

APPENDIX V-LABORATORY RESULTS

Analytical Report 501565

**for
Talon/LPE Co.**

Project Manager: Melissa Decker

Cal AB Launcher

701583.144.01

27-FEB-15

Collected By: Client



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-14-18), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
New Jersey (TX007), North Carolina(681), Oklahoma (9218), Pennsylvania (68-03610)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Texas (T104704477), Louisiana (04176), USDA (P330-07-00105)

Xenco-Lakeland: Florida (E84098)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)

Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)



27-FEB-15

Project Manager: **Melissa Decker**
Talon/LPE Co.
2901 S State Highway 349
Midland, TX 79706

Reference: XENCO Report No(s): **501565**
Cal AB Launcher
Project Address: Malaga, NM

Melissa Decker:

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(s) 501565. 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. The uncertainty of measurement associated with the results of analysis reported is available upon request. 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. 501565 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,

Kelsey Brooks
Project Manager

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Sample Cross Reference 501565



Talon/LPE Co., Midland, TX

Cal AB Launcher

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BG-1	S	01-30-15 10:00	- 0 ft	501565-001
W-1 Draw	W	01-29-15 23:00		501565-002
W-1 Draw Voa	W	01-29-15 23:03		501565-003
S-1-0'	S	01-29-15 23:09	- 0 ft	501565-004
S-2-0'	S	01-29-15 23:12	- 0 ft	501565-005
S-3-0'	S	01-29-15 23:16	- 0 ft	501565-006
S-4-0'	S	01-30-15 09:30	- 0 ft	501565-007
S-5-0'	S	01-30-15 09:32	- 0 ft	501565-008
S-6-0' Draw	S	01-30-15 09:34	- 0 ft	501565-009
S-1-0' Draw	S	01-29-15 23:25	- 0 ft	501565-010
S-2-0' Draw	S	01-29-15 23:30	- 0 ft	501565-011
S-3-0' Draw	S	01-29-15 23:35	- 0 ft	501565-012
S-4-0' Draw	S	01-30-15 09:40	- 0 ft	501565-013
S-5-0' Draw	S	01-30-15 09:45	- 0 ft	501565-014
Sump	S	01-29-15 23:40		501565-015



CASE NARRATIVE



Client Name: Talon/LPE Co.

Project Name: Cal AB Launcher

Project ID: 701583.144.01
Work Order Number(s): 501565

Report Date: 27-FEB-15
Date Received: 01/30/2015

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analysis Summary 501565

Talon/LPE Co., Midland, TX
Project Name: Cal AB Launcher



Project Id: 701583.144.01
Contact: Melissa Decker
Project Location: Malaga,NM

Date Received in Lab: Fri Jan-30-15 03:12 pm
Report Date: 27-FEB-15

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	501565-001	501565-002	501565-003	501565-004	501565-005	501565-006
	Field Id: Depth: Matrix: Sampled:	BG-1 0 ft SOIL Jan-30-15 10:00	W-1 Draw WATER Jan-29-15 23:00	W-1 Draw Voa WATER Jan-29-15 23:03	S-1-0' 0 ft SOIL Jan-29-15 23:09	S-2-0' 0 ft SOIL Jan-29-15 23:12	S-3-0' 0 ft SOIL Jan-29-15 23:16
BTEX by EPA 8021B	Extracted:						
	Analyzed:						
	Units/RL:						
	Benzene			0.309 0.00100	1.49 0.249	ND 0.249	ND 0.000998
	Toluene			0.395 0.00200	22.5 0.498	10.0 0.498	ND 0.00200
	Ethylbenzene			0.0447 0.00100	9.47 0.249	6.19 0.249	ND 0.000998
Inorganic Anions by EPA 300/300.1 SUB: E871002	m,p-Xylenes			0.340 0.00200	42.6 0.498	32.3 0.498	ND 0.00200
	o-Xylene			0.129 0.00100	18.3 0.249	10.9 0.249	ND 0.000998
	Total Xylenes			0.469 0.00100	60.9 0.249	43.2 0.249	ND 0.000998
Total BTEX				1.22 0.00100	94.4 0.249	59.4 0.249	ND 0.000998
Mercury by EPA 7470A SUB: T104704295-TX	Extracted:	Feb-07-15 12:00	Jan-31-15 13:36		Feb-07-15 12:00	Feb-07-15 12:00	Feb-07-15 12:00
	Analyzed:	Feb-08-15 04:52	Jan-31-15 13:36		Feb-08-15 05:07	Feb-08-15 05:22	Feb-08-15 14:42
	Units/RL:	121 13.3	mg/L RL 21000 1000		mg/kg RL 247 24.1	mg/kg RL 474 44.4	mg/kg RL 5200 498
Mercury	Extracted:			Feb-04-15 10:00			
	Analyzed:			Feb-04-15 12:45			
	Units/RL:			mg/L RL ND 0.000500			
Mercury by SW 7471A SUB: T104704295-TX	Extracted:				Feb-04-15 10:00	Feb-04-15 10:00	Feb-04-15 10:00
	Analyzed:				Feb-04-15 14:14	Feb-04-15 14:16	Feb-04-15 14:18
	Units/RL:				mg/kg RL 0.0385 0.00356	mg/kg RL 0.0255 0.00318	mg/kg RL 0.0939 0.00371

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Kelsey Brooks

Kelsey Brooks
Project Manager



Certificate of Analysis Summary 501565

Talon/LPE Co., Midland, TX
Project Name: Cal AB Launcher



Project Id: 701583.144.01
Contact: Melissa Decker
Project Location: Malaga, NM

Date Received in Lab: Fri Jan-30-15 03:12 pm
Report Date: 27-FEB-15

Project Manager: Kelsey Brooks

Analysis Requested		Lab Id:	501565-001	501565-002	501565-003	501565-004	501565-005	501565-006
Field Id:		BG-1	W-1 Draw	W-1 Draw Voa	S-1-0'	S-2-0'	S-3-0'	
Depth:		0 ft			0 ft	0 ft	0 ft	
Matrix:		SOIL	WATER	WATER	SOIL	SOIL	SOIL	
Sampled:		Jan-30-15 10:00	Jan-29-15 23:00	Jan-29-15 23:03	Jan-29-15 23:09	Jan-29-15 23:12	Jan-29-15 23:16	
Metals per ICP by SW846 6010B SUB: T104704295-TX	Extracted:	Feb-03-15 09:30		Feb-03-15 06:15	Feb-03-15 09:30	Feb-03-15 09:30	Feb-03-15 09:30	
	Analyzed:	Feb-03-15 13:20		Feb-03-15 12:37	Feb-03-15 13:22	Feb-03-15 13:32	Feb-03-15 13:34	
	Units/RL:	mg/kg RL		mg/L RL	mg/kg RL	mg/kg RL	mg/kg RL	
	Arsenic	2.38 0.574		ND 0.100	4.60 0.580	1.55 0.538	4.10 0.612	
	Barium	148 0.574		1.38 0.100	248 0.580	137 0.538	552 0.612	
	Cadmium	ND 0.287		ND 0.0500	0.389 0.290	ND 0.269	0.428 0.306	
Percent Moisture	Chromium	5.97 0.287		0.0730 0.0500	4.61 0.290	3.10 0.269	8.17 0.306	
	Lead	7.06 0.688		ND 0.120	13.3 0.697	5.91 0.646	9.35 0.735	
	Selenium	ND 0.574		ND 0.100	ND 0.580	ND 0.538	ND 0.612	
	Silver	ND 0.229		ND 0.0400	ND 0.232	ND 0.215	ND 0.245	
Extracted:								
Analyzed:		Feb-02-15 17:15			Feb-02-15 17:15	Feb-02-15 17:15	Feb-02-15 17:15	
Units/RL:		% RL			% RL	% RL	% RL	
Percent Moisture		24.9 1.00			17.2 1.00	9.85 1.00	19.9 1.00	
TPH By SW8015 Mod				*****				
Extracted:				Feb-02-15 10:05	Feb-02-15 16:00	Feb-02-15 16:00	Feb-02-15 16:00	
Analyzed:				mg/L RL	mg/kg RL	mg/kg RL	mg/kg RL	
Units/RL:				270 15.0	2870 74.9	1960 74.9	ND 14.9	
C6-C12 Gasoline Range Hydrocarbons				3140 15.0	13300 74.9	9110 74.9	558 14.9	
C12-C28 Diesel Range Hydrocarbons				16.0 15.0	1630 74.9	1110 74.9	70.1 14.9	
C28-C35 Oil Range Hydrocarbons				3430 15.0	17800 74.9	12200 74.9	628 14.9	
Total TPH								

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Kelsey Brooks

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 501565

Talon/LPE Co., Midland, TX
Project Name: Cal AB Launcher



Project Id: 701583.144.01
Contact: Melissa Decker
Project Location: Malaga, NM

Date Received in Lab: Fri Jan-30-15 03:12 pm
Report Date: 27-FEB-15

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	501565-007	501565-008	501565-009	501565-010	501565-011	501565-012
	Field Id:	S-4-0'	S-5-0'	S-6-0' Draw	S-1-0' Draw	S-2-0' Draw	S-3-0' Draw
	Depth:	0 ft	0 ft	0 ft	0 ft	0 ft	0 ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Jan-30-15 09:30	Jan-30-15 09:32	Jan-30-15 09:34	Jan-29-15 23:25	Jan-29-15 23:30	Jan-29-15 23:35
BTX by EPA 8021B	Extracted:	Feb-02-15 16:00	Feb-02-15 16:00	Feb-02-15 16:00	Feb-02-15 16:00	Feb-02-15 16:00	Feb-02-15 16:00
	Analyzed:	Feb-03-15 04:20	Feb-03-15 12:09	Feb-03-15 04:53	Feb-03-15 05:09	Feb-03-15 05:26	Feb-03-15 05:42
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
		ND 0.000992	ND 0.00100	0.00111 0.000994	0.00148 0.000996	0.00169 0.000996	0.00189 0.000996
		ND 0.00198	ND 0.00200	0.00283 0.00199	0.00330 0.00199	0.00286 0.00199	0.00424 0.00199
Benzene		ND 0.000992	ND 0.00100	ND 0.000994	ND 0.000996	ND 0.000996	0.00379 0.000996
Toluene		ND 0.00198	ND 0.00200	0.00223 0.00199	0.00212 0.00199	ND 0.00199	0.0288 0.00199
Ethylbenzene		ND 0.000992	ND 0.00100	ND 0.000994	0.00208 0.000996	ND 0.000996	0.0326 0.000996
m,p-Xylenes		ND 0.000992	ND 0.00100	0.00223 0.000994	0.00420 0.000996	ND 0.000996	0.0614 0.000996
o-Xylene		ND 0.000992	ND 0.00100	0.00619 0.000994	0.00898 0.000996	0.00455 0.000996	0.0713 0.000996
Total Xylenes		ND 0.000992	ND 0.00100				
Total BTX							
Inorganic Anions by EPA 300/300.1 SUB: E871002	Extracted:	Feb-07-15 12:00	Feb-07-15 12:00	Feb-07-15 12:00	Feb-07-15 12:00	Feb-07-15 12:00	Feb-07-15 12:00
	Analyzed:	Feb-08-15 06:24	Feb-08-15 07:10	Feb-08-15 14:57	Feb-08-15 15:12	Feb-08-15 15:28	Feb-08-15 15:43
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		10.7 2.39	828 55.7	937 75.3	232 25.9	353 27.4	62.2 11.3
Mercury by SW 7471A SUB: T104704295-TX	Extracted:	Feb-04-15 10:00	Feb-04-15 10:00	Feb-04-15 10:00	Feb-04-15 10:00	Feb-04-15 10:00	Feb-04-15 10:00
	Analyzed:	Feb-04-15 14:20	Feb-04-15 14:22	Feb-04-15 14:24	Feb-04-15 14:26	Feb-04-15 14:28	Feb-04-15 14:31
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Mercury		0.0396 0.00327	0.0179 0.00371	0.0323 0.00561	0.0652 0.00383	0.0860 0.00418	0.00878 0.00351

Kelsey Brooks

Kelsey Brooks
Project Manager

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Version: 1.0%



Certificate of Analysis Summary 501565

Talon/LPE Co., Midland, TX

Project Name: Cal AB Launcher

Project Id: 701583.144.01

Contact: Melissa Decker

Project Location: Malaga, NM



Date Received in Lab: Fri Jan-30-15 03:12 pm

Report Date: 27-FEB-15

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	501565-007	501565-008	501565-009	501565-010	501565-011	501565-012
	Field Id:	S-4-0'	S-5-0'	S-6-0'	S-1-0'	S-2-0'	S-3-0'
	Depth:	0 ft	0 ft	0 ft	0 ft	0 ft	0 ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Metals per ICP by SW846 6010B SUB: T104704295-TX	Sampled:	Jan-30-15 09:30	Jan-30-15 09:32	Jan-30-15 09:34	Jan-29-15 23:25	Jan-29-15 23:30	Jan-29-15 23:35
	Extracted:	Feb-03-15 09:30	Feb-03-15 09:30	Feb-03-15 09:30	Feb-03-15 09:30	Feb-03-15 09:30	Feb-03-15 09:30
	Analyzed:	Feb-03-15 13:37	Feb-03-15 13:39	Feb-03-15 13:42	Feb-03-15 13:44	Feb-03-15 13:46	Feb-03-15 13:49
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Arsenic	3.22 0.565	3.16 0.645	5.31 0.812	2.43 0.549	4.81 0.641	2.28 0.536
	Barium	224 0.565	176 0.645	173 0.812	166 0.549	114 0.641	142 0.536
Percent Moisture	Extracted:	Feb-02-15 17:15	Feb-02-15 17:15	Feb-02-15 17:15	Feb-02-15 17:15	Feb-02-15 17:15	Feb-02-15 17:15
	Analyzed:	Feb-02-15 23:38	Feb-02-15 23:38	Feb-02-15 23:38	Feb-02-15 23:38	Feb-02-15 23:38	Feb-02-15 23:38
	Units/RL:	% RL	% RL	% RL	% RL	% RL	% RL
	TPH By SW8015 Mod	16.5 1.00	28.3 1.00	46.9 1.00	22.8 1.00	27.1 1.00	11.2 1.00
	Extracted:	Feb-02-15 16:00	Feb-02-15 16:00	Feb-02-15 16:00	Feb-02-15 16:00	Feb-02-15 16:00	Feb-02-15 16:00
	Analyzed:	Feb-02-15 23:38	Feb-02-15 23:38	Feb-02-15 23:38	Feb-02-15 23:38	Feb-02-15 23:38	Feb-02-15 23:38
C6-C12 Gasoline Range Hydrocarbons	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	C6-C12 Gasoline Range Hydrocarbons	ND 15.0	20.1 15.0	98.5 15.0	62.9 15.0	527 75.0	1140 74.9
	C12-C28 Diesel Range Hydrocarbons	ND 15.0	1670 15.0	3160 15.0	1660 15.0	11500 75.0	13600 74.9
	C28-C35 Oil Range Hydrocarbons	ND 15.0	123 15.0	195 15.0	149 15.0	933 75.0	981 74.9
Total TPH		ND 15.0	1810 15.0	3450 15.0	1870 15.0	13000 75.0	15700 74.9

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Kelsey Brooks

Kelsey Brooks
Project Manager



Certificate of Analysis Summary 501565

Talon/LPE Co., Midland, TX
Project Name: Cal AB Launcher



Project Id: 701583.144.01
Contact: Melissa Decker
Project Location: Malaga, NM

Date Received in Lab: Fri Jan-30-15 03:12 pm
Report Date: 27-FEB-15
Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	501565-013	501565-014	501565-015
	Field Id: Depth: Matrix: Sampled:	S-4-0' Draw 0 ft SOIL Jan-30-15 09:40	S-5-0' Draw 0 ft SOIL Jan-30-15 09:45	Sump SOIL Jan-29-15 23:40
BTEX by EPA 8021B	Extracted:	Feb-02-15 16:00	Feb-02-15 16:00	Feb-02-15 16:00
	Analyzed:	Feb-03-15 05:59	Feb-03-15 06:15	Feb-03-15 08:10
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL
	Benzene	ND 0.000992	0.00155 0.000994	6.63 1.25
	Toluene	ND 0.00198	0.00592 0.00199	125 2.50
	Ethylbenzene	ND 0.000992	ND 0.000994	43.6 1.25
Inorganic Anions by EPA 300/300.1 SUB: E871002	m,p-Xylenes	ND 0.00198	0.0144 0.00199	205 2.50
	o-Xylene	ND 0.000992	0.00634 0.000994	77.7 1.25
	Total Xylenes	ND 0.000992	0.0207 0.000994	283 1.25
	Total BTEX	ND 0.000992	0.0282 0.000994	458 1.25
Mercury by SW 7471A SUB: T104704295-TX	Extracted:	Feb-07-15 12:00	Feb-07-15 12:00	Feb-07-15 12:00
	Analyzed:	Feb-08-15 15:59	Feb-08-15 16:14	Feb-08-15 17:00
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		45.0 2.62	371 35.5	3710 998
Mercury	Extracted:	Feb-04-15 10:00	Feb-04-15 10:00	Feb-04-15 10:00
	Analyzed:	Feb-04-15 14:37	Feb-04-15 14:39	Feb-04-15 14:41
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL
		0.00525 0.00398	0.0213 0.00541	0.0166 0.00313

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Kelsey Brooks

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Project Manager



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Talon/LPE Co., Midland, TX
Project Name: Cal AB Launcher



Project Id: 701583.144.01
Contact: Melissa Decker
Project Location: Malaga, NM

Date Received in Lab: Fri Jan-30-15 03:12 pm
Report Date: 27-FEB-15
Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	501565-013	501565-014	501565-015	
	Field Id:	S-4-0' Draw	S-5-0' Draw	Sump	
	Depth:	0 ft	0 ft		
	Matrix:	SOIL	SOIL	SOIL	
	Sampled:	Jan-30-15 09:40	Jan-30-15 09:45	Jan-29-15 23:40	
Metals per ICP by SW846 6010B SUB: T104704295-TX	Extracted:	Feb-03-15 09:30	Feb-03-15 09:30	Feb-03-15 09:30	
	Analyzed:	Feb-03-15 13:52	Feb-03-15 13:54	Feb-03-15 14:03	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	
	Arsenic	2.77 0.637	3.58 0.785	ND 0.249	
	Barium	120 0.637	185 0.785	1.49 0.249	
	Cadmium	0.440 0.319	0.424 0.393	ND 0.124	
	Chromium	8.09 0.319	5.70 0.393	0.323 0.124	
	Lead	7.44 0.765	7.60 0.942	ND 0.299	
	Selenium	ND 0.637	ND 0.785	ND 0.249	
	Silver	ND 0.255	0.424 0.314	ND 0.0995	
Percent Moisture	Extracted:				
	Analyzed:	Feb-02-15 17:15	Feb-02-15 17:15		
	Units/RL:	% RL	% RL		
TPH By SW8015 Mod	Extracted:	23.8 1.00	43.7 1.00		
	Analyzed:	Feb-02-15 16:00	Feb-02-15 16:00	Feb-02-15 16:00	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	
	C6-C12 Gasoline Range Hydrocarbons	ND 15.0	809 74.9	14300 1500	
	C12-C28 Diesel Range Hydrocarbons	18.6 15.0	13500 74.9	113000 1500	
Total TPH	C28-C35 Oil Range Hydrocarbons	ND 15.0	1250 74.9	10600 1500	
		18.6 15.0	15600 74.9	138000 1500	

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Kelsey Brooks

Kelsey Brooks
Project 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 affect the recovery of the spike concentration. This condition could also affect 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 quantitation limit and above the detection limit.
- 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.

