AP-39

ConocoPhillips
East Vacuum Playa

Annual Report
2013

Griswold, Jim, EMNRD

From: Bockisch, Bernie <bbockisch@craworld.com>
Sent: Wednesday, April 09, 2014 11:25 AM
To: Griswold, Jim, EMNRD
Cc: Hathaway, David C
Subject: Vacuum Glorietta Annual Report
Attachments: 075005 - RPT 3 - Final.pdf

Jim,

I've attached the Annual Groundwater Monitoring Report for the Vacuum Glorietta site located near Buckeye, New Mexico. The report details the installation of three groundwater monitoring wells and the associated groundwater sampling event. We will be performing the next groundwater monitoring event on April 15. Feel free to contact me if you have any questions,

Bernie

Bernard Bockisch, PMP
Conestoga-Rovers & Associates (CRA)
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CONESTOGA-ROVERS & ASSOCIATES

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Annual Groundwater Monitoring Report

Vacuum Glorietta East Unit
Lea County, New Mexico

Prepared for: ConocoPhillips Company

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

March 20, 2014 • 075005 • Report No. 3

Partners in Sustainability

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Section 1.0 Introduction

Subsurface assessment activities were performed at the Vacuum Glorieta East Unit from December 4, 2013 to December 13, 2013 and from January 27, 2014 to January 28, 2014. The Vacuum Glorieta East Unit site (hereafter referred to as the "Site"), is located on land owned by the New Mexico State Land Office within Units N and O, Section 27, Township 17 South, Range 35 East, in Lea County, New Mexico (32° 47.932' N, 103° 26.726' W, see **Figure 1**).

The scope of work for the project was developed between ConocoPhillips Company (CoP), New Mexico Oil Conservation Division (NMOCD), and Conestoga-Rovers and Associates (CRA) personnel. CRA performed project management, general oversight of the remediation activities, soil and groundwater sampling, and documentation of the field work. Drilling and monitoring well installation was performed by Yellow Jacket Drilling (YJD) of Phoenix, Arizona. The agreed upon scope of services included:

- Obtaining site specific training, permits, and involving appropriate stakeholders needed to complete the scope of work;
- Installing three additional monitoring wells to further assess the northern, western, and southern extent of hydrocarbons and chlorides in the groundwater (see **Figure 2**); and
- Conducting four quarterly groundwater monitoring and sampling events.

Section 2.0 Site History

Impacts to soil and groundwater are believed to be associated with a release that was reported to the New Mexico Oil Conservation Division (NMOCD) on October 28, 2002. The affected area was estimated to be approximately 80 feet by 150 feet in size. Approximately 80 barrels of oil and 20 barrels of water were recovered after the release.

An initial Site investigation was performed by B&H Environmental Services in November 2002. A total of seven shallow soil borings were advanced during the investigation. Soil samples collected from the borings indicated the presence of chlorides and petroleum hydrocarbons above NMOCD Recommended Remedial Action Limits (RRAL's).

Excavation of affected soil began in August 2004 and was extended to a depth of approximately 20 feet below ground surface (bgs). Approximately 3,240 cubic yards (yd^3) of petroleum impacted soil were excavated from the site and disposed of at a regulated facility. However, historical hydrocarbon concentrations were observed during excavation and additional assessment work was required. The excavation was backfilled and additional soil borings and monitoring wells were installed.

Based on the results of the additional assessment work, a Stage I and II Abatement Plan was submitted to the NMOCD in October 2007. The Abatement Plan proposed additional excavation of impacted soils and the placement of a geo-membrane liner prior to backfilling and reseeding the area of excavation. The abatement plan included the installation of groundwater monitoring wells, followed by 8 quarters of groundwater monitoring.

The additional excavation work that was approved under the October 2007 Abatement Plan was performed in November and December 2008. One monitoring well was abandoned (VG-1) because it was located within the footprint of the excavation. Approximately 1,000 yd^3 of soil was excavated. During the excavation, a significant rain event occurred which caused flushing of the soils. Due to the rain event, it was agreed by the NMOCD that a geo-membrane liner was not required to be installed prior to backfilling. Backfilling and reseeding of the excavation was approved and performed in July 2009. Following backfilling and reseeding, one groundwater monitoring well, VG-4, was installed within the footprint of the excavation.

On October 6, 2011, CRA conducted groundwater gauging of the onsite monitoring wells. Monitoring well VG-4 was not sampled because it contained 0.17 ft of light non-aqueous phase liquid (LNAPL). The groundwater at the site was sampled for chlorides. The groundwater analytical results indicated concentrations of chlorides below the regulatory limit (VG-2, 103.0 mg/L and VG-3, 42.0 mg/L).

Section 3.0 Monitoring Well Installation

Between December 4, 2013 and December 13, 2013, YJD installed three groundwater monitoring wells (VG-5, VG-6, and VG-7) under CRA observation. Borings were advanced using a CME-850 drill rig and hollow stem augers. Soil samples were collected in ten foot increments using a 1.5-foot long, 2-inch diameter split-spoon. Samples were logged by CRA personnel according to the Unified Soil Classification System. All cuttings generated during monitoring well installation were placed in labeled 55-gallon drums for appropriate disposal at a later date.

VG-5 was installed at a depth of 74 feet bgs while VG-6 and VG-7 were installed at depths of 80 feet bgs. Each well was constructed of 2-inch diameter, schedule 40, flush-joint, PVC casing and screen. The monitoring wells consist of a 0.5-foot long, threaded PVC bottom plug and 15 feet of flush-joint, threaded, factory-slotted (0.010-inch) well screen. The annular space around the well screen was filled with 10/20 gradation silica sand to approximately two feet above the well screen, followed by approximately 3 feet of 1/4-inch and 3/8-inch bentonite pellets. A cement/bentonite grout was placed from the top of the bentonite pellets to ground surface. The wellheads are protected with an above-grade completion set within a 24-inch by 24-inch by 4-inch thick concrete pad.

After installation, each well was developed using a bailer and submersible Monsoon pump until water quality parameters stabilized and turbidity significantly decreased.

3.1 Soil Types

The soils mainly consisted of tan or brown, fine-grained, silty sands until approximately 40 to 50 feet bgs. The sands were well-cemented (caliche) or contained high quantities of well cemented nodules to a depth of approximately 20 feet bgs.

Below the silty sands, the soils were predominantly poorly-sorted, non-cemented, tan, sands. Boring logs from monitoring well installation activities are presented as **Appendix A**.

3.2 Soil Analytical Results

Soil samples were placed in laboratory-supplied containers, labeled, placed on ice, and transported under chain of custody documentation via overnight delivery. Soil samples were sent to Pace Analytical (Pace) of Lenexa, Kansas. Soil samples were analyzed for total petroleum hydrocarbons (TPH) using EPA method 8015B and chlorides using EPA method 300.0. Laboratory analytical results are present in **Appendix B**.

Soil samples returned analytical results below detection limits for TPH (See **Table 1**). Soil samples returned analytical results below NMOCD RRAL's for chlorides. The NMOCD RRAL for chlorides is 250 mg/kg.

Section 4.0 Quarterly Groundwater Monitoring and Sampling

Groundwater sampling was conducted at the Site from January 27 and 28, 2014.

4.1 Groundwater Monitoring Methodology

Prior to collection of groundwater samples, depth to groundwater in each well was measured using an oil/water interface probe (see **Table 2**). During groundwater monitoring events, Site monitoring wells were purged of at least three casing volumes of groundwater using a 1.5-inch diameter, polyethylene, dedicated bailer. While purging each well, groundwater parameters were recorded using a YSI 556 multi-parameter sonde.

Groundwater samples were placed in laboratory-supplied containers, labeled, placed on ice, and transported via overnight delivery under chain of custody documentation. Groundwater samples were sent to Pace for analysis of TPH using EPA method 8015B, benzene, toluene, ethylbenzene and xylenes (BTEX) by EPA method 8260, and chlorides using EPA method 300.0. A summary of analytical results is presented as **Table 3**. Laboratory analytical results are present in **Appendix B**.

4.2 Groundwater Monitoring Analytical Results

The New Mexico Water Quality Control Commission (NMWQCC) mandates that groundwater quality in New Mexico be protected, and has issued groundwater quality standards in Title 20, Chapter 6, Part 2, Section 3103 of the New Mexico Administrative Code (20.6.2.3103 NMAC). Results of the groundwater monitoring event are discussed below:

January 2014

- Data collected during January 2014 indicate that the local groundwater gradient is to the southwest. Depth to groundwater was found to be approximately 64 to 68 feet bgs in Site monitor wells. The groundwater gradient was approximately 0.0025 feet per foot. A groundwater potentiometric surface map reflecting January 2014 groundwater elevations is presented as **Figure 3**.
- Monitoring well VG-4 was not sampled due to the presence of 0.04 feet of LNAPL. An oil-absorbent skimming sock was placed in VG-4 and will be replaced at each subsequent sampling event.
- BTEX: The NMWQCC domestic water supply groundwater quality standards for benzene, toluene, ethylbenzene, and xylenes are 0.01 mg/L, 0.75 mg/L, 0.75 mg/L, and 0.62 mg/L, respectively. In January 2014, all Site groundwater monitoring wells returned analytical results that were below laboratory detection limits for all BTEX constituents.
- Chlorides: The NMWQCC domestic water supply groundwater quality standard for chlorides is 250 mg/L. In January 2014, VG-5 yielded an analytical result of 304 mg/L. A map showing the distribution of chloride concentrations in the groundwater can be found as **Figure 4**.

Section 5.0 Conclusion and Recommendations

Chloride concentrations exceeded the NMWQCC standards in VG-5 during the January 2014 groundwater monitoring and sampling event. CRA recommends continued quarterly groundwater sampling at the Site.

Please feel free to contact the CRA Albuquerque office if there are any questions or additional information is required.

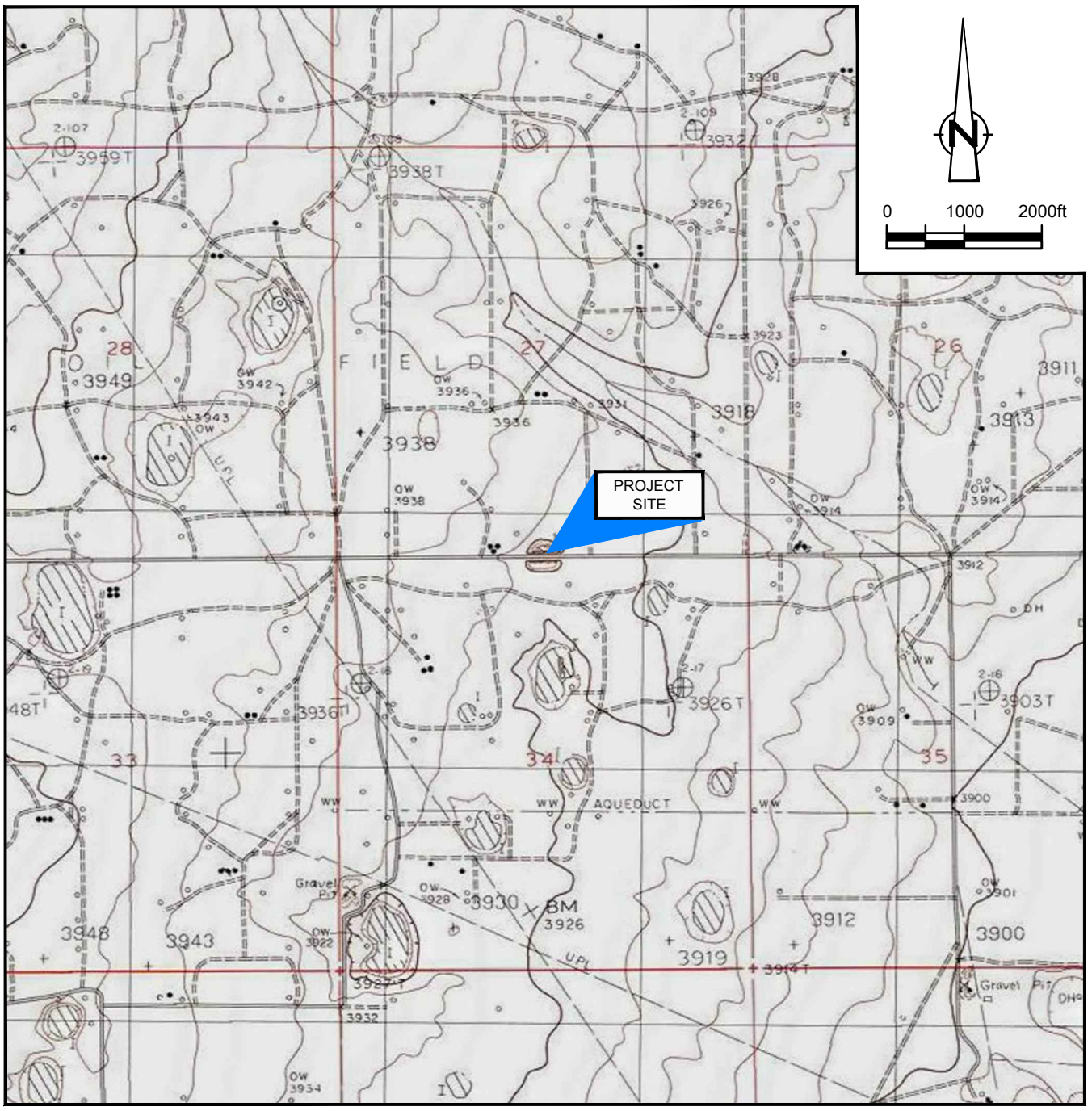
All of which is Respectfully Submitted,

CONESTOGA ROVERS & ASSOCIATES

Cale Kanack
Staff Scientist

Bernard Bockisch, PMP
Sr. Project Manage

Figures



SOURCE: USGS 7.5 MINUTE QUAD
"LOVINGTON SW, NEW MEXICO"

LAT/LONG: 32.799° NORTH, -103.445° WEST
COORDINATE: NAD83 DATUM, U.S. FOOT
STATE PLANE ZONE - NEW MEXICO EAST

Figure 1

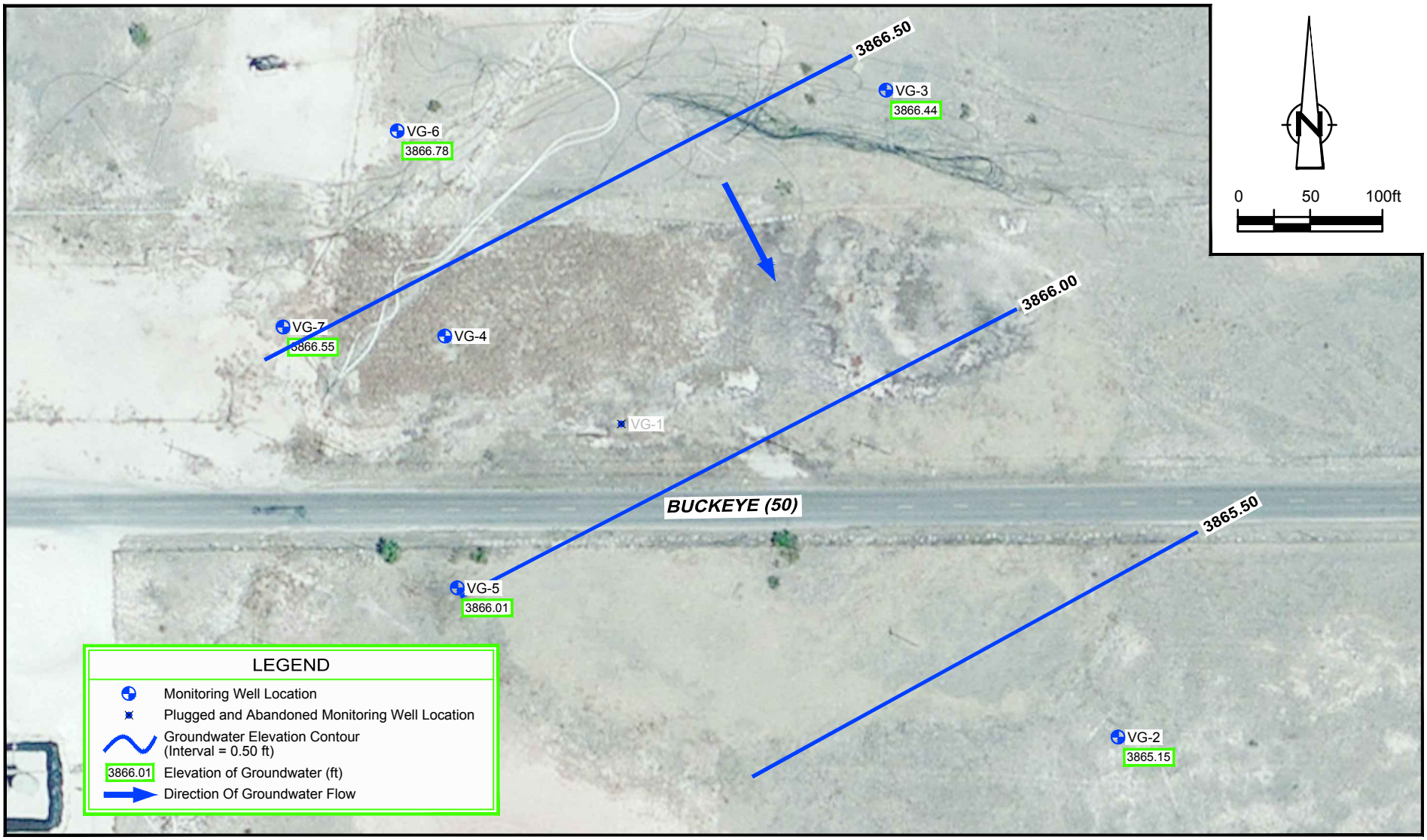
SITE LOCATION MAP
VACUUM GLORIETTA EAST UNIT, EAST BATTERY PLAYA
SECTION 27, T17S, R35E, LEA COUNTY, NEW MEXICO
ConocoPhillips Company

LAT/LONG: 32.799° NORTH, -103.445° WEST
COORDINATE: NAD83 DATUM, U.S. FOOT
STATE PLANE ZONE - NEW MEXICO EAST

Figure 2

SITE DETAILS MAP
VACUUM GLORIETTA EAST UNIT, EAST BATTERY PLAYA
SECTION 27, T17S, R35E, LEA COUNTY, NEW MEXICO
ConocoPhillips Company

075005-00(003)GN-DL001 MAR 7/2014



LAT/LONG: 32.799° NORTH, -103.445° WEST
COORDINATE: NAD83 DATUM, U.S. FOOT
STATE PLANE ZONE - NEW MEXICO EAST

Figure 3

JANUARY 2014 GROUNDWATER POTENTIOMETRIC MAP
VACUUM GLORIETTA EAST UNIT, EAST BATTERY PLAYA
SECTION 27, T17S, R35E, LEA COUNTY, NEW MEXICO

ConocoPhillips Company

LAT/LONG: 32.799° NORTH, -103.445° WEST
COORDINATE: NAD83 DATUM, U.S. FOOT
STATE PLANE ZONE - NEW MEXICO EAST

Figure 4

JANUARY 2014 CHLORIDE CONCENTRATION MAP
VACUUM GLORIETTA EAST UNIT, EAST BATTERY PLAYA
SECTION 27, T17S, R35E, LEA COUNTY, NEW MEXICO
ConocoPhillips Company

075005-00(003)GN-DL002 MAR 19/2014

Tables

Table 1
Soil Analytical Summary
Vacuum Glorietta East Unit
Lea County, New Mexico

