Bratcher, Mike, EMNRD

From: Logan Anderson [la_elkeenv@yahoo.com]
Sent: Thursday, March 11, 2010 4:11 PM
To: Bratcher, Mike, EMNRD
Cc: Bobby Steadham
Subject: Linn Operating - C A Russell Battery (2RP-392)
Attachments: Remediation Proposal.pdf

Mike,

As per the conversation between you and Bobby Steadham today, attached is the remediation proposal for the Dig and Haul if the impacted soil at the C A Russell Battery. If you have any questions feel free to contact me.

Thanks,
Logan Anderson

Project Manager
Elke Environmental, Inc.
off 432-366-0043
cell 432-664-1269
fax 432-366-0884

Remediation Plan

Prepared for
Linn Operating

C A Russell Battery
Eddy County, NM

2RP - 392

Prepared by
Elke Environmental, Inc.
P.O. Box 14167 Odessa, TX 79768
Phone (432) 366-0043 Fax (432) 366-0884

Elke Environmental, Inc.

P.O. Box 14167 Odessa, TX 79768
Phone (432) 366-0043 Fax (432) 366-0884

March 1, 2010

New Mexico Oil Conservation Division
Mr. Mike Bratcher
1301 West Grand Ave.
Artesia, New Mexico 88210

Re: Linn Operating – C A Russell Battery
UL 'B' Sec. 18 T17S R31E Eddy County
2RP-392

Mr. Mike Bratcher,

Elke Environmental was contracted by Linn Operating to complete the delineation and remediation of the spill at the C A Russell Battery. Site ranking for the site is as follows: Wellhead Protection – 0 points, Surface body of Water – 0 points and Groundwater (>200') - 0 points. Total ranking for the site is 0 points. The RAL's for the site will be TPH – 5,000ppm; Chloride – 250ppm and BTEX – 100ppm (using field vapor headspace measurement). Initial sampling of the spill was completed on 2-25-10 by hand. The delineation was completed on 3-2-10 and 3-3-10. Attached is a plat map and field analytical of the delineation.

