State of New Mexico Energy Minerals and Natural Resources

Form C-141 Revised August 8, 2011

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

					C	PERAT	OR		Initial R	eport 🛛 Fina	і керо
Name of Co	mpany: Va	anguard					uck Johnston				
			1, Odess	a Texas 79762			lo. 432-202-47				
acility Nar	ne: Bimini	13 State #4			H	Facility Typ	e: Tank Battery	1			
urface Ow	mer: Dar A	Angell		Mineral (Owner:	State			API No.	30-025-35150	
				LOCA	TION	OF REL	EASE				
Jnit Letter	Section	Township	Range	Feet from the	-	South Line	Feet from the	East/V	Vest Line	County	
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ype of Rele	ease: 2% KG	CL water				1	Release: 45 bbl.		Volume Rec	covered: 30 bbl.	
ource of Re	elease: Com	nection on Fra	ac Tank			Date and H 10/3/2011	Iour of Occurrent 7:30 A.M.	ce:	Date and Ho 10/3/2011 7	our of Discovery: :30am	
Vas Immedi	ate Notice C		Yes [] No 🗌 Not R	equired	If YES, To Geoffrey L	Whom? eking Voicemail	1		11.1.1. A.	
By Whom?	Mike Stubb	lefield						11:30 a			-
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1RP-2755



The following *Site Characterization and Work Plan* serves as a condensed update on field activities undertaken and proposed actions for the afore referenced Site.

Background:

The site is located in Unit Letter F (SE ¼ NW ¼), Section 13, Township 17 South, Range 35 East, approximately nine miles south of Lovington, in Lea County, New Mexico. The property is owned by Dar Angell.

The release site is located on the pad of an active well and lease road; latitude 32.83595 North, longitude 103.412082 West. Area Map, Site Location Map, and Sample/Site Map are included as Figure 1, Figure 2, and Figure 3, respectively. The Initial NMOCD Form C-141 indicates the connection on a frac tank leaked. The leak was immediately isolated and the connection was replaced. A vacuum truck was brought to the site and 30 barrels of standing fluids were recovered. The area affected was from the frac tank, across the location and flowed off the location pooling next to the lease road. The flow path area measured approximately 321' x 12'. The Initial NMOCD Form C-141 is included as Attachment IV.

NMOCD Site Classification:

A search for water wells was completed utilizing the USGS and New Mexico Office of the State Engineer's (NMOSE) websites. There are four wells located in the area surrounding the release site (reference *Table 1*). Also, one well (domestic, agriculture or public) and one body of surface water exist within a 1,000-foot radius of the release site (reference *Figure 2*). The USGS database indicates a water depth of 45 feet below ground surface (bgs) within a 216-meter radius (reference *Table 1*).

Utilizing this information, the NMOCD guidelines indicate the Bimini 13 State #4 release site to have a ranking score of fifty. Based on this score, the NMOCD Recommended Remedial Action Levels (RRALs) for delineation at this Site were determined as follows: Benzene – 10 mg/Kg, BTEX – 50 mg/Kg, TPH – 100 mg/Kg, and Chloride – 250 mg/Kg.

The affected area is on the western side of the well pad and on the lease road leading to the pad. This area is caliche approximately one foot thick compacted over sandy caliche.

Delineation Progress:

On June 29, 2017 EPI personnel mobilized on site to collect soil samples to determine the vertical extent of contamination. A total of twenty-three soil samples were collected from eight sample locations; SP1 – SP8. Soil samples from each sample location were sent to Cardinal Labs in Hobbs, New Mexico, for testing. Laboratory analytical results indicate chlorides above NMOCD RRALs at surface level at SP1 – SP3. Field testing indicates Chloride concentrations above NMOCD RRALs from surface level to ten feet bgs (reference *Figure 3* and *Table 2*).

Portions of select soil samples were field tested for organic vapors and chloride concentrations. Soil samples collected for field testing of organic vapors were placed in self-sealing polyethylene bags and allowed to equilibrate to ~70° F. Field testing of organic vapors utilized a Mini-RaeTM Photoionization Detector (PID) equipped with a 10.6 electron-volt (eV) calibrated for benzene



response. Chloride concentrations were determined via use of a LaMotte Chloride Kit (Titration Method).

Soil samples designated for laboratory analyses were collected into laboratory provided glass containers, labeled and inserted into self-sealing polyethylene bags, placed in a cooler, chilled and transported to an independent laboratory for quantification of contaminant concentrations under Chain-of-Custody protocol.

Completed Action:

EPI mobilized on the Bimini 13 State #4 with equipment and excavated an area approximately ten ft. wide by fifteen ft. long to 4 ft. bgs. Once excavation activity was complete a conformation sample was taken at the bottom of the excavation. Sample was taken to Cardinal labs in Hobbs, NM, and method 300 was ran on the soil for closure. Soil was then hauled to a state approved disposal facility. A 20-mil liner was installed with a topsoil base to protect liner, then caliche was used to backfill remainder of excavation.

Revegetation Plan:

As the area in question is on an active lease road and well pad, no seeding will be required.