Well ID	*Sample ID*	*Sample Date*	*TPH-GRO (mg/kg)*	*TPH-DRO (mg/kg)*	*TPH-ORO (mg/kg)*	*TPH Total (mg/kg)*	*Chloride (mg/kg)*
VG-5	S-075005-121013-CK-VG5-10	12/10/2013	< 10.4	< 10.0	< 10.0	< 10.4	< 103
	S-075005-121013-CK-VG5-20	12/10/2013	< 10.7	< 10.7	< 10.7	< 10.7	< 108
	S-075005-121013-CK-VG5-30	12/10/2013	< 10.6	< 10.5	< 10.5	< 10.6	< 106
	S-075005-121013-CK-VG5-40	12/10/2013	< 10.7	< 10.6	< 10.6	< 10.7	< 106
	S-075005-121013-CK-VG5-50	12/10/2013	< 10.7	< 10.6	< 10.6	< 10.7	< 107
	S-075005-121013-CK-VG5-60	12/10/2013	< 11.2	< 11.0	< 11.0	< 11.2	< 111
VG-6	S-075005-120613-CK-VG6-10	12/6/2013	< 11.5	< 11.5	< 11.5	< 11.5	< 117
	S-075005-120613-CK-VG6-20	12/6/2013	< 10.6	< 10.6	< 10.6	< 10.6	< 108
	S-075005-120613-CK-VG6-30	12/6/2013	< 10.4	< 10.5	< 10.5	< 10.5	< 106
	S-075005-120613-CK-VG6-40	12/6/2013	< 10.4	< 10.5	< 10.5	< 10.5	< 106
	S-075005-120613-CK-VG6-50	12/6/2013	< 10.3	< 10.4	< 10.4	< 10.4	< 105
	S-075005-120613-CK-VG6-60	12/6/2013	< 10.4	< 10.4	< 10.4	< 10.4	< 106
VG-7	S-075005-120413-CK-VG7-10	12/4/2013	< 10.9	< 10.9	< 10.9	< 10.9	< 112
	S-075005-120413-CK-VG7-20	12/4/2013	< 10.9	< 10.8	< 10.8	< 10.9	< 110
	S-075005-120413-CK-VG7-30	12/4/2013	< 10.8	< 10.7	< 10.7	< 10.8	< 107
	S-075005-120413-CK-VG7-40	12/4/2013	< 10.6	< 10.4	< 10.4	< 10.6	176
	S-075005-120413-CK-VG7-50	12/4/2013	< 10.3	< 10.6	< 10.6	< 10.6	165
	S-075005-120413-CK-VG7-60	12/4/2013	< 10.7	< 10.6	< 10.6	< 10.7	164
NMOCD RRAL			--	--	--	**1,000**	**250**

Notes:
TPH = Total petroleum hydrocarbons
GRO/DRO/ORO = Gasoline/diesel/oil organics
NMOCD RRAL = New Mexico Oil Conservation Division Recommended Remedial Action Limit
mg/kg = milligrams per kilogram (parts per million)
< 10.4 = Below Laboratory Detection Limit of 10.4 mg/kg
< = Below Laboratory Detection Limit
BOLD = Concentrations that exceed the NMWQCC groundwater quality standard

Table 2
Monitoring Well Specifications and Groundwater Elevations
Vacuum Glorietta East Unit
Lea County, New Mexico

Well ID	*Total Depth (ft below TOC)*	*Top of Casing Elevation**	*Screen Interval (ft bgs)*	*Date Measured*	*Depth to Product (ft below TOC)*	*Depth to Groundwater (ft below TOC)*	*Relative Water Level (ft)*
VG-2	70	3930.56	--	1/27/2014	--	65.41	3865.15
VG-3	70	3931.15	--	1/27/2014	--	64.71	3866.44
VG-4	78	3931.93	--	1/27/2014	65.52	65.56	--
VG-5	74	3930.52	59 - 74	1/27/2014	--	64.51	3866.01
VG-6	80	3935.16	65 - 80	1/27/2014	--	68.38	3866.78
VG-7	80	3934.78	65 - 80	1/27/2014	--	68.23	3866.55

Table 3
Groundwater Analytical Summary
Vacuum Glorietta East Unit
Lea County, New Mexico

Well ID	*Sample ID*	*Sample Date*	*Benzene (mg/L)*	*Toluene (mg/L)*	*Ethylbenzene (mg/L)*	*Xylenes (mg/L)*	*Chloride (mg/L)*
VG-2	GW-075005-012814-CK-VG-2	1/28/2014	< 0.001	< 0.001	< 0.001	< 0.003	125
VG-3	GW-075005-012814-CK-VG-3	1/28/2014	< 0.001	< 0.001	< 0.001	< 0.003	45.2
VG-4	Not sampled due to presence of LNAPL.						
VG-5	GW-075005-012814-CK-VG-5	1/28/2014	< 0.001	< 0.001	< 0.001	< 0.003	**304**
VG-6	GW-075005-012814-CK-VG-6	1/28/2014	< 0.001	< 0.001	< 0.001	< 0.003	88.3
VG-7	GW-075005-012814-CK-VG-7	1/28/2014	< 0.001	< 0.001	< 0.001	< 0.003	191
NMWQCC Groundwater Quality Standards			**0.01**	**0.75**	**0.75**	**0.62**	**250**

Notes:
NMWQCC = New Mexico Water Quality Control Commission
mg/L = milligrams per liter (parts per million)
< 0.001 = Below Laboratory Detection Limit of 0.001 mg/L
< = Below Laboratory Detection Limit
BOLD = Concentrations that exceed the NMWQCC groundwater quality standard

Appendix A

Boring Logs

PROJECT NAME: Vacuum Glorietta
LOCATION: Lea County, New Mexico
FIELD LOGGED BY: Cale Kanack
SURFACE ELEVATION (msl): 3927.8 feet
GROUNDWATER ELEVATION (msl): 70 feet bgs
REMARKS:
COORDINATES: 32.79848, -103.44618

SOIL BORING NO: VG-5
DRILL TYPE: Hollow Stem Auger
BORE HOLE DIAMETER: 7 7/8"
DRILLED BY: Yellow Jacket Drilling
DATE/TIME HOLE STARTED: December 10, 2013 at 0845
DATE/TIME HOLE COMPLETED: December 10, 2013 at 1300

DEPTH (bgs) - ft	SAMPLE TO LAB	SAMPLE ID	STRATAGRAPHIC SEQUENCE	COMPLETION INFORMATION	CLASSIFICATION AND DESCRIPTION	USCS Symbol	Chloride (mg/kg)	DEPTH (bgs) - ft
3925					Silty Sand: Tan to white, well cemented (caliche)	SM		0
								-5
3920	X	VG-5 (10-11.5)					< 103	-10
3915					Silty Sand: Tan, fine grained, dry, moderately cemented, with caliche nodules	SM		-15
3910	X	VG-5 (20-21.5)					< 108	-20
3905					Silty Sand: Tan, fine grained, slightly moist, weakly cemented, some caliche nodules	SM		-25

PROJECT NAME: Vacuum Glorietta
LOCATION: Lea County, New Mexico
FIELD LOGGED BY: Cale Kanack
SURFACE ELEVATION (msl): 3927.8 feet
GROUNDWATER ELEVATION (msl): 70 feet bgs
REMARKS:
COORDINATES: 32.79848, -103.44618

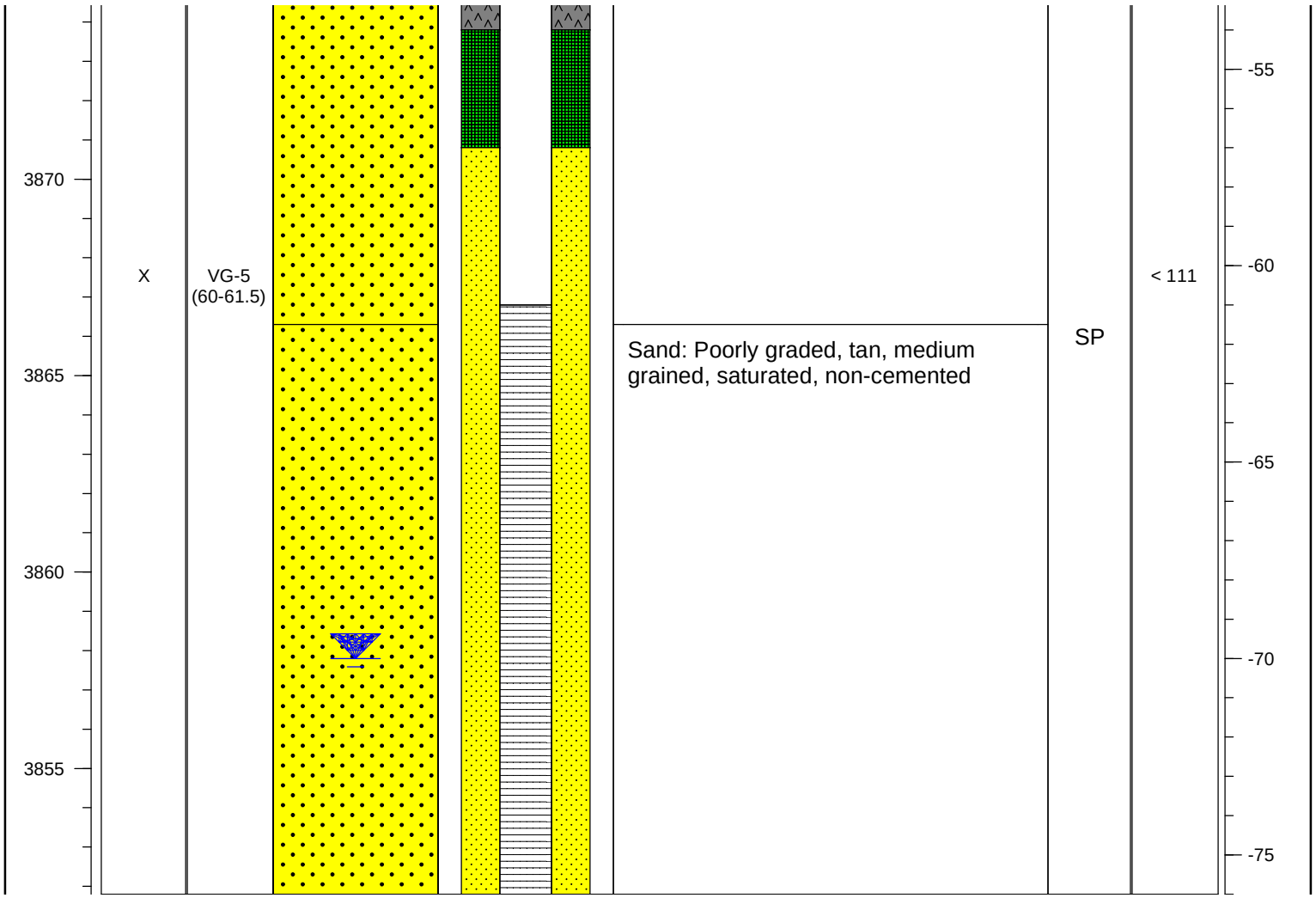
SOIL BORING NO: VG-5
DRILL TYPE: Hollow Stem Auger
BORE HOLE DIAMETER: 7 7/8"
DRILLED BY: Yellow Jacket Drilling
DATE/TIME HOLE STARTED: December 10, 2013 at 0845
DATE/TIME HOLE COMPLETED: December 10, 2013 at 1300

DEPTH (bgs) - ft	SAMPLE TO LAB	SAMPLE ID	STRATAGRAPHIC SEQUENCE	COMPLETION INFORMATION	CLASSIFICATION AND DESCRIPTION	USCS Symbol	Chloride (mg/kg)	DEPTH (bgs) - ft
3900	X	VG-5 (30-31.5)					< 106	-30
3895					Sand: Poorly graded, tan, slightly moist, non-cemented	SP		-35
3890	X	VG-5 (40-41.5)					< 106	-40
3885					Sand: Poorly graded, tan, slightly moist, non-cemented, trace caliche nodules	SP		-45
3880	X	VG-5 (50-51.5)					< 107	-50
3875					Sand: Poorly graded, tan, medium grained, moist, non-cemented	SP		

PROJECT NAME: Vacuum Glorietta
LOCATION: Lea County, New Mexico
FIELD LOGGED BY: Cale Kanack
SURFACE ELEVATION (msl): 3927.8 feet
GROUNDWATER ELEVATION (msl): 70 feet bgs
REMARKS:
COORDINATES: 32.79848, -103.44618

SOIL BORING NO: VG-5
DRILL TYPE: Hollow Stem Auger
BORE HOLE DIAMETER: 7 7/8"
DRILLED BY: Yellow Jacket Drilling
DATE/TIME HOLE STARTED: December 10, 2013 at 0845
DATE/TIME HOLE COMPLETED: December 10, 2013 at 1300

DEPTH (bgs) - ft	SAMPLE TO LAB	SAMPLE ID	STRATAGRAPHIC SEQUENCE / COMPLETION INFORMATION	CLASSIFICATION AND DESCRIPTION	USCS Symbol	Chloride (mg/kg)	DEPTH (bgs) - ft
3870	X	VG-5 (60-61.5)		Sand: Poorly graded, tan, medium grained, saturated, non-cemented	SP	< 111	-55
3865							-60
3860							-65
3855							-70
							-75



PROJECT NAME: Vacuum Glorietta
LOCATION: Lea County, New Mexico
FIELD LOGGED BY: Cale Kanack
SURFACE ELEVATION (msl): 3932.5 feet
GROUNDWATER ELEVATION (msl): 70 feet bgs
REMARKS:
COORDINATES: 32.79935, -103.44630

SOIL BORING NO: VG-6
DRILL TYPE: Hollow Stem Auger
BORE HOLE DIAMETER: 7 7/8"
DRILLED BY: Yellow Jacket Drilling
DATE/TIME HOLE STARTED: December 5, 2013 at 1515
DATE/TIME HOLE COMPLETED: December 5, 2013 at 1010

DEPTH (bgs) - ft	SAMPLE TO LAB	SAMPLE ID	STRATAGRAPHIC SEQUENCE / COMPLETION INFORMATION	CLASSIFICATION AND DESCRIPTION	USCS Symbol	Chloride (mg/kg)	DEPTH (bgs) - ft
3930				Silty Sand: Brown, fine grained, dry, weakly cemented, with gravel and caliche nodules	SM		0
							-5
3925							
	X	VG-6 (10-11.5)				< 117	-10
3920				Silty Sand: Brown, fine grained, dry, weakly cemented, with gravel and caliche nodules	SM		
							-15
3915							
	X	VG-6 (20-21.5)				< 108	-20
3910				Silty Sand: Brown, fine grained, dry, weakly cemented, some caliche nodules	SM		
							-25

PROJECT NAME: Vacuum Glorietta
LOCATION: Lea County, New Mexico
FIELD LOGGED BY: Cale Kanack
SURFACE ELEVATION (msl): 3932.5 feet
GROUNDWATER ELEVATION (msl): 70 feet bgs
REMARKS:
COORDINATES: 32.79935, -103.44630

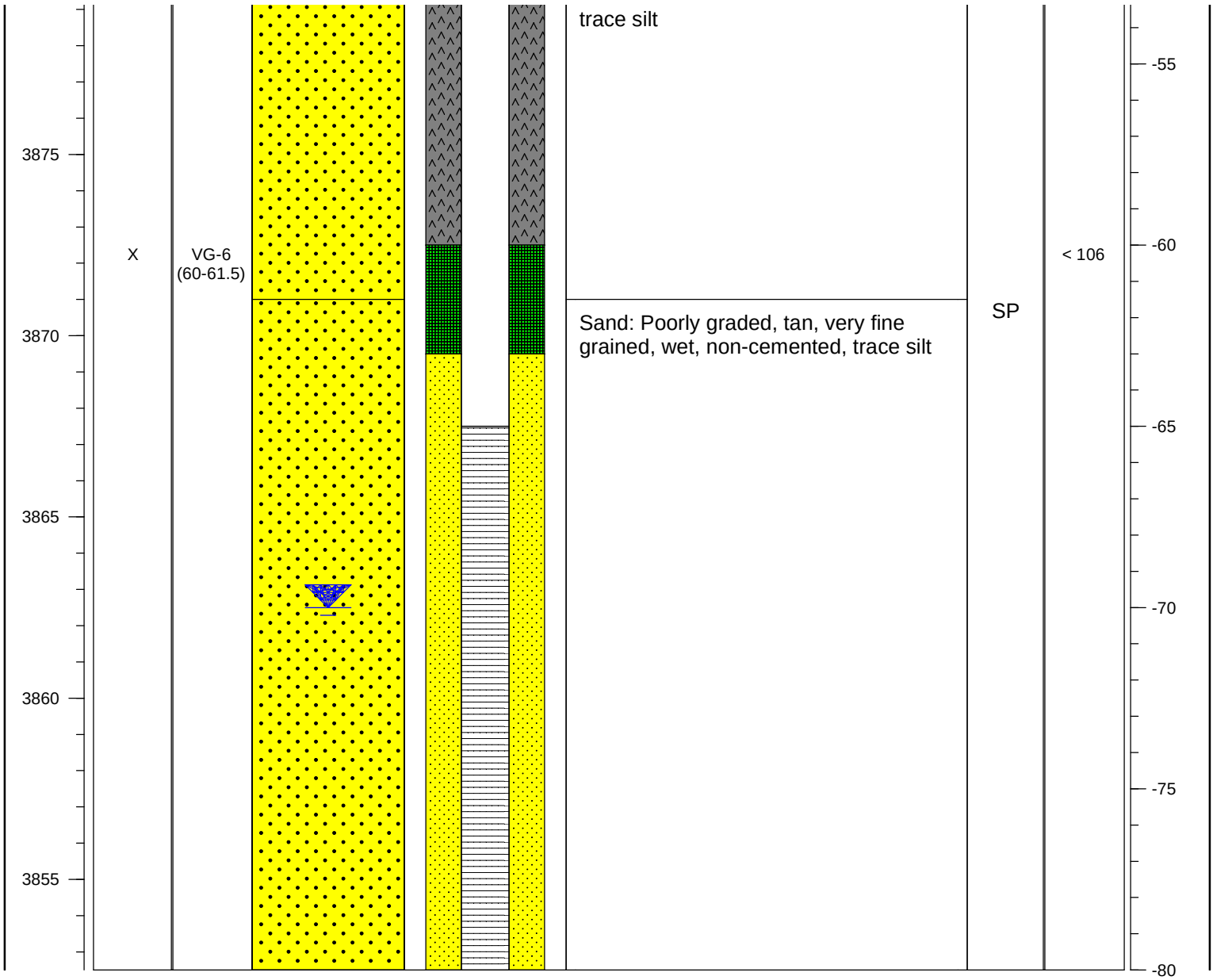
SOIL BORING NO: VG-6
DRILL TYPE: Hollow Stem Auger
BORE HOLE DIAMETER: 7 7/8"
DRILLED BY: Yellow Jacket Drilling
DATE/TIME HOLE STARTED: December 5, 2013 at 1515
DATE/TIME HOLE COMPLETED: December 5, 2013 at 1010

DEPTH (bgs) - ft	SAMPLE TO LAB	SAMPLE ID	STRATAGRAPHIC SEQUENCE	COMPLETION INFORMATION	CLASSIFICATION AND DESCRIPTION	USCS Symbol	Chloride (mg/kg)	DEPTH (bgs) - ft
3905								
	X	VG-6 (30-31.5)					< 106	-30
3900					Silty Sand: Light brown, very fine grained, dry, non-cemented	SM		
								-35
3895								
	X	VG-6 (40-41.5)					< 106	-40
3890					Sand: Poorly graded, tan, very fine grained, dry, non-cemented, trace silt	SP		
								-45
3885								
	X	VG-6 (50-51.5)					< 105	-50
3880					Sand: Poorly graded, tan, very fine grained, slighty moist, non-cemented,	SP		