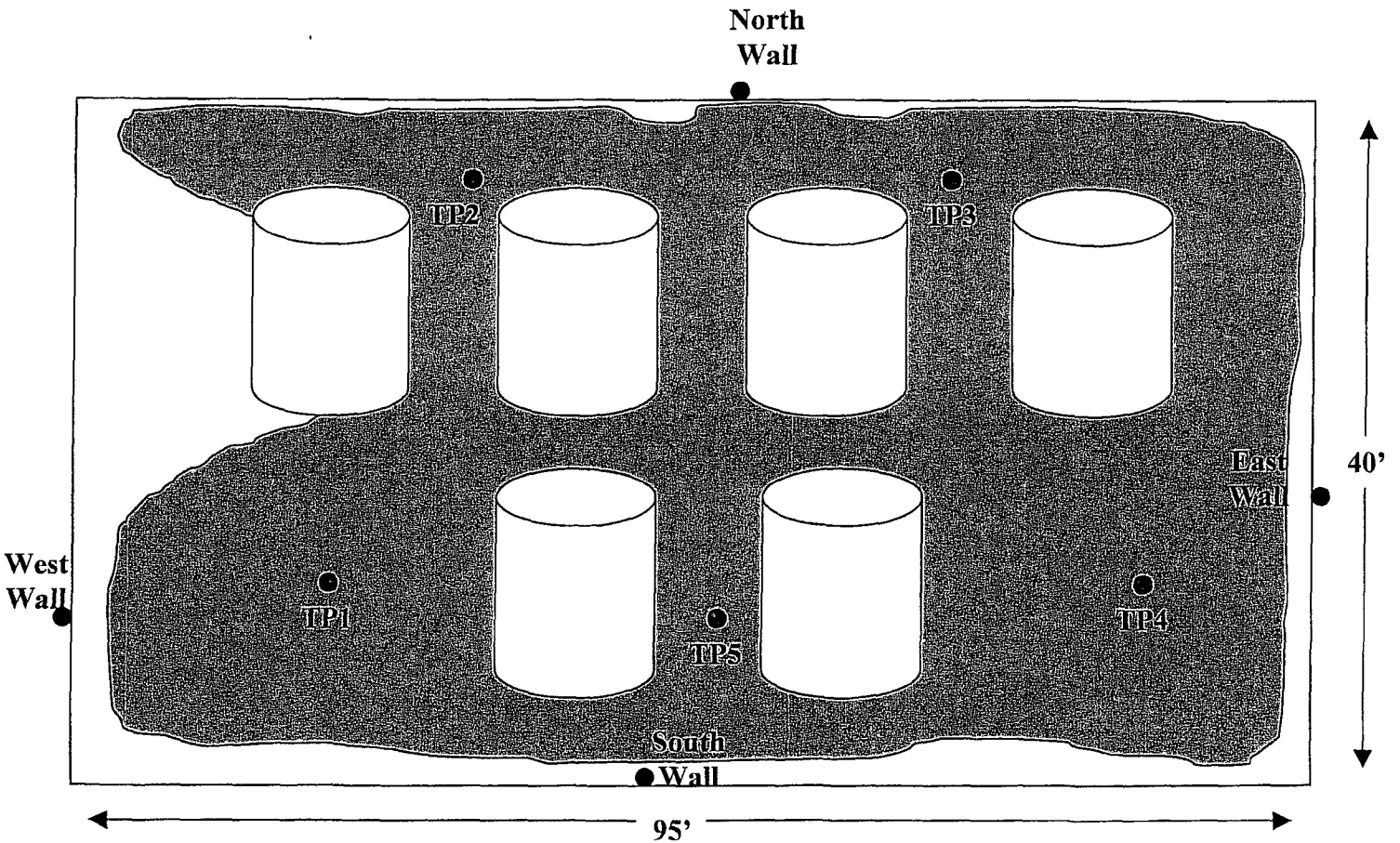
Linn Operating proposes to excavate 18" of impacted soil and haul to an OCD Approved disposal. A 20 mil poly liner will be installed at 18" with a 4 oz. Geotextile Liner above and below the poly liner. After installation of the liner, clean native soil will be backfilled into the excavation. A final report with lab confirmations will be submitted at the completion of the project. If you have any questions about the enclosed report please contact me at the office.

Sincerely,

Logan Anderson

Linn Operating
C A Russell Battery
Eddy County, NM

Plat Map



Elke Environmental, Inc.

P.O. Box 14167 Odessa, TX 79768

Field Analytical Report Form

Client Linn Operating **Analyst** Bobby Steadham

Site C A Russell Battery

Sample ID	Date	Depth	418.1 TPH / PPM	Cl / PPM	PID / PPM	GPS
TP1	2-25-10	6"	6,450	175	1,055	32° 50.291' N 103° 54.335' W
TP1	2-25-10	1' 6"	1,004	169	219	32° 50.291' N 103° 54.335' W
TP1	3-3-10	3' 6"	1,278	239	119	32° 50.291' N 103° 54.335' W
TP1	3-3-10	4' 6"	1,295	509	106	32° 50.291' N 103° 54.335' W
TP1	3-3-10	5' 6"	465	1,075	13.5	32° 50.291' N 103° 54.335' W
TP1	3-3-10	6' 6"	6	1,762	8.7	32° 50.291' N 103° 54.335' W
TP1	3-3-10	7' 6"		1,876	6.4	32° 50.291' N 103° 54.335' W
TP1	3-3-10	8' 6"		1,423	4.5	32° 50.291' N 103° 54.335' W
TP1	3-3-10	9' 6"		1,687	3.7	32° 50.291' N 103° 54.335' W
TP1	3-3-10	10' 6"		2,377	4.8	32° 50.291' N 103° 54.335' W
TP1	3-3-10	11' 6"		1,966	5.2	32° 50.291' N 103° 54.335' W
TP1	3-3-10	12' 6"		871	3.1	32° 50.291' N 103° 54.335' W
TP1	3-3-10	13' 6"	11	256	2.0	32° 50.291' N 103° 54.335' W
TP2	2-25-10	6"	15,410	184	1,635	32° 50.294' N 103° 54.335' W
TP2	2-25-10	1' 6"	400	79	717	32° 50.294' N 103° 54.335' W
TP2	3-2-10	2' 6"	167	122	95.0	32° 50.294' N 103° 54.335' W