Noxious Weed Management Plan:

In an effort to prevent the spread of noxious weeds such as African Rue, Siberian Elm, Jointed Goatgrass, Russian Olive, Camelthorn, Saltcedar, Starthistle varieties, Hoary Cress and Russian Knapweed, the area will be confirmed to be clear of any noxious weeds. If any are located they will be removed by hand and the area treated with an appropriate herbicide. After a period of three months the area will be examined for noxious weed growth and re-treated if any growth has occurred.

Following completion of NMOCD and NMSLO approved Proposed Actions, EPI will provide a detailed *Final Closure Report* to Vanguard, NMOCD, and NMSLO personnel. Vanguard and EPI personnel would welcome an opportunity to briefly discuss the *Work Plan* at your earliest convenience.

Should you have any questions or concerns please feel free to contact me via e-mail at <u>bboone.epi@gmail.com</u> or Mr. Chuck Johnston at (432) 202-4771 or via e-mail at cjohnston@vnrllc.com. All official communication should be addressed to:

Mr. Chuck Johnston Vanguard 4001 Penbrook, Suite 2001 Odessa, Texas 79762



Sincerely,

ENVIRONMENTAL PLUS, INC.

Brandon Boone Environmental Consultant

cc: Olivia Yu, Environmental Specialist – NMOCD District 1, Hobbs, NM Amber Groves, Remediation Specialist – NMSLO, Hobbs, NM Chuck Johnston, EHS – Vanguard File

Encl.: Figure 1 – Area Map
Figure 2 – Site Location Map
Table 1 – Well Data
Table 2 – Summary of Soil Sample Field Testing and Laboratory Analytical Results
Attachment I – Photographs
Attachment II – NMOSE Average Depth to Groundwater
Attachment III – Laboratory Analytical Results
Attachment IV – Copy of Initial NMOCD Form C-141

FIGURES





TABLES

TABLE 1

Well Data

Vanguard - Bimini 13 State #4

Ref #	Well Number	Use	Diversion ^A	Owner		q16	q4	Sec	Twsp	Rng	Easting	Northing	Distance ^B	Date Measured	Surface Elevation ^C	Depth to Water (ft bgs)
1	USGS 1				2	2	3	13	17S	35E	648541	3634017	216	09-Feb-96	3,924	45
2	L 04503	PRO	0	TRI SERVICE DRILLING CO			2	24	17S	35E	649145	3632884	1,443	10-Sep-60	3,910	43
3	L 04171	PRO	0	NORWOOD DRILLING COMPANY		4	1	18	17S	36E	650102	3634311	1,496	09-Jun-59	3,903	128
4	USGS 2				1	1	2	19	17S	36E	650475	3633258	2,066	16-Jan-86	3,893	37

Data obtained from the New Mexico Office of the State Engineer and USGS Websites

^A = In acre feet per annum ^B = In meters C = Elevation interpolated from Google Earth based on referenced location

PRO = 72-12-1 Prospecting or development of Natural Resource

quarters are 1=NW, 2=NE, 3=SW, 4=SE; quarters are smallest to biggest

TABLE 2 Summary of Soil Sample Field Testing and Laboratory Analytical Results Vanguard Bimini 13 State #4

ì 							DIIIIII IS	blute #4							
Lab Sample ID	Depth (feet)	Soil Status	Sample Date	PID Reading (ppm)	Field Chloride (mg/Kg)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Total Xylenes (mg/Kg)	Total BTEX (mg/Kg)	GRO C6-C10 (mg/Kg)	DRO C10-C28 (mg/Kg)	EXT DRO C28-C36 (mg/Kg)	Total TPH (mg/Kg)	Chloride (mg/Kg)
	8"	In-Situ	29-Jun-17	0.0	480	< 0.050	< 0.050	< 0.050	< 0.150	< 0.300	<10.0	<10.0		<20.0	384
	3	In-Situ	29-Jun-17	0.0	400										
SP1	5	In-Situ	29-Jun-17	0.0	480		-								
SF1	8	In-Situ	29-Jun-17	0.0	320										
	11	In-Situ	29-Jun-17	0.0	240										
	14	In-Situ	29-Jun-17	0.0	80	< 0.050	< 0.050	< 0.050	< 0.150	< 0.300	<10.0	<10.0		<20.0	64
	8"	In-Situ	29-Jun-17	0.0	280	< 0.050	< 0.050	< 0.050	< 0.150	< 0.300	<10.0	<10.0		<20.0	352
	3	In-Situ	29-Jun-17	0.0	880										
	4	Excavated	25-Sep-17	0.0	80	< 0.050	< 0.050	< 0.050	< 0.150	< 0.300	<10.0	<10.0		<20.0	20.2
SP2	5	In-Situ	29-Jun-17	0.0	800										
	8	In-Situ	29-Jun-17	0.0	480										
	14	In-Situ	29-Jun-17	0.0	240										
	18	In-Situ	29-Jun-17	0.0	80	< 0.050	< 0.050	0.060	< 0.150	< 0.300	<10.0	<10.0		<20.0	48
	8"	In-Situ	29-Jun-17	0.0	320	< 0.050	< 0.050	< 0.050	< 0.150	< 0.300	<10.0	<10.0		<20.0	288
	3	In-Situ	29-Jun-17	0.0	400										
SP3	5	In-Situ	29-Jun-17	0.0	480										
515	10	In-Situ	29-Jun-17	0.0	320										
	15	In-Situ	29-Jun-17	0.0	240										
	18	In-Situ	29-Jun-17	0.0	80	< 0.050	< 0.050	< 0.050	< 0.150	< 0.300	<10.0	<10.0		<20.0	64