**** Surrogate recovered outside laboratory control limit.**

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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Form 2 - Surrogate Recoveries

Project Name: Cal AB Launcher

Work Orders : 501565,

Lab Batch #: 960786

Sample: 501565-003 / SMP

Project ID: 701583.144.01

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 01/30/15 21:34

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0354	0.0300	118	80-120	
4-Bromofluorobenzene	0.0334	0.0300	111	80-120	

Lab Batch #: 960788

Sample: 501565-003 / SMP

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 02/02/15 10:05

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	12.5	9.99	125	70-135	
o-Terphenyl	3.84	4.99	77	70-135	

Lab Batch #: 960901

Sample: 501565-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/02/15 23:16

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	96.8	99.6	97	70-135	
o-Terphenyl	50.1	49.8	101	70-135	

Lab Batch #: 960901

Sample: 501565-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/02/15 23:38

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	93.0	99.9	93	70-135	
o-Terphenyl	46.8	50.0	94	70-135	

Lab Batch #: 960901

Sample: 501565-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/03/15 00:46

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	103	99.8	103	70-135	
o-Terphenyl	51.9	49.9	104	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: Cal AB Launcher

Work Orders : 501565,

Project ID: 701583.144.01

Lab Batch #: 960901

Sample: 501565-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/03/15 01:09

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	99.7	104	70-135	
o-Terphenyl	51.1	49.9	102	70-135	

Lab Batch #: 960901

Sample: 501565-010 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/03/15 01:32

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	110	99.7	110	70-135	
o-Terphenyl	54.9	49.9	110	70-135	

Lab Batch #: 960901

Sample: 501565-013 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/03/15 02:39

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	99.8	100	70-135	
o-Terphenyl	51.4	49.9	103	70-135	

Lab Batch #: 960901

Sample: 501565-015 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/03/15 03:25

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	1190	1000	119	70-135	
o-Terphenyl	561	500	112	70-135	

Lab Batch #: 960905

Sample: 501565-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/03/15 04:04

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0247	0.0300	82	80-120	
4-Bromofluorobenzene	0.0331	0.0300	110	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: Cal AB Launcher

Work Orders : 501565,

Lab Batch #: 960905

Sample: 501565-007 / SMP

Project ID: 701583.144.01

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/03/15 04:20

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0269	0.0300	90	80-120	
4-Bromofluorobenzene	0.0352	0.0300	117	80-120	

Lab Batch #: 960905

Sample: 501565-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/03/15 04:53

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0260	0.0300	87	80-120	
4-Bromofluorobenzene	0.0309	0.0300	103	80-120	

Lab Batch #: 960905

Sample: 501565-010 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/03/15 05:09

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0254	0.0300	85	80-120	
4-Bromofluorobenzene	0.0334	0.0300	111	80-120	

Lab Batch #: 960905

Sample: 501565-011 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/03/15 05:26

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0258	0.0300	86	80-120	
4-Bromofluorobenzene	0.0330	0.0300	110	80-120	

Lab Batch #: 960905

Sample: 501565-012 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/03/15 05:42

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0257	0.0300	86	80-120	
4-Bromofluorobenzene	0.0354	0.0300	118	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes



Form 2 - Surrogate Recoveries

Project Name: Cal AB Launcher

Work Orders : 501565,

Project ID: 701583.144.01

Lab Batch #: 960905

Sample: 501565-013 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/03/15 05:59

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0249	0.0300	83	80-120	
4-Bromofluorobenzene	0.0341	0.0300	114	80-120	

Lab Batch #: 960905

Sample: 501565-014 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/03/15 06:15

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0274	0.0300	91	80-120	
4-Bromofluorobenzene	0.0304	0.0300	101	80-120	

Lab Batch #: 960905

Sample: 501565-015 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/03/15 08:10

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0274	0.0300	91	80-120	
4-Bromofluorobenzene	0.0311	0.0300	104	80-120	

Lab Batch #: 960901

Sample: 501565-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/03/15 09:26

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	126	99.8	126	70-135	
o-Terphenyl	63.2	49.9	127	70-135	

Lab Batch #: 960905

Sample: 501565-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/03/15 09:31

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0315	0.0300	105	80-120	
4-Bromofluorobenzene	0.0337	0.0300	112	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: Cal AB Launcher

Work Orders : 501565,

Project ID: 701583.144.01

Lab Batch #: 960905

Sample: 501565-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/03/15 09:47

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0251	0.0300	84	80-120	
4-Bromofluorobenzene	0.0333	0.0300	111	80-120	

Lab Batch #: 960901

Sample: 501565-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/03/15 09:48

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	115	99.8	115	70-135	
o-Terphenyl	47.2	49.9	95	70-135	

Lab Batch #: 960901

Sample: 501565-011 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/03/15 10:11

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	102	100	102	70-135	
o-Terphenyl	39.1	50.0	78	70-135	

Lab Batch #: 960901

Sample: 501565-012 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/03/15 10:34

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	105	99.9	105	70-135	
o-Terphenyl	45.3	50.0	91	70-135	

Lab Batch #: 960901

Sample: 501565-014 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/03/15 10:56

SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	104	99.9	104	70-135	
o-Terphenyl	46.2	50.0	92	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: Cal AB Launcher

Work Orders : 501565,

Lab Batch #: 960905

Sample: 501565-008 / SMP

Project ID: 701583.144.01
Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/03/15 12:09

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0251	0.0300	84	80-120	
4-Bromofluorobenzene	0.0355	0.0300	118	80-120	

Lab Batch #: 960786

Sample: 667865-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 01/30/15 17:43

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0243	0.0300	81	80-120	
4-Bromofluorobenzene	0.0289	0.0300	96	80-120	

Lab Batch #: 960788

Sample: 667869-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 01/30/15 19:49

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	11.2	10.0	112	70-135	
o-Terphenyl	5.83	5.00	117	70-135	

Lab Batch #: 960901

Sample: 667906-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/02/15 18:12

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	105	100	105	70-135	
o-Terphenyl	55.0	50.0	110	70-135	

Lab Batch #: 960905

Sample: 667913-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/03/15 02:25

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0263	0.0300	88	80-120	
4-Bromofluorobenzene	0.0333	0.0300	111	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: Cal AB Launcher

Work Orders : 501565,

Project ID: 701583.144.01

Lab Batch #: 960786

Sample: 667865-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 01/30/15 18:00

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0348	0.0300	116	80-120	
4-Bromofluorobenzene	0.0307	0.0300	102	80-120	

Lab Batch #: 960788

Sample: 667869-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 01/30/15 20:11

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	10.3	10.0	103	70-135	
o-Terphenyl	5.25	5.00	105	70-135	

Lab Batch #: 960901

Sample: 667906-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/02/15 18:36

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	124	100	124	70-135	
o-Terphenyl	56.8	50.0	114	70-135	

Lab Batch #: 960905

Sample: 667913-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/03/15 02:42

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0349	0.0300	116	80-120	
4-Bromofluorobenzene	0.0330	0.0300	110	80-120	

Lab Batch #: 960786

Sample: 667865-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 01/30/15 18:16

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0318	0.0300	106	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: Cal AB Launcher

Work Orders : 501565,

Project ID: 701583.144.01

Lab Batch #: 960788

Sample: 667869-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 01/30/15 20:33

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	10.9	10.0	109	70-135	
o-Terphenyl	5.94	5.00	119	70-135	

Lab Batch #: 960901

Sample: 667906-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/02/15 19:00

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	128	100	128	70-135	
o-Terphenyl	59.5	50.0	119	70-135	

Lab Batch #: 960905

Sample: 667913-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/03/15 02:58

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0346	0.0300	115	80-120	
4-Bromofluorobenzene	0.0328	0.0300	109	80-120	

Lab Batch #: 960786

Sample: 501447-001 S / MS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 01/30/15 18:33

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0294	0.0300	98	80-120	
4-Bromofluorobenzene	0.0313	0.0300	104	80-120	

Lab Batch #: 960901

Sample: 501574-002 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/02/15 20:11

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	126	99.9	126	70-135	
o-Terphenyl	63.1	50.0	126	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] = $100 \times A / B$

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



Form 2 - Surrogate Recoveries

Project Name: Cal AB Launcher

Work Orders : 501565,

Project ID: 701583.144.01

Lab Batch #: 960905

Sample: 501565-006 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/03/15 03:15

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0329	0.0300	110	80-120	
4-Bromofluorobenzene	0.0360	0.0300	120	80-120	

Lab Batch #: 960786

Sample: 501447-001 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 01/30/15 18:49

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0291	0.0300	97	80-120	
4-Bromofluorobenzene	0.0315	0.0300	105	80-120	

Lab Batch #: 960901

Sample: 501574-002 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/02/15 20:34

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	99.8	101	70-135	
o-Terphenyl	45.9	49.9	92	70-135	

Lab Batch #: 960905

Sample: 501565-006 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/03/15 03:31

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0325	0.0300	108	80-120	
4-Bromofluorobenzene	0.0355	0.0300	118	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Blank Spike Recovery

Project Name: Cal AB Launcher



Work Order #: 501565

Project ID: 701583.144.01

Lab Batch #: 961346

Sample: 688214-1-BKS

Matrix: Solid

Date Analyzed: 02/08/2015

Date Prepared: 02/07/2015

Analyst: BHRE

Reporting Units: mg/kg

Batch #: 1

BLANK/BLANK SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Chloride	<2.00	20.0	20.6	103	90-110	

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

Project Name: Cal AB Launcher

Work Order #: 501565

Analyst: ARM

Lab Batch ID: 960786

Units: mg/L

Date Prepared: 01/30/2015

Sample: 667865-1-BKS

Batch #: 1

Project ID: 701583.144.01

Date Analyzed: 01/30/2015

Matrix: Water

BLANK / BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Analytes	BTEX by EPA 8021B										Flag
	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blank Spike Duplicate %R [G]	RPD %	Control Limits %R	Control Limits %RPD	
Benzene	<0.00100	0.100	0.0987	99	0.100	0.102	102	3	70-125	25	
Toluene	<0.00200	0.100	0.0958	96	0.100	0.0992	99	3	70-125	25	
Ethylbenzene	<0.00100	0.100	0.0955	96	0.100	0.0987	99	3	71-129	25	
m,p-Xylenes	<0.00200	0.200	0.192	96	0.200	0.199	100	4	70-131	25	
o-Xylene	<0.00100	0.100	0.0986	99	0.100	0.102	102	3	71-133	25	

Date Prepared: 02/02/2015

Date Analyzed: 02/03/2015

Batch #: 1

Analyst: ARM

Lab Batch ID: 960905

Units: mg/kg

Sample: 667913-1-BKS

Matrix: Solid

BLANK / BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Analytes	BTEX by EPA 8021B										Flag
	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blank Spike Duplicate %R [G]	RPD %	Control Limits %R	Control Limits %RPD	
Benzene	<0.00100	0.100	0.101	101	0.100	0.100	100	1	70-130	35	
Toluene	<0.00200	0.100	0.0975	98	0.100	0.0981	98	1	70-130	35	
Ethylbenzene	<0.00100	0.100	0.0974	97	0.100	0.0988	99	1	71-129	35	
m,p-Xylenes	<0.00200	0.200	0.196	98	0.200	0.199	100	2	70-135	35	
o-Xylene	<0.00100	0.100	0.102	102	0.100	0.103	103	1	71-133	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

Project Name: Cal AB Launcher

Project ID: 701583.144.01

Work Order #: 501565

Analyst: JUM

Date Prepared: 01/31/2015

Date Analyzed: 01/31/2015

Lab Batch ID: 960882

Sample: 667820-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

BLANK / BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1		Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blank Spike Duplicate %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes												
Chloride		<1.00	25.0	22.4	90	25.0	23.9	96	6	90-110	20	

Date Prepared: 02/07/2015

Date Analyzed: 02/08/2015

Batch #: 1

Matrix: Solid

Sample: 688218-1-BKS

Units: mg/kg

BLANK / BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1		Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blank Spike Duplicate %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes												
Chloride		<2.00	20.0	20.1	101	20.0	20.3	102	1	90-110	20	

Date Prepared: 02/04/2015

Date Analyzed: 02/04/2015

Batch #: 1

Matrix: Water

Sample: 667974-1-BKS

Units: mg/L

BLANK / BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Mercury by EPA 7470A		Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blank Spike Duplicate %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes												
Mercury		<0.0000100	0.00500	0.00497	99	0.00500	0.00495	99	0	85-115	20	

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

Project Name: Cal AB Launcher

Work Order #: 501565

Analyst: DAT

Lab Batch ID: 961045

Units: mg/kg

Date Prepared: 02/04/2015

Batch #: 1

Sample: 667976-1-BKS

Project ID: 701583.144.01

Date Analyzed: 02/04/2015

Matrix: Solid

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY												
Units: mg/kg		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
Mercury by SW 7471A												
Analytes												
Mercury		<0.00333	0.167	0.162	97	0.167	0.162	97	0	85-115	20	

Date Prepared: 02/03/2015

Batch #: 1

Sample: 667901-1-BKS

Date Analyzed: 02/03/2015

Matrix: Water

Units: mg/L		BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
Metals per ICP by SW846 6010B		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
Analytes												
Arsenic		<0.0100	1.00	1.07	107	1.00	1.07	107	0	85-115	20	
Barium		<0.0100	1.00	1.07	107	1.00	1.08	108	1	85-115	20	
Cadmium		<0.00500	1.00	1.07	107	1.00	1.08	108	1	85-115	20	
Chromium		<0.00500	1.00	1.04	104	1.00	1.04	104	0	85-115	20	
Lead		<0.0120	1.00	1.06	106	1.00	1.07	107	1	85-115	20	
Selenium		<0.0100	1.00	1.07	107	1.00	1.07	107	0	85-115	20	
Silver		<0.00400	1.00	1.02	102	1.00	1.03	103	1	85-115	20	

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

Project Name: Cal AB Launcher

Work Order #: 501565

Analyst: DAT

Lab Batch ID: 960914

Units: mg/kg

Date Prepared: 02/03/2015

Batch #: 1

Sample: 667904-1-BKS

Project ID: 701583.144.01

Date Analyzed: 02/03/2015

Matrix: Solid

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY												
Metals per ICP by SW846 6010B		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
Analytes												
Arsenic		<0.500	100	107	107	100	108	108	1	85-115	20	
Barium		<0.500	100	106	106	100	106	106	0	85-115	20	
Cadmium		<0.250	100	106	106	100	106	106	0	85-115	20	
Chromium		<0.250	100	104	104	100	104	104	0	85-115	20	
Lead		<0.600	100	104	104	100	105	105	1	85-115	20	
Selenium		<0.500	100	107	107	100	107	107	0	85-115	20	
Silver		<0.200	100	102	102	100	101	101	1	85-115	20	

