Larson & Associates, Inc.
Environmental Consultants

RECEIVED
By OCD District 1 at 7:50 am, Jul 14, 2015

APPROVED
By OCD District 1 at 7:50 am, Jul 14, 2015

June 29, 2015

VIA EMAIL: Kellie.Jones@state.nm.us

Ms. Kellie Jones,
Environmental Specialist
New Mexico Oil Conservation Division
1624 N. French Drive
Hobbs, New Mexico 88240

Re: 1RP-3593 – Final Report, Paladin Energy Corp. State BT "C" No. 003 Tank Battery Spill, Lea County, New Mexico

Dear Ms. Jones:

Larson & Associates, Inc. (LAI), on behalf of Paladin Energy Corp. (Paladin), submits this final report to the New Mexico Oil Conservation Division (OCD) to present the investigation and remediation of a crude oil and produced water spill at the State BT "C" No. 003 tank battery (Site). The extent of release was determined an additional soil sample from boring SB-3 showing no reportable concentrations of TPH, collection and analysis of groundwater sample southeast (down gradient) of the Site, removal of additional soil in the area of borings SB-1 and SB-2 and installing a poly liner (20 mil thickness) southeast of the tanks. Paladin respectfully requests your approval for no further action. Please contact Mickey Horn with Paladin at (432) 522-2162 or me at (432) 687-0901.
Sincerely,

Larson & Associates, Inc.

Mark J. Larson, P.G.

President/Sr. Project Manager

mark@laenvironmental.com

cc: Mickey Horn – Paladin Energy Corp.

Encl.

1RP-3593
FINAL REPORT
STATE BT "C" N0. 003 TANK BATTERY
LEA COUNTY, NEW MEXICO

LAI Project No. 15-0130-01

June 26, 2015

Prepared for:

Paladin Energy Corp.

10290 Monroe Drive, Suite 301

Fort Worth, Texas 75229

Prepared by:

Larson & Associates, Inc.

507 North Marienfeld Street, Suite 205

Midland, TX 79701

Mark J. Larson

Certified Professional Geologist No. 10490

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1.0 EXECUTIVE SUMMARY

This report is submitted to the New Mexico Oil Conservation Division (OCD) District 1, in Hobbs, New Mexico, on behalf of Paladin Energy Corp (Paladin), to present the final investigation and remediation of a crude oil and produced water spill at the State BT "C" No. 003 tank battery (Site) located in Lea County, New Mexico. The legal description is Unit L (NW/4, NW/4), Section 35, Township 11 South and Range 33 East. OCD issued remediation project (RP) number 1RP-3593 for the release.

The release was discovered by an OCD inspector, on March 31, 2015. On April 1, 2015, OCD issued a notice of violation to Paladin that required corrective action to be completed by June 5, 2015. Paladin initiated corrective action on April 2, 2015, that included excavating soil from around the tanks, south, west and southeast of the tank. The soil was disposed at the Gandy Marley land fill located west of Tatum, New Mexico.

On April 21, 2015, Larson & Associates, Inc. (LAI) supervised drilling and sampling three (3) borings to approximately 35 feet below ground surface (bgs). A boring was drilled to groundwater southeast (down gradient) of the Facility. Groundwater was measured at about 40 feet bgs and a groundwater sample was collected and analyzed for BTEX and chloride.

On May 21, 2015, OCD District 1 in Hobbs, New Mexico granted Paladin conditional approval for the following:

- Excavate soil to the extent feasible from the vicinity of borings SB-1 and SB-2;
- Ensure there are two sample points on SB-3 that are below regulated limits;
- Show locations of composite samples on map;
- Investigate possibility of adding liner in the SB-3, SE corner;
- Take ground water sample.

On May 28 – 29, 2015, LAI personnel supervised soil excavation from the area around borings SB-1 and SB-2. About 275 cubic yards of soil was excavated to caliche between about 1 and 2 feet bgs and disposed at Gandy Marley Landfill.

TPH was less than the analytical method RL in sample SB-3, 25 feet, therefore, two samples from SB-3, 20 and 25 feet were below the TPH method reporting limit;

On June 22, 2015, paladin installed a 20-mil thickness liner southeast of the tanks;

A groundwater sample was collected about 100 feet southeast (down gradient) of the Facility and reported BTEX below the analytical method RL and chloride at 40.4 milligrams per liter (mg/L). The chloride concentration is below the New Mexico Water Quality Control Commission (WQCC) domestic water quality standard (250 mg/L).

Paladin respectfully requests no further action for the release.

2.0 INTRODUCTION

This report is submitted to the New Mexico Oil Conservation Division (OCD) on behalf of Paladin Energy Corp (Paladin) to present the investigation and remediation of a crude oil and produced water spill at the State BT "C" No. 003 tank battery (Site). The Site is located in Unit L (NW/4, SW/4), Section 35, Township 11 South, Range 33 east, in Lea County, New Mexico. The geodetic position is north 33° 19' 07.188" and west 103° 35' 20.946". Figure 1 presents a location and topographic map. Figure 2 presents an aerial map.

2.1 Background and Initial Response

On March 31, 2015, an inspector with OCD District 1, in Hobbs, New Mexico, discovered the spill. On April 1, 2015, OCD issued a letter of violation to Paladin requiring, among other things, filing form C-141 and performing corrective action by June 5, 2015.

The spill occurred from failure of a pressure relief (pop-off) valve at the free water knockout that released about 15 barrels (bbl) of oil and 40 bbl of water. The spill was contained inside the firewall and about 7 bbl of fluid (oil and water) was recovered. On April 2, 2015, Paladin initiated corrective actions that included excavating visually contaminated soil from around the tanks, southeast and west of the tanks. The contaminated soil was hauled to the Gandy Marley landfill (NM1-19-0) located west of Tatum, New Mexico. Remediation project (RP) number 1RP-3593 was assigned to the release.

2.2 Initial Investigation

On April 7, 2015, LAI personnel collected initial 5-spot composite samples (TBC-A and TBC-B) from excavations south and southeast of the tanks. The samples were analyzed for benzene and total BTEX (sum of benzene, toluene, ethyl benzene and xylenes) by EPA SW-846 method 8021B, total petroleum hydrocarbon (TPH), as combine gasoline (GRO) and diesel (DRO) organic fractions, by EPA SW-846 method 8015B and chloride by EPA method 300. Benzene and total BTEX were below the OCD recommended remediation action levels (RRAL) of 10 milligrams per kilogram (mg/Kg) and 50 mg/Kg, respectively. TPH was 1,432.14 mg/Kg (TBC-1) and 12,900.58 mg/Kg (TBC-B) and exceeded the RRAL (100 mg/Kg). Chloride was 350 mg/Kg (TBC-A) and 971 mg/Kg (TBC-B).

On April 21, 2015, LAI supervised drilling of 3 air rotary drilled borings by Scarborough Drilling, Inc. (SDC) northwest (SB-1), southwest (SB-2) and southeast (SB-3) of the tanks. The borings were drilled to about 35 feet bgs and samples were collected every 5 feet with a jam tube sampler. The laboratory reported benzene below the analytical method reporting limit (RL) and total BTEX below the RRAL (50 mg/Kg). TPH exceeded the RRAL boring SB-1 at 0 (10,200 mg/Kg) and 5 (3,580 mg/Kg) feet, SB-2 at 0 (2,050 mg/Kg) feet and SB-3 at 0 (756 mg/Kg, 5 (860 mg/Kg), 10 (177 mg/Kg) and to 10 (298 mg/Kg) feet bgs. Chloride decreased below 250 mg/Kg in boring SB-1 (15 feet), SB-2 (35 feet) and SB-3 (5 feet).

On April 21, 2015, a groundwater sample was collected about 100 feet southeast (down gradient) of the tanks and analyzed for BTEX and chloride by EPA SW-846 methods 8021B and 300, respectively. BTEX was not reported above the RL and chloride was 40.4 mg/L.

The results of the initial investigations were compiled in a report titled, "*1RP-3594 Spill Investigation Report, State BT "C" Tank Battery No. 003, Lea County, New Mexico May 11, 2015*" and submitted to the OCD on May 13, 2015.

3.0 FINAL INVESTIGATION

On May 21, 2015 and June 15, 2015, OCD approved the remediation plan with the following conditions:

- Excavate soil to the extent feasible from the vicinity of borings SB-1 and SB-2;
- Ensure there are two sample points on SB-3 that are below regulated limits;
- Show locations of composite samples on map;
- Investigate possibility of adding liner in the SB-3, SE corner;
- Take ground water sample.

Appendix A presents OCD correspondence.

On May 28 – 29, 2015, LAI personnel supervised soil excavation from the area around borings SB-1 and SB-2. About 275 cubic yards of soil was excavated to caliche between about 1 and 2 feet bgs and disposed at Gandy Marley Landfill. Appendix B presents photographs.

TPH was less than the analytical method RL in sample SB-3, 25 feet, therefore, two samples from SB-3, 20 and 25 feet were below the TPH method reporting limit. Table 1 presents the analytical data summary. Appendix C presents the laboratory report.

The locations of the composite samples are shown on Figure3.

On June 22, 2015, Paladin installed a 20-mil thickness liner southeast of the tanks.

A groundwater sample was collected southeast (down gradient) of the Facility and reported BTEX below the analytical method RL and chloride at 40.4 milligrams per liter (mg/L). The chloride concentration is below the New Mexico Water Quality Control Commission (WQCC) domestic water quality standard (250 mg/L). Table 2 presents the groundwater analytical data summary. Appendix C presents the laboratory report.

Between June 23 and 25, 2015, the liner and excavations were backfilled with clean soil and firewall replaced. Appendix B presents photographs. Figure 4 presents the liner location.

4.0 CONCLUSIONS

following conclusions are based on the investigation results:

- Approximately 275 cubic yards of soil was excavated to caliche between about 1 and 2 feet from the tank battery and disposed at Gandy Marley Landfill;
- TPH was delineated with two (2) samples from each boring below the method RL;
- Chloride was delineated below the WQCC domestic water quality standard (250 mg/Kg);
- BTEX was below the analytical method RL and chloride was below the WQCC domestic water quality standard (250 mg/L) in a groundwater sample collected about 100 feet southeast (down gradient9 of the tank battery, on April 21, 2015;
- A liner (20 mil thickness) was installed in the bottom of the excavation southeast of the tanks; and the excavations were backfilled with clean soil before replacing the firewall.