TABLE 2 Summary of Soil Sample Field Testing and Laboratory Analytical Results Vanguard Bimini 13 State #4

Lab Sample ID	Depth (feet)	Soil Status	Sample Date	PID Reading (ppm)	Field Chloride (mg/Kg)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Total Xylenes (mg/Kg)	Total BTEX (mg/Kg)	GRO C6-C10 (mg/Kg)	DRO C10-C28 (mg/Kg)	EXT DRO C28-C36 (mg/Kg)	Total TPH (mg/Kg)	Chloride (mg/Kg)
SP4	8"	In-Situ	29-Jun-17	0.0	80	< 0.050	< 0.050	< 0.050	< 0.150	< 0.300	<10.0	<10.0		<20.0	48
SP5	8"	In-Situ	29-Jun-17	0.0	80	< 0.050	< 0.050	< 0.050	< 0.150	< 0.300	<10.0	<10.0		<20.0	128
SP6	8"	In-Situ	29-Jun-17	0.0	160	< 0.050	< 0.050	< 0.050	< 0.150	< 0.300	<10.0	<10.0		<20.0	176
SP7	8"	In-Situ	29-Jun-17	0.0	160	< 0.050	< 0.050	< 0.050	< 0.150	< 0.300	<10.0	<10.0		<20.0	112
SP8	8"	In-Situ	29-Jun-17	0.0	80	< 0.050	< 0.050	0.060	< 0.150	< 0.300	<10.0	<10.0		<20.0	80
NMOCD		ended Reme Levels	edial Action	100		10				50				100	250

- - = Not Analyzed

Bold values are in excess of NMOCD Recommended Remedial Action Levels

ATTACHMENTS

ATTACHMENT I Photographs



Photograph #1- Well pad area



Photograph #2- Well pad area



Photograph #3- Well pad area



Photograph #4- Well pad area



Photograph #5- Well pad area



Photograph #6- Well pad area



Photograph #7- Well pad area



Photograph #8- Well less than 1,000' from location



Photograph #9 SP2 prior to excavation



Photograph #10 SP2 excavated



Photograph #11 Topsoil base





Photograph #13 Topsoil base on top of liner



Photograph#14 Excavation backfilled

ATTACHMENT II NMOSE Average Depth to Groundwater



POD suffix indicates the POD has been replaced & no longer serves a water right file.)	been replaced O=orphaned, C=the file is closed)		· ·					2=NE 3 st to lar	3=SW 4= gest)) AD83 UTM in me	ters)	(In feet)	
POD Number	POD Sub- Code basin C	Count		Q 16		Sec	Tws	Rng		x	Y	Distance	-	-	Water Column
L 04503	L	LE			2	24	17S	35E	6491	45	3632884* 🌍	1443	90	43	47
<u>L 04171</u>	L	LE		4	1	18	17S	36E	6501	02	3634311* 🌍	1496	128	128	0
											Avera	ge Depth to	Water:	85	feet
												Minimum	Depth:	43	feet
												Maximum	Depth:	128	feet
Record Count: 2															

UTMNAD83 Radius Search (in meters):

Easting (X): 648608.25

Northing (Y): 3634223.83

Radius: 2000

*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

ATTACHMENT III Laboratory Analytical Results



July 10, 2017

Daniel Dominguez Environmental Plus, Inc. P.O. Box 1558 Eunice, NM 88231

RE: BIMINI 13

Enclosed are the results of analyses for samples received by the laboratory on 07/03/17 15:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/ga/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keine

Celey D. Keene Lab Director/Quality Manager



Environmental Plus, Inc. Daniel Dominguez P.O. Box 1558 Eunice NM, 88231 Fax To: (505) 394-2601

Received:	07/03/2017	Sampling Date:	06/29/2017
Reported:	07/10/2017	Sampling Type:	Soil
Project Name:	BIMINI 13	Sampling Condition:	Cool & Intact
Project Number:	STATE #4	Sample Received By:	Tamara Oldaker
Project Location:	VANGUARD		

Sample ID: SP 1 @ (SURFACE) (H701734-01)

BTEX 8021B	mg/kg		Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/05/2017	ND	2.14	107	2.00	2.31	
Toluene*	<0.050	0.050	07/05/2017	ND	2.02	101	2.00	4.13	
Ethylbenzene*	<0.050	0.050	07/05/2017	ND	2.07	104	2.00	2.34	
Total Xylenes*	<0.150	0.150	07/05/2017	ND	6.12	102	6.00	1.37	
Total BTEX	<0.300	0.300	07/05/2017	ND					
Surrogate: 4-Bromofluorobenzene (PID	101 %	% 72-148							
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	384	16.0	07/05/2017	ND	448	112	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/05/2017	ND	180	90.2	200	2.74	
DRO >C10-C28	<10.0	10.0	07/05/2017	ND	198	99.0	200	1.48	
Surrogate: 1-Chlorooctane	80.7 9	% 28.3-16	4						
Surrogate: 1-Chlorooctadecane	81.8 9	% 34.7-15	7						

