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

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company **ConocoPhillips Company**	Contact **John W. Gates**
Address **3300 North A St. Bldg 6, Midland, TX 79705-5406**	Telephone No. **505.391.3158**
Facility Name **MCA 2A Header**	Facility Type **Oil and Gas**

Surface Owner **Federal**	Mineral Owner **Federal**	Lease No **LC-060199A**

LOCATION OF RELEASE

NEARBY WELL MCA UNIT 308
API # 30.025.24076.00.00

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
G	**29**	**17S**	**32E**					**Lea**

Latitude 32.48.340 **Longitude 103 47.301**

NATURE OF RELEASE

Type of Release **Produced Water**	Volume of Release **878.4**bbl (**0**oil, **878.4**water)	Volume Recovered (**0**oil, **845**water)
Source of Release **2" Fiberglass Trunkline**	Date and Hour of Occurrence **9/19/09 Unknown**	Date and Hour of Discovery **9/19/09 0717**
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? **Pat Hutchins**	
By Whom? **Tommy Brooks**	Date and Hour **9/19/09 1615**	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

WATER @ 170'

Describe Cause of Problem and Remedial Action Taken.*
Leak originated from a hole in a 2" fiberglass trunkline due to fatigue. Trunkline was isolated and the 2A header

Describe Area Affected and Cleanup Action Taken.*
300' X 60' X 2" area of sandy pasture land with no livestock present. Spill site will be delineated & remediated in accordance with an agreement with NMOCD and BLM guidelines.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: John W. Gates

Printed Name: **John W. Gates**

Title: **HSER Lead**

E-mail Address: **John.W.Gates@conocophillips.com**

Date: **9/21/09** Phone: **505.391.3158**

OIL CONSERVATION DIVISION

Approved by ~~District Supervisor:~~ ENV ENGINEER Geoffrey Leking

Approval Date: 09/24/09 Expiration Date: 11/24/09

Conditions of Approval: DELINEATE TO CLEAN +1. SUBMIT FINAL BY 11/24/09.

Attached ☐
IRP-09-10-2300

- Attach Additional Sheets If Necessary

fGRL0928731707

TETRA TECH, INC.

1910 N. Big Spring St.
Midland, Texas 79705
432-686-8081

December 12, 2010

Mr. Justin Wright
ConocoPhillips
HC60 Box 66
Lovington, NM 88260

RE: MCA 2A Header
Request for Closure Report
Lea County, New Mexico
Unit G, Sec. 29, T17S, R32E
1RP 2300

Dear Mr. Wright:

Tetra Tech suggests that ConocoPhillips submit this document as a request for closure report to the New Mexico Oil Conservation Division (NMOCD) and to the US Bureau of Land Management (BLM) for the soil remediation performed during August through October 2010, at ConocoPhillips' MCA 2A Header produced water release site. This work was performed in support of ConocoPhillips efforts to remediate an 878.4 barrel produced water release of which 845 barrels were recovered. The release was reported to the NMOCD (C141 Attached). The Site is located below Mescalero Ridge, approximately 1.1 miles southwest of the ConocoPhillips MCA Unit office in Lea County, New Mexico (32.805893°N, 103.788380°W; Figure 1). The BLM is the land administrator.

The Site is located in the Querecho Plains of eastern New Mexico. This area generally consists of a thin cover of Quaternary sand dunes overlying the undivided Triassic Upper Chinle Group[1]. The Pyote-Kermit soil association at the Site is gently undulating deep sandy soil that is well drained, non-calcareous sands.[2]

The Site is heavily populated with oil field pipelines. Observations made by Tetra Tech during an initial site overview revealed that there are at least 5 pipelines running through the Site.

Exposure Pathway Analysis

Depth to water in the vicinity of the Site is estimated to be approximately 76 feet below ground surface (fbgs). This interpretation is based on information gathered at monitoring well MW-20 that is described in ConocoPhillips' remediation project entitled "*Maljamar Gas Plant GW-020*"

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[1] U.S. Department of Agriculture, Natural Resources Conservation Services. Web Soil Survey Database.
[2] Turner, M.T., D.N. Cox, B.C Mickelson, A.J. Roath, and C.D Wilson, 1973. Soil Survey Lea County, New Mexico. U.S. Depart of Agr Soil Conser Ser, 89p.

(log attached). The monitoring well is located approximately 3,515 feet (ft) northeast of the Site. The nearest playa is approximately 0.6 miles east-southeast of the Site.

Following the ranking criteria presented in "*Guidelines for Remediation of Leaks, Spills, and Releases*" promulgated on August 13, 1993, by the NMOCD, this Site has the following score:

Criteria		Ranking Score
Depth to groundwater	50 - 99 feet	10
Distance from water source	>1,000 feet	0
Distance from domestic water source	>200 feet	0
Distance from surface water body	>1,000 feet	0
Total Ranking Score		10

The recommended remediation action level for a ranking score of 10-19 is 10 parts per million (ppm) for benzene, 50 ppm for total benzene, toluene, ethylbenzene, and total xylenes (BTEX), and 1,000 ppm for total petroleum hydrocarbons (TPH).

In the event of oil/gas releases to the environment, the NMOCD uses the New Mexico Water Quality Control Commission's maximum contaminate level of 250 ppm for chloride (20.6.2.3103 NMAC, Subsection A) for delineation.

Scope of Work

The lateral extent of the release area was defined by soil discoloration (Figure 2). To delineate the vertical extent of the produced water affected area, a hand auger was utilized in November 2009, a backhoe in May 2010, and an air rotary boring unit in August 2010 to collect soil samples.

November 4, 2009 – Six hand auger locations were bored to describe subsurface conditions at the Site. A findings report, a laboratory report, and recommendations were submitted on December 2, 2009 to the BLM and NMOCD for approval.

February 8, 2010 - ConocoPhillips and Tetra Tech representatives met with NMOCD to discuss safety concerns surrounding the planned excavation work at the MCA 2A Header. Seventeen flowlines enter the header with numerous other lines in the vicinity of the produced water release. In addition, if the excavation were to go beyond 4 fbgs, a 2:1 sloped excavation would be performed to prevent caving, which would substantially increase the size of the excavation (moving into the sand dunes). Owing to the number of lines and the potential for an expanded excavation, ConocoPhillips agreed to dig one exploratory trench (collect a sample for chloride analysis), limit the depth of the proposed excavation to 4- ft, lay down a 40-mil geomembrane, and backfill. The BLM expressed disappointment at not being involved in the meeting. Since the meeting, the BLM changed remediation strategies in sand dune lands under Federal control and now requires clay be used as a barrier to prevent water penetration into affected soils left in-place.

May 21, 2010 – Tetra Tech returned to the Site to collect 8 backhoe samples. A brief findings report and laboratory report were submitted to the NMOCD and BLM for review on August 3, 2010.

July 20, 2010 – BLM issued a warning to ConocoPhillips concerning Site remediation and indicated that re-sampling was required to determine the depth and width of chloride impact. The agency requested that a sampling and remediation plan be submitted within 30 days.

August 2, 2010 – ConocoPhillips, NMOCD and BLM met to discuss implementation of remediation at the Site. The agencies set the following schedule: a soil boring sampling plan delivered by August 4, 2010; execution of the plan to begin no later than August 10, 2010 and soil laboratory analyses submitted to the agencies by August 13, 2010. An excavation work plan will be submitted to the agencies by August 18, 2010.

The BLM and NMOCD placed a tight schedule on collecting additional data, so ConocoPhillips hired a water well drilling company to provide an air rotary boring unit. ConocoPhillips informed NMOCD that the unit was not capable of collecting discrete depth samples (split spoon) and volatile organic compounds and petroleum hydrocarbons could volatize during the sampling process. The air rotary unit was used in August 2010 in the affected area to describe vertical and horizontal environmental conditions.

August 19 & 20, 2010 – BLM indicated that the agency prefers at SB-1 and -2, contaminated soil should be excavated to 6-ft; at SB-3, contaminated soil should be excavated to 4-ft; and at SB-6 and -7, contaminates soil should be excavated to 9-ft. The area can be backfilled with sand without clay material. After backfill, the excavated area does not have to seeded.

September 10, 2010 – BLM indicated that on September 2, 2010, at SB-2 the chloride levels at 7-ft were at 1,020 milligrams per kilogram (mg/Kg) on the west side wall. BLM also directed at SB-2 the excavation be taken down to 9-ft and extend the east and west sidewalls 3-ft into the sand dunes. Take a soil sample at the bottom of the 9 ft excavation, put clay liner down, and backfill.

September 17, 2010 – Tetra Tech presented information concerning the excavation. A figure was presented that showed the excavation boundary, excavation depths, and the soil borings completed in August. Data from the new boring (SB-8), requested by OCD, that was completed near soil boring SB-4 indicated chloride concentration at 45 fbgs was 256 mg/Kg. Tetra Tech suggested that ConocoPhillips request that further excavation be stopped and the excavation be backfilled with caliche, capped with 1-ft of compacted clay, and the remainder of the head space be backfilled with sand. Tetra Tech also recommended areas to the north and northeast of the present excavation should be remediated in a separate project, subject to BLM and NMOCD approvals.

September 30, 2010 - Tetra Tech presented information concerning the excavation. A figure was presented that showed the new excavation boundary, new excavation depths, and the soil borings completed in August. Tetra Tech suggested that ConocoPhillips request that further excavation be stopped and the excavation be backfilled with caliche, capped with 1-ft of compacted clay, and the remainder of the head space be backfilled with sand. Tetra Tech also

recommended areas to the north and northeast of the present excavation should be remediated in a separate project, subject to BLM and NMOCD approvals.

October 8, 2010 – NMOCD agrees with all statements presented by the BLM regarding MCA 2A Header. At soil boring SB-8, the chloride levels were 256 mg/Kg at 45 fbgs. The agency directed ConocoPhillips to put a clay liner at/or where the clay boundary is and backfill.

October 18, 2010 – BLM stopped work at the Site and stated the haul-back sand was not the right color.

December 2, 2010 – Backfill of the excavation was completed.

The 12 soil samples collected from the six hand auger borings in November 2009, and 8 soil samples collected from a backhoe trench in May 2010 were submitted to a laboratory for analyses. The NMOCD requested that the 50 soil cutting samples collected from the 7 borings in August 2010 be analyzed and these samples were submitted to a laboratory for analyses. Excavation sidewall and floor samples were collected during the removal of affected soil and submitted to a laboratory for analyses. All samples were placed into glass sample jars, sealed with Teflon-lined lids, and placed on ice for transportation with a chain-of-custody to an analytical laboratory where they were analyzed for diesel and gasoline range TPH (TPH_{DRO} and TPH_{GRO}, Method 8015), BTEX (Method 8021), and chloride (Method 300). All laboratory analyses are presented in the Appendix.

Findings

Soil encountered at the Site was moist yellowish brown sands from the surface to varying depths. Locally, the dune sands overlie a thick caliche lens.

TPH and BTEX laboratory analyses for the investigative events are presented in Tables 1, 2 and 3. TPH concentrations were detected in all November 2009 auger samples and ranged from 265 to 7,510 milligrams per kilogram (mg/Kg). Benzene (0.069 mg/Kg) was detected in only one sample (HA-3 at 6 fbgs). BTEX concentrations ranged from non-detection to 40.77 mg/Kg.

Chloride concentrations were present in all hand auger boring locations and ranged from 293 to 25,000 mg/Kg (Table 1).

TPH concentrations were detected only in the upper 2-ft of the May 2010 backhoe samples and ranged from 8.7 to 534 mg/Kg (Table 2). Since the volatile organic compounds were below recommended remedial action levels in the November 2009 sampling event, these hydrocarbon constituents were excluded from the analyses. Chloride concentrations attenuated with depth but showed a slight rise at the 12 to 14 fbgs sampling depths.

Tetra Tech returned to the Site on August 11, 2010 to clear each soil boring location for down-hole hazards before drilling ensued. Boring began August 12 and was completed on August 13, 2010. Laboratory analyses of the 50 soil cutting samples are presented in Table 3 and in the Appendix.

Total petroleum hydrocarbons exceeded the NMOCD recommended remedial action level at only two boring locations (SB-10, 0.5-ft and SB-6, 0-0.05 ft) and concentrations ranged from non-detection to 3,023 mg/Kg. Neither benzene nor BTEX exceed the recommended remedial action level in any of the boring locations.

Chloride concentrations decreased below 250 mg/Kg with depth (maximum depth 20 fbgs) in all borings except for soil boring SB-4. At SB-4, 24 fbgs, chloride concentration was 548 mg/Kg. Figure 2 and 3 illustrate the configuration of the completed excavation at MCA 2A Header. Approximately 5,000 cubic yards of affected soil was excavated and hauled to CRI for disposal. Figure 2 shows the excavation boundary, excavation depths, and the soil borings completed in August (Table 1).

NMOCD requested one addition boring (SB-8) be completed near soil boring SB-4. The new boring (SB-8) was completed August 25, 2010. Laboratory data for this new boring are shown below.

Depth (ft)	Chloride (mg/Kg)
20	1300
25	298
30	156
35	317
40	93.1
45	256

ft = Feet
mg/Kg = Milligrams per Kilogram

Figure 3 presents laboratory confirmation analyses (Appendix) of chloride concentrations in samples collected from various locations in the floor and sidewalls of the excavation as of September 27, 2010. Total petroleum hydrocarbons were present in only two samples (9/01/10 N-F 6' 147.4 mg/Kg TPH and 9/02/10 II-FB 4' 194.3 mg/Kg TPH) and the concentrations were below NMOCD's recommended remedial action level. Neither benzene nor BTEX concentrations were noted in any of the laboratory analyses (Appendix).

Conclusions

A laboratory analysis of the over-excavation indicates clean boundaries in all areas, with the exception of the eastern side wall and floor adjacent to a large sand dune and the northeast side wall, were achieved (Photo Log). As directed by the agencies (10/8/2010), a clay barrier was placed in the area of soil boring SB-8 to prevent potential downward migration of residual chloride in soil due to precipitation.

As directed by the BLM (9/10/2010) in area SB-2, the area was excavated to 9-ft and the east and west sidewalls were extended 3-ft into the sand dunes. A soil sample was taken at the bottom of the excavation, a clay barrier was laid, and the area was backfilled.

Owing to the physical structures (flowlines and pipelines) present in the area, the affected soil in the northeast sidewall was not excavated.

Recommendations

Based on the work performed at this produced water release site, Tetra Tech recommends no further action. Tetra Tech also recommended areas to the north and northeast of the present remediation should be remediated in a separate project, subject to the BLM and the NMOCD approvals.

Tetra Tech suggests that ConocoPhillips request closure from the NMOCD and the BLM for this mixed crude oil/produced water release location. Please contact me (432-686-8081), if you have any questions or require additional information.