5.0 RECDOMMENDATION

Paladin respectfully requests no further action for the spill. Appendix D presents the initial and final C-141.

FIGURES

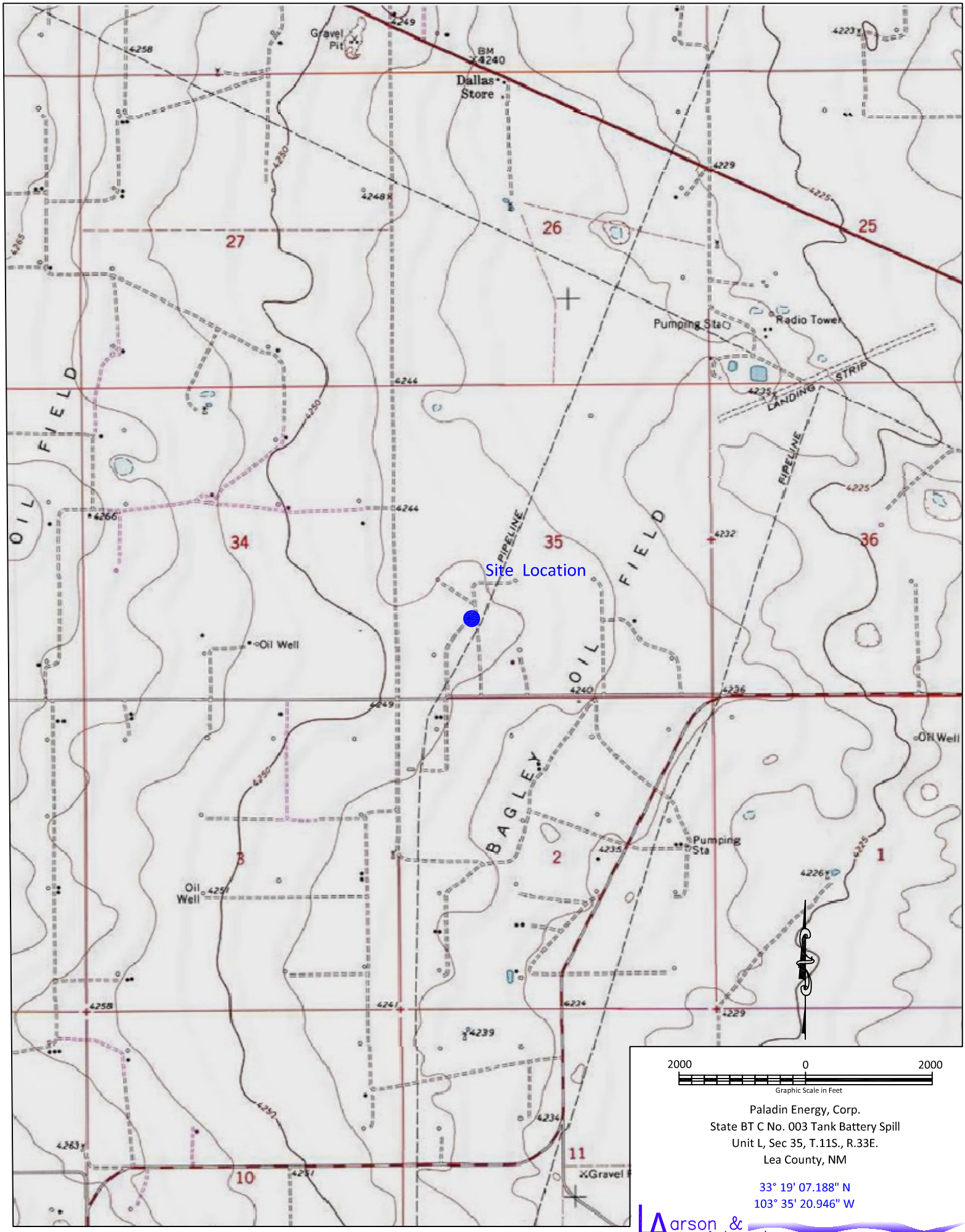


Figure 1 - Topographic Map

Figure 2 - Aerial Map

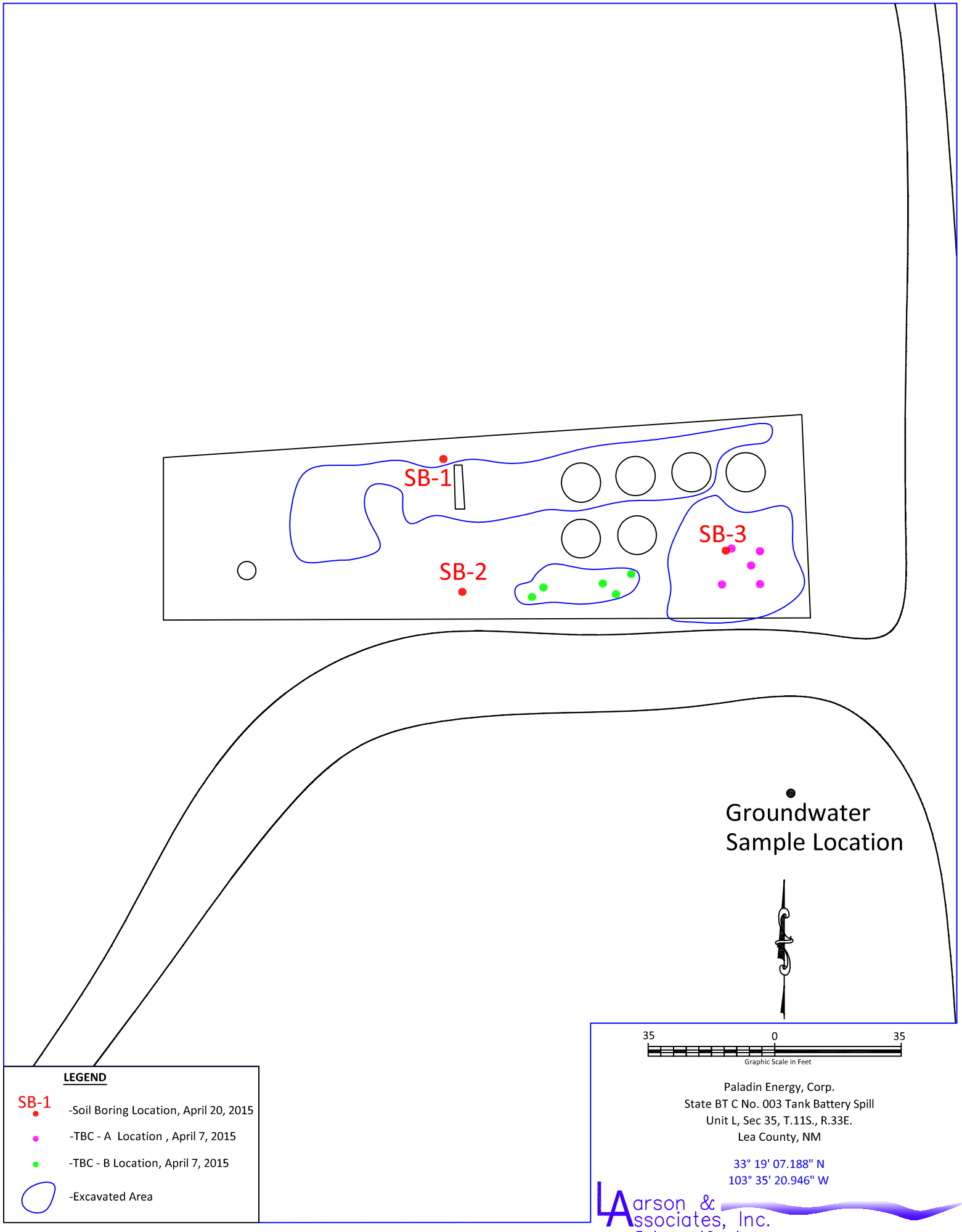
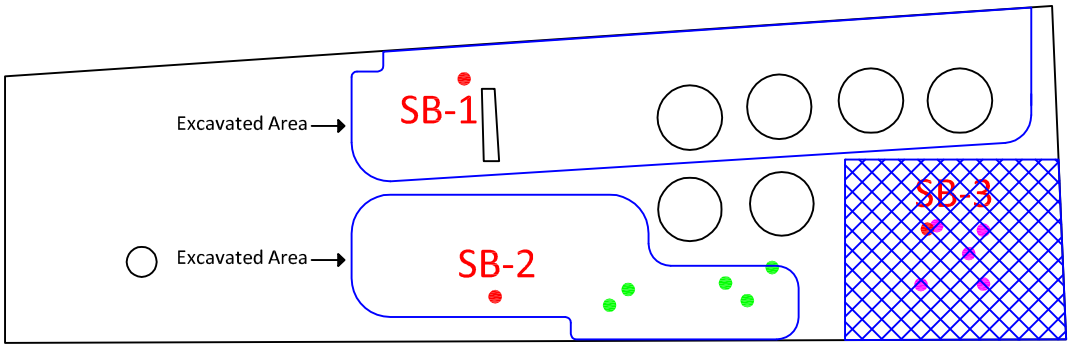


Figure 3 - Site Drawing



Groundwater
Sample Location

LEGEND

SB-1 -Soil Boring Location, April 20, 2015

-TBC - A Location , April 7, 2015

-TBC - B Location, April 7, 2015

-Excavated Area

-Area of Liner

35 0 35

Graphic Scale in Feet

Paladin Energy, Corp.
State BT C No. 003 Tank Battery Spill
Unit L, Sec 35, T.11S., R.33E.
Lea County, NM

33° 19' 07.188" N
103° 35' 20.946" W

Larson & Associates, Inc.
Environmental Consultants

Figure 4 -Remediation Area Map

TABLES

Table 1
Soil Boring Analytical Data Summary
Paladin Energy Corp., State BT "C" No. 003 Tank Battery
Lea County, New Mexico
1RP-3593