Date Prepared: 01/30/2015

Date Analyzed: 01/30/2015

Analyst: ARM

Lab Batch ID: 960788

Sample: 667869-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY												
Units:	mg/L											
Analytes	TPH By SW8015 Mod	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
	C6-C12 Gasoline Range Hydrocarbons	<1.50	100	80.5	81	100	85.7	86	6	70-135	25	
	C12-C28 Diesel Range Hydrocarbons	<1.50	100	83.0	83	100	91.1	91	9	70-135	25	

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

Project Name: Cal AB Launcher

Work Order #: 501565

Analyst: ARM

Lab Batch ID: 960901

Units: mg/kg

Date Prepared: 02/02/2015

Batch #: 1

Sample: 667906-1-EKS

Project ID: 701583.144.01

Date Analyzed: 02/02/2015

Matrix: Solid

Units:		BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
TPH By SW8015 Mod		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
Analytes												
C6-C12 Gasoline Range Hydrocarbons		<15.0	1000	906	91	1000	932	93	3	70-135	35	
C12-C28 Diesel Range Hydrocarbons		<15.0	1000	1030	103	1000	1070	107	4	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: Cal AB Launcher



Work Order #: 501565

Lab Batch #: 960882

Date Analyzed: 01/31/2015

QC- Sample ID: 501462-001 S

Reporting Units: mg/L

Date Prepared: 01/31/2015

Batch #: 1

Project ID: 701583.144.01

Analyst: JUM

Matrix: Water

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	134000	50000	186000	104	80-120	

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

BRL - Below Reporting Limit

Form 3 - MS / MSD Recoveries



Project Name: Cal AB Launcher

Work Order #: 501565
 Lab Batch ID: 960786
 Date Analyzed: 01/30/2015
 Reporting Units: mg/L
 Project ID: 701583.144.01
 QC- Sample ID: 501447-001 S
 Batch #: 1
 Matrix: Water
 Date Prepared: 01/30/2015
 Analyst: ARM

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Analytes	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
BTEX by EPA 8021B											
Benzene	<0.00100	0.100	0.101	101	0.100	0.103	103	2	70-125	25	
Toluene	<0.00200	0.100	0.0971	97	0.100	0.0990	99	2	70-125	25	
Ethylbenzene	<0.00100	0.100	0.0961	96	0.100	0.0983	98	2	71-129	25	
m,p-Xylenes	<0.00200	0.200	0.194	97	0.200	0.198	99	2	70-131	25	
o-Xylene	<0.00100	0.100	0.0991	99	0.100	0.101	101	2	71-133	25	

Lab Batch ID: 960905 QC- Sample ID: 501565-006 S Batch #: 1 Matrix: Soil

Date Analyzed: 02/03/2015 Date Prepared: 02/02/2015 Analyst: ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Analytes	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
BTEX by EPA 8021B											
Benzene	<0.00100	0.100	0.0899	90	0.0998	0.0923	92	3	70-130	35	
Toluene	<0.00200	0.100	0.0849	85	0.0998	0.0874	88	3	70-130	35	
Ethylbenzene	<0.00100	0.100	0.0785	79	0.0998	0.0825	83	5	71-129	35	
m,p-Xylenes	<0.00200	0.200	0.156	78	0.200	0.163	82	4	70-135	35	
o-Xylene	<0.00100	0.100	0.0781	78	0.0998	0.0816	82	4	71-133	35	

Matrix Spike Percent Recovery $[D] = 100 \times (C-A)/B$
 Relative Percent Difference $RPD = 200 \times (C-F)/(C+F)$
 ND = Not Detected, I = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
 N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



Project Name: Cal AB Launcher

Work Order #: 501565
 Lab Batch ID: 961346
 Date Analyzed: 02/08/2015
 Reporting Units: mg/kg

Project ID: 701583.144.01
 QC- Sample ID: 501565-005 S
 Date Prepared: 02/07/2015
 Batch #: 1
 Matrix: Soil
 Analyst: BHRE

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	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
Analytes											
Chloride	474	444	932	103	444	932	103	0	80-120	20	

Lab Batch ID: 961352
 Date Analyzed: 02/08/2015
 Reporting Units: mg/kg

QC- Sample ID: 501530-001 S
 Date Prepared: 02/07/2015
 Batch #: 1
 Matrix: Soil
 Analyst: BHRE

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	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
Analytes											
Chloride	128	117	251	105	117	253	107	1	80-120	20	

Lab Batch ID: 961352
 Date Analyzed: 02/08/2015
 Reporting Units: mg/kg

QC- Sample ID: 501565-014 S
 Date Prepared: 02/07/2015
 Batch #: 1
 Matrix: Soil
 Analyst: BHRE

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	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
Analytes											
Chloride	371	355	734	102	355	735	103	0	80-120	20	

Matrix Spike Percent Recovery $[D] = 100 * (C-A) / B$
 Relative Percent Difference $RPD = 200 * |(C-F) / (C+F)|$
 ND = Not Detected, I = Present Below Reporting Limit, P = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
 N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

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

Form 3 - MS / MSD Recoveries

Project Name: Cal AB Launcher

Work Order #: 501565
Lab Batch ID: 961042
Date Analyzed: 02/04/2015
Reporting Units: mg/L

Project ID: 701583.144.01
QC- Sample ID: 501409-001 S Batch #: 1 Matrix: Water
Date Prepared: 02/04/2015 Analyst: DAT

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Mercury by EPA 7470A	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Mercury	<0.000100	0.00500	0.00414	83	0.00500	0.00421	84	2	75-125	20	

Lab Batch ID: 961045
Date Analyzed: 02/04/2015
Reporting Units: mg/kg

QC- Sample ID: 501462-005 S Batch #: 1 Matrix: Soil
Date Prepared: 02/04/2015 Analyst: DAT

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Mercury by SW 7471A	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Mercury	0.208	0.304	0.446	78	0.303	0.431	74	3	75-125	20	X

Lab Batch ID: 960903
Date Analyzed: 02/03/2015
Reporting Units: mg/L

QC- Sample ID: 501409-001 S Batch #: 1 Matrix: Water
Date Prepared: 02/03/2015 Analyst: DAT

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Metals per ICP by SW846 6010B	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Arsenic	<0.0100	1.00	1.04	104	1.00	1.04	104	0	75-125	20	
Barium	0.0927	1.00	1.05	96	1.00	1.04	95	1	75-125	20	
Cadmium	<0.00500	1.00	0.925	93	1.00	0.921	92	0	75-125	20	
Chromium	<0.00500	1.00	0.969	97	1.00	0.973	97	0	75-125	20	
Lead	<0.0120	1.00	0.908	91	1.00	0.906	91	0	75-125	20	
Selenium	<0.0100	1.00	1.08	108	1.00	1.08	108	0	75-125	20	
Silver	<0.00400	1.00	0.986	99	1.00	0.985	99	0	75-125	20	

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

ND = Not Detected, I = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQU = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

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



Project Name: Cal AB Launcher

Work Order #: 501565
 Lab Batch ID: 960914
 Date Analyzed: 02/03/2015
 Reporting Units: mg/kg
 Project ID: 701583.144.01
 QC- Sample ID: 501625-001 S
 Date Prepared: 02/03/2015
 Batch #: 1
 Matrix: Solid
 Analyst: DAI

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Metals per ICP by SW846 6010B		Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Arsenic		4.26	114	112	95	109	94	3	75-125	20	
Barium		67.3	114	186	104	182	102	2	75-125	20	
Cadmium		0.369	114	91.9	80	89.8	80	2	75-125	20	
Chromium		8.25	114	101	81	99.0	81	2	75-125	20	
Lead		8.08	114	97.3	78	95.1	78	2	75-125	20	
Selenium		<0.571	114	103	90	101	90	2	75-125	20	
Silver		<0.228	114	95.5	84	94.8	85	1	75-125	20	

Lab Batch ID: 960901
 Date Analyzed: 02/02/2015
 Reporting Units: mg/kg
 QC- Sample ID: 501574-002 S
 Date Prepared: 02/02/2015
 Batch #: 1
 Matrix: Soil
 Analyst: ARM

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod		Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
C6-C12 Gasoline Range Hydrocarbons		<16.0	1070	1050	98	1070	85	14	70-135	35	
C12-C28 Diesel Range Hydrocarbons		41.5	1070	1230	111	906	81	30	70-135	35	

Matrix Spike Percent Recovery $[D] = 100 \times (C-A)/B$
 Relative Percent Difference $RPD = 200 \times |(C-F)/(C+F)|$
 ND = Not Detected, I = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
 N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Project Name: Cal AB Launcher

Work Order #: 501565

Lab Batch #: 960867

Project ID: 701583.144.01

Date Analyzed: 02/02/2015 17:15

Date Prepared: 02/02/2015

Analyst: WRU

QC- Sample ID: 501565-001 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	24.9	28.8	15	20	

Lab Batch #: 960867

Date Analyzed: 02/02/2015 17:15

Date Prepared: 02/02/2015

Analyst: WRU

QC- Sample ID: 501608-001 D

Batch #: 1

Matrix: Soil

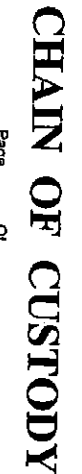
Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	10.9	11.2	3	20	

Spike Relative Difference RPD $200 * |(B-A)/(B+A)|$

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

BRL - Below Reporting Limit



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Final 1.001

CHAIN OF CUSTODY

Page 71

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Stafford, Texas (281-240-4200)

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Norcross, Georgia (770-449-8800)

LakeLand, Florida (863-646-8526)

Tampa, Florida (813-620-2000)

Client / Reporting Information		Project Information		Analytical Information		Matrix Codes										
Company Name: TALON LPE		Project Name/Number: CAL AB LANDFILL				A= Air S = Soil/Sediment GW = Ground Water DW = Drinking Water P = Product SW = Surface water SL = Sludge WW = Waste Water O = Oil WW = Waste Water										
Company Address: 2901 Hwy 349 Midland		Project Location: MALAGA, NM														
Email: SHITTHOKET@TALONLPE.COM		Invoice To: mdecker@talonlpe.com														
Phone No: 761.583.1440		PO Number:														
Project Contact: Nelissa Becker																
Sampler's Name: Nelissa Becker																
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO ₃	H ₂ SO ₄	NaOH	NaHSO ₄	MeOH	Other	Notes	Field Comments
1	S-1-0' DRAW	0'	1/29	7330	S	1	X	X	X	X	X	X	X	X		
2	S-3-0' DRAW	0'	1/29	7335	S	1	X	X	X	X	X	X	X	X		
3	S-4-0' DRAW	0'	1/30	0940	S	1	X	X	X	X	X	X	X	X		
4	S-5-0' DRAW	0'	1/30	0945	S	1	X	X	X	X	X	X	X	X		
5	SUMP	0'	1/29	2240	S	1	X	X	X	X	X	X	X	X		
6																
7																
8																
9																
10																
Turnaround Time (Business days)		Data Deliverable Information		Notes												
☐ Same Day TAT		☒ 5 Day TAT		☐ Level II Std QOC		☐ Level IV (Full Data Pkg /raw data)										
☐ Next Day EMERGENCY		☐ 7 Day TAT		☐ Level III Std QOC+ Forms		☐ TRRP Level IV										
☐ 2 Day EMERGENCY		☐ Contract TAT		☐ Level 3 (CLP Forms)		☐ UST / RG -411										
☐ 3 Day EMERGENCY				☐ TRRP Checklist												
TAT Starts Day received by Lab, if received by 3:00 pm																
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW FOR THE SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY																
Requested By: [Signature]		Received By: [Signature]		Date Time: 1/30/15		Relinquished By: [Signature]		Date Time: 1/30/15		Received By: [Signature]		Date Time: 1/30/15		Relinquished By: [Signature]		
Relinquished by: [Signature]		Date Time: 1/30/15		Received By: [Signature]		Date Time: 1/30/15		Relinquished By: [Signature]		Date Time: 1/30/15		Received By: [Signature]		Date Time: 1/30/15		
Relinquished by: [Signature]		Date Time: 1/30/15		Received By: [Signature]		Date Time: 1/30/15		Relinquished By: [Signature]		Date Time: 1/30/15		Received By: [Signature]		Date Time: 1/30/15		
Relinquished by: [Signature]		Date Time: 1/30/15		Received By: [Signature]		Date Time: 1/30/15		Relinquished By: [Signature]		Date Time: 1/30/15		Received By: [Signature]		Date Time: 1/30/15		
Relinquished by: [Signature]		Date Time: 1/30/15		Received By: [Signature]		Date Time: 1/30/15		Relinquished By: [Signature]		Date Time: 1/30/15		Received By: [Signature]		Date Time: 1/30/15		
Relinquished by: [Signature]		Date Time: 1/30/15		Received By: [Signature]		Date Time: 1/30/15		Relinquished By: [Signature]		Date Time: 1/30/15		Received By: [Signature]		Date Time: 1/30/15		
Relinquished by: [Signature]		Date Time: 1/30/15		Received By: [Signature]		Date Time: 1/30/15		Relinquished By: [Signature]		Date Time: 1/30/15		Received By: [Signature]		Date Time: 1/30/15		
Relinquished by: [Signature]		Date Time: 1/30/15		Received By: [Signature]		Date Time: 1/30/15		Relinquished By: [Signature]		Date Time: 1/30/15		Received By: [Signature]		Date Time: 1/30/15		
Relinquished by: [Signature]		Date Time: 1/30/15		Received By: [Signature]		Date Time: 1/30/15		Relinquished By: [Signature]		Date Time: 1/30/15						



XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In



Client: Talon/LPE Co.

Date/ Time Received: 01/30/2015 03:12:00 PM

Work Order #: 501565

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Sample instructions complete on Chain of Custody?	Yes
#9 Any missing/extra samples?	No
#10 Chain of Custody signed when relinquished/ received?	Yes
#11 Chain of Custody agrees with sample label(s)?	Yes
#12 Container label(s) legible and intact?	Yes
#13 Sample matrix/ properties agree with Chain of Custody?	Yes
#14 Samples in proper container/ bottle?	Yes
#15 Samples properly preserved?	Yes
#16 Sample container(s) intact?	Yes
#17 Sufficient sample amount for indicated test(s)?	Yes
#18 All samples received within hold time?	Yes
#19 Subcontract of sample(s)?	Yes
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	Yes
#21 <2 for all samples preserved with HNO ₃ , HCL, H ₂ SO ₄ ? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	Yes
#22 >10 for all samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH?	N/A

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:

PH Device/Lot#:

Checklist completed by:

Kelsey Brooks
Kelsey Brooks

Date: 01/30/2015

Checklist reviewed by:

Kelsey Brooks
Kelsey Brooks

Date: 01/30/2015

Analytical Report 502904

**for
Talon LPE**

Project Manager: Sheldon Hitchcock

Cal AB Launcher

701583.144.01

26-FEB-15

Collected By: Client



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-14-18), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
New Jersey (TX007), North Carolina(681), Oklahoma (9218), Pennsylvania (68-03610)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Texas (T104704477), Louisiana (04176), USDA (P330-07-00105)

Xenco-Lakeland: Florida (E84098)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)

Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)



26-FEB-15

Project Manager: **Sheldon Hitckcock**

Talon LPE

408 W. Texas St.
Artesia, NM 88210

Reference: XENCO Report No(s): **502904**

Cal AB Launcher

Project Address: A-8-265-29E

Sheldon Hitckcock:

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(s) 502904. 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. The uncertainty of measurement associated with the results of analysis reported is available upon request. 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. 502904 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,

Kelsey Brooks

Project Manager

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Sample Cross Reference 502904



Talon LPE, Artesia, NM

Cal AB Launcher

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
S-6 0'	S	02-23-15 10:07	- 0 ft	502904-001
S-7 0'	S	02-23-15 10:09	- 0 ft	502904-002
BG-2 0'	S	02-23-15 10:20	- 0 ft	502904-003
BG-3 0'	S	02-23-15 10:34	- 0 ft	502904-004
BG-4 0'	S	02-23-15 10:42	- 0 ft	502904-005



CASE NARRATIVE



Client Name: Talon LPE

Project Name: Cal AB Launcher

Project ID: 701583.144.01
Work Order Number(s): 502904

Report Date: 26-FEB-15
Date Received: 02/24/2015

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 502904

Talon LPE, Artesia, NM

Project Name: Cal AB Launcher

Project Id: 701583.144.01

Contact: Sheldon Hitchcock

Project Location: A-8-265-29E

Date Received in Lab: Tue Feb-24-15 12:56 pm

Report Date: 26-FEB-15

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id.		502904-001		502904-002		502904-003		502904-004		502904-005	
	Field Id.	Depth:	S-6 0'	0 ft	S-7 0'	0 ft	BG-2 0'	0 ft	BG-3 0'	0 ft	BG-4 0'	0 ft
	Matrix:		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:		Feb-23-15 10:07		Feb-23-15 10:09		Feb-23-15 10:20		Feb-23-15 10:34		Feb-23-15 10:42	
BTEX by EPA 8021B	Extracted:		Feb-24-15 15:00		Feb-24-15 15:00							
	Analyzed:		Feb-25-15 02:23		Feb-25-15 02:39							
	Units/RL:		mg/kg	RL	mg/kg	RL						
	Benzene		ND	0.000996	ND	0.000994						
	Toluene		ND	0.00199	ND	0.00199						
Inorganic Anions by EPA 300/300.1	Ethylbenzene		ND	0.000996	ND	0.000994						
	m,p-Xylenes		ND	0.00199	ND	0.00199						
	o-Xylene		ND	0.000996	ND	0.000994						
	Total Xylenes		ND	0.000996	ND	0.000994						
	Total BTEX		ND	0.000996	ND	0.000994						
Mercury by SW 7471A SUB: T104704295-TX	Extracted:		Feb-25-15 17:00		Feb-25-15 17:00		Feb-25-15 17:00		Feb-25-15 17:00		Feb-25-15 17:00	
	Analyzed:		Feb-26-15 08:52		Feb-26-15 13:04		Feb-26-15 13:50		Feb-26-15 14:12		Feb-26-15 14:37	
	Units/RL:		mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
	Chloride		1720	223	4670	471	345	113	141	114	209	248
Mercury	Extracted:		Feb-26-15 09:00		Feb-26-15 09:00		Feb-26-15 09:00		Feb-26-15 09:00		Feb-26-15 09:00	
	Analyzed:		Feb-26-15 11:02		Feb-26-15 11:02		Feb-26-15 11:02		Feb-26-15 11:09		Feb-26-15 11:11	
	Units/RL:		mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
			ND	0.00300	ND	0.00300	ND	0.00300	0.00383	0.00329	0.00392	0.00375