Analyst Notes

Elke Environmental, Inc.
P.O. Box 14167 Odessa, TX 79768

Field Analytical Report Form

Client Linn Operating **Analyst** Bobby Steadham

Site C A Russell Battery

Sample ID	Date	Depth	418.1 TPH / PPM	Cl / PPM	PID / PPM	GPS
TP3	2-25-10	6"	19,580	92	1,514	32° 50.296' N 103° 54.328' W
TP3	2-25-10	1' 6"	976	117	926	32° 50.296' N 103° 54.328' W
TP3	3-2-10	2' 6"	1,276	173	1,186	32° 50.296' N 103° 54.328' W
TP3	3-2-10	3' 6"	127	118	277	32° 50.296' N 103° 54.328' W
TP3	3-2-10	5'	14	114	47.9	32° 50.296' N 103° 54.328' W
TP4	2-25-10	6"	22,150	119	1,305	32° 50.294' N 103° 54.323' W
TP4	2-25-10	1' 6"	12,850	119	1,118	32° 50.294' N 103° 54.323' W
TP4	3-2-10	2' 6"	487	200	384	32° 50.294' N 103° 54.323' W
TP4	3-2-10	3' 6"	587	119	113	32° 50.294' N 103° 54.323' W
TP4	3-2-10	4' 6"	1,250	109	76.3	32° 50.294' N 103° 54.323' W
TP4	3-2-10	5' 6"	682	141	41.1	32° 50.294' N 103° 54.323' W
TP5	2-25-10	6"	22,000	176	1,341	32° 50.292' N 103° 54.331' W
TP5	2-25-10	1' 6"	1,250	129	1,304	32° 50.292' N 103° 54.331' W
TP5	3-2-10	2' 6"	1,690	247	529	32° 50.292' N 103° 54.331' W
TP5	3-2-10	3'	10,190	449	457	32° 50.292' N 103° 54.331' W

Analyst Notes

Elke Environmental, Inc.
P.O. Box 14167 Odessa, TX 79768

Field Analytical Report Form

Client Linn Operating **Analyst** Bobby Steadham

Site C A Russell Battery

Sample ID	Date	Depth	418.1 TPH / PPM	Cl / PPM	PID / PPM	GPS
TP5	3-2-10	3' 6"	3,660	569	104	32° 50.292' N 103° 54.331' W
TP5	3-2-10	5'	32	773	41.0	32° 50.292' N 103° 54.331' W
TP5	3-2-10	5' 6"		703		32° 50.292' N 103° 54.331' W
TP5	3-3-10	6'		860		32° 50.292' N 103° 54.331' W
TP5	3-3-10	8'	16	235	54.5	32° 50.292' N 103° 54.331' W
North Wall	3-3-10	5'	27	209	11.1	32° 50.297' N 103° 54.330' W
East Wall	3-3-10	5'	16	149	10.8	32° 50.296' N 103° 54.318' W
South Wall	3-3-10	5'	31	259	7.0	32° 50.288' N 103° 54.331' W
West Wall	3-3-10	5'	369	271	29.0	32° 50.291' N 103° 54.340' W

Analyst Notes

Analytical Report 364388

for

Elke Environmental, Inc.