Sample	Depth (Feet)	Collection Date	PID (ppm)	Benzene (mg/Kg)	BTEX (mg/Kg)	C6 - C12 (mg/Kg)	>C12 - C28 (mg/Kg)	>C28 - C35 (mg/Kg)	TPH (mg/Kg)	Chloride (mg/Kg)
OCD RRAL:				**10**	**50**				**100**	
SB-1	0	4/21/2015	27.4	--	--	296	9080	833	**10,200**	420
	5	4/21/2015	264	<0.00111	0.6	493	2780	305	**3,580**	397
	10	4/21/2015	15	--	--	<27.5	35.1	<27.5	**35**	280
	15	4/21/2015	11.5	--	--	<26.3	<26.3	<26.3	<26.3	122
	20	4/21/2015	4.4	--	--	<26.6	<26.6	<26.6	<26.6	75
	25	4/21/2015	32.7	--	--	<26.9	35	<26.9	**35**	67
	30	4/21/2015	4.4	--	--	--	--	--	**--**	44
	35	4/21/2015	2.6	--	--	--	--	--	**--**	103
SB-2	0	4/21/2015	22.1	--	--	72.50	1,870	106	**2,050**	125
	5	4/21/2015	153	<0.00114	0.04555	<28.4	98.6	<28.4	**98.6**	480
	10	4/21/2015	112	--	--	43.50	399	<25.5	***443**	83.3
	15	4/21/2015	57	--	--	<29.8	<29.8	<29.8	<29.8	6.55
	20	4/21/2015	15	--	--	<27.2	<27.2	<27.2	<27.2	72.2
	25	4/21/2015	53.9	--	--	--	--	--	**--**	4.54
	30	4/21/2015	2.0	--	--	--	--	--	**--**	440
	35	4/21/2015	18.0	--	--	--	--	--	**--**	47.7
SB-3	1	4/21/2015	16	--	**--**	<32.1	685	70.5	**756**	363
	5	4/21/2015	223	<0.00130	0.3902	137	683	39.4	**860**	8.78
	10	4/21/2015	130	--	**--**	<27.5	177	<27.5	**177**	52.4
	15	4/21/2015	29	--	**--**	28.7	270	<26.0	**298**	44.5
	20	4/21/2015	13	--	**--**	<30.5	<30.5	<30.5	<30.5	<1.22
	25	4/21/2015	7.9	--	**--**	<26.9	<26.9	<26.9	<26.9	65.4
	30	4/21/2015	2.0	--	**--**	--	--	--	--	82.3
	35	4/21/2015	2.0	--	**--**	--	--	--	--	96.1

Notes: Laboratory analysis performed by Permian Basin Environmental Lab, Midland, Texas, by EPA SW-846 methods 8021B (BTEX), 8015M (TPH) and method 300 (chloride).
Depth in feet below ground surface (bgs)
mg/Kg: milligrams per kilogram equivalent to parts per million (ppm)
* Indicates sample may be cross contaminated
Bold indicates that analyte was detected above the method concentration limit
Bold and highlighted indicates that analyte was detected above the OCD recommended remediation action level (RRAL)

Table 2
Groundwater Analytical Data Summary
Paladin Energy Corp., State BT "C" No. 003 Tank Battery
Lea County, New Mexico
1RP-3593

Sample ID	Date	Benzene	Toluene	Ethylbenzene	Xylenes	Chlorides
WQCC Limit:		**0.01**	**0.8**	**0.75**	**0.62**	**250**
TMW-1	11/18/2008	<0.00100	<0.00100	<0.00100	<0.00300	**40.4**

Notes: Analysis performed by Permian Basin Environmental Lab (PBELAB), Midland, Texas
Analysis performed by EPA method SW-846-8021B (BTEX) and 300.0 (chloride)
All values reported in milligrams per liter (mg/L) equivelent to parts per million (ppm)
Bold indicates analyte was detected above reporting limit (RL) but below the regulatory limit

APPENDIX A

OCD Correspondence

Mark Larson

From: Jones, Kellie, EMNRD [Kellie.Jones@state.nm.us]
Sent: Thursday, May 21, 2015 8:24 AM
To: Mark Larson
Cc: paladinmid@suddenlink.net; Oberding, Tomas, EMNRD
Subject: RE: 1RP-3593 and 1RP-3594, Paladin Energy Corp., State BT "C"No.003 Tank Battery and State BT "D" Well No. 003

Mark,

Per our conversation on 20 May 2015, the work plans are conditionally approved, with the following conditions:

1RP-3593

1. Ensure there are two sample points on SB-3 that are below regulated limits
2. Show locations of composite samples on map
3. Investigate possibility of adding liner in the SB-3, SE corner
4. Take ground water sample

1RP-3594

1. Drop two additional soil borings
2. Show location of soil boring and composite samples on map
3. Take ground water sample

It was brought up during our conversation that some of the additional data was already at the lab, but just needed to be processed.

If you have any questions, please feel free to contact me. I do appreciate your time and assistance in this matter.

Thanks,

Kellie Jones
Environmental Specialist, District 1
Oil Conservation Division, EMNRD
(575) 393-6161 ext. 111
575-370-3180 (emergency-cell)
E-Mail: kellie.jones@state.nm.us

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations.

Please note:
-The OCD is no longer granting "risk-based," or standard closure of events/RPs with remediation deferred to site abandonment/sale/closure. The RP will remain open until such time as historic contamination is addressed.
-Photographic documentation is stipulated for all events involving liquids.

If you have any questions or concerns, and for notification, please contact me.

From: Mark Larson [mailto:Mark@laenvironmental.com]
Sent: Thursday, May 14, 2015 7:27 AM
To: Oberding, Tomas, EMNRD; Jones, Kellie, EMNRD
Cc: paladinmid@suddenlink.net
Subject: Re: 1RP-3593 and 1RP-3594, Paladin Energy Corp., State BT "C" No.003 Tank Battery and State BT "D" Well No. 003

Dear Dr. Oberding and Ms. Jones,
Please use the link below to download electronic version of the above-referenced report. The report are submitted on behalf of Paladin Energy Corp. (Paladin) and present the investigation and remediation results for spills reported at the State BT "C" No.003 Tank Battery (1RP-3593) and State BT "D" Well No.003 (1RP-3594). Please contact Mickey Horn with Paladin at (432) 634-6599 or me at (432) 687-0901, with any questions you may have or if you cannot open the weblink.
Sincerely,

Mark J. Larson, P.G.
President/Sr. Project Manager
507 N. Marienfeld St., Suite 200
Midland, Texas 79701
Office – 432-687-0901
Cell – 432- 556-8656
Fax – 432-687-0456
mark@laenvironmental.com

Larson & Associates, Inc.
Environmental Consultants

Directly below is the link to the remediation report for 15-0130-01, State BT "C". Transmittal letter is included.

https://files.acrobat.com/a/preview/ac86bb6b-08b2-41ef-b26b-0c5a01a13824

Directly below is the link to the remediation report for 15-0130-02, State BT "D". Transmittal letter is included.

https://files.acrobat.com/a/preview/9ff4fe2c-921f-4eb7-89f3-8193ad7389d9

--

Mark Larson

From: michael [paladinmid@suddenlink.net]
Sent: Monday, June 15, 2015 5:05 PM
To: Mark Larson
Subject: FW: 1RP-3594, Paladin Energy Corp., State BT State BT "D" Well No. 003

From: Jones, Kellie, EMNRD [mailto:Kellie.Jones@state.nm.us]
Sent: Monday, June 15, 2015 11:30 AM
To: Mark Larson
Cc: paladinmid@suddenlink.net
Subject: RE: 1RP-3594, Paladin Energy Corp., State BT State BT "D" Well No. 003

Mark,

I am agreeable to the proposed action. Please submit the final C141 with the final report, the one submitted today will not be processed until then.

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

Thank you,

Kellie Jones
Environmental Specialist, District 1
Oil Conservation Division, EMNRD
(575) 393-6161 ext. 111
575-370-3180 (emergency-cell)
E-Mail: kellie.jones@state.nm.us

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations.

Please note:
-The OCD is no longer granting "risk-based," or standard closure of events/RPs with remediation deferred to site abandonment/sale/closure. The RP will remain open until such time as historic contamination is addressed.
-Photographic documentation is stipulated for all events involving liquids.

If you have any questions or concerns, and for notification, please contact me.

From: Mark Larson [mailto:Mark@laenvironmental.com]
Sent: Wednesday, June 10, 2015 10:47 AM
To: Jones, Kellie, EMNRD
Cc: paladinmid@suddenlink.net
Subject: RE: 1RP-3594, Paladin Energy Corp., State BT State BT "D" Well No. 003

Kellie:

The following is in response to your approval for the Paladin Energy Corp. State BT "D" Well No. 003 spill (1RP-3594):

1RP-3594

1. Drop two additional soil borings
   Response: Two borings (SB-2 and SB-3) were drilled on May 26, 2015. TPH was detected at 458.9 mg/Kg in sample SB-2, 1 foot bgs. The remaining samples from boring SB-2 (5, 10 and 15 feet) and boring SB-3 (1, 5, 10 and 15 feet) were below the RRAL (100 mg/Kg) or analytical method reporting limit (RL). Chloride decreased below 250 mg/Kg in samples from 25 feet. Table 2 presents the laboratory analytical data summary.
2. Show location of soil boring and composite samples on map
   Response: Figure 3 presents the locations the composite (discrete) samples and boring locations.
3. Take ground water sample
   Response: A groundwater samples was collected about 70 feet southeast (down gradient) from the spill, on April 21, 2015. Table 3 presents the analytical data summary which shows chloride at 221 mg/L and below the WQCC domestic drinking water standard (250 m/L). Figure 3 shows the groundwater sample location.

Proposed Action:
Paladin will install a 20 mil liner in the area shown on Figure 4. The liner will be installed in the bottom of the excavation at the same time a liner will be installed at the State BT "C" tank battery. The excavations will be filled with clean soil/caliche. A final report will be submitted to OCD upon completion of the work which will be photo documented. The final C-141 is attached.

Your approval of this request is greatly appreciated. Please contact me if you have questions.
Sincerely,

Mark J. Larson, P.G.
President/Sr. Project Manager
507 N. Marienfeld St., Suite 200
Midland, Texas 79701
Office – 432-687-0901
Cell – 432- 556-8656
Fax – 432-687-0456
mark@laenvironmental.com

LA arson & Associates, Inc.
Environmental Consultants

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APPENDIX B

Photographs

Facility Sign

Soil Remediation Southeast of Tanks Viewing West, June 22, 2015

Installing Liner Southeast of Tanks Viewing West, June 22, 2015

Completed Liner Viewing West, June 22, 2015

Completed Backfilling and Firewall Construction Viewing West, June 26, 2015

Completed Backfilling and Firewall Construction Viewing North, June 26, 2015

Soil Remediation South of Tanks Viewing West, June 22, 2015

Soil Remediation South and West of Tanks Viewing East, June 22, 2015

Completed Backfilling South and West of Tanks Viewing East, June 26, 2015

Soil Remediation West of Tanks Viewing East, June 22, 2015

Completed Backfilling West of Tanks Viewing East, June 26, 2015

Completed Backfilling West of Tanks Viewing East, June 26, 2015

Completed Backfilling North of Tanks Viewing West, June 26, 2015

APPENDIX C

Laboratory Reports

PERMIAN BASIN
ENVIRONMENTAL LAB, LP
10014 SCR 1213
Midland, TX 79706

PBELAB

Analytical Report

Prepared for:

Mark Larson

Larson & Associates, Inc.

