# **CLOSURE REPORT**

# STATE C-20 BATTERY RELEASE SITE REF: 150006 COMPANY # 217817

UL-L (NW¼ OF THE NE¼) OF SECTION 20 T21S R36E ~8 MILES WEST-NORTHWEST OF EUNICE LEA COUNTY, NEW MEXICO

LATITUDE: N 32° 27' 45.1" LONGITUDE: W 103° 17' 27.0"

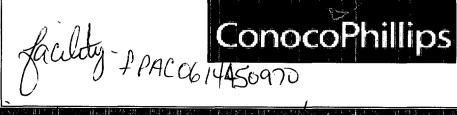
# **APRIL 2006**

**PREPARED BY:** 

ENVIRONMENTAL PLUS, INC. 2100 AVENUE O EUNICE, NEW MEXICO 88231



**PREPARED** FOR:



dent - n PACOG 1445/084 ication - pPACOG 1445/428

# LETTER OF TRANSMITTAL



Date:	May 15, 2006
To:	Larry Johnson
Company Name:	New Mexico Oil Conservation Division – Hobbs
Address:	1625 French Drive
City / State / Zip:	Hobbs, New Mexico 88240
From:	Jason Stegemoller
CC:	Thaddeus Kostrubala, NMSLO – Sante Fe, NM; Myra Meyers, NMSLO –
	NMSLO – Hobbs, NM; C. John Coy, ConocoPhillips – Hobbs, NM; John Abney,
	ConocoPhillips – Hobbs, NM; File
Project #:	150006
Project Name:	ConocoPhillips – State C-20 Tank Battery
Subject:	Closure Report

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	1	ConocoPhillips – State C-20 Tank Battery – Closure Report
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### Remarks

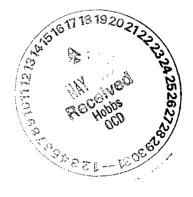
Dear Mr. Johnson:

Enclosed is the Closure Report for the ConocoPhillips – State C-20 Tank Battery. Should you have any questions or concerns, please feel free to contact Iain Olness or me at (505) 394-3481.

Sincerely,

Jaron Megumoh

Jason Stegemoller



P. O. Box 1558 Eunice, NM 88240 (505) 394-3481 Fax: (505) 394-2601 **Distribution List** 

ConocoPhillips

ConocoPhillips – State C-20 Tank Battery

(Ref.: 150006)

Name	Title	Company or Agency	Mailing Address	E-Mail
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Thaddeus Kostrubala	Environmental Engineer	New Mexico State Land Office- Sante Fe	P.O. Box 1148 Sante Fe, NM 87504-1148	tkostrubala@slo.state.nm.us
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File	-	Environmental Plus, Inc.	P.O. Box 1558 Eunice, NM 88231	iolness@envplus.net

: 1

### **STANDARD OF CARE**

### **Closure Report**

### ConocoPhillips-State C-20 Battery Ref. # 150006

The information provided in this report was collected consistent with the New Mexico Oil Conservation Division (NMOCD) *Guidelines for Remediation of Leaks, Spills and Releases* (August 13, 1993), the NMOCD *Unlined Surface Impoundment Closure Guidelines* (February 1993), and the Environmental Plus, Inc. (EPI) *Standard Operating Procedures and Quality Assurance/Quality Control Plan.* The conclusions are based on field observations and laboratory analytical reports as presented in the report. Recommendations follow NMOCD guidance and represent the professional opinions of EPI staff. These opinions were arrived at with currently accepted geologic, hydrogeologic and engineering practices at this time and location. The report was prepared or reviewed by a certified or registered EPI professional with a background in engineering, environmental and/or the natural sciences.

This report was prepared by:

avon Alegemolt

Jason Stegemoller, M.S. Environmental Scientist

15 May 2006

Date

This report was reviewed by:

Iain A. Olness, P.G. Technical Manager

15 May 2006

Date

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### **Project Synopsis**

### Site Specific:

- Company Name: ConocoPhillips
- Facility Name: State C-20 Battery Release Site
- Project Reference: 150006
- Company Contacts: John Abney
- Site Location: WGS84 N32° 27' 45.1"; W103° 17' 27.0"
- Legal Description: Unit Letter L, (NW¼ of the SW¼), Section 20, T21S, R36E
- General Location: ~ 8-miles West-Northwest of Eunice, New Mexico
- Elevation: 3,636-ft amsl Depth to Ground Water: ~200-ft
- Land Ownership: State of New Mexico (leased by DASCO Cattle Company)
- EPI Personnel: Project Consultant Iain Olness Site Foreman – Joe Gatts

### **Release Specific:**

- Product Released: Production Fluid
- ◆ Volume Released: ≈32-bbl reported Volume Recovered: ≈30-bbl
- Time of Occurrence: 27-September-2004 Time of Discovery: 27-September-2004
- **Release Source:** Air compressor lost power causing pneumatically operated water dump valve to open.
- ♦ Initial Surface Area Affected: 16,560-ft<sup>2</sup>

### Remediation Specific:

- Final Vertical extent of contamination: 5-ft bgs;
- Remaining depth to ground water: >100-ft
- Water wells within 1,000-ft: 0 Surface water bodies within 1,000-ft: 0
- NMOCD Site Ranking Index: 0 points (>100-ft to top of water table)
- Remedial goals for Soil: TPH 5,000 mg/kg; BTEX 50 mg/kg; Benzene 10 mg/kg
- RCRA Waste Classification: Exempt
- Remediation Option Selected: a) Excavation of contaminated soil above NMOCD remedial goals; b) laboratory analyses to confirm removal of soil impacted of NMOCD remedial thresholds; c) dispose of a portion of excavated soil, blend the remaining excavated soil with clean soil and backfill the excavation.
- Disposal Facility: J & L Land Farm Volume disposed: 140 cubic yards
- Project Completion Date: 13 December 2005

# 1.0 Summary

This report addresses the site investigation and remedial activities of the ConocoPhillips State C-20 Battery release site. On September 27, 2004, a release of approximately 32 barrels of production fluid occurred as a result of the loss of electrical power. ConocoPhillips recovered approximately 30 barrels, and utilized a backhoe to back drag the release area to soak up the remaining fluid. This site is located in Unit Letter L, (NW¼ of the SE¼), Section 20, T21S, R36E, N32° 27' 45.1" and W103° 17' 27.0"approximately 8 miles East-Northeast of Eunice, Lea County, New Mexico. The property is owned by the State of New Mexico and leased by DASCO Cattle Company (reference *Figures 1* and 2). Environmental Plus, Inc. (EPI) was retained by ConocoPhillips in October 2004 to delineate the site and remediate soil impacted above New Mexico Oil Conservation Division (NMOCD) remedial thresholds. EPI performed GPS surveying, photography and characterization of the site on October 29, 2004. The release impacted approximately 16,650 square feet (ft<sup>2</sup>) of visibly affected surface area (reference *Figure 3*).

To delineate the vertical extent of contamination, three soil borings were advanced on November 23, 2004 within the perimeter of the release area. During the advancement of the soil borings, samples were collected at five-foot intervals for field and laboratory analyses. Field analyses indicated organic vapor concentrations ranged from 0.0 to 61.4 parts per million (ppm). Analytical results indicated that soil impacted above NMOCD remedial guidelines was limited to five-feet below ground surface (bgs).

After the extents of contamination had been delineated, remediation activities commenced on April 29, 2004 and continued through May 23, 2005. Remediation of this site consisted of the excavation of approximately 1,200 cubic yards (yds<sup>3</sup>) of contaminated soil to a maximum depth of four-feet bgs.

On May 23, 2005, eight soil samples were collected from the excavation for field and laboratory analyses. Field analytical data indicated organic vapors ranged from 2.3 to 156 ppm. Analytical results indicated that soil hydrocarbon concentrations were below NMOCD remedial thresholds. On December 13, 2005, the site was backfilled with the blended soil and graded to allow natural drainage.

Approximately 140 yds<sup>3</sup> of impacted soil (i.e., soil exhibiting highest contaminant levels) was transported to J&L Land Farm for treatment. The remaining impacted soil was blended with approximately 210 yds<sup>3</sup> of clean soil purchased from the State of New Mexico and obtained from State Pit number 562. To confirm that the excavated, hydrocarbon impacted soil had been blended to below NMOCD remedial thresholds, soil samples were collected on May 25, 2005 and submitted for laboratory analyses (reference *Table 2*). Analytical results for these samples indicated all contaminant concentrations were less than the NMOCD remedial thresholds.

# 2.0 Site Description

### 2.1 Geological Description

<u>The United States Geological Survey (USGS) Ground-Water Report 6, "Geology and</u> <u>Ground-Water Conditions in Southern Lea County, New Mexico,"</u> A. Nicholson and A. Clebsch, 1961, describes the near surface geology of southern Lea County as "an intergrade of the Quaternary Alluvium (QA) sediments (i.e., fine to medium sand) with the mostly eroded Cenozoic Ogallala (CO) formation. Typically, the QA and CO formations in the area are capped by a thick interbed of caliche and generally overlain by sandy soil."

The release site is located in the Eunice Plain physiographic subdivision, described by Nicholson & Clebsch as an area "underlain by a hard caliche surface and is almost entirely covered by reddish-brown dune sand". The thickness of the sand cover ranges from 2-5 feet in most areas to as much as 20-30 feet in drift areas.

### 2.2 Ecological Description

The area is typical of the Upper Chihuahuan Desert Biome consisting primarily of hummocky sand hills covered with Harvard Shin Oak (*Querqus harvardi*) interspersed with Honey Mesquite (*Prosopis glandulosa*) along with semi-desert grasses, and flowering annual and perennial forbs. Mammals represented, include Orrd's and Merriam's Kangaroo Rats, Deer Mouse, White Throated Wood Rat, Cottontail Rabbit, Black Tailed Jackrabbit, Mule Deer, Bobcat, Red Fox and Coyote. Reptiles, amphibians, and birds are numerous and typical of area. A survey of *Listed*, *Threatened*, or *Endangered Species* was not conducted.

### 2.3 Area Groundwater

The unconfined groundwater aquifer at this site is projected to be approximately 200-ft bgs based on limited water depth data obtained from the New Mexico State Engineers Office data base. Groundwater gradient in this area is generally to the east-southeast.

### 2.4 Area Water Wells

All recorded wells are greater than 1,000 horizontal feet from the site (reference *Figure* 2).

### 2.5 Area Surface Water Features

No surface water bodies exist within a 1,000 foot radius of the site (reference Figure 2).

# 3.0 NMOCD Site Ranking

Contaminant delineation and remedial work done at this site indicate the chemical parameters of the soil and the physical parameters of the groundwater were characterized consistent with the characterization and remediation/abatement goals and objectives set forth in the following New Mexico Oil Conservation Division (NMOCD) publications:

- Guidelines for Remediation of Leaks, Spills and Releases (August 13, 1993)
- Unlined Surface Impoundment Closure Guidelines (February 1993)

Acceptable thresholds for contaminants/constituents of concern, i.e., total petroleum hydrocarbons, benzene, and the mass sum of benzene, toluene, ethylbenzene, and total xylenes, were determined based on the NMOCD Ranking Criteria as follows:

- Depth to Groundwater (i.e., distance from the lower most acceptable concentration to the groundwater);
- Wellhead Protection Area (i.e., distance from fresh water supply wells); and
- Distance to Surface Water Body (i.e., horizontal distance to all down gradient surface water bodies).

Based on the proximity of the site to protectable area water wells, surface water bodies, and depth to groundwater from the lower most contamination, the NMOCD ranking score for the site is zero points with the soil remedial goals highlighted in the Site Ranking table presented below:

1. Groundwa	ter	2. Wellhead Protection Area	3. Distance to Surface Water
Depth to GV points	V <50 feet: 20	If <1,000' from water source, or; <200' from private domestic water	<200 horizontal feet: 20 points
Depth to GV 10 points	V 50 to 99 feet:	source: 20 points	200-1,000 horizontal feet: 10 points
Depth to GV 0 points	V >100 feet:	If >1,000' from water source, or; >200' from private domestic water source: <i>0 points</i>	>1,000 horizontal feet: <i>0 points</i>
		Site Rank (1+2+3) = 0 + 0 + 0 = 0 p	oints
	Total Site Ran	king Score and Acceptable Remedial	Goal Concentrations
Parameter	20 or >	10	0
Benzene <sup>1</sup>	10 ppm	10 ppm	10 ppm
BTEX'	50 ppm	50 ppm	50 ppm
ТРН	100 ppm	1,000 ppm	5,000 ppm

A field soil vapor headspace measurement of 100 ppm may be substituted for a laboratory analysis of the benzene and BTEX concentration limits.

### 4.0 Remedial Investigation and Cleanup

The vertical extent of hydrocarbon contamination at the site was determined with the advancement of three soil borings on November 23, 2004 within the perimeter of the release area. Soil borings were advanced to a maximum depth of ten-feet bgs with samples collected at five-foot intervals. A portion of each sample was analyzed in the field utilizing an UltraRae PID equipped with a 9.8 eV lamp. Field analyses indicated soil organic vapor concentrations ranged from 0.0 to 61.4 ppm. The remaining portion of each sample was submitted for laboratory quantification of TPH and BTEX concentrations. Lateral extents of hydrocarbon impacts were determined visually as the excavation progressed, with confirmatory samples collected upon the completion of excavation activities.

Analytical results indicated that TPH concentrations in the soil from the surface of soil boring SB-1 were 13,400 mg/Kg, in excess of NMOCD remedial thresholds. Benzene concentrations were not detected at or above laboratory method detection limits (MDLs), and BTEX concentrations were 0.116 mg/Kg, both were below NMOCD remedial thresholds. Analytical results of soil samples obtained from five and ten-feet bgs indicated benzene and BTEX constituents were not detected at or above laboratory MDL. TPH at five-feet bgs was detected; however, concentrations could only be estimated at 9.35 mg/Kg. TPH concentrations at ten-feet bgs were not detected at or above laboratory MDLs. All hydrocarbon concentrations from SB-1 at five and ten-feet bgs were below NMOCD remedial thresholds (reference *Table 1*).

Analytical results from samples obtained from soil boring SB-2 indicated TPH concentrations at the surface were 20,500 mg/Kg, in excess of NMOCD remedial threshold. Benzene concentrations were reported to be 0.0319 mg/Kg, and BTEX constituent concentrations were 2.765 mg/Kg, both below NMOCD remedial goals. Analyses of soil samples collected from five and ten-feet bgs indicated benzene and BTEX constituents were not detected at or above

laboratory MDLs. TPH concentrations from five and ten-feet bgs were 1,520 and 16.4 mg/Kg, respectively. All analytes from soil samples obtained at five and ten-feet bgs intervals were below NMOCD remedial thresholds (reference *Table 1*).

Laboratory analyses of soil samples collected from soil boring SB-3 indicated TPH concentrations at the surface were 29,500 mg/Kg, in excess of NMOCD remedial goals. Benzene and BTEX concentrations were reported to be 0.0319 and 2.765 mg/Kg, respectively. Analyses of soil samples collected from five and ten-feet bgs indicated benzene and BTEX constituent concentrations were not detected at or above laboratory MDL. Analytical results indicated TPH concentrations at five-foot bgs were not detected at or above laboratory MDL and at ten-feet bgs were detected; however, could only be estimated at 9.19 mg/Kg. All analytes from soil samples obtained at five and ten-feet bgs intervals were below NMOCD remedial thresholds (reference *Table 1*).

Field and laboratory analytical results of samples collected from SB-1, SB-2 and SB-3 indicated soil impacted above NMOCD remedial thresholds was limited to approximately five-ft bgs. Based on analytical data soil impacted above NMOCD remedial thresholds was excavated

After excavation of soil to previously delineated extents, confirmatory composite soil samples were collected from the excavation on May 23, 2005 and analyzed in the field to verify remedial limits had been achieved. Organic vapor concentrations ranged from 2.3 to 156 ppm with an average concentration of 46 ppm (reference *Table 2*). In addition, samples were submitted to an independent laboratory for quantification of TPH, BTEX constituents, and chloride concentrations. Analytical results indicated excavation hydrocarbon concentrations for all analytes were below the NMOCD remedial thresholds for all samples. Chloride concentrations ranged from 48 to 160 mg/Kg, with an average of 110 mg/Kg (reference *Table 2*).

Remedial activities at the site consisted of the excavation of approximately 1,200 yd<sup>3</sup> of impacted soil from the site. Approximately 140 yd<sup>3</sup> of impacted soil (i.e., soil exhibiting highest contamination levels) was transported to J&L Land Farm for treatment. The remaining impacted soil, approximately 1,060 yd<sup>3</sup> was blended with clean soil purchased from the State of New Mexico to below NMOCD remedial thresholds.

Soil samples were collected from the blended soil on May 25, 2005 and submitted for laboratory analyses for quantification of hydrocarbon and chloride concentrations in the impacted soil had been blended to below NMOCD remedial goals. Laboratory analytical results indicated TPH, benzene and BTEX constituent concentrations were not detected at or above laboratory MDL. Reported chloride concentrations ranged from 80 to 96 mg/Kg. Hydrocarbon concentrations for all hydrocarbon analytes from the blended soil were below NMOCD remedial thresholds (reference *Table 2*).

On December 13, 2005, the excavation was backfilled with the blended soil and graded to allow natural drainage.

## 5.0 Groundwater Investigation

The projected depth to groundwater at this site is approximately 200-ft bgs. Excavation of the site was to a maximum depth of four feet, with the remaining depth to ground water >100-ft. Final field analyses for soil samples collected from the base of the excavation indicated organic vapor concentrations of <300 ppm (reference *Table 2*). In addition, final analytical results for samples collected from the excavation on May 23, 2005 indicated all hydrocarbon concentrations were below NMOCD remedial thresholds. Final chloride concentrations remaining in the excavation were reported to range from 48 to 160 mg/Kg, with an average of 110 mg/Kg. Soil

samples were collected from the blended soil on May 25, 2005 indicated TPH and BTEX constituent concentrations were not detected at or above laboratory MDL and chloride concentrations ranged from 80 to 96 mg/Kg (reference *Table 2*).

Based on depth to groundwater and field and laboratory analytical data, it is believed groundwater was not impacted, nor will it be impacted due to the release. Therefore, no further groundwater investigation is necessary.

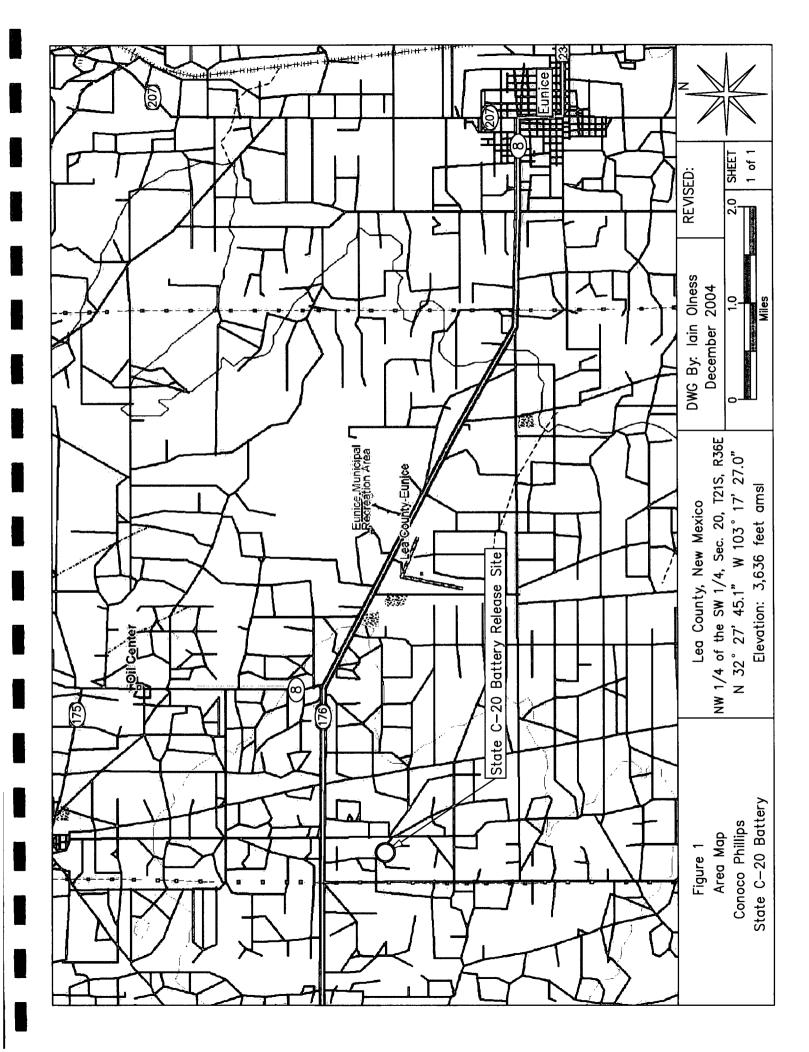
# 6.0 Closure Justification

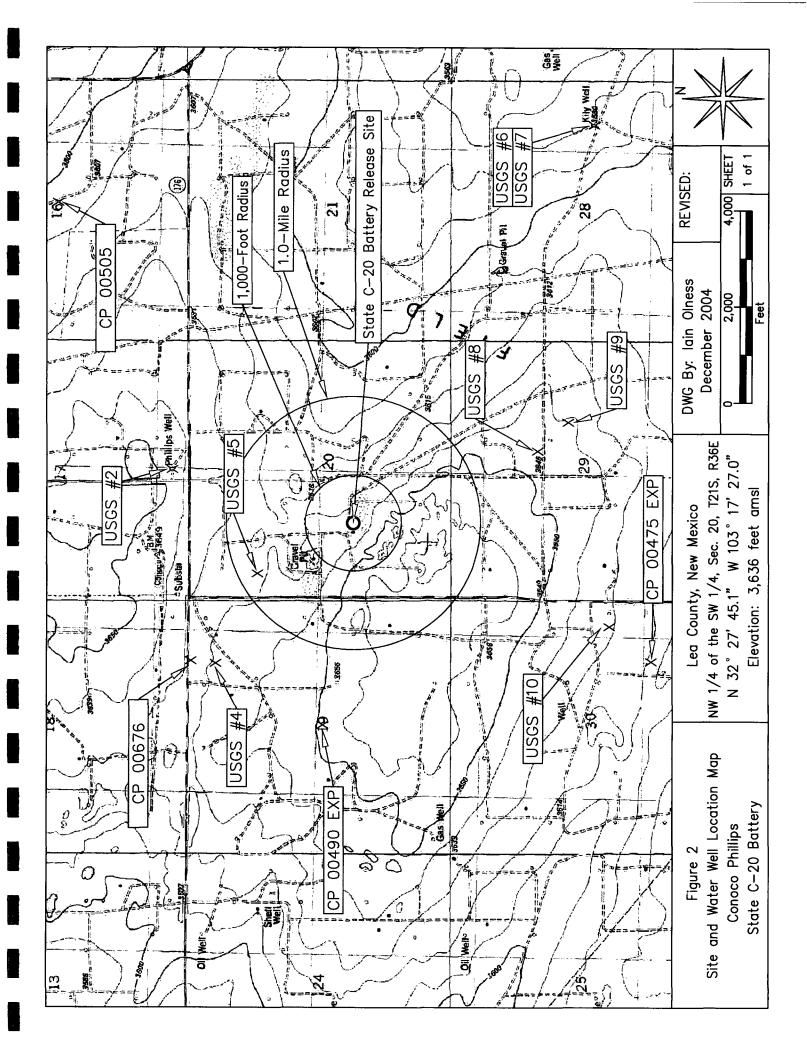
This report documents successful treatment of impacted soil above the remedial thresholds discussed in Section 3 above and confirmed via laboratory analyses for this release site. The impacted soil was excavated with a portion transported to J & L Landfarm for treatment; the remaining impacted soil was blended with clean soil to achieve NMOCD remedial goals. The site was backfilled with blended soil and graded to allow natural drainage. The final closure activity at the site is to seed the remediation area with a seed blend approved by the New Mexico State Land Office.

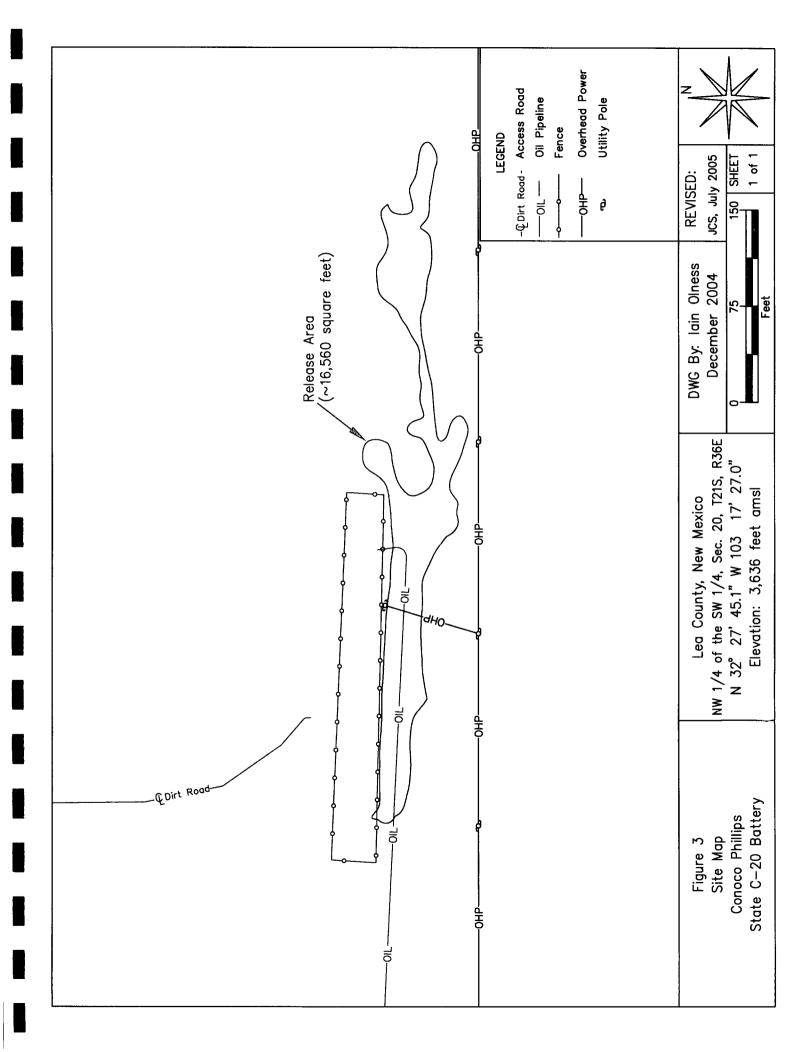
Environmental Plus, Inc., on behalf of ConocoPhillips, request the NMOCD require no further action at the site and issue a *Site Closure Letter*.

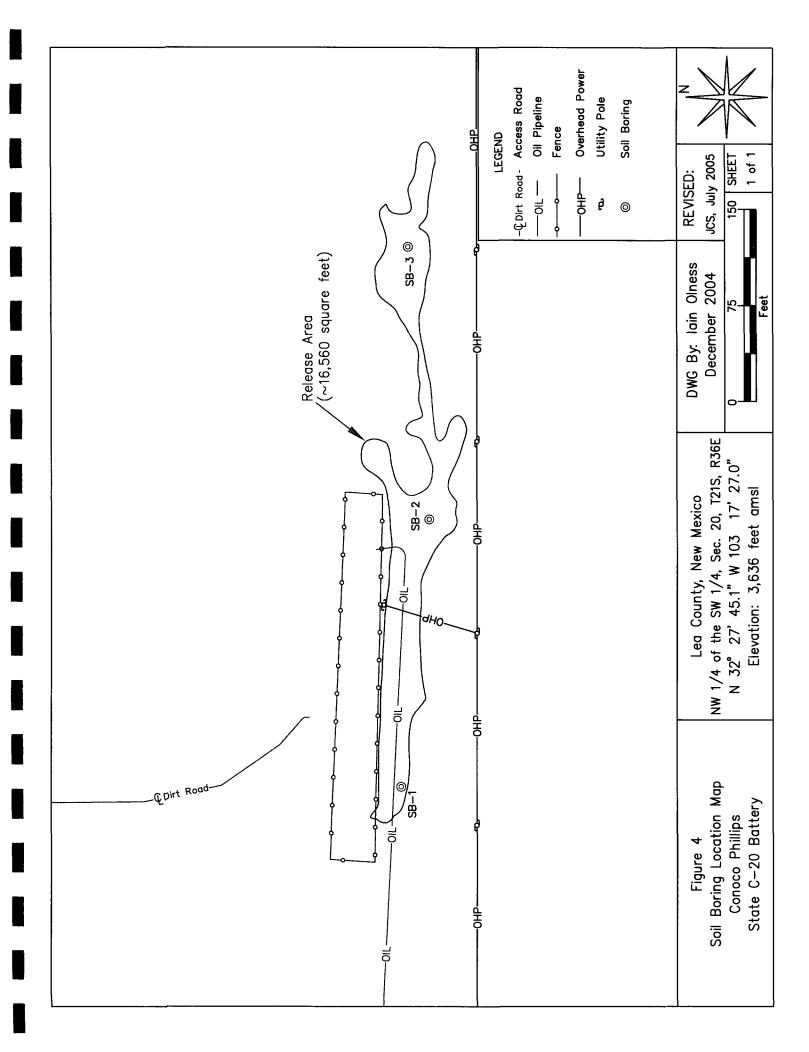
**FIGURES** 

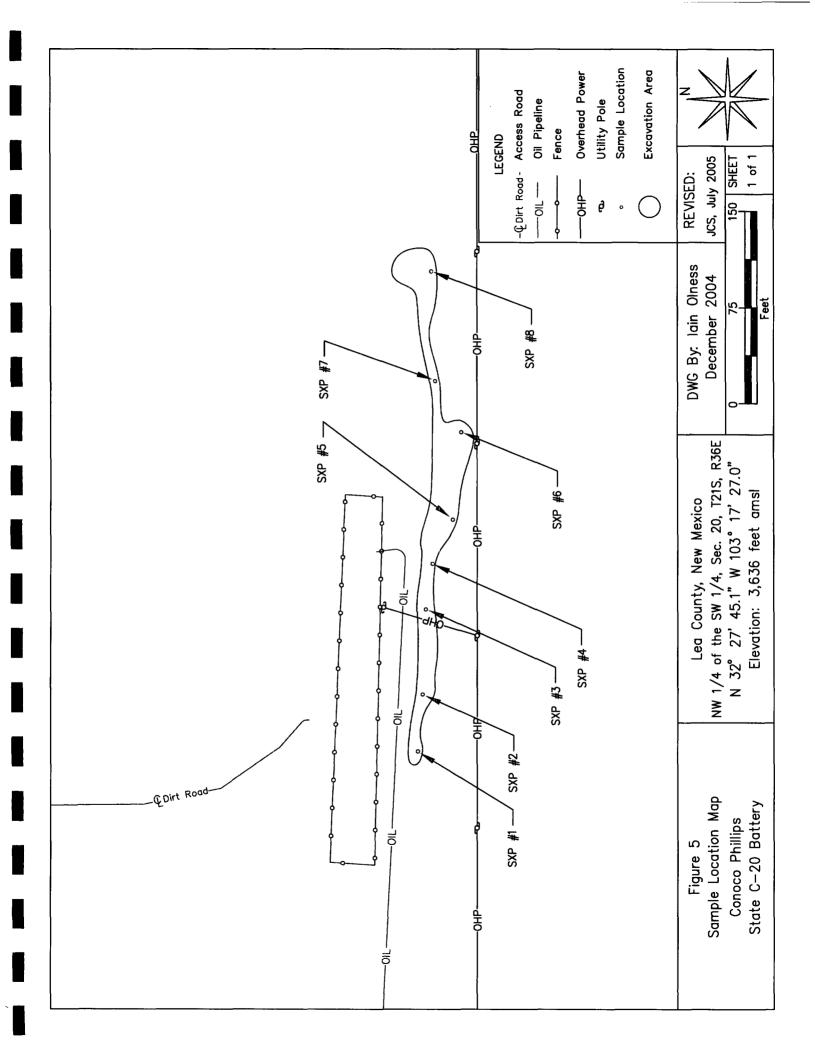
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**TABLES** 

**TABLE 1** 

# **Summary of Soil Boring Analytical Results**

# Conoco Phillips State C-20 Battery (Ref. #150006)

Soil Boring	Depth	Samula Data	PID Reading	Benzene	Toluene	Ethylbenzene	m,p-Xylenes	o-Xylene	Total BTEX	HdT	H4T H4T	Total TPH
Guitor	(feet)		(wdd)	(µg/Кg)	(µg/Kg)	(μg/Kg)	(µg/Kg)	(µg/Kg)	(gX/gu)	(as gasume) (mg/Kg)	(as uesei) (mg/Kg)	(mg/Kg)
	Surface	23-Nov-04	18	<25	<25	19.1 4	70.1	26.4	96.5	322	13,100	13,400
SB-1	5	23-Nov-04	2.2	<25	<25	<25	<25	<25	<125	<10	9.35 4	00'0
	10	23-Nov-04	0.0	<25	<25	<25	<25	<25	<125	<10	<10	<10
	Surface	23-Nov-04	21.3	31.9	336	486	1,490	421	2,770	948	19,500	20,500
SB-2	5	23-Nov-04	11.3	<25	<25	<25	<25	<25	<125	58.5	1,460	1,520
	10	23-Nov-04	0.3	<25	<25	<25	<25	<25	<125	<10	16.4	16.4
	Surface	23-Nov-04	61.4	<25	76.2	171	589	218	1,060	2,830	26,700	29,500
SB-3	5	23-Nov-04	5.0	<25	<25	<25	<25	<25	<125	<10	<10	<10
	10	23-Nov-04	0.0	<25	<25	<25	<25	<25	<125	<10	$9.19^{4}$	61.6
NMOC	NMOCD Remedial Thresholds	loids	$100^{3}$	10,000					50,000			5,000

<sup>1</sup> Bolded values are in excess of the NMOCD Remediation Thresholds <sup>2</sup> NA : Not Analyzed <sup>3</sup> In lieu of laboratory analyse of benzene, toluene, ethylbenzene and total xylenes. <sup>4</sup> Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).

TABLE 2

# **Summary of Excavation Analytical Results**

# Conoco Phillips State C-20 Battery (Ref. #150006)

Soil Sample I.D.	Depth	Sample Date	Soil Status	PID Reading	Benzene	Toluene	Ethylbenzene	Ethylbenzene Total Xylenes	Total BTEX	HdT Hore 230	TPH (as diesel)	Total TPH	Chloride
	(1111)			(udd)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
SXP#1	2	23-May-05	In Situ	2.3	<0.002	<0.002	<0.002	<0.006	<0.0012	<10	<10	<10	160
SXP#2	2	23-May-05	In Situ	16.4	<0.002	<0.002	<0.002	<0.006	<0.0012	<10	<10	<10	144
SXP#3	2	23-May-05	In Situ	4.2	<0.002	<0.002	<0.002	<0.006	<0.0012	<10	<10	<10	112
SXP #4	2	23-May-05	In Situ	21.1	<0.002	<0.002	<0.002	<0.006	<0.0012	<10	<10	<10	64
SXP #5	2	23-May-05	In Situ	88.4	0.011	0.003	<0.002	0.006	0.020	<10	176	176	80
SXP#6	2	23-May-05	In Situ	156	<0.002	<0.002	<0.002	<0.006	<0.0012	<10	<10	202	160
SXP #7	4	23-May-05	In Situ	25.6	<0.002	<0.002	<0.002	<0.006	<0.0012	<10	<10	518	48
SXP#8	2	23-May-05	In Situ	56.7	<0.002	<0.002	<0.002	<0.006	<0.0012	<10	<10	<10	112
CPSC20BSSPC	Comp	25-May-05	Blended Soil	NA	<0.002	<0.002	<0.002	<0.006	<0.0012	<10	<10	<10	80
CPSC20BNSPC	Comp	25-May-05	Blended Soil	AN	<0.002	<0.002	<0.002	<0.006	<0.0012	<10	<10	<10	80
CPSC20BNSP-1-4	Comp	25-May-05	Blended Soil	NA	<0.002	<0.002	<0.002	<0.006	<0.0012	<10	<10	<10	96
<b>NMOCD Remedial Thresholds</b>	nedial Thru	esholds		100	10				50			5,000	250 <sup>A</sup>

Bolded values are in excess of the NMOCD Remediation Thresholds

<sup>A</sup> Chloride residuals may not be capable of impacting groundwater above NMWQCC groundwater standards of 250 ppm. Comp= Composite Sample

**TABLE 3** 

# <u>Well Data</u>

# Conoco Phillips State C-20 Battery (Ref. #150006)

Well Number	Diversion <sup>A</sup>	Owner	Use	Source	Twsp	Rng	Sec q q q	Latitude	Longitude	Date Measured	Surface Elevation <sup>B</sup>	Depth to Water (ft bgs)
USGS #1					21 S	36 E	16 2 2 4			31-Jan-91	3,590	174.98
A CP 00505	<b>北京北京</b> 和普	Snyder Ranches, Ltd.	STK		21 S	36 B*	36 B 116 2	N 32° 28' 43 53 1	N132°28'43.53" W-103°16'11'43" (*10-Jul-72)		3,605	561
05GS#2	17 5 - 15 . 3. 4. 4		1. N. 1. 1. 1.		+21Si	36 E -	+ 21 S		24-1- d	- 4 07-Mar 96 2 9.645	3,645	= 242,65
USGS #3					21 S	36 E	18 241			07-Feb-96	3,645	233.83
	1	Let Color E. Sims	- MOC -		21 S	36 E	36 E - 18 441	N 32º 28º 17.46	N 32º 28º 17.46º W 103º 17 59.37	-30-Apr-93-	- 3,625-	106
USGS #4	A Contraction of the second	1. Construction of the second state of the		a and the Color of the A	- S 12	36E	1912212	and the second se	و المربعة المحمد ال المحمد المحمد	18-Mar-86   3,635	3,635	5.217.34 M
CP 00490 EXP	2 - 0	1/2 U.R. Cattle Company	STK		21 S	36 E	19-23	N 32° 27' 51 41"	36 E 119 233 (7 N 32 27 51 4 F W 103 18 14 75 2		. 3,655	
···· USGS #5					21 S	∑36.E	036.E (20.11.377)			(07.Jan-54 1. 3/628	1 31628	- 215.96
USCS #6			ومعطور ومراجع المراجع		21S	36 E	36 E 28 42 F			15-Eeb-96 5 3580	-	186.14
OSGS #7					128	36 E	36 E   28 4 2 1	بدارده ومنهما بدوستها مندع استار معادلات من منه ال	ar ta na serie a serie series. Ar train on a chaire a train	15-Jan-54 5580	3.580	174,49
USGS #8	北京な法律	South Strate Second Strates Second			5 12 S	136年年	36E + 29 23 I -	法教育中心的主要的		06-Apr-91 3,645	3,645	246.87
TRUE #6			the second second	الم المراجع ال مراجع المراجع ال		36 E	36 E 29 2 3 4		an a	08-Sep-70	1000	240.89
14-102GS:#10-11	Real Property of the second		The second second	and the second se	21 S -	<u>-36€ - </u> ];	21 S 36 E 30 4 2 2 4			[~13:Feb:96.  3.642	-3,642	230.69
CP.00475 EXP	0	Róss Robinson	STK		- 21'S'	- 36E -	30_4.2.2	N 32° 26' 46.01 *	N 32° 26' 46:01"   W 103° 17' 59.18" -		3,615	

\* = Data obtained from the New Mexico Office of the State Engineer Website (http://iwaters.ose.state.nm.us:7001/iWATERS/wr\_RegisServlet1) Shaded well information indicates well location shown on Figure 2

 $^{A}$  = in acre feet per annum

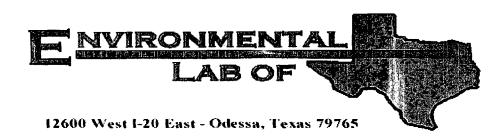
 $^{B}$  = Elevation interpolated from USGS topographical map based on referenced location.

DOM = Domestic STK = Livestock Watering

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

# **APPENDIX** I

# LABORATORY ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY FORMS



# Analytical Report

### **Prepared for:**

Iain Olness Environmental Plus, Incorporated P.O. Box 1558 Eunice, NM 88231

Project: Conoco Phillips / State C-20 Battery Project Number: 2002-10273 Location: None Given

Lab Order Number: 4K24008

Report Date: 12/06/04

Environmental Plus, Incorporated	Project:	Conoco Phillips / State C-20 Battery	Fax: 505-394-2601
P.O. Box 1558	Project Number:	2002-10273	Reported:
Eunice NM, 88231	Project Manager:	Iain Olness	12/06/04 10:47

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH-1 (surface)	4K24008-01	Soil	11/23/04 09:21	11/24/04 13:15
BH-1 (5')	4K24008-02	Soil	11/23/04 09:54	11/24/04 13:15
BH-1 (10')	4K24008-03	Soil	11/23/04 10:46	11/24/04 13:15
BH-2 (Surface)	4K24008-04	Soil	11/23/04 10:44	11/24/04 13:15
BH-2 (5')	4K24008-05	Soil	11/23/04 11:27	11/24/04 13:15
BH-2 (10')	4K24008-06	Soil	11/23/04 12:48	11/24/04 13:15
BH-3 (surface)	4K24008-07	Soil	11/23/04 14:53	11/24/04 13:15
BH-3 (5')	4K24008-08	Soil	11/23/04 15:37	11/24/04 13:15
BH-3 (10')	4K24008-09	Soil	11/23/04 16:07	11/24/04 13:15

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Fax: 505-394-2601 Project: Conoco Phillips / State C-20 Battery Environmental Plus, Incorporated Project Number: 2002-10273 Reported: 12/06/04 10:47 Eunice NM, 88231 Project Manager: Iain Olness

### Organics by GC

### **Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Analyst	Notes
BH-1 (surface) (4K24008-01) Soil										
Benzene	ND	0.0250	mg/kg dry	25	EL40209	12/01/04	12/01/04	EPA 8021B	cdk	
Toluene	ND	0.0250	11	н	н	n	"	11	cdk	
Ethylbenzene	J [0.0191]	0.0250	"	"	"	n	н	н	cdk	
Xylene (p/m)	0.0701	0.0250	"		"	н		u	cdk	
Xylene (o)	0.0264	0.0250	**	n		"	н	"	cdk	
Surrogate: a,a,a-Trifluorotoluene		84.0 %	80	120	n	"	"	"		
Surrogate: 4-Bromofluorobenzene		83.6 %	80	120	"	"	"	"		
Gasoline Range Organics C6-C12	322	50.0	"	5	EK42419	11/24/04	11/24/04	EPA 8015M	JLH	
Diesel Range Organics >C12-C35	13100	50.0	"		"	11	н	н	JLH	
Total Hydrocarbon C6-C35	13400	50.0	"	H	"	H	11	"	JLH	
Surrogate: 1-Chlorooctane		21.9 %	70	130	"	"	"	"		S-0
Surrogate: 1-Chlorooctadecane		28.1 %	70	130	"	"	"	"		S-0
BH-1 (5') (4K24008-02) Soil										
Benzene	ND	0.0250	mg/kg dry	25	EL40209	12/01/04	12/01/04	EPA 8021B	cdk	
Toluene	ND	0.0250	"	**	н		"	"	cdk	
Ethylbenzene	ND	0.0250	"	"	Ħ	11	"	"	cdk	
Xylene (p/m)	ND	0.0250			"	"	"	"	cdk	
Xylene (o)	ND	0.0250	"	"	"	"		"	cdk	
Surrogate: a,a,a-Trifluorotoluene		97.5 %	80	120	"	"	"	"		
Surrogate: 4-Bromofluorobenzene		96.6 %	80-1	120	. #	"	"	"		
Gasoline Range Organics C6-C12	ND	10.0	"	1	EK42419	11/24/04	11/24/04	EPA 8015M	ЛН	
Diesel Range Organics >C12-C35	J [9.35]	10.0			н	"	*1	н	JLH	
Total Hydrocarbon C6-C35	ND	10.0	н	"	"	"	"	"	JLH	
Surrogate: 1-Chlorooctane		104 %	70-1	130	"	"	"	"		
Surrogate: 1-Chlorooctadecane		116 %	70	130	"	"	"	"		
BH-1 (10') (4K24008-03) Soil										
Benzene	ND	0.0250	mg/kg dry	25	EL40209	12/01/04	12/01/04	EPA 8021B	cdk	
Toluene	ND	0.0250	н	"		"	11	"	cdk	
Ethylbenzene	ND	0.0250	"	**	"	**	11		cdk	
Xylene (p/m)	ND	0.0250	34		"		"	и	cdk	
Xylene (o)	ND	0.0250		n	"	ĸ	n	w	cdk	
Surrogate: a,a,a-Trifluorotoluene		98.2 %	80	120	"	"	"	"		
Surrogate: 4-Bromofluorobenzene		100 %	80-1	120	"	"	"	"		
Gasoline Range Organics C6-C12	ND	10.0	"	1	EK42419	11/24/04	11/24/04	EPA 8015M	ЛLН	
Diesel Range Organics >C12-C35	ND	10.0		н	11	"	"		JLH	

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P.O. Box 1558

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Environmental Plus, Incorporated	Project:	Conoco Phillips / State C-20 Battery	Fax: 505-394-2601	ul.
P.O. Box 1558	Project Number:	2002-10273	Reported:	٦
Eunice NM, 88231	Project Manager:	Iain Olness	12/06/04 10:47	

### Organics by GC

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Analyst	Note
BH-1 (10') (4K24008-03) Soil								-		
Total Hydrocarbon C6-C35	ND	10.0	mg/kg dry	1	EK42419	11/24/04	11/24/04	EPA 8015M	ЛН	
Surrogate: 1-Chlorooctane		107 %	70-1	30	"	n	"	"		
Surrogate: 1-Chlorooctadecane		118 %	70-1	30	"	"	"	"		
BH-2 (Surface) (4K24008-04) Soil										
Benzene	0.0319	0.0250	mg/kg dry	25	EL40209	12/01/04	12/01/04	EPA 8021B	cdk	
Toluene	0.336	0.0250		**	Ħ	"	"	н	cdk	
Ethylbenzene	0.486	0.0250	"	"	"	u	17	"	cdk	
Xylene (p/m)	1.49	0.0250	"	"	H	"	"	n	cdk	
Xylene (o)	0.421	0.0250	н	•	u	"	11	11	cdk	
Surrogate: a,a,a-Trifluorotoluene		156 %	80-1.	20	"	"	"	"		S-04
Surrogate: 4-Bromofluorobenzene		126 %	80-1.	20	"	"	"	"		<b>S-0</b> 4
Gasoline Range Organics C6-C12	948	50.0	"	5	EK42419	11/24/04	11/25/04	EPA 8015M	JLH	
Diesel Range Organics >C12-C35	19500	50.0	н		**	u	"		ЛН	
Total Hydrocarbon C6-C35	20500	50.0	"	v	н		н		JLH	
Surrogate: 1-Chlorooctane	-	21.0 %	70-1.	30	"	"	11	"		S-06
Surrogate: 1-Chlorooctadecane		27.0 %	70-1.	30	"	"	"	"		S-06
BH-2 (5') (4K24008-05) Soil										
Benzene	ND	0.0250	mg/kg dry	25	EL40209	12/01/04	12/01/04	EPA 8021B	cdk	
Toluene	ND	0.0250	D	"	li	н	u		cdk	
Ethylbenzene	ND	0.0250	*	н	"	"	11	н	cdk	
Xylene (p/m)	ND	0.0250	"	"	"	"			cdk	
Xylene (o)	ND	0.0250	"	н	н	"			cdk	
Surrogate: a,a,a-Trifluorotoluene		92.9 %	80-12	20	"	"	n	"		
Surrogate: 4-Bromofluorobenzene		89.8 %	80-12	20	"	"	"	"		
Gasoline Range Organics C6-C12	58.5	10.0	н	1	EK42419	i 1/24/04	11/25/04	EPA 8015M	ЛН	
	1460	10.0	н	••	n	"	**	"	ЛLН	
Diesel Range Organics >C12-C35		10.0	H		11	N	*	"	ЛН	
Diesel Range Organics >C12-C35 Fotal Hydrocarbon C6-C35	1520			20	"	n	"	"		_
0 0	1520	99.1 %	70-13							

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Project: Conoco Phillips / State C-20 Battery Project Number: 2002-10273 Project Manager: Iain Olness

**Reported:** 12/06/04 10:47

### Organics by GC

### Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Analyst	Note
BH-2 (10') (4K24008-06) Soil										
Benzene	ND	0.0250	mg/kg dry	25	EL40209	12/01/04	12/01/04	EPA 8021B	cdk	
Toluene	ND	0.0250		"	**	"	"	н	cdk	
Ethylbenzene	ND	0.0250	"		"	11	н	"	cdk	
Xylene (p/m)	ND	0.0250	н	"	"	"	"	**	cdk	
Xylene (o)	ND	0.0250	н	"	"	11	"	"	cdk	
Surrogate: a,a,a-Trifluorotoluene		104 %	80-1	120	"	"	"	"		
Surrogate: 4-Bromofluorobenzene		96.3 %	80-1	20	"	"	"	"		
Gasoline Range Organics C6-C12	ND	10.0	"	1	EK42419	11/24/04	11/29/04	EPA 8015M	JLH	
Diesel Range Organics >C12-C35	16.4	10.0	"	**	"	**	"	11	ЛLН	
Total Hydrocarbon C6-C35	16.4	10.0	"		"		"	"	ЛLН	
Surrogate: 1-Chlorooctane		122 %	70-1	30	"	"	"	"		
Surrogate: 1-Chlorooctadecane		128 %	70-1	30	"	"	"	"		
BH-3 (surface) (4K24008-07) Soil										
Benzene	ND	0.0250	mg/kg dry	25	EL40209	12/01/04	12/02/04	EPA 8021B	cdk	
Toluene	0.0762	0.0250	н	"	"		11	"	cdk	
Ethylbenzene	0.171	0.0250	и	14			и	"	cdk	
Xylene (p/m)	0.589	0.0250	"	н	"	"	**	"	cdk	
Xylene (o)	0.218	0.0250	н	"	н	"	"		cdk	
Surrogate: a,a,a-Trifluorotoluene		112 %	80-1	20	"	"	"	"		
Surrogate: 4-Bromofluorobenzene		104 %	80-1	20	"	"	"	"		
Gasoline Range Organics C6-C12	2830	50.0	11	5	EK42419	11/24/04	11/25/04	EPA 8015M	JLH	
Diesel Range Organics >C12-C35	26700	50.0	"		"	**	и	"	лгн	
Total Hydrocarbon C6-C35	29500	50.0	н	"	"	"	*1	"	ЛLН	
Surrogate: 1-Chlorooctane		27.1 %	70-1	30	"	"	"	"		S-0
Surrogate: 1-Chlorooctadecane		29.8 %	70-1	30	"	"	"	"		S-0
BH-3 (5') (4K24008-08) Soil										
Benzene	ND	0.0250	mg/kg dry	25	EL40209	12/01/04	12/01/04	EPA 8021B	cdk	
Toluene	ND	0.0250	**	"	0	"	"		cdk	
Ethylbenzene	ND	0.0250	"		"		"		cdk	

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Surrogate: a,a,a-Trifluorotoluene

Surrogate: 4-Bromofluorobenzene

Gasoline Range Organics C6-C12

Diesel Range Organics >C12-C35

Total Hydrocarbon C6-C35

Xylene (p/m)

Xylene (o)

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Environmental Plus, Incorporated P.O. Box 1558 Eunice NM, 88231		Project: Conoco Phillips / State C-20 Battery Project Number: 2002-10273 Project Manager: Iain Olness									
			rganics by mental La		exas					×	
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Analyst	Notes	
BH-3 (5') (4K24008-08) Soil Surrogate: 1-Chlorooctane				30	EK42419	11/24/04	11/29/04	EPA 8015M			
Surrogate: 1-Chlorooctadecane		122 %	70-1.		"	N N	"	n – – – – – – – – – – – – – – – – – – –			
3H-3 (10') (4K24008-09) Soil											
Benzene	ND	0.0250	mg/kg dry	25	EL40209	12/01/04	12/01/04	EPA 8021B	cdk		
Toluene	ND	0.0250	"	"	"	"	18		cdk		
Ethylbenzene	ND	0.0250	"	"	"		"	"	cđk	,	
Kylene (p/m)	ND	0.0250	*		"	u	"	"	cdk		
Kylene (o)	ND	0.0250	H	u	"	**	"	н	cdk		
Surrogate: a,a,a-Trifluorotoluene		96.4 %	80-12	20	"	"	"	"			
Surrogate: 4-Bromofluorobenzene		101 %	80-12	20	"	"	"	"			
Jasoline Range Organics C6-C12	ND	10.0	11	1	EK42419	11/24/04	11/25/04	EPA 8015M	ЛН		
Diesel Range Organics >C12-C35	J [9.19]	10.0	"	*	"	H	"	"	ЛH	J	
Total Hydrocarbon C6-C35	ND	10.0	H	"	11	u.	u	**	ЛН		
Surrogate: 1-Chlorooctane		102 %	70-13	10	"	"	"	"			
Surrogate: 1-Chlorooctadecane		112 %	70-13	20	n	"	"	"			

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### General Chemistry Parameters by EPA / Standard Methods

#### **Environmental Lab of Texas**

		Reporting								
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Analyst	Notes
BH-1 (surface) (4K24008-01) Soil										
% Moisture	7.0		%	1	EK42908	11/29/04	11/29/04	% calculation	LC	
BH-1 (5') (4K24008-02) Soil										
% Moisture	16.0		%	1	EK42908	11/29/04	11/29/04	% calculation	1 LC	
BH-1 (10') (4K24008-03) Soil										
% Moisture	11.0		%	1	EK42908	11/29/04	11/29/04	% calculation	LC	-
BH-2 (Surface) (4K24008-04) Soil										
% Moisture	11.0		%	1	EK42908	11/29/04	11/29/04	% calculation	LC	
BH-2 (5') (4K24008-05) Soil										
% Moisture	21.0		%	1	EK42908	11/29/04	11/29/04	% calculation	LC	
BH-2 (10') (4K24008-06) Soil										
% Moisture	7.0		%	1	EK42908	11/29/04	11/29/04	% calculation	LC	
BH-3 (surface) (4K24008-07) Soil										
% Moisture	4.0		%	1	EK42908	11/29/04	11/29/04	% calculation	LC	
BH-3 (5') (4K24008-08) Soil										
% Moisture	11.0		%	1	EK42908	11/29/04	11/29/04	% calculation	LC	
BH-3 (10') (4K24008-09) Soil										
% Moisture	9.0		%	1	EK42908	11/29/04	11/29/04	% calculation	LC	

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Environmental Plus, Incorporated P.O. Box 1558 Eunice NM, 88231		Project N	Project: Co Jumber: 200 anager: Iain		s / State C-2	20 Battery			Repo	-394-2601 orted: 04 10:47
	0	rganics b	y GC - Q	uality C	ontrol					
		Environ	mental L	ab of Te	xas					
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EK42419 - Solvent Extraction (GC)				Analyst:	ЛН					
Blank (EK42419-BLK1)				Prepared &	k Analyzed:	11/24/04				
Gasoline Range Organics C6-C12	ND	10.0	mg/kg wet							
Diesel Range Organics >C12-C35	ND	10.0	**							
Total Hydrocarbon C6-C35	ND	10.0	н							
Surrogate: 1-Chlorooctane	50.3		n	50.0		101	70-130	·		
Surrogate: 1-Chlorooctadecane	54.7		"	50.0		109	70-130			
LCS (EK42419-BS1)				Prepared &	Analyzed:	11/24/04				
Gasoline Range Organics C6-C12	436	10.0	mg/kg wet	500		87.2	75-125			-
Diesel Range Organics >C12-C35	475	10.0		500		95.0	75-125			
Total Hydrocarbon C6-C35	911	10.0	"	1000		91.1	75-125			
Surrogate: 1-Chlorooctane	49.2		"	50.0		98.4	70-130			
Surrogate: 1-Chlorooctadecane	47.9		"	50.0		95.8	70-130			
Calibration Check (EK42419-CCV1)				Prepared &	z Analyzed:	11/24/04				
Gasoline Range Organics C6-C12	452		mg/kg	500		90.4	80-120			
Diesel Range Organics >C12-C35	483		"	500		96.6	80-120			
Fotal Hydrocarbon C6-C35	935		11	1000		93.5	80-120			
Surrogate: 1-Chlorooctane	58.5	· · · · · ·	mg/kg wet	50.0	•	117	70-130			
Surrogate: 1-Chlorooctadecane	56.7		"	50.0		113	70-130			
Matrix Spike (EK42419-MS1)	Sou	rce: 4K24008	-02	Prepared &	: Analyzed:	11/24/04				
Jasoline Range Organics C6-C12	575	10.0	mg/kg dry	595	ND	96.6	75-125			
Diesel Range Organics >C12-C35	666	10.0	11	595	9.35	110	75-125			
Fotal Hydrocarbon C6-C35	1240	10.0	*	1190	ND	104	75-125			
Surrogate: 1-Chlorooctane	72.3		"	59.5		122	70-130			
Surrogate: 1-Chlorooctadecane	70.0		"	59.5		118	70-130			
Matrix Spike Dup (EK42419-MSD1)	Sour	rce: 4K24008	-02	Prepared &	Analyzed:	11/24/04				
Jasoline Range Organics C6-C12	587	10.0	mg/kg dry	595	ND	98.7	75-125	2.07	20	
Diesel Range Organics >C12-C35	661	10.0	Ħ	595	9.35	110	75-125	0.754	20	
Fotal Hydrocarbon C6-C35	1250	10.0	и	1190	ND	105	75-125	0.803	20	
Surrogate: 1-Chlorooctane	73.1		11	59.5		123	70-130			
Surrogate: 1-Chlorooctadecane	70.8		"	59.5		119	70-130			

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## **Reported:** 12/06/04 10:47

### **Organics by GC - Quality Control**

### **Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
				Level	Result	/0KEC		ΝΓD		
Batch EL40209 - EPA 5030C (GC)				Analyst:	cdk					
Blank (EL40209-BLK1)				Prepared &	Analyzed:	12/01/04				
Benzene	ND	0.0250	mg/kg wet							
Toluene	ND	0.0250	"							
Ethylbenzene	ND	0.0250	н							
Xylene (p/m)	ND	0.0250	"							
Xylene (o)	ND	0.0250	н							
Surrogate: a,a,a-Trifluorotoluene	0.102		"	0.100	-	102	80-120			
Surrogate: 4-Bromofluorobenzene	0.102		"	0.100		102	80-120			
LCS (EL40209-BS1)				Prepared &	Analyzed:	12/01/04				
Benzene	87.2		ug/kg	100		87.2	80-120			
Toluene	87.8		н	100		87.8	80-120			
Ethylbenzene	102		**	100		102	80-120			
Xylene (p/m)	234		н	200		117	80-120			
Xylene (o)	116		"	100		116	80-120			
Surrogate: a,a,a-Trifluorotoluene	0.115		mg/kg wet	0.100		115	80-120			
Surrogate: 4-Bromofluorobenzene	0.117		"	0.100		117	80-120			
Calibration Check (EL40209-CCV1)				Prepared: 1	2/01/04 A	nalyzed: 12	/02/04			
Benzene	87.7		ug/kg	100		87.7	80-120			
Toluene	88.4		"	100		88.4	80-120			
Ethylbenzene	99.7		н	100		99.7	80-120			
Xylene (p/m)	227		и	200		114	80-120			
Xylene (0)	118		"	100		118	80-120			
Surrogate: a,a,a-Trifluorotoluene	0.0939		mg/kg wet	0.100		93.9	80-120			
Surrogate: 4-Bromofluorobenzene	0.120		n	0.100		120	80-120			
Matrix Spike (EL40209-MS1)	Sou	rce: 4K29003	3-01	Prepared &	Analyzed:	12/01/04				
Benzene	83.7		ug/kg	100	ND	83.7	80-120			
Toluene	86.3		н	100	ND	86.3	80-120			
Ethylbenzene	96.2		**	100	ND	96.2	80-120			
Xylene (p/m)	221			200	ND	110	80-120			
Xylene (0)	114		11	100	ND	114	80-120			
Surrogate: a,a,a-Trifluorotoluene	0.125		mg/kg dry	0.122		102	80-120			
Surrogate: 4-Bromofluorobenzene	0.131		н	0.122		107	80-120			

Environmental Lab of Texas

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas.

Environmental Plus, Incorporated	Project: C	Conoco Phillips / State C-20 Battery	Fax: 505-394-2601
P.O. Box 1558	Project Number: 2	002-10273	Reported:
Eunice NM, 88231	Project Manager: Ia	ain Olness	12/06/04 10:47

### **Organics by GC - Quality Control**

### **Environmental Lab of Texas**

Analyte	Result	Reporting Limit Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EL40209 - EPA 5030C (GC)			Analyst:	cdk					
Matrix Spike Dup (EL40209-MSD1)	Sou	rce: 4K29003-01	Prepared &	Analyzed:	: 12/01/04				
Benzene	85.9	ug/kg	100	ND	85.9	80-120	2.59	20	
Toluene	88.3	11	100	ND	88.3	80-120	2.29	20	
Ethylbenzene	101	'n	100	ND	101	80-120	4.87	20	
Xylene (p/m)	233	**	200	ND	116	80-120	5.31	20	
Xylene (0)	119	**	100	ND	119	80-120	4.29	20	
Surrogate: a,a,a-Trifluorotoluene	0.129	mg/kg dry	0.122		106	80-120			
Surrogate: 4-Bromofluorobenzene	0.142	"	0.122		116	80-120			

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas.

Environmental Plus, Incorporated P.O. Box 1558 Eunice NM, 88231

## **Reported:** 12/06/04 10:47

### General Chemistry Parameters by EPA / Standard Methods - Quality Control

### **Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EK42908 - General Preparation (Prep)				Analyst:	LC					
Blank (EK42908-BLK1)				Prepared &	Analyzed:	11/29/04				
% Moisture	0.0		%							
Duplicate (EK42908-DUP1)	Sou	rce: 4K24004-	01	Prepared &	Analyzed:	11/29/04				
% Moisture	5.0		%		5.0			0.00	20	

Environmental Lab of Texas

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P.O. Box	nental Plus, Incorporated x 1558 IM, 88231	Project: Conoco Phillips / State C-20 Battery Project Number: 2002-10273 Project Manager: Iain Olness						
		Notes and De	finitions					
5-06	The recovery of this surrogate is outside control lin matrix interference's.	ution required from high analyte concentration and/or						
-04	The surrogate recovery for this sample is outside o	f established control l	imits due to a sample matrix effect.					
	Detected but below the Reporting Limit; therefore,	, result is an estimated	concentration (CLP J-Flag).					
DET	Analyte DETECTED							
١D	Analyte NOT DETECTED at or above the reporting limit	t						
IR.	Not Reported							
lry	Sample results reported on a dry weight basis							
PD	Relative Percent Difference							
.CS 1S	Laboratory Control Spike Matrix Spike							
ns Dup	Duplicate							
- <b>-</b> P								

Report Approved By:

Raland K Just

12/6/2004

Raland K. Tuttle, Lab Manager Celey D. Keene, Lab Director, Org. Tech Director Peggy Allen, QA Officer Jeanne Mc Murrey, Inorg. Tech Director James L. Hawkins, Chemist/Geologist Sandra Sanchez, Lab Tech.

Date:

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

If you have received this material in error, please notify us immediately at 432-563-1800.

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas.

Page 11 of 11

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### Environmental Lab of Texas Variance / Corrective Action Report – Sample Log-In

Client: <u>E</u>	PI
Date/Time:	11-24-04 @ 13 30

Order #: <u>41624008</u>

Initials:

### Sample Receipt Checklist

Temperature of container/cooler?	(Yes)	No	OS C
Shipping container/cooler in good condition?	(Yes)	No	
Custody Seals intact on shipping container/cooler?	Yes	No	Not present
Custody Seals intact on sample bottles?	Yes	No	Not present
Chain of custody present?	(tes)	No	
Sample Instructions complete on Chain of Custody?	(Yes)	No	
Chain of Custody signed when relinquished and received?	Tes	No	
Chain of custody agrees with sample label(s)	(Yes)	No	
Container labels legible and intact?	Yes	No	
Sample Matrix and properties same as on chain of custody?	(Yes)	No	
Samples in proper container/bottle?	Tes,	No	
Samples properly preserved?	TES	No	
Sample bottles intact?	(Ves)	No	······································
Preservations documented on Chain of Custody?	Yes	No	
Containers documented on Chain of Custody?	(Xes)	No	
Sufficient sample amount for indicated test?	Yes	No	
All samples received within sufficient hold time?	(Yes)	No	
VOC samples have zero headspace?	(Yes)	No	Not Applicable

Other observations:

Contact Person: Regarding:	Variance Documentation: Date/Time:	_ Contacted by:	[
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PHONE (325) 673-7001 . 2111 BEECHWOOD . ABILENE, TX 79603

PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR CONOCO PHILLIPS ATTN: JOHN ABNEY 1410 WEST COUNTY ROAD HOBBS, NM 88240 FAX TO: (505) 391-3102

Receiving Date: 05/24/05 Reporting Date: 06/03/05 Project Number: 150006 Project Name: STATE C 20 Project Location: UL-H, SEC4, T21S, R36E Sampling Date: 05/23/05 Sample Type: SOIL Sample Condition: COOL & INTACT Sample Received By: NF Analyzed By: BC

	GRO	DRO
· · ·	(C <sub>6</sub> -C <sub>10</sub> )	(>C <sub>10</sub> -C <sub>28</sub> )
LAB NUMBER SAMPLE ID	(mg/Kg)	(mg/Kg)
ANALYSIS DATE:	06/03/05	06/03/05
H9817-1 SXP #1	<10.0	<10.0
H9817-2 SXP #2	<10.0	<10.0
H9817-3 SXP #3	<10,0	<10.0
H9817-4 SXP #4	<10.0	<10.0
H9817-5 SXP #5	<10.0	176
H9817-6 SXP #6	<10,0	202
H9817-7 SXP #7	<10.0	518
H9817-8 SXP #8	<10.0	77.4
Quality Control	806	733
True Value QC	800	800
% Recovery	101	91.6
Relative Percent Difference	0.5	0.8

METHOD; SW-846 8015 M

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H9817.XLS

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PHONE (505) 393-2326 - 101 E. MARLAND - HOBBS, NM 88240

Receiving Date: 5/24/2005 Reporting Date: 5/26/2005 Project Number: 150006 Project Name: STATE C-2020 Project Location: UL-H, SEC 4, T2-	15, R36E	ANALYTICAL F CONOCO PHIL ATTN: JOHN A 1410 WEST HOBBS, NM 88 Fax: 505-391-31	LIPS BNEY 240 02	Sampling Date: 5/23/ Sample Type: SOIL Sample Condition: CC Sample Received By: Analyzed By: JD	OL& INTACT
LAB NUMBISAMPLE ID	MTBE (mg/kg)	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYLBENZENE (mg/kg)	TOTAL XYLENES (mg/kg)
ANALYSIS DATE:	EMOIOR			( 0, 0)	(mg/kg)
H9817-1 SXP#1	5/26/05	5/26/05	5/26/05	5/28/05	5/26/05
H9817-2 SXP#2	< 0.002	<0.002	< 0.002	< 0.002	<.006
H9817-3 SXP#3	<0.002	< 0.002	< 0.002	< 0.002	<.006
H9817-4 SXP#4	<0.002	< 0.002	<0.002	< 0.002	<.006
H9817-5 SXP#5	<0.002	< 0.002	< 0.002	< 0.002	<.008
H9817-6 SXP#8	< 0.002	0.011	0.003	<0.002	0.006
H9817-7 SXP#7	<0.002	< 0.002	< 0.002	<0.002	<.006
H9817-8 SXP#8	<0.002	<0.002	< 0.002	< 0.002	<.006
TROTT-O SAP#8	<0.002	<0.002	< 0.002	<0.002	<.006
Quality Control					
Quality Control	0.094	0.108	0.102	0.101	0.299
True Value QC	0.100	0.100	0.100	0.100	0.300
% Recovery	94	108	102	101	99,7
Relative Percent Difference	5	0	1	2.1	1.7

METHODS: EPA - SW 846-8021B, 5030B; Gas Chromatography

2Mnollo ), Chemi

5126 12005 Date

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PHONE (505) 393-2326 + 101 E. MARLAND + HOBBS, NM 88240

#### ANALYTICAL RESULTS FOR CONOCO PHILLIPS ATTN: JOHN ABNEY 1410 WEST COUNTY ROAD HOBBS, NM 88240 FAX TO: (505) 391-3102

Receiving Date: 05/24/05 Reporting Date: 05/26/05 Project Number: 150006 Project Name: STATE C20 Project Location: UL-H SEC4 T21S R36E Analysis Date: 05/26/05 Sampling Date: 05/23/05 Sample Type: SOIL Sample Condition: COOL & INTACT Sample Received By: NF Analyzed By: AH

LAB NUMBER SAMPLE ID

Cl<sup>--</sup> (mg/Kg)

H9817-1*	SXP #1	160
H9817-2*	SXP #2	144
H9817-3*	SXP #3	112
H9817-4	SXP #4	64
H9817-5	SXP #5	80
H9817-6*	SXP #6	160
H9817-7	SXP #7	48
H9817-8*	SXP #8	112
Quality Control		1000
True Value QC	;	1000
% Recovery	·	100
<b>Relative Perce</b>	nt Difference	4.0

METHOD: Standard Methods 4500-Cl'B Note: Analyses performed on 1:4 w:v aqueous extracts.

\*Matrix interference (color) observed.

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PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR ENVIRONMENTAL PLUS, INC. ATTN: IAIN OLNESS P.O. BOX 1558 EUNICE, NM 88231 FAX TO: (505) 394-2601

Receiving Date: 05/26/05 Reporting Date: 06/06/05 Project Number: 2002-10273 Project Name: STATE C-20 BATTERY Project Location: NOT GIVEN Sampling Date: 05/25/05 Sample Type: SOIL Sample Condition: COOL & INTACT Sample Received By: AH Analyzed By: BC/AH

LAB NUMBER SAMPLE ID	GRO (C <sub>6</sub> -C <sub>10</sub> ) (mg/Kg)	DRO (>C <sub>10</sub> -C <sub>28</sub> ) (mg/Kg)	CI* (mg/Kg)
ANALYSIS DATE	06/04/05	06/04/05	05/31/05
H9824-1 CPSC20BSSPC	<10.0	<10.0	80
H9824-2 CPSC20BNSPC	<10.0	<10.0	80
H9824-3 CPSC20BNSP-1-4	<10.0	<10.0	96
			0.50
Quality Control	800	743	950
True Value QC	800	800	1000
% Recovery	100	92.9	95.0
Relative Percent Difference	1.5	1.9	5.0

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; CI<sup>-</sup>: Std. Methods 4500-CI<sup>-</sup>B \*Analyses performed on 1:4 w:v aqueous extracts.

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Date

#### H9824.XLS

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ANALYTICAL RESULTS FOR ENVIRONMENTAL PLUS, INC ATTN: IAIN OLNESS PO BOX 1558 EUNICE, NM 88231 FAX TO: 505-394-2601

Receiving Date: 5/26/2005 Reporting Date: 6/6/2005 Project Number: 2002-10273 Project Name: NONE GIVEN Project Location: STATE C-20 BATTERY Sampling Date: 5/25/2005 Sample Type: SOIL Sample Condition: COOL & INTACT Sample Received By: AH Analyzed By: JD

						TOTAL
LAB NUMBI	EFSAMPLE ID	MTBE	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES
		(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
,			· · · · · · · · · · · · · · · · · · ·			
ANALYSIS	DATE:	6/6/05	6/6/05	6/6/05	6/6/05	6/6/05
H9824-1	CPSC20BSSPC	<0.002	< 0.002	< 0.002	<0.002	<0.006
H9824-2	CPSC20BNSPC	<0.002	<0.002	< 0.002	<0.002	<0.006
H9824-3	CPSC20BNSP-1-4	<0.002	<0.002	<0.002	<0.002	<0.006
Quality Con	trol	0.101	0.098	0.094	0.094	0.274
True Value	QC	0.100	0.100	0.100	0.100	0.300
% Recovery	,	101	98	94	94	91.3
<b>Relative</b> Per	rcent Difference	5	0	1	2.1	1.7

METHODS: EPA - SW 846-8021B, 5030B; Gas Chromatography

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07/2005

SE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. ims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable e. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, es or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above-stated reasons or otherwise.

Cardinal	Cardinal Laboratories Inc.	Imc.				-,											Ċ	nain	of	Cn	sto	Chain of Custody Form	For	E
101 East Marland, 505-393-2326 Fe	101 East Marland, Hobbs, NM 88240 505-393-2326   Fax 505-393-2476										ĺ	2111 Beechwood, Abilene, TX 79603 915-673-7001 Fax 915-673-7020	schwood 7001 F	, Ab ax 9	lene 15-6	Ϋ́, Η	d, Abilene, TX 796 Fax 915-673-7020	03						
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<b>EPI Project Manager</b>	ger lain Olness														-		┢							
<b>Mailing Address</b>	P.O. BOX 1558																		-					
City, State, Zip	Eunice New Mexico 88231	sxico 88	231																					
EPI Phone#/Fax#	505-394-3481 / 505-394-2601	505-394	-26(	5				e			C		С С											
<b>Client Company</b>	Conoco Phillips																			-				
Facility Name	State C-20 Battery	ery							Attn	loL :	un A	Attn: John Abney												
<b>Project Reference</b>	e 2002-10273							141(	OWe	st C	our	1410West County Road,						<del></del>	-					
<b>EPI Sampler Name</b>	e Cody Fisher							`ola	ldoh	Ds, 1	MN	Hobbs, NM 88240			an a		-							572
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# **APPENDIX II**

### **PROJECT PHOTOGRAPHS**

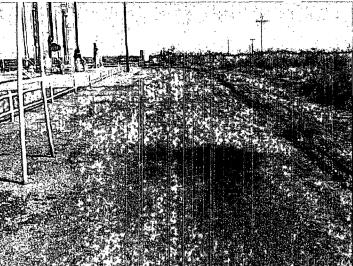


Photo #1: Release area, looking easterly. Dark stained soil indicates contamination.

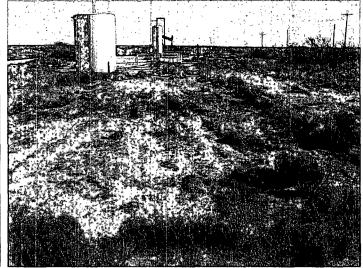


Photo #2: Release area, looking easterly. Notice soil staining in central portion of the photograph.

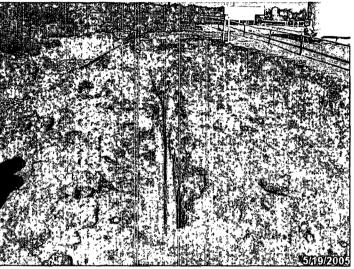


Photo #3: Excavation, looking westerly.

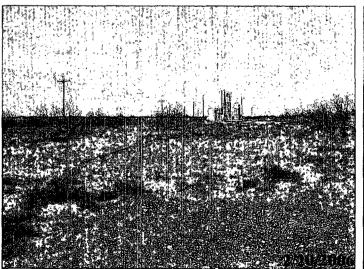


Photo #5: Current status of excavation, looking westerly.



Photo #4: Excavation, looking easterly.



Photo #6: Current status of excavation, looking easterly.

## **APPENDIX III**

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# **SOIL BORING LOGS**

					L	.og 🛛	f Test Borings (NOTE - Page 1 of 1)
							Project Number: 150006
					LUS, IN		Project Name: Conoco Phillips State C-20 Battery
			RONME	ED LAND NTAL SEF EUNICE	RVICES		Location: UL-l, Section 20, Township 21 South, Range 36 East
			505-	-394-348	31	В	Boring Number: SB-1 Surface Elevation: 3,636
Sample # and Time	Sample Type	Recovery (inches)	d Maisture	PID Readings (ppm)	Symbol	Depth (feet)	Start Date: <u>11/23/04</u> Time: <u>0849 hrs</u> Completion Date: <u>11/23/04</u> Time: <u>1017 hrs</u> Description
0849	Grab	NA	Da	18.0	SP		SAND
0920	CS	10	Da	2.2	Callche	5 5 	Caliche
0927	cs	5	Dry	0.0	Caliche	10 10	0 Callche
						_	End of Boring at 12.0'
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							—
Date	Wate   Tim		el Meas ample epth	Surement Casing	Cave-	nl Va	ter Drilling Method: HSA 3.5" ID
11/23/0		D	epth -	Casing Depth	Deptr -	<u>Le</u>	zvel Backfill Method: Bentonite
_			-				- Field Representative: MG

					L	.og [	]f Test Borings (NOTE - Page 1 of 1)
							Project Number: 150006
					lus, Ing Farm a		Project Name: Conoco Phillips State C-20 Battery
			RONMEN	ITAL SEP	RVICES		Location: UL-1, Section 20, Township 21 South, Range 36 East
			505-	394-348	31	]	Boring Number: SB-2 Surface Elevation: 3,636
Sample # and Time	Sample Type	Recovery (inches)	Malsture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Start Date: <u>11/23/04</u> Time: <u>10399 hrs</u> Completion Date: <u>11/23/04</u> Time: <u>1155 hrs</u> Description
1045	Grab	NA	Da	21.3	SP		SAND
						 [	5
1057	CS	9	Da	11.3	Caliche		Caliche
1120	CS	8	Dry	0.3	Caliche		Callche
							End of Boring at 12.0'
Date	Wate Tim		el Meas Imple epth	Casing Depth	cs (feet Cave-l	n Vo	Drilling Method: HSA 3.5' ID
11/23/0		•	-	-	Deptr -		Backfill Method: Bentonite
-	-		-		-		- Field Representative: MG

					L	.og Di	f Test Borings (NOTE - Page 1 of 1)
							Project Number: 150006
		TATE A	PPR⊡∨e R⊡NMEN E	AL PI D LAND ITAL SEF UNICE 394-348	FARM A RVICES		Project Name: Conoco Phillips State C-20 Battery Location: UL-1, Section 20, Township 21 South, Range 36 East oring Number: SB-3 Surface Elevation: 3,636
Sample # and Time	Sample Type	Recovery (inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Start Date: <u>11/23/04</u> Time: <u>1314 hrs</u> Completion Date: <u>11/23/04</u> Time: <u>1418 hrs</u> Description
1325	Grab	NA	Da	61.4	SP		SAND
		i				5	
1344	CS	8	Dry	5.0	Caliche	 	Caliche
1400	cs	10	Dry	0.0	Rock		Caliche
							End of Boring at 12.0'
							_
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						3	۳ <u> </u>
Date	Wate Tim	ie So	mple	urement Casing Depth	Cave-	n Va	ter Drilling Method: HSA 3.5' ID
11/23/0	04 -	De	epith -	Depth -	Deptk -	1 Le	Backfill Methodi Bentonite
	-		-			-	Field Representative: MG

# **APPENDIX IV**

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### FINAL NMOCD C-141 FORM

District I 1625 N. French Dr., Hobbs, NM 88240 District II 1301 W. Grand Avenue, Artesia, NM 88210 District III 1000 Rio Brazos Road, Aztec, NM 87410 District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505

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#### State of New Mexico Energy Minerals and Natural Resources

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Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Form C-141 Revised March 17, 1999

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

### **Release Notification and Corrective Action**

	OPERA	TOR				Initial Report	🔀 Fina	l Report
Name	of Company				Contact			
	Phillips				John Abney			
Addres					Telephone			
		Rd. Hobbs NM			505-391-31			
-	y Name				Facility Ty			
State C	-20 Battery				Oil and Gas			
	e Owner <del>  Deek Estate</del>	Stateof New	Mexico	Mineral Ow	ner		Lease N	0.
			L	DCATION	<b>OF RELEAS</b>	SE		
Unit	Section	Township	Range	Feet from the	North/South	Feet from the East/We	st County	: Lea
Letter	20	T21S	R36E	Line		Line		32° 27' 45.1"
L					-		······	/ 103° 17' 27.0"
			1	NATURE O	F RELEASI	C	1R	P-897
	[ Release			<u> </u>	Volume of Rel	ase	Volume Rec	overed
Oil	-CD-lassa				32 bbls		30 bbls	aur of Discovery
Tank Ba	of Release					of Occurrence 2004 @ 0300 hrs		ar 2004 @ 0800 hrs
	mediate Notice	Given?			If YES, To Wh		27 50 pt01100	12001 (2000 1113
			No 🗌	Not Required		NMOCD-Hobbs		
By Wha	om?				When?	1		
-			and the second second second second second second second second second second second second second second second		27 September 2			
Was a V	Watercourse Re	ached? 🗌 Yes	🛛 No		If YES, Volum NA	e Impacting the Wate	rcourse.	
<b>If a Wa</b> NA	itercourse was l	mpacted, Describe	Fully.*		1		<u> </u>	
Describ	e Cause of Pro	blem and Remedial	Action Taken	.*				
				water dump valv	e to open. Upon	discovery lease was shu	ut in	
Spill are area. ~1	ea of approximat 140 yd <sup>3</sup> was tran exico to below N	sported to J&LLa	,200 yd <sup>3</sup> of soi ndfarm for trea	tment. The rema	ining impacted so	medial Guidelines was il was blended with clo n of backfilling, the sit	ean soil obtain	ed from the State of
I hereby	certify that the	information given al	ove is true and	complete to the	best of my know	ledge and understand t	hat pursuant to	NMOCD rules and
						form corrective actions as "Final Report" does		
						t pose a threat to groun		
health o	or the environme	nt. In addition, NM	OCD acceptance			ve the operator of respo		
other fe	deral, state, or lo	cal laws and/or regu	lations.					
Signatu	ure:	John Ume	и		<u>0</u>	IL CONSERVA	TION DIV	VISION
		pro contra	0			ENVICEN	57_ (	
	Name: John A		<u>~</u>	····	Approved by	y District Supervisor:		
E-mail	Address: John.H	.Abney@ConocoPhilli	ps.com			- •		0.50
Title: S	S.H.E.A.R. Spec	ialist			Approval D	ate: 5.24.06	Expiration	Date:
Date:		Phone: 505-391-	3128		Conditions of	f Annrovel-		Attached

\* Attach Additional Sheets If Necessary