Sincerely,

Tetra Tech

Charles Durrett
Senior Project Manager

Cc: Mr. John Gates, ConocoPhillips

Table 1
ConocoPhillips
MCA 2A Header
Hand Auger Analytical Soil Analyses
November 4, 2009

	Location	Sample Depth (ft)	Chloride (mg/Kg)	Petroleum Hydrocarbons (mg/Kg)			Volatile Organic Compounds (mg/Kg)				
				DRO	GRO	Total	Benzene	Ethyl-benzene	Toluene	Xylenes Total	Total BTEX
Hand Auger (HA) Sampling Locations	HA-1	2.5	5,170	5,400	460	5,860	ND	11	3.1	18.6	32.70
		5.5	2,190	1,300	130	1,430	ND	0.4	0.021	2.9	3.321
	HA-2	3.0	4,290	6,600	910	7,510	ND	12	0.77	28.0	40.77
		6	1,410	160	1	161	ND	ND	ND	ND	ND
	HA-3	4.0	2,220	ND	ND	2,220	ND	ND	ND	ND	ND
		6.0	25,000	4,500	350	4,850	0.069	6.4	3.8	13.1	23.369
	HA-4	6	4,520	ND	ND	4,520	ND	ND	ND	0.002	0.002
		4	293	ND	ND	293	ND	ND	ND	ND	ND
	HA-5	3	1,990	ND	ND	1,990	ND	ND	ND	ND	ND
		5.0	878	1,000	ND	1,000	ND	ND	ND	ND	ND
	HA-6	3	1,120	740.0	0.2	740	ND	ND	ND	ND	ND
		6.5	2,570	250	15.0	265	ND	0.0014	0.003	0.079	0.0838

TPH_{GRO} =Gasoline range petroleum hydrocarbons
TPH_{DRO} =Diesel range petroleum hydrocarbons
ft = Feet
mg/Kg = Milligrams per kilogram
ND = Analyte not detected at or above laboratory detection limits

Table 2
ConocoPhillips
MCA 2A Header
Backhoe Analytical Soil Analyses
May 21, 2010

Sample Number	Sample Depth (ft)	Chloride (mg/Kg)	Petroleum Hydrocarbons		
			GRO (mg/Kg)	DRO mg/Kg	Total mg/Kg
1	0-0.5	2660	14	520	534
2	2	2460	ND	8.7	8.7
3	4	966	ND	ND	ND
4	6	241	ND	ND	ND
5	8	233	ND	ND	ND
6	10	58.2	ND	ND	ND
7	12	270	ND	ND	ND
8	14	321	ND	ND	ND

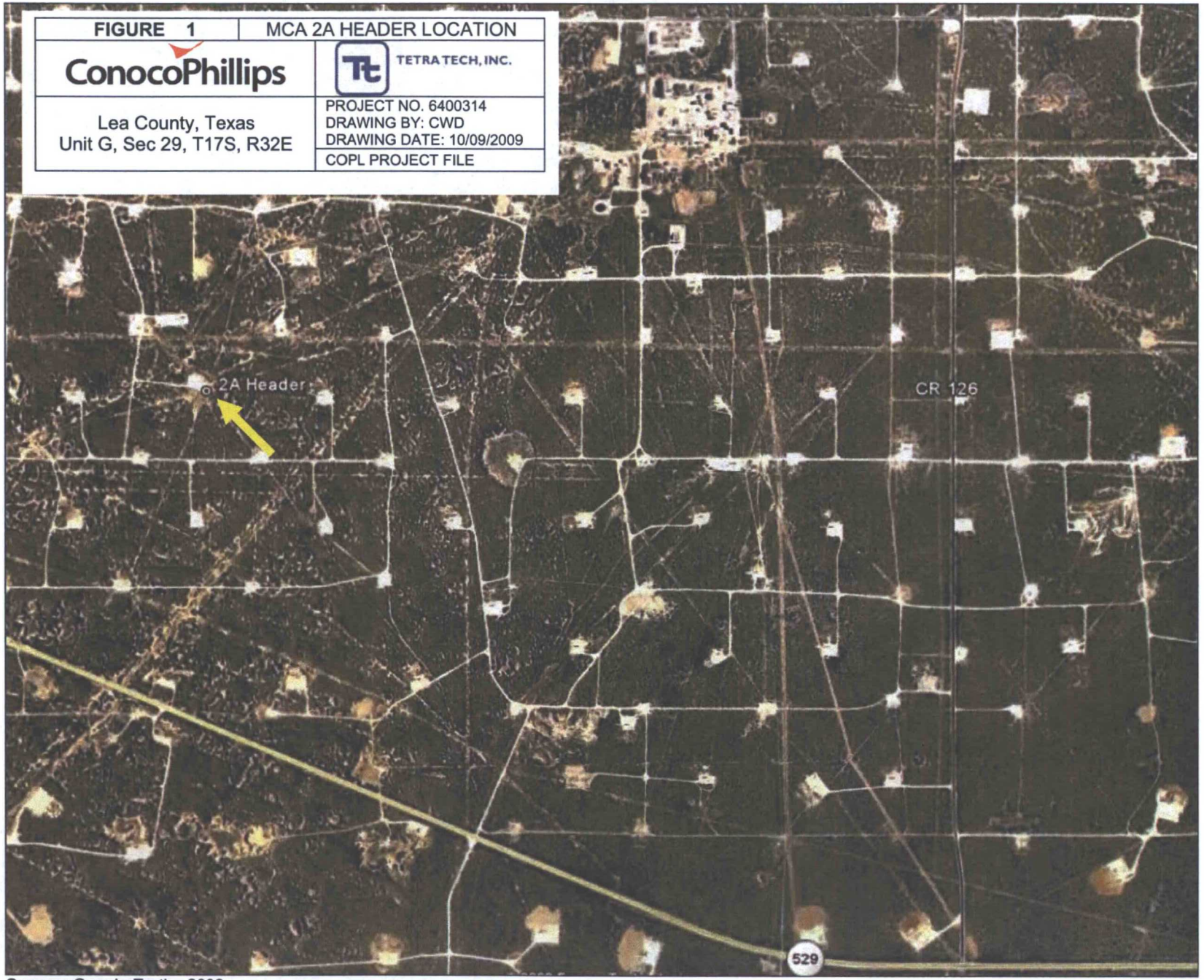
TPH_{GRO} =Gasoline range petroleum hydrocarbons
TPH_{DRO} =Diesel range petroleum hydrocarbons
ft = Feet
mg/Kg = Milligrams per kilogram
ND = Analyte not detected at or above laboratory detection limits

Table 3
ConocoPhillips
MCA 2A Header
Air Rotary Boring Analytical Soil Analyses
August 12-13, 2010

Location		Sample Depth (ft)	Chloride (mg/Kg)	Petroleum Hydrocarbons (mg/Kg)			Volatile Organic Compounds (mg/Kg)				
				DRO	GRO	Total	Benzene	Ethyl-benzene	Toluene	Xylenes Total	Total BTEX
Soil Boring (SB) Sampling Locations	SB-1	0-0.5	75	ND	105	105	ND	ND	ND	ND	ND
		4.0	**1,060**	893	2,130	**3,023**	ND	0.3497	ND	1.806	2.126
		8.0	46.6	74.2	330	404.2	ND	0.0606	0.0146	0.6858	0.7610
		12.0	5.57	ND	29.9	29.9	ND	0.0019	ND	0.0013	0.0032
		16.0	37.7	ND	39.2	39.2	0.0018	ND	ND	ND	0.0018
		20.0	23.1	ND	21.2	21.2	ND	ND	ND	ND	ND
		24.0	5.68	ND	33	33	ND	ND	ND	ND	ND
	SB-2	0-0.5	6.24	ND	ND	ND	ND	ND	ND	ND	ND
		4.0	**1,420**	ND	ND	ND	ND	ND	ND	ND	ND
		8.0	**361**	ND	ND	ND	ND	ND	ND	ND	ND
		12.0	**274**	ND	ND	ND	ND	ND	ND	ND	ND
		16.0	**304**	15.5	ND	15.5	ND	ND	ND	ND	ND
		20.0	88.9	ND	21.4	21.4	ND	ND	ND	ND	ND
		24.0	112	26.7	27.1	53.8	ND	ND	ND	ND	ND
	SB-3	0-0.5	21.6	ND	ND	ND	ND	ND	ND	ND	ND
		4.0	40.8	ND	ND	ND	ND	ND	ND	ND	ND
		8.0	227	ND	30.3	30.3	ND	ND	ND	ND	ND
		12.0	22	ND	ND	ND	ND	ND	ND	ND	ND
		16.0	23	ND	ND	ND	ND	ND	ND	ND	ND
		20.0	19	ND	26.7	26.7	ND	ND	ND	ND	ND
		24.0	36	ND	48.4	48.4	ND	ND	ND	ND	ND
	SB-4	0-0.5	152	ND	ND	ND	ND	ND	ND	ND	ND
		4.0	77.9	ND	ND	ND	ND	ND	ND	ND	ND
		8.0	245	ND	107	107	ND	ND	ND	ND	ND
		12.0	**334**	ND	65.5	65.5	ND	ND	ND	ND	ND
		16.0	**405**	ND	23.7	23.7	ND	ND	ND	ND	ND
		20.0	**318**	ND	19.6	19.6	ND	ND	ND	ND	ND
		24.0	**548**	ND	19.2	19.2	ND	ND	ND	ND	ND
	SB-5	0-0.5	131	ND	ND	ND	ND	ND	ND	ND	ND
		4.0	**386**	46.2	80.3	126.5	ND	ND	ND	ND	ND
		8.0	**363**	75.4	599	674.4	0.8884	ND	1.296	0.5816	2.766
		12.0	53.5	ND	26	26	ND	ND	0.0	ND	0.0014
		16.0	98.5	ND	ND	ND	ND	ND	ND	0.0028	0.0028
		20.0	119	ND	ND	ND	ND	ND	ND	ND	ND
		24.0	192	ND	ND	ND	ND	ND	ND	ND	ND
	SB-6	0-0.5	**530**	183	818	**1,001**	ND	ND	ND	0.0084	0.0084
		4.0	240	38.3	42.4	80.7	ND	ND	ND	ND	ND
		8.0	**939**	ND	112	112	ND	ND	ND	ND	ND
		12.0	138	ND	49.1	49.1	ND	ND	ND	ND	ND
		16.0	107	ND	ND	ND	ND	ND	ND	ND	ND
		20.0	136	ND	ND	ND	ND	ND	ND	ND	ND
		24.0	231	ND	95.3	95.3	ND	ND	ND	ND	ND
	SB-7	0-0.5	20.5	ND	19.5	19.5	ND	ND	ND	ND	ND
		4.0	**580**	ND	ND	ND	ND	ND	ND	ND	ND
		8.0	**588**	20.6	ND	20.6	ND	ND	ND	ND	ND
		12.0	173	ND	27.2	27.2	ND	ND	ND	ND	ND
		16.0	234	ND	ND	ND	ND	ND	ND	ND	ND
		20.0	158	ND	ND	ND	ND	ND	ND	ND	ND
		24.0	186	ND	ND	ND	ND	ND	ND	ND	ND
		28.0	195	ND	ND	ND	ND	ND	ND	ND	ND

TPH_{GRO} = Gasoline range petroleum hydrocarbons
TPH_{DRO} = Diesel range petroleum hydrocarbons
ft = Feet
mg/Kg = Milligrams per kilogram
ND = Analyte not detected at or above laboratory detection limits

FIGURE 1	MCA 2A HEADER LOCATION
ConocoPhillips	TETRA TECH, INC.
Lea County, Texas Unit G, Sec 29, T17S, R32E	PROJECT NO. 6400314 DRAWING BY: CWD DRAWING DATE: 10/09/2009 COPL PROJECT FILE



Source: Google Earth. 2009.

FIGURE 2	MCA 2A HEADER PRODUCED WATER EXCAVATION BOUNDARY, SOIL BORING (SB) SAMPLING LOCATIONS, AND EXCAVATION DEPTHS (FEET = ')
ConocoPhillips	TETRA TECH, INC.
Lea County, Texas Unit G, Sec 29, T17S, R32E	PROJECT NO. 6400314 DRAWING BY: CWD DRAWING DATE: 9/16/2010 COP PROJECT FILE

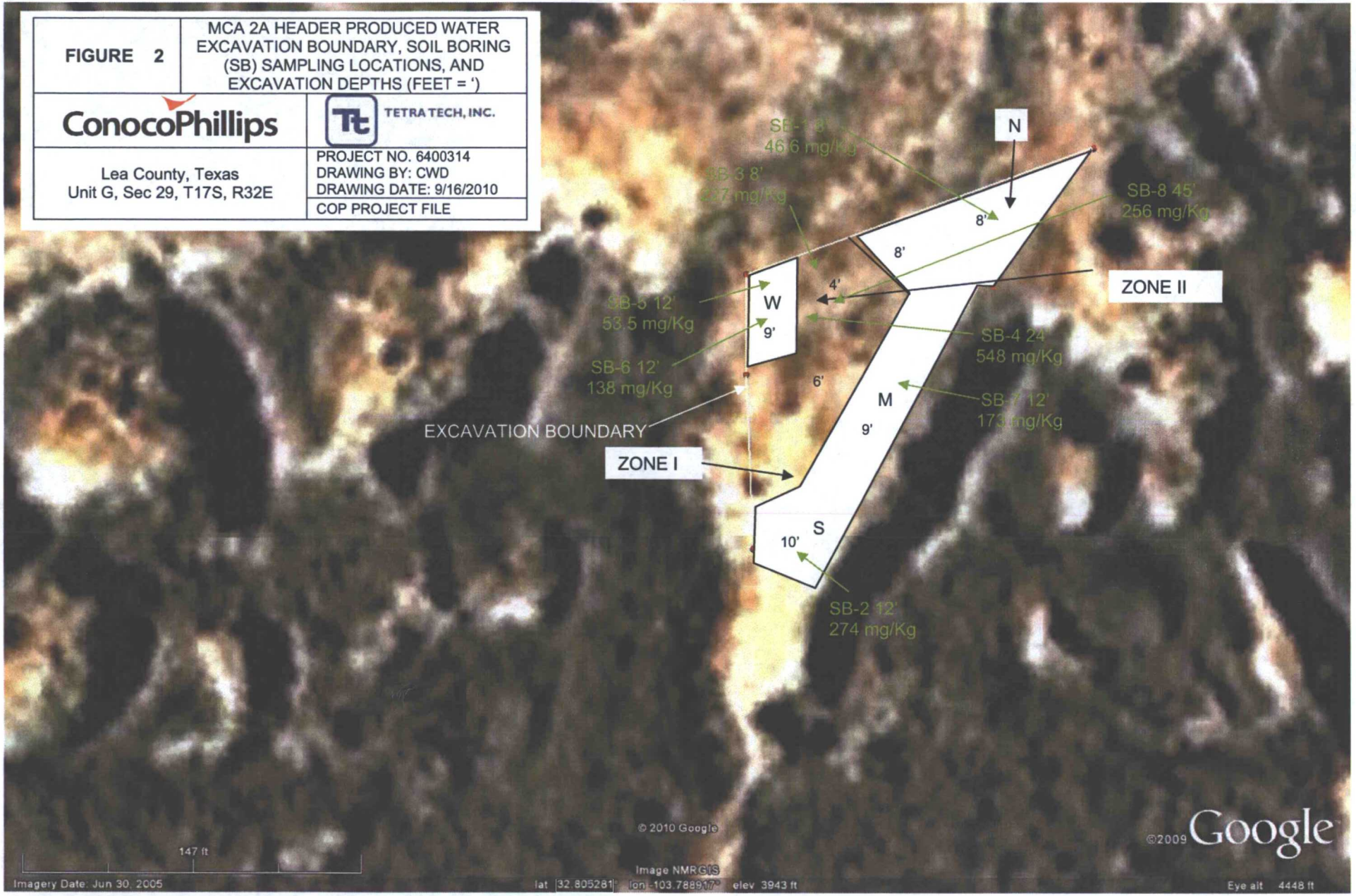
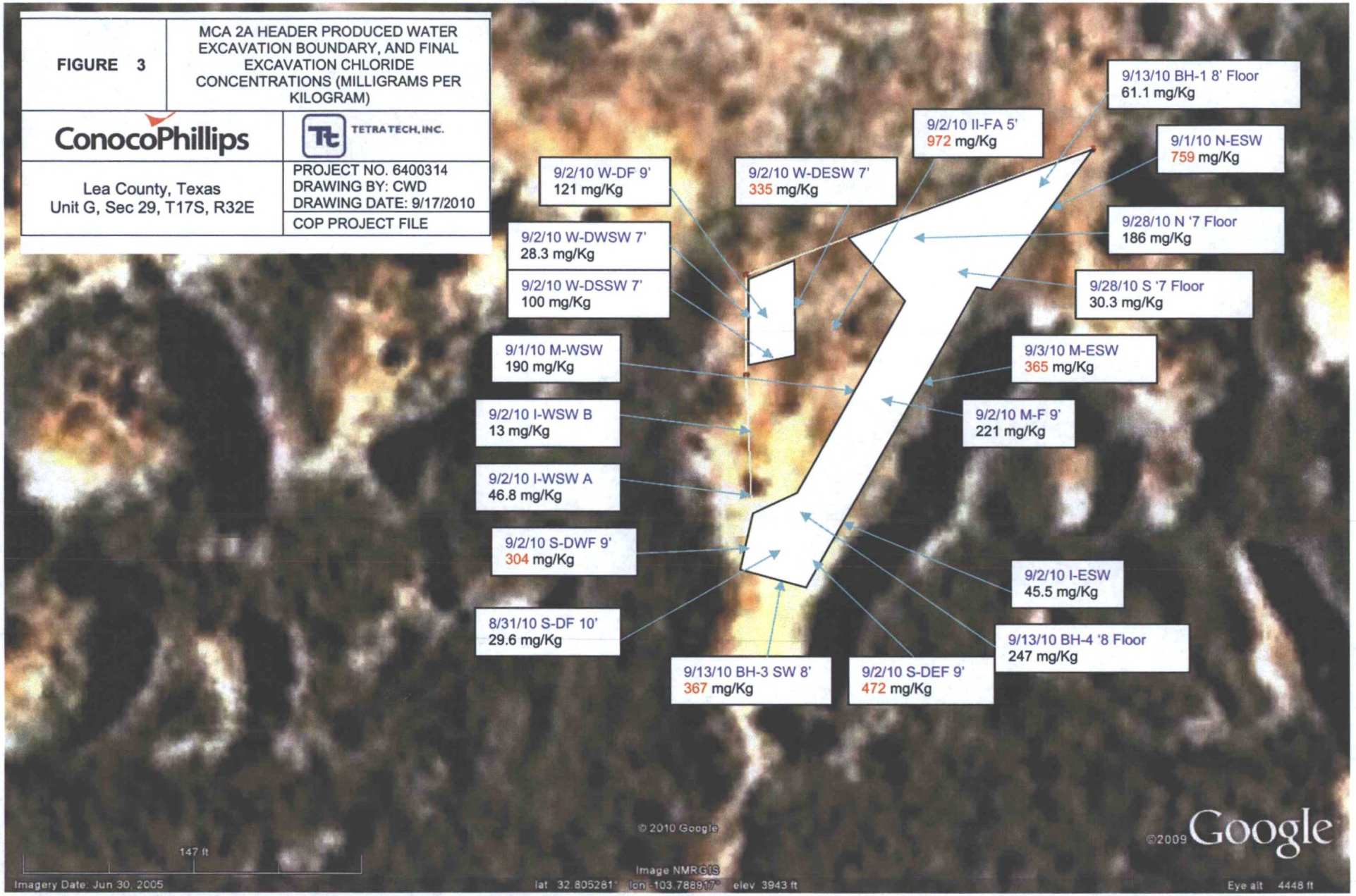