PROJECT NAME: Vacuum Glorietta
LOCATION: Lea County, New Mexico
FIELD LOGGED BY: Cale Kanack
SURFACE ELEVATION (msl): 3932.5 feet
GROUNDWATER ELEVATION (msl): 70 feet bgs
REMARKS:
COORDINATES: 32.79935, -103.44630

SOIL BORING NO: VG-6
DRILL TYPE: Hollow Stem Auger
BORE HOLE DIAMETER: 7 7/8"
DRILLED BY: Yellow Jacket Drilling
DATE/TIME HOLE STARTED: December 5, 2013 at 1515
DATE/TIME HOLE COMPLETED: December 5, 2013 at 1010

DEPTH (bgs) - ft	SAMPLE TO LAB	SAMPLE ID	STRATAGRAPHIC SEQUENCE	COMPLETION INFORMATION	CLASSIFICATION AND DESCRIPTION	USCS Symbol	Chloride (mg/kg)	DEPTH (bgs) - ft
3875	X	VG-6 (60-61.5)			trace silt	SP	< 106	-55
3870					Sand: Poorly graded, tan, very fine grained, wet, non-cemented, trace silt			-60
3865								-65
3860								-70
3855								-75
								-80



TD = 80 feet bgs

CONESTOGA-ROVERS & ASSOCIATES

BORING LOG AND WELL COMPLETION FORM

PROJECT NAME: Vacuum Glorietta
LOCATION: Lea County, New Mexico
FIELD LOGGED BY: Cale Kanack
SURFACE ELEVATION (msl): 3932.2 feet
GROUNDWATER ELEVATION (msl): 70 feet bgs
REMARKS:
COORDINATES: 32.79898, -103.44657

SOIL BORING NO: VG-7
DRILL TYPE: Hollow Stem Auger
BORE HOLE DIAMETER: 7 7/8"
DRILLED BY: Yellow Jacket Drilling
DATE/TIME HOLE STARTED: December 4, 2013 at 0845
DATE/TIME HOLE COMPLETED: December 4, 2013 at 1505

DEPTH (bgs) - ft	SAMPLE TO LAB	SAMPLE ID	STRATAGRAPHIC SEQUENCE / COMPLETION INFORMATION	CLASSIFICATION AND DESCRIPTION	USCS Symbol	Chloride (mg/kg)	DEPTH (bgs) - ft
3930				Fill: Fill			0
				Silty Sand: Cemented caliche			-5
3925				Silty Sand: Light tan, fine grained, dry, weakly cemented, with gravel and caliche nodules	SM		
	X	VG-7 (10-11.5)				< 112	-10
3920				Silty Sand: Pinkish tan, very fine grained, dry, moderately cemented, with well cemented caliche nodules	SM		
3915							-15
	X	VG-7 (20-21.5)				< 110	-20
3910				Silty Sand: Light brown, medium to fine grained, slightly moist, non-cemented, some caliche nodules	SM		
							-25

PROJECT NAME: Vacuum Glorietta
LOCATION: Lea County, New Mexico
FIELD LOGGED BY: Cale Kanack
SURFACE ELEVATION (msl): 3932.2 feet
GROUNDWATER ELEVATION (msl): 70 feet bgs
REMARKS:
COORDINATES: 32.79898, -103.44657

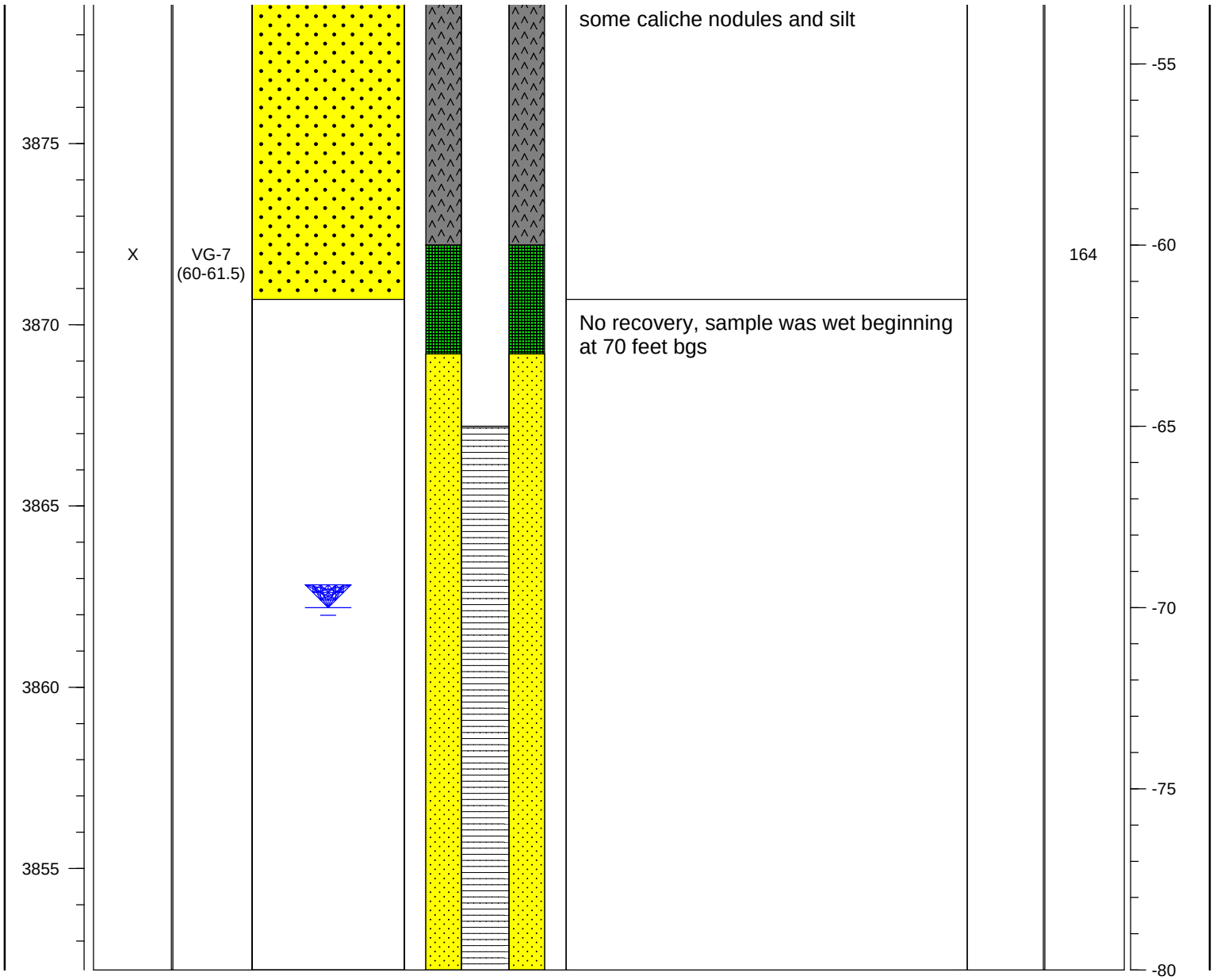
SOIL BORING NO: VG-7
DRILL TYPE: Hollow Stem Auger
BORE HOLE DIAMETER: 7 7/8"
DRILLED BY: Yellow Jacket Drilling
DATE/TIME HOLE STARTED: December 4, 2013 at 0845
DATE/TIME HOLE COMPLETED: December 4, 2013 at 1505

DEPTH (bgs) - ft	SAMPLE TO LAB	SAMPLE ID	STRATAGRAPHIC SEQUENCE / COMPLETION INFORMATION	CLASSIFICATION AND DESCRIPTION	USCS Symbol	Chloride (mg/kg)	DEPTH (bgs) - ft
3905							
	X	VG-7 (30-31.5)				< 107	-30
3900				Silty Sand: Light brown, medium to fine grained, slightly moist, non-cemented, some caliche nodules	SM		
							-35
3895							
	X	VG-7 (40-41.5)				176	-40
3890				Silty Sand: Light brown, medium to fine grained, slightly moist, weakly cemented, some caliche nodules	SM		
							-45
3885							
	X	VG-7 (50-51.5)				165	-50
3880				Sand: Poorly graded, light brown, fine grained, slightly moist, non-cemented,	SP		

PROJECT NAME: Vacuum Glorietta
LOCATION: Lea County, New Mexico
FIELD LOGGED BY: Cale Kanack
SURFACE ELEVATION (msl): 3932.2 feet
GROUNDWATER ELEVATION (msl): 70 feet bgs
REMARKS:
COORDINATES: 32.79898, -103.44657

SOIL BORING NO: VG-7
DRILL TYPE: Hollow Stem Auger
BORE HOLE DIAMETER: 7 7/8"
DRILLED BY: Yellow Jacket Drilling
DATE/TIME HOLE STARTED: December 4, 2013 at 0845
DATE/TIME HOLE COMPLETED: December 4, 2013 at 1505

DEPTH (bgs) - ft	SAMPLE TO LAB	SAMPLE ID	STRATAGRAPHIC SEQUENCE	COMPLETION INFORMATION	CLASSIFICATION AND DESCRIPTION	USCS Symbol	Chloride (mg/kg)	DEPTH (bgs) - ft
	X	VG-7 (60-61.5)			some caliche nodules and silt		164	
					No recovery, sample was wet beginning at 70 feet bgs			



Appendix B

Analytical Results

Pace Analytical Services, Inc.
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Lenexa, KS 66219
(913)599-5665

December 31, 2013

Bernie Bockisch
COP Conestoga-Rovers & Associa
6121 Indian School Rd NE
Ste 200
Albuquerque, NM 87110

RE: Project: 075005 NM VACUUM GLORIETTA
Pace Project No.: 60159663

Dear Bernie Bockisch:
Enclosed are the analytical results for sample(s) received by the laboratory on December 14, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Alice Flanagan

alice.flanagan@pacelabs.com
Project Manager

Enclosures

cc: Cale Canack, COP Conestoga-Rovers & Associa

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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CERTIFICATIONS

Project: 075005 NM VACUUM GLORIETTA
Pace Project No.: 60159663

Kansas Certification IDs
9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 13-012-0
Illinois Certification #: 003097
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407-13-4
Utah Certification #: KS000212013-3
Illinois Certification #: 003097

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SAMPLE SUMMARY

Project: 075005 NM VACUUM GLORIETTA
Pace Project No.: 60159663

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60159663001	**S-075005-121013-CK-V65-10**	Solid	12/10/13 09:40	12/14/13 11:30
60159663002	**S-075005-121013-CK-V65-20**	Solid	12/10/13 10:15	12/14/13 11:30
60159663003	**S-075005-121013-CK-V65-30**	Solid	12/10/13 10:30	12/14/13 11:30
60159663004	**S-075005-121013-CK-V65-40**	Solid	12/10/13 10:40	12/14/13 11:30
60159663005	**S-075005-121013-CK-V65-50**	Solid	12/10/13 11:15	12/14/13 11:30
60159663006	**S-075005-121013-CK-V65-60**	Solid	12/10/13 11:30	12/14/13 11:30
60159663007	**S-075005-121013-CK-WASTE**	Solid	12/13/13 12:00	12/14/13 11:30
60159663008	**GW075005-121013-CK-WASTE**	Water	12/13/13 12:15	12/14/13 11:30
60159663009	**TRIP BLANK**	Water	12/13/13 00:00	12/14/13 11:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 075005 NM VACUUM GLORIETTA
Pace Project No.: 60159663

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60159663001	**S-075005-121013-CK-V65-10**	EPA 8015B	JDE	4	PASI-K
		EPA 8015B	SDR	2	PASI-K
		ASTM D2974	TMD	1	PASI-K
		EPA 300.0	OL	1	PASI-K
60159663002	**S-075005-121013-CK-V65-20**	EPA 8015B	JDE	4	PASI-K
		EPA 8015B	SDR	2	PASI-K
		ASTM D2974	TMD	1	PASI-K
		EPA 300.0	OL	1	PASI-K
60159663003	**S-075005-121013-CK-V65-30**	EPA 8015B	JDE	4	PASI-K
		EPA 8015B	SDR	2	PASI-K
		ASTM D2974	TMD	1	PASI-K
		EPA 300.0	OL	1	PASI-K
60159663004	**S-075005-121013-CK-V65-40**	EPA 8015B	JDE	4	PASI-K
		EPA 8015B	SDR	2	PASI-K
		ASTM D2974	TMD	1	PASI-K
		EPA 300.0	OL	1	PASI-K
60159663005	**S-075005-121013-CK-V65-50**	EPA 8015B	JDE	4	PASI-K
		EPA 8015B	SDR	2	PASI-K
		ASTM D2974	TMD	1	PASI-K
		EPA 300.0	OL	1	PASI-K
60159663006	**S-075005-121013-CK-V65-60**	EPA 8015B	JDE	4	PASI-K
		EPA 8015B	SDR	2	PASI-K
		ASTM D2974	TMD	1	PASI-K
		EPA 300.0	OL	1	PASI-K

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SUMMARY OF DETECTION

Project: 075005 NM VACUUM GLORIETTA
Pace Project No.: 60159663

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
60159663001	**S-075005-121013-CK-V65-10**					
ASTM D2974	Percent Moisture	2.9	%	0.50	12/27/13 00:00	
60159663002	**S-075005-121013-CK-V65-20**					
ASTM D2974	Percent Moisture	7.4	%	0.50	12/27/13 00:00	
60159663003	**S-075005-121013-CK-V65-30**					
ASTM D2974	Percent Moisture	6.1	%	0.50	12/27/13 00:00	
60159663004	**S-075005-121013-CK-V65-40**					
ASTM D2974	Percent Moisture	5.9	%	0.50	12/27/13 00:00	
60159663005	**S-075005-121013-CK-V65-50**					
ASTM D2974	Percent Moisture	6.3	%	0.50	12/27/13 00:00	
60159663006	**S-075005-121013-CK-V65-60**					
ASTM D2974	Percent Moisture	9.8	%	0.50	12/27/13 00:00	

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PROJECT NARRATIVE

Project: 075005 NM VACUUM GLORIETTA
Pace Project No.: 60159663

Method: **EPA 8015B**
Description: 8015B Diesel Range Organics
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: December 31, 2013

General Information:
6 samples were analyzed for EPA 8015B. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3546 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 075005 NM VACUUM GLORIETTA
Pace Project No.: 60159663

Method: **EPA 8015B**
Description: Gasoline Range Organics
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: December 31, 2013

General Information:
6 samples were analyzed for EPA 8015B. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 5035A/5030B with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 075005 NM VACUUM GLORIETTA
Pace Project No.: 60159663

Method: **EPA 300.0**
Description: 300.0 IC Anions 28 Days
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: December 31, 2013

General Information:
6 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 300.0 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 075005 NM VACUUM GLORIETTA
Pace Project No.: 60159663

Sample: S-075005-121013-CK-V65-10 **Lab ID: 60159663001** Collected: 12/10/13 09:40 Received: 12/14/13 11:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 3546							
TPH-DRO (C10-C28)	ND	mg/kg	10.0	1	12/19/13 00:00	12/31/13 13:29		
TPH-ORO (C28-C35)	ND	mg/kg	10.0	1	12/19/13 00:00	12/31/13 13:29		
Surrogates								
n-Tetracosane (S)	71	%	35-147	1	12/19/13 00:00	12/31/13 13:29	646-31-1	
p-Terphenyl (S)	63	%	37-138	1	12/19/13 00:00	12/31/13 13:29	92-94-4	
Gasoline Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 5035A/5030B							
TPH-GRO	ND	mg/kg	10.4	1	12/23/13 00:00	12/24/13 17:10		
Surrogates								
4-Bromofluorobenzene (S)	90	%	67-139	1	12/23/13 00:00	12/24/13 17:10	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	**2.9**	%	0.50	1		12/27/13 00:00		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Preparation Method: EPA 300.0							
Chloride	ND	mg/kg	103	10	12/23/13 08:00	12/23/13 14:21	16887-00-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 075005 NM VACUUM GLORIETTA
Pace Project No.: 60159663

Sample: S-075005-121013-CK-V65-20 **Lab ID: 60159663002** Collected: 12/10/13 10:15 Received: 12/14/13 11:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 3546							
TPH-DRO (C10-C28)	ND	mg/kg	10.7	1	12/19/13 00:00	12/31/13 13:49		
TPH-ORO (C28-C35)	ND	mg/kg	10.7	1	12/19/13 00:00	12/31/13 13:49		
Surrogates								
n-Tetracosane (S)	91	%	35-147	1	12/19/13 00:00	12/31/13 13:49	646-31-1	
p-Terphenyl (S)	83	%	37-138	1	12/19/13 00:00	12/31/13 13:49	92-94-4	
Gasoline Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 5035A/5030B							
TPH-GRO	ND	mg/kg	10.7	1	12/23/13 00:00	12/24/13 17:32		
Surrogates								
4-Bromofluorobenzene (S)	94	%	67-139	1	12/23/13 00:00	12/24/13 17:32	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	**7.4**	%	0.50	1		12/27/13 00:00		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Preparation Method: EPA 300.0							
Chloride	ND	mg/kg	108	10	12/23/13 08:00	12/23/13 15:07	16887-00-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 075005 NM VACUUM GLORIETTA
Pace Project No.: 60159663

Sample: S-075005-121013-CK-V65-30 **Lab ID: 60159663003** Collected: 12/10/13 10:30 Received: 12/14/13 11:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 3546							
TPH-DRO (C10-C28)	ND	mg/kg	10.5	1	12/19/13 00:00	12/31/13 13:56		
TPH-ORO (C28-C35)	ND	mg/kg	10.5	1	12/19/13 00:00	12/31/13 13:56		
Surrogates								
n-Tetracosane (S)	98	%	35-147	1	12/19/13 00:00	12/31/13 13:56	646-31-1	
p-Terphenyl (S)	86	%	37-138	1	12/19/13 00:00	12/31/13 13:56	92-94-4	
Gasoline Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 5035A/5030B							
TPH-GRO	ND	mg/kg	10.6	1	12/23/13 00:00	12/24/13 17:53		
Surrogates								
4-Bromofluorobenzene (S)	91	%	67-139	1	12/23/13 00:00	12/24/13 17:53	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	**6.1**	%	0.50	1		12/27/13 00:00		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Preparation Method: EPA 300.0							
Chloride	ND	mg/kg	106	10	12/23/13 08:00	12/23/13 15:23	16887-00-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 075005 NM VACUUM GLORIETTA
Pace Project No.: 60159663

Sample: S-075005-121013-CK-V65-40 **Lab ID: 60159663004** Collected: 12/10/13 10:40 Received: 12/14/13 11:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 3546							
TPH-DRO (C10-C28)	ND	mg/kg	10.6	1	12/19/13 00:00	12/31/13 14:03		
TPH-ORO (C28-C35)	ND	mg/kg	10.6	1	12/19/13 00:00	12/31/13 14:03		
Surrogates								
n-Tetracosane (S)	95	%	35-147	1	12/19/13 00:00	12/31/13 14:03	646-31-1	
p-Terphenyl (S)	84	%	37-138	1	12/19/13 00:00	12/31/13 14:03	92-94-4	
Gasoline Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 5035A/5030B							
TPH-GRO	ND	mg/kg	10.7	1	12/23/13 00:00	12/24/13 18:15		
Surrogates								
4-Bromofluorobenzene (S)	95	%	67-139	1	12/23/13 00:00	12/24/13 18:15	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	**5.9**	%	0.50	1		12/27/13 00:00		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Preparation Method: EPA 300.0							
Chloride	ND	mg/kg	106	10	12/23/13 08:00	12/23/13 15:38	16887-00-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 075005 NM VACUUM GLORIETTA
Pace Project No.: 60159663