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end user of the data hierarchy presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 502904

Talon LPE, Artesia, NM

Project Name: Cal AB Launcher

Project Id: 701583.144.01

Contact: Sheldon Hirtcock

Project Location: A-8-265-29E

Date Received in Lab: Tue Feb-24-15 12:56 pm

Report Date: 26-FEB-15

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:		502904-001		502904-002		502904-003		502904-004		502904-005	
	Field Id:		S-6 0'		S-7 0'		BG-2 0'		BG-3 0'		BG-4 0'	
	Depth:		0 ft		0 ft		0 ft		0 ft		0 ft	
	Matrix:		SOIL		SOIL		SOIL		SOIL		SOIL	
Metals per ICP by SW846 6010B SUB: T104704295-TX	Sampled:		Feb-23-15 10:07		Feb-23-15 10:09		Feb-23-15 10:20		Feb-23-15 10:34		Feb-23-15 10:42	
	Extracted:						Feb-26-15 07:30		Feb-26-15 07:30		Feb-26-15 07:30	
	Analyzed:						Feb-26-15 11:01		Feb-26-15 11:04		Feb-26-15 11:06	
	Units/RL:						mg/kg		mg/kg		mg/kg	
Arsenic							3.78		2.71		3.06	
Barium							71.6		85.7		172	
Cadmium							ND		0.308		0.385	
Chromium							2.77		5.53		11.9	
Lead							4.04		5.37		8.48	
Selenium							ND		ND		ND	
Silver							ND		ND		ND	
Percent Moisture	Extracted:											
	Analyzed:		Feb-24-15 17:30		Feb-24-15 17:30		Feb-24-15 17:30		Feb-24-15 17:30		Feb-24-15 17:30	
	Units/RL:		% RL		% RL		% RL		% RL		% RL	
Percent Moisture			10.2		15.0		11.5		12.4		19.5	
TPH By SW8015 Mod	Extracted:		Feb-25-15 15:00		Feb-25-15 15:00							
	Analyzed:		Feb-25-15 19:06		Feb-25-15 20:14							
	Units/RL:		mg/kg RL		mg/kg RL							
C6-C12 Gasoline Range Hydrocarbons			ND		ND		14.9					
C12-C28 Diesel Range Hydrocarbons			80.1		55.3		14.9					
C28-C35 Oil Range Hydrocarbons			ND		ND		14.9					
Total TPH			80.1		55.3		14.9					

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Kelsey Brooks

Kelsey Brooks
Project 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 affect the recovery of the spike concentration. This condition could also affect 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 quantitation limit and above the detection limit.
- 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.

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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12600 West I-20 East, Odessa, TX 79765
6017 Financial Drive, Norcross, GA 30071
3725 E. Atlanta Ave, Phoenix, AZ 85040

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(210) 509-3334	(210) 509-3335
(813) 620-2000	(813) 620-2033
(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	



Form 2 - Surrogate Recoveries

Project Name: Cal AB Launcher

Work Orders : 502904,

Project ID: 701583.144.01

Lab Batch #: 962598

Sample: 502904-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/25/15 02:23

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0313	0.0300	104	80-120	
4-Bromofluorobenzene	0.0334	0.0300	111	80-120	

Lab Batch #: 962598

Sample: 502904-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/25/15 02:39

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0323	0.0300	108	80-120	
4-Bromofluorobenzene	0.0344	0.0300	115	80-120	

Lab Batch #: 962630

Sample: 502904-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/25/15 19:06

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	99.7	107	70-135	
o-Terphenyl	54.5	49.9	109	70-135	

Lab Batch #: 962630

Sample: 502904-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/25/15 20:14

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.7	99.6	92	70-135	
o-Terphenyl	46.2	49.8	93	70-135	

Lab Batch #: 962598

Sample: 689008-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/25/15 04:51

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0307	0.0300	102	80-120	
4-Bromofluorobenzene	0.0327	0.0300	109	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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



Form 2 - Surrogate Recoveries

Project Name: Cal AB Launcher

Work Orders : 502904,

Project ID: 701583.144.01

Lab Batch #: 962630

Sample: 689030-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/25/15 17:35

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	100	103	70-135	
o-Terphenyl	54.1	50.0	108	70-135	

Lab Batch #: 962598

Sample: 689008-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/25/15 01:01

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0303	0.0300	101	80-120	
4-Bromofluorobenzene	0.0307	0.0300	102	80-120	

Lab Batch #: 962630

Sample: 689030-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/25/15 17:58

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	100	115	70-135	
o-Terphenyl	51.5	50.0	103	70-135	

Lab Batch #: 962598

Sample: 689008-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/25/15 01:17

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0309	0.0300	103	80-120	
4-Bromofluorobenzene	0.0301	0.0300	100	80-120	

Lab Batch #: 962630

Sample: 689030-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/25/15 18:21

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	127	100	127	70-135	
o-Terphenyl	56.6	50.0	113	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: Cal AB Launcher

Work Orders : 502904,

Lab Batch #: 962598

Sample: 502904-002 S / MS

Project ID: 701583.144.01
Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/25/15 01:33

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0321	0.0300	107	80-120	
4-Bromofluorobenzene	0.0330	0.0300	110	80-120	

Lab Batch #: 962630

Sample: 502904-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/25/15 19:30

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	99.7	116	70-135	
o-Terphenyl	49.5	49.9	99	70-135	

Lab Batch #: 962598

Sample: 502904-002 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/25/15 01:50

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0320	0.0300	107	80-120	
4-Bromofluorobenzene	0.0332	0.0300	111	80-120	

Lab Batch #: 962630

Sample: 502904-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/25/15 19:51

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	112	99.9	112	70-135	
o-Terphenyl	50.8	50.0	102	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Project Name: Cal AB Launcher
Work Order #: 502904

Analyst: ARM

Lab Batch ID: 962598

Units: mg/kg

Date Prepared: 02/24/2015

Batch #: 1

Sample: 689008-1-BKS

Project ID: 701583.144.01

Date Analyzed: 02/25/2015

Matrix: Solid

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY													
Units:	mg/kg												
Analytes	BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag	
	Benzene		<0.00100	0.100	0.101	101	0.100	0.102	102	1	70-130	35	
	Toluene		<0.00200	0.100	0.0997	100	0.100	0.101	101	1	70-130	35	
	Ethylbenzene		<0.00100	0.100	0.104	104	0.100	0.105	105	1	71-129	35	
	m,p-Xylenes		<0.00200	0.200	0.204	102	0.200	0.206	103	1	70-135	35	
	o-Xylene		<0.00100	0.100	0.103	103	0.100	0.103	103	0	71-133	35	

Date Prepared: 02/25/2015

Date Analyzed: 02/26/2015

Batch #: 1

Matrix: Solid

Analyst: JUM

Lab Batch ID: 962690

Units: mg/kg

Sample: 689021-1-BKS

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Units:	mg/kg										
Inorganic Anions by EPA 300/300.1	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
Analytes											
Chloride	<2.00	50.0	52.5	105	50.0	48.8	98	7	90-110	20	

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

Project Name: Cal AB Launcher

Work Order #: 502904

Analyst: DAT

Lab Batch ID: 962673

Units: mg/kg

Date Prepared: 02/26/2015

Sample: 689033-1-BKS Batch #: 1

Project ID: 701583.144.01

Date Analyzed: 02/26/2015

Matrix: Solid

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY												
Units:	mg/kg											
Analytes	Mercury by SW 7471A	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
Mercury		<0.00333	0.167	0.165	99	0.167	0.167	100	1	85-115	20	

Date Analyzed: 02/26/2015

Matrix: Solid

Date Prepared: 02/26/2015

Batch #: 1

Sample: 689027-1-BKS

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY												
Units: mg/kg												
Metals per ICP by SW846 6010B 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	
	Arsenic	<0.500	100	101	101	100	102	102	1	85-115	20	
	Barium	<0.500	100	101	101	100	102	102	1	85-115	20	
	Cadmium	<0.250	100	101	101	100	101	101	0	85-115	20	
	Chromium	<0.250	100	101	101	100	101	101	0	85-115	20	
	Lead	<0.600	100	102	102	100	102	102	0	85-115	20	
	Selenium	<0.500	100	103	103	100	102	102	1	85-115	20	
	Silver	<0.200	100	99.8	100	100	99.6	100	0	85-115	20	

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

Project Name: Cal AB Launcher

Work Order #: 502904

Analyst: ARM

Lab Batch ID: 962630

Units: mg/kg

Date Prepared: 02/25/2015

Batch #: 1

Sample: 689030-1-BKS

Project ID: 701583.144.01

Date Analyzed: 02/25/2015

Matrix: Solid

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY												
TPH By SW8015 Mod		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
Analytes												
C6-C12 Gasoline Range Hydrocarbons		<15.0	1000	843	84	1000	886	89	5	70-135	35	
C12-C28 Diesel Range Hydrocarbons		<15.0	1000	1030	103	1000	1200	120	15	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: Cal AB Launcher



Work Order #: 502904

Lab Batch #: 962690

Date Analyzed: 02/26/2015

QC- Sample ID: 502781-001 S

Reporting Units: mg/kg

Date Prepared: 02/25/2015

Batch #: 1

Project ID: 701583.144.01

Analyst: JUM

Matrix: Soil

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	359	540	937	107	80-120	

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

BRL - Below Reporting Limit



Project Name: Cal AB Launcher

Work Order #: 502904 Project ID: 701583.144.01
 Lab Batch ID: 962598 QC- Sample ID: 502904-002 S Batch #: 1 Matrix: Soil
 Date Analyzed: 02/25/2015 Date Prepared: 02/24/2015 Analyst: ARM
 Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B		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
Analytes												
Benzene		<0.000996	0.0996	0.0977	98	0.0998	0.0961	96	2	70-130	35	
Toluene		<0.00199	0.0996	0.0951	95	0.0998	0.0918	92	4	70-130	35	
Ethylbenzene		<0.000996	0.0996	0.0964	97	0.0998	0.0935	94	3	71-129	35	
m,p-Xylenes		<0.00199	0.199	0.188	94	0.200	0.183	92	3	70-135	35	
o-Xylene		<0.000996	0.0996	0.0930	93	0.0998	0.0913	91	2	71-133	35	

Lab Batch ID: 962673 QC- Sample ID: 502904-003 S Batch #: 1 Matrix: Soil
 Date Analyzed: 02/26/2015 Date Prepared: 02/26/2015 Analyst: DAT

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Mercury by SW 7471A		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
Analytes												
Mercury		0.00294	0.144	0.123	83	0.143	0.125	85	2	75-125	20	

Matrix Spike Percent Recovery $[D] = 100 \times (C-A)/B$
 Relative Percent Difference $RPD = 200 \times (C-F)/(C+E)$
 ND = Not Detected, I = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
 N = See Narrative, EQ1 = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



Project Name: Cal AB Launcher

Work Order #: 502904
 Lab Batch ID: 962664
 Date Analyzed: 02/26/2015
 Reporting Units: mg/kg

QC- Sample ID: 502905-002 S
 Date Prepared: 02/26/2015
 Project ID: 701583.144.01
 Batch #: 1 Matrix: Soil
 Analyst: DAT

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Metals per ICP by SW846 6010B		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
Analytes												
Arsenic		3.81	124	120	94	122	116	92	3	75-125	20	
Barium		117	124	253	110	122	249	108	2	75-125	20	
Cadmium		0.436	124	105	84	122	102	83	3	75-125	20	
Chromium		9.34	124	126	94	122	122	92	3	75-125	20	
Lead		6.15	124	111	85	122	109	84	2	75-125	20	
Selenium		<0.622	124	111	90	122	112	92	1	75-125	20	
Silver		<0.249	124	119	96	122	119	98	0	75-125	20	

Lab Batch ID: 962630
 Date Analyzed: 02/25/2015
 Reporting Units: mg/kg
 QC- Sample ID: 502904-001 S
 Date Prepared: 02/25/2015
 Batch #: 1 Matrix: Soil
 Analyst: ARM

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod		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
Analytes												
C6-C12 Gasoline Range Hydrocarbons		<15.0	997	936	94	999	823	82	13	70-135	35	
C12-C28 Diesel Range Hydrocarbons		80.1	997	1090	101	999	1070	99	2	70-135	35	

Matrix Spike Percent Recovery $[D] = 100 \times (C-A)/B$
 Relative Percent Difference $RPD = 200 \times [(C-F)/(C+F)]$
 ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
 N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



Sample Duplicate Recovery



Project Name: Cal AB Launcher

Work Order #: 502904

Lab Batch #: 962556

Project ID: 701583.144.01

Date Analyzed: 02/24/2015 17:30

Date Prepared: 02/24/2015

Analyst: JUM

QC- Sample ID: 502839-001 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	21.5	20.1	7	20	

Lab Batch #: 962556

Date Analyzed: 02/24/2015 17:30

Date Prepared: 02/24/2015

Analyst: JUM

QC- Sample ID: 502839-011 D

Batch #: 1

Matrix: Soil

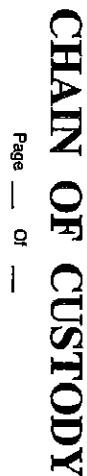
Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	5.11	4.47	13	20	

Spike Relative Difference $RPD = 200 * |(B-A)/(B+A)|$

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

BRL - Below Reporting Limit



Page — of —

Stafford, Texas (281-240-4200)

Dallas, Texas (214-902-0300)

Service Center - San Antonio, Texas (210-509-3334)

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Odessa, Texas (432-563-1800)

Norcross, Georgia (770-449-8800)

Lakeland, Florida (883-646-6526)

Tampa, Florida (813-620-2000)

Xenoco Quota #

Xenoco Job #

2025

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes			
Company Name / Branch:				Project Name/Number:											
Company Address:				Project Location:											
Email:				Invoice To:											
Phone No:				PO Number:											
408 W. Texas Ave. Artesia, NM				A-8-265-29E											
Slutnick & O'Brien Inc.				Sheldon Hittcock											
Project Contact:				Sheldon Hittcock											
Samplers Name:				Sheldon Hittcock											
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Mix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MeOH	Other	Field Comments
1	5-60'	0'	2/21/16	10:07	5	1									8 RCRA
2	5-70'	0'		10:08	5	1									TPH DRO/GRO
3	5-80'	0'		10:10	5	1									BTEX
4	5-90'	0'		10:13	5	1									Chlorides
5	5-100'	0'		10:15	5	1									
6															
7															
8															
9															
10															
Turnaround Time (Business days)				Data Deliverable Information				Notes							
☐ Same Day TAT				☐ Level II Std OC				☐ Level IV (Full Data Pkg /raw data)							
☐ Next Day EMERGENCY				☐ Day TAT				☐ TRRP Level IV							
☒ 2 Day EMERGENCY				☐ Contract TAT				☐ Level 3 (CLP Forms)				☐ IUST / RG-411			
☐ 3 Day EMERGENCY								☐ TRRP Checklist							
TAT Starts Day received by Lab, if received by 3:00 pm				FED-EX / UPS Tracking #											
Relinquished by Sampler:				Relinquished By:				Date Time:							
Sheldon Hittcock				2/21/16 1:21P				2/21/16 1:21P							
Relinquished by:				Relinquished By:				Date Time:							
Sheldon Hittcock				2/21/16 1:21P				2/21/16 1:21P							
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Relinquished by:				Relinquished By:				Date Time:							
Sheldon Hittcock				2/21/16 1:21P				2/21/16 1:21P							
Relinquished by:				Relinquished By:				Date Time:							
Sheldon Hittcock															



XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In



Client: Talon LPE

Date/ Time Received: 02/24/2015 12:56:21 PM

Work Order #: 502904

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	-1
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	No
#5 Custody Seals intact on sample bottles?	No
#6 *Custody Seals Signed and dated?	No
#7 *Chain of Custody present?	Yes
#8 Sample instructions complete on Chain of Custody?	Yes
#9 Any missing/extra samples?	No
#10 Chain of Custody signed when relinquished/ received?	Yes
#11 Chain of Custody agrees with sample label(s)?	Yes
#12 Container label(s) legible and intact?	Yes
#13 Sample matrix/ properties agree with Chain of Custody?	Yes
#14 Samples in proper container/ bottle?	Yes
#15 Samples properly preserved?	Yes
#16 Sample container(s) intact?	Yes
#17 Sufficient sample amount for indicated test(s)?	Yes
#18 All samples received within hold time?	Yes
#19 Subcontract of sample(s)?	No
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	N/A
#21 <2 for all samples preserved with HNO ₃ , HCL, H ₂ SO ₄ ? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	N/A
#22 >10 for all samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH?	N/A

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:

PH Device/Lot#:

Checklist completed by:

Kelsey Brooks
Kelsey Brooks

Date: 02/24/2015

Checklist reviewed by:

Date: _____

Analytical Report 508466

**for
Talon LPE**

Project Manager: Sheldon Hitchcock

Cal AB Launcher

701583.144.01

29-MAY-15

Collected By: Client



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-14-18), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
Oklahoma (9218)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Texas (T104704477), Louisiana (04176), USDA (P330-07-00105)

Xenco-Lakeland: Florida (E84098)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code: AZ000989): Arizona (AZ0758)



29-MAY-15

Project Manager: **Sheldon Hitckcock**

Talon LPE

408 W. Texas St.
Artesia, NM 88210

Reference: XENCO Report No(s): **508466**

Cal AB Launcher

Project Address: A-8-265-29E

Sheldon Hitckcock:

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(s) 508466. 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. The uncertainty of measurement associated with the results of analysis reported is available upon request. 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. 508466 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,

Kelsey Brooks

Project Manager

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Sample Cross Reference 508466



Talon LPE, Artesia, NM

Cal AB Launcher

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BG-5 0'	S	05-22-15 11:07	- 0 ft	508466-001
BG-5 1'	S	05-22-15 11:10	- 1 ft	508466-002
BG-6 0'	S	05-22-15 11:22	- 0 ft	508466-003
BG-6 1'	S	05-22-15 11:27	- 1 ft	508466-004
BG-7 0'	S	05-22-15 11:40	- 0 ft	508466-005
BG-7 0.5' Refusal	S	05-22-15 11:45	- .5 ft	508466-006



CASE NARRATIVE



Client Name: Talon LPE

Project Name: Cal AB Launcher

Project ID: 701583.144.01
Work Order Number(s): 508466

Report Date: 29-MAY-15
Date Received: 05/27/2015

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analysis Summary 508466

Talon LPE, Artesia, NM

Project Name: Cal AB Launcher

Project Id: 701583.144.01

Contact: Sheldon Hitchcock

Project Location: A-8-265-29E

Date Received in Lab: Wed May-27-15 11:30 am

Report Date: 29-MAY-15

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	508466-001	508466-002	508466-003	508466-004	508466-005	508466-006
	Field Id:	BG-5 0'	BG-5 1'	BG-6 0'	BG-6 1'	BG-7 0'	BG-7 0.5' Refusal
	Depth:	0 ft	1 ft	0 ft	1 ft	0 ft	.5 ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	May-22-15 11:07	May-22-15 11:10	May-22-15 11:22	May-22-15 11:27	May-22-15 11:40	May-22-15 11:45
Mercury by SW 7471A SUB: E871002	Extracted:	May-28-15 13:00	May-28-15 13:00	May-28-15 13:00	May-28-15 13:00	May-28-15 13:00	May-28-15 13:00
	Analyzed:	May-28-15 16:21	May-28-15 16:27	May-28-15 16:29	May-28-15 16:31	May-28-15 16:36	May-28-15 16:38
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
		ND 0.0200	ND 0.0185	ND 0.0179	ND 0.0196	0.0236 0.0179	ND 0.0182
RCRA Metals by SW846-6010B SUB: E871002	Extracted:	May-28-15 13:30	May-28-15 13:30	May-28-15 13:30	May-28-15 13:30	May-28-15 13:30	May-28-15 13:30
	Analyzed:	May-29-15 10:10	May-29-15 10:18	May-29-15 10:25	May-29-15 10:31	May-29-15 10:38	May-29-15 10:59
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
		2.81 2.00	4.11 2.00	ND 2.00	ND 1.96	1.91 1.72	1.82 1.72
Arsenic		156 1.00	355 1.00	31.1 1.00	23.5 0.980	69.2 0.862	105 0.862
Barium		ND 1.00	ND 1.00	ND 1.00	ND 0.980	ND 0.862	ND 0.862
Cadmium		5.83 1.00	5.58 1.00	3.13 1.00	1.71 0.980	6.19 0.862	6.71 0.862
Chromium		8.50 2.00	6.35 2.00	4.54 2.00	2.66 1.96	7.73 1.72	8.15 1.72
Lead		ND 3.00	ND 3.00	ND 3.00	ND 2.94	ND 2.59	ND 2.59
Selenium		ND 3.00	ND 3.00	ND 3.00	ND 2.94	ND 2.59	ND 2.59
Silver							

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Kelsey Brooks

Kelsey Brooks
Project 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 affect the recovery of the spike concentration. This condition could also affect 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 quantitation limit and above the detection limit.
- 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.

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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9701 Harry Hines Blvd, Dallas, TX 75220
5332 Blackberry Drive, San Antonio TX 78238
2505 North Falkenburg Rd, Tampa, FL 33619
12600 West I-20 East, Odessa, TX 79765
6017 Financial Drive, Norcross, GA 30071
3725 E. Atlanta Ave, Phoenix, AZ 85040

Phone	Fax
(281) 240-4200	(281) 240-4280
(214) 902 0300	(214) 351-9139
(210) 509-3334	(210) 509-3335
(813) 620-2000	(813) 620-2033
(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	

Project Name: Cal AB Launcher

Work Order #: 508466

Analyst: BHRE

Lab Batch ID: 969103

Units: mg/kg

Date Prepared: 05/28/2015

Sample: 693124-1-BKS

Batch #: 1

Project ID: 701583.144.01

Date Analyzed: 05/28/2015

Matrix: Solid

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Units: mg/kg											
Mercury by SW 7471A	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
Analytes											
Mercury	<0.0200	0.200	0.204	102	0.200	0.202	101	1	80-120	20	

Date Prepared: 05/28/2015

Sample: 693125-1-BKS

Batch #: 1

Date Analyzed: 05/29/2015

Matrix: Solid

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY												
RCRA Metals by SW846-6010B		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
Analytes												
Arsenic		<2.00	100	104	104	100	98.0	98	6	75-125	20	
Barium		<1.00	100	99.9	100	100	96.3	96	4	75-125	20	
Cadmium		<1.00	100	101	101	100	96.3	96	5	75-125	20	
Chromium		<1.00	100	104	104	100	100	100	4	75-125	20	
Lead		<2.00	100	106	106	100	102	102	4	75-125	20	
Selenium		<3.00	100	105	105	100	97.9	98	7	75-125	20	
Silver		<3.00	50.0	49.5	99	50.0	48.1	96	3	75-125	20	

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



Project Name: Cal AB Launcher

Work Order #: 508466
 Lab Batch ID: 969103
 Date Analyzed: 05/28/2015
 Reporting Units: mg/kg

Project ID: 701583.144.01
 QC- Sample ID: 508466-001 S
 Date Prepared: 05/28/2015

Batch #: 1
 Matrix: Soil
 Analyst: BHRE

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Mercury by SW 7471A		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
Analytes												
Mercury		<0.0200	0.200	0.214	107	0.192	0.205	107	4	75-125	20	

Lab Batch ID: 969107
 Date Analyzed: 05/29/2015
 Reporting Units: mg/kg

QC- Sample ID: 508347-001 S
 Date Prepared: 05/28/2015

Batch #: 1
 Matrix: Soil
 Analyst: DEP

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

RCRA Metals by SW846-6010B		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
Analytes												
Arsenic		5.76	120	117	93	120	119	94	2	75-125	20	
Barium		46.8	120	163	97	120	166	99	2	75-125	20	
Cadmium		<1.20	120	112	93	120	113	94	1	75-125	20	
Chromium		11.0	120	136	104	120	138	106	1	75-125	20	
Lead		96.6	120	171	62	120	169	60	1	75-125	20	X
Selenium		<3.59	120	112	93	120	113	94	1	75-125	20	
Silver		<3.59	59.9	51.9	87	59.9	52.2	87	1	75-125	20	

Matrix Spike Percent Recovery $[D] = 100 * (C-A)/B$
 Relative Percent Difference $RPD = 200 * [(C-F)/(C+F)]$
 ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
 N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In



Client: Talon LPE

Date/ Time Received: 05/27/2015 11:30:00 AM

Work Order #: 508466

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	2.5
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Sample instructions complete on Chain of Custody?	Yes
#9 Any missing/extra samples?	No
#10 Chain of Custody signed when relinquished/ received?	Yes
#11 Chain of Custody agrees with sample label(s)?	Yes
#12 Container label(s) legible and intact?	Yes
#13 Sample matrix/ properties agree with Chain of Custody?	Yes
#14 Samples in proper container/ bottle?	Yes
#15 Samples properly preserved?	Yes
#16 Sample container(s) intact?	Yes
#17 Sufficient sample amount for indicated test(s)?	Yes
#18 All samples received within hold time?	Yes
#19 Subcontract of sample(s)?	No
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	N/A
#21 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	N/A
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	N/A

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:

PH Device/Lot#:

Checklist completed by:

Kelsey Brooks
Kelsey Brooks

Date: 05/27/2015

Checklist reviewed by:

Kelsey Brooks
Kelsey Brooks

Date: 05/27/2015

Analytical Report 518518

**for
Talon LPE**

**Project Manager: Sheldon Hitchcock
Cal A B Launcher**

03-NOV-15

Collected By: Client



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-15-19), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
Oklahoma (9218)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Texas (T104704477), Louisiana (04176), USDA (P330-07-00105)

Xenco-Lakeland: Florida (E84098)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code: AZ000989): Arizona (AZ0758)



03-NOV-15

Project Manager: **Sheldon Hitckcock**

Talon LPE

408 W. Texas St.

Artesia, NM 88210

Reference: XENCO Report No(s): **518518**

Cal A B Launcher

Project Address:

Sheldon Hitckcock:

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(s) 518518. 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. The uncertainty of measurement associated with the results of analysis reported is available upon request. 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. 518518 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,

Kelsey Brooks

Project Manager

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Sample Cross Reference 518518



Talon LPE, Artesia, NM

Cal A B Launcher

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
S-1 0'	S	10-29-15 15:00	- 0 ft	518518-001
S-2 0'	S	10-29-15 15:05	- 0 ft	518518-002
S- 3 0'	S	10-29-15 15:10	- 0 ft	518518-003
S-4 0'	S	10-29-15 15:15	- 0 ft	518518-004
S-5 0'	S	10-29-15 15:20	- 0 ft	518518-005
S-6 0'	S	10-29-15 15:25	- 0 ft	518518-006
S- 7 0'	S	10-29-15 15:30	- 0 ft	518518-007
S-1 0' Draw	S	10-29-15 16:20	- 0 ft	518518-008
S-2 0' Draw	S	10-29-15 16:15	- 0 ft	518518-009
S-3 0' Draw	S	10-29-15 16:10	- 0 ft	518518-010
S-4 0' Draw	S	10-29-15 16:25	- 0 ft	518518-011
S-5 0' Draw	S	10-29-15 16:05	- 0 ft	518518-012
S-6 0' Draw	S	10-29-15 16:00	- 0 ft	518518-013



CASE NARRATIVE



Client Name: Talon LPE

Project Name: Cal A B Launcher

Project ID:

Work Order Number(s): 518518

Report Date: 03-NOV-15

Date Received: 10/31/2015

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-980399 BTEX by EPA 8021B

Lab Sample ID 518518-003 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Benzene, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 518518-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013.

The Laboratory Control Sample for Toluene, m,p-Xylenes, Benzene, Ethylbenzene, o-Xylene is within laboratory Control Limits, therefore the data was accepted.



Certificate of Analysis Summary 518518

Talon LPE, Artesia, NM

Project Name: Cal A B Launcher

Project Id:

Contact: Sheldon Hitecock

Project Location:

Date Received in Lab: Sat Oct-31-15 12:50 pm

Report Date: 03-NOV-15

Project Manager: Kelsey Brooks



Analysis Requested		Lab Id:	518518-001	518518-002	518518-003	518518-004	518518-005	518518-006
		Field Id:	S-1 0'	S-2 0'	S-3 0'	S-4 0'	S-5 0'	S-6 0'
		Depth:	0 ft	0 ft	0 ft	0 ft	0 ft	0 ft
		Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Sampled:	Oct-29-15 15:00	Oct-29-15 15:05	Oct-29-15 15:10	Oct-29-15 15:15	Oct-29-15 15:20	Oct-29-15 15:25
BTEX by EPA 8021B	Extracted:	Nov-02-15 10:00	Nov-02-15 10:00	Nov-02-15 10:00	Nov-02-15 10:00	Nov-02-15 10:00	Nov-02-15 10:00	Nov-02-15 10:00
	Analyzed:	Nov-02-15 12:36	Nov-02-15 12:53	Nov-03-15 10:46	Nov-02-15 14:31	Nov-02-15 14:48	Nov-02-15 14:59	Nov-03-15 11:02
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
		ND 0.250	0.00100 0.00100	ND 0.00101	ND 0.00100	ND 0.00100	ND 0.00100	ND 0.00100
		2.91 0.500	0.0222 0.00201	ND 0.00202	ND 0.00201	0.0450 0.00200	0.0487 0.00100	ND 0.00200
Inorganic Anions by EPA 300/300.1	Extracted:	Nov-02-15 13:06	Nov-02-15 13:51	Nov-02-15 14:14	Nov-02-15 14:37	Nov-02-15 14:59	Nov-02-15 15:20	Nov-02-15 15:56
	Analyzed:	Nov-02-15 13:06	Nov-02-15 13:51	Nov-02-15 22:51	Nov-02-15 14:37	Nov-02-15 14:59	Nov-02-15 15:51	Nov-02-15 17:56
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
		149 100	74.4 40.0	ND 2.00	ND 2.00	114 100	1520 200	ND 0.00100
		86.6 0.250	0.327 0.00100	ND 0.00101	ND 0.00100	0.536 0.00100	0.536 0.00100	ND 0.00100
TPH by SW 8015B	Extracted:	Nov-02-15 09:00	Nov-02-15 09:00	Nov-02-15 09:00	Nov-02-15 09:00	Nov-02-15 09:00	Nov-02-15 09:00	Nov-02-15 09:00
	Analyzed:	Nov-03-15 11:23	Nov-02-15 14:40	Nov-02-15 15:08	Nov-02-15 15:36	Nov-03-15 11:51	Nov-02-15 16:30	Nov-02-15 16:30
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
		389 74.9	252 15.0	ND 14.9	ND 15.0	389 74.9	ND 15.0	ND 15.0
		9720 74.9	4680 15.0	ND 14.9	ND 15.0	7040 74.9	ND 15.0	ND 15.0
Total TPH		1260 74.9	327 15.0	ND 14.9	ND 15.0	838 74.9	ND 15.0	ND 15.0
		11400 74.9	5260 15.0	ND 14.9	ND 15.0	8270 74.9	ND 15.0	ND 15.0

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Kelsey Brooks

Kelsey Brooks
Project Manager



Certificate of Analysis Summary 518518

Talon LPE, Artesia, NM

Project Name: Cal A B Launcher

Project Id:

Contact: Sheldon Hitcock

Project Location:

Date Received in Lab: Sat Oct-31-15 12:50 pm

Report Date: 03-NOV-15

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>		Lab Id:	518518-007	518518-008	518518-009	518518-010	518518-011	518518-012
		Field Id:	S-7'0"	S-1'0" Draw	S-2'0" Draw	S-3'0" Draw	S-4'0" Draw	S-5'0" Draw
		Depth:	0 ft	0 ft	0 ft	0 ft	0 ft	0 ft
		Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Sampled:	Oct-29-15 15:30	Oct-29-15 16:20	Oct-29-15 16:15	Oct-29-15 16:10	Oct-29-15 16:25	Oct-29-15 16:05
BTEX by EPA 8021B	Extracted:	Nov-02-15 10:00	Nov-02-15 10:00	Nov-02-15 10:00	Nov-02-15 10:00	Nov-02-15 10:00	Nov-02-15 10:00	Nov-02-15 10:00
	Analyzed:	Nov-03-15 11:19	Nov-03-15 15:18	Nov-03-15 12:23	Nov-03-15 12:06	Nov-03-15 15:01	Nov-03-15 12:57	Nov-03-15 12:57
	Units/RL:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		RL	RL	RL	RL	RL	RL	RL
		ND 0.000992	ND 0.00101	ND 0.00100	ND 0.00101	ND 0.00101	ND 0.00166	0.00166 0.000998
Benzene		ND 0.00198	ND 0.00202	0.0382	0.00200	ND 0.00332	ND 0.00200	ND 0.00200
Toluene		ND 0.000992	ND 0.00101	ND 0.00100	ND 0.00100	ND 0.00166	ND 0.000998	ND 0.000998
Ethylbenzene		ND 0.00198	0.0278	0.00202	0.400	0.00202	ND 0.00200	ND 0.00200
m,p-Xylenes		ND 0.000992	0.0240	0.00101	0.291	0.00100	ND 0.00166	ND 0.000998
o-Xylene		ND 0.000992	0.0518	0.00101	0.691	0.00100	ND 0.00166	ND 0.000998
Total Xylenes		ND 0.000992	0.0518	0.00101	0.729	0.00100	ND 0.00166	0.00166 0.000998
Total BTEX								
Inorganic Anions by EPA 300/300.1		Extracted:	Nov-02-15 18:19	Nov-02-15 18:41	Nov-02-15 19:04	Nov-02-15 19:27	Nov-02-15 19:49	Nov-02-15 20:35
Chloride	Analyzed:	Nov-02-15 18:19	Nov-02-15 18:41	Nov-02-15 19:04	Nov-02-15 19:04	Nov-02-15 19:27	Nov-02-15 19:49	Nov-02-15 20:35
	Units/RL:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		RL	RL	RL	RL	RL	RL	RL
		4370	23.1	10.0	69.2	823	499	1160
		400	40.0	100	40.0	100	100	100
TPH by SW 8015B		Extracted:	Nov-02-15 09:00	Nov-02-15 09:00	Nov-02-15 09:00	Nov-02-15 09:00	Nov-02-15 09:00	Nov-02-15 09:00
C6-C10 Gasoline Range Hydrocarbons	Analyzed:	Nov-02-15 16:56	Nov-02-15 18:05	Nov-02-15 12:18	Nov-02-15 12:18	Nov-02-15 18:58	Nov-02-15 19:50	Nov-02-15 20:48
	Units/RL:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		RL	RL	RL	RL	RL	RL	RL
		ND 14.9	85.8	15.0	306	118	ND 15.0	ND 15.0
C10-C28 Diesel Range Hydrocarbons		ND 14.9	691	15.0	7850	2850	ND 15.0	ND 15.0
C28-C35 Oil Range Hydrocarbons		ND 14.9	153	15.0	1170	279	ND 15.0	ND 15.0
Total TPH		ND 14.9	930	15.0	9330	3250	ND 15.0	ND 15.0

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount involved for this work order unless otherwise agreed to in writing.

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Kelsey Brooks

Kelsey Brooks
Project Manager



Certificate of Analysis Summary 518518

Talon LPE, Artesia, NM

Project Name: Cal A B Launcher

Project Id:

Contact: Sheldon Hittcock

Project Location:

Date Received in Lab: Sat Oct-31-15 12:50 pm

Report Date: 03-NOV-15

Project Manager: Kelsey Brooks



Analysis Requested		Lab Id:	518518-013			
		Field Id:	S-6 0' Draw			
		Depth:	0 ft			
		Matrix:	SOIL			
		Sampled:	Oct-29-15 16:00			
BTEX by EPA 8021B		Extracted:	Nov-02-15 10:00			
		Analyzed:	Nov-02-15 18 39			
		Units/RL:	mg/kg RL			
Benzene			ND 0.000992			
Toluene			ND 0.00198			
Ethylbenzene			ND 0.000992			
m,p-Xylenes			ND 0.00198			
o-Xylene			ND 0.000992			
Total Xylenes			ND 0.000992			
Total BTEX			ND 0.000992			
Inorganic Anions by EPA 300/300.1		Extracted:	Nov-02-15 20:57			
		Analyzed:	Nov-02-15 20:57			
		Units/RL:	mg/kg RL			
Chloride			1210 100			
TPH by SW 8015B		Extracted:	Nov-02-15 09 00			
		Analyzed:	Nov-02-15 21.15			
		Units/RL:	mg/kg RL			
C6-C10 Gasoline Range Hydrocarbons			ND 15.0			
C10-C28 Diesel Range Hydrocarbons			ND 15.0			
C28-C35 Oil Range Hydrocarbons			ND 15.0			
Total TPH			ND 15.0			

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Kelsey Brooks

Kelsey Brooks
Project 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 affect the recovery of the spike concentration. This condition could also affect 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 quantitation limit and above the detection limit.
- 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.

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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(770) 449-8800	(770) 449-5477
(602) 437-0330	



Form 2 - Surrogate Recoveries

Project Name: Cal A B Launcher

Work Orders : 518518,

Lab Batch #: 980399

Sample: 518518-001 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/02/15 12:36

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0267	0.0300	89	80-120	
4-Bromofluorobenzene	0.0359	0.0300	120	80-120	

Lab Batch #: 980399

Sample: 518518-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/02/15 12:53

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0244	0.0300	81	80-120	
4-Bromofluorobenzene	0.0306	0.0300	102	80-120	

Lab Batch #: 980399

Sample: 518518-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/02/15 14:31

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0286	0.0300	95	80-120	
4-Bromofluorobenzene	0.0306	0.0300	102	80-120	

Lab Batch #: 980504

Sample: 518518-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/02/15 14:40

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.2	99.9	93	70-135	
o-Terphenyl	42.9	50.0	86	70-135	

Lab Batch #: 980399

Sample: 518518-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/02/15 14:48

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0298	0.0300	99	80-120	
4-Bromofluorobenzene	0.0338	0.0300	113	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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



Form 2 - Surrogate Recoveries

Project Name: Cal A B Launcher

Work Orders : 518518,

Lab Batch #: 980504

Sample: 518518-003 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/02/15 15:08

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	77.4	99.6	78	70-135	
o-Terphenyl	36.4	49.8	73	70-135	

Lab Batch #: 980504

Sample: 518518-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/02/15 15:36

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.2	99.9	86	70-135	
o-Terphenyl	40.8	50.0	82	70-135	

Lab Batch #: 980504

Sample: 518518-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/02/15 16:30

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.7	99.9	88	70-135	
o-Terphenyl	41.1	50.0	82	70-135	

Lab Batch #: 980504

Sample: 518518-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/02/15 16:56

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	84.1	99.6	84	70-135	
o-Terphenyl	39.6	49.8	80	70-135	

Lab Batch #: 980504

Sample: 518518-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/02/15 18:05

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.5	100	90	70-135	
o-Terphenyl	64.4	50.0	129	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: Cal A B Launcher

Work Orders : 518518,

Lab Batch #: 980399

Sample: 518518-013 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/02/15 18:39

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0288	0.0300	96	80-120	
4-Bromofluorobenzene	0.0319	0.0300	106	80-120	

Lab Batch #: 980504

Sample: 518518-010 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/02/15 18:58

SURROGATE RECOVERY STUDY

TPH by SW 8015B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	98.9	99.6	99	70-135	
o-Terphenyl	47.4	49.8	95	70-135	

Lab Batch #: 980504

Sample: 518518-011 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/02/15 19:50

SURROGATE RECOVERY STUDY

TPH by SW 8015B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	91.1	99.9	91	70-135	
o-Terphenyl	42.5	50.0	85	70-135	

Lab Batch #: 980504

Sample: 518518-012 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/02/15 20:48

SURROGATE RECOVERY STUDY

TPH by SW 8015B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	84.3	99.7	85	70-135	
o-Terphenyl	39.5	49.9	79	70-135	

Lab Batch #: 980504

Sample: 518518-013 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/02/15 21:15

SURROGATE RECOVERY STUDY

TPH by SW 8015B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	88.2	99.9	88	70-135	
o-Terphenyl	41.2	50.0	82	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: Cal A B Launcher

Work Orders : 518518,

Lab Batch #: 980399

Sample: 518518-003 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/03/15 10:46

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0348	0.0300	116	80-120	
4-Bromofluorobenzene	0.0283	0.0300	94	80-120	

Lab Batch #: 980399

Sample: 518518-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/03/15 11:02

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0333	0.0300	111	80-120	
4-Bromofluorobenzene	0.0274	0.0300	91	80-120	

Lab Batch #: 980399

Sample: 518518-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/03/15 11:19

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0341	0.0300	114	80-120	
4-Bromofluorobenzene	0.0295	0.0300	98	80-120	

Lab Batch #: 980504

Sample: 518518-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/03/15 11:23

SURROGATE RECOVERY STUDY

TPH by SW 8015B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	108	99.9	108	70-135	
o-Terphenyl	41.4	50.0	83	70-135	

Lab Batch #: 980504

Sample: 518518-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/03/15 11:51

SURROGATE RECOVERY STUDY

TPH by SW 8015B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	112	99.8	112	70-135	
o-Terphenyl	35.7	49.9	72	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: Cal A B Launcher

Work Orders : 518518,

Lab Batch #: 980399

Sample: 518518-010 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/03/15 12:06

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0305	0.0300	102	80-120	
4-Bromofluorobenzene	0.0355	0.0300	118	80-120	

Lab Batch #: 980504

Sample: 518518-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/03/15 12:18

SURROGATE RECOVERY STUDY					
TPH by SW 8015B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	85.9	99.9	86	70-135	
o-Terphenyl	47.2	50.0	94	70-135	

Lab Batch #: 980399

Sample: 518518-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/03/15 12:23

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0321	0.0300	107	80-120	
4-Bromofluorobenzene	0.0270	0.0300	90	80-120	

Lab Batch #: 980399

Sample: 518518-012 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/03/15 12:57

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0328	0.0300	109	80-120	
4-Bromofluorobenzene	0.0308	0.0300	103	80-120	

Lab Batch #: 980399

Sample: 518518-011 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/03/15 15:01

SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0284	0.0300	95	80-120	
4-Bromofluorobenzene	0.0255	0.0300	85	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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



Form 2 - Surrogate Recoveries

Project Name: Cal A B Launcher

Work Orders : 518518,

Lab Batch #: 980399

Sample: 518518-008 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/03/15 15:18

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0319	0.0300	106	80-120	
4-Bromofluorobenzene	0.0342	0.0300	114	80-120	

Lab Batch #: 980504

Sample: 700368-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 11/02/15 13:20

SURROGATE RECOVERY STUDY

TPH by SW 8015B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	48.6	50.0	97	70-135	

Lab Batch #: 980399

Sample: 700313-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 11/02/15 16:10

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0344	0.0300	115	80-120	

Lab Batch #: 980399

Sample: 700313-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 11/02/15 09:36

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0270	0.0300	90	80-120	
4-Bromofluorobenzene	0.0337	0.0300	112	80-120	

Lab Batch #: 980504

Sample: 700368-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 11/02/15 12:26

SURROGATE RECOVERY STUDY

TPH by SW 8015B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	112	100	112	70-135	
o-Terphenyl	47.4	50.0	95	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 \times A / B$

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



Form 2 - Surrogate Recoveries

Project Name: Cal A B Launcher

Work Orders : 518518,

Lab Batch #: 980399

Sample: 700313-1-BSD / BSD

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 11/02/15 09:52

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0329	0.0300	110	80-120	
4-Bromofluorobenzene	0.0345	0.0300	115	80-120	

Lab Batch #: 980504

Sample: 700368-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 11/03/15 10:55

SURROGATE RECOVERY STUDY

TPH by SW 8015B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	121	100	121	70-135	
o-Terphenyl	46.6	50.0	93	70-135	

Lab Batch #: 980399

Sample: 518518-003 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/02/15 13:25

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0290	0.0300	97	80-120	
4-Bromofluorobenzene	0.0341	0.0300	114	80-120	

Lab Batch #: 980504

Sample: 518518-003 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/02/15 21:41

SURROGATE RECOVERY STUDY

TPH by SW 8015B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	107	99.7	107	70-135	
o-Terphenyl	44.7	49.9	90	70-135	

Lab Batch #: 980399

Sample: 518518-003 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/02/15 13:42

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0332	0.0300	111	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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



Form 2 - Surrogate Recoveries

Project Name: Cal A B Launcher

Work Orders : 518518,

Lab Batch #: 980504

Sample: 518518-003 SD / MSD

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/03/15 12:50

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	108	99.9	108	70-135	
o-Terphenyl	44.9	50.0	90	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.



BS / BSD Recoveries



Project Name: Cal A B Launcher

Work Order #: 518518

Analyst: SYG

Lab Batch ID: 980399

Units: mg/kg

Date Prepared: 11/02/2015

Batch #: 1

Sample: 700313-1-BKS

Project ID:

Date Analyzed: 11/02/2015

Matrix: Solid

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
	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
Analytes	BTEX by EPA 8021B										
	Benzene	<0.000994	0.0994	0.0799	80	0.0998	0.0801	80	0	70-130	35
	Toluene	<0.00199	0.0994	0.0802	81	0.0998	0.0845	85	5	70-130	35
	Ethylbenzene	<0.000994	0.0994	0.0860	87	0.0998	0.0896	90	4	71-129	35
	m,p-Xylenes	<0.00199	0.199	0.175	88	0.200	0.181	91	3	70-135	35
	o-Xylene	<0.000994	0.0994	0.0862	87	0.0998	0.0896	90	4	71-133	35

Analyst: MNR

Lab Batch ID: 980471

Units: mg/kg

Date Prepared: 11/02/2015

Batch #: 1

Sample: 700319-1-BKS

Date Analyzed: 11/02/2015

Matrix: Solid

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
	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
Inorganic Anions by EPA 300/300.1											
Analytes											
Chloride	<2.00	50.0	48.8	98	50.0	48.8	98	0	90-110	20	

Relative Percent Difference RPD = $200 * [(C-F) / (C+F)]$

Blank Spike Recovery [D] = $100 * (C) / [B]$

Blank Spike Duplicate Recovery [G] = $100 * (F) / [E]$

All results are based on MDL and Validated for QC Purposes



BS / BSD Recoveries

Project Name: Cal A B Launcher



Work Order #: 518518

Analyst: PJB

Lab Batch ID: 980504

Units: mg/kg

Date Prepared: 11/02/2015

Batch #: 1

Sample: 700368-1-BKS

Project ID:

Date Analyzed: 11/02/2015

Matrix: Solid

BLANK / BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

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
TPH by SW 8015B											
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	833	83	1000	945	95	13	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	1130	113	1000	1210	121	7	70-135	35	

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



Form 3 - MS Recoveries
Project Name: Cal A B Launcher



Work Order #: 518518

Lab Batch #: 980471

Date Analyzed: 11/02/2015

QC- Sample ID: 518518-001 S

Reporting Units: mg/kg

Date Prepared: 11/02/2015

Batch #: 1

Project ID:

Analyst: MNR

Matrix: Soil

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	149	2500	2600	98	80-120	

Lab Batch #: 980471

Date Analyzed: 11/02/2015

QC- Sample ID: 518518-011 S

Reporting Units: mg/kg

Date Prepared: 11/02/2015

Batch #: 1

Analyst: MNR

Matrix: Soil

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	499	2500	3020	101	80-120	

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

BRL - Below Reporting Limit



Form 3 - MS / MSD Recoveries

Project Name: Cal A B Launcher



Work Order #: 518518
Lab Batch ID: 980399
Date Analyzed: 11/02/2015
Reporting Units: mg/kg

Project ID:
QC- Sample ID: 518518-003 S Batch #: 1 Matrix: Soil
Date Prepared: 11/02/2015 Analyst: SYG

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Analytes	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
BTEX by EPA 8021B											
Benzene	<0.00101	0.101	<0.00101	0	0.101	<0.00101	0	NC	70-130	35	X
Toluene	<0.00202	0.101	<0.00202	0	0.101	<0.00201	0	NC	70-130	35	X
Ethylbenzene	<0.00101	0.101	<0.00101	0	0.101	<0.00101	0	NC	71-129	35	X
m,p-Xylenes	<0.00202	0.202	<0.00202	0	0.201	<0.00201	0	NC	70-135	35	X
o-Xylene	<0.00101	0.101	<0.00101	0	0.101	<0.00101	0	NC	71-133	35	X

Lab Batch ID: 980504 QC- Sample ID: 518518-003 S Batch #: 1 Matrix: Soil
Date Analyzed: 11/02/2015 Analyst: PJB
Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Analytes	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
TPH by SW 8015B											
C6-C10 Gasoline Range Hydrocarbons	<15.0	997	890	89	999	991	99	11	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	997	1170	117	999	1280	128	9	70-135	35	

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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

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

ANALYSIS REQUEST & CHAIN OF CUSTODY RECORD



☐ 4143 Greenbriar Drive, Stafford, TX 77477 281-240-4300
☐ 5332, Blackberry Drive, San Antonio, TX 78238 210-508-3334

☐ 9701 Harry Hines Blvd., Dallas, TX 75220 214-902-0300
☒ 12600 West I-20 East, Odessa, TX 79765 432-563-1800

Serial #: 330928 Page 1 of 2

Lab Only:

Company-City: TALEN, NM Phone: 575-746-8769

Project Name-Location: AR-514, NM 8820 Project ID: 575-746-8769

Previously done at XENCO

Proj. State: TX, AL, FL, GA, LA, MS, NC, NJ, PA, SC, TN, UT Other NM

Proj. Manager (PM): Sheldon Hitencock

E-mail Results to: [] EPM and [] FAX No:

Sheldon Hitencock

Invoice to: [] Accounting [] Inc. Invoice with Final Report [] Invoice must have a P.O.

Bill to: Raimel Johnson ETP

Quote/Pricing: P.O. No: [] Call for P.O.

Reg Program: UST DRY-CLEAN Land-Fill Waste-Disp NPDES DW TRRP

QAPP Per-Contract CLP AGCEE NAVY DOE DOD USACE OTHER:

Special DLs (GW DW QAPP MDLs RLs See Lab PM Included Call PM)

Sampler Name: S. Hitencock Signature: Sheldon Hitencock

Signature: Sheldon Hitencock

Preservatives

Container Type

Container Size

Containers

Grab

Composite

Matrix

Depth in"

Time

Sampling Date

Relinquished by (Initials and Sign)

Date & Time

Relinquished to (Initials and Sign)

Date & Time

Relinquished to (Initials and Sign)

Date & Time

Relinquished to (Initials and Sign)

Date & Time

Relinquished to (Initials and Sign)

TAT: ASAP 5h 12h 24h 48h 3d 5d 7d 10d 21d Standard TAT is project specific. It is typically 5-7 Working Days for level II and 10+ Working days for level III and IV data.

Hold Samples (Surcharges will apply and are pre-approved)

Addn: PAH above mg/L W, mg/Kg S Highest Hit

Addn: PAH above mg/L W, mg/Kg S Highest Hit

Addn: PAH above mg/L W, mg/Kg S Highest Hit

Addn: PAH above mg/L W, mg/Kg S Highest Hit

Addn: PAH above mg/L W, mg/Kg S Highest Hit

Addn: PAH above mg/L W, mg/Kg S Highest Hit

Addn: PAH above mg/L W, mg/Kg S Highest Hit

Addn: PAH above mg/L W, mg/Kg S Highest Hit

Addn: PAH above mg/L W, mg/Kg S Highest Hit

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Addn: PAH above mg/L W, mg/Kg S Highest Hit

Addn: PAH above mg/L W, mg/Kg S Highest Hit

Addn: PAH above mg/L W, mg/Kg S Highest Hit

Addn: PAH above mg/L W, mg/Kg S Highest Hit

Addn: PAH above mg/L W, mg/Kg S Highest Hit

Preservatives: Various (V), HCl pH<2 (H), H2SO4 pH<2 (S), HNO3 pH<2 (N), Asbc Acid&NaOH (A), ZnAc&NaOH (Z), (Cool, <4C) (C), None (NA), See Label (L), Other (O)
 Cont. Size: 4oz (4), 8oz (8), 32oz (32), 40ml VOA (40), 1L (1), 500ml (5), Tedlar Bag (B), Various (V), Other

Matrix: Air (A), Product (P), Solid (S), Water (W), Liquid (L)
 Notice: Signature of this document and relinquishment of these samples constitutes a valid purchase order from client company to Xenco Laboratories and its affiliates, subcontractors and assigns under Xenco's standard terms and conditions of service unless previously negotiated under a fully executed client contract.

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XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In



Client: Talon LPE

Date/ Time Received: 10/31/2015 12:50:00 PM

Work Order #: 518518

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	3
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Sample instructions complete on Chain of Custody?	Yes
#9 Any missing/extra samples?	No
#10 Chain of Custody signed when relinquished/ received?	Yes
#11 Chain of Custody agrees with sample label(s)?	Yes
#12 Container label(s) legible and intact?	Yes
#13 Sample matrix/ properties agree with Chain of Custody?	Yes
#14 Samples in proper container/ bottle?	Yes
#15 Samples properly preserved?	Yes
#16 Sample container(s) intact?	Yes
#17 Sufficient sample amount for indicated test(s)?	Yes
#18 All samples received within hold time?	Yes
#19 Subcontract of sample(s)?	No
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	N/A
#21 <2 for all samples preserved with HNO ₃ , HCL, H ₂ SO ₄ ? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	N/A
#22 >10 for all samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH?	N/A

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:

PH Device/Lot#:

Checklist completed by:

Minerva Rios

Date: 10/31/2015

Checklist reviewed by:

Kelsey Brooks

Date: 11/03/2015

Analytical Report 519768

**for
Talon LPE**

**Project Manager: Sheldon Hiteckcock
Cal A/B Launcher**

27-NOV-15

Collected By: Client



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-15-19), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
Oklahoma (9218)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Texas (T104704477), Louisiana (04176), USDA (P330-07-00105)

Xenco-Lakeland: Florida (E84098)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code: AZ000989): Arizona (AZ0758)



27-NOV-15

Project Manager: **Sheldon Hitckcock**

Talon LPE

408 W. Texas St.

Artesia, NM 88210

Reference: XENCO Report No(s): **519768**

Cal A/B Launcher

Project Address: NM

Sheldon Hitckcock:

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(s) 519768. 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. The uncertainty of measurement associated with the results of analysis reported is available upon request. 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. 519768 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,

Julian Martinez

Project Manager

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

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Houston - Dallas - Odessa - San Antonio - Tampa - Lakeland - Atlanta - Phoenix - Oklahoma - Latin America



Sample Cross Reference 519768



Talon LPE, Artesia, NM

Cal A/B Launcher

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
C-1	S	11-18-15 12:56		519768-001
C-2	S	11-18-15 12:58		519768-002
C-3	S	11-18-15 13:00		519768-003
C-5	S	11-18-15 13:06		519768-004
C-6	S	11-18-15 13:03		519768-005
BC-1	S	11-18-15 13:16		519768-006
BC-2	S	11-18-15 13:18		519768-007
BC-3	S	11-18-15 13:24		519768-008
BC-4	S	11-18-15 13:26		519768-009



CASE NARRATIVE



Client Name: Talon LPE

Project Name: Cal A/B Launcher

Project ID:

Work Order Number(s): 519768

Report Date: 27-NOV-15

Date Received: 11/19/2015

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analysis Summary 519768

Talon LPE, Artesia, NM

Project Name: Cal A/B Launcher

Project Id:

Contact: Sheldon Hitchcock

Project Location: NM

Date Received in Lab: Thu Nov-19-15 08:05 am

Report Date: 27-NOV-15

Project Manager: Kelsey Brooks



Analysis Requested	Lab Id:		519768-001		519768-002		519768-003		519768-004		519768-005		519768-006	
	Field Id:	Depth:	C-1	SOIL	C-2	SOIL	C-3	SOIL	C-5	SOIL	C-6	SOIL	BC-1	SOIL
TCLP Mercury by SW 7470A SUB: T104704295-TX	Maibx:		Nov-18-15 12:56		Nov-18-15 12:58		Nov-18-15 13:00		Nov-18-15 13:06		Nov-18-15 13:03		Nov-18-15 13:16	
	Sampled:		Nov-25-15 07:45		Nov-25-15 07:45		Nov-25-15 07:45		Nov-25-15 07:45		Nov-25-15 07:45		Nov-25-15 07:45	
	Extracted:		Nov-25-15 11:16		Nov-25-15 11:22		Nov-25-15 11:24		Nov-25-15 11:26		Nov-25-15 11:32		Nov-25-15 11:34	
TCLP Metals per ICP by SW846 6010B SUB: T104704295-TX	Analyzed:		mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
	Units/RL:		ND 0.000100		ND 0.000100		ND 0.000100		ND 0.000100		ND 0.000100		ND 0.000100	
			Nov-25-15 05:45		Nov-25-15 05:45		Nov-25-15 05:45		Nov-25-15 05:45		Nov-25-15 05:45		Nov-25-15 05:45	
Mercury	Extracted:		Nov-25-15 10:53		Nov-25-15 11:11		Nov-25-15 11:23		Nov-25-15 11:27		Nov-25-15 11:30		Nov-25-15 11:33	
	Analyzed:		mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
	Units/RL:		ND 0.0250		ND 0.0250		ND 0.0250		ND 0.0250		ND 0.0250		ND 0.0250	
Arsenic	Extracted:		ND 0.0250		ND 0.0250		ND 0.0250		ND 0.0250		ND 0.0250		ND 0.0250	
	Analyzed:		0.364	0.0250	0.242	0.0250	0.308	0.0250	0.366	0.0250	0.0623	0.0250	0.269	0.0250
	Units/RL:		ND 0.0125		ND 0.0125		ND 0.0125		ND 0.0125		ND 0.0125		ND 0.0125	
Barium	Extracted:		ND 0.0125		ND 0.0125		ND 0.0125		ND 0.0125		ND 0.0125		ND 0.0125	
	Analyzed:		ND 0.0125		ND 0.0125		ND 0.0125		ND 0.0125		ND 0.0125		ND 0.0125	
	Units/RL:		ND 0.0300		ND 0.0300		ND 0.0300		ND 0.0300		ND 0.0300		ND 0.0300	
Cadmium	Extracted:		ND 0.0250		ND 0.0250		ND 0.0250		ND 0.0250		ND 0.0250		ND 0.0250	
	Analyzed:		ND 0.0250		ND 0.0250		ND 0.0250		ND 0.0250		ND 0.0250		ND 0.0250	
	Units/RL:		ND 0.0100		ND 0.0100		ND 0.0100		ND 0.0100		ND 0.0100		ND 0.0100	
Chromium	Extracted:		ND 0.0100		ND 0.0100		ND 0.0100		ND 0.0100		ND 0.0100		ND 0.0100	
	Analyzed:		ND 0.0100		ND 0.0100		ND 0.0100		ND 0.0100		ND 0.0100		ND 0.0100	
	Units/RL:		ND 0.0100		ND 0.0100		ND 0.0100		ND 0.0100		ND 0.0100		ND 0.0100	
Lead	Extracted:		ND 0.0100		ND 0.0100		ND 0.0100		ND 0.0100		ND 0.0100		ND 0.0100	
	Analyzed:		ND 0.0100		ND 0.0100		ND 0.0100		ND 0.0100		ND 0.0100		ND 0.0100	
	Units/RL:		ND 0.0100		ND 0.0100		ND 0.0100		ND 0.0100		ND 0.0100		ND 0.0100	
Selenium	Extracted:		ND 0.0100		ND 0.0100		ND 0.0100		ND 0.0100		ND 0.0100		ND 0.0100	
	Analyzed:		ND 0.0100		ND 0.0100		ND 0.0100		ND 0.0100		ND 0.0100		ND 0.0100	
	Units/RL:		ND 0.0100		ND 0.0100		ND 0.0100		ND 0.0100		ND 0.0100		ND 0.0100	
Silver	Extracted:		ND 0.0100		ND 0.0100		ND 0.0100		ND 0.0100		ND 0.0100		ND 0.0100	
	Analyzed:		ND 0.0100		ND 0.0100		ND 0.0100		ND 0.0100		ND 0.0100		ND 0.0100	
	Units/RL:		ND 0.0100		ND 0.0100		ND 0.0100		ND 0.0100		ND 0.0100		ND 0.0100	

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Julian Martinez
Project Manager



Certificate of Analysis Summary 519768

Talon LPE, Artesia, NM



Project Id:

Contact: Sheldon Hirtcock

Project Location: NM

Project Name: Cal A/B Launcher

Date Received in Lab: Thu Nov-19-15 08:05 am

Report Date: 27-NOV-15

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	519768-001	519768-002	519768-003	519768-004	519768-005	519768-006
	Field Id:	C-1	C-2	C-3	C-5	C-6	BC-1
	Depth:						
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Nov-18-15 12:56	Nov-18-15 12:58	Nov-18-15 13:00	Nov-18-15 13:06	Nov-18-15 13:03	Nov-18-15 13:16
BTX by EPA 8021B	Extracted:	Nov-23-15 15:00	Nov-23-15 15:00	Nov-23-15 15:00	Nov-23-15 15:00	Nov-23-15 15:00	Nov-23-15 15:00
	Analyzed:	Nov-23-15 17:46	Nov-23-15 18:03	Nov-24-15 08:59	Nov-24-15 10:54	Nov-23-15 18:52	Nov-23-15 19:09
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
		ND 0.00101	ND 0.00100	ND 0.000990	ND 0.00167	ND 0.00101	ND 0.000996
Benzene		ND 0.00202	ND 0.00200	ND 0.00198	ND 0.00353	ND 0.00201	ND 0.00199
Toluene		ND 0.00101	ND 0.00100	ND 0.000990	ND 0.00167	ND 0.00101	ND 0.000996
Ethylbenzene		ND 0.00202	ND 0.00200	ND 0.00198	ND 0.00353	ND 0.00201	ND 0.00199
m,p-Xylenes		ND 0.00101	ND 0.00100	ND 0.000990	ND 0.00167	ND 0.00101	ND 0.000996
o-Xylene		ND 0.00101	ND 0.00100	ND 0.000990	ND 0.00167	ND 0.00101	ND 0.000996
Total Xylenes		ND 0.00101	ND 0.00100	ND 0.000990	ND 0.00167	ND 0.00101	ND 0.000996
Total BTX		ND 0.00101	ND 0.00100	ND 0.000990	ND 0.00167	ND 0.00101	ND 0.000996
Inorganic Anions by EPA 300/300.1	Extracted:	Nov-20-15 12:00	Nov-20-15 12:00	Nov-20-15 12:00	Nov-20-15 12:00	Nov-20-15 12:00	Nov-20-15 12:00
	Analyzed:	Nov-23-15 13:50	Nov-23-15 14:13	Nov-23-15 14:58	Nov-23-15 17:38	Nov-23-15 15:44	Nov-23-15 18:01
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
		3.74 2.00	10.4 10.0	15.1 10.0	3.25 2.00	ND 2.00	2.66 2.00
Chloride		Nov-20-15 10:00	Nov-20-15 10:00	Nov-20-15 10:00	Nov-20-15 10:00	Nov-20-15 10:00	Nov-20-15 10:00
TPH by SW 8015B	Extracted:	Nov-23-15 13:07	Nov-23-15 13:43	Nov-23-15 14:21	Nov-23-15 14:53	Nov-23-15 18:12	Nov-23-15 18:48
	Analyzed:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Units/RL:	ND 15.0	ND 15.0	ND 14.9	ND 15.0	ND 15.0	ND 15.0
		ND 15.0	ND 15.0	ND 14.9	ND 15.0	ND 15.0	ND 15.0
C6-C10 Gasoline Range Hydrocarbons		ND 15.0	ND 15.0	ND 14.9	ND 15.0	ND 15.0	ND 15.0
C10-C28 Diesel Range Hydrocarbons		ND 15.0	ND 15.0	ND 14.9	ND 15.0	ND 15.0	ND 15.0
C28-C35 Oil Range Hydrocarbons		ND 15.0	ND 15.0	ND 14.9	ND 15.0	ND 15.0	ND 15.0
Total TPH		ND 15.0	ND 15.0	ND 14.9	ND 15.0	ND 15.0	ND 15.0

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Julian Martinez
Project Manager



Certificate of Analysis Summary 519768

Talon LPE, Artesia, NM

Project Name: Cal A/B Launcher

Project Id:

Contact: Sheldon Hitecock

Project Location: NM

Date Received in Lab: Thu Nov-19-15 08:05 am

Report Date: 27-NOV-15

Project Manager: Kelsey Brooks

Analysis Requested		Lab Id:	519768-007	519768-008	519768-009	
		Field Id:	BC-2	BC-3	BC-4	
		Depth:				
		Matrix:	SOIL	SOIL	SOIL	
		Sampled:	Nov-18-15 13:18	Nov-18-15 13:24	Nov-18-15 13:26	
TCLP Mercury by SW 7470A SUB: T104704295-TX	Extracted:	Nov-25-15 07:45	Nov-25-15 07:45	Nov-25-15 07:45	Nov-25-15 07:45	
	Analyzed:	Nov-25-15 11:36	Nov-25-15 11:39	Nov-25-15 11:41	Nov-25-15 11:41	
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL	
Mercury		ND 0.000100	ND 0.000100	ND 0.000100	ND 0.000100	
TCLP Metals per ICP by SW846 6010B SUB: T104704295-TX	Extracted:	Nov-25-15 05:45	Nov-25-15 05:45	Nov-25-15 05:45	Nov-25-15 05:45	
	Analyzed:	Nov-25-15 11:36	Nov-25-15 11:40	Nov-25-15 11:43	Nov-25-15 11:43	
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL	
Arsenic		ND 0.0250	ND 0.0250	ND 0.0250	ND 0.0250	
Barium		0.279 0.0250	0.214 0.0250	1.36 0.0250	1.36 0.0250	
Cadmium		ND 0.0125	ND 0.0125	ND 0.0125	ND 0.0125	
Chromium		ND 0.0125	ND 0.0125	ND 0.0125	ND 0.0125	
Lead		ND 0.0300	ND 0.0300	ND 0.0300	ND 0.0300	
Selenium		ND 0.0250	ND 0.0250	ND 0.0250	ND 0.0250	
Silver		ND 0.0100	ND 0.0100	ND 0.0100	ND 0.0100	

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Julian Martinez
Project Manager



Certificate of Analysis Summary 519768

Talon LPE, Artesia, NM

Project Name: Cal A/B Launcher

Project Id:

Contact: Sheldon Hircckcock

Project Location: NM

Date Received in Lab: Thu Nov-19-15 08:05 am

Report Date: 27-NOV-15

Project Manager: Kelsey Brooks

Analysis Requested		Lab Id:	519768-007	519768-008	519768-009		
		Field Id:	BC-2	BC-3	BC-4		
		Depth:					
		Matrix:	SOIL	SOIL	SOIL		
		Sampled:	Nov-18-15 13:18	Nov-18-15 13:24	Nov-18-15 13:26		
BTEX by EPA 8021B	Extracted:	Nov-23-15 15:00	Nov-23-15 15:00	Nov-23-15 15:00	Nov-23-15 15:00		
	Analyzed:	Nov-23-15 19:25	Nov-23-15 19:42	Nov-23-15 19:57	Nov-23-15 19:57		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
		ND 0.00100	ND 0.00101	ND 0.000994	ND 0.000994		
Benzene			ND 0.00201	ND 0.00199	ND 0.00199		
Toluene			ND 0.00100	ND 0.00101	ND 0.000994		
Ethylbenzene			ND 0.00201	ND 0.00201	ND 0.00199		
m,p-Xylenes			ND 0.00100	ND 0.00101	ND 0.000994		
o-Xylene			ND 0.00100	ND 0.00101	ND 0.000994		
Total Xylenes			ND 0.00100	ND 0.00101	ND 0.000994		
Total BTEX			ND 0.00100	ND 0.00101	ND 0.000994		
Inorganic Anions by EPA 300/300.1	Extracted:	Nov-20-15 12:00	Nov-20-15 12:00	Nov-20-15 12:00	Nov-20-15 12:00		
	Analyzed:	Nov-23-15 18:23	Nov-25-15 12:32	Nov-21-15 09:55	Nov-21-15 09:55		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
		ND 2.00	2.58 2.00	ND 2.00	ND 2.00		
Chloride							
TPH by SW 8015B	Extracted:	Nov-20-15 10:00	Nov-20-15 10:00	Nov-20-15 10:00	Nov-20-15 10:00		
	Analyzed:	Nov-23-15 19:22	Nov-23-15 19:55	Nov-23-15 20:35	Nov-23-15 20:35		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
		ND 14.9	ND 14.9	ND 14.9	ND 14.9		
C6-C10 Gasoline Range Hydrocarbons			ND 14.9	ND 14.9	ND 14.9		
C10-C28 Diesel Range Hydrocarbons			ND 14.9	ND 14.9	ND 14.9		
C28-C35 Oil Range Hydrocarbons			ND 14.9	ND 14.9	ND 14.9		
Total TPH			ND 14.9	ND 14.9	ND 14.9		

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Julian Martinez
Project 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 affect the recovery of the spike concentration. This condition could also affect 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 quantitation limit and above the detection limit.
- 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.

**** Surrogate recovered outside laboratory control limit.**

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	



Form 2 - Surrogate Recoveries

Project Name: Cal A/B Launcher

Work Orders : 519768,

Lab Batch #: 982033

Sample: 519768-001 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/23/15 13:07

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	99.8	102	70-135	
o-Terphenyl	45.4	49.9	91	70-135	

Lab Batch #: 982033

Sample: 519768-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/23/15 13:43

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	99.9	100	70-135	
o-Terphenyl	44.2	50.0	88	70-135	

Lab Batch #: 982033

Sample: 519768-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/23/15 14:21

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.8	99.5	98	70-135	
o-Terphenyl	41.9	49.8	84	70-135	

Lab Batch #: 982033

Sample: 519768-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/23/15 14:53

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	113	100	113	70-135	
o-Terphenyl	49.4	50.0	99	70-135	

Lab Batch #: 982003

Sample: 519768-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/23/15 17:46

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0290	0.0300	97	80-120	
4-Bromofluorobenzene	0.0357	0.0300	119	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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



Form 2 - Surrogate Recoveries

Project Name: Cal A/B Launcher

Work Orders : 519768,

Lab Batch #: 982003

Sample: 519768-002 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/23/15 18:03

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0296	0.0300	99	80-120	
4-Bromofluorobenzene	0.0359	0.0300	120	80-120	

Lab Batch #: 982033

Sample: 519768-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/23/15 18:12

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.0	99.8	96	70-135	
o-Terphenyl	45.0	49.9	90	70-135	

Lab Batch #: 982033

Sample: 519768-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/23/15 18:48

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.8	99.8	99	70-135	
o-Terphenyl	46.4	49.9	93	70-135	

Lab Batch #: 982003

Sample: 519768-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/23/15 18:52

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0305	0.0300	102	80-120	
4-Bromofluorobenzene	0.0358	0.0300	119	80-120	

Lab Batch #: 982003

Sample: 519768-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/23/15 19:09

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0288	0.0300	96	80-120	
4-Bromofluorobenzene	0.0342	0.0300	114	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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



Form 2 - Surrogate Recoveries

Project Name: Cal A/B Launcher

Work Orders : 519768,

Lab Batch #: 982033

Sample: 519768-007 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/23/15 19:22

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.6	99.5	98	70-135	
o-Terphenyl	46.2	49.8	93	70-135	

Lab Batch #: 982003

Sample: 519768-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/23/15 19:25

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0244	0.0300	81	80-120	
4-Bromofluorobenzene	0.0260	0.0300	87	80-120	

Lab Batch #: 982003

Sample: 519768-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/23/15 19:42

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0303	0.0300	101	80-120	
4-Bromofluorobenzene	0.0354	0.0300	118	80-120	

Lab Batch #: 982033

Sample: 519768-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/23/15 19:55

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	121	99.6	121	70-135	
o-Terphenyl	57.4	49.8	115	70-135	

Lab Batch #: 982003

Sample: 519768-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/23/15 19:57

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0359	0.0300	120	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: Cal A/B Launcher

Work Orders : 519768,

Lab Batch #: 982033

Sample: 519768-009 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/23/15 20:35

SURROGATE RECOVERY STUDY

TPH by SW 8015B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	98.2	99.5	99	70-135	
o-Terphenyl	46.2	49.8	93	70-135	

Lab Batch #: 982003

Sample: 519768-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/24/15 08:59

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0344	0.0300	115	80-120	
4-Bromofluorobenzene	0.0286	0.0300	95	80-120	

Lab Batch #: 982003

Sample: 519768-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/24/15 10:54

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0346	0.0300	115	80-120	
4-Bromofluorobenzene	0.0331	0.0300	110	80-120	

Lab Batch #: 982033

Sample: 701239-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 11/20/15 11:33

SURROGATE RECOVERY STUDY

TPH by SW 8015B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	100	100	100	70-135	
o-Terphenyl	43.7	50.0	87	70-135	

Lab Batch #: 982003

Sample: 701277-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 11/23/15 17:29

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0359	0.0300	120	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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



Form 2 - Surrogate Recoveries

Project Name: Cal A/B Launcher

Work Orders : 519768,

Lab Batch #: 982033

Sample: 701239-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 11/20/15 12:08

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	119	100	119	70-135	
o-Terphenyl	46.6	50.0	93	70-135	

Lab Batch #: 982003

Sample: 701277-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 11/23/15 16:38

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0253	0.0300	84	80-120	
4-Bromofluorobenzene	0.0305	0.0300	102	80-120	

Lab Batch #: 982033

Sample: 701239-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 11/20/15 12:47

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	100	116	70-135	
o-Terphenyl	44.4	50.0	89	70-135	

Lab Batch #: 982003

Sample: 701277-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 11/23/15 16:54

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0249	0.0300	83	80-120	
4-Bromofluorobenzene	0.0311	0.0300	104	80-120	

Lab Batch #: 982033

Sample: 519769-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/21/15 09:15

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	105	99.8	105	70-135	
o-Terphenyl	37.9	49.9	76	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: Cal A/B Launcher

Work Orders : 519768,

Lab Batch #: 982003

Sample: 519768-001 S / MS

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/23/15 20:31

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0326	0.0300	109	80-120	
4-Bromofluorobenzene	0.0320	0.0300	107	80-120	

Lab Batch #: 982033

Sample: 519769-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/21/15 09:54

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.7	99.9	97	70-135	
o-Terphenyl	35.1	50.0	70	70-135	

Lab Batch #: 982003

Sample: 519768-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/23/15 20:47

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0291	0.0300	97	80-120	
4-Bromofluorobenzene	0.0345	0.0300	115	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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

Project Name: Cal A/B Launcher

Work Order #: 519768

Analyst: SYG

Lab Batch ID: 982003

Units: mg/kg

Date Prepared: 11/23/2015

Batch #: 1

Sample: 701277-1-BKS

Project ID:

Date Analyzed: 11/23/2015

Matrix: Solid

BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blank Spike Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
BTEX by EPA 8021B											
Benzene	<0.00100	0.100	0.0909	91	0.100	0.0930	93	2	70-130	35	
Toluene	<0.00200	0.100	0.0907	91	0.100	0.0949	95	5	70-130	35	
Ethylbenzene	<0.00100	0.100	0.0951	95	0.100	0.0994	99	4	71-129	35	
m,p-Xylenes	<0.00200	0.200	0.197	99	0.201	0.208	103	5	70-135	35	
o-Xylene	<0.00100	0.100	0.0931	93	0.100	0.0981	98	5	71-133	35	

Date Prepared: 11/20/2015

Batch #: 1

Date Analyzed: 11/21/2015

Matrix: Solid

Analyst: MNR

Lab Batch ID: 981896

Sample: 701200-1-BKS

Units: mg/kg

BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blank Spike Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Chloride	<2.00	50.0	50.4	101	50.0	49.9	100	1	90-110	20	

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

Project Name: Cal A/B Launcher

Work Order #: 519768

Analyst: DAT

Lab Batch ID: 982154

Units: mg/L

Date Prepared: 11/25/2015

Batch #: 1

Sample: 701344-1-BKS

Project ID:

Date Analyzed: 11/25/2015

Matrix: Water

BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Units:	mg/L										
Analytes	TCLP Mercury by SW 7470A										
	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
Mercury	<0.000100	0.00500	0.00508	102	0.00500	0.00513	103	1	85-115	20	

Analyst: DAT

Lab Batch ID: 982158

Units: mg/L

Date Prepared: 11/25/2015

Batch #: 1

Sample: 701333-1-BKS

Date Analyzed: 11/25/2015

Matrix: Water

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Units: mg/L		TCLP Metals per ICP by SW846 6010B									
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
Arsenic	<0.0250	2.50	2.46	98	2.50	2.47	99	0	85-115	20	
Barium	<0.0250	2.50	2.31	92	2.50	2.33	93	1	85-115	20	
Cadmium	<0.0125	2.50	2.32	93	2.50	2.32	93	0	85-115	20	
Chromium	<0.0125	2.50	2.28	91	2.50	2.34	94	3	85-115	20	
Lead	<0.0300	2.50	2.23	89	2.50	2.23	89	0	85-115	20	
Selenium	<0.0250	2.50	2.56	102	2.50	2.58	103	1	85-115	20	
Silver	<0.0100	2.50	2.25	90	2.50	2.29	92	2	85-115	20	

Relative Percent Difference RPD = $200 * [(C-F)/(C+F)]$

Blank Spike Recovery [D] = $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] = $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



BS / BSD Recoveries

Project Name: Cal A/B Launcher



Work Order #: 519768

Analyst: PJB

Lab Batch ID: 982033

Units: mg/kg

Date Prepared: 11/20/2015

Batch #: 1

Sample: 701239-1-BKS

Project ID:

Date Analyzed: 11/20/2015

Matrix: Solid

BLANK / BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

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
TPH by SW 8015B											
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	977	98	1000	1000	100	2	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	1120	112	1000	1120	112	0	70-135	55	

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: Cal A/B Launcher



Work Order #: 519768

Lab Batch #: 981896

Date Analyzed: 11/21/2015

QC- Sample ID: 519702-001 S

Reporting Units: mg/kg

Project ID:

Analyst: MNR

Date Prepared: 11/20/2015

Batch #: 1

Matrix: Soil

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	138	1000	1140	100	80-120	

Lab Batch #: 981896

Date Analyzed: 11/23/2015

QC- Sample ID: 519768-002 S

Reporting Units: mg/kg

Date Prepared: 11/20/2015

Batch #: 1

Analyst: MNR

Matrix: Soil

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	10.4	250	263	101	80-120	

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

BRL - Below Reporting Limit



Form 3 - MS / MSD Recoveries



Project Name: Cal A/B Launcher

Work Order #: 519768
Lab Batch ID: 982003
Date Analyzed: 11/23/2015
Reporting Units: mg/kg

QC- Sample ID: 519768-001 S
Date Prepared: 11/23/2015
Project ID: 519768
Batch #: 1
Matrix: Soil
Analyst: SYG

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00101	0.101	0.0810	80	0.101	0.0892	88	10	70-130	35	
Toluene	<0.00202	0.101	0.0815	81	0.101	0.0873	86	7	70-130	35	
Ethylbenzene	<0.00101	0.101	0.0815	81	0.101	0.0906	90	11	71-129	35	
m,p-Xylenes	<0.00202	0.202	0.166	82	0.202	0.187	93	12	70-135	35	
o-Xylene	<0.00101	0.101	0.0815	81	0.101	0.0907	90	11	71-133	35	

Lab Batch ID: 982154
Date Analyzed: 11/25/2015
Reporting Units: mg/L
QC- Sample ID: 519768-001 S
Date Prepared: 11/25/2015
Project ID: 519768
Batch #: 1
Matrix: Soil
Analyst: DAT

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Analytes	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
Mercury	<0.000100	0.00500	0.00507	101	0.00500	0.00507	101	0	75-125	20	

Matrix Spike Percent Recovery $[D] = 100 \times (C-A)/B$
Relative Percent Difference $RPD = 200 \times |(C-F)/(C+F)|$
ND = Not Detected, I = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



Form 3 - MS / MSD Recoveries

Project Name: Cal A/B Launcher



Work Order #: 519768
Lab Batch ID: 982158
Date Analyzed: 11/25/2015
Reporting Units: mg/L

Project ID: 519768-001 S
Batch #: 1
Matrix: Soil
QC-Sample ID: 519768-001 S
Date Prepared: 11/25/2015
Analyst: DAT

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TCLP Metals per ICP by SW846 6010B Analytes	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
Arsenic	<0.0250	2.50	2.43	97	2.50	2.42	97	0	75-125	20	
Barium	0.364	2.50	2.54	87	2.50	2.56	88	1	75-125	20	
Cadmium	<0.0125	2.50	2.10	84	2.50	2.11	84	0	75-125	20	
Chromium	<0.0125	2.50	2.29	92	2.50	2.29	92	0	75-125	20	
Lead	<0.0300	2.50	2.07	83	2.50	2.07	83	0	75-125	20	
Selenium	<0.0250	2.50	2.55	102	2.50	2.54	102	0	75-125	20	
Silver	<0.0100	2.50	2.31	92	2.50	2.33	93	1	75-125	20	

Lab Batch ID: 982033
Date Analyzed: 11/21/2015
Reporting Units: mg/kg

QC-Sample ID: 519769-001 S
Batch #: 1
Matrix: Soil
Date Prepared: 11/20/2015
Analyst: PJB

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW 8015B Analytes	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-C10 Gasoline Range Hydrocarbons	<15.0	998	995	100	999	929	93	7	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	998	1050	105	999	986	99	6	70-135	35	

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

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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Not Calculable - Sample amount is > 4 times the amount spiked.



ANALYSIS REQUEST & CHAIN OF CUSTODY RECORD

☐ 4143 Greenbriar Drive, Stafford, TX 77477 281-240-4200
☐ 5332, Blackberry Drive, San Antonio, TX 78238 210-509-3394

☐ 9701 Harry Hines Blvd., Dallas, TX 75220 214-902-0300
☐ 12600 West 1-20 East, Odessa, TX 79765 432-563-1800

Serial #: 330844 Page 1 of 2

Company City Talton, GA Phone 575-689-5148

Lab Only: 519768

Project Name-Location Atesia, NM, B8245 Project ID 575-689-5148

TAT: ASAP 5h 12h 24h 48h 3d 7d 10d 21d Standard TAT is project specific. It is typically 5-7 Working Days for level II and 10+ Working days for level III and IV data.

Project State: TX, AL, FL, GA, LA, MS, NC, NJ, PA, SC, TN, UT Other NM Proj. Manager (PM) Shunie Bradford

Remarks

E-mail Results to BPM and Shunie Bradford Fax No:

Invoice to ☐ Accounting ☐ Inc. Invoice with Final Report ☐ Invoice must have a P.O.

Bill to: Rachel Johnson - ETP

Quote/Pricing: P.O. No: ☐ Call for P.O.

Reg Program: UST DRY-CLEAN Land-Fill Waste-Disp NPDES DW TRRP

QAPP Per-Contract CLP AGCEE NAVY DOE DOD USACE OTHER:

Special DLS (GW DW QAPP MDLs RLS See Lab PM Included Cell PM)

Sampler Name Shunie Bradford Signature Shunie Bradford

Sample ID	Sampling Date	Time	Depth	Matrix	Composite	Grab	# Containers	Container Size	Container Type	Preservatives	VOA: Full-List E	VOA: PP TCL	PAHs SIM 8	TX-1005 DRO	SVOCs: Full-List	OC Pesticides P	Metals: RCRA-8	SPLP - (TCLP)	EDB / DBCP	TPH 805	BTEX 8021	Chlorides	TATASAP 5h	Addn: PAH above	Hold Samples (Su	Sample Clean-up	Addn:
			ft' In" m																								
C-1	11/10/14	18:56	0' 3		V	I	403	C	C									V	V	V	V						
C-2		12:58																									
C-3		13:00																									
C-5		13:06																									
C-6		13:03																									
Ac-1		13:16																									
Ac-2		13:18																									
Ac-3		13:24																									
Ac-4		13:26																									
Relinquished by (Initials and Sign)	Date & Time	Relinquished to (Initials and Sign)	Date & Time	Total Containers per COC:	Cooler Temp: °C																						
Shunie Bradford	11/19/15 08:05	Shunie Bradford	11/19/15 8:05	9	16	Otherwise agreed on writing. Reports are the Intellectual Property of XENCO until paid. Samples will be held 30 days after final report is e-mailed unless hereby requested. Rush Charges and Collection Fees are pre-approved if needed.																					

Preservatives: Various (