FIGURE 3	MCA 2A HEADER PRODUCED WATER EXCAVATION BOUNDARY, AND FINAL EXCAVATION CHLORIDE CONCENTRATIONS (MILLIGRAMS PER KILOGRAM)
ConocoPhillips	TETRA TECH, INC.
Lea County, Texas Unit G, Sec 29, T17S, R32E	PROJECT NO. 6400314 DRAWING BY: CWD DRAWING DATE: 9/17/2010
	COP PROJECT FILE



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State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company **ConocoPhillips Company**	Contact **John W. Gates**
Address **3300 North A St. Bldg 6, Midland, TX 79705-5406**	Telephone No. **505.391.3158**
Facility Name **MCA 2A Header**	Facility Type **Oil and Gas**

Surface Owner **Federal**	Mineral Owner **Federal**	Lease No **LC-060199A**

LOCATION OF RELEASE

NEARBY WELL MCA UNIT 308
API # 30.025.24076.00.00

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
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Latitude 32.48.340 **Longitude 103 47.301**

NATURE OF RELEASE

Type of Release **Produced Water**	Volume of Release **878.4**bbl (**0**oil, **878.4**water)	Volume Recovered (**0**oil, **845**water)
Source of Release **2" Fiberglass Trunkline**	Date and Hour of Occurrence **9/19/09 Unknown**	Date and Hour of Discovery **9/19/09 0717**
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? **Pat Hutchins**	
By Whom? **Tommy Brooks**	Date and Hour **9/19/09 1615**	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

WATER @ 170'

Describe Cause of Problem and Remedial Action Taken.*
Leak originated from a hole in a 2" fiberglass trunkline due to fatigue. Trunkline was isolated and the 2A header

Describe Area Affected and Cleanup Action Taken.*
300' X 60' X 2" area of sandy pasture land with no livestock present. Spill site will be delineated & remediated in accordance with an agreement with NMOCD and BLM guidelines.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: John W. Gates

Printed Name: **John W. Gates**

Title: **HSER Lead**

E-mail Address: **John.W.Gates@conocophillips.com**

Date: **9/21/09** Phone: **505.391.3158**

OIL CONSERVATION DIVISION

Approved by ~~District Supervisor:~~ ENV ENGINEER Geoffrey Leking

Approval Date: 09/24/09 Expiration Date: 11/24/09

Conditions of Approval: DELINEATE TO CLEAN +1. SUBMIT FINAL BY 11/24/09.

Attached ☐
IRP-09-10-2300

- Attach Additional Sheets If Necessary

fGRL0928731707

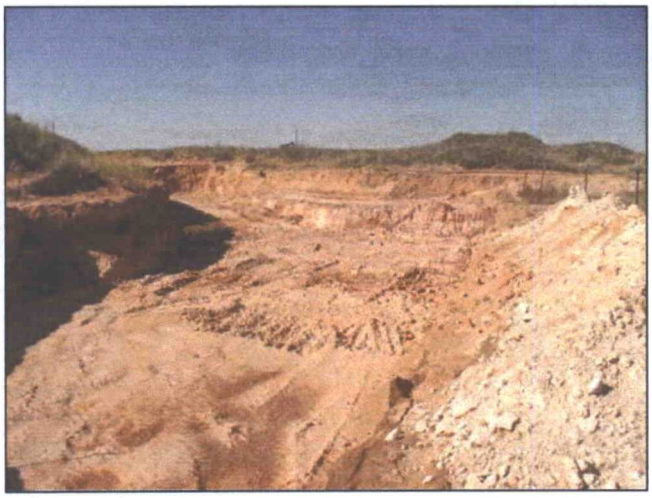
PHOTOGRAPHS

LOCATION

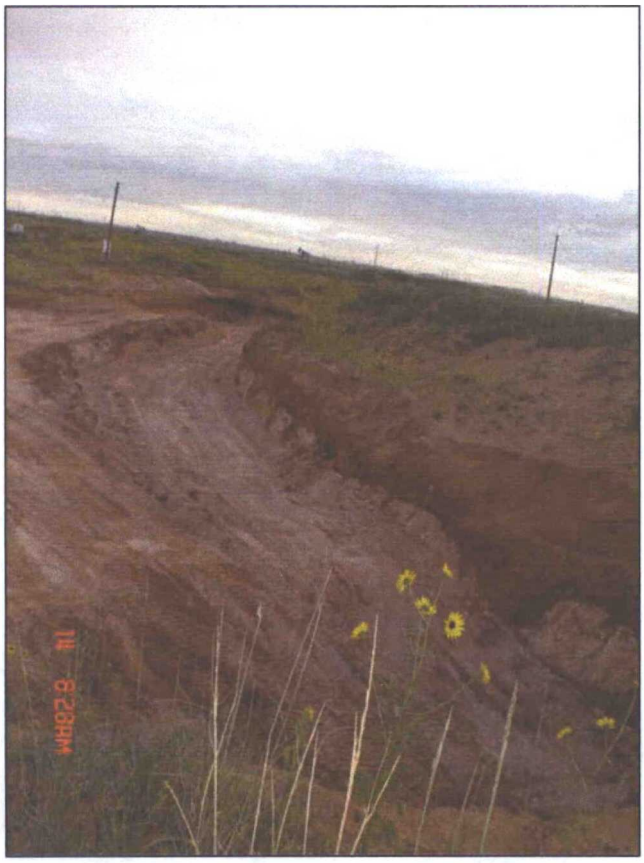
VIEW: South
Produced water release site

VIEW: South
Produced water pooling area

VIEW: North
Produced water release site at south end of affected area



VIEW: South
Excavated area

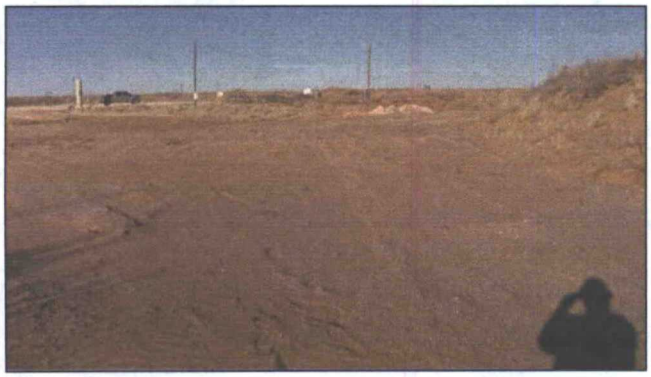


VIEW: North
Excavated area

VIEW: South
Placing clay over backfill

VIEW: East
Placing clay over backfill

VIEW: South
Remediated location



VIEW: North
Remediated location

VIEW: Northeast
Remediated location

LABORATORY REPORTS

Xenco Laboratory Report Dated September 2, 2010
Xenco Laboratory Report Dated September 7, 2010
Xenco Laboratory Report Dated September 14, 2010
Xenco Laboratory Report Dated September 29, 2010

Analytical Report 388015

for

Tetra Tech- Midland

Project Manager: Charles Durrett

MCA 2A Header

6400315CO

02-SEP-10

Celebrating 20 Years of commitment to excellence in Environmental Testing Services

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)
Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)
Xenco-Boca Raton (EPA Lab Code: FL01273):
Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

Xenco Phoenix (EPA Lab Code: AZ00901):
Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

02-SEP-10

Project Manager: **Charles Durrett**
Tetra Tech- Midland
1910 N. Big Spring
Midland, TX 79705

Reference: XENCO Report No: **388015**
MCA 2A Header
Project Address: New Mexico

Charles Durrett:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 388015. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 388015 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Brent Barron, II
Odessa Laboratory Manager

Sample Cross Reference 388015

Tetra Tech- Midland, Midland, TX

MCA 2A Header

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
S DEEP- NSW	S	Aug-31-10 13:45		388015-001
S-WSW	S	Aug-31-10 14:00		388015-002
S-ESW	S	Aug-31-10 14:15		388015-003
S Deep-F 10'	S	Aug-31-10 14:30	10 ft	388015-004
S - F 6'	S	Aug-31-10 14:45	6 ft	388015-005

CASE NARRATIVE

Client Name: Tetra Tech- Midland
Project Name: MCA 2A Header

Project ID:	*6400315CO*	*Report Date:*	*02-SEP-10*
Work Order Number:	*388015*	*Date Received:*	*09/01/2010*

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-821272 TPH By SW8015 Mod
None

Batch: LBA-821301 Anions by E300
None

Batch: LBA-821314 Percent Moisture
None

Batch: LBA-821331 BTEX by EPA 8021B
SW8021BM

Batch 821331, 4-Bromofluorobenzene recovered above QC limits QC Data Not confirmed by re-analysis. Samples affected are: 572250-1-BKS.

SW8021BM

Batch 821331, Benzene recovered below QC limits in the Matrix Spike Duplicate.
Samples affected are: 388015-003, -005, -004, -002.
The Laboratory Control Sample for Benzene is within laboratory Control Limits

Batch: LBA-821392 BTEX by EPA 8021B
SW8021BM

Batch 821392, 4-Bromofluorobenzene recovered above QC limits . Matrix interferences is suspected; data confirmed by re-analysis
Samples affected are: 388015-001. 4-Bromofluorobenzene recovered above QC limits . Matrix interferences is suspected; data not confirmed by re-analysis Samples affected are: 388015-001 SD.

Certificate of Analysis Summary 388015

Tetra Tech- Midland, Midland, TX

Project Name: MCA 2A Header

Project Id: 6400315CO
Contact: Charles Durrett
Project Location: New Mexico

Date Received in Lab: Wed Sep-01-10 07:56 am
Report Date: 02-SEP-10
Project Manager: Brent Barron, II

Analysis Requested															
	Lab Id:	388015-001		388015-002		388015-003		388015-004		388015-005					
	Field Id:	S DEEP- NSW		S-WSW		S-ESW		S Deep-F 10'		S - F 6'					
	Depth:							10- ft		6- ft					
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL					
	Sampled:	Aug-31-10 13:45		Aug-31-10 14:00		Aug-31-10 14:15		Aug-31-10 14:30		Aug-31-10 14:45					
Anions by E300	***Extracted:***														
	Analyzed:	Sep-01-10 12:37		Sep-01-10 12:37		Sep-01-10 12:37		Sep-01-10 12:37		Sep-01-10 12:37					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		270	9.25	1130	18.7	467	9.31	29.6	5.46	586	10.0				
BTEX by EPA 8021B	***Extracted:***	Sep-02-10 09:00		Sep-01-10 09:02		Sep-01-10 09:02		Sep-01-10 09:02		Sep-01-10 09:02					
	Analyzed:	Sep-02-10 11:04		Sep-01-10 15:41		Sep-01-10 16:04		Sep-01-10 16:27		Sep-01-10 14:07					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Benzene		ND	0.0011	ND	0.0011	ND	0.0011	ND	0.0013	ND	0.0012				
Toluene		ND	0.0022	ND	0.0022	ND	0.0022	ND	0.0026	ND	0.0024				
Ethylbenzene		ND	0.0011	ND	0.0011	ND	0.0011	ND	0.0013	ND	0.0012				
m,p-Xylenes		ND	0.0022	ND	0.0022	ND	0.0022	ND	0.0026	ND	0.0024				
o-Xylene		ND	0.0011	ND	0.0011	ND	0.0011	ND	0.0013	ND	0.0012				
Total Xylenes		ND	0.0011	ND	0.0011	ND	0.0011	ND	0.0013	ND	0.0012				
Total BTEX		ND	0.0011	ND	0.0011	ND	0.0011	ND	0.0013	ND	0.0012				
Percent Moisture	***Extracted:***														
	Analyzed:	Sep-02-10 09:51		Sep-02-10 09:51		Sep-02-10 09:51		Sep-02-10 09:51		Sep-02-10 09:51					
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL				
Percent Moisture		9.19	1.00	10.0	1.00	9.75	1.00	23.1	1.00	16.1	1.00				
TPH By SW8015 Mod	***Extracted:***	Sep-01-10 09:15		Sep-01-10 09:15		Sep-01-10 09:15		Sep-01-10 09:15		Sep-01-10 09:15					
	Analyzed:	Sep-01-10 11:53		Sep-01-10 12:13		Sep-01-10 12:33		Sep-01-10 12:54		Sep-01-10 13:14					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons		ND	16.5	ND	16.6	ND	16.6	ND	19.6	ND	17.8				
Diesel Range Hydrocarbons		ND	16.5	ND	16.6	ND	16.6	ND	19.6	ND	17.8				

Brent Barron, II
Odessa Laboratory Manager

Final 1.000

XENCO Laboratories

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

J The target analyte was positively identified below the MQL and above the SQL.

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit

PQL Practical Quantitation Limit

* Outside XENCO's scope of NELAC Accreditation.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: MCA 2A Header

Work Orders : 388015, **Project ID:** 6400315CO

Lab Batch #: 821331 **Sample:** 572250-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 09/01/10 11:48

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0349	0.0300	116	80-120	
4-Bromofluorobenzene	0.0365	0.0300	122	80-120	*

Lab Batch #: 821331 **Sample:** 572250-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 09/01/10 12:11

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0345	0.0300	115	80-120	
4-Bromofluorobenzene	0.0351	0.0300	117	80-120	

Lab Batch #: 821331 **Sample:** 572250-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 09/01/10 13:44

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0347	0.0300	116	80-120	

Lab Batch #: 821331 **Sample:** 388015-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/01/10 14:07

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0361	0.0300	120	80-120	

Lab Batch #: 821331 **Sample:** 388015-005 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/01/10 14:30

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0337	0.0300	112	80-120	
4-Bromofluorobenzene	0.0353	0.0300	118	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: MCA 2A Header

Work Orders : 388015, **Project ID:** 6400315CO

Lab Batch #: 821331 **Sample:** 388015-005 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/01/10 14:53

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0336	0.0300	112	80-120	
4-Bromofluorobenzene	0.0359	0.0300	120	80-120	

Lab Batch #: 821331 **Sample:** 388015-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/01/10 15:41

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0293	0.0300	98	80-120	
4-Bromofluorobenzene	0.0360	0.0300	120	80-120	

Lab Batch #: 821331 **Sample:** 388015-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/01/10 16:04

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0357	0.0300	119	80-120	

Lab Batch #: 821331 **Sample:** 388015-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/01/10 16:27

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0289	0.0300	96	80-120	
4-Bromofluorobenzene	0.0349	0.0300	116	80-120	

Lab Batch #: 821392 **Sample:** 572290-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 09/02/10 09:31

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0342	0.0300	114	80-120	
4-Bromofluorobenzene	0.0355	0.0300	118	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: MCA 2A Header

Work Orders : 388015, **Project ID:** 6400315CO

Lab Batch #: 821392 **Sample:** 572290-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 09/02/10 10:41

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0351	0.0300	117	80-120	

Lab Batch #: 821392 **Sample:** 388015-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/02/10 11:04

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0295	0.0300	98	80-120	
4-Bromofluorobenzene	0.0363	0.0300	121	80-120	**

Lab Batch #: 821392 **Sample:** 388015-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/02/10 11:28

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0342	0.0300	114	80-120	
4-Bromofluorobenzene	0.0359	0.0300	120	80-120	