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Celey D. Keene, Lab Director/Quality Manager



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Received:	07/03/2017	Sampling Date:	06/29/2017
Reported:	07/10/2017	Sampling Type:	Soil
Project Name:	BIMINI 13	Sampling Condition:	Cool & Intact
Project Number:	STATE #4	Sample Received By:	Tamara Oldaker
Project Location:	VANGUARD		

Sample ID: SP 1 @ (14') (H701734-02)

BTEX 8021B	mg/kg		Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/05/2017	ND	2.14	107	2.00	2.31	
Toluene*	<0.050	0.050	07/05/2017	ND	2.02	101	2.00	4.13	
Ethylbenzene*	<0.050	0.050	07/05/2017	ND	2.07	104	2.00	2.34	
Total Xylenes*	<0.150	0.150	07/05/2017	ND	6.12	102	6.00	1.37	
Total BTEX	<0.300	0.300	07/05/2017	ND					
Surrogate: 4-Bromofluorobenzene (PID	103 %	6 72-148							
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	07/05/2017	ND	448	112	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/05/2017	ND	180	90.2	200	2.74	
DRO >C10-C28	<10.0	10.0	07/05/2017	ND	198	99.0	200	1.48	
Surrogate: 1-Chlorooctane	86.2 9	28.3-16	4						
Surrogate: 1-Chlorooctadecane	83.1 9	% 34.7-15	7						

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Celey D. Keene, Lab Director/Quality Manager



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Received:	07/03/2017	Sampling Date:	06/29/2017
Reported:	07/10/2017	Sampling Type:	Soil
Project Name:	BIMINI 13	Sampling Condition:	Cool & Intact
Project Number:	STATE #4	Sample Received By:	Tamara Oldaker
Project Location:	VANGUARD		

Sample ID: SP 2 @ (SURFACE) (H701734-03)

BTEX 8021B	mg/kg		Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/05/2017	ND	2.14	107	2.00	2.31	
Toluene*	<0.050	0.050	07/05/2017	ND	2.02	101	2.00	4.13	
Ethylbenzene*	<0.050	0.050	07/05/2017	ND	2.07	104	2.00	2.34	
Total Xylenes*	<0.150	0.150	07/05/2017	ND	6.12	102	6.00	1.37	
Total BTEX	<0.300	0.300	07/05/2017	ND					
Surrogate: 4-Bromofluorobenzene (PID	102 9	% 72-148							
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	352	16.0	07/05/2017	ND	448	112	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/05/2017	ND	180	90.2	200	2.74	
DRO >C10-C28	<10.0	10.0	07/05/2017	ND	198	99.0	200	1.48	
Surrogate: 1-Chlorooctane	69.5	28.3-16	4						
Surrogate: 1-Chlorooctadecane	64.2	% 34.7-15	7						

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Received:	07/03/2017	Sampling Date:	06/29/2017
Reported:	07/10/2017	Sampling Type:	Soil
Project Name:	BIMINI 13	Sampling Condition:	Cool & Intact
Project Number:	STATE #4	Sample Received By:	Tamara Oldaker
Project Location:	VANGUARD		

Sample ID: SP 2 @ (18') (H701734-04)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/05/2017	ND	2.14	107	2.00	2.31	
Toluene*	<0.050	0.050	07/05/2017	ND	2.02	101	2.00	4.13	
Ethylbenzene*	<0.050	0.050	07/05/2017	ND	2.07	104	2.00	2.34	
Total Xylenes*	<0.150	0.150	07/05/2017	ND	6.12	102	6.00	1.37	
Total BTEX	<0.300	0.300	07/05/2017	ND					
Surrogate: 4-Bromofluorobenzene (PID	102 %	6 72-148	2						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	07/05/2017	ND	448	112	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/05/2017	ND	180	90.2	200	2.74	
DRO >C10-C28	<10.0	10.0	07/05/2017	ND	198	99.0	200	1.48	
Surrogate: 1-Chlorooctane	103 %	6 28.3-16	4						
Surrogate: 1-Chlorooctadecane	102 %	6 34.7-15	7						

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Celey D. Keene, Lab Director/Quality Manager



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Received:	07/03/2017	Sampling Date:	06/29/2017
Reported:	07/10/2017	Sampling Type:	Soil
Project Name:	BIMINI 13	Sampling Condition:	Cool & Intact
Project Number:	STATE #4	Sample Received By:	Tamara Oldaker
Project Location:	VANGUARD		