Sample: S-075005-121013-CK-V65-50 **Lab ID: 60159663005** Collected: 12/10/13 11:15 Received: 12/14/13 11:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 3546							
TPH-DRO (C10-C28)	ND	mg/kg	10.6	1	12/19/13 00:00	12/31/13 14:10		
TPH-ORO (C28-C35)	ND	mg/kg	10.6	1	12/19/13 00:00	12/31/13 14:10		
Surrogates								
n-Tetracosane (S)	92	%	35-147	1	12/19/13 00:00	12/31/13 14:10	646-31-1	
p-Terphenyl (S)	80	%	37-138	1	12/19/13 00:00	12/31/13 14:10	92-94-4	
Gasoline Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 5035A/5030B							
TPH-GRO	ND	mg/kg	10.7	1	12/23/13 00:00	12/24/13 18:36		
Surrogates								
4-Bromofluorobenzene (S)	90	%	67-139	1	12/23/13 00:00	12/24/13 18:36	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	**6.3**	%	0.50	1		12/27/13 00:00		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Preparation Method: EPA 300.0							
Chloride	ND	mg/kg	107	10	12/23/13 08:00	12/23/13 15:54	16887-00-6	

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

ANALYTICAL RESULTS

Project: 075005 NM VACUUM GLORIETTA
Pace Project No.: 60159663

Sample: S-075005-121013-CK-V65-60 **Lab ID: 60159663006** Collected: 12/10/13 11:30 Received: 12/14/13 11:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B		Preparation Method: EPA 3546					
TPH-DRO (C10-C28)	ND	mg/kg	11.0	1	12/19/13 00:00	12/31/13 14:17		
TPH-ORO (C28-C35)	ND	mg/kg	11.0	1	12/19/13 00:00	12/31/13 14:17		
Surrogates								
n-Tetracosane (S)	100	%	35-147	1	12/19/13 00:00	12/31/13 14:17	646-31-1	
p-Terphenyl (S)	87	%	37-138	1	12/19/13 00:00	12/31/13 14:17	92-94-4	
Gasoline Range Organics	Analytical Method: EPA 8015B		Preparation Method: EPA 5035A/5030B					
TPH-GRO	ND	mg/kg	11.2	1	12/23/13 00:00	12/24/13 18:58		
Surrogates								
4-Bromofluorobenzene (S)	95	%	67-139	1	12/23/13 00:00	12/24/13 18:58	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	**9.8**	%	0.50	1		12/27/13 00:00		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0		Preparation Method: EPA 300.0					
Chloride	ND	mg/kg	111	10	12/23/13 08:00	12/23/13 16:09	16887-00-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: 075005 NM VACUUM GLORIETTA
Pace Project No.: 60159663

QC Batch: GCV/4607 Analysis Method: EPA 8015B
QC Batch Method: EPA 5035A/5030B Analysis Description: Gasoline Range Organics
Associated Lab Samples: 60159663001, 60159663002, 60159663003, 60159663004, 60159663005, 60159663006

METHOD BLANK: 1310884 Matrix: Solid
Associated Lab Samples: 60159663001, 60159663002, 60159663003, 60159663004, 60159663005, 60159663006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH-GRO	mg/kg	ND	10.0	12/24/13 16:05	
4-Bromofluorobenzene (S)	%	97	67-139	12/24/13 16:05	

LABORATORY CONTROL SAMPLE: 1310885

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH-GRO	mg/kg	50	44.0	88	65-143	
4-Bromofluorobenzene (S)	%			101	67-139	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1310886 1310887

Parameter	Units	60159663001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH-GRO	mg/kg	ND	51.8	51.8	47.8	46.8	90	88	40-151	2	33	
4-Bromofluorobenzene (S)	%						94	92	67-139			

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QUALITY CONTROL DATA

Project: 075005 NM VACUUM GLORIETTA
Pace Project No.: 60159663

QC Batch: OEXT/42005 Analysis Method: EPA 8015B
QC Batch Method: EPA 3546 Analysis Description: EPA 8015B
Associated Lab Samples: 60159663001, 60159663002, 60159663003, 60159663004, 60159663005, 60159663006

METHOD BLANK: 1308416 Matrix: Solid
Associated Lab Samples: 60159663001, 60159663002, 60159663003, 60159663004, 60159663005, 60159663006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH-DRO (C10-C28)	mg/kg	ND	9.8	12/31/13 13:22	
TPH-ORO (C28-C35)	mg/kg	ND	9.8	12/31/13 13:22	
n-Tetracosane (S)	%	94	35-147	12/31/13 13:22	
p-Terphenyl (S)	%	83	37-138	12/31/13 13:22	

LABORATORY CONTROL SAMPLE: 1308417

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH-DRO (C10-C28)	mg/kg	82.6	67.9	82	66-120	
TPH-ORO (C28-C35)	mg/kg		ND			
n-Tetracosane (S)	%			92	35-147	
p-Terphenyl (S)	%			112	37-138	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1308418 1308419

Parameter	Units	60159663001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH-DRO (C10-C28)	mg/kg	ND	84	85.1	68.1	69.0	76	76	22-152	1	43	
TPH-ORO (C28-C35)	mg/kg	ND			ND	ND						
n-Tetracosane (S)	%						86	76	35-147			
p-Terphenyl (S)	%						81	72	37-138			

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 075005 NM VACUUM GLORIETTA
Pace Project No.: 60159663

QC Batch: PMST/9280 Analysis Method: ASTM D2974
QC Batch Method: ASTM D2974 Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 60159663001, 60159663002, 60159663003, 60159663004, 60159663005, 60159663006

METHOD BLANK: 1311931 Matrix: Solid
Associated Lab Samples: 60159663001, 60159663002, 60159663003, 60159663004, 60159663005, 60159663006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Percent Moisture	%	ND	0.50	12/27/13 00:00	

SAMPLE DUPLICATE: 1311932

Parameter	Units	60159540046 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	54.2	53.8	1	20	

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

QUALITY CONTROL DATA

Project: 075005 NM VACUUM GLORIETTA
Pace Project No.: 60159663

QC Batch: WETA/27621 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60159663001, 60159663002, 60159663003, 60159663004, 60159663005, 60159663006

METHOD BLANK: 1310511 Matrix: Solid
Associated Lab Samples: 60159663001, 60159663002, 60159663003, 60159663004, 60159663005, 60159663006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/kg	ND	100	12/23/13 13:50	

LABORATORY CONTROL SAMPLE: 1310512

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/kg	500	505	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1310513 1310514

Parameter	Units	60159663001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/kg	ND	515	515	505	507	98	98	80-120	0	15	

REPORT OF LABORATORY ANALYSIS

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Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: 075005 NM VACUUM GLORIETTA
Pace Project No.: 60159663

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-K	Pace Analytical Services - Kansas City

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 075005 NM VACUUM GLORIETTA
Pace Project No.: 60159663

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60159663001	**S-075005-121013-CK-V65-10**	EPA 3546	OEXT/42005	EPA 8015B	GCSV/16017
60159663002	**S-075005-121013-CK-V65-20**	EPA 3546	OEXT/42005	EPA 8015B	GCSV/16017
60159663003	**S-075005-121013-CK-V65-30**	EPA 3546	OEXT/42005	EPA 8015B	GCSV/16017
60159663004	**S-075005-121013-CK-V65-40**	EPA 3546	OEXT/42005	EPA 8015B	GCSV/16017
60159663005	**S-075005-121013-CK-V65-50**	EPA 3546	OEXT/42005	EPA 8015B	GCSV/16017
60159663006	**S-075005-121013-CK-V65-60**	EPA 3546	OEXT/42005	EPA 8015B	GCSV/16017
60159663001	**S-075005-121013-CK-V65-10**	EPA 5035A/5030B	GCV/4607	EPA 8015B	GCV/4608
60159663002	**S-075005-121013-CK-V65-20**	EPA 5035A/5030B	GCV/4607	EPA 8015B	GCV/4608
60159663003	**S-075005-121013-CK-V65-30**	EPA 5035A/5030B	GCV/4607	EPA 8015B	GCV/4608
60159663004	**S-075005-121013-CK-V65-40**	EPA 5035A/5030B	GCV/4607	EPA 8015B	GCV/4608
60159663005	**S-075005-121013-CK-V65-50**	EPA 5035A/5030B	GCV/4607	EPA 8015B	GCV/4608
60159663006	**S-075005-121013-CK-V65-60**	EPA 5035A/5030B	GCV/4607	EPA 8015B	GCV/4608
60159663001	**S-075005-121013-CK-V65-10**	ASTM D2974	PMST/9280		
60159663002	**S-075005-121013-CK-V65-20**	ASTM D2974	PMST/9280		
60159663003	**S-075005-121013-CK-V65-30**	ASTM D2974	PMST/9280		
60159663004	**S-075005-121013-CK-V65-40**	ASTM D2974	PMST/9280		
60159663005	**S-075005-121013-CK-V65-50**	ASTM D2974	PMST/9280		
60159663006	**S-075005-121013-CK-V65-60**	ASTM D2974	PMST/9280		
60159663001	**S-075005-121013-CK-V65-10**	EPA 300.0	WETA/27621	EPA 300.0	WETA/27622
60159663002	**S-075005-121013-CK-V65-20**	EPA 300.0	WETA/27621	EPA 300.0	WETA/27622
60159663003	**S-075005-121013-CK-V65-30**	EPA 300.0	WETA/27621	EPA 300.0	WETA/27622
60159663004	**S-075005-121013-CK-V65-40**	EPA 300.0	WETA/27621	EPA 300.0	WETA/27622
60159663005	**S-075005-121013-CK-V65-50**	EPA 300.0	WETA/27621	EPA 300.0	WETA/27622
60159663006	**S-075005-121013-CK-V65-60**	EPA 300.0	WETA/27621	EPA 300.0	WETA/27622

Pace Analytical
www.pacelabs.com

Sample Condition Upon Receipt

WO# : 60159663

60159663

Client Name: CRA

Optional
Proj Due Date:
Proj Name:

Courier: Fed Ex ☑ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☐

Tracking #: 803791391523 Pace Shipping Label Used? Yes ☐ No ☑

Custody Seal on Cooler/Box Present: Yes ☑ No ☐ Seals intact: Yes ☑ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☑ Foam ☐ None ☐ Other ☑ zip lc

Thermometer Used: T-239 / T-194 **Type of Ice:** Wet Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 3.2

Temperature should be above freezing to 6°C

Date and initials of person examining contents: DM 12/14/13

Chain of Custody present:	☑Yes ☐No ☐N/A	1.
Chain of Custody filled out:	☑Yes ☐No ☐N/A	2.
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	3.
Sampler name & signature on COC:	☑Yes ☐No ☐N/A	4.
Samples arrived within holding time:	☑Yes ☐No ☐N/A	5.
Short Hold Time analyses (<72hr): DM 12/14	☑Yes ☐No ☐N/A	6. PH
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	7.
Sufficient volume:	☑Yes ☐No ☐N/A	8.
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	9.
Containers intact:	☑Yes ☐No ☐N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐Yes ☐No ☑N/A	11.
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	12.
Sample labels match COC: Includes date/time/ID/analyses Matrix: SL/WT	☑Yes ☐No ☐N/A	13.
All containers needing preservation have been checked.	☐Yes ☐No ☑N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☑N/A	14.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☑Yes ☐No	Initial when completed / Lot # of added preservative
Trip Blank present: Pace Trip Blank lot # (if purchased): 111113-3	☑Yes ☐No ☐N/A	15.
Headspace in VOA vials (>6mm):	☐Yes ☑No ☐N/A	16.
Project sampled in USDA Regulated Area:	☐Yes ☑No ☐N/A	17. List State:

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution: per phone call 12/16 8:20 am w/ Cafe - Cancel Waste sample analysis. AF

Project Manager Review: MW for AFT Date: 12/16/13

CONESTOGA-ROVERS & ASSOCIATES

CHAIN OF CUSTODY RECORD

Address: 6121 INDIAN SCHOOL NE, STE 200, ABQ, NM 87110
Phone: 505-884-0672 Fax:

60159663 COC NO.: 32754
PAGE 1 OF 1
(See Reverse Side for Instructions)

Project No/ Phase/Task Code: 075005	Laboratory Name: PACE	Lab Location: LENEXA, KS	SSOW ID:
Project Name: VACUUM GLORIETTA	Lab Contact: ALICE FLANAGAN	Lab Quote No:	Cooler No:
Project Location: BUCKEYE, NM			Carrier:
Chemistry Contact: ANGIE BOWN			Airbill No:
Sampler(s): CALE KANACK			Date Shipped: 12-13-13

SAMPLE TYPE | CONTAINER QUANTITY & PRESERVATION | ANALYSIS REQUESTED (See Back of COC for Definitions)

Item	SAMPLE IDENTIFICATION (Containers for each sample may be combined on one line)	DATE (mm/dd/yy)	TIME (hh:mm)	Matrix Code (see back of COC)	Grab (G) or Comp (C)	Unpreserved	Hydrochloric Acid (HCl)	Nitric Acid (HNO_3)	Sulfuric Acid (H_2SO_4)	Sodium Hydroxide (NaOH)	Methanol/Water (Soil VOC)	EnCores 3x5-g, 1x25-g	Other:	Total Containers/Sample	8015 GRO	8015 DRO/ORO	300.0 CHLORIDE	BTEX	RCI		MS/MSD Request	COMMENTS/ SPECIAL INSTRUCTIONS:
1	S-075005-121013-CK-VG5-10	12/10/13	0940	SO	G	X								2	X	X	X			2w G/Fa		DO NOT 01
2	S-075005-121013-CK-VG5-20	12/10/13	1015	SO	G	X								2	X	X	X					ANALYZE FOR 02
3	S-075005-121013-CK-VG5-30	12/10/13	1030	SO	G	X								2	X	X	X					BTEX EXCEPT 03
4	S-075005-121013-CK-VG5-40	12/10/13	1040	SO	G	X								2	X	X	X					FOR WASTE 04
5	S-075005-121013-CK-VG5-50	12/10/13	1115	SO	G	X								2	X	X	X					SAMPLES 05
6	S-075005-121013-CK-VG5-60	12/10/13	1130	SO	G	X								2	X	X	X					06
7	S-075005-121313-CK-WASTE	12/13/13	1200	SO	C	X								2	X	X	X	X	X			07
8	GW-075005-121313-CK-WASTE	12/13/13	1215	WG	G	5	3							8	X	X	X	X	X	4AG 4U 1BP3U 3DG9H		08
9	TRIP BLANK													3								09
10																						
11																						
12																						
13																						
14																						
15																						

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

Total Number of Containers: 25
All Samples in Cooler must be on COC
Notes/ Special Requirements:

	RELINQUISHED BY	COMPANY	DATE	TIME		RECEIVED BY	COMPANY	DATE	TIME
1.	[signature]	CRA	12-13-13	1430	1.	[signature] PACE 3.2	PACE	12/14/13	1130
2.					2.				
3.					3.				

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

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

CRA Form: COC-10B (20110804)

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

December 23, 2013

Bernie Bockisch
COP Conestoga-Rovers & Associa
6121 Indian School Rd NE
Ste 200
Albuquerque, NM 87110

RE: Project: 075005 VACUUM GLORIETTA
Pace Project No.: 60159190

Dear Bernie Bockisch:
Enclosed are the analytical results for sample(s) received by the laboratory on December 07, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Alice Flanagan

alice.flanagan@pacelabs.com
Project Manager

Enclosures

cc: Cale Canack, COP Conestoga-Rovers & Associa

Pace Analytical Services, Inc.
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Lenexa, KS 66219
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CERTIFICATIONS

Project: 075005 VACUUM GLORIETTA
Pace Project No.: 60159190

Kansas Certification IDs
9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 13-012-0
Illinois Certification #: 003097
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407-13-4
Utah Certification #: KS000212013-3
Illinois Certification #: 003097

Pace Analytical Services, Inc.
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Lenexa, KS 66219
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SAMPLE SUMMARY

Project: 075005 VACUUM GLORIETTA
Pace Project No.: 60159190

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60159190001	**S-075005-120613-CK-VG6-10'**	Solid	12/06/13 07:40	12/07/13 10:40
60159190002	**S-075005-120613-CK-VG6-20'**	Solid	12/06/13 08:00	12/07/13 10:40
60159190003	**S-075005-120613-CK-VG6-30'**	Solid	12/06/13 08:45	12/07/13 10:40
60159190004	**S-075005-120613-CK-VG6-40'**	Solid	12/06/13 09:15	12/07/13 10:40
60159190005	**S-075005-120613-CK-VG6-50'**	Solid	12/06/13 09:35	12/07/13 10:40
60159190006	**S-075005-120613-CK-VG6-60'**	Solid	12/06/13 10:00	12/07/13 10:40
60159190007	**TRIP BLANK**	Solid	12/06/13 08:00	12/07/13 10:40

Pace Analytical Services, Inc.
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SAMPLE ANALYTE COUNT

Project: 075005 VACUUM GLORIETTA
Pace Project No.: 60159190

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60159190001	**S-075005-120613-CK-VG6-10'**	EPA 8015B	JDE	4	PASI-K
		EPA 8015B	SDR	2	PASI-K
		ASTM D2974	DWC	1	PASI-K
		EPA 300.0	OL	1	PASI-K
60159190002	**S-075005-120613-CK-VG6-20'**	EPA 8015B	JDE	4	PASI-K
		EPA 8015B	SDR	2	PASI-K
		ASTM D2974	DWC	1	PASI-K
		EPA 300.0	OL	1	PASI-K
60159190003	**S-075005-120613-CK-VG6-30'**	EPA 8015B	JDE	4	PASI-K
		EPA 8015B	SDR	2	PASI-K
		ASTM D2974	DWC	1	PASI-K
		EPA 300.0	OL	1	PASI-K
60159190004	**S-075005-120613-CK-VG6-40'**	EPA 8015B	JDE	4	PASI-K
		EPA 8015B	SDR	2	PASI-K
		ASTM D2974	DWC	1	PASI-K
		EPA 300.0	OL	1	PASI-K
60159190005	**S-075005-120613-CK-VG6-50'**	EPA 8015B	JDE	4	PASI-K
		EPA 8015B	SDR	2	PASI-K
		ASTM D2974	DWC	1	PASI-K
		EPA 300.0	OL	1	PASI-K
60159190006	**S-075005-120613-CK-VG6-60'**	EPA 8015B	JDE	4	PASI-K
		EPA 8015B	SDR	2	PASI-K
		ASTM D2974	DWC	1	PASI-K
		EPA 300.0	OL	1	PASI-K

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SUMMARY OF DETECTION

Project: 075005 VACUUM GLORIETTA
Pace Project No.: 60159190

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
60159190001	**S-075005-120613-CK-VG6-10'**					
ASTM D2974	Percent Moisture	14.5	%	0.50	12/18/13 00:00	
60159190002	**S-075005-120613-CK-VG6-20'**					
ASTM D2974	Percent Moisture	7.4	%	0.50	12/18/13 00:00	
60159190003	**S-075005-120613-CK-VG6-30'**					
ASTM D2974	Percent Moisture	5.8	%	0.50	12/18/13 00:00	
60159190004	**S-075005-120613-CK-VG6-40'**					
ASTM D2974	Percent Moisture	5.7	%	0.50	12/18/13 00:00	
60159190005	**S-075005-120613-CK-VG6-50'**					
ASTM D2974	Percent Moisture	4.7	%	0.50	12/18/13 00:00	
60159190006	**S-075005-120613-CK-VG6-60'**					
ASTM D2974	Percent Moisture	5.9	%	0.50	12/18/13 00:00	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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PROJECT NARRATIVE

Project: 075005 VACUUM GLORIETTA
Pace Project No.: 60159190

Method: **EPA 8015B**
Description: 8015B Diesel Range Organics
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: December 23, 2013