P.O. Box 50685

Midland, TX 79710

Project: Paladiin/State BT "C" Battery

Project Number: 15-0130-01

Location:

Lab Order Number: 5D22006

NELAP ACCREDITED TNI LABORATORY

NELAP/TCEQ # T104704156-13-3

Report Date: 05/06/15

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Paladiin/State BT "C" Battery
Project Number: 15-0130-01
Project Manager: Mark Larson

Fax: (432) 687-0456

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB-1 0'	5D22006-01	Soil	04/21/15 10:16	04-22-2015 10:21
SB-1 5'	5D22006-02	Soil	04/21/15 10:30	04-22-2015 10:21
SB-1 10'	5D22006-03	Soil	04/21/15 10:38	04-22-2015 10:21
SB-1 15'	5D22006-04	Soil	04/21/15 10:42	04-22-2015 10:21
SB-1 20'	5D22006-05	Soil	04/21/15 10:48	04-22-2015 10:21
SB-1 25'	5D22006-06	Soil	04/21/15 10:55	04-22-2015 10:21
SB-1 30'	5D22006-07	Soil	04/21/15 11:00	04-22-2015 10:21
SB-1 35'	5D22006-08	Soil	04/21/15 11:07	04-22-2015 10:21
SB-2 0'	5D22006-09	Soil	04/21/15 11:20	04-22-2015 10:21
SB-2 5'	5D22006-10	Soil	04/21/15 12:22	04-22-2015 10:21
SB-2 10'	5D22006-11	Soil	04/21/15 12:28	04-22-2015 10:21
SB-2 15'	5D22006-12	Soil	04/21/15 12:55	04-22-2015 10:21
SB-2 20'	5D22006-13	Soil	04/21/15 13:02	04-22-2015 10:21
SB-2 25'	5D22006-14	Soil	04/21/15 13:07	04-22-2015 10:21
SB-2 30'	5D22006-15	Soil	04/21/15 13:14	04-22-2015 10:21
SB-2 35'	5D22006-16	Soil	04/21/15 13:20	04-22-2015 10:21
SB-3 1'	5D22006-17	Soil	04/21/15 13:32	04-22-2015 10:21
SB-3 5'	5D22006-18	Soil	04/21/15 13:40	04-22-2015 10:21
SB-3 10'	5D22006-19	Soil	04/21/15 13:47	04-22-2015 10:21
SB-3 15'	5D22006-20	Soil	04/21/15 13:54	04-22-2015 10:21
SB-3 20'	5D22006-21	Soil	04/21/15 13:58	04-22-2015 10:21
SB-3 25'	5D22006-22	Soil	04/21/15 14:09	04-22-2015 10:21
SB-3 30'	5D22006-23	Soil	04/21/15 14:15	04-22-2015 10:21
SB-3 35'	5D22006-24	Soil	04/21/15 14:20	04-22-2015 10:21

Larson & Associates, Inc.	Project: Paladiin/State BT "C" Battery	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 15-0130-01	
Midland TX, 79710	Project Manager: Mark Larson	

SB-1 0'

5D22006-01 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**420**	1.08	mg/kg dry	1	P5D3006	04/29/15	04/30/15	EPA 300.0	
% Moisture	**7.0**	0.1	%	1	P5D2705	04/27/15	04/27/15	% calculation	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	**296**	134	mg/kg dry	5	P5D2702	04/24/15	04/27/15	TPH 8015M	
>C12-C28	**9080**	134	mg/kg dry	5	P5D2702	04/24/15	04/27/15	TPH 8015M	
>C28-C35	**833**	134	mg/kg dry	5	P5D2702	04/24/15	04/27/15	TPH 8015M	
Surrogate: 1-Chlorooctane		*74.8 %*	*70-130*		*P5D2702*	*04/24/15*	*04/27/15*	*TPH 8015M*	
Surrogate: o-Terphenyl		*82.3 %*	*70-130*		*P5D2702*	*04/24/15*	*04/27/15*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	**10200**	134	mg/kg dry	5	[CALC]	04/24/15	04/27/15	calc	

Larson & Associates, Inc.	Project: Paladiin/State BT "C" Battery	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 15-0130-01	
Midland TX, 79710	Project Manager: Mark Larson	

SB-1 5'

5D22006-02 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
Organics by GC									
Benzene	ND	0.00111	mg/kg dry	1	P5D2704	04/24/15	04/24/15	EPA 8021B	
Toluene	**0.0579**	0.00222	mg/kg dry	1	P5D2704	04/24/15	04/24/15	EPA 8021B	
Ethylbenzene	**0.0665**	0.00111	mg/kg dry	1	P5D2704	04/24/15	04/24/15	EPA 8021B	
Xylene (p/m)	**0.324**	0.00222	mg/kg dry	1	P5D2704	04/24/15	04/24/15	EPA 8021B	
Xylene (o)	**0.105**	0.00111	mg/kg dry	1	P5D2704	04/24/15	04/24/15	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		*83.2 %*	*75-125*		*P5D2704*	*04/24/15*	*04/24/15*	*EPA 8021B*	
Surrogate: 4-Bromofluorobenzene		*113 %*	*75-125*		*P5D2704*	*04/24/15*	*04/24/15*	*EPA 8021B*	
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**397**	1.11	mg/kg dry	1	P5D3006	04/29/15	04/30/15	EPA 300.0	
% Moisture	**10.0**	0.1	%	1	P5D2705	04/27/15	04/27/15	% calculation	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	**493**	27.8	mg/kg dry	1	P5D2702	04/24/15	04/27/15	TPH 8015M	
>C12-C28	**2780**	27.8	mg/kg dry	1	P5D2702	04/24/15	04/27/15	TPH 8015M	
>C28-C35	**305**	27.8	mg/kg dry	1	P5D2702	04/24/15	04/27/15	TPH 8015M	
Surrogate: 1-Chlorooctane		*105 %*	*70-130*		*P5D2702*	*04/24/15*	*04/27/15*	*TPH 8015M*	
Surrogate: o-Terphenyl		*88.9 %*	*70-130*		*P5D2702*	*04/24/15*	*04/27/15*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	**3580**	27.8	mg/kg dry	1	[CALC]	04/24/15	04/27/15	calc	

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Midland TX, 79710	Project Manager: Mark Larson	

SB-1 10'

5D22006-03 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**280**	1.10	mg/kg dry	1	P5D3006	04/29/15	04/30/15	EPA 300.0	
% Moisture	**9.0**	0.1	%	1	P5D2705	04/27/15	04/27/15	% calculation	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	27.5	mg/kg dry	1	P5D2702	04/24/15	04/27/15	TPH 8015M	
>C12-C28	**35.1**	27.5	mg/kg dry	1	P5D2702	04/24/15	04/27/15	TPH 8015M	
>C28-C35	ND	27.5	mg/kg dry	1	P5D2702	04/24/15	04/27/15	TPH 8015M	
Surrogate: 1-Chlorooctane		*75.1 %*	*70-130*		*P5D2702*	*04/24/15*	*04/27/15*	*TPH 8015M*	
Surrogate: o-Terphenyl		*89.0 %*	*70-130*		*P5D2702*	*04/24/15*	*04/27/15*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	**35.1**	27.5	mg/kg dry	1	[CALC]	04/24/15	04/27/15	calc	

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P.O. Box 50685	Project Number: 15-0130-01	
Midland TX, 79710	Project Manager: Mark Larson	

SB-1 15'

5D22006-04 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**122**	1.05	mg/kg dry	1	P5D3006	04/29/15	04/30/15	EPA 300.0	
% Moisture	**5.0**	0.1	%	1	P5D2705	04/27/15	04/27/15	% calculation	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	26.3	mg/kg dry	1	P5D2702	04/24/15	04/27/15	TPH 8015M	
>C12-C28	ND	26.3	mg/kg dry	1	P5D2702	04/24/15	04/27/15	TPH 8015M	
>C28-C35	ND	26.3	mg/kg dry	1	P5D2702	04/24/15	04/27/15	TPH 8015M	
Surrogate: 1-Chlorooctane		*74.5 %*	*70-130*		*P5D2702*	*04/24/15*	*04/27/15*	*TPH 8015M*	
Surrogate: o-Terphenyl		*87.8 %*	*70-130*		*P5D2702*	*04/24/15*	*04/27/15*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	ND	26.3	mg/kg dry	1	[CALC]	04/24/15	04/27/15	calc	

Larson & Associates, Inc.	Project: Paladiin/State BT "C" Battery	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 15-0130-01	
Midland TX, 79710	Project Manager: Mark Larson	

SB-1 20'

5D22006-05 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**74.9**	1.06	mg/kg dry	1	P5E0503	04/30/15	05/05/15	EPA 300.0	
% Moisture	**6.0**	0.1	%	1	P5D2705	04/27/15	04/27/15	% calculation	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	26.6	mg/kg dry	1	P5D2702	04/24/15	04/27/15	TPH 8015M	
>C12-C28	ND	26.6	mg/kg dry	1	P5D2702	04/24/15	04/27/15	TPH 8015M	
>C28-C35	ND	26.6	mg/kg dry	1	P5D2702	04/24/15	04/27/15	TPH 8015M	
Surrogate: 1-Chlorooctane		*67.6 %*	*70-130*		*P5D2702*	*04/24/15*	*04/27/15*	*TPH 8015M*	*S-GC*
Surrogate: o-Terphenyl		*78.3 %*	*70-130*		*P5D2702*	*04/24/15*	*04/27/15*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	ND	26.6	mg/kg dry	1	[CALC]	04/24/15	04/27/15	calc	

Larson & Associates, Inc.	Project: Paladiin/State BT "C" Battery	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 15-0130-01	
Midland TX, 79710	Project Manager: Mark Larson	

SB-1 25'