Project Manager: Logan Anderson

Linn Operating

CA Russel Battery

09-MAR-10

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-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: FL00449):
Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)
North Carolina(444), Texas(T104704468-TX), Illinois(002295)

09-MAR-10

Project Manager: **Logan Anderson**
Elke Environmental, Inc.
P.O. Box 14167
Odessa, TX 79768

Reference: XENCO Report No: **364388**
Linn Operating
Project Address: CA Russel Battery

Logan Anderson:

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 364388. 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. 364388 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 364388

Elke Environmental, Inc., Odessa, TX

Linn Operating

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
TP1 @ 162"	S	Mar-03-10 17:00	162 In	364388-001
TP2 @ 30"	S	Mar-02-10 11:00	30 In	364388-002
TP3 @ 60"	S	Mar-02-10 15:00	60 In	364388-003
TP4 @ 66"	S	Mar-02-10 15:00	66 In	364388-004
TP5 @ 96"	S	Mar-03-10 12:00	96 In	364388-005

CASE NARRATIVE

Client Name: Elke Environmental, Inc.
Project Name: Linn Operating

Project ID:	*CA Russel Battery*	*Report Date:*	*09-MAR-10*
Work Order Number:	*364388*	*Date Received:*	*03/04/2010*

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-796849 Percent Moisture
AD2216A
Batch 796849, Percent Moisture RPD is outside the QC limit. This is most likely due to sample non-homogeneity.
Samples affected are: 364388-004, -001, -002, -003, -005.

Batch: LBA-797069 TPH By SW8015 Mod
None

Batch: LBA-797091 Anions by E300
None

Certificate of Analysis Summary 364388

Elke Environmental, Inc., Odessa, TX

Project Name: Linn Operating

Project Id: CA Russel Battery
Contact: Logan Anderson
Project Location: CA Russel Battery

Date Received in Lab: Thu Mar-04-10 02:39 pm
Report Date: 09-MAR-10
Project Manager: Brent Barron, II

Analysis Requested												
	Lab Id:	364388-001		364388-002		364388-003		364388-004		364388-005		
	Field Id:	TP1 @ 162"		TP2 @ 30"		TP3 @ 60"		TP4 @ 66"		TP5 @ 96"		
	Depth:	162 In		30 In		60 In		66 In		96 In		
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		
	Sampled:	Mar-03-10 17:00		Mar-02-10 11:00		Mar-02-10 15:00		Mar-02-10 15:00		Mar-03-10 12:00		
Anions by E300	*Extracted:*											
	Analyzed:	Mar-09-10 09:11		Mar-09-10 09:11		Mar-09-10 09:11		Mar-09-10 09:11		Mar-09-10 09:11		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	
Chloride		ND	4.23	97.4	9.46	67.6	8.74	480	17.6	143	9.25	
Percent Moisture	*Extracted:*											
	Analyzed:	Mar-05-10 17:00		Mar-05-10 17:00		Mar-05-10 17:00		Mar-05-10 17:00		Mar-05-10 17:00		
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	
Percent Moisture		ND	1.00	11.2	1.00	3.91	1.00	4.65	1.00	9.22	1.00	
TPH By SW8015 Mod	*Extracted:*	Mar-08-10 09:30		Mar-08-10 09:30		Mar-08-10 09:30		Mar-08-10 09:30		Mar-08-10 09:30		
	Analyzed:	Mar-08-10 14:44		Mar-08-10 15:12		Mar-08-10 15:39		Mar-08-10 16:06		Mar-08-10 16:33		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	
C6-C12 Gasoline Range Hydrocarbons		ND	15.1	ND	16.8	ND	15.6	ND	15.7	ND	16.5	
C12-C28 Diesel Range Hydrocarbons		22.0	15.1	47.6	16.8	ND	15.6	130	15.7	16.9	16.5	
C28-C35 Oil Range Hydrocarbons		ND	15.1	ND	16.8	ND	15.6	39.9	15.7	ND	16.5	
Total TPH		22.0	15.1	47.6	16.8	ND	15.6	170	15.7	16.9	16.5	

Brent Barron, II
Odessa Laboratory Manager

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

* Outside XENCO's scope of NELAC Accreditation.