General Information:
6 samples were analyzed for EPA 8015B. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3546 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, Inc.
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PROJECT NARRATIVE

Project: 075005 VACUUM GLORIETTA
Pace Project No.: 60159190

Method: **EPA 8015B**
Description: Gasoline Range Organics
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: December 23, 2013

General Information:
6 samples were analyzed for EPA 8015B. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 5035A/5030B with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: GCV/4596

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60158915001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 1301388)
  - TPH-GRO
- MSD (Lab ID: 1301389)
  - TPH-GRO

Additional Comments:

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PROJECT NARRATIVE

Project: 075005 VACUUM GLORIETTA
Pace Project No.: 60159190

Method: **EPA 300.0**
Description: 300.0 IC Anions 28 Days
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: December 23, 2013

General Information:
6 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 300.0 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 075005 VACUUM GLORIETTA
Pace Project No.: 60159190

Sample: S-075005-120613-CK-VG6-10' **Lab ID: 60159190001** Collected: 12/06/13 07:40 Received: 12/07/13 10:40 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B		Preparation Method: EPA 3546					
TPH-DRO (C10-C28)	ND	mg/kg	11.5	1	12/11/13 00:00	12/13/13 17:19		
TPH-ORO (C28-C35)	ND	mg/kg	11.5	1	12/11/13 00:00	12/13/13 17:19		
Surrogates								
n-Tetracosane (S)	98	%	35-147	1	12/11/13 00:00	12/13/13 17:19	646-31-1	
p-Terphenyl (S)	84	%	37-138	1	12/11/13 00:00	12/13/13 17:19	92-94-4	
Gasoline Range Organics	Analytical Method: EPA 8015B		Preparation Method: EPA 5035A/5030B					
TPH-GRO	ND	mg/kg	11.5	1	12/09/13 00:00	12/11/13 00:03		
Surrogates								
4-Bromofluorobenzene (S)	102	%	67-139	1	12/09/13 00:00	12/11/13 00:03	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	**14.5**	%	0.50	1		12/18/13 00:00		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0		Preparation Method: EPA 300.0					
Chloride	ND	mg/kg	117	10	12/18/13 08:00	12/18/13 15:52	16887-00-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 075005 VACUUM GLORIETTA
Pace Project No.: 60159190

Sample: S-075005-120613-CK-VG6-20' **Lab ID: 60159190002** Collected: 12/06/13 08:00 Received: 12/07/13 10:40 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B		Preparation Method: EPA 3546					
TPH-DRO (C10-C28)	ND	mg/kg	10.6	1	12/11/13 00:00	12/13/13 17:26		
TPH-ORO (C28-C35)	ND	mg/kg	10.6	1	12/11/13 00:00	12/13/13 17:26		
Surrogates								
n-Tetracosane (S)	100	%	35-147	1	12/11/13 00:00	12/13/13 17:26	646-31-1	
p-Terphenyl (S)	85	%	37-138	1	12/11/13 00:00	12/13/13 17:26	92-94-4	
Gasoline Range Organics	Analytical Method: EPA 8015B		Preparation Method: EPA 5035A/5030B					
TPH-GRO	ND	mg/kg	10.6	1	12/09/13 00:00	12/11/13 00:25		
Surrogates								
4-Bromofluorobenzene (S)	101	%	67-139	1	12/09/13 00:00	12/11/13 00:25	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	**7.4**	%	0.50	1		12/18/13 00:00		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0		Preparation Method: EPA 300.0					
Chloride	ND	mg/kg	108	10	12/18/13 08:00	12/18/13 16:38	16887-00-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 075005 VACUUM GLORIETTA
Pace Project No.: 60159190

Sample: S-075005-120613-CK-VG6-30' **Lab ID: 60159190003** Collected: 12/06/13 08:45 Received: 12/07/13 10:40 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B		Preparation Method: EPA 3546					
TPH-DRO (C10-C28)	ND	mg/kg	10.5	1	12/11/13 00:00	12/13/13 17:33		
TPH-ORO (C28-C35)	ND	mg/kg	10.5	1	12/11/13 00:00	12/13/13 17:33		
Surrogates								
n-Tetracosane (S)	74	%	35-147	1	12/11/13 00:00	12/13/13 17:33	646-31-1	
p-Terphenyl (S)	63	%	37-138	1	12/11/13 00:00	12/13/13 17:33	92-94-4	
Gasoline Range Organics	Analytical Method: EPA 8015B		Preparation Method: EPA 5035A/5030B					
TPH-GRO	ND	mg/kg	10.4	1	12/09/13 00:00	12/11/13 00:47		
Surrogates								
4-Bromofluorobenzene (S)	101	%	67-139	1	12/09/13 00:00	12/11/13 00:47	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	**5.8**	%	0.50	1		12/18/13 00:00		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0		Preparation Method: EPA 300.0					
Chloride	ND	mg/kg	106	10	12/18/13 08:00	12/18/13 16:54	16887-00-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 075005 VACUUM GLORIETTA
Pace Project No.: 60159190

Sample: S-075005-120613-CK-VG6-40' **Lab ID: 60159190004** Collected: 12/06/13 09:15 Received: 12/07/13 10:40 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B		Preparation Method: EPA 3546					
TPH-DRO (C10-C28)	ND	mg/kg	10.5	1	12/11/13 00:00	12/13/13 17:40		
TPH-ORO (C28-C35)	ND	mg/kg	10.5	1	12/11/13 00:00	12/13/13 17:40		
Surrogates								
n-Tetracosane (S)	91	%	35-147	1	12/11/13 00:00	12/13/13 17:40	646-31-1	
p-Terphenyl (S)	78	%	37-138	1	12/11/13 00:00	12/13/13 17:40	92-94-4	
Gasoline Range Organics	Analytical Method: EPA 8015B		Preparation Method: EPA 5035A/5030B					
TPH-GRO	ND	mg/kg	10.4	1	12/09/13 00:00	12/11/13 01:08		
Surrogates								
4-Bromofluorobenzene (S)	102	%	67-139	1	12/09/13 00:00	12/11/13 01:08	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	**5.7**	%	0.50	1		12/18/13 00:00		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0		Preparation Method: EPA 300.0					
Chloride	ND	mg/kg	106	10	12/18/13 08:00	12/18/13 17:09	16887-00-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 075005 VACUUM GLORIETTA
Pace Project No.: 60159190

Sample: S-075005-120613-CK-VG6-50' **Lab ID: 60159190005** Collected: 12/06/13 09:35 Received: 12/07/13 10:40 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B		Preparation Method: EPA 3546					
TPH-DRO (C10-C28)	ND	mg/kg	10.4	1	12/11/13 00:00	12/13/13 17:47		
TPH-ORO (C28-C35)	ND	mg/kg	10.4	1	12/11/13 00:00	12/13/13 17:47		
Surrogates								
n-Tetracosane (S)	99	%	35-147	1	12/11/13 00:00	12/13/13 17:47	646-31-1	
p-Terphenyl (S)	83	%	37-138	1	12/11/13 00:00	12/13/13 17:47	92-94-4	
Gasoline Range Organics	Analytical Method: EPA 8015B		Preparation Method: EPA 5035A/5030B					
TPH-GRO	ND	mg/kg	10.3	1	12/09/13 00:00	12/11/13 01:30		
Surrogates								
4-Bromofluorobenzene (S)	99	%	67-139	1	12/09/13 00:00	12/11/13 01:30	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	**4.7**	%	0.50	1		12/18/13 00:00		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0		Preparation Method: EPA 300.0					
Chloride	ND	mg/kg	105	10	12/18/13 08:00	12/18/13 17:24	16887-00-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 075005 VACUUM GLORIETTA
Pace Project No.: 60159190

Sample: S-075005-120613-CK-VG6-60' **Lab ID: 60159190006** Collected: 12/06/13 10:00 Received: 12/07/13 10:40 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 3546							
TPH-DRO (C10-C28)	ND	mg/kg	10.4	1	12/11/13 00:00	12/13/13 17:54		
TPH-ORO (C28-C35)	ND	mg/kg	10.4	1	12/11/13 00:00	12/13/13 17:54		
Surrogates								
n-Tetracosane (S)	88	%	35-147	1	12/11/13 00:00	12/13/13 17:54	646-31-1	
p-Terphenyl (S)	75	%	37-138	1	12/11/13 00:00	12/13/13 17:54	92-94-4	
Gasoline Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 5035A/5030B							
TPH-GRO	ND	mg/kg	10.4	1	12/09/13 00:00	12/11/13 01:52		
Surrogates								
4-Bromofluorobenzene (S)	100	%	67-139	1	12/09/13 00:00	12/11/13 01:52	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	**5.9**	%	0.50	1		12/18/13 00:00		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Preparation Method: EPA 300.0							
Chloride	ND	mg/kg	106	10	12/18/13 08:00	12/18/13 18:11	16887-00-6	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 075005 VACUUM GLORIETTA
Pace Project No.: 60159190

QC Batch: GCV/4596 Analysis Method: EPA 8015B
QC Batch Method: EPA 5035A/5030B Analysis Description: Gasoline Range Organics
Associated Lab Samples: 60159190001, 60159190002, 60159190003, 60159190004, 60159190005, 60159190006

METHOD BLANK: 1301386 Matrix: Solid
Associated Lab Samples: 60159190001, 60159190002, 60159190003, 60159190004, 60159190005, 60159190006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH-GRO	mg/kg	ND	10.0	12/10/13 19:44	
4-Bromofluorobenzene (S)	%	101	67-139	12/10/13 19:44	

LABORATORY CONTROL SAMPLE: 1301387

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH-GRO	mg/kg	50	53.3	107	65-143	
4-Bromofluorobenzene (S)	%			104	67-139	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1301388 1301389

Parameter	Units	60158915001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH-GRO	mg/kg	658	284	284	753	754	33	34	40-151	0	33	M1
4-Bromofluorobenzene (S)	%						126	129	67-139			

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 075005 VACUUM GLORIETTA
Pace Project No.: 60159190

QC Batch: OEXT/41868 Analysis Method: EPA 8015B
QC Batch Method: EPA 3546 Analysis Description: EPA 8015B
Associated Lab Samples: 60159190001, 60159190002, 60159190003, 60159190004, 60159190005, 60159190006

METHOD BLANK: 1303968 Matrix: Solid
Associated Lab Samples: 60159190001, 60159190002, 60159190003, 60159190004, 60159190005, 60159190006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH-DRO (C10-C28)	mg/kg	ND	9.8	12/13/13 15:54	
TPH-ORO (C28-C35)	mg/kg	ND	9.8	12/13/13 15:54	
n-Tetracosane (S)	%	98	35-147	12/13/13 15:54	
p-Terphenyl (S)	%	85	37-138	12/13/13 15:54	

LABORATORY CONTROL SAMPLE: 1303969

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH-DRO (C10-C28)	mg/kg	82.4	77.6	94	66-120	
TPH-ORO (C28-C35)	mg/kg		ND			
n-Tetracosane (S)	%			101	35-147	
p-Terphenyl (S)	%			92	37-138	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1303970 1303971

Parameter	Units	60159139001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH-DRO (C10-C28)	mg/kg	ND	91.5	92.7	71.7	85.4	76	90	22-152	17	43	
TPH-ORO (C28-C35)	mg/kg	ND			ND	ND						
n-Tetracosane (S)	%						94	96	35-147			
p-Terphenyl (S)	%						84	86	37-138			

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 075005 VACUUM GLORIETTA
Pace Project No.: 60159190

QC Batch: PMST/9242 Analysis Method: ASTM D2974
QC Batch Method: ASTM D2974 Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 60159190001, 60159190002, 60159190003, 60159190004, 60159190005, 60159190006

METHOD BLANK: 1307612 Matrix: Solid
Associated Lab Samples: 60159190001, 60159190002, 60159190003, 60159190004, 60159190005, 60159190006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Percent Moisture	%	ND	0.50	12/18/13 00:00	

SAMPLE DUPLICATE: 1307613

Parameter	Units	60159186001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	16.1	15.9	1	20	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 075005 VACUUM GLORIETTA
Pace Project No.: 60159190

QC Batch: WETA/27563 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60159190001, 60159190002, 60159190003, 60159190004, 60159190005, 60159190006

METHOD BLANK: 1307576 Matrix: Solid
Associated Lab Samples: 60159190001, 60159190002, 60159190003, 60159190004, 60159190005, 60159190006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/kg	ND	100	12/18/13 15:21	

LABORATORY CONTROL SAMPLE: 1307577

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/kg	500	501	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1307578 1307579

Parameter	Units	60159190001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/kg	ND	585	585	598	600	83	84	80-120	0	15	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 075005 VACUUM GLORIETTA
Pace Project No.: 60159190

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-K	Pace Analytical Services - Kansas City

ANALYTE QUALIFIERS

M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 075005 VACUUM GLORIETTA
Pace Project No.: 60159190

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60159190001	**S-075005-120613-CK-VG6-10'**	EPA 3546	OEXT/41868	EPA 8015B	GCSV/15972
60159190002	**S-075005-120613-CK-VG6-20'**	EPA 3546	OEXT/41868	EPA 8015B	GCSV/15972
60159190003	**S-075005-120613-CK-VG6-30'**	EPA 3546	OEXT/41868	EPA 8015B	GCSV/15972
60159190004	**S-075005-120613-CK-VG6-40'**	EPA 3546	OEXT/41868	EPA 8015B	GCSV/15972
60159190005	**S-075005-120613-CK-VG6-50'**	EPA 3546	OEXT/41868	EPA 8015B	GCSV/15972
60159190006	**S-075005-120613-CK-VG6-60'**	EPA 3546	OEXT/41868	EPA 8015B	GCSV/15972
60159190001	**S-075005-120613-CK-VG6-10'**	EPA 5035A/5030B	GCV/4596	EPA 8015B	GCV/4599
60159190002	**S-075005-120613-CK-VG6-20'**	EPA 5035A/5030B	GCV/4596	EPA 8015B	GCV/4599
60159190003	**S-075005-120613-CK-VG6-30'**	EPA 5035A/5030B	GCV/4596	EPA 8015B	GCV/4599
60159190004	**S-075005-120613-CK-VG6-40'**	EPA 5035A/5030B	GCV/4596	EPA 8015B	GCV/4599
60159190005	**S-075005-120613-CK-VG6-50'**	EPA 5035A/5030B	GCV/4596	EPA 8015B	GCV/4599
60159190006	**S-075005-120613-CK-VG6-60'**	EPA 5035A/5030B	GCV/4596	EPA 8015B	GCV/4599
60159190001	**S-075005-120613-CK-VG6-10'**	ASTM D2974	PMST/9242		
60159190002	**S-075005-120613-CK-VG6-20'**	ASTM D2974	PMST/9242		
60159190003	**S-075005-120613-CK-VG6-30'**	ASTM D2974	PMST/9242		
60159190004	**S-075005-120613-CK-VG6-40'**	ASTM D2974	PMST/9242		
60159190005	**S-075005-120613-CK-VG6-50'**	ASTM D2974	PMST/9242		
60159190006	**S-075005-120613-CK-VG6-60'**	ASTM D2974	PMST/9242		
60159190001	**S-075005-120613-CK-VG6-10'**	EPA 300.0	WETA/27563	EPA 300.0	WETA/27564
60159190002	**S-075005-120613-CK-VG6-20'**	EPA 300.0	WETA/27563	EPA 300.0	WETA/27564
60159190003	**S-075005-120613-CK-VG6-30'**	EPA 300.0	WETA/27563	EPA 300.0	WETA/27564
60159190004	**S-075005-120613-CK-VG6-40'**	EPA 300.0	WETA/27563	EPA 300.0	WETA/27564
60159190005	**S-075005-120613-CK-VG6-50'**	EPA 300.0	WETA/27563	EPA 300.0	WETA/27564
60159190006	**S-075005-120613-CK-VG6-60'**	EPA 300.0	WETA/27563	EPA 300.0	WETA/27564

Pace Analytical
www.pacelabs.com

Sample Condition Upon Receipt

WO#: 60159190

60159190

Optional
Proj Due Date:
Proj Name:

Client Name: CRA

Courier: Fed Ex ☒ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☐

Tracking #: 8034246116 60 Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☑ No ☐ Seals intact: Yes ☑ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☑ Foam ☐ None ☐ Other ☑ ZIPLOC

Thermometer Used: T-239 / T-194 **Type of Ice:** (Wet) Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 5-2

Date and initials of person examining contents: pm 12/7/13

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	1.
Chain of Custody filled out:	☑Yes ☐No ☐N/A	2.
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	3.
Sampler name & signature on COC:	☑Yes ☐No ☐N/A	4.
Samples arrived within holding time:	☑Yes ☐No ☐N/A	5.
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	6.
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	7.
Sufficient volume:	☑Yes ☐No ☐N/A	8.
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	9.
Containers intact:	☑Yes ☐No ☐N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐Yes ☐No ☑N/A	11.
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	12.
Sample labels match COC:	☑Yes ☐No ☐N/A	
Includes date/time/ID/analyses Matrix: SL		13.
All containers needing preservation have been checked.	☐Yes ☐No ☑N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☑N/A	14.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☐Yes ☑No	Initial when completed / Lot # of added preservative
Trip Blank present:	☑Yes ☐No ☐N/A	
Pace Trip Blank lot # (if purchased): 092313-3 pm 12/7/13		15.
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	16.
Project sampled in USDA Regulated Area:	☐Yes ☑No ☐N/A	17. List State: NM

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: mw for AFT Date: 12/7/13

CHAIN OF CUSTODY RECORD

COC NO.: 32753

PAGE 1 OF 1

(See Reverse Side for Instructions)

CONESTOGA-ROVERS & ASSOCIATES

Address: 6121 INDIAN SCHOOL NE STE 200, ABQ, NM 87110

Phone: 505-884-0672 Fax:

60459190

Project No/ Phase/Task Code: 075005	**Laboratory Name:** PACE	**Lab Location:** LENEXA, KS	**SSOW ID:**
Project Name: VACUUM GLORIETTA	**Lab Contact:** ALICE FLANAGAN	**Lab Quote No:**	**Cooler No:**
Project Location: BUCKEYE, NM			**Carrier:**
Chemistry Contact: ANGIE BOWN			**Airbill No:**
Sampler(s): CALE KANACK			**Date Shipped:** 12-5-13

Item	Sample Identification (Containers for each sample may be combined on one line)	Date (mm/dd/yy)	Time (hh:mm)	Matrix Code (see back of COC)	Grab (G) or Comp (C)	Container Quantity & Preservation: Unpreserved	HCl	HNO_3	H_2SO_4	NaOH	Methanol/Water (Soil VOC)	EnCores 3x5-g, 1x25-g	Other:	Total Containers/Sample	Analysis Requested: 8015 GRO	8015 DRO/ORO	300.0 Chloride							MS/MSD Request	Comments/ Special Instructions:
1	S-075005-120613-CK-VGG-10	12/6/13	0740	So	G	X								2	X	X	X	2VGFU						001	Do Not
2	S-075005-120613-CK-VGG-20	12/6/13	0800	So	G	X								2	X	X	X							002	ANALYZE
3	S-075005-120613-CK-VGG-30	12/6/13	0845	So	G	X								2	X	X	X							003	FOR BTEX
4	S-075005-120613-CK-VGG-40	12/6/13	0915	So	G	X								2	X	X	X							004	
5	S-075005-120613-CK-VGG-50	12/6/13	0935	So	G	X								2	X	X	X							005	
6	S-075005-120613-CK-VGG-60	12/6/13	1000	So	G	X								2	X	X	X							006	
7	TRIP BLANK													2				2VGAU						007	
8																									
9																									
10																									
11																									
12																									
13																									
14																									
15																									

TAT Required in business days (use separate COCs for different TATs):

☐ 1 Day ☐ 2 Days ☐ 3 Days ☐ 1 Week ☐ 2 Week ☒ Other: STANDARD

Total Number of Containers: 15

All Samples in Cooler must be on COC

Notes/ Special Requirements:

	Relinquished By	Company	Date	Time	Received By	Company	Date	Time
1.	[signature]	CRA	12/5/13	1130	1. [signature] PASI 5-2	PACE	12/7/13	1040
2.					2.			
3.					3.			