5D22006-06 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**67.4**	1.08	mg/kg dry	1	P5E0503	04/30/15	05/05/15	EPA 300.0	
% Moisture	**7.0**	0.1	%	1	P5D2705	04/27/15	04/27/15	% calculation	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	26.9	mg/kg dry	1	P5D2702	04/24/15	04/27/15	TPH 8015M	
>C12-C28	**35.0**	26.9	mg/kg dry	1	P5D2702	04/24/15	04/27/15	TPH 8015M	
>C28-C35	ND	26.9	mg/kg dry	1	P5D2702	04/24/15	04/27/15	TPH 8015M	
Surrogate: 1-Chlorooctane		*77.2 %*	*70-130*		*P5D2702*	*04/24/15*	*04/27/15*	*TPH 8015M*	
Surrogate: o-Terphenyl		*92.0 %*	*70-130*		*P5D2702*	*04/24/15*	*04/27/15*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	**35.0**	26.9	mg/kg dry	1	[CALC]	04/24/15	04/27/15	calc	

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Midland TX, 79710	Project Manager: Mark Larson	

SB-1 30'

5D22006-07 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**43.5**	1.41	mg/kg dry	1	P5E0503	04/30/15	05/05/15	EPA 300.0	
% Moisture	**29.0**	0.1	%	1	P5D2705	04/27/15	04/27/15	% calculation	

Larson & Associates, Inc.	Project: Paladiin/State BT "C" Battery	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 15-0130-01	
Midland TX, 79710	Project Manager: Mark Larson	

SB-1 35'

5D22006-08 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**103**	1.08	mg/kg dry	1	P5E0503	04/30/15	05/05/15	EPA 300.0	
% Moisture	**7.0**	0.1	%	1	P5D2705	04/27/15	04/27/15	% calculation	

Larson & Associates, Inc.	Project: Paladiin/State BT "C" Battery	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 15-0130-01	
Midland TX, 79710	Project Manager: Mark Larson	

SB-2 0'

5D22006-09 (Soil)

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**125**	1.35	mg/kg dry	1	P5E0503	04/30/15	05/05/15	EPA 300.0	
% Moisture	**26.0**	0.1	%	1	P5D2705	04/27/15	04/27/15	% calculation	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	**72.5**	33.8	mg/kg dry	1	P5D2702	04/24/15	04/27/15	TPH 8015M	
>C12-C28	**1870**	33.8	mg/kg dry	1	P5D2702	04/24/15	04/27/15	TPH 8015M	
>C28-C35	**106**	33.8	mg/kg dry	1	P5D2702	04/24/15	04/27/15	TPH 8015M	
Surrogate: 1-Chlorooctane		*83.5 %*	*70-130*		*P5D2702*	*04/24/15*	*04/27/15*	*TPH 8015M*	
Surrogate: o-Terphenyl		*100 %*	*70-130*		*P5D2702*	*04/24/15*	*04/27/15*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	**2050**	33.8	mg/kg dry	1	[CALC]	04/24/15	04/27/15	calc	

Larson & Associates, Inc.	Project: Paladiin/State BT "C" Battery	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 15-0130-01	
Midland TX, 79710	Project Manager: Mark Larson	

SB-2 5'

5D22006-10 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
Organics by GC									
Benzene	ND	0.00114	mg/kg dry	1	P5D2704	04/24/15	04/24/15	EPA 8021B	
Toluene	**0.0134**	0.00227	mg/kg dry	1	P5D2704	04/24/15	04/24/15	EPA 8021B	
Ethylbenzene	**0.00333**	0.00114	mg/kg dry	1	P5D2704	04/24/15	04/24/15	EPA 8021B	
Xylene (p/m)	**0.0245**	0.00227	mg/kg dry	1	P5D2704	04/24/15	04/24/15	EPA 8021B	
Xylene (o)	**0.00432**	0.00114	mg/kg dry	1	P5D2704	04/24/15	04/24/15	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		*103 %*	*75-125*		*P5D2704*	*04/24/15*	*04/24/15*	*EPA 8021B*	
Surrogate: 4-Bromofluorobenzene		*92.7 %*	*75-125*		*P5D2704*	*04/24/15*	*04/24/15*	*EPA 8021B*	
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**480**	1.14	mg/kg dry	1	P5E0503	04/30/15	05/05/15	EPA 300.0	
% Moisture	**12.0**	0.1	%	1	P5D2705	04/27/15	04/27/15	% calculation	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	28.4	mg/kg dry	1	P5D2702	04/24/15	04/27/15	TPH 8015M	
>C12-C28	**98.6**	28.4	mg/kg dry	1	P5D2702	04/24/15	04/27/15	TPH 8015M	
>C28-C35	ND	28.4	mg/kg dry	1	P5D2702	04/24/15	04/27/15	TPH 8015M	
Surrogate: 1-Chlorooctane		*82.2 %*	*70-130*		*P5D2702*	*04/24/15*	*04/27/15*	*TPH 8015M*	
Surrogate: o-Terphenyl		*96.8 %*	*70-130*		*P5D2702*	*04/24/15*	*04/27/15*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	**98.6**	28.4	mg/kg dry	1	[CALC]	04/24/15	04/27/15	calc	

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P.O. Box 50685	Project Number: 15-0130-01	
Midland TX, 79710	Project Manager: Mark Larson	

SB-2 10'

5D22006-11 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**83.3**	1.02	mg/kg dry	1	P5E0503	04/30/15	05/05/15	EPA 300.0	
% Moisture	**2.0**	0.1	%	1	P5D2705	04/27/15	04/27/15	% calculation	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	**43.5**	25.5	mg/kg dry	1	P5D2702	04/24/15	04/27/15	TPH 8015M	
>C12-C28	**399**	25.5	mg/kg dry	1	P5D2702	04/24/15	04/27/15	TPH 8015M	
>C28-C35	ND	25.5	mg/kg dry	1	P5D2702	04/24/15	04/27/15	TPH 8015M	
Surrogate: 1-Chlorooctane		*78.1 %*	*70-130*		*P5D2702*	*04/24/15*	*04/27/15*	*TPH 8015M*	
Surrogate: o-Terphenyl		*92.3 %*	*70-130*		*P5D2702*	*04/24/15*	*04/27/15*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	**443**	25.5	mg/kg dry	1	[CALC]	04/24/15	04/27/15	calc	

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Midland TX, 79710	Project Manager: Mark Larson	

SB-2 15'

5D22006-12 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**6.55**	1.19	mg/kg dry	1	P5E0503	04/30/15	05/05/15	EPA 300.0	
% Moisture	**16.0**	0.1	%	1	P5D2705	04/27/15	04/27/15	% calculation	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	29.8	mg/kg dry	1	P5D2702	04/24/15	04/27/15	TPH 8015M	
>C12-C28	ND	29.8	mg/kg dry	1	P5D2702	04/24/15	04/27/15	TPH 8015M	
>C28-C35	ND	29.8	mg/kg dry	1	P5D2702	04/24/15	04/27/15	TPH 8015M	
Surrogate: 1-Chlorooctane		*72.4 %*	*70-130*		*P5D2702*	*04/24/15*	*04/27/15*	*TPH 8015M*	
Surrogate: o-Terphenyl		*85.9 %*	*70-130*		*P5D2702*	*04/24/15*	*04/27/15*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	ND	29.8	mg/kg dry	1	[CALC]	04/24/15	04/27/15	calc	

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Midland TX, 79710	Project Manager: Mark Larson	

SB-2 20'

5D22006-13 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**72.2**	1.09	mg/kg dry	1	P5E0503	04/30/15	05/05/15	EPA 300.0	
% Moisture	**8.0**	0.1	%	1	P5D2705	04/27/15	04/27/15	% calculation	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	27.2	mg/kg dry	1	P5D3003	04/27/15	04/27/15	TPH 8015M	
>C12-C28	ND	27.2	mg/kg dry	1	P5D3003	04/27/15	04/27/15	TPH 8015M	
>C28-C35	ND	27.2	mg/kg dry	1	P5D3003	04/27/15	04/27/15	TPH 8015M	
Surrogate: 1-Chlorooctane		*70.6 %*	*70-130*		*P5D3003*	*04/27/15*	*04/27/15*	*TPH 8015M*	
Surrogate: o-Terphenyl		*83.3 %*	*70-130*		*P5D3003*	*04/27/15*	*04/27/15*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	ND	27.2	mg/kg dry	1	[CALC]	04/27/15	04/27/15	calc	

Larson & Associates, Inc.	Project: Paladiin/State BT "C" Battery	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 15-0130-01	
Midland TX, 79710	Project Manager: Mark Larson	

SB-2 25'

5D22006-14 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**4.54**	1.09	mg/kg dry	1	P5E0503	04/30/15	05/05/15	EPA 300.0	
% Moisture	**8.0**	0.1	%	1	P5D2705	04/27/15	04/27/15	% calculation	

Larson & Associates, Inc.	Project: Paladiin/State BT "C" Battery	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 15-0130-01	
Midland TX, 79710	Project Manager: Mark Larson	

SB-2 30'

5D22006-15 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**440**	1.18	mg/kg dry	1	P5E0503	04/30/15	05/05/15	EPA 300.0	
% Moisture	**15.0**	0.1	%	1	P5D2705	04/27/15	04/27/15	% calculation	

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P.O. Box 50685	Project Number: 15-0130-01	
Midland TX, 79710	Project Manager: Mark Larson	

SB-2 35'

5D22006-16 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**47.7**	1.08	mg/kg dry	1	P5E0503	04/30/15	05/05/15	EPA 300.0	
% Moisture	**7.0**	0.1	%	1	P5D2705	04/27/15	04/27/15	% calculation	

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Midland TX, 79710	Project Manager: Mark Larson	

SB-3 1'

5D22006-17 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**363**	1.28	mg/kg dry	1	P5E0503	04/30/15	05/05/15	EPA 300.0	
% Moisture	**22.0**	0.1	%	1	P5D2705	04/27/15	04/27/15	% calculation	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	32.1	mg/kg dry	1	P5D3003	04/27/15	04/27/15	TPH 8015M	
>C12-C28	**685**	32.1	mg/kg dry	1	P5D3003	04/27/15	04/27/15	TPH 8015M	
>C28-C35	**70.5**	32.1	mg/kg dry	1	P5D3003	04/27/15	04/27/15	TPH 8015M	
Surrogate: 1-Chlorooctane		*63.9 %*	*70-130*		*P5D3003*	*04/27/15*	*04/27/15*	*TPH 8015M*	*S-GC*
Surrogate: o-Terphenyl		*86.6 %*	*70-130*		*P5D3003*	*04/27/15*	*04/27/15*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	**756**	32.1	mg/kg dry	1	[CALC]	04/27/15	04/27/15	calc	

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Midland TX, 79710	Project Manager: Mark Larson	

SB-3 5'

5D22006-18 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
Organics by GC									
Benzene	ND	0.00130	mg/kg dry	1	P5D2704	04/24/15	04/24/15	EPA 8021B	
Toluene	**0.0240**	0.00260	mg/kg dry	1	P5D2704	04/24/15	04/24/15	EPA 8021B	
Ethylbenzene	**0.0483**	0.00130	mg/kg dry	1	P5D2704	04/24/15	04/24/15	EPA 8021B	
Xylene (p/m)	**0.276**	0.00260	mg/kg dry	1	P5D2704	04/24/15	04/24/15	EPA 8021B	
Xylene (o)	**0.0419**	0.00130	mg/kg dry	1	P5D2704	04/24/15	04/24/15	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		*80.8 %*	*75-125*		*P5D2704*	*04/24/15*	*04/24/15*	*EPA 8021B*	
Surrogate: 4-Bromofluorobenzene		*101 %*	*75-125*		*P5D2704*	*04/24/15*	*04/24/15*	*EPA 8021B*	
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**8.78**	1.30	mg/kg dry	1	P5E0503	04/30/15	05/05/15	EPA 300.0	
% Moisture	**23.0**	0.1	%	1	P5D2705	04/27/15	04/27/15	% calculation	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	**137**	32.5	mg/kg dry	1	P5D3003	04/27/15	04/27/15	TPH 8015M	
>C12-C28	**683**	32.5	mg/kg dry	1	P5D3003	04/27/15	04/27/15	TPH 8015M	
>C28-C35	**39.4**	32.5	mg/kg dry	1	P5D3003	04/27/15	04/27/15	TPH 8015M	
Surrogate: 1-Chlorooctane		*79.0 %*	*70-130*		*P5D3003*	*04/27/15*	*04/27/15*	*TPH 8015M*	
Surrogate: o-Terphenyl		*88.8 %*	*70-130*		*P5D3003*	*04/27/15*	*04/27/15*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	**860**	32.5	mg/kg dry	1	[CALC]	04/27/15	04/27/15	calc	

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SB-3 10'

5D22006-19 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**52.4**	1.10	mg/kg dry	1	P5E0503	04/30/15	05/05/15	EPA 300.0	
% Moisture	**9.0**	0.1	%	1	P5D2705	04/27/15	04/27/15	% calculation	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	27.5	mg/kg dry	1	P5D3003	04/27/15	04/27/15	TPH 8015M	
>C12-C28	**177**	27.5	mg/kg dry	1	P5D3003	04/27/15	04/27/15	TPH 8015M	
>C28-C35	ND	27.5	mg/kg dry	1	P5D3003	04/27/15	04/27/15	TPH 8015M	
Surrogate: 1-Chlorooctane		*68.1 %*	*70-130*		*P5D3003*	*04/27/15*	*04/27/15*	*TPH 8015M*	*S-GC*
Surrogate: o-Terphenyl		*80.5 %*	*70-130*		*P5D3003*	*04/27/15*	*04/27/15*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	**177**	27.5	mg/kg dry	1	[CALC]	04/27/15	04/27/15	calc	

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Midland TX, 79710	Project Manager: Mark Larson	

SB-3 15'

5D22006-20 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**44.5**	1.04	mg/kg dry	1	P5E0503	04/30/15	05/05/15	EPA 300.0	
% Moisture	**4.0**	0.1	%	1	P5D2705	04/27/15	04/27/15	% calculation	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	**28.7**	26.0	mg/kg dry	1	P5D3003	04/27/15	04/27/15	TPH 8015M	
>C12-C28	**270**	26.0	mg/kg dry	1	P5D3003	04/27/15	04/27/15	TPH 8015M	
>C28-C35	ND	26.0	mg/kg dry	1	P5D3003	04/27/15	04/27/15	TPH 8015M	
Surrogate: 1-Chlorooctane		*74.4 %*	*70-130*		*P5D3003*	*04/27/15*	*04/27/15*	*TPH 8015M*	
Surrogate: o-Terphenyl		*87.5 %*	*70-130*		*P5D3003*	*04/27/15*	*04/27/15*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	**298**	26.0	mg/kg dry	1	[CALC]	04/27/15	04/27/15	calc	

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Midland TX, 79710	Project Manager: Mark Larson	

SB-3 20'

5D22006-21 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	ND	1.22	mg/kg dry	1	P5E0503	04/30/15	05/05/15	EPA 300.0	
% Moisture	**18.0**	0.1	%	1	P5D2705	04/27/15	04/27/15	% calculation	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	30.5	mg/kg dry	1	P5D3003	04/27/15	04/27/15	TPH 8015M	
>C12-C28	ND	30.5	mg/kg dry	1	P5D3003	04/27/15	04/27/15	TPH 8015M	
>C28-C35	ND	30.5	mg/kg dry	1	P5D3003	04/27/15	04/27/15	TPH 8015M	
Surrogate: 1-Chlorooctane		*70.2 %*	*70-130*		*P5D3003*	*04/27/15*	*04/27/15*	*TPH 8015M*	
Surrogate: o-Terphenyl		*82.7 %*	*70-130*		*P5D3003*	*04/27/15*	*04/27/15*	*TPH 8015M*	
Total Petroleum Hydrocarbon C6-C35	ND	30.5	mg/kg dry	1	[CALC]	04/27/15	04/27/15	calc	

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Midland TX, 79710	Project Manager: Mark Larson	

SB-3 25'

5D22006-22 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**65.4**	1.08	mg/kg dry	1	P5E0503	04/30/15	05/05/15	EPA 300.0	
% Moisture	**7.0**	0.1	%	1	P5D2705	04/27/15	04/27/15	% calculation	

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Midland TX, 79710	Project Manager: Mark Larson	

SB-3 30'

5D22006-23 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**82.3**	1.08	mg/kg dry	1	P5E0503	04/30/15	05/05/15	EPA 300.0	
% Moisture	**7.0**	0.1	%	1	P5D2705	04/27/15	04/27/15	% calculation	

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Midland TX, 79710	Project Manager: Mark Larson	

SB-3 35'

5D22006-24 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**96.1**	1.10	mg/kg dry	1	P5E0503	04/30/15	05/05/15	EPA 300.0	
% Moisture	**9.0**	0.1	%	1	P5D2705	04/27/15	04/27/15	% calculation	

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Organics by GC - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P5D2704 - General Preparation (GC)										
Blank (P5D2704-BLK1)				Prepared & Analyzed: 04/24/15						
Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00200	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00200	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 1,4-Difluorobenzene	*0.0503*		*"*	*0.0600*		*83.8*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*0.0663*		*"*	*0.0600*		*110*	*75-125*			
LCS (P5D2704-BS1)				Prepared & Analyzed: 04/24/15						
Benzene	0.100	0.00100	mg/kg wet	0.100		100	70-130			
Toluene	0.111	0.00200	"	0.100		111	70-130			
Ethylbenzene	0.117	0.00100	"	0.100		117	70-130			
Xylene (p/m)	0.231	0.00200	"	0.200		115	70-130			
Xylene (o)	0.110	0.00100	"	0.100		110	70-130			
Surrogate: 1,4-Difluorobenzene	*0.0595*		*"*	*0.0600*		*99.2*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*0.0680*		*"*	*0.0600*		*113*	*75-125*			
LCS Dup (P5D2704-BSD1)				Prepared & Analyzed: 04/24/15						
Benzene	0.0986	0.00100	mg/kg wet	0.100		98.6	70-130	1.60	20	
Toluene	0.111	0.00200	"	0.100		111	70-130	0.0720	20	
Ethylbenzene	0.115	0.00100	"	0.100		115	70-130	1.63	20	
Xylene (p/m)	0.224	0.00200	"	0.200		112	70-130	2.83	20	
Xylene (o)	0.109	0.00100	"	0.100		109	70-130	1.57	20	
Surrogate: 1,4-Difluorobenzene	*0.0613*		*"*	*0.0600*		*102*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*0.0673*		*"*	*0.0600*		*112*	*75-125*			

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Project Number: 15-0130-01
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General Chemistry Parameters by EPA / Standard Methods - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P5D2705 - * DEFAULT PREP *** **										
Blank (P5D2705-BLK1)				Prepared & Analyzed: 04/27/15						
% Moisture	ND	0.1	%							
Duplicate (P5D2705-DUP1)		**Source: 5D24002-01**		Prepared & Analyzed: 04/27/15						
% Moisture	10.0	0.1	%		11.0			9.52	20	
Duplicate (P5D2705-DUP2)		**Source: 5D24003-01**		Prepared & Analyzed: 04/27/15						
% Moisture	2.0	0.1	%		2.0			0.00	20	
Batch P5D3006 - * DEFAULT PREP *** **										
Blank (P5D3006-BLK1)				Prepared: 04/29/15 Analyzed: 04/30/15						
Chloride	ND	1.00	mg/kg wet							
LCS (P5D3006-BS1)				Prepared: 04/29/15 Analyzed: 04/30/15						
Chloride	105	1.00	mg/kg wet	100		105	80-120			
LCS Dup (P5D3006-BSD1)				Prepared: 04/29/15 Analyzed: 04/30/15						
Chloride	105	1.00	mg/kg wet	100		105	80-120	0.334	20	
Duplicate (P5D3006-DUP1)		**Source: 5D22004-39**		Prepared: 04/29/15 Analyzed: 04/30/15						
Chloride	3310	27.5	mg/kg dry		3140			5.33	20	
Duplicate (P5D3006-DUP2)		**Source: 5D24001-01**		Prepared: 04/29/15 Analyzed: 04/30/15						
Chloride	3470	61.0	mg/kg dry		3490			0.544	20	
Matrix Spike (P5D3006-MS1)		**Source: 5D22004-39**		Prepared: 04/29/15 Analyzed: 04/30/15						
Chloride	6020	27.5	mg/kg dry	2750	3140	105	80-120			

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General Chemistry Parameters by EPA / Standard Methods - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P5E0503 - * DEFAULT PREP *** **										
Blank (P5E0503-BLK1)				Prepared: 04/30/15 Analyzed: 05/05/15						
Chloride	ND	1.00	mg/kg wet							
LCS (P5E0503-BS1)				Prepared: 04/30/15 Analyzed: 05/05/15						
Chloride	107	1.00	mg/kg wet	100		107	80-120			
LCS Dup (P5E0503-BSD1)				Prepared: 04/30/15 Analyzed: 05/05/15						
Chloride	108	1.00	mg/kg wet	100		108	80-120	0.539	20	
Duplicate (P5E0503-DUP1)		**Source: 5D22006-05**		Prepared: 04/30/15 Analyzed: 05/05/15						
Chloride	77.2	1.06	mg/kg dry		74.9			3.02	20	
Duplicate (P5E0503-DUP2)		**Source: 5D22006-15**		Prepared: 04/30/15 Analyzed: 05/05/15						
Chloride	444	1.18	mg/kg dry		440			0.862	20	

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Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P5D2702 - TX 1005										
Duplicate (P5D2702-DUP1)	**Source: 5D22006-12**			Prepared: 04/24/15 Analyzed: 04/27/15						
C6-C12	ND	29.8	mg/kg dry		ND				20	
>C12-C28	29.9	29.8	"		ND				20	
Surrogate: 1-Chlorooctane	*92.0*		*"*	*119*		*77.3*	*70-130*			
Surrogate: o-Terphenyl	*53.9*		*"*	*59.5*		*90.5*	*70-130*			
Batch P5D3003 - TX 1005										
Blank (P5D3003-BLK1)				Prepared & Analyzed: 04/27/15						
C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	*65.6*		*"*	*100*		*65.6*	*70-130*			*S-GC*
Surrogate: o-Terphenyl	*38.6*		*"*	*50.0*		*77.2*	*70-130*			
LCS (P5D3003-BS1)				Prepared & Analyzed: 04/27/15						
C6-C12	894	25.0	mg/kg wet	1000		89.4	75-125			
>C12-C28	1080	25.0	"	1000		108	75-125			
Surrogate: 1-Chlorooctane	*88.6*		*"*	*100*		*88.6*	*70-130*			
Surrogate: o-Terphenyl	*43.8*		*"*	*50.0*		*87.6*	*70-130*			
LCS Dup (P5D3003-BSD1)				Prepared & Analyzed: 04/27/15						
C6-C12	986	25.0	mg/kg wet	1000		98.6	75-125	9.85	20	
>C12-C28	1150	25.0	"	1000		115	75-125	6.17	20	
Surrogate: 1-Chlorooctane	*87.7*		*"*	*100*		*87.7*	*70-130*			
Surrogate: o-Terphenyl	*40.7*		*"*	*50.0*		*81.5*	*70-130*			
Duplicate (P5D3003-DUP1)	**Source: 5D27003-01**			Prepared: 04/27/15 Analyzed: 04/28/15						
C6-C12	2740	439	mg/kg dry		2900			5.86	20	
>C12-C28	22400	439	"		23700			5.82	20	
Surrogate: 1-Chlorooctane	*147*		*"*	*175*		*83.7*	*70-130*			
Surrogate: o-Terphenyl	*91.1*		*"*	*87.7*		*104*	*70-130*			

Larson & Associates, Inc.
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Project Number: 15-0130-01
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Fax: (432) 687-0456

Notes and Definitions

S-GC	Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
LCS	Laboratory Control Spike
MS	Matrix Spike
Dup	Duplicate

Report Approved By:  Date: 5/6/2015

Brent Barron, Laboratory Director/Technical Director

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants

507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to:

DATE: 4-21-2015 PAGE 1 OF 2

PO #: _____ LAB WORK ORDER #: 5D22006

PROJECT LOCATION OR NAME: Paladin State BT "C" Battery

LAI PROJECT #: 15-0130-01 COLLECTOR: MJL

TRRP report? ☐ Yes ☑ No

TIME ZONE: Time zone/State: Mtn / NM

S=SOIL P=PAINT
W=WATER SL=SLUDGE
A=AIR OT=OTHER

PRESERVATION: HCl | HNO_3 | H_2SO_4 ☐ NaOH ☐ | ICE | UNPRESERVED

ANALYSES: BTEX ☑ MTBE ☐ | TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐ | GASOLINE MOD 8015 ☐ | DIESEL - MOD 8015 ☑ | VOC 8260 ☐ | SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐ | 8081 PESTICIDES ☐ 8151 HERBICIDES ☐ | 8082 PCBS ☐ | TCLP - METALS (RCRA) ☐ TCLP VOC ☐ | TCLP - PEST ☐ HERB ☐ Semi-VOC ☐ | TOTAL METALS (RCRA) ☐ OTHER LIST ☐ | LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐ | RCI ☐ TOX ☐ FLASHPOINT ☐ | TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐ | pH ☐ HEXAVALENT CHROMIUM ☐ | EXPLOSIVES ☐ PECHLORATE ☐ | CHLORIDE ☑ ANIONS ☐ ALKALINITY ☐

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	BTEX ☑	TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☐	DIESEL - MOD 8015 ☑	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDE ☑ ANIONS ☐ ALKALINITY ☐	FIELD NOTES
SB-1, 0'	-01	4/21/15	10:16	S	1				✓			✓		✓												✓		
SB-1, 5'	-02		10:30	S	1				✓		✓	✓		✓												✓		
SB-1, 10'	-03		10:38	S	1				✓			✓		✓												✓		
SB-1, 15'	-04		10:42	S	1				✓			✓		✓												✓		
SB-1, 20'	-05		10:48	S	1				✓			✓		✓												✓		
SB-1, 25'	-06		10:55	S	1				✓			✓		✓												✓		
SB-1, 30'	-07		11:00	S	1			✓	✓																	✓		
SB-1, 35'	-08		11:07	S	1				✓																	✓		
SB-2, 0'	-09		11:20	S	1				✓			✓		✓												✓		
SB-2, 5'	-10		12:22	S	1				✓		✓	✓		✓												✓		
SB-2, 10'	-11		12:28	S	1				✓			✓		✓												✓		
SB-2, 15'	-12		12:55	S	1				✓			✓		✓												✓		
SB-2, 20'	-13		13:02	S	1				✓			✓		✓												✓		
SB-2, 25'	-14		13:07	S	1			✓																		✓		
SB-2, 30'	-15		13:14	S	1			✓	✓																	✓		
TOTAL																												

RELINQUISHED BY:(Signature) DATE/TIME 4/22/15 10:21 RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

Permian Basin Env. Lab

TURN AROUND TIME
NORMAL ☑
1 DAY ☐
2 DAY ☐
OTHER ☐
_____

LABORATORY USE ONLY:
RECEIVING TEMP: 1.4 THERM #: _____
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL # _____
☑ HAND DELIVERED

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to:

DATE: 4-21-2015 PAGE 2 OF 2

PO #: _____ LAB WORK ORDER #: 580220

PROJECT LOCATION OR NAME: Paladin / State BT "C" Battery

LAI PROJECT #: 15-0130-01 COLLECTOR: MJL

TRRP report? ☐ Yes ☒ No

TIME ZONE: Time zone/State: Mtn/NM

S=SOIL P=PAINT
W=WATER SL=SLUDGE
A=AIR OT=OTHER

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES: BTEX ☒ MTBE ☐	TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☒	DIESEL - MOD 8015 ☒	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDE ☒ ANIONS ☐ ALKALINITY ☐	FIELD NOTES
SB-2, 35'	-16	4/21/15	13:26	S	1				✓				✓	✓												✓		
SB-3, 1'	-17		13:32	S	1				✓				✓	✓												✓		
SB-3, 5'	-18		13:40	S	1				✓	✓			✓	✓												✓		
SB-3, 10'	-19		13:47	S	1				✓				✓	✓												✓		
SB-3, 15'	-20		13:54	S	1				✓				✓	✓												✓		
SB-3, 20'	-21		13:58	S	1				✓				✓	✓												✓		
SB-3, 25'	-22		14:09	S	1				✓																	✓		
SB-3, 30'	-23		14:15	S	1				✓																	✓		
SB-3, 35'	-24	↓	14:20	S	1				✓																	✓		
TOTAL																												

RELINQUISHED BY:(Signature) DATE/TIME 4/22/15 10:21 RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

Permian Basin Env. Lab

TURN AROUND TIME
NORMAL ☒
1 DAY ☐
2 DAY ☐
OTHER ☐

LABORATORY USE ONLY:
RECEIVING TEMP: 1.0 THERM #: _____
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL # _____
☒ HAND DELIVERED

PERMIAN BASIN
ENVIRONMENTAL LAB, LP
10014 SCR 1213
Midland, TX 79706

PBELAB

Analytical Report

Prepared for:

Mark Larson

Larson & Associates, Inc.

P.O. Box 50685

Midland, TX 79710

Project: Paladin/State BT "D" Well #003 Battery

Project Number: 15-0130-02

Location: New Mexico

Lab Order Number: 5D22008

NELAP ACCREDITED TNI LABORATORY

NELAP/TCEQ # T104704156-13-3

Report Date: 05/08/15

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Paladin/State BT "D" Well #003 Battery
Project Number: 15-0130-02
Project Manager: Mark Larson

Fax: (432) 687-0456

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TMW-1	5D22008-01	Water	04/21/15 08:25	04-22-2015 10:21

Larson & Associates, Inc.	Project: Paladin/State BT "D" Well #003 Battery	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 15-0130-02	
Midland TX, 79710	Project Manager: Mark Larson	

TMW-1

5D22008-01 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
Organics by GC									
Benzene	ND	0.00100	mg/L	1	P5E0511	05/01/15	05/04/15	EPA 8021B	
Toluene	ND	0.00100	mg/L	1	P5E0511	05/01/15	05/04/15	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/L	1	P5E0511	05/01/15	05/04/15	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/L	1	P5E0511	05/01/15	05/04/15	EPA 8021B	
Xylene (o)	ND	0.00100	mg/L	1	P5E0511	05/01/15	05/04/15	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		*83.8 %*		*80-120*	*P5E0511*	*05/01/15*	*05/04/15*	*EPA 8021B*	
Surrogate: 1,4-Difluorobenzene		*96.5 %*		*80-120*	*P5E0511*	*05/01/15*	*05/04/15*	*EPA 8021B*	
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**40.4**	5.00	mg/L	10	P5E0808	05/07/15	05/08/15	EPA 300.0	

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Paladin/State BT "D" Well #003 Battery
Project Number: 15-0130-02
Project Manager: Mark Larson

Fax: (432) 687-0456

Organics by GC - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P5E0511 - General Preparation (GC)										
Blank (P5E0511-BLK1)				Prepared: 05/01/15 Analyzed: 05/04/15						
Benzene	ND	0.00100	mg/L							
Toluene	ND	0.00100	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00200	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 4-Bromofluorobenzene	*52.4*		*ug/l*	*60.0*		*87.3*	*80-120*			
Surrogate: 1,4-Difluorobenzene	*63.6*		*"*	*60.0*		*106*	*80-120*			
LCS (P5E0511-BS1)				Prepared: 05/01/15 Analyzed: 05/04/15						
Benzene	0.0924	0.00100	mg/L	0.100		92.4	80-120			
Toluene	0.101	0.00100	"	0.100		101	80-120			
Ethylbenzene	0.114	0.00100	"	0.100		114	80-120			
Xylene (p/m)	0.227	0.00200	"	0.200		114	80-120			
Xylene (o)	0.112	0.00100	"	0.100		112	80-120			
Surrogate: 4-Bromofluorobenzene	*62.6*		*ug/l*	*60.0*		*104*	*80-120*			
Surrogate: 1,4-Difluorobenzene	*55.9*		*"*	*60.0*		*93.1*	*80-120*			
Duplicate (P5E0511-DUP1)	**Source: 5D22010-01**			Prepared: 05/01/15 Analyzed: 05/04/15						
Benzene	0.00187	0.00100	mg/L		0.00227			19.3	20	
Toluene	ND	0.00100	"		ND				20	
Ethylbenzene	ND	0.00100	"		ND				20	
Xylene (p/m)	ND	0.00200	"		ND				20	
Xylene (o)	ND	0.00100	"		ND				20	
Surrogate: 4-Bromofluorobenzene	*60.3*		*ug/l*	*60.0*		*101*	*80-120*			
Surrogate: 1,4-Difluorobenzene	*49.4*		*"*	*60.0*		*82.4*	*80-120*			

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Paladin/State BT "D" Well #003 Battery
Project Number: 15-0130-02
Project Manager: Mark Larson

Fax: (432) 687-0456

General Chemistry Parameters by EPA / Standard Methods - Quality Control

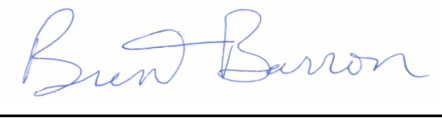
Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P5E0808 - * DEFAULT PREP *** **										
Blank (P5E0808-BLK1)				Prepared: 05/07/15 Analyzed: 05/08/15						
Chloride	ND	0.500	mg/L							
LCS (P5E0808-BS1)				Prepared: 05/07/15 Analyzed: 05/08/15						
Chloride	10.3	0.500	mg/L	10.0		103	80-120			
LCS Dup (P5E0808-BSD1)				Prepared: 05/07/15 Analyzed: 05/08/15						
Chloride	10.3	0.500	mg/L	10.0		103	80-120	0.475	20	
Duplicate (P5E0808-DUP1)		**Source: 5D22008-01**		Prepared: 05/07/15 Analyzed: 05/08/15						
Chloride	38.4	5.00	mg/L		40.4			5.20	20	
Matrix Spike (P5E0808-MS1)		**Source: 5D22008-01**		Prepared: 05/07/15 Analyzed: 05/08/15						
Chloride	147	5.00	mg/L	100	40.4	107	80-120			

Larson & Associates, Inc.	Project: Paladin/State BT "D" Well #003 Battery	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 15-0130-02	
Midland TX, 79710	Project Manager: Mark Larson	

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
LCS	Laboratory Control Spike
MS	Matrix Spike
Dup	Duplicate

Report Approved By:  Date: 5/8/2015

Brent Barron, Laboratory Director/Technical Director

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to:

DATE: 4-21-2015 PAGE 1 OF 1

PO #: LAB WORK ORDER #: 5D22008

PROJECT LOCATION OR NAME: Paladin/State BT "D" Well #003

LAI PROJECT #: 15-0130-02 COLLECTOR: TUL

TRRP report? ☐ Yes ☑ No

TIME ZONE: Time zone/State: Mtn/NM

S=SOIL W=WATER A=AIR P=PAINT SL=SLUDGE OT=OTHER

5PD22008

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES	FIELD NOTES
TMW-1	-01	4/21/15	08:25	W	3				✓		BTEX ☑ MTBE ☐; TRPH 418.1 ☐; TPH 1005 ☐; TPH 1006 ☐; GASOLINE MOD 8015 ☐; DIESEL - MOD 8015 ☐; VOC 8260 ☐; SVOC 8270 ☐; PAH 8270 ☐; HOLDPAH ☐; 8081 PESTICIDES ☐; 8151 HERBICIDES ☐; 8082 PCBS ☐; TCLP - METALS (RCRA) ☐; TCLP VOC ☐; TCLP - PEST ☐; HERB ☐; Semi-VOC ☐; TOTAL METALS (RCRA) ☐; OTHER LIST ☐; LEAD - TOTAL ☐; D.W. 200.8 ☐; TCLP ☐; RCI ☐; TOX ☐; FLASHPOINT ☐; TDS ☑; TSS ☐; % MOISTURE ☐; CYANIDE ☐; pH ☐; HEXAVALENT CHROMIUM ☐; EXPLOSIVES ☐; PECHLORATE ☐; CHLORIDE ☑; ANIONS ☑; ALKALINITY ☑; Sulfate; Chloride	

TOTAL

RELINQUISHED BY:(Signature) DATE/TIME 4/22/15 10:21 RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

Permian Basin Env. Lab

TURN AROUND TIME

NORMAL ☑
1 DAY ☐
2 DAY ☐
OTHER ☐

LABORATORY USE ONLY:

RECEIVING TEMP: 2.2 THERM #: NCF LA1

CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED

☐ CARRIER BILL #

☐ HAND DELIVERED

APPENDIX D

Initial and Final C-141

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

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 August 8, 2011

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: Paladin Energy Corp	Contact: Mickey Hom
Address: 10290 Monroe Dr., Ste 301, Fort Worth, TX 75229	Telephone No. (214) 352-7273
Facility Name: State BT "C" No. 003	Facility Type: Tank Battery

Surface Owner: State of New Mexico	Mineral Owner: State of New Mexico	API No. 30-025-01017-00-00

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
L	35	11S	33E	1,980	South	660	West	Lea

Latitude 33° 19' 04" Longitude 103° 34' 12"

NATURE OF RELEASE

Type of Release Crude oil/produced water	Volume of Release 15 bbl oil and 40 bbl water	Volume Recovered 7 bbl (total fluid)
Source of Release Valve failure at free water knockout	Date and Hour of Occurrence 03/15/2015	Date and Hour of Discovery 03/16/2015
Was Immediate Notice Given? ☐ Yes ☒ No ☐ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	
If a Watercourse was Impacted, Describe Fully.*		

RECEIVED
By OCD; Dr. Oberding at 1:05 pm, Apr 07, 2015

Describe Cause of Problem and Remedial Action Taken.* Pop-off relief valve failed at free water knockout causing liquids to spill onto ground. Spill is limited to area inside firewall and no liquid escaped firewall. A vacuum truck was used to pick up free liquid. Backhoe and roust-a-bout crew to pick up oily soil for disposal at OCD approved facility.

Describe Area Affected and Cleanup Action Taken.* Area affected by spill is inside firewall and did not affect area outside of firewall. ~~Composite soil samples~~ will be collected and analyzed following removal of oily soil and reported to OCD to determine if further remediation is required.
Note: Composite samples are not accepted.

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: Mickey Hom

Printed Name: Mickey Hom

Title: Operations Manager

E-mail Address: paladinmid@suddenlink.net

Date: April 6, 2015 Phone: (432) 522-2162

OIL CONSERVATION DIVISION

Approved by ~~Environmental Specialist~~ Hydrologist

Approval Date: 04/07/2015 Expiration Date: 07/07/2015

Conditions of Approval:

Site samples required. Delineate and remediate area as per NMOCD guides.

Attached ☐

1RP-3593 164070

nTO1509747584

pTO1509747792

* Attach Additional Sheets If Necessary

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

1RP-3593
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: Paladin Energy Corp.	Contact: Mickey Horn
Address: 10290 Monroe Dr., Ste. 301, Fort Worth, TX 75229	Telephone No.: (214) 352-7273
Facility Name: State BT "C" No. 003	Facility Type: Tank Battery

Surface Owner: State of New Mexico	Mineral Owner: State of new Mexico	API No.30-025-01017-00-00

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County: Lea
L	35	11S	33E	1,980	South	660	West	

Latitude: N 33° 19' 0.4" Longitude: W 103° 34' 12"

NATURE OF RELEASE

Type of Release: Crude Oil and Produced Water	Volume of Release: 15bbl oil/ 40 bbl water	Volume Recovered: 7 bbl
Source of Release: Valve failure at free water knockout	Date and Hour of Occurrence: 03/15/2015	Date and Hour of Discovery: 03/16/2015
Was Immediate Notice Given? ☐ Yes ☒ No ☐ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.* Pop-off relief valve failed at free water knock out causing liquids to spill onto ground. Spill is limited to area inside firewall and no liquids escaped firewall. A vacuum truck was used to pick up free liquid. Backhoe and roust-a-bout crew picked up oil soil for disposal at OCD approved facility.

Describe Area Affected and Cleanup Action Taken.*Spill is limited to area inside firewall. Three (3) brings were drilled inside firewall to delineate the spill and 1 boring outside (southeast) to collect a groundwater sample. TPH was delineated with at least 2 clean samples from each boring. Chloride was delineated vertically to 250 mg/Kg. Groundwater not affected by spill with chloride being less than 50 mg/L. About 275 cubic yards of soil was excavated from inside firewall and hauled to Gandy Marley Landfill. Liner was installed in southeast corner of battery and excavations were filled with clean soil before replacing firewall.

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: Mickey Horn	**1RP-3593** OIL CONSERVATION DIVISION	
Printed Name: Mickey Horn (Paladin Energy Corp.)	Approved by: :	
Title: Sr. Project Manager / President, Larson and Associates, Inc.	Approval Date:	Expiration Date:
E-mail Address: paladinmid@suddenlink.net	Conditions of Approval:	Attached ☐
Date: 06/26/2015 Phone: (432) 522-2162		

* Attach Additional Sheets If Necessary