Form 2 - Surrogate Recoveries

Project Name: Linn Operating

Work Orders : 364388,

Project ID: CA Russel Battery

Lab Batch #: 797069 **Sample:** 552365-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/08/10 13:22

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	100	102	70-135	
o-Terphenyl	57.3	50.0	115	70-135	

Lab Batch #: 797069 **Sample:** 552365-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/08/10 13:49

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	100	102	70-135	
o-Terphenyl	58.1	50.1	116	70-135	

Lab Batch #: 797069 **Sample:** 552365-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/08/10 14:17

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	101	100	70-135	
o-Terphenyl	59.7	50.3	119	70-135	

Lab Batch #: 797069 **Sample:** 364388-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/08/10 14:44

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	99.9	100	70-135	
o-Terphenyl	56.4	50.0	113	70-135	

Lab Batch #: 797069 **Sample:** 364388-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/08/10 15:12

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	99.6	90	70-135	
o-Terphenyl	53.5	49.8	107	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: Linn Operating

Work Orders : 364388, **Project ID:** CA Russel Battery

Lab Batch #: 797069 **Sample:** 364388-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/08/10 15:39

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	99.9	100	70-135	
o-Terphenyl	60.2	50.0	120	70-135	

Lab Batch #: 797069 **Sample:** 364388-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/08/10 16:06

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	106	99.9	106	70-135	
o-Terphenyl	63.5	50.0	127	70-135	

Lab Batch #: 797069 **Sample:** 364388-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/08/10 16:33

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	106	100	106	70-135	
o-Terphenyl	64.5	50.0	129	70-135	

Lab Batch #: 797069 **Sample:** 364388-003 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** *03/09/10 00:11*

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	99.6	103	70-135	
o-Terphenyl	58.4	49.8	117	70-135	

Lab Batch #: 797069 **Sample:** 364388-003 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/09/10 00:38

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	106	99.8	106	70-135	
o-Terphenyl	60.3	49.9	121	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: Linn Operating

Work Order #: 364388 **Project ID:** CA Russel Battery

Lab Batch #: 797091 **Sample:** 797091-1-BKS **Matrix:** Solid

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

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

	BLANK /BLANK SPIKE RECOVERY STUDY					
Anions by E300 **Analytes**	**Blank Result [A]**	**Spike Added [B]**	**Blank Spike Result [C]**	**Blank Spike %R [D]**	**Control Limits %R**	**Flags**
Chloride	ND	10.0	9.93	99	75-125	

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

BS / BSD Recoveries

Project Name: Linn Operating

Work Order #: 364388
Analyst: BEV
Lab Batch ID: 797069
Sample: 552365-1-BKS
Batch #: 1
Units: mg/kg

Date Prepared: 03/08/2010
Project ID: CA Russel Battery
Date Analyzed: 03/08/2010
Matrix: Solid

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
	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
C6-C12 Gasoline Range Hydrocarbons	ND	1000	902	90	1000	904	90	0	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	775	78	1000	991	99	24	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: Linn Operating

Work Order #: 364388
Lab Batch #: 797091
Project ID: CA Russel Battery
Date Analyzed: 03/09/2010
Date Prepared: 03/09/2010
Analyst: LATCOR
QC- Sample ID: 364388-001 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	ND	101	107	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: Linn Operating

Work Order #: 364388 **Project ID:** CA Russel Battery

Lab Batch ID: 797069 **QC- Sample ID:** 364388-003 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 03/09/2010 **Date Prepared:** 03/08/2010 **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
C6-C12 Gasoline Range Hydrocarbons	ND	1040	926	89	1040	965	93	4	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1040	843	81	1040	796	77	6	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: Linn Operating

Work Order #: 364388

Lab Batch #: 797091 **Project ID:** CA Russel Battery

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

QC- Sample ID: 364388-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

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

Lab Batch #: 796849

Date Analyzed: 03/05/2010 **Date Prepared:** 03/05/2010 **Analyst:** WRU

QC- Sample ID: 364467-001 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	5.01	8.93	56	20	F