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

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

CRA Form: COC-10B (20110804)

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

December 20, 2013

Bernie Bockisch
COP Conestoga-Rovers & Associa
6121 Indian School Rd NE
Ste 200
Albuquerque, NM 87110

RE: Project: 075005 VACUUM GLORIETTA
Pace Project No.: 60159139

Dear Bernie Bockisch:
Enclosed are the analytical results for sample(s) received by the laboratory on December 06, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Alice Flanagan

alice.flanagan@pacelabs.com
Project Manager

Enclosures

cc: Cale Canack, COP Conestoga-Rovers & Associa

Pace Analytical Services, Inc.
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Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: 075005 VACUUM GLORIETTA
Pace Project No.: 60159139

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 13-012-0
Illinois Certification #: 003097
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407-13-4
Utah Certification #: KS000212013-3
Illinois Certification #: 003097

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: 075005 VACUUM GLORIETTA
Pace Project No.: 60159139

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60159139001	**S-075005-120412-CK-VG7-10**	Solid	12/04/13 10:55	12/06/13 08:15
60159139002	**S-075005-120412-CK-VG7-20**	Solid	12/04/13 12:10	12/06/13 08:15
60159139003	**S-075005-120412-CK-VG7-30**	Solid	12/04/13 12:25	12/06/13 08:15
60159139004	**S-075005-120412-CK-VG7-40**	Solid	12/04/13 13:20	12/06/13 08:15
60159139005	**S-075005-120412-CK-VG7-50**	Solid	12/04/13 13:55	12/06/13 08:15
60159139006	**S-075005-120412-CK-VG7-60**	Solid	12/04/13 14:10	12/06/13 08:15
60159139007	**TRIP BLANK**	Solid	12/04/13 08:00	12/06/13 08:15

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SAMPLE ANALYTE COUNT

Project: 075005 VACUUM GLORIETTA
Pace Project No.: 60159139

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60159139001	**S-075005-120412-CK-VG7-10**	EPA 8015B	JDE	4	PASI-K
		EPA 8015B	SDR	2	PASI-K
		ASTM D2974	DWC	1	PASI-K
		EPA 300.0	OL	1	PASI-K
60159139002	**S-075005-120412-CK-VG7-20**	EPA 8015B	JDE	4	PASI-K
		EPA 8015B	SDR	2	PASI-K
		ASTM D2974	DWC	1	PASI-K
		EPA 300.0	OL	1	PASI-K
60159139003	**S-075005-120412-CK-VG7-30**	EPA 8015B	JDE	4	PASI-K
		EPA 8015B	SDR	2	PASI-K
		ASTM D2974	DWC	1	PASI-K
		EPA 300.0	OL	1	PASI-K
60159139004	**S-075005-120412-CK-VG7-40**	EPA 8015B	JDE	4	PASI-K
		EPA 8015B	SDR	2	PASI-K
		ASTM D2974	DWC	1	PASI-K
		EPA 300.0	OL	1	PASI-K
60159139005	**S-075005-120412-CK-VG7-50**	EPA 8015B	JDE	4	PASI-K
		EPA 8015B	SDR	2	PASI-K
		ASTM D2974	DWC	1	PASI-K
		EPA 300.0	OL	1	PASI-K
60159139006	**S-075005-120412-CK-VG7-60**	EPA 8015B	JDE	4	PASI-K
		EPA 8015B	SDR	2	PASI-K
		ASTM D2974	DWC	1	PASI-K
		EPA 300.0	OL	1	PASI-K

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SUMMARY OF DETECTION

Project: 075005 VACUUM GLORIETTA
Pace Project No.: 60159139

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
60159139001	**S-075005-120412-CK-VG7-10**					
ASTM D2974	Percent Moisture	10.7	%	0.50	12/17/13 00:00	
60159139002	**S-075005-120412-CK-VG7-20**					
ASTM D2974	Percent Moisture	9.3	%	0.50	12/17/13 00:00	
60159139003	**S-075005-120412-CK-VG7-30**					
ASTM D2974	Percent Moisture	6.5	%	0.50	12/17/13 00:00	
60159139004	**S-075005-120412-CK-VG7-40**					
ASTM D2974	Percent Moisture	5.7	%	0.50	12/17/13 00:00	
EPA 300.0	Chloride	176	mg/kg	106	12/17/13 16:13	
60159139005	**S-075005-120412-CK-VG7-50**					
ASTM D2974	Percent Moisture	6.3	%	0.50	12/17/13 00:00	
EPA 300.0	Chloride	165	mg/kg	107	12/17/13 16:57	
60159139006	**S-075005-120412-CK-VG7-60**					
ASTM D2974	Percent Moisture	6.8	%	0.50	12/17/13 00:00	
EPA 300.0	Chloride	164	mg/kg	107	12/17/13 17:11	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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(913)599-5665

PROJECT NARRATIVE

Project: 075005 VACUUM GLORIETTA
Pace Project No.: 60159139

Method: **EPA 8015B**
Description: 8015B Diesel Range Organics
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: December 20, 2013

General Information:
6 samples were analyzed for EPA 8015B. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3546 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, Inc.
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PROJECT NARRATIVE

Project: 075005 VACUUM GLORIETTA
Pace Project No.: 60159139

Method: **EPA 8015B**
Description: Gasoline Range Organics
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: December 20, 2013

General Information:
6 samples were analyzed for EPA 8015B. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 5035A/5030B with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: GCV/4596

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60158915001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 1301388)
  - TPH-GRO
- MSD (Lab ID: 1301389)
  - TPH-GRO

Additional Comments:

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PROJECT NARRATIVE

Project: 075005 VACUUM GLORIETTA
Pace Project No.: 60159139

Method: **EPA 300.0**
Description: 300.0 IC Anions 28 Days
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: December 20, 2013

General Information:
6 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 300.0 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

Pace Analytical Services, Inc.
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(913)599-5665

ANALYTICAL RESULTS

Project: 075005 VACUUM GLORIETTA
Pace Project No.: 60159139

Sample: S-075005-120412-CK-VG7-10 **Lab ID: 60159139001** Collected: 12/04/13 10:55 Received: 12/06/13 08:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B		Preparation Method: EPA 3546					
TPH-DRO (C10-C28)	ND	mg/kg	10.9	1	12/11/13 00:00	12/13/13 16:22		
TPH-ORO (C28-C35)	ND	mg/kg	10.9	1	12/11/13 00:00	12/13/13 16:22		
Surrogates								
n-Tetracosane (S)	96	%	35-147	1	12/11/13 00:00	12/13/13 16:22	646-31-1	
p-Terphenyl (S)	82	%	37-138	1	12/11/13 00:00	12/13/13 16:22	92-94-4	
Gasoline Range Organics	Analytical Method: EPA 8015B		Preparation Method: EPA 5035A/5030B					
TPH-GRO	ND	mg/kg	10.9	1	12/09/13 00:00	12/10/13 21:11		
Surrogates								
4-Bromofluorobenzene (S)	97	%	67-139	1	12/09/13 00:00	12/10/13 21:11	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	**10.7**	%	0.50	1		12/17/13 00:00		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0		Preparation Method: EPA 300.0					
Chloride	ND	mg/kg	112	10	12/17/13 08:00	12/17/13 15:01	16887-00-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9608 Loiret Blvd.
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(913)599-5665

ANALYTICAL RESULTS

Project: 075005 VACUUM GLORIETTA
Pace Project No.: 60159139

Sample: S-075005-120412-CK-VG7-20 **Lab ID: 60159139002** Collected: 12/04/13 12:10 Received: 12/06/13 08:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B		Preparation Method: EPA 3546					
TPH-DRO (C10-C28)	ND	mg/kg	10.8	1	12/11/13 00:00	12/13/13 16:29		
TPH-ORO (C28-C35)	ND	mg/kg	10.8	1	12/11/13 00:00	12/13/13 16:29		
Surrogates								
n-Tetracosane (S)	86	%	35-147	1	12/11/13 00:00	12/13/13 16:29	646-31-1	
p-Terphenyl (S)	73	%	37-138	1	12/11/13 00:00	12/13/13 16:29	92-94-4	
Gasoline Range Organics	Analytical Method: EPA 8015B		Preparation Method: EPA 5035A/5030B					
TPH-GRO	ND	mg/kg	10.9	1	12/09/13 00:00	12/10/13 21:32		
Surrogates								
4-Bromofluorobenzene (S)	102	%	67-139	1	12/09/13 00:00	12/10/13 21:32	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	**9.3**	%	0.50	1		12/17/13 00:00		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0		Preparation Method: EPA 300.0					
Chloride	ND	mg/kg	110	10	12/17/13 08:00	12/17/13 15:45	16887-00-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: 075005 VACUUM GLORIETTA
Pace Project No.: 60159139

Sample: S-075005-120412-CK-VG7-30 **Lab ID: 60159139003** Collected: 12/04/13 12:25 Received: 12/06/13 08:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B		Preparation Method: EPA 3546					
TPH-DRO (C10-C28)	ND	mg/kg	10.7	1	12/11/13 00:00	12/13/13 16:36		
TPH-ORO (C28-C35)	ND	mg/kg	10.7	1	12/11/13 00:00	12/13/13 16:36		
Surrogates								
n-Tetracosane (S)	89	%	35-147	1	12/11/13 00:00	12/13/13 16:36	646-31-1	
p-Terphenyl (S)	76	%	37-138	1	12/11/13 00:00	12/13/13 16:36	92-94-4	
Gasoline Range Organics	Analytical Method: EPA 8015B		Preparation Method: EPA 5035A/5030B					
TPH-GRO	ND	mg/kg	10.8	1	12/09/13 00:00	12/10/13 21:54		
Surrogates								
4-Bromofluorobenzene (S)	101	%	67-139	1	12/09/13 00:00	12/10/13 21:54	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	**6.5**	%	0.50	1		12/17/13 00:00		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0		Preparation Method: EPA 300.0					
Chloride	ND	mg/kg	107	10	12/17/13 08:00	12/17/13 15:59	16887-00-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: 075005 VACUUM GLORIETTA
Pace Project No.: 60159139

Sample: S-075005-120412-CK-VG7-40 **Lab ID: 60159139004** Collected: 12/04/13 13:20 Received: 12/06/13 08:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 3546							
TPH-DRO (C10-C28)	ND	mg/kg	10.4	1	12/11/13 00:00	12/13/13 16:43		
TPH-ORO (C28-C35)	ND	mg/kg	10.4	1	12/11/13 00:00	12/13/13 16:43		
Surrogates								
n-Tetracosane (S)	88	%	35-147	1	12/11/13 00:00	12/13/13 16:43	646-31-1	
p-Terphenyl (S)	74	%	37-138	1	12/11/13 00:00	12/13/13 16:43	92-94-4	
Gasoline Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 5035A/5030B							
TPH-GRO	ND	mg/kg	10.6	1	12/09/13 00:00	12/10/13 22:15		
Surrogates								
4-Bromofluorobenzene (S)	102	%	67-139	1	12/09/13 00:00	12/10/13 22:15	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	**5.7**	%	0.50	1		12/17/13 00:00		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Preparation Method: EPA 300.0							
Chloride	**176**	mg/kg	106	10	12/17/13 08:00	12/17/13 16:13	16887-00-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: 075005 VACUUM GLORIETTA
Pace Project No.: 60159139

Sample: S-075005-120412-CK-VG7-50 **Lab ID: 60159139005** Collected: 12/04/13 13:55 Received: 12/06/13 08:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B		Preparation Method: EPA 3546					
TPH-DRO (C10-C28)	ND	mg/kg	10.6	1	12/11/13 00:00	12/13/13 17:05		
TPH-ORO (C28-C35)	ND	mg/kg	10.6	1	12/11/13 00:00	12/13/13 17:05		
Surrogates								
n-Tetracosane (S)	106	%	35-147	1	12/11/13 00:00	12/13/13 17:05	646-31-1	
p-Terphenyl (S)	91	%	37-138	1	12/11/13 00:00	12/13/13 17:05	92-94-4	
Gasoline Range Organics	Analytical Method: EPA 8015B		Preparation Method: EPA 5035A/5030B					
TPH-GRO	ND	mg/kg	10.3	1	12/09/13 00:00	12/10/13 22:37		
Surrogates								
4-Bromofluorobenzene (S)	96	%	67-139	1	12/09/13 00:00	12/10/13 22:37	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	**6.3**	%	0.50	1		12/17/13 00:00		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0		Preparation Method: EPA 300.0					
Chloride	**165**	mg/kg	107	10	12/17/13 08:00	12/17/13 16:57	16887-00-6	

REPORT OF LABORATORY ANALYSIS

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Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: 075005 VACUUM GLORIETTA
Pace Project No.: 60159139

Sample: S-075005-120412-CK-VG7-60 **Lab ID: 60159139006** Collected: 12/04/13 14:10 Received: 12/06/13 08:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B		Preparation Method: EPA 3546					
TPH-DRO (C10-C28)	ND	mg/kg	10.6	1	12/11/13 00:00	12/13/13 17:12		
TPH-ORO (C28-C35)	ND	mg/kg	10.6	1	12/11/13 00:00	12/13/13 17:12		
Surrogates								
n-Tetracosane (S)	96	%	35-147	1	12/11/13 00:00	12/13/13 17:12	646-31-1	
p-Terphenyl (S)	82	%	37-138	1	12/11/13 00:00	12/13/13 17:12	92-94-4	
Gasoline Range Organics	Analytical Method: EPA 8015B		Preparation Method: EPA 5035A/5030B					
TPH-GRO	ND	mg/kg	10.7	1	12/09/13 00:00	12/10/13 23:42		
Surrogates								
4-Bromofluorobenzene (S)	95	%	67-139	1	12/09/13 00:00	12/10/13 23:42	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	**6.8**	%	0.50	1		12/17/13 00:00		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0		Preparation Method: EPA 300.0					
Chloride	**164**	mg/kg	107	10	12/17/13 08:00	12/17/13 17:11	16887-00-6	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 075005 VACUUM GLORIETTA
Pace Project No.: 60159139

QC Batch: GCV/4596 Analysis Method: EPA 8015B
QC Batch Method: EPA 5035A/5030B Analysis Description: Gasoline Range Organics
Associated Lab Samples: 60159139001, 60159139002, 60159139003, 60159139004, 60159139005, 60159139006

METHOD BLANK: 1301386 Matrix: Solid
Associated Lab Samples: 60159139001, 60159139002, 60159139003, 60159139004, 60159139005, 60159139006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH-GRO	mg/kg	ND	10.0	12/10/13 19:44	
4-Bromofluorobenzene (S)	%	101	67-139	12/10/13 19:44	

LABORATORY CONTROL SAMPLE: 1301387

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH-GRO	mg/kg	50	53.3	107	65-143	
4-Bromofluorobenzene (S)	%			104	67-139	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1301388 1301389

Parameter	Units	60158915001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH-GRO	mg/kg	658	284	284	753	754	33	34	40-151	0	33	M1
4-Bromofluorobenzene (S)	%						126	129	67-139			

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 075005 VACUUM GLORIETTA
Pace Project No.: 60159139

QC Batch: OEXT/41868 Analysis Method: EPA 8015B
QC Batch Method: EPA 3546 Analysis Description: EPA 8015B
Associated Lab Samples: 60159139001, 60159139002, 60159139003, 60159139004, 60159139005, 60159139006

METHOD BLANK: 1303968 Matrix: Solid
Associated Lab Samples: 60159139001, 60159139002, 60159139003, 60159139004, 60159139005, 60159139006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH-DRO (C10-C28)	mg/kg	ND	9.8	12/13/13 15:54	
TPH-ORO (C28-C35)	mg/kg	ND	9.8	12/13/13 15:54	
n-Tetracosane (S)	%	98	35-147	12/13/13 15:54	
p-Terphenyl (S)	%	85	37-138	12/13/13 15:54	

LABORATORY CONTROL SAMPLE: 1303969

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH-DRO (C10-C28)	mg/kg	82.4	77.6	94	66-120	
TPH-ORO (C28-C35)	mg/kg		ND			
n-Tetracosane (S)	%			101	35-147	
p-Terphenyl (S)	%			92	37-138	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1303970 1303971

Parameter	Units	60159139001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH-DRO (C10-C28)	mg/kg	ND	91.5	92.7	71.7	85.4	76	90	22-152	17	43	
TPH-ORO (C28-C35)	mg/kg	ND			ND	ND						
n-Tetracosane (S)	%						94	96	35-147			
p-Terphenyl (S)	%						84	86	37-138			

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QUALITY CONTROL DATA

Project: 075005 VACUUM GLORIETTA
Pace Project No.: 60159139

QC Batch: PMST/9236 Analysis Method: ASTM D2974
QC Batch Method: ASTM D2974 Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 60159139001, 60159139002, 60159139003, 60159139004, 60159139005, 60159139006

METHOD BLANK: 1306740 Matrix: Solid
Associated Lab Samples: 60159139001, 60159139002, 60159139003, 60159139004, 60159139005, 60159139006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Percent Moisture	%	ND	0.50	12/17/13 00:00	

SAMPLE DUPLICATE: 1306741

Parameter	Units	60159139001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	10.7	10.6	1	20	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 075005 VACUUM GLORIETTA
Pace Project No.: 60159139

QC Batch: WETA/27538 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60159139001, 60159139002, 60159139003, 60159139004, 60159139005, 60159139006

METHOD BLANK: 1306783 Matrix: Solid
Associated Lab Samples: 60159139001, 60159139002, 60159139003, 60159139004, 60159139005, 60159139006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/kg	ND	100	12/17/13 14:33	

LABORATORY CONTROL SAMPLE: 1306784

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/kg	500	484	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1306785 1306786

Parameter	Units	60159139001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/kg	ND	560	560	568	567	87	86	80-120	0	15	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 075005 VACUUM GLORIETTA
Pace Project No.: 60159139

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-K	Pace Analytical Services - Kansas City

ANALYTE QUALIFIERS

M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 075005 VACUUM GLORIETTA
Pace Project No.: 60159139