Sample ID: SP 3 @ (SURFACE) (H701734-05)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/05/2017	ND	2.14	107	2.00	2.31	
Toluene*	<0.050	0.050	07/05/2017	ND	2.02	101	2.00	4.13	
Ethylbenzene*	<0.050	0.050	07/05/2017	ND	2.07	104	2.00	2.34	
Total Xylenes*	<0.150	0.150	07/05/2017	ND	6.12	102	6.00	1.37	
Total BTEX	<0.300	0.300	07/05/2017	ND					
Surrogate: 4-Bromofluorobenzene (PID	102 9	6 72-148							
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	288	16.0	07/05/2017	ND	448	112	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/05/2017	ND	180	90.2	200	2.74	
DRO >C10-C28	<10.0	10.0	07/05/2017	ND	198	99.0	200	1.48	
Surrogate: 1-Chlorooctane	81.1	28.3-16	4						
Surrogate: 1-Chlorooctadecane	77.1	34.7-15	7						

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Received:	07/03/2017	Sampling Date:	06/29/2017
Reported:	07/10/2017	Sampling Type:	Soil
Project Name:	BIMINI 13	Sampling Condition:	Cool & Intact
Project Number:	STATE #4	Sample Received By:	Tamara Oldaker
Project Location:	VANGUARD		

Sample ID: SP 3 @ (18') (H701734-06)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/05/2017	ND	2.14	107	2.00	2.31	
Toluene*	<0.050	0.050	07/05/2017	ND	2.02	101	2.00	4.13	
Ethylbenzene*	<0.050	0.050	07/05/2017	ND	2.07	104	2.00	2.34	
Total Xylenes*	<0.150	0.150	07/05/2017	ND	6.12	102	6.00	1.37	
Total BTEX	<0.300	0.300	07/05/2017	ND					
Surrogate: 4-Bromofluorobenzene (PID	<i>99.7</i>	% 72-148							
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	07/05/2017	ND	448	112	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/05/2017	ND	180	90.2	200	2.74	
DRO >C10-C28	<10.0	10.0	07/05/2017	ND	198	99.0	200	1.48	
Surrogate: 1-Chlorooctane	92.3	28.3-16	4						
Surrogate: 1-Chlorooctadecane	88.9	% 34.7-15	7						

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Received:	07/03/2017	Sampling Date:	06/29/2017
Reported:	07/10/2017	Sampling Type:	Soil
Project Name:	BIMINI 13	Sampling Condition:	Cool & Intact
Project Number:	STATE #4	Sample Received By:	Tamara Oldaker
Project Location:	VANGUARD		

Sample ID: SP 4 @ (8") (H701734-07)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/05/2017	ND	2.14	107	2.00	2.31	
Toluene*	<0.050	0.050	07/05/2017	ND	2.02	101	2.00	4.13	
Ethylbenzene*	<0.050	0.050	07/05/2017	ND	2.07	104	2.00	2.34	
Total Xylenes*	<0.150	0.150	07/05/2017	ND	6.12	102	6.00	1.37	
Total BTEX	<0.300	0.300	07/05/2017	ND					
Surrogate: 4-Bromofluorobenzene (PID	101 9	% 72-148							
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	07/05/2017	ND	448	112	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/05/2017	ND	180	90.2	200	2.74	
DRO >C10-C28	<10.0	10.0	07/05/2017	ND	198	99.0	200	1.48	
Surrogate: 1-Chlorooctane	82.2	28.3-16	4						
Surrogate: 1-Chlorooctadecane	75.6	% 34.7-15	7						

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Received:	07/03/2017	Sampling Date:	06/29/2017
Reported:	07/10/2017	Sampling Type:	Soil
Project Name:	BIMINI 13	Sampling Condition:	Cool & Intact
Project Number:	STATE #4	Sample Received By:	Tamara Oldaker
Project Location:	VANGUARD		

Sample ID: SP 5 @ (8") (H701734-08)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/05/2017	ND	2.14	107	2.00	2.31	
Toluene*	<0.050	0.050	07/05/2017	ND	2.02	101	2.00	4.13	
Ethylbenzene*	<0.050	0.050	07/05/2017	ND	2.07	104	2.00	2.34	
Total Xylenes*	<0.150	0.150	07/05/2017	ND	6.12	102	6.00	1.37	
Total BTEX	<0.300	0.300	07/05/2017	ND					
Surrogate: 4-Bromofluorobenzene (PID	101 9	% 72-148	2						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	07/05/2017	ND	448	112	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/05/2017	ND	180	90.2	200	2.74	
DRO >C10-C28	<10.0	10.0	07/05/2017	ND	198	99.0	200	1.48	
Surrogate: 1-Chlorooctane	67.4	28.3-16	4						
Surrogate: 1-Chlorooctadecane	61.7	34.7-15	7						

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Received:	07/03/2017	Sampling Date:	06/29/2017
Reported:	07/10/2017	Sampling Type:	Soil
Project Name:	BIMINI 13	Sampling Condition:	Cool & Intact
Project Number:	STATE #4	Sample Received By:	Tamara Oldaker
Project Location:	VANGUARD		

Sample ID: SP 6 @ (8") (H701734-09)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/05/2017	ND	2.14	107	2.00	2.31	
Toluene*	<0.050	0.050	07/05/2017	ND	2.02	101	2.00	4.13	
Ethylbenzene*	<0.050	0.050	07/05/2017	ND	2.07	104	2.00	2.34	
Total Xylenes*	<0.150	0.150	07/05/2017	ND	6.12	102	6.00	1.37	
Total BTEX	<0.300	0.300	07/05/2017	ND					
Surrogate: 4-Bromofluorobenzene (PID	99. 8 9	% 72-148	2						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	176	16.0	07/05/2017	ND	448	112	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/05/2017	ND	180	90.2	200	2.74	
DRO >C10-C28	<10.0	10.0	07/05/2017	ND	198	99.0	200	1.48	
Surrogate: 1-Chlorooctane	82.9 9	28.3-16	4						
Surrogate: 1-Chlorooctadecane	79.4 9	% 34.7-15	7						

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Celey D. Keene, Lab Director/Quality Manager



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Received:	07/03/2017	Sampling Date:	06/29/2017
Reported:	07/10/2017	Sampling Type:	Soil
Project Name:	BIMINI 13	Sampling Condition:	Cool & Intact
Project Number:	STATE #4	Sample Received By:	Tamara Oldaker
Project Location:	VANGUARD		

Sample ID: SP 7@ (8") (H701734-10)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/06/2017	ND	2.06	103	2.00	0.235	
Toluene*	<0.050	0.050	07/06/2017	ND	1.93	96.3	2.00	0.000365	
Ethylbenzene*	<0.050	0.050	07/06/2017	ND	2.00	99.9	2.00	0.339	
Total Xylenes*	<0.150	0.150	07/06/2017	ND	5.99	99.8	6.00	0.507	
Total BTEX	<0.300	0.300	07/06/2017	ND					
Surrogate: 4-Bromofluorobenzene (PID	101 9	% 72-148							
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	07/05/2017	ND	448	112	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/05/2017	ND	180	90.2	200	2.74	
DRO >C10-C28	<10.0	10.0	07/05/2017	ND	198	99.0	200	1.48	
Surrogate: 1-Chlorooctane	109 9	28.3-16	4						
Surrogate: 1-Chlorooctadecane	106 9	34.7-15	7						

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Celey D. Keene, Lab Director/Quality Manager



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Received:	07/03/2017	Sampling Date:	06/29/2017
Reported:	07/10/2017	Sampling Type:	Soil
Project Name:	BIMINI 13	Sampling Condition:	Cool & Intact
Project Number:	STATE #4	Sample Received By:	Tamara Oldaker
Project Location:	VANGUARD		

Sample ID: SP 8 @ (8") (H701734-11)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/06/2017	ND	2.06	103	2.00	0.235	
Toluene*	<0.050	0.050	07/06/2017	ND	1.93	96.3	2.00	0.000365	
Ethylbenzene*	<0.050	0.050	07/06/2017	ND	2.00	99.9	2.00	0.339	
Total Xylenes*	<0.150	0.150	07/06/2017	ND	5.99	99.8	6.00	0.507	
Total BTEX	<0.300	0.300	07/06/2017	ND					
Surrogate: 4-Bromofluorobenzene (PID	100 %	6 72-148	2						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	07/05/2017	ND	448	112	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	07/05/2017	ND	180	90.2	200	2.74	
DRO >C10-C28	<10.0	10.0	07/05/2017	ND	198	99.0	200	1.48	
Surrogate: 1-Chlorooctane	93.8 9	28.3-16	4						
Surrogate: 1-Chlorooctadecane	89.8 9	34.7-15	7						

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Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

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Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager

P.O. Box 1558, Eunice, NM 88231 P.O. Box 1558, Eunice, NM 88231 New Mexico 88231 I.D. ID. ID. III To Crockett III.D. III To Crockett III.D. III To G G G G G G G G G G G G G G G G G G G	S, Inc. P.O. Box 1558, Eunice, NM 88231 Inmental Plus, Inc. Bill To Dominguez New Mexico 88231 1:3 State #4 Instate #4 Ind Instate #4 Ind Instate #4 Instate #4	S, Inc. P.O. Box 1558, Eunice, NM 88231 Dominguez New Mexico 88231 13 State #4 13 State #4 14 State #4 13 State #4 14 State #4 13 State #4 14 State #4 14 State #4 14 State #4 15 State #4 15 State #4 14 State #4 15 State #4 15 State #4 13 State #4 13 State #4 13 State #4 13 State #4 13 State #4 14 State #4 13 State #4 13 State #4 13 State #4 14 State #4 13 State #4 14 State #4 15 State #4 14 State #4 15 State #4 14 State #4 15 State #4 16 State #4 17 State #4 18 State #4	S, Inc. P.O. Box 1558, Eunice, NM 88231 P.O. Box 1558, Eunice, NM 88231 I.J. 1358 New Mexico 88231 I.J. 1358 I.J. 1358	Inc. P.O. Box 1558, Eunice, NM 88231 International plus, Inc. Bill To Annotational plus, Inc. Bill To Annotational plus, Inc. Bill To Annotational plus, Inc. Bill To Annotational plus, Inc. P.O. Box 1558, Eunice, NM 88231 Ind Bill To Annotational plus, Inc. Annotational plus, Inc. Annotational plus, Inc. Ind Bill To Annotational plus, Inc. Ind Annotational plus, Inc. Annotational plus, Inc. Ind Annotational plus, Inc. Annotational plus, Inc. Annotational plus, Inc. Inc. NI Bill To Annotational plus, Inc. Annotational plus, Inc. Inc. Annotational plus, Inc. Annotational plus, Inc. Annotational plus, Inc. Inc. Annotational plus, Inc. <th co<="" th=""><th>Sampler Relinquished:</th><th>10 SP7 (8")</th><th></th><th>2 205</th><th></th><th>6 SD3</th><th>4 374</th><th>3 212</th><th></th><th></th><th>H IVI IVI IVI</th><th>LAB I.D.</th><th>EPI Sampler Name</th><th>Project Reference</th><th>Location</th><th>Facility Name</th><th>Client Company</th><th>EPI Phone#/Fax#</th><th>City, State, Zip</th><th>Mailing Address</th><th>EPI Project Manager</th><th>Company Name</th><th>(575) 394-3481 FAX:</th><th>2100 Avenue O, Eunice, NM 88231</th><th>Fnvironmental</th></th>	<th>Sampler Relinquished:</th> <th>10 SP7 (8")</th> <th></th> <th>2 205</th> <th></th> <th>6 SD3</th> <th>4 374</th> <th>3 212</th> <th></th> <th></th> <th>H IVI IVI IVI</th> <th>LAB I.D.</th> <th>EPI Sampler Name</th> <th>Project Reference</th> <th>Location</th> <th>Facility Name</th> <th>Client Company</th> <th>EPI Phone#/Fax#</th> <th>City, State, Zip</th> <th>Mailing Address</th> <th>EPI Project Manager</th> <th>Company Name</th> <th>(575) 394-3481 FAX:</th> <th>2100 Avenue O, Eunice, NM 88231</th> <th>Fnvironmental</th>	Sampler Relinquished:	10 SP7 (8")		2 205		6 SD3	4 374	3 212			H IVI IVI IVI	LAB I.D.	EPI Sampler Name	Project Reference	Location	Facility Name	Client Company	EPI Phone#/Fax#	City, State, Zip	Mailing Address	EPI Project Manager	Company Name	(575) 394-3481 FAX:	2100 Avenue O, Eunice, NM 88231	Fnvironmental
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October 11, 2017

Daniel Dominguez Environmental Plus, Inc.

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P.O. Box 1558

Eunice, NM 88231

RE: BIMINI 13 STATE #4

Enclosed are the results of analyses for samples received by the laboratory on 09/25/17 15:25.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-17-9. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Total Haloacetic Acids (HAA-5
Method EPA 524.2	Total Trihalomethanes (TTHM
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keine

Celey D. Keene Lab Director/Quality Manager



Environmental Plus, Inc. P.O. Box 1558 Eunice NM, 88231		oject Number: oject Manager:	BIMINI 13 STATE #4 VANGUARD Daniel Dominguez (505) 394-2601	Reported: 11-Oct-17 15:56
Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SP 2 @ (4')	H702606-01	Soil	22-Sep-17 15:45	25-Sep-17 15:25

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager



Environmental Plus, Inc. P.O. Box 1558 Eunice NM, 88231			Project Nun Project Mana	nber: VAN	iel Doming	juez		1	Reported: 11-Oct-17 15:{	56
				P 2 @ (4') 606-01 (So	il)					
Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardina	al Laborat	ories					
Volatile Organic Compounds by 1	EPA Method	8021								
Benzene*	< 0.050		0.050	mg/kg	50	7092803	MS	28-Sep-17	8021B	
Toluene*	< 0.050		0.050	mg/kg	50	7092803	MS	28-Sep-17	8021B	
Ethylbenzene*	< 0.050		0.050	mg/kg	50	7092803	MS	28-Sep-17	8021B	
Total Xylenes*	< 0.150		0.150	mg/kg	50	7092803	MS	28-Sep-17	8021B	
Total BTEX	< 0.300		0.300	mg/kg	50	7092803	MS	28-Sep-17	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			103 %	72-1	48	7092803	MS	28-Sep-17	8021B	
Petroleum Hydrocarbons by GC	FID									
GRO C6-C10	<10.0		10.0	mg/kg	1	7092701	MS	27-Sep-17	8015B	
DRO >C10-C28	<10.0		10.0	mg/kg	1	7092701	MS	27-Sep-17	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	7092701	MS	27-Sep-17	8015B	
Surrogate: 1-Chlorooctane			70.5 %	28.3-	164	7092701	MS	27-Sep-17	8015B	
Surrogate: 1-Chlorooctadecane			71.2 %	34.7-	157	7092701	MS	27-Sep-17	8015B	
			Green Anal	ytical Labo	oratories					
Soluble (DI Water Extraction)										
Chloride	20.2		10.0	mg/kg wet	10	B710045	JDA	06-Oct-17	EPA300.0	

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Celey D. Keene, Lab Director/Quality Manager



Project: BIMINI 13 STATE #4 Project Number: VANGUARD Project Manager: Daniel Dominguez Fax To: (505) 394-2601	Reported: 11-Oct-17 15:56
Fax To: (505) 394-2601	
	Project Number: VANGUARD

Volatile Organic Compounds by EPA Method 8021 - Quality Control

Cardinal Laboratories

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 7092803 - Volatiles										
Blank (7092803-BLK1)				Prepared &	Analyzed:	28-Sep-17	1			
Benzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Total Xylenes	ND	0.150	mg/kg							
Total BTEX	ND	0.300	mg/kg							
Surrogate: 4-Bromofluorobenzene (PID)	0.0517		mg/kg	0.0500		103	72-148			
LCS (7092803-BS1)				Prepared &	Analyzed:	28-Sep-17	,			
Benzene	1.78	0.050	mg/kg	2.00		88.9	79.5-124			
Toluene	1.61	0.050	mg/kg	2.00		80.7	75.5-127			
Ethylbenzene	1.63	0.050	mg/kg	2.00		81.3	77.7-125			
Total Xylenes	4.94	0.150	mg/kg	6.00		82.3	70.9-124			
Surrogate: 4-Bromofluorobenzene (PID)	0.0505		mg/kg	0.0500		101	72-148			
LCS Dup (7092803-BSD1)				Prepared &	Analyzed:	28-Sep-17	7			
Benzene	1.75	0.050	mg/kg	2.00		87.4	79.5-124	1.68	6.5	
Toluene	1.58	0.050	mg/kg	2.00		79.0	75.5-127	2.06	7.02	
Ethylbenzene	1.62	0.050	mg/kg	2.00		80.8	77.7-125	0.562	7.83	
Total Xylenes	4.92	0.150	mg/kg	6.00		82.0	70.9-124	0.354	7.78	
Surrogate: 4-Bromofluorobenzene (PID)	0.0512		mg/kg	0.0500		102	72-148			

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Celey D. Keene, Lab Director/Quality Manager



Environmental Plus, Inc. P.O. Box 1558 Eunice NM, 88231	Project: BIMINI 13 STATE #4 Project Number: VANGUARD Project Manager: Daniel Dominguez Fax To: (505) 394-2601	Reported: 11-Oct-17 15:56
	Fax To: (505) 394-2601	

Petroleum Hydrocarbons by GC FID - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7092701 - General Prep - Organics										
Blank (7092701-BLK1)				Prepared &	Analyzed:	27-Sep-17				
GRO C6-C10	ND	10.0	mg/kg							
DRO >C10-C28	ND	10.0	mg/kg							
EXT DRO >C28-C35	ND	10.0	mg/kg							
EXT DRO >C28-C36	ND	10.0	mg/kg							
Total TPH C6-C28	ND	10.0	mg/kg							
Surrogate: 1-Chlorooctane	42.7		mg/kg	50.0		85.4	28.3-164			
Surrogate: 1-Chlorooctadecane	45.2		mg/kg	50.0		90.4	34.7-157			
LCS (7092701-BS1)				Prepared &	Analyzed:	27-Sep-17				
GRO C6-C10	224	10.0	mg/kg	200		112	76.6-119			
DRO >C10-C28	230	10.0	mg/kg	200		115	81.4-124			
Total TPH C6-C28	454	10.0	mg/kg	400		113	79.4-121			
Surrogate: 1-Chlorooctane	47.8		mg/kg	50.0		95.6	28.3-164			
Surrogate: 1-Chlorooctadecane	46.7		mg/kg	50.0		93.5	34.7-157			
LCS Dup (7092701-BSD1)				Prepared &	Analyzed:	27-Sep-17				
GRO C6-C10	220	10.0	mg/kg	200		110	76.6-119	1.88	7.94	
DRO >C10-C28	229	10.0	mg/kg	200		115	81.4-124	0.344	9.83	
Total TPH C6-C28	449	10.0	mg/kg	400		112	79.4-121	1.10	8.57	
Surrogate: 1-Chlorooctane	46.9		mg/kg	50.0		93.8	28.3-164			
Surrogate: 1-Chlorooctadecane	45.3		mg/kg	50.0		90.6	34.7-157			

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Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



Environmental Plus, Inc. P.O. Box 1558 Eunice NM, 88231	Project: BIMINI 13 STATE #4 Project Number: VANGUARD Project Manager: Daniel Dominguez Fax To: (505) 394-2601	Reported: 11-Oct-17 15:56
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Soluble (DI Water Extraction) - Quality Control

Green Analytical Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B710045 - General Prep - Wet Chem										
Blank (B710045-BLK1)				Prepared: (5-Oct-17 A	nalyzed: 00	6-Oct-17			
Chloride	ND	10.0	mg/kg wet							
LCS (B710045-BS1)				Prepared: (5-Oct-17 A	nalyzed: 0	6-Oct-17			
Chloride	243	10.0	mg/kg wet	250		97.1	85-115			
LCS Dup (B710045-BSD1)				Prepared: (5-Oct-17 A	nalyzed: 0	6-Oct-17			
Chloride	245	10.0	mg/kg wet	250		98.0	85-115	0.943	20	

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Notes and Definitions

- ND
 Analyte NOT DETECTED at or above the reporting limit

 RPD
 Relative Percent Difference

 **
 Samples not received at proper temperature of 6°C or below.

 Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C
 Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager

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ATTACHMENT IV Copy of Initial NMOCD Form C-141