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

Environmental Lab of Texas

A Xenco Laboratories Company

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

Phone: 432-563-1800
Fax: 432-563-1713

Project Manager: Logan Anderson
Company Name: Elke Environmental
Company Address: P O Box 14167
City/State/Zip: Odessa, TX 79768
Telephone No: 432-366-0043 Fax No: 432-366-0884
Sampler Signature:
e-mail: la_elkeenv@yahoo.com

Project Name: LINN OPERATING
Project #:
Project Loc: CA RUSSEL BATTERY
PO #:
Report Format: ☑ Standard ☐ TRRP ☐ NPDES

(lab use only)
ORDER #: 364388

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers: Ice	HNO_3	HCl	H_2SO_4	NaOH	$Na_2S_2O_3$	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge	GW = Groundwater S=Soil/Solid	NP=Non-Potable Specify Other	Analyze For: TCLP: TPH: 418.1 / 8015M	TPH: TX 1005	TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO_4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
01	TP1 @ 162"		162"	3/3/10	5:PM			X									S		X			X										X
02	TP2 @ 30"		30"	3/2/10	11:00AM			X									S		X			X										X
03	TP3 @ 60"		60"	3/2/10	3:00 PM			X									S		X			X										X
04	TP4 @ 66"		66"	3/2/10	3:00 PM			X									S		X			X										X
05	TP5 @ 96"		96"	3/2/10	12:00 PM			X									S		X			X										X

Special Instructions:

Relinquished by:	Date	Time	Received by:	Date	Time
	3/4/10	2:39			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT: Andrea Sam	3.4.10	14:39

Laboratory Comments:
VOCs Free of Headspace? Y N
Custody seals on container(s) Y N
Sample Hand Delivered by Sampler/Client Rep. ? Y N
by Courier? UPS DHL FedEx Lone Star
4029155
Temperature Upon Receipt: 5.6 °C

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Elke Env.

Date/ Time: 3.4.10 14:39

Lab ID #: 364388

Initials: AL

Sample Receipt Checklist

					Client Initials
#1	Temperature of container/ cooler?	(Yes)	No	5.6 °C	
#2	Shipping container in good condition?	(Yes)	No		
#3	Custody Seals intact on shipping container/ cooler?	Yes	No	(Not Present)	
#4	Custody Seals intact on sample bottles/ container?	(Yes)	No	Not Present	
#5	Chain of Custody present?	(Yes)	No		
#6	Sample instructions complete of Chain of Custody?	(Yes)	No		
#7	Chain of Custody signed when relinquished/ received?	(Yes)	No		
#8	Chain of Custody agrees with sample label(s)?	(Yes)	No	ID written on Cont./ Lid	
#9	Container label(s) legible and intact?	(Yes)	No	Not Applicable	
#10	Sample matrix/ properties agree with Chain of Custody?	(Yes)	No		
#11	Containers supplied by ELOT?	(Yes)	No		
#12	Samples in proper container/ bottle?	(Yes)	No	See Below	
#13	Samples properly preserved?	(Yes)	No	See Below	
#14	Sample bottles intact?	(Yes)	No		
#15	Preservations documented on Chain of Custody?	(Yes)	No		
#16	Containers documented on Chain of Custody?	(Yes)	No		
#17	Sufficient sample amount for indicated test(s)?	(Yes)	No	See Below	
#18	All samples received within sufficient hold time?	(Yes)	No	See Below	
#19	Subcontract of sample(s)?	Yes	No	(Not Applicable)	
#20	VOC samples have zero headspace?	(Yes)	No	Not Applicable	

Variance Documentation

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

Regarding: _____

Corrective Action Taken: _____

Check all that Apply:

- ☐ See attached e-mail/ fax
- ☐ Client understands and would like to proceed with analysis
- ☐ Cooling process had begun shortly after sampling event