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60159139001	**S-075005-120412-CK-VG7-10**	EPA 3546	OEXT/41868	EPA 8015B	GCSV/15972
60159139002	**S-075005-120412-CK-VG7-20**	EPA 3546	OEXT/41868	EPA 8015B	GCSV/15972
60159139003	**S-075005-120412-CK-VG7-30**	EPA 3546	OEXT/41868	EPA 8015B	GCSV/15972
60159139004	**S-075005-120412-CK-VG7-40**	EPA 3546	OEXT/41868	EPA 8015B	GCSV/15972
60159139005	**S-075005-120412-CK-VG7-50**	EPA 3546	OEXT/41868	EPA 8015B	GCSV/15972
60159139006	**S-075005-120412-CK-VG7-60**	EPA 3546	OEXT/41868	EPA 8015B	GCSV/15972
60159139001	**S-075005-120412-CK-VG7-10**	EPA 5035A/5030B	GCV/4596	EPA 8015B	GCV/4599
60159139002	**S-075005-120412-CK-VG7-20**	EPA 5035A/5030B	GCV/4596	EPA 8015B	GCV/4599
60159139003	**S-075005-120412-CK-VG7-30**	EPA 5035A/5030B	GCV/4596	EPA 8015B	GCV/4599
60159139004	**S-075005-120412-CK-VG7-40**	EPA 5035A/5030B	GCV/4596	EPA 8015B	GCV/4599
60159139005	**S-075005-120412-CK-VG7-50**	EPA 5035A/5030B	GCV/4596	EPA 8015B	GCV/4599
60159139006	**S-075005-120412-CK-VG7-60**	EPA 5035A/5030B	GCV/4596	EPA 8015B	GCV/4599
60159139001	**S-075005-120412-CK-VG7-10**	ASTM D2974	PMST/9236		
60159139002	**S-075005-120412-CK-VG7-20**	ASTM D2974	PMST/9236		
60159139003	**S-075005-120412-CK-VG7-30**	ASTM D2974	PMST/9236		
60159139004	**S-075005-120412-CK-VG7-40**	ASTM D2974	PMST/9236		
60159139005	**S-075005-120412-CK-VG7-50**	ASTM D2974	PMST/9236		
60159139006	**S-075005-120412-CK-VG7-60**	ASTM D2974	PMST/9236		
60159139001	**S-075005-120412-CK-VG7-10**	EPA 300.0	WETA/27538	EPA 300.0	WETA/27539
60159139002	**S-075005-120412-CK-VG7-20**	EPA 300.0	WETA/27538	EPA 300.0	WETA/27539
60159139003	**S-075005-120412-CK-VG7-30**	EPA 300.0	WETA/27538	EPA 300.0	WETA/27539
60159139004	**S-075005-120412-CK-VG7-40**	EPA 300.0	WETA/27538	EPA 300.0	WETA/27539
60159139005	**S-075005-120412-CK-VG7-50**	EPA 300.0	WETA/27538	EPA 300.0	WETA/27539
60159139006	**S-075005-120412-CK-VG7-60**	EPA 300.0	WETA/27538	EPA 300.0	WETA/27539

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Sample Condition Upon Receipt

WO# : 60159139

60159139

Client Name: CRA NM

Optional
Proj Due Date:
Proj Name:

Courier: Fed Ex ☒ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☐

Tracking #: 8039 7491 6490 Pace Shipping Label Used? Yes ☒ No ☐

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☒ Bubble Bags ☐ Foam ☐ None ☐ Other ☐

Thermometer Used: T-239 / T-194 **Type of Ice:** (Wet) Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 5.6

Date and initials of person examining contents: JAS 12/6/13 930

Temperature should be above freezing to 6°C

Chain of Custody present:	☒Yes ☐No ☐N/A	1.
Chain of Custody filled out:	☒Yes ☐No ☐N/A	2.
Chain of Custody relinquished:	☒Yes ☐No ☐N/A	3.
Sampler name & signature on COC:	☒Yes ☐No ☐N/A	4.
Samples arrived within holding time:	☒Yes ☐No ☐N/A	5.
Short Hold Time analyses (<72hr):	☐Yes ☒No ☐N/A	6.
Rush Turn Around Time requested:	☐Yes ☒No ☐N/A	7.
Sufficient volume:	☒Yes ☐No ☐N/A	8.
Correct containers used:	☒Yes ☐No ☐N/A	
Pace containers used:	☒Yes ☐No ☐N/A	9.
Containers intact:	☒Yes ☐No ☐N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐Yes ☐No ☒N/A	11.
Filtered volume received for dissolved tests?	☐Yes ☐No ☒N/A	12.
Sample labels match COC:	☒Yes ☐No ☐N/A	
Includes date/time/ID/analyses Matrix: WW water SO.1		13.
All containers needing preservation have been checked.	☐Yes ☐No ☒N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☒N/A	14.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☒Yes ☐No	Initial when completed MA / Lot # of added preservative
Trip Blank present:	☐Yes ☒No ☐N/A	
Pace Trip Blank lot # (if purchased): MA		15.
Headspace in VOA vials (>6mm):	☐Yes ☐No ☐N/A	16.
Project sampled in USDA Regulated Area:	☐Yes ☒No ☐N/A	17. List State: Buckeye NM

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: AAF Date: 12/6/13

CHAIN OF CUSTODY RECORD

COC NO.: 32550

PAGE 1 OF 1

(See Reverse Side for Instructions)

CONESTOGA-ROVERS & ASSOCIATES

Address: 6121 INDIAN SCHOOL NE STE 200, ABQ, NM 87110

Phone: 505-884-0672 Fax:

60159139

Project No/ Phase/Task Code: 075005	Laboratory Name: PACE	Lab Location: LENEXA, KS	SSOW ID:
Project Name: VACUUM GLORIETTA	Lab Contact: ALICE FLANAGAN	Lab Quote No:	Cooler No:
Project Location: BUCKEYE, NM			Carrier:
Chemistry Contact: ANGIE BOWN			Airbill No:
Sampler(s): CACE KAMACK			Date Shipped:

Item	Sample Identification (Containers for each sample may be combined on one line)	Date (mm/dd/yy)	Time (hh:mm)	Sample Type: Matrix Code (see back of COC)	Sample Type: Grab (G) or Comp (C)	Container Quantity & Preservation: Unpreserved	HCl	HNO_3	H_2SO_4	NaOH	Methanol/Water (Soil VOC)	EnCores 3x5-g, 1x25-g	Other:	Total Containers/Sample	Analysis Requested: 8015 GRO	8015 DRO/ORO	300.0 Chloride	MS/MSD Request	Comments/ Special Instructions:
1	S-075005-120413-CK-VG7-10	12/4/13	1055	SO	G	X								1	X	X	X	1(VGFN)	DO NOT 001
2	S-075005-120413-CK-VG7-20	12/4/13	1210	SO	G	X								1	X	X	X		ANALYZE 002
3	S-075005-120413-CK-VG7-30	12/4/13	1225	SO	G	X								1	X	X	X		FOR BTEX 003
4	S-075005-120413-CK-VG7-40	12/4/13	1320	SO	G	X								1	X	X	X		004
5	S-075005-120413-CK-VG7-50	12/4/13	1355	SO	G	X								1	X	X	X		005
6	S-075005-120413-CK-VG7-60	12/4/13	1410	SO	G	X								1	X	X	X		006
7	TRIP BLANK																	2(VGFN)	007
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			

TAT Required in business days (use separate COCs for different TATs):

☐ 1 Day ☐ 2 Days ☐ 3 Days ☐ 1 Week ☐ 2 Week ☒ Other: STANDARD

Total Number of Containers: 6

All Samples in Cooler must be on COC

Notes/ Special Requirements:

5.6°C

	Relinquished By	Company	Date	Time	Received By	Company	Date	Time
1.		CRA	12-5-13	1100		Pace	12/6/13	815
2.								
3.								

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

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

CRA Form: COC-10B (20110804)

Pace Analytical Services, Inc.
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(913)599-5665

February 14, 2014

Bernie Bockisch
COP Conestoga-Rovers & Associa
6121 Indian School Rd NE
Ste 200
Albuquerque, NM 87110

RE: Project: 075005 Vacuum Glorieta East
Pace Project No.: 60162094

Dear Bernie Bockisch:
Enclosed are the analytical results for sample(s) received by the laboratory on January 29, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Alice Flanagan
alice.flanagan@pacelabs.com
Project Manager

Enclosures

cc: Cale Canack, COP Conestoga-Rovers & Associa

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Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: 075005 Vacuum Glorieta East
Pace Project No.: 60162094

Kansas Certification IDs
9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 13-012-0
Illinois Certification #: 003097
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407-13-4
Utah Certification #: KS000212013-3
Illinois Certification #: 003097

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SAMPLE SUMMARY

Project: 075005 Vacuum Glorieta East
Pace Project No.: 60162094

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60162094001	**GW-075005-012814-CK-VG-2**	Water	01/28/14 09:15	01/29/14 08:50
60162094002	**GW-075005-012814-CK-VG-3**	Water	01/28/14 13:00	01/29/14 08:50
60162094003	**GW-075005-012814-CK-VG-5**	Water	01/28/14 10:20	01/29/14 08:50
60162094004	**GW-075005-012814-CK-VG-6**	Water	01/28/14 12:20	01/29/14 08:50
60162094005	**GW-075005-012814-CK-VG-7**	Water	01/28/14 11:10	01/29/14 08:50
60162094006	**GW-075005-012814-CK-DUP**	Water	01/28/14 08:00	01/29/14 08:50
60162094007	**TRIP BLANK**	Water	01/28/14 08:00	01/29/14 08:50

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 075005 Vacuum Glorieta East
Pace Project No.: 60162094

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60162094001	**GW-075005-012814-CK-VG-2**	EPA 8015B	JDH	4	PASI-K
		EPA 5030B/8015B	SDR	3	PASI-K
		EPA 8260/OA1	JTS	8	PASI-K
		EPA 300.0	OL	1	PASI-K
60162094002	**GW-075005-012814-CK-VG-3**	EPA 8015B	JDH	4	PASI-K
		EPA 5030B/8015B	SDR	3	PASI-K
		EPA 8260/OA1	JTS	8	PASI-K
		EPA 300.0	OL	1	PASI-K
60162094003	**GW-075005-012814-CK-VG-5**	EPA 8015B	JDH	4	PASI-K
		EPA 5030B/8015B	SDR	3	PASI-K
		EPA 8260/OA1	JTS	8	PASI-K
		EPA 300.0	OL	1	PASI-K
60162094004	**GW-075005-012814-CK-VG-6**	EPA 8015B	JDH	4	PASI-K
		EPA 5030B/8015B	SDR	3	PASI-K
		EPA 8260/OA1	JTS	8	PASI-K
		EPA 300.0	OL	1	PASI-K
60162094005	**GW-075005-012814-CK-VG-7**	EPA 8015B	JDH	4	PASI-K
		EPA 5030B/8015B	SDR	3	PASI-K
		EPA 8260/OA1	JTS	8	PASI-K
		EPA 300.0	OL	1	PASI-K
60162094006	**GW-075005-012814-CK-DUP**	EPA 8015B	JDH	4	PASI-K
		EPA 5030B/8015B	SDR	3	PASI-K
		EPA 8260/OA1	JTS	8	PASI-K
		EPA 300.0	OL	1	PASI-K
60162094007	**TRIP BLANK**	EPA 8260/OA1	SDR	8	PASI-K

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SUMMARY OF DETECTION

Project: 075005 Vacuum Glorieta East
Pace Project No.: 60162094

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
60162094001	**GW-075005-012814-CK-VG-2**					
EPA 5030B/8015B	Preservation pH	1.0		0.10	02/07/14 12:28	
EPA 8260/OA1	Preservation pH	1.0		0.10	01/30/14 16:53	
EPA 300.0	Chloride	125	mg/L	10.0	02/10/14 19:14	
60162094002	**GW-075005-012814-CK-VG-3**					
EPA 5030B/8015B	Preservation pH	1.0		0.10	02/07/14 12:50	
EPA 8260/OA1	Preservation pH	1.0		0.10	01/30/14 17:09	
EPA 300.0	Chloride	45.2	mg/L	10.0	02/10/14 19:57	
60162094003	**GW-075005-012814-CK-VG-5**					
EPA 5030B/8015B	Preservation pH	1.0		0.10	02/07/14 13:12	
EPA 8260/OA1	Preservation pH	1.0		0.10	01/30/14 17:25	
EPA 300.0	Chloride	304	mg/L	20.0	02/11/14 15:08	
60162094004	**GW-075005-012814-CK-VG-6**					
EPA 5030B/8015B	Preservation pH	1.0		0.10	02/07/14 13:34	
EPA 8260/OA1	Preservation pH	1.0		0.10	01/30/14 17:42	
EPA 300.0	Chloride	88.3	mg/L	10.0	02/10/14 20:26	
60162094005	**GW-075005-012814-CK-VG-7**					
EPA 5030B/8015B	Preservation pH	1.0		0.10	02/07/14 13:55	
EPA 8260/OA1	Preservation pH	1.0		0.10	01/30/14 17:58	
EPA 300.0	Chloride	191	mg/L	20.0	02/11/14 15:22	
60162094006	**GW-075005-012814-CK-DUP**					
EPA 5030B/8015B	Preservation pH	1.0		0.10	02/07/14 14:17	
EPA 8260/OA1	Preservation pH	1.0		0.10	01/30/14 18:14	
EPA 300.0	Chloride	201	mg/L	20.0	02/11/14 15:36	
60162094007	**TRIP BLANK**					
EPA 8260/OA1	Preservation pH	1.0		0.10	01/31/14 16:17	

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 075005 Vacuum Glorieta East
Pace Project No.: 60162094

Method: **EPA 8015B**
Description: 8015B Diesel Range Organics
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: February 14, 2014

General Information:
6 samples were analyzed for EPA 8015B. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3510C with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: GCSV/16230

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

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PROJECT NARRATIVE

Project: 075005 Vacuum Glorieta East
Pace Project No.: 60162094

Method: **EPA 5030B/8015B**
Description: Gasoline Range Organics
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: February 14, 2014

General Information:
6 samples were analyzed for EPA 5030B/8015B. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: GCV/4666

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

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PROJECT NARRATIVE

Project: 075005 Vacuum Glorieta East
Pace Project No.: 60162094

Method: **EPA 8260/OA1**
Description: 8260/OA1 UST, Water
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: February 14, 2014

General Information:
7 samples were analyzed for EPA 8260/OA1. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: MSV/59144

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: MSV/59201

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

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PROJECT NARRATIVE

Project: 075005 Vacuum Glorieta East
Pace Project No.: 60162094

Method: **EPA 300.0**
Description: 300.0 IC Anions 28 Days
Client: COP Conestoga-Rovers & Associates, Inc. NM
Date: February 14, 2014

General Information:
6 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 075005 Vacuum Glorieta East
Pace Project No.: 60162094

Sample: GW-075005-012814-CK-VG-2 **Lab ID: 60162094001** Collected: 01/28/14 09:15 Received: 01/29/14 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 3510C							
TPH-DRO (C10-C28)	ND	mg/L	0.50	1	02/03/14 00:00	02/06/14 14:42		
TPH-ORO (C28-C35)	ND	mg/L	0.50	1	02/03/14 00:00	02/06/14 14:42		
Surrogates								
p-Terphenyl (S)	64	%	28-127	1	02/03/14 00:00	02/06/14 14:42	92-94-4	
n-Tetracosane (S)	54	%	22-121	1	02/03/14 00:00	02/06/14 14:42	646-31-1	
Gasoline Range Organics	Analytical Method: EPA 5030B/8015B							
TPH-GRO	ND	mg/L	0.50	1		02/07/14 12:28		
Surrogates								
4-Bromofluorobenzene (S)	107	%	65-123	1		02/07/14 12:28	460-00-4	
Preservation pH	**1.0**		0.10	1		02/07/14 12:28		
8260/OA1 UST, Water	Analytical Method: EPA 8260/OA1							
Benzene	ND	ug/L	1.0	1		01/30/14 16:53	71-43-2	
Toluene	ND	ug/L	1.0	1		01/30/14 16:53	108-88-3	
Ethylbenzene	ND	ug/L	1.0	1		01/30/14 16:53	100-41-4	
Xylene (Total)	ND	ug/L	3.0	1		01/30/14 16:53	1330-20-7	
Surrogates								
Toluene-d8 (S)	100	%	80-120	1		01/30/14 16:53	2037-26-5	
4-Bromofluorobenzene (S)	103	%	80-120	1		01/30/14 16:53	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	80-120	1		01/30/14 16:53	17060-07-0	
Preservation pH	**1.0**		0.10	1		01/30/14 16:53		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Chloride	**125**	mg/L	10.0	10		02/10/14 19:14	16887-00-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 075005 Vacuum Glorieta East
Pace Project No.: 60162094

Sample: GW-075005-012814-CK-VG-3 **Lab ID: 60162094002** Collected: 01/28/14 13:00 Received: 01/29/14 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 3510C							
TPH-DRO (C10-C28)	ND	mg/L	0.50	1	02/03/14 00:00	02/06/14 14:49		
TPH-ORO (C28-C35)	ND	mg/L	0.50	1	02/03/14 00:00	02/06/14 14:49		
Surrogates								
p-Terphenyl (S)	64	%	28-127	1	02/03/14 00:00	02/06/14 14:49	92-94-4	
n-Tetracosane (S)	53	%	22-121	1	02/03/14 00:00	02/06/14 14:49	646-31-1	
Gasoline Range Organics	Analytical Method: EPA 5030B/8015B							
TPH-GRO	ND	mg/L	0.50	1		02/07/14 12:50		
Surrogates								
4-Bromofluorobenzene (S)	106	%	65-123	1		02/07/14 12:50	460-00-4	
Preservation pH	**1.0**		0.10	1		02/07/14 12:50		
8260/OA1 UST, Water	Analytical Method: EPA 8260/OA1							
Benzene	ND	ug/L	1.0	1		01/30/14 17:09	71-43-2	
Toluene	ND	ug/L	1.0	1		01/30/14 17:09	108-88-3	
Ethylbenzene	ND	ug/L	1.0	1		01/30/14 17:09	100-41-4	
Xylene (Total)	ND	ug/L	3.0	1		01/30/14 17:09	1330-20-7	
Surrogates								
Toluene-d8 (S)	100	%	80-120	1		01/30/14 17:09	2037-26-5	
4-Bromofluorobenzene (S)	103	%	80-120	1		01/30/14 17:09	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	80-120	1		01/30/14 17:09	17060-07-0	
Preservation pH	**1.0**		0.10	1		01/30/14 17:09		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Chloride	**45.2**	mg/L	10.0	10		02/10/14 19:57	16887-00-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 075005 Vacuum Glorieta East
Pace Project No.: 60162094

Sample: GW-075005-012814-CK-VG-5 **Lab ID: 60162094003** Collected: 01/28/14 10:20 Received: 01/29/14 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 3510C							
TPH-DRO (C10-C28)	ND	mg/L	0.50	1	02/03/14 00:00	02/06/14 15:50		
TPH-ORO (C28-C35)	ND	mg/L	0.50	1	02/03/14 00:00	02/06/14 15:50		
Surrogates								
p-Terphenyl (S)	70	%	28-127	1	02/03/14 00:00	02/06/14 15:50	92-94-4	
n-Tetracosane (S)	64	%	22-121	1	02/03/14 00:00	02/06/14 15:50	646-31-1	
Gasoline Range Organics	Analytical Method: EPA 5030B/8015B							
TPH-GRO	ND	mg/L	0.50	1		02/07/14 13:12		
Surrogates								
4-Bromofluorobenzene (S)	104	%	65-123	1		02/07/14 13:12	460-00-4	
Preservation pH	**1.0**		0.10	1		02/07/14 13:12		
8260/OA1 UST, Water	Analytical Method: EPA 8260/OA1							
Benzene	ND	ug/L	1.0	1		01/30/14 17:25	71-43-2	
Toluene	ND	ug/L	1.0	1		01/30/14 17:25	108-88-3	
Ethylbenzene	ND	ug/L	1.0	1		01/30/14 17:25	100-41-4	
Xylene (Total)	ND	ug/L	3.0	1		01/30/14 17:25	1330-20-7	
Surrogates								
Toluene-d8 (S)	100	%	80-120	1		01/30/14 17:25	2037-26-5	
4-Bromofluorobenzene (S)	104	%	80-120	1		01/30/14 17:25	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	80-120	1		01/30/14 17:25	17060-07-0	
Preservation pH	**1.0**		0.10	1		01/30/14 17:25		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Chloride	**304**	mg/L	20.0	20		02/11/14 15:08	16887-00-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 075005 Vacuum Glorieta East
Pace Project No.: 60162094