Lab Batch #: 821392 **Sample:** 388015-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/02/10 11:51

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0336	0.0300	112	80-120	
4-Bromofluorobenzene	0.0362	0.0300	121	80-120	*

Lab Batch #: 821272 **Sample:** 572238-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 09/01/10 10:54

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.0	100	88	70-135	
o-Terphenyl	56.6	50.2	113	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: MCA 2A Header

Work Orders : 388015, **Project ID:** 6400315CO

Lab Batch #: 821272 **Sample:** 572238-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 09/01/10 11:14

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.8	100	88	70-135	
o-Terphenyl	53.3	50.2	106	70-135	

Lab Batch #: 821272 **Sample:** 572238-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 09/01/10 11:34

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.9	99.5	88	70-135	
o-Terphenyl	45.2	49.8	91	70-135	

Lab Batch #: 821272 **Sample:** 388015-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/01/10 11:53

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.7	100	88	70-135	
o-Terphenyl	45.6	50.0	91	70-135	

Lab Batch #: 821272 **Sample:** 388015-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/01/10 12:13

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.4	99.8	88	70-135	
o-Terphenyl	45.2	49.9	91	70-135	

Lab Batch #: 821272 **Sample:** 388015-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/01/10 12:33

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.0	100	90	70-135	
o-Terphenyl	46.4	50.0	93	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: MCA 2A Header

Work Orders : 388015,

Project ID: 6400315CO

Lab Batch #: 821272 **Sample:** 388015-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/01/10 12:54

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	100	115	70-135	
o-Terphenyl	60.7	50.2	121	70-135	

Lab Batch #: 821272 **Sample:** 388015-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/01/10 13:14

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.3	99.5	90	70-135	
o-Terphenyl	46.2	49.8	93	70-135	

Lab Batch #: 821272 **Sample:** 388015-005 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/01/10 13:34

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.4	101	88	70-135	
o-Terphenyl	50.7	50.3	101	70-135	

Lab Batch #: 821272 **Sample:** 388015-005 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/01/10 13:54

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	84.7	100	85	70-135	
o-Terphenyl	51.2	50.0	102	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Final 1.000

Blank Spike Recovery

Project Name: MCA 2A Header

Work Order #: 388015 **Project ID:** 6400315CO

Lab Batch #: 821392 **Sample:** 572290-1-BKS **Matrix:** Solid

Date Analyzed: 09/02/2010 **Date Prepared:** 09/02/2010 **Analyst:** ASA

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

BTEX by EPA 8021B Analytes	Blank Result [A]	BLANK /BLANK SPIKE RECOVERY STUDY Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Benzene	ND	0.0996	0.0875	88	70-130	
Toluene	ND	0.0996	0.0860	86	70-130	
Ethylbenzene	ND	0.0996	0.0907	91	71-129	
m,p-Xylenes	ND	0.1992	0.1762	88	70-135	
o-Xylene	ND	0.0996	0.0891	89	71-133	

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

BRL - Below Reporting Limit

XENCO Laboratories

BS / BSD Recoveries

Project Name: MCA 2A Header

Work Order #: 388015 **Project ID:** 6400315CO

Analyst: SEE **Date Prepared:** 09/01/2010 **Date Analyzed:** 09/01/2010

Lab Batch ID: 821331 **Sample:** 572250-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.0992	0.0961	97	0.0996	0.0950	95	1	70-130	35	
Toluene	ND	0.0992	0.0949	96	0.0996	0.0939	94	1	70-130	35	
Ethylbenzene	ND	0.0992	0.0988	100	0.0996	0.0977	98	1	71-129	35	
m,p-Xylenes	ND	0.1984	0.1916	97	0.1992	0.1897	95	1	70-135	35	
o-Xylene	ND	0.0992	0.0978	99	0.0996	0.0973	98	1	71-133	35	

Analyst: LATCOR **Date Prepared:** 09/01/2010 **Date Analyzed:** 09/01/2010

Lab Batch ID: 821301 **Sample:** 821301-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Anions by E300 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	ND	10.0	9.11	91	10	9.16	92	1	75-125	20	

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

XENCO Laboratories

BS / BSD Recoveries

Project Name: MCA 2A Header

Work Order #: 388015
Analyst: BEV
Lab Batch ID: 821272
Sample: 572238-1-BKS
Units: mg/kg

Date Prepared: 09/01/2010
Batch #: 1

Project ID: 6400315CO
Date Analyzed: 09/01/2010
Matrix: Solid

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons	ND	1000	1180	118	1000	1180	118	0	70-135	35	
Diesel Range Hydrocarbons	ND	1000	955	96	1000	1080	108	12	70-135	35	

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

XENCO Laboratories

Form 3 - MS Recoveries

Project Name: MCA 2A Header

Work Order #: 388015
Lab Batch #: 821301
Project ID: 6400315CO
Date Analyzed: 09/01/2010
Date Prepared: 09/01/2010
Analyst: LATCOR
QC- Sample ID: 388015-001 S
Batch #: 1
Matrix: Soil
Reporting Units: mg/kg

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	270	220	442	78	75-125	

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

BRL - Below Reporting Limit

Final 1.000

Form 3 - MS / MSD Recoveries

Project Name: MCA 2A Header

Work Order # : 388015 **Project ID:** 6400315CO

Lab Batch ID: 821331 **QC- Sample ID:** 388015-005 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 09/01/2010 **Date Prepared:** 09/01/2010 **Analyst:** SEE

Reporting Units: mg/kg

BTEX by EPA 8021B Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1185	0.1096	92	0.1190	0.0804	68	31	70-130	35	X
Toluene	ND	0.1185	0.1083	91	0.1190	0.0842	71	25	70-130	35	
Ethylbenzene	ND	0.1185	0.1140	96	0.1190	0.0932	78	20	71-129	35	
m,p-Xylenes	ND	0.2370	0.2214	93	0.2379	0.1835	77	19	70-135	35	
o-Xylene	ND	0.1185	0.1126	95	0.1190	0.0929	78	19	71-133	35	

Lab Batch ID: 821392 **QC- Sample ID:** 388015-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 09/02/2010 **Date Prepared:** 09/02/2010 **Analyst:** ASA

Reporting Units: mg/kg

BTEX by EPA 8021B Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1099	0.0897	82	0.1095	0.0894	82	0	70-130	35	
Toluene	ND	0.1099	0.0888	81	0.1095	0.0890	81	0	70-130	35	
Ethylbenzene	ND	0.1099	0.0936	85	0.1095	0.0942	86	1	71-129	35	
m,p-Xylenes	ND	0.2198	0.1834	83	0.2189	0.1835	84	0	70-135	35	
o-Xylene	ND	0.1099	0.0916	83	0.1095	0.0914	83	0	71-133	35	

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

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

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

Form 3 - MS / MSD Recoveries

Project Name: MCA 2A Header

Work Order # : 388015 **Project ID:** 6400315CO

Lab Batch ID: 821272 **QC- Sample ID:** 388015-005 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 09/01/2010 **Date Prepared:** 09/01/2010 **Analyst:** BEV

Reporting Units: mg/kg

TPH By SW8015 Mod Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons	ND	1200	1400	117	1190	1350	113	4	70-135	35	
Diesel Range Hydrocarbons	ND	1200	1240	103	1190	1160	97	7	70-135	35	

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

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

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

XENCO Laboratories

Sample Duplicate Recovery

ACCREDITED IN ACCORDANCE WITH nelac

Project Name: MCA 2A Header

Work Order #: 388015

Lab Batch #: 821301 **Project ID:** 6400315CO

Date Analyzed: 09/01/2010 **Date Prepared:** 09/01/2010 **Analyst:** LATCOR

QC- Sample ID: 388015-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Anions by E300	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride	270	276	2	20	

Lab Batch #: 821314

Date Analyzed: 09/02/2010 **Date Prepared:** 09/02/2010 **Analyst:** JLG

QC- Sample ID: 388015-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	9.19	10.2	10	20	

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

BRL - Below Reporting Limit

Analysis Request of Chain of Custody Record

PAGE: OF:

388015

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

CLIENT NAME: ConocoPhillips BK
SITE MANAGER: C. Dworak
PROJECT NO.: 640031S CO
PROJECT NAME: MCA 2A Heater

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. (Ext to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride 300	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
-001	8/31/10	1:45	S	X		S Deep - NSW	2	N					X	X										X				
-002	8/31/10	2:00	S	X		S - WSW	2	N					X	X										X				
-003	8/31/10	2:15	S	X		S - ESW	2	N					X	X										X				
-004	8/31/10	2:30	S	X		S Deep - F 10'	2	N					X	X										X				
-005	8/31/10	2:45	S	X		S - F 6'	2	N					X	X										X				

RELINQUISHED BY: (Signature) Date: 9/1/10 Time: 6:00 am
RECEIVED BY: (Signature) Date: Time:
SAMPLED BY: (Print & Initial) Date: Time:

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:
SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS
AIRBILL #: OTHER:

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:
TETRA TECH CONTACT PERSON: Results by:

RECEIVING LABORATORY:
ADDRESS:
CITY: STATE: ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature)
DATE: 9/1/10 TIME: 7:56 am
RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 5.5°C
REMARKS: * 8015 DRO-GRO New Mexico

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

XENCO Laboratories

XENCO Laboratories
Atlanta, Boca Raton, Corpus Christi, Dallas
Houston, Miami, Odessa, Philadelphia
Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist
Document No.: SYS-SRC
Revision/Date: No. 01, 5/27/2010
Effective Date: 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

Client: TetraTech
Date/Time: 9/1/10
Lab ID # : 388015
Initials: BB

Sample Receipt Checklist

1. Samples on ice?						Blue	Water	No	
2. Shipping container in good condition?						Yes	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?						Yes	No	N/A	
4. Chain of Custody present?						Yes	No		
5. Sample instructions complete on chain of custody?						Yes	No		
6. Any missing / extra samples?						Yes	No		
7. Chain of custody signed when relinquished / received?						Yes	No		
8. Chain of custody agrees with sample label(s)?						Yes	No		
9. Container labels legible and intact?						Yes	No		
10. Sample matrix / properties agree with chain of custody?						Yes	No		
11. Samples in proper container / bottle?						Yes	No		
12. Samples properly preserved?						Yes	No	N/A	
13. Sample container intact?						Yes	No		
14. Sufficient sample amount for indicated test(s)?						Yes	No		
15. All samples received within sufficient hold time?						Yes	No		
16. Subcontract of sample(s)?						Yes	No	N/A	
17. VOC sample have zero head space?						Yes	No	N/A	
18. Cooler 1 No.		Cooler 2 No.		Cooler 3 No.		Cooler 4 No.		Cooler 5 No.	
lbs	5.5 °C	lbs	°C	lbs	°C	lbs	°C	lbs	°C

Nonconformance Documentation

Contact:_____ Contacted by:_____ Date/Time:_____

Regarding: _____

_____

Corrective Action Taken: _____

_____

_____

_____

Check all that apply:
- ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
- ☐ Initial and Backup Temperature confirm out of temperature conditions
- ☐ Client understands and would like to proceed with analysis

Analysis Request of Chain of Custody Record

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

388015

PAGE: OF:

CLIENT NAME: ConocoPhillips BW
SITE MANAGER: C. Dworak
PROJECT NO.: 6400315 CO
PROJECT NAME: MCA 2A Heater

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride 300	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
-001	8/31/10	1:45	S	X		S Deep - NSW	2	N					X	X										X				
-002	8/31/10	2:00	S	X		S - WSW	2	N					X	X										X				
-003	8/31/10	2:15	S	X		S - ESW	2	N					X	X										X				
-004	8/31/10	2:30	S	X		S Deep - F 10'	2	N					X	X										X				
-005	8/31/10	2:45	S	X		S - F 0'	2	N					X	X										X				

RELINQUISHED BY: (Signature)	Date: 9/1/10 Time: 6:00 am	RECEIVED BY: (Signature)	Date: Time:
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:
RECEIVING LABORATORY: ADDRESS: CITY: STATE: ZIP: CONTACT: PHONE:		RECEIVED BY: (Signature) DATE: 9/1/10 TIME: 7:56 am	

SAMPLED BY: (Print & Initial) Date: Time:

SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS AIRBILL #: OTHER:

TETRA TECH CONTACT PERSON: Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 5.5°C

REMARKS: * 8015 DRO-GRO New Mexico

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

XENCO Laboratories	Document Title: Sample Receipt Checklist
Atlanta, Boca Raton, Corpus Christi, Dallas	Document No.: SYS-SRC
Houston, Miami, Odessa, Philadelphia	Revision/Date: No. 01, 5/27/2010
Phoenix, San Antonio, Tampa	Effective Date: 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

Client: TetraTech

Date/Time: 9/1/10

Lab ID #: 388015

Initials: BB

Sample Receipt Checklist

1. Samples on ice?	Blue	(Water)	No	
2. Shipping container in good condition?	(Yes)	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	(Yes)	No	N/A	
4. Chain of Custody present?	(Yes)	No		
5. Sample instructions complete on chain of custody?	(Yes)	No		
6. Any missing / extra samples?	Yes	(No)		
7. Chain of custody signed when relinquished / received?	(Yes)	No		
8. Chain of custody agrees with sample label(s)?	(Yes)	No		
9. Container labels legible and intact?	(Yes)	No		
10. Sample matrix / properties agree with chain of custody?	(Yes)	No		
11. Samples in proper container / bottle?	(Yes)	No		
12. Samples properly preserved?	(Yes)	No	N/A	
13. Sample container intact?	(Yes)	No		
14. Sufficient sample amount for indicated test(s)?	(Yes)	No		
15. All samples received within sufficient hold time?	(Yes)	No		
16. Subcontract of sample(s)?	Yes	(No)	N/A	
17. VOC sample have zero head space?	(Yes)	No	N/A	

18. Cooler 1 No.		Cooler 2 No.		Cooler 3 No.		Cooler 4 No.		Cooler 5 No.	
lbs	5.5 °C	lbs	°C	lbs	°C	lbs	°C	lbs	°C

Nonconformance Documentation

Contact:_____ Contacted by:_____ Date/Time:_____

Regarding: _____

_____

Corrective Action Taken:_____

_____

_____

_____

Check all that apply:
- ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
- ☐ Initial and Backup Temperature confirm out of temperature conditions
- ☐ Client understands and would like to proceed with analysis

Analytical Report 388394

for

Tetra Tech- Midland

Project Manager: Charles Durrett

Conoco Phillips MCA Header 2 A

114-6400315CO

07-SEP-10

Celebrating 20 Years of commitment to excellence in Environmental Testing Services

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)
Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)
Xenco-Boca Raton (EPA Lab Code: FL01273):
Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

Xenco Phoenix (EPA Lab Code: AZ00901):
Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

07-SEP-10

Project Manager: **Charles Durrett**
Tetra Tech- Midland
1910 N. Big Spring
Midland, TX 79705

Reference: XENCO Report No: **388394**
Conoco Phillips MCA Header 2 A
Project Address:

Charles Durrett:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 388394. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 388394 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Brent Barron, II
Odessa Laboratory Manager

Sample Cross Reference 388394

Tetra Tech- Midland, Midland, TX

Conoco Phillips MCA Header 2 A

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
S Deep - WF-9'	S	Sep-02-10 09:00		388394-001
I - WSWA	S	Sep-02-10 09:10		388394-002
I - WSWB	S	Sep-02-10 09:15		388394-003
S Deep - EF 9'	S	Sep-02-10 09:40		388394-004
S Deep - SSW 8'	S	Sep-02-10 09:50		388394-005
I - ESW	S	Sep-02-10 10:00		388394-006
I - F 6'	S	Sep-02-10 10:05		388394-007
W Deep - F 9'	S	Sep-02-10 10:20		388394-008
W Deep - WSW 7'	S	Sep-02-10 10:22		388394-009
W Deep - SSW 7'	S	Sep-02-10 10:24		388394-010
W Deep - ESW 7'	S	Sep-02-10 10:26		388394-011
II - F A 5'	S	Sep-02-10 10:30		388394-012
II - F B 4'	S	Sep-02-10 10:40		388394-013

CASE NARRATIVE

Client Name: Tetra Tech- Midland
Project Name: Conoco Phillips MCA Header 2 A

Project ID:	*114-6400315CO*	*Report Date:*	*07-SEP-10*
Work Order Number:	*388394*	*Date Received:*	*09/02/2010*

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-821582 Total Chloride (Titrametric)
None

Batch: LBA-821608 Percent Moisture
None

Batch: LBA-821732 Chlorides by E300
None

Batch: LBA-821739 BTEX by EPA 8021B
None

Batch: LBA-821742 TPH By SW8015 Mod
None

Certificate of Analysis Summary 388394

Tetra Tech- Midland, Midland, TX

Project Name: Conoco Phillips MCA Header 2 A

Project Id: 114-6400315CO
Contact: Charles Durrett
Project Location:

Date Received in Lab: Thu Sep-02-10 03:05 pm
Report Date: 07-SEP-10
Project Manager: Brent Barron, II

Analysis Requested		388394-001		388394-002		388394-003		388394-004		388394-005		388394-006	
	Field Id:	S Deep - WF-9'		I - WSWA		I - WSWB		S Deep - EF 9'		S Deep - SSW 8'		I - ESW	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Sep-02-10 09:00		Sep-02-10 09:10		Sep-02-10 09:15		Sep-02-10 09:40		Sep-02-10 09:50		Sep-02-10 10:00	
BTEX by EPA 8021B	*Extracted:*	Sep-03-10 08:00		Sep-03-10 08:00		Sep-03-10 08:00		Sep-03-10 08:00		Sep-03-10 08:00		Sep-03-10 08:00	
	Analyzed:	Sep-03-10 12:31		Sep-03-10 12:54		Sep-03-10 13:18		Sep-03-10 13:41		Sep-03-10 14:05		Sep-03-10 14:28	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		ND	0.0011	ND	0.0011	ND	0.0010	ND	0.0011	ND	0.0012	ND	0.0012
Toluene		ND	0.0022	ND	0.0022	ND	0.0020	ND	0.0023	ND	0.0023	ND	0.0024
Ethylbenzene		ND	0.0011	ND	0.0011	ND	0.0010	ND	0.0011	ND	0.0012	ND	0.0012
m,p-Xylenes		ND	0.0022	ND	0.0022	ND	0.0020	ND	0.0023	ND	0.0023	ND	0.0024
o-Xylene		ND	0.0011	ND	0.0011	ND	0.0010	ND	0.0011	ND	0.0012	ND	0.0012
Total Xylenes		ND	0.0011	ND	0.0011	ND	0.0010	ND	0.0011	ND	0.0012	ND	0.0012
Total BTEX		ND	0.0011	ND	0.0011	ND	0.0010	ND	0.0011	ND	0.0012	ND	0.0012
Chlorides by E300	*Extracted:*												
	Analyzed:	Sep-03-10 11:33		Sep-03-10 11:33		Sep-03-10 11:33		Sep-03-10 11:33		Sep-03-10 11:33		Sep-03-10 11:33	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		304	9.33	46.8	4.55	13.0	4.23	472	9.67	741	9.79	45.5	5.00
Percent Moisture	*Extracted:*												
	Analyzed:	Sep-03-10 13:00		Sep-03-10 13:00		Sep-03-10 13:00		Sep-03-10 13:00		Sep-03-10 13:00		Sep-03-10 13:00	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		9.96	1.00	7.74	1.00	ND	1.00	13.1	1.00	14.2	1.00	16.0	1.00
TPH By SW8015 Mod	*Extracted:*	Sep-03-10 09:45		Sep-03-10 09:45		Sep-03-10 09:45		Sep-03-10 09:45		Sep-03-10 09:45		Sep-03-10 09:45	
	Analyzed:	Sep-03-10 13:13		Sep-03-10 13:32		Sep-03-10 13:51		Sep-03-10 14:11		Sep-03-10 14:31		Sep-03-10 14:51	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons		ND	16.6	ND	16.3	ND	15.1	ND	17.2	ND	17.5	ND	17.8
Diesel Range Hydrocarbons		ND	16.6	ND	16.3	ND	15.1	ND	17.2	ND	17.5	ND	17.8

Brent Barron, II
Odessa Laboratory Manager

Final 1.000

Certificate of Analysis Summary 388394

Tetra Tech- Midland, Midland, TX

Project Name: Conoco Phillips MCA Header 2 A

Project Id: 114-6400315CO
Contact: Charles Durrett
Project Location:

Date Received in Lab: Thu Sep-02-10 03:05 pm
Report Date: 07-SEP-10
Project Manager: Brent Barron, II

Analysis Requested													
	Lab Id:	388394-007		388394-008		388394-009		388394-010		388394-011		388394-012	
	Field Id:	I - F 6'		W Deep - F 9'		W Deep - WSW 7'		W Deep - SSW 7'		W Deep - ESW 7'		II - F A 5'	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Sep-02-10 10:05		Sep-02-10 10:20		Sep-02-10 10:22		Sep-02-10 10:24		Sep-02-10 10:26		Sep-02-10 10:30	
BTEX by EPA 8021B	*Extracted:*	Sep-03-10 08:00		Sep-03-10 08:00		Sep-03-10 08:00		Sep-03-10 08:00		Sep-03-10 08:00		Sep-03-10 08:00	
	Analyzed:	Sep-03-10 14:51		Sep-03-10 15:15		Sep-03-10 15:45		Sep-03-10 16:08		Sep-03-10 18:04		Sep-03-10 18:27	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		ND	0.0012	ND	0.0011	ND	0.0012	ND	0.0011	ND	0.0012	ND	0.0012
Toluene		ND	0.0023	ND	0.0022	ND	0.0023	ND	0.0023	ND	0.0024	ND	0.0025
Ethylbenzene		ND	0.0012	ND	0.0011	ND	0.0012	ND	0.0011	ND	0.0012	ND	0.0012
m,p-Xylenes		ND	0.0023	ND	0.0022	ND	0.0023	ND	0.0023	ND	0.0024	ND	0.0025
o-Xylene		ND	0.0012	ND	0.0011	ND	0.0012	ND	0.0011	ND	0.0012	ND	0.0012
Total Xylenes		ND	0.0012	ND	0.0011	ND	0.0012	ND	0.0011	ND	0.0012	ND	0.0012
Total BTEX		ND	0.0012	ND	0.0011	ND	0.0012	ND	0.0011	ND	0.0012	ND	0.0012
Chlorides by E300	*Extracted:*												
	Analyzed:	Sep-03-10 11:33		Sep-03-10 11:33		Sep-03-10 11:33		Sep-03-10 11:33		Sep-03-10 11:33		Sep-03-10 11:33	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		1030	19.6	121	9.27	28.3	9.67	100	9.68	335	9.94	972	20.7
Percent Moisture	*Extracted:*												
	Analyzed:	Sep-03-10 13:00		Sep-03-10 13:00		Sep-03-10 13:00		Sep-03-10 13:00		Sep-03-10 13:00		Sep-03-10 13:00	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		14.2	1.00	9.36	1.00	13.1	1.00	13.2	1.00	15.5	1.00	18.9	1.00
TPH By SW8015 Mod	*Extracted:*	Sep-03-10 09:45		Sep-03-10 09:45		Sep-03-10 09:45		Sep-03-10 09:45		Sep-03-10 09:45		Sep-03-10 09:45	
	Analyzed:	Sep-03-10 15:10		Sep-03-10 15:29		Sep-03-10 15:50		Sep-03-10 16:09		Sep-03-10 16:49		Sep-03-10 17:09	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons		ND	17.5	ND	16.5	ND	17.2	ND	17.3	ND	17.7	ND	18.6
Diesel Range Hydrocarbons		ND	17.5	ND	16.5	ND	17.2	ND	17.3	ND	17.7	ND	18.6

Brent Barron, II
Odessa Laboratory Manager

Final 1.000

Certificate of Analysis Summary 388394

Tetra Tech- Midland, Midland, TX

Project Name: Conoco Phillips MCA Header 2 A

Project Id: 114-6400315CO
Contact: Charles Durrett
Project Location:

Date Received in Lab: Thu Sep-02-10 03:05 pm
Report Date: 07-SEP-10
Project Manager: Brent Barron, II

Analysis Requested							
	Lab Id:	388394-013					
	Field Id:	II - F B 4'					
	Depth:						
	Matrix:	SOIL					
	Sampled:	Sep-02-10 10:40					
BTEX by EPA 8021B	*Extracted:*	Sep-03-10 08:00					
	Analyzed:	Sep-03-10 18:50					
	Units/RL:	mg/kg	RL				
Benzene		ND	0.0012				
Toluene		ND	0.0023				
Ethylbenzene		ND	0.0012				
m,p-Xylenes		ND	0.0023				
o-Xylene		ND	0.0012				
Total Xylenes		ND	0.0012				
Total BTEX		ND	0.0012				
Chlorides by E300	*Extracted:*						
	Analyzed:	Sep-03-10 11:33					
	Units/RL:	mg/kg	RL				
Chloride		1150	24.2				
Percent Moisture	*Extracted:*						
	Analyzed:	Sep-03-10 13:00					
	Units/RL:	%	RL				
Percent Moisture		13.3	1.00				
TPH By SW8015 Mod	*Extracted:*	Sep-03-10 09:45					
	Analyzed:	Sep-03-10 17:28					
	Units/RL:	mg/kg	RL				
Gasoline Range Hydrocarbons		18.3	17.3				
Diesel Range Hydrocarbons		176	17.3				

Brent Barron, II
Odessa Laboratory Manager

Final 1.000

XENCO Laboratories

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

J The target analyte was positively identified below the MQL and above the SQL.

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit

PQL Practical Quantitation Limit

* Outside XENCO's scope of NELAC Accreditation.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Conoco Phillips MCA Header 2 A

Work Orders : 388394, **Project ID:** 114-6400315CO

Lab Batch #: 821739 **Sample:** 572521-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 09/03/10 10:58

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0351	0.0300	117	80-120	
4-Bromofluorobenzene	0.0355	0.0300	118	80-120	

Lab Batch #: 821739 **Sample:** 572521-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 09/03/10 12:08

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0291	0.0300	97	80-120	
4-Bromofluorobenzene	0.0338	0.0300	113	80-120	

Lab Batch #: 821739 **Sample:** 388394-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/03/10 12:31

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0294	0.0300	98	80-120	
4-Bromofluorobenzene	0.0352	0.0300	117	80-120	

Lab Batch #: 821739 **Sample:** 388394-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/03/10 12:54

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0290	0.0300	97	80-120	
4-Bromofluorobenzene	0.0344	0.0300	115	80-120	

Lab Batch #: 821739 **Sample:** 388394-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/03/10 13:18

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0351	0.0300	117	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Conoco Phillips MCA Header 2 A

Work Orders : 388394,

Project ID: 114-6400315CO

Lab Batch #: 821739 **Sample:** 388394-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/03/10 13:41

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0359	0.0300	120	80-120	

Lab Batch #: 821739 **Sample:** 388394-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/03/10 14:05

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0291	0.0300	97	80-120	
4-Bromofluorobenzene	0.0354	0.0300	118	80-120	

Lab Batch #: 821739 **Sample:** 388394-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/03/10 14:28

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0289	0.0300	96	80-120	
4-Bromofluorobenzene	0.0336	0.0300	112	80-120	

Lab Batch #: 821739 **Sample:** 388394-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/03/10 14:51

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0289	0.0300	96	80-120	
4-Bromofluorobenzene	0.0355	0.0300	118	80-120	

Lab Batch #: 821739 **Sample:** 388394-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/03/10 15:15

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0289	0.0300	96	80-120	
4-Bromofluorobenzene	0.0352	0.0300	117	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Conoco Phillips MCA Header 2 A

Work Orders : 388394,

Project ID: 114-6400315CO

Lab Batch #: 821739 **Sample:** 388394-009 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/03/10 15:45

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0340	0.0300	113	80-120	

Lab Batch #: 821739 **Sample:** 388394-010 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/03/10 16:08

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0307	0.0300	102	80-120	
4-Bromofluorobenzene	0.0340	0.0300	113	80-120	

Lab Batch #: 821739 **Sample:** 388394-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/03/10 16:32

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0361	0.0300	120	80-120	
4-Bromofluorobenzene	0.0353	0.0300	118	80-120	

Lab Batch #: 821739 **Sample:** 388394-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/03/10 16:55

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0357	0.0300	119	80-120	
4-Bromofluorobenzene	0.0350	0.0300	117	80-120	

Lab Batch #: 821739 **Sample:** 388394-011 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/03/10 18:04

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0306	0.0300	102	80-120	
4-Bromofluorobenzene	0.0336	0.0300	112	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Conoco Phillips MCA Header 2 A

Work Orders : 388394, **Project ID:** 114-6400315CO

Lab Batch #: 821739 **Sample:** 388394-012 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/03/10 18:27

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0302	0.0300	101	80-120	
4-Bromofluorobenzene	0.0321	0.0300	107	80-120	

Lab Batch #: 821739 **Sample:** 388394-013 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/03/10 18:50

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0312	0.0300	104	80-120	
4-Bromofluorobenzene	0.0354	0.0300	118	80-120	

Lab Batch #: 821742 **Sample:** 572530-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 09/03/10 12:14

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.2	100	93	70-135	
o-Terphenyl	50.0	50.2	100	70-135	

Lab Batch #: 821742 **Sample:** 572530-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 09/03/10 12:33

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.2	99.8	93	70-135	
o-Terphenyl	57.2	49.9	115	70-135	

Lab Batch #: 821742 **Sample:** 572530-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 09/03/10 12:53

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.9	100	94	70-135	
o-Terphenyl	47.9	50.2	95	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Conoco Phillips MCA Header 2 A

Work Orders : 388394,

Project ID: 114-6400315CO

Lab Batch #: 821742 **Sample:** 388394-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/03/10 13:13

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	84.0	99.7	84	70-135	
o-Terphenyl	42.8	49.9	86	70-135	

Lab Batch #: 821742 **Sample:** 388394-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/03/10 13:32

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.7	100	95	70-135	
o-Terphenyl	48.6	50.0	97	70-135	

Lab Batch #: 821742 **Sample:** 388394-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/03/10 13:51

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.0	99.9	87	70-135	
o-Terphenyl	41.7	50.0	83	70-135	

Lab Batch #: 821742 **Sample:** 388394-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/03/10 14:11

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.5	99.9	94	70-135	
o-Terphenyl	48.5	50.0	97	70-135	

Lab Batch #: 821742 **Sample:** 388394-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/03/10 14:31

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.9	99.9	93	70-135	
o-Terphenyl	47.9	50.0	96	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Conoco Phillips MCA Header 2 A

Work Orders : 388394, **Project ID:** 114-6400315CO

Lab Batch #: 821742 **Sample:** 388394-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/03/10 14:51

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.6	99.6	92	70-135	
o-Terphenyl	47.4	49.8	95	70-135	

Lab Batch #: 821742 **Sample:** 388394-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/03/10 15:10

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.6	99.9	93	70-135	
o-Terphenyl	47.5	50.0	95	70-135	

Lab Batch #: 821742 **Sample:** 388394-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/03/10 15:29

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.7	99.9	93	70-135	
o-Terphenyl	47.5	50.0	95	70-135	

Lab Batch #: 821742 **Sample:** 388394-009 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/03/10 15:50

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.1	99.8	91	70-135	
o-Terphenyl	47.2	49.9	95	70-135	

Lab Batch #: 821742 **Sample:** 388394-010 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/03/10 16:09

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.3	100	93	70-135	
o-Terphenyl	48.3	50.2	96	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Conoco Phillips MCA Header 2 A

Work Orders : 388394,

Project ID: 114-6400315CO

Lab Batch #: 821742 **Sample:** 388394-011 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/03/10 16:49

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.8	99.9	93	70-135	
o-Terphenyl	48.0	50.0	96	70-135	

Lab Batch #: 821742 **Sample:** 388394-012 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/03/10 17:09

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.4	100	92	70-135	
o-Terphenyl	47.8	50.2	95	70-135	

Lab Batch #: 821742 **Sample:** 388394-013 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/03/10 17:28

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.1	100	94	70-135	
o-Terphenyl	50.2	50.0	100	70-135	

Lab Batch #: 821742 **Sample:** 388394-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/03/10 18:49

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.7	99.6	92	70-135	
o-Terphenyl	47.9	49.8	96	70-135	

Lab Batch #: 821742 **Sample:** 388394-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/03/10 19:09

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.5	99.6	95	70-135	
o-Terphenyl	46.5	49.8	93	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Blank Spike Recovery

Project Name: Conoco Phillips MCA Header 2 A

Work Order #: 388394 **Project ID:** 114-6400315CO

Lab Batch #: 821739 **Sample:** 572521-1-BKS **Matrix:** Solid

Date Analyzed: 09/03/2010 **Date Prepared:** 09/03/2010 **Analyst:** ASA

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

BTEX by EPA 8021B Analytes	Blank Result [A]	BLANK /BLANK SPIKE RECOVERY STUDY Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Benzene	ND	0.1000	0.0966	97	70-130	
Toluene	ND	0.1000	0.0964	96	70-130	
Ethylbenzene	ND	0.1000	0.1005	101	71-129	
m,p-Xylenes	ND	0.2000	0.1967	98	70-135	
o-Xylene	ND	0.1000	0.1001	100	71-133	

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

BRL - Below Reporting Limit

Final 1.000

XENCO Laboratories

BS / BSD Recoveries

Project Name: Conoco Phillips MCA Header 2 A

Work Order #: 388394 **Project ID:** 114-6400315CO

Analyst: BRB **Date Prepared:** 09/03/2010 **Date Analyzed:** 09/03/2010

Lab Batch ID: 821732 **Sample:** 821732-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chlorides by E300 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Fluoride	ND	5.00	ND	0	5	ND	0	NC	75-125	20	L
Chloride	ND	10.0	8.26	83	10	10.0	100	19	75-125	20	
Nitrite as N	ND	1.52	ND	0	1.52	ND	0	NC	75-125	20	L
Bromide	ND	5.00	ND	0	5	ND	0	NC	75-125	20	L
Nitrate as N	ND	1.13	ND	0	1.13	ND	0	NC	75-125	20	L
Ortho-Phosphate	ND	5.00	ND	0	5	ND	0	NC	75-125	20	L
Sulfate	ND	5.00	ND	0	5	ND	0	NC	75-125	20	L

Analyst: BEV **Date Prepared:** 09/03/2010 **Date Analyzed:** 09/03/2010

Lab Batch ID: 821742 **Sample:** 572530-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons	ND	1000	1030	103	998	1050	105	2	70-135	35	
Diesel Range Hydrocarbons	ND	1000	989	99	998	1050	105	6	70-135	35	

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

Form 3 - MS Recoveries

Project Name: Conoco Phillips MCA Header 2 A

Work Order #: 388394
Lab Batch #: 821732
Project ID: 114-6400315CO
Date Analyzed: 09/03/2010
Date Prepared: 09/03/2010
Analyst: BRB
QC- Sample ID: 388490-001 S
Batch #: 1
Matrix: Soil
Reporting Units: mg/kg

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Fluoride	ND	205	ND	0	75-125	X
Chloride	52.6	410	489	106	75-125	
Nitrite as N	ND	62.5	ND	0	75-125	X
Bromide	ND	205	ND	0	75-125	X
Nitrate as N	ND	46.4	ND	0	75-125	X
Ortho-Phosphate	ND	205	ND	0	75-125	X
Sulfate	ND	205	ND	0	75-125	X

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

BRL - Below Reporting Limit

XENCO Laboratories

Form 3 - MS / MSD Recoveries

Project Name: Conoco Phillips MCA Header 2 A

Work Order # : 388394 **Project ID:** 114-6400315CO

Lab Batch ID: 821739 **QC- Sample ID:** 388394-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 09/03/2010 **Date Prepared:** 09/03/2010 **Analyst:** ASA

Reporting Units: mg/kg

BTEX by EPA 8021B Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1104	0.1010	91	0.1100	0.0990	90	2	70-130	35	
Toluene	ND	0.1104	0.0997	90	0.1100	0.0975	89	2	70-130	35	
Ethylbenzene	ND	0.1104	0.1038	94	0.1100	0.1009	92	3	71-129	35	
m,p-Xylenes	ND	0.2208	0.2019	91	0.2199	0.1962	89	3	70-135	35	
o-Xylene	ND	0.1104	0.1019	92	0.1100	0.0986	90	3	71-133	35	

Lab Batch ID: 821742 **QC- Sample ID:** 388394-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 09/03/2010 **Date Prepared:** 09/03/2010 **Analyst:** BEV

Reporting Units: mg/kg

TPH By SW8015 Mod Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons	ND	1110	1140	103	1110	1150	104	1	70-135	35	
Diesel Range Hydrocarbons	ND	1110	1100	99	1110	1140	103	4	70-135	35	

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

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

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

Sample Duplicate Recovery

Project Name: Conoco Phillips MCA Header 2 A

Work Order #: 388394

Lab Batch #: 821608 **Project ID:** 114-6400315CO

Date Analyzed: 09/03/2010 **Date Prepared:** 09/03/2010 **Analyst:** JLG

QC- Sample ID: 388394-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	9.96	8.96	11	20	

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

Analysis Request of Chain of Custody Record

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

3883394

CLIENT NAME: ConocoPhillips
SITE MANAGER: Charles Durrett
PROJECT NO.: 114-6400315CO
PROJECT NAME: McA Hawker 2A

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
01	9/2/10	9:00	S	X		S Deep - WF 9'	1	N			X		X	X											X				
02	9/2/10	910	S	X		I - WSW A	1	N			X		X	X											X				
03	9/2/10	915	S	X		I - WSW B	1	N			X		X	X											X				
04	9/2/10	940	S	X		S Deep - EF 9'	1	N			X		X	X											X				
05	9/2/10	950	S	X		S Deep - SSW 8'	1	N			X		X	X											X				
06	9/2/10	1000	S	X		I - ESW	1	N			X		X	X											X				
07	9/2/10	1005	S	X		I - F 6'	1	N			X		X	X											X				
08	9/2/10	1020	S	X		W Deep - F 9'	1	N			X		X	X											X				
09	9/2/10	1022	S	X		W Deep - WSW 7'	1	N			X		X	X											X				
10	9/2/10	1024	S	X		W Deep - SSW 7'	1	N			X		X	X											X				

ANALYSIS REQUEST (Circle or Specify Method No.)

RELINQUISHED BY: (Signature) — Date: 9/2/10 Time: 3:05
RECEIVED BY: (Signature) Andria Elson — Date: 9.2.10 Time: 15:05
SAMPLED BY: (Print & Initial) CO — Date: 9/2/10 Time: 11:00 GDT

RELINQUISHED BY: (Signature) — Date: Time:
RECEIVED BY: (Signature) — Date: Time:

RELINQUISHED BY: (Signature) — Date: Time:
RECEIVED BY: (Signature) — Date: Time:

SAMPLE SHIPPED BY: (Circle)
FEDEX BUS
HAND DELIVERED UPS
AIRBILL #:
OTHER:

TETRA TECH CONTACT PERSON:
Results by:
RUSH Charges Authorized: Yes No

RECEIVING LABORATORY:
ADDRESS:
CITY: STATE: ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature)
DATE: TIME:

SAMPLE CONDITION WHEN RECEIVED: 2.1°C

REMARKS: TPH 8015 DRO-GRO (New Mexico) w/seal on cooler, w/label asseals

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

Analysis Request of Chain of Custody Record

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

3383914

CLIENT NAME: Conoco Phillips

SITE MANAGER: Charles Durrett

PROJECT NO: 114-6400315 (2)

PROJECT NAME: MCA 2A Header

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
11	9/2/10	1026	S	X		WDeep - ESW 7'	1	N			X		X	X										X				
12	9/2/10	1030	S	X		II - F A 5'	1	N			X		X	X										X				
13	9/2/10	1040	S	X		II - F B 4'	1	N			X		X	X										X				

ANALYSIS REQUEST (Circle or Specify Method No.)

RELINQUISHED BY: (Signature) Date: 9/2/10 Time: 3:05

RECEIVED BY: (Signature) Andrea Elam Date: 9-2-10 Time: 15:05

SAMPLED BY: (Print & Initial) Charles Durrett CD Date: 9/2/10 Time: 12:00

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: Time:

SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS

AIRBILL #:

OTHER:

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: Time:

TETRA TECH CONTACT PERSON:

Results by:

RUSH Charges Authorized: (Yes) No

RECEIVING LABORATORY:

ADDRESS:

CITY: STATE: ZIP:

CONTACT: PHONE:

RECEIVED BY: (Signature)

DATE: TIME:

SAMPLE CONDITION WHEN RECEIVED: 2.1°C

REMARKS: 8015 DRO-GRO (New Mexico) w/labels as seals sealon cooler

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

Prelogin / Nonconformance Report - Sample Log-In

Client: Tetra Tech
Date/Time: 9.2.10 15:05
Lab ID # : 388394
Initials: AE

Sample Receipt Checklist

1. Samples on ice?	Blue	(Water)	No	
2. Shipping container in good condition?	(Yes)	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	(Yes)	No	N/A	
4. Chain of Custody present?	(Yes)	No		
5. Sample instructions complete on chain of custody?	(Yes)	No		
6. Any missing / extra samples?	Yes	(No)		
7. Chain of custody signed when relinquished / received?	(Yes)	No		
8. Chain of custody agrees with sample label(s)?	(Yes)	No		
9. Container labels legible and intact?	(Yes)	No		
10. Sample matrix / properties agree with chain of custody?	(Yes)	No		
11. Samples in proper container / bottle?	(Yes)	No		
12. Samples properly preserved?	(Yes)	No	N/A	
13. Sample container intact?	(Yes)	No		
14. Sufficient sample amount for indicated test(s)?	(Yes)	No		
15. All samples received within sufficient hold time?	(Yes)	No		
16. Subcontract of sample(s)?	(Yes)	No	N/A	
17. VOC sample have zero head space?	(Yes)	No	N/A	

18. Cooler 1 No.		Cooler 2 No.		Cooler 3 No.		Cooler 4 No.		Cooler 5 No.	
lbs	2.1 °C	lbs	°C	lbs	°C	lbs	°C	lbs	°C

Nonconformance Documentation

Contact:_____ Contacted by:_____ Date/Time:_____

Regarding: _____

Corrective Action Taken: _____

Check all that apply:
- ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
- ☐ Initial and Backup Temperature confirm out of temperature conditions
- ☐ Client understands and would like to proceed with analysis

Analytical Report 388548

for

Tetra Tech- Midland

Project Manager: Charles Durrett

MCA 2A Header

114-6400314CO

07-SEP-10

Celebrating 20 Years of commitment to excellence in Environmental Testing Services

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)
Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)
Xenco-Boca Raton (EPA Lab Code: FL01273):
Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

Xenco Phoenix (EPA Lab Code: AZ00901):
Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

07-SEP-10

Project Manager: **Charles Durrett**
Tetra Tech- Midland
1910 N. Big Spring
Midland, TX 79705

Reference: XENCO Report No: **388548**
MCA 2A Header
Project Address:

Charles Durrett:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 388548. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 388548 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Brent Barron, II
Odessa Laboratory Manager

Sample Cross Reference 388548

Tetra Tech- Midland, Midland, TX

MCA 2A Header

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
M-ESW	S	Sep-03-10 08:30		388548-001
M-SSW	S	Sep-03-10 08:40		388548-002
M-NSW	S	Sep-03-10 08:35		388548-003

CASE NARRATIVE

Client Name: Tetra Tech- Midland
Project Name: MCA 2A Header

Project ID:	*114-6400314CO*	*Report Date:*	*07-SEP-10*
Work Order Number:	*388548*	*Date Received:*	*09/03/2010*

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-821695 Percent Moisture
None

Batch: LBA-821696 Percent Moisture
None

Batch: LBA-821732 Anions by E300
None

Batch: LBA-821739 BTEX by EPA 8021B
None

Batch: LBA-821742 TPH By SW8015 Mod
None

Certificate of Analysis Summary 388548

Tetra Tech- Midland, Midland, TX

Project Name: MCA 2A Header

Project Id: 114-6400314CO
Contact: Charles Durrett
Project Location:

Date Received in Lab: Fri Sep-03-10 02:52 pm
Report Date: 07-SEP-10
Project Manager: Brent Barron, II

Analysis Requested											
	Lab Id:	388548-001		388548-002		388548-003					
	Field Id:	M-ESW		M-SSW		M-NSW					
	Depth:										
	Matrix:	SOIL		SOIL		SOIL					
	Sampled:	Sep-03-10 08:30		Sep-03-10 08:40		Sep-03-10 08:35					
Anions by E300	*Extracted:*										
	Analyzed:	Sep-03-10 15:33		Sep-03-10 15:33		Sep-03-10 15:33					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		365	9.60	337	9.50	317	9.28				
BTEX by EPA 8021B	*Extracted:*	Sep-03-10 15:15		Sep-03-10 15:15		Sep-03-10 15:15					
	Analyzed:	Sep-03-10 19:13		Sep-03-10 19:36		Sep-03-10 19:59					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Benzene		ND	0.0011	ND	0.0011	ND	0.0011				
Toluene		ND	0.0023	ND	0.0022	ND	0.0022				
Ethylbenzene		ND	0.0011	ND	0.0011	ND	0.0011				
m,p-Xylenes		ND	0.0023	ND	0.0022	ND	0.0022				
o-Xylene		ND	0.0011	ND	0.0011	ND	0.0011				
Total Xylenes		ND	0.0011	ND	0.0011	ND	0.0011				
Total BTEX		ND	0.0011	ND	0.0011	ND	0.0011				
Percent Moisture	*Extracted:*										
	Analyzed:	Sep-04-10 09:04		Sep-04-10 09:04		Sep-04-10 09:04					
	Units/RL:	%	RL	%	RL	%	RL				
Percent Moisture		12.5	1.00	11.6	1.00	9.53	1.00				
TPH By SW8015 Mod	*Extracted:*	Sep-03-10 15:10		Sep-03-10 15:10		Sep-03-10 15:10					
	Analyzed:	Sep-03-10 17:48		Sep-03-10 18:08		Sep-03-10 18:29					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons		ND	17.1	ND	17.0	ND	16.5				
Diesel Range Hydrocarbons		ND	17.1	ND	17.0	ND	16.5				

Brent Barron, II
Odessa Laboratory Manager

XENCO Laboratories

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

J The target analyte was positively identified below the MQL and above the SQL.

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit

PQL Practical Quantitation Limit

* Outside XENCO's scope of NELAC Accreditation.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: MCA 2A Header

Work Orders : 388548,

Project ID: 114-6400314CO

Lab Batch #: 821739 **Sample:** 572521-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 09/03/10 10:58

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0351	0.0300	117	80-120	
4-Bromofluorobenzene	0.0355	0.0300	118	80-120	

Lab Batch #: 821739 **Sample:** 572521-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 09/03/10 12:08

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0291	0.0300	97	80-120	
4-Bromofluorobenzene	0.0338	0.0300	113	80-120	

Lab Batch #: 821739 **Sample:** 388394-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/03/10 16:32

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0361	0.0300	120	80-120	
4-Bromofluorobenzene	0.0353	0.0300	118	80-120	

Lab Batch #: 821739 **Sample:** 388394-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/03/10 16:55

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0357	0.0300	119	80-120	
4-Bromofluorobenzene	0.0350	0.0300	117	80-120	

Lab Batch #: 821739 **Sample:** 388548-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/03/10 19:13

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0358	0.0300	119	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: MCA 2A Header

Work Orders : 388548, **Project ID:** 114-6400314CO

Lab Batch #: 821739 **Sample:** 388548-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/03/10 19:36

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0306	0.0300	102	80-120	
4-Bromofluorobenzene	0.0354	0.0300	118	80-120	

Lab Batch #: 821739 **Sample:** 388548-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/03/10 19:59

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0307	0.0300	102	80-120	
4-Bromofluorobenzene	0.0354	0.0300	118	80-120	

Lab Batch #: 821742 **Sample:** 572530-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 09/03/10 12:14

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.2	100	93	70-135	
o-Terphenyl	50.0	50.2	100	70-135	

Lab Batch #: 821742 **Sample:** 572530-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 09/03/10 12:33

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.2	99.8	93	70-135	
o-Terphenyl	57.2	49.9	115	70-135	

Lab Batch #: 821742 **Sample:** 572530-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 09/03/10 12:53

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.9	100	94	70-135	
o-Terphenyl	47.9	50.2	95	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: MCA 2A Header

Work Orders : 388548,

Project ID: 114-6400314CO

Lab Batch #: 821742 **Sample:** 388548-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/03/10 17:48

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.1	99.7	97	70-135	
o-Terphenyl	51.0	49.9	102	70-135	

Lab Batch #: 821742 **Sample:** 388548-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/03/10 18:08

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	100	100	70-135	
o-Terphenyl	52.7	50.2	105	70-135	

Lab Batch #: 821742 **Sample:** 388548-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/03/10 18:29

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.1	99.8	96	70-135	
o-Terphenyl	50.0	49.9	100	70-135	

Lab Batch #: 821742 **Sample:** 388394-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/03/10 18:49

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.7	99.6	92	70-135	
o-Terphenyl	47.9	49.8	96	70-135	

Lab Batch #: 821742 **Sample:** 388394-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/03/10 19:09

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.5	99.6	95	70-135	
o-Terphenyl	46.5	49.8	93	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Blank Spike Recovery

Project Name: MCA 2A Header

Work Order #: 388548 **Project ID:** 114-6400314CO

Lab Batch #: 821739 **Sample:** 572521-1-BKS **Matrix:** Solid

Date Analyzed: 09/03/2010 **Date Prepared:** 09/03/2010 **Analyst:** ASA

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

BTEX by EPA 8021B Analytes	Blank Result [A]	BLANK /BLANK SPIKE RECOVERY STUDY Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Benzene	ND	0.1000	0.0966	97	70-130	
Toluene	ND	0.1000	0.0964	96	70-130	
Ethylbenzene	ND	0.1000	0.1005	101	71-129	
m,p-Xylenes	ND	0.2000	0.1967	98	70-135	
o-Xylene	ND	0.1000	0.1001	100	71-133	

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

BRL - Below Reporting Limit

XENCO Laboratories

BS / BSD Recoveries

Project Name: MCA 2A Header

Work Order #: 388548 **Project ID:** 114-6400314CO

Analyst: BRB **Date Prepared:** 09/03/2010 **Date Analyzed:** 09/03/2010

Lab Batch ID: 821732 **Sample:** 821732-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Anions by E300 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	ND	10.0	8.26	83	10	10.0	100	19	75-125	20	

Analyst: BEV **Date Prepared:** 09/03/2010 **Date Analyzed:** 09/03/2010

Lab Batch ID: 821742 **Sample:** 572530-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons	ND	1000	1030	103	998	1050	105	2	70-135	35	
Diesel Range Hydrocarbons	ND	1000	989	99	998	1050	105	6	70-135	35	

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

XENCO Laboratories

Form 3 - MS Recoveries

Project Name: MCA 2A Header

Work Order #: 388548
Lab Batch #: 821732
Project ID: 114-6400314CO
Date Analyzed: 09/03/2010
Date Prepared: 09/03/2010
Analyst: BRB
QC- Sample ID: 388490-001 S
Batch #: 1
Matrix: Soil
Reporting Units: mg/kg

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	52.6	410	489	106	75-125	

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

BRL - Below Reporting Limit

Form 3 - MS / MSD Recoveries

Project Name: MCA 2A Header

Work Order # : 388548 **Project ID:** 114-6400314CO

Lab Batch ID: 821739 **QC- Sample ID:** 388394-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 09/03/2010 **Date Prepared:** 09/03/2010 **Analyst:** ASA

Reporting Units: mg/kg

BTEX by EPA 8021B Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1104	0.1010	91	0.1100	0.0990	90	2	70-130	35	
Toluene	ND	0.1104	0.0997	90	0.1100	0.0975	89	2	70-130	35	
Ethylbenzene	ND	0.1104	0.1038	94	0.1100	0.1009	92	3	71-129	35	
m,p-Xylenes	ND	0.2208	0.2019	91	0.2199	0.1962	89	3	70-135	35	
o-Xylene	ND	0.1104	0.1019	92	0.1100	0.0986	90	3	71-133	35	

Lab Batch ID: 821742 **QC- Sample ID:** 388394-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 09/03/2010 **Date Prepared:** 09/03/2010 **Analyst:** BEV

Reporting Units: mg/kg

TPH By SW8015 Mod Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons	ND	1110	1140	103	1110	1150	104	1	70-135	35	
Diesel Range Hydrocarbons	ND	1110	1100	99	1110	1140	103	4	70-135	35	

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

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

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

XENCO Laboratories

Sample Duplicate Recovery

ACCREDITED IN ACCORDANCE WITH nelac

Project Name: MCA 2A Header

Work Order #: 388548

Lab Batch #: 821695 **Project ID:** 114-6400314CO

Date Analyzed: 09/04/2010 **Date Prepared:** 09/04/2010 **Analyst:** JLG

QC- Sample ID: 388374-021 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	4.63	4.86	5	20	

Lab Batch #: 821696

Date Analyzed: 09/04/2010 **Date Prepared:** 09/04/2010 **Analyst:** JLG

QC- Sample ID: 388548-003 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	9.53	8.97	6	20	

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

Analysis Request of Chain of Custody Record

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

388548

H2o glass

PAGE: 1 OF: 1

CLIENT NAME: Concho Oil & Gas

SITE MANAGER: Charles Durrett

PROJECT NO.: 114-64003.4C0

PROJECT NAME: MCA 2A Acadia

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
-001	388548 9/3/10	830	S	X		m - ESW	1	N			X		X	X											X			
-002	9/3/10	840				m - SSW	1	N			X		X	X											X			
-003	9/3/10	835				m - NSW	1	N			X		X	X											X			

RELINQUISHED BY: (Signature)	Date: 9/3/10 Time: 3:32	RECEIVED BY: (Signature)	Date: Time:
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:
RECEIVING LABORATORY: Xenco / Jeanne Fitch ADDRESS: CITY: STATE: ZIP: CONTACT: PHONE:	RECEIVED BY: (Signature) Jeanne Fitch (JMF 9-3-10) DATE: 09-03-10 TIME: 1532 1452		

SAMPLED BY: (Print & Initial) Charles Durrett — Date: 9/3/10 Time: 9:00 am

SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS — AIRBILL #: OTHER:

TETRA TECH CONTACT PERSON: Charles Durrett

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 1.1 °C

REMARKS: TPH 8015 (DRO-GRO) New method — Id on lid seal on cooler

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

XENCO Laboratories	Document Title: Sample Receipt Checklist
Atlanta, Boca Raton, Corpus Christi, Dallas	Document No.: SYS-SRC
Houston, Miami, Odessa, Philadelphia	Revision/Date: No. 01, 5/27/2010
Phoenix, San Antonio, Tampa	Effective Date: 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

Client: Tetra Tech

Date/Time: 09-03-10 @ 1532

Lab ID # :

Initials: JMF

Sample Receipt Checklist

1. Samples on ice?	Blue	(Water)	No	
2. Shipping container in good condition?	(Yes)	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	(Yes)	No	N/A	
4. Chain of Custody present?	(Yes)	No		
5. Sample instructions complete on chain of custody?	(Yes)	No		
6. Any missing / extra samples?	Yes	(No)		
7. Chain of custody signed when relinquished / received?	(Yes)	No		
8. Chain of custody agrees with sample label(s)?	(Yes)	No		
9. Container labels legible and intact?	(Yes)	No		
10. Sample matrix / properties agree with chain of custody?	(Yes)	No		
11. Samples in proper container / bottle?	(Yes)	No		
12. Samples properly preserved?	(Yes)	No	N/A	
13. Sample container intact?	(Yes)	No		
14. Sufficient sample amount for indicated test(s)?	(Yes)	No		
15. All samples received within sufficient hold time?	(Yes)	No		
16. Subcontract of sample(s)?	Yes	(No)	N/A	
17. VOC sample have zero head space?	(Yes)	No	N/A	

18. Cooler 1 No.		Cooler 2 No.		Cooler 3 No.		Cooler 4 No.		Cooler 5 No.	
lbs	(.) °C	lbs	°C	lbs	°C	lbs	°C	lbs	°C

Nonconformance Documentation

Contact:_____ Contacted by:_____ Date/Time:_____

Regarding: _____

Corrective Action Taken: _____

Check all that apply:
- ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
- ☐ Initial and Backup Temperature confirm out of temperature conditions
- ☐ Client understands and would like to proceed with analysis

Analytical Report 388261

for

Tetra Tech- Midland

Project Manager: Charles Durrett

MCA 2A Header

114-6400315CO

14-SEP-10

Celebrating 20 Years of commitment to excellence in Environmental Testing Services

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)
Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)
Xenco-Boca Raton (EPA Lab Code: FL01273):
Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

Xenco Phoenix (EPA Lab Code: AZ00901):
Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

14-SEP-10

Project Manager: **Charles Durrett**
Tetra Tech- Midland
1910 N. Big Spring
Midland, TX 79705

Reference: XENCO Report No: **388261**
MCA 2A Header
Project Address:

Charles Durrett:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 388261. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 388261 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Brent Barron, II
Odessa Laboratory Manager

Sample Cross Reference 388261

Tetra Tech- Midland, Midland, TX

MCA 2A Header

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
M-ESW	S	Sep-01-10 09:00		388261-001
M-NSW	S	Sep-01-10 09:15		388261-002
M-F 9'	S	Sep-01-10 09:45	9 ft	388261-003
M-WSW	S	Sep-01-10 13:00		388261-004
M-SSW	S	Sep-01-10 13:17		388261-005
N-ESW	S	Sep-01-10 13:30		388261-006
N-F 6'	S	Sep-01-10 13:37	6 ft	388261-007

CASE NARRATIVE

Client Name: Tetra Tech- Midland
Project Name: MCA 2A Header

Project ID:	*114-6400315CO*	*Report Date:*	*14-SEP-10*
Work Order Number:	*388261*	*Date Received:*	*09/02/2010*

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-821349 Percent Moisture
None

Batch: LBA-821365 Inorganic Anions by EPA 300/300.1
None

Batch: LBA-821392 BTEX by EPA 8021B
SW8021BM

Batch 821392, 4-Bromofluorobenzene recovered above QC limits . Matrix interferences is suspected; data not confirmed by re-analysis
Samples affected are: 388015-001 SD,388261-007.

Batch: LBA-821543 TPH By SW8015 Mod
None

Certificate of Analysis Summary 388261

Tetra Tech- Midland, Midland, TX

Project Name: MCA 2A Header

Project Id: 114-6400315CO
Contact: Charles Durrett
Project Location:

Date Received in Lab: Thu Sep-02-10 07:53 am
Report Date: 14-SEP-10
Project Manager: Brent Barron, II

Analysis Requested													
	Lab Id:	388261-001		388261-002		388261-003		388261-004		388261-005		388261-006	
	Field Id:	M-ESW		M-NSW		M-F 9'		M-WSW		M-SSW		N-ESW	
	Depth:					9- ft							
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Sep-01-10 09:00		Sep-01-10 09:15		Sep-01-10 09:45		Sep-01-10 13:00		Sep-01-10 13:17		Sep-01-10 13:30	
BTEX by EPA 8021B	Extracted:	Sep-02-10 09:00		Sep-02-10 09:00		Sep-02-10 09:00		Sep-02-10 09:00		Sep-02-10 09:00		Sep-02-10 09:00	
	Analyzed:	Sep-02-10 14:33		Sep-02-10 18:59		Sep-02-10 19:22		Sep-02-10 19:46		Sep-02-10 20:09		Sep-02-10 20:32	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		ND	0.0011	ND	0.0012	ND	0.0011	ND	0.0013	ND	0.0011	ND	0.0011
Toluene		ND	0.0022	ND	0.0024	ND	0.0022	ND	0.0026	ND	0.0023	ND	0.0021
Ethylbenzene		ND	0.0011	ND	0.0012	ND	0.0011	ND	0.0013	ND	0.0011	ND	0.0011
m,p-Xylenes		ND	0.0022	ND	0.0024	ND	0.0022	ND	0.0026	ND	0.0023	ND	0.0021
o-Xylene		ND	0.0011	ND	0.0012	ND	0.0011	ND	0.0013	ND	0.0011	ND	0.0011
Total Xylenes		ND	0.0011	ND	0.0012	ND	0.0011	ND	0.0013	ND	0.0011	ND	0.0011
Total BTEX		ND	0.0011	ND	0.0012	ND	0.0011	ND	0.0013	ND	0.0011	ND	0.0011
Inorganic Anions by EPA 300/300.1	Extracted:												
	Analyzed:	Sep-02-10 09:18		Sep-02-10 09:18		Sep-02-10 09:18		Sep-02-10 09:18		Sep-02-10 09:18		Sep-02-10 09:18	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		421	11.2	482	11.7	221	11.2	190	13.0	341	5.64	759	21.1
Percent Moisture	Extracted:												
	Analyzed:	Sep-02-10 11:20		Sep-02-10 11:20		Sep-02-10 11:20		Sep-02-10 11:20		Sep-02-10 11:20		Sep-02-10 11:20	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		10.7	1.00	14.5	1.00	10.5	1.00	22.9	1.00	11.3	1.00	5.11	1.00
TPH By SW8015 Mod	Extracted:	Sep-02-10 09:00		Sep-02-10 09:00		Sep-02-10 09:00		Sep-02-10 09:00		Sep-02-10 09:00		Sep-02-10 09:00	
	Analyzed:	Sep-02-10 11:45		Sep-02-10 12:05		Sep-02-10 12:26		Sep-02-10 12:46		Sep-02-10 13:10		Sep-02-10 13:31	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons		ND	16.9	ND	17.6	ND	16.7	ND	19.4	ND	16.9	ND	15.8
Diesel Range Hydrocarbons		ND	16.9	ND	17.6	ND	16.7	ND	19.4	ND	16.9	ND	15.8

Brent Barron, II
Odessa Laboratory Manager

Certificate of Analysis Summary 388261

Tetra Tech- Midland, Midland, TX

Project Name: MCA 2A Header

Project Id: 114-6400315CO
Contact: Charles Durrett
Project Location:

Date Received in Lab: Thu Sep-02-10 07:53 am
Report Date: 14-SEP-10
Project Manager: Brent Barron, II

Analysis Requested							
	Lab Id:	388261-007					
	Field Id:	N-F 6'					
	Depth:	6- ft					
	Matrix:	SOIL					
	Sampled:	Sep-01-10 13:37					
BTEX by EPA 8021B	***Extracted:***	Sep-02-10 09:00					
	Analyzed:	Sep-02-10 20:55					
	Units/RL:	mg/kg	RL				
Benzene		ND	0.0011				
Toluene		ND	0.0023				
Ethylbenzene		ND	0.0011				
m,p-Xylenes		ND	0.0023				
o-Xylene		ND	0.0011				
Total Xylenes		ND	0.0011				
Total BTEX		ND	0.0011				
Inorganic Anions by EPA 300/300.1	***Extracted:***						
	Analyzed:	Sep-02-10 09:18					
	Units/RL:	mg/kg	RL				
Chloride		720	22.9				
Percent Moisture	***Extracted:***						
	Analyzed:	Sep-02-10 11:20					
	Units/RL:	%	RL				
Percent Moisture		12.6	1.00				
TPH By SW8015 Mod	***Extracted:***	Sep-02-10 09:00					
	Analyzed:	Sep-02-10 13:52					
	Units/RL:	mg/kg	RL				
Gasoline Range Hydrocarbons		17.4	17.1				
Diesel Range Hydrocarbons		130	17.1				

Brent Barron, II
Odessa Laboratory Manager

XENCO Laboratories

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

J The target analyte was positively identified below the MQL and above the SQL.

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit

PQL Practical Quantitation Limit

* Outside XENCO's scope of NELAC Accreditation.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: MCA 2A Header

Work Orders : 388261, **Project ID:** 114-6400315CO

Lab Batch #: 821392 **Sample:** 572290-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 09/02/10 09:31

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0342	0.0300	114	80-120	
4-Bromofluorobenzene	0.0355	0.0300	118	80-120	

Lab Batch #: 821392 **Sample:** 572290-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 09/02/10 10:41

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0351	0.0300	117	80-120	

Lab Batch #: 821392 **Sample:** 388015-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/02/10 11:28

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0342	0.0300	114	80-120	
4-Bromofluorobenzene	0.0359	0.0300	120	80-120	

Lab Batch #: 821392 **Sample:** 388015-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/02/10 11:51

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0336	0.0300	112	80-120	
4-Bromofluorobenzene	0.0362	0.0300	121	80-120	*

Lab Batch #: 821392 **Sample:** 388261-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/02/10 14:33

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0288	0.0300	96	80-120	
4-Bromofluorobenzene	0.0350	0.0300	117	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: MCA 2A Header

Work Orders : 388261,

Project ID: 114-6400315CO

Lab Batch #: 821392 **Sample:** 388261-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/02/10 18:59

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0293	0.0300	98	80-120	
4-Bromofluorobenzene	0.0350	0.0300	117	80-120	

Lab Batch #: 821392 **Sample:** 388261-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/02/10 19:22

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0293	0.0300	98	80-120	
4-Bromofluorobenzene	0.0351	0.0300	117	80-120	

Lab Batch #: 821392 **Sample:** 388261-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/02/10 19:46

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0288	0.0300	96	80-120	
4-Bromofluorobenzene	0.0338	0.0300	113	80-120	

Lab Batch #: 821392 **Sample:** 388261-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/02/10 20:09

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0294	0.0300	98	80-120	
4-Bromofluorobenzene	0.0357	0.0300	119	80-120	

Lab Batch #: 821392 **Sample:** 388261-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/02/10 20:32

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0285	0.0300	95	80-120	
4-Bromofluorobenzene	0.0343	0.0300	114	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: MCA 2A Header

Work Orders : 388261,

Project ID: 114-6400315CO

Lab Batch #: 821392 **Sample:** 388261-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/02/10 20:55

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0295	0.0300	98	80-120	
4-Bromofluorobenzene	0.0367	0.0300	122	80-120	*

Lab Batch #: 821543 **Sample:** 572389-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 09/02/10 10:44

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.4	99.5	94	70-135	
o-Terphenyl	56.8	49.8	114	70-135	

Lab Batch #: 821543 **Sample:** 572389-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 09/02/10 11:04

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.6	100	92	70-135	
o-Terphenyl	49.9	50.2	99	70-135	

Lab Batch #: 821543 **Sample:** 572389-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 09/02/10 11:24

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.5	100	93	70-135	
o-Terphenyl	48.0	50.0	96	70-135	

Lab Batch #: 821543 **Sample:** 388261-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/02/10 11:45

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	105	101	104	70-135	
o-Terphenyl	55.4	50.3	110	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: MCA 2A Header

Work Orders : 388261,

Project ID: 114-6400315CO

Lab Batch #: 821543 **Sample:** 388261-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/02/10 12:05

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.6	100	94	70-135	
o-Terphenyl	49.3	50.2	98	70-135	

Lab Batch #: 821543 **Sample:** 388261-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/02/10 12:26

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.6	99.9	92	70-135	
o-Terphenyl	47.4	50.0	95	70-135	

Lab Batch #: 821543 **Sample:** 388261-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/02/10 12:46

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.1	99.5	92	70-135	
o-Terphenyl	47.5	49.8	95	70-135	

Lab Batch #: 821543 **Sample:** 388261-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/02/10 13:10

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	83.2	100	83	70-135	
o-Terphenyl	43.1	50.1	86	70-135	

Lab Batch #: 821543 **Sample:** 388261-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/02/10 13:31

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.2	99.7	87	70-135	
o-Terphenyl	44.3	49.9	89	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: MCA 2A Header

Work Orders : 388261,

Project ID: 114-6400315CO

Lab Batch #: 821543 **Sample:** 388261-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/02/10 13:52

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.6	99.9	94	70-135	
o-Terphenyl	49.8	50.0	100	70-135	

Lab Batch #: 821543 **Sample:** 388261-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/02/10 17:48

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	99.5	112	70-135	
o-Terphenyl	56.2	49.8	113	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Blank Spike Recovery

Project Name: MCA 2A Header

Work Order #: 388261 **Project ID:** 114-6400315CO

Lab Batch #: 821392 **Sample:** 572290-1-BKS **Matrix:** Solid

Date Analyzed: 09/02/2010 **Date Prepared:** 09/02/2010 **Analyst:** ASA

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

BTEX by EPA 8021B Analytes	Blank Result [A]	BLANK /BLANK SPIKE RECOVERY STUDY Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Benzene	ND	0.0996	0.0875	88	70-130	
Toluene	ND	0.0996	0.0860	86	70-130	
Ethylbenzene	ND	0.0996	0.0907	91	71-129	
m,p-Xylenes	ND	0.1992	0.1762	88	70-135	
o-Xylene	ND	0.0996	0.0891	89	71-133	

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

BRL - Below Reporting Limit

XENCO Laboratories

BS / BSD Recoveries

Project Name: MCA 2A Header

Work Order #: 388261 **Project ID:** 114-6400315CO

Analyst: LATCOR **Date Prepared:** 09/02/2010 **Date Analyzed:** 09/02/2010

Lab Batch ID: 821365 **Sample:** 821365-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	ND	10.0	9.48	95	10	9.67	97	2	80-120	20	

Analyst: BEV **Date Prepared:** 09/02/2010 **Date Analyzed:** 09/02/2010

Lab Batch ID: 821543 **Sample:** 572389-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons	ND	995	1210	122	1000	1200	120	1	70-135	35	
Diesel Range Hydrocarbons	ND	995	1020	103	1000	1090	109	7	70-135	35	

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

Form 3 - MS Recoveries

Project Name: MCA 2A Header

Work Order #: 388261
Lab Batch #: 821365
Project ID: 114-6400315CO
Date Analyzed: 09/02/2010
Date Prepared: 09/02/2010
Analyst: LATCOR
QC- Sample ID: 388261-001 S
Batch #: 1
Matrix: Soil
Reporting Units: mg/kg

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	421	224	617	88	80-120	

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

BRL - Below Reporting Limit

XENCO Laboratories

Form 3 - MS / MSD Recoveries

Project Name: MCA 2A Header

Work Order # : 388261 **Project ID:** 114-6400315CO

Lab Batch ID: 821392 **QC- Sample ID:** 388015-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 09/02/2010 **Date Prepared:** 09/02/2010 **Analyst:** ASA

Reporting Units: mg/kg

BTEX by EPA 8021B Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1099	0.0897	82	0.1095	0.0894	82	0	70-130	35	
Toluene	ND	0.1099	0.0888	81	0.1095	0.0890	81	0	70-130	35	
Ethylbenzene	ND	0.1099	0.0936	85	0.1095	0.0942	86	1	71-129	35	
m,p-Xylenes	ND	0.2198	0.1834	83	0.2189	0.1835	84	0	70-135	35	
o-Xylene	ND	0.1099	0.0916	83	0.1095	0.0914	83	0	71-133	35	

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

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

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

XENCO Laboratories

Sample Duplicate Recovery

ACCREDITED IN ACCORDANCE WITH nelac

Project Name: MCA 2A Header

Work Order #: 388261

Lab Batch #: 821365 **Project ID:** 114-6400315CO

Date Analyzed: 09/02/2010 **Date Prepared:** 09/02/2010 **Analyst:** LATCOR

QC- Sample ID: 388261-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Inorganic Anions by EPA 300/300.1	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride	421	414	2	20	

Lab Batch #: 821349

Date Analyzed: 09/02/2010 **Date Prepared:** 09/02/2010 **Analyst:** JLG

QC- Sample ID: 388261-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	10.7	10.1	6	20	

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

Analysis Request of Chain of Custody Record

388261

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

PAGE: 1 OF: 1

CLIENT NAME: ConocoPhillips

SITE MANAGER: Charles Durrett

PROJECT NO.: 114-6400315 CO

PROJECT NAME: MCA 2A Header

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 mod. (GRO-DRO)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chlorides 300	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
-001	9/1/10	9:00	S	X		~~m-ESW~~ m-ESW	2				X		X												X				
-002	9/1/10	9:15	S	X		m-NSW	2				X		X												X				
-003	9/1/10	9:45	S	X		m-F 9'	2				X		X												X				
-004	9/1/10	1:00	S	X		m-WSW	2				X		X												X				
-005	9/1/10	1:17	S	X		m-SSW	2				X		X												X				
-006	9/1/10	1:30	S	X		N-ESW	2				X		X												X				
-007	9/1/10	1:37	S	X		N-F 6'	2				X		X												X				

RELINQUISHED BY: (Signature) — Date: 9/2/10 Time: 6:00 am — RECEIVED BY: (Signature) — Date: — Time:

SAMPLED BY: (Print & Initial) Charles Durrett CD — Date: 9/1/10 Time: 6:39 pm

RELINQUISHED BY: (Signature) — Date: — Time: — RECEIVED BY: (Signature) — Date: — Time:

SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS — AIRBILL #: — OTHER:

RELINQUISHED BY: (Signature) — Date: — Time: — RECEIVED BY: (Signature) — Date: — Time:

TETRA TECH CONTACT PERSON: Charles Durrett — Results by:

RECEIVING LABORATORY: — RECEIVED BY: (Signature)

ADDRESS: — CITY: — STATE: — ZIP: — CONTACT: — PHONE: — DATE: 9/2/10 — TIME: 7:53

RUSH Charges Authorized: (Yes) No

SAMPLE CONDITION WHEN RECEIVED: 2.1 °C

REMARKS: TPH 8015 (GRO-DRO) New Mexico

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

XENCO Laboratories	XENCO Laboratories Atlanta, Boca Raton, Corpus Christi, Dallas Houston, Miami, Odessa, Philadelphia Phoenix, San Antonio, Tampa	Document Title: Sample Receipt Checklist Document No.: SYS-SRC Revision/Date: No. 01, 5/27/2010 Effective Date: 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

Client: TetraTech

Date/Time: 9/2/10 753

Lab ID #: 388261

Initials: [illegible]

Sample Receipt Checklist

1. Samples on ice?	Blue	(Water)	No	
2. Shipping container in good condition?	(Yes)	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	(Yes)	No	N/A	
4. Chain of Custody present?	(Yes)	No		
5. Sample instructions complete on chain of custody?	(Yes)	No		
6. Any missing / extra samples?	Yes	(No)		
7. Chain of custody signed when relinquished / received?	(Yes)	No		
8. Chain of custody agrees with sample label(s)?	(Yes)	No		
9. Container labels legible and intact?	(Yes)	No		
10. Sample matrix / properties agree with chain of custody?	(Yes)	No		
11. Samples in proper container / bottle?	(Yes)	No		
12. Samples properly preserved?	(Yes)	No	N/A	
13. Sample container intact?	(Yes)	No		
14. Sufficient sample amount for indicated test(s)?	(Yes)	No		
15. All samples received within sufficient hold time?	(Yes)	No		
16. Subcontract of sample(s)?	Yes	(No)	N/A	
17. VOC sample have zero head space?	(Yes)	No	N/A	

18. Cooler 1 No.		Cooler 2 No.		Cooler 3 No.		Cooler 4 No.		Cooler 5 No.	
lbs	2.1 °C	lbs	°C	lbs	°C	lbs	°C	lbs	°C

Nonconformance Documentation

Contact:_____ Contacted by:_____ Date/Time:_____

Regarding: _____

Corrective Action Taken: _____

Check all that apply:
- ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
- ☐ Initial and Backup Temperature confirm out of temperature conditions
- ☐ Client understands and would like to proceed with analysis

Analytical Report 391565

for

Tetra Tech- Midland

Project Manager: Charles Durrett

Midland Odessa Standard List of prices

29-SEP-10

Celebrating 20 Years of commitment to excellence in Environmental Testing Services

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)
Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)
Xenco-Boca Raton (EPA Lab Code: FL01273):
Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

Xenco Phoenix (EPA Lab Code: AZ00901):
Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

29-SEP-10

Project Manager: **Charles Durrett**
Tetra Tech- Midland
1910 N. Big Spring
Midland, TX 79705

Reference: XENCO Report No: **391565**
Midland Odessa Standard List of prices
Project Address:

Charles Durrett:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 391565. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 391565 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Brent Barron, II
Odessa Laboratory Manager

Sample Cross Reference 391565

Tetra Tech- Midland, Midland, TX

Midland Odessa Standard List of prices

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
North 3'	S	Sep-28-10 11:30		391565-001
South 3'	S	Sep-28-10 11:30		391565-002

CASE NARRATIVE

Client Name: Tetra Tech- Midland
Project Name: Midland Odessa Standard List of prices

Project ID:
Work Order Number: 391565

Report Date: 29-SEP-10
Date Received: 09/28/2010

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-825155 Percent Moisture
None

Batch: LBA-825184 Anions by E300
None

Certificate of Analysis Summary 391565

Tetra Tech- Midland, Midland, TX

Project Name: Midland Odessa Standard List of prices

Project Id:

Contact: Charles Durrett

Project Location:

Date Received in Lab: Tue Sep-28-10 03:25 pm

Report Date: 29-SEP-10

Project Manager: Brent Barron, II

Analysis Requested									
	Lab Id:	391565-001		391565-002					
	Field Id:	North 3'		South 3'					
	Depth:								
	Matrix:	SOIL		SOIL					
	Sampled:	Sep-28-10 11:30		Sep-28-10 11:30					
Anions by E300	***Extracted:***								
	Analyzed:	Sep-28-10 18:26		Sep-28-10 18:45					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Chloride		186	9.43	30.3	9.42				
Percent Moisture	***Extracted:***								
	Analyzed:	Sep-28-10 17:00		Sep-28-10 17:00					
	Units/RL:	%	RL	%	RL				
Percent Moisture		10.9	1.00	10.8	1.00				

Brent Barron, II
Odessa Laboratory Manager

Final 1.000

XENCO Laboratories

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

J The target analyte was positively identified below the MQL and above the SQL.

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit

PQL Practical Quantitation Limit

* Outside XENCO's scope of NELAC Accreditation.

BS / BSD Recoveries

Project Name: Midland Odessa Standard List of prices

Work Order #: 391565
Analyst: LATCOR
Date Prepared: 09/28/2010
Project ID:
Date Analyzed: 09/28/2010
Lab Batch ID: 825184
Sample: 825184-1-BKS
Batch #: 1
Matrix: Solid
Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Anions by E300 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	ND	10.0	8.23	82	10	8.18	82	1	75-125	20	

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

Final 1.000

Form 3 - MS Recoveries

Project Name: Midland Odessa Standard List of prices

Work Order #: 391565
Lab Batch #: 825184
Project ID:
Date Analyzed: 09/28/2010
Date Prepared: 09/28/2010
Analyst: LATCOR
QC- Sample ID: 391080-012 S
Batch #: 1
Matrix: Soil
Reporting Units: mg/kg

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	1170	541	1590	78	75-125	

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

BRL - Below Reporting Limit

XENCO Laboratories

Sample Duplicate Recovery

ACCREDITED IN ACCORDANCE WITH nelac

Project Name: Midland Odessa Standard List of prices

Work Order #: 391565

Lab Batch #: 825184 **Project ID:**

Date Analyzed: 09/28/2010 **Date Prepared:** 09/28/2010 **Analyst:** LATCOR

QC- Sample ID: 391080-012 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Anions by E300	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride	1170	1070	9	20	

Lab Batch #: 825155

Date Analyzed: 09/28/2010 **Date Prepared:** 09/28/2010 **Analyst:** WRU

QC- Sample ID: 391524-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	9.20	9.40	2	20	

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

Analysis Request of Chain of Custody Record

PAGE: 1 OF: 1

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

CLIENT NAME: CEP
SITE MANAGER: C. Durrett
PROJECT NO.:
PROJECT NAME:

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC-MS Vol. 8240/8260/624	GC-MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
	2010																											
	28/9	1130			X	North 3'	1				X													X				
	28/9	1130			X	South 3'	1				X													X				

ANALYSIS REQUEST (Circle or Specify Method No.)

RELINQUISHED BY: (Signature) Date: 28/9/10 Time: 3:35
RECEIVED BY: (Signature) Date: Time:
SAMPLED BY: (Print & Initial) Date: Time:

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:
SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS AIRBILL #: OTHER:

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:
TETRA TECH CONTACT PERSON: Results by:

RECEIVING LABORATORY:
ADDRESS:
CITY: STATE: ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature) 5.1°C
DATE: 9/28/10 TIME: 1525
RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED:
REMARKS: 24hr Turn Rush 40z soil

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

XENCO Laboratories

XENCO Laboratories
Atlanta, Boca Raton, Corpus Christi, Dallas
Houston, Miami, Odessa, Philadelphia
Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist
Document No.: SYS-SRC
Revision/Date: No. 01, 5/27/2010
Effective Date: 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

Client: Meagan Epley
Date/Time: 9/28/2010
Lab ID # :
Initials: ME

Sample Receipt Checklist

1. Samples on ice?	Blue	Water	No	
2. Shipping container in good condition?	Yes	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	N/A	not on cooler
4. Chain of Custody present?	Yes	No		
5. Sample instructions complete on chain of custody?	Yes	No		
6. Any missing / extra samples?	Yes	No		
7. Chain of custody signed when relinquished / received?	Yes	No		
8. Chain of custody agrees with sample label(s)?	Yes	No		
9. Container labels legible and intact?	Yes	No		
10. Sample matrix / properties agree with chain of custody?	Yes	No		
11. Samples in proper container / bottle?	Yes	No		
12. Samples properly preserved?	Yes	No	N/A	
13. Sample container intact?	Yes	No		
14. Sufficient sample amount for indicated test(s)?	Yes	No		
15. All samples received within sufficient hold time?	Yes	No		
16. Subcontract of sample(s)?	Yes	No	N/A	
17. VOC sample have zero head space?	Yes	No	N/A	

18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs 5.1 °C	lbs °C	lbs °C	lbs °C	lbs °C

402 soil

Nonconformance Documentation

Contact:_____ Contacted by:_____ Date/Time:_____

Regarding: _____

Corrective Action Taken: _____

Check all that apply:
- ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
- ☐ Initial and Backup Temperature confirm out of temperature conditions
- ☐ Client understands and would like to proceed with analysis