Sample: GW-075005-012814-CK-VG-6 **Lab ID: 60162094004** Collected: 01/28/14 12:20 Received: 01/29/14 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 3510C							
TPH-DRO (C10-C28)	ND	mg/L	0.50	1	02/03/14 00:00	02/06/14 15:57		
TPH-ORO (C28-C35)	ND	mg/L	0.50	1	02/03/14 00:00	02/06/14 15:57		
Surrogates								
p-Terphenyl (S)	66	%	28-127	1	02/03/14 00:00	02/06/14 15:57	92-94-4	
n-Tetracosane (S)	54	%	22-121	1	02/03/14 00:00	02/06/14 15:57	646-31-1	
Gasoline Range Organics	Analytical Method: EPA 5030B/8015B							
TPH-GRO	ND	mg/L	0.50	1		02/07/14 13:34		
Surrogates								
4-Bromofluorobenzene (S)	103	%	65-123	1		02/07/14 13:34	460-00-4	
Preservation pH	**1.0**		0.10	1		02/07/14 13:34		
8260/OA1 UST, Water	Analytical Method: EPA 8260/OA1							
Benzene	ND	ug/L	1.0	1		01/30/14 17:42	71-43-2	
Toluene	ND	ug/L	1.0	1		01/30/14 17:42	108-88-3	
Ethylbenzene	ND	ug/L	1.0	1		01/30/14 17:42	100-41-4	
Xylene (Total)	ND	ug/L	3.0	1		01/30/14 17:42	1330-20-7	
Surrogates								
Toluene-d8 (S)	100	%	80-120	1		01/30/14 17:42	2037-26-5	
4-Bromofluorobenzene (S)	103	%	80-120	1		01/30/14 17:42	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	80-120	1		01/30/14 17:42	17060-07-0	
Preservation pH	**1.0**		0.10	1		01/30/14 17:42		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Chloride	**88.3**	mg/L	10.0	10		02/10/14 20:26	16887-00-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 075005 Vacuum Glorieta East
Pace Project No.: 60162094

Sample: GW-075005-012814-CK-VG-7 **Lab ID: 60162094005** Collected: 01/28/14 11:10 Received: 01/29/14 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 3510C							
TPH-DRO (C10-C28)	ND	mg/L	0.50	1	02/03/14 00:00	02/06/14 16:04		
TPH-ORO (C28-C35)	ND	mg/L	0.50	1	02/03/14 00:00	02/06/14 16:04		
Surrogates								
p-Terphenyl (S)	65	%	28-127	1	02/03/14 00:00	02/06/14 16:04	92-94-4	
n-Tetracosane (S)	49	%	22-121	1	02/03/14 00:00	02/06/14 16:04	646-31-1	
Gasoline Range Organics	Analytical Method: EPA 5030B/8015B							
TPH-GRO	ND	mg/L	0.50	1		02/07/14 13:55		
Surrogates								
4-Bromofluorobenzene (S)	103	%	65-123	1		02/07/14 13:55	460-00-4	
Preservation pH	**1.0**		0.10	1		02/07/14 13:55		
8260/OA1 UST, Water	Analytical Method: EPA 8260/OA1							
Benzene	ND	ug/L	1.0	1		01/30/14 17:58	71-43-2	
Toluene	ND	ug/L	1.0	1		01/30/14 17:58	108-88-3	
Ethylbenzene	ND	ug/L	1.0	1		01/30/14 17:58	100-41-4	
Xylene (Total)	ND	ug/L	3.0	1		01/30/14 17:58	1330-20-7	
Surrogates								
Toluene-d8 (S)	100	%	80-120	1		01/30/14 17:58	2037-26-5	
4-Bromofluorobenzene (S)	103	%	80-120	1		01/30/14 17:58	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	80-120	1		01/30/14 17:58	17060-07-0	
Preservation pH	**1.0**		0.10	1		01/30/14 17:58		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Chloride	**191**	mg/L	20.0	20		02/11/14 15:22	16887-00-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 075005 Vacuum Glorieta East
Pace Project No.: 60162094

Sample: GW-075005-012814-CK-DUP **Lab ID: 60162094006** Collected: 01/28/14 08:00 Received: 01/29/14 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015B Diesel Range Organics	Analytical Method: EPA 8015B Preparation Method: EPA 3510C							
TPH-DRO (C10-C28)	ND	mg/L	0.50	1	02/03/14 00:00	02/06/14 16:11		
TPH-ORO (C28-C35)	ND	mg/L	0.50	1	02/03/14 00:00	02/06/14 16:11		
Surrogates								
p-Terphenyl (S)	74	%	28-127	1	02/03/14 00:00	02/06/14 16:11	92-94-4	
n-Tetracosane (S)	67	%	22-121	1	02/03/14 00:00	02/06/14 16:11	646-31-1	
Gasoline Range Organics	Analytical Method: EPA 5030B/8015B							
TPH-GRO	ND	mg/L	0.50	1		02/07/14 14:17		
Surrogates								
4-Bromofluorobenzene (S)	106	%	65-123	1		02/07/14 14:17	460-00-4	
Preservation pH	**1.0**		0.10	1		02/07/14 14:17		
8260/OA1 UST, Water	Analytical Method: EPA 8260/OA1							
Benzene	ND	ug/L	1.0	1		01/30/14 18:14	71-43-2	
Toluene	ND	ug/L	1.0	1		01/30/14 18:14	108-88-3	
Ethylbenzene	ND	ug/L	1.0	1		01/30/14 18:14	100-41-4	
Xylene (Total)	ND	ug/L	3.0	1		01/30/14 18:14	1330-20-7	
Surrogates								
Toluene-d8 (S)	99	%	80-120	1		01/30/14 18:14	2037-26-5	
4-Bromofluorobenzene (S)	102	%	80-120	1		01/30/14 18:14	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	80-120	1		01/30/14 18:14	17060-07-0	
Preservation pH	**1.0**		0.10	1		01/30/14 18:14		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Chloride	**201**	mg/L	20.0	20		02/11/14 15:36	16887-00-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 075005 Vacuum Glorieta East
Pace Project No.: 60162094

Sample: TRIP BLANK **Lab ID: 60162094007** Collected: 01/28/14 08:00 Received: 01/29/14 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260/OA1 UST, Water	Analytical Method: EPA 8260/OA1							
Benzene	ND	ug/L	1.0	1		01/31/14 16:17	71-43-2	
Toluene	ND	ug/L	1.0	1		01/31/14 16:17	108-88-3	
Ethylbenzene	ND	ug/L	1.0	1		01/31/14 16:17	100-41-4	
Xylene (Total)	ND	ug/L	3.0	1		01/31/14 16:17	1330-20-7	
Surrogates								
Toluene-d8 (S)	101	%	80-120	1		01/31/14 16:17	2037-26-5	HS
4-Bromofluorobenzene (S)	103	%	80-120	1		01/31/14 16:17	460-00-4	
1,2-Dichloroethane-d4 (S)	106	%	80-120	1		01/31/14 16:17	17060-07-0	
Preservation pH	**1.0**		0.10	1		01/31/14 16:17		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: 075005 Vacuum Glorieta East
Pace Project No.: 60162094

QC Batch: GCV/4666 Analysis Method: EPA 5030B/8015B
QC Batch Method: EPA 5030B/8015B Analysis Description: Gasoline Range Organics
Associated Lab Samples: 60162094001, 60162094002, 60162094003, 60162094004, 60162094005, 60162094006

METHOD BLANK: 1327506 Matrix: Water
Associated Lab Samples: 60162094001, 60162094002, 60162094003, 60162094004, 60162094005, 60162094006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH-GRO	mg/L	ND	0.50	02/07/14 12:07	
4-Bromofluorobenzene (S)	%	113	65-123	02/07/14 12:07	

LABORATORY CONTROL SAMPLE: 1327507

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH-GRO	mg/L	1	0.88	88	67-134	
4-Bromofluorobenzene (S)	%			110	65-123	

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

QUALITY CONTROL DATA

Project: 075005 Vacuum Glorieta East
Pace Project No.: 60162094

QC Batch: MSV/59144 Analysis Method: EPA 8260/OA1
QC Batch Method: EPA 8260/OA1 Analysis Description: 8260/OA1 UST-WATER
Associated Lab Samples: 60162094001, 60162094002, 60162094003, 60162094004, 60162094005, 60162094006

METHOD BLANK: 1324164 Matrix: Water
Associated Lab Samples: 60162094001, 60162094002, 60162094003, 60162094004, 60162094005, 60162094006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	01/30/14 14:42	
Ethylbenzene	ug/L	ND	1.0	01/30/14 14:42	
Toluene	ug/L	ND	1.0	01/30/14 14:42	
Xylene (Total)	ug/L	ND	3.0	01/30/14 14:42	
1,2-Dichloroethane-d4 (S)	%	104	80-120	01/30/14 14:42	
4-Bromofluorobenzene (S)	%	103	80-120	01/30/14 14:42	
Toluene-d8 (S)	%	100	80-120	01/30/14 14:42	

LABORATORY CONTROL SAMPLE: 1324165

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	19.1	95	73-122	
Ethylbenzene	ug/L	20	20.6	103	76-123	
Toluene	ug/L	20	19.7	98	76-122	
Xylene (Total)	ug/L	60	62.4	104	76-122	
1,2-Dichloroethane-d4 (S)	%			103	80-120	
4-Bromofluorobenzene (S)	%			102	80-120	
Toluene-d8 (S)	%			100	80-120	

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QUALITY CONTROL DATA

Project: 075005 Vacuum Glorieta East
Pace Project No.: 60162094

QC Batch: MSV/59201 Analysis Method: EPA 8260/OA1
QC Batch Method: EPA 8260/OA1 Analysis Description: 8260/OA1 UST-WATER
Associated Lab Samples: 60162094007

METHOD BLANK: 1325165 Matrix: Water
Associated Lab Samples: 60162094007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	01/31/14 16:01	
Ethylbenzene	ug/L	ND	1.0	01/31/14 16:01	
Toluene	ug/L	ND	1.0	01/31/14 16:01	
Xylene (Total)	ug/L	ND	3.0	01/31/14 16:01	
1,2-Dichloroethane-d4 (S)	%	107	80-120	01/31/14 16:01	
4-Bromofluorobenzene (S)	%	104	80-120	01/31/14 16:01	
Toluene-d8 (S)	%	102	80-120	01/31/14 16:01	

LABORATORY CONTROL SAMPLE: 1325166

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	21.9	110	73-122	
Ethylbenzene	ug/L	20	21.0	105	76-123	
Toluene	ug/L	20	20.3	101	76-122	
Xylene (Total)	ug/L	60	64.7	108	76-122	
1,2-Dichloroethane-d4 (S)	%			105	80-120	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			99	80-120	

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QUALITY CONTROL DATA

Project: 075005 Vacuum Glorieta East
Pace Project No.: 60162094

QC Batch: OEXT/42568 Analysis Method: EPA 8015B
QC Batch Method: EPA 3510C Analysis Description: EPA 8015B
Associated Lab Samples: 60162094001, 60162094002, 60162094003, 60162094004, 60162094005, 60162094006

METHOD BLANK: 1326156 Matrix: Water
Associated Lab Samples: 60162094001, 60162094002, 60162094003, 60162094004, 60162094005, 60162094006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH-DRO (C10-C28)	mg/L	ND	0.50	02/06/14 14:28	
TPH-ORO (C28-C35)	mg/L	ND	0.50	02/06/14 14:28	
n-Tetracosane (S)	%	76	22-121	02/06/14 14:28	
p-Terphenyl (S)	%	74	28-127	02/06/14 14:28	

LABORATORY CONTROL SAMPLE: 1326157

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH-DRO (C10-C28)	mg/L	12.5	11.3	91	39-120	
n-Tetracosane (S)	%			82	22-121	
p-Terphenyl (S)	%			78	28-127	

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QUALITY CONTROL DATA

Project: 075005 Vacuum Glorieta East
Pace Project No.: 60162094

QC Batch: WETA/28143 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60162094001, 60162094002, 60162094003, 60162094004, 60162094005, 60162094006

METHOD BLANK: 1328259 Matrix: Water
Associated Lab Samples: 60162094001, 60162094002, 60162094004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	02/10/14 18:02	

METHOD BLANK: 1328444 Matrix: Water
Associated Lab Samples: 60162094003, 60162094005, 60162094006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	02/11/14 15:51	

LABORATORY CONTROL SAMPLE: 1328260

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.5	109	90-110	

LABORATORY CONTROL SAMPLE: 1328445

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.2	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1328261 1328262

Parameter	Units	60162094001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	125	50	50	171	171	91	92	80-120	0	15	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: 075005 Vacuum Glorieta East
Pace Project No.: 60162094

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-K Pace Analytical Services - Kansas City

BATCH QUALIFIERS

Batch: MSV/59144

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: MSV/59201

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: OEXT/42568

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: GCV/4666

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

HS Results are from sample aliquot taken from VOA vial with headspace (air bubble greater than 6 mm diameter).

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 075005 Vacuum Glorieta East
Pace Project No.: 60162094

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60162094001	**GW-075005-012814-CK-VG-2**	EPA 3510C	OEXT/42568	EPA 8015B	GCSV/16230
60162094002	**GW-075005-012814-CK-VG-3**	EPA 3510C	OEXT/42568	EPA 8015B	GCSV/16230
60162094003	**GW-075005-012814-CK-VG-5**	EPA 3510C	OEXT/42568	EPA 8015B	GCSV/16230
60162094004	**GW-075005-012814-CK-VG-6**	EPA 3510C	OEXT/42568	EPA 8015B	GCSV/16230
60162094005	**GW-075005-012814-CK-VG-7**	EPA 3510C	OEXT/42568	EPA 8015B	GCSV/16230
60162094006	**GW-075005-012814-CK-DUP**	EPA 3510C	OEXT/42568	EPA 8015B	GCSV/16230
60162094001	**GW-075005-012814-CK-VG-2**	EPA 5030B/8015B	GCV/4666		
60162094002	**GW-075005-012814-CK-VG-3**	EPA 5030B/8015B	GCV/4666		
60162094003	**GW-075005-012814-CK-VG-5**	EPA 5030B/8015B	GCV/4666		
60162094004	**GW-075005-012814-CK-VG-6**	EPA 5030B/8015B	GCV/4666		
60162094005	**GW-075005-012814-CK-VG-7**	EPA 5030B/8015B	GCV/4666		
60162094006	**GW-075005-012814-CK-DUP**	EPA 5030B/8015B	GCV/4666		
60162094001	**GW-075005-012814-CK-VG-2**	EPA 8260/OA1	MSV/59144		
60162094002	**GW-075005-012814-CK-VG-3**	EPA 8260/OA1	MSV/59144		
60162094003	**GW-075005-012814-CK-VG-5**	EPA 8260/OA1	MSV/59144		
60162094004	**GW-075005-012814-CK-VG-6**	EPA 8260/OA1	MSV/59144		
60162094005	**GW-075005-012814-CK-VG-7**	EPA 8260/OA1	MSV/59144		
60162094006	**GW-075005-012814-CK-DUP**	EPA 8260/OA1	MSV/59144		
60162094007	**TRIP BLANK**	EPA 8260/OA1	MSV/59201		
60162094001	**GW-075005-012814-CK-VG-2**	EPA 300.0	WETA/28143		
60162094002	**GW-075005-012814-CK-VG-3**	EPA 300.0	WETA/28143		
60162094003	**GW-075005-012814-CK-VG-5**	EPA 300.0	WETA/28143		
60162094004	**GW-075005-012814-CK-VG-6**	EPA 300.0	WETA/28143		
60162094005	**GW-075005-012814-CK-VG-7**	EPA 300.0	WETA/28143		
60162094006	**GW-075005-012814-CK-DUP**	EPA 300.0	WETA/28143		

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Sample Condition Upon Receipt
ESI Tech Spec Client

WO#: 60162094

60162094

Client Name: COP CPA NM

Optional
Proj Due Date:
Proj Name:

Courier: Fed Ex ☒ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☐

Tracking #: 8039 7491 6744; 6652 Pace Shipping Label Used? Yes ☒ No ☐

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☒ Bubble Bags ☒ Foam ☒ None ☐ Other ☐

Thermometer Used: T-239 / T-194 **Type of Ice:** Wet Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 4.6, 2.4

Temperature should be above freezing to 6°C

Date and initials of person examining contents: JW 1/29/14 1150

Chain of Custody present:	☒Yes ☐No ☐N/A	1.
Chain of Custody filled out:	☒Yes ☐No ☐N/A	2.
Chain of Custody relinquished:	☒Yes ☐No ☐N/A	3.
Sampler name & signature on COC:	☒Yes ☐No ☐N/A	4.
Samples arrived within holding time:	☒Yes ☐No ☐N/A	5.
Short Hold Time analyses (<72hr):	☐Yes ☒No ☐N/A	6.
Rush Turn Around Time requested:	☐Yes ☒No ☐N/A	7.
Sufficient volume:	☒Yes ☐No ☐N/A	8.
Correct containers used:	☒Yes ☐No ☐N/A	
Pace containers used:	☒Yes ☐No ☐N/A	9.
Containers intact:	☒Yes ☐No ☐N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐Yes ☐No ☒N/A	11.
Filtered volume received for dissolved tests?	☐Yes ☐No ☒N/A	12.
Sample labels match COC:	☒Yes ☐No ☐N/A	
Includes date/time/ID/analyses Matrix: water		13.
All containers needing preservation have been checked.	☐Yes ☐No ☒N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☒N/A	14.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☒Yes ☐No	Initial when completed: NA Lot # of added preservative:
Trip Blank present: 051313-3	☒Yes ☐No ☐N/A	
Pace Trip Blank lot # (if purchased): NA		15.
Headspace in VOA vials (>6mm):	☒Yes ☐No ☒N/A	headspace in all trip blank vials.
		16.
Project sampled in USDA Regulated Area:	☐Yes ☐No ☒N/A	17. List State:

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [signature] Date: 1/29/14

Temp Log: Record start and finish times when unpacking cooler, if >20 min, recheck sample temps.

Start: 1135	Start:
End: 1145	End:
Temp:	Temp:

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The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

Section A Required Client Information:

Company:	COP CRA NM
Address:	6121 Indian School Rd NE Ste200
	Albuquerque, NM 87110
Email To:	bbockisch@craworld.com
Phone: 505-884-0672	Fax:
Requested Due Date/TAT:	STANDARD

Section B Required Project Information:

Report To:	Bernie Bockisch
Copy To:	Cale Canack
Purchase Order No.:	
Project Name:	Vacuum Glorieta East Unit
Project Number:	75005

Section C Invoice Information:

Attention:	COP ePayables
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	Alice Flanagan
Pace Profile #:	7275

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: NM

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	8260 BTEX	8015 GRO	8015 DRO/ORO	300.0 Chloride	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	GW-075005-012814-CK-VG-2	WT	G			1/28/14	0915		9	3			6					X	X	X	X	N	60162094 001
2	GW-075005-012814-CK-VG-3	WT	G		1300	1/28/14	~~1300~~		9	3			6					X	X	X	X		002
3	GW-075005-012814-CK-VG-5	WT	G			1/28/14	1020		9	3			6					X	X	X	X		003
4	GW-075005-012814-CK-VG-6	WT	G			1/28/14	1220		9	3			6					X	X	X	X		004
5	GW-075005-012814-CK-VG-7	WT	G			1/28/14	1110		9	3			6					X	X	X	X		005
6	GW-075005-012814-CK-DUP	WT	G			/	/		9	3			6					X	X	X	X		006
7	TRIP BLANK	WT	/			/	/		3	3								X					007
8																							
9																							
10																							
11																							
12																							

Requested Analysis Filtered (Y/N)

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
TWO COOLERS @	CRA	1/28/14	1530		1/29/14	850	2.4	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: CALE KANACK

SIGNATURE of SAMPLER: _____ DATE Signed (MM/DD/YY): 1/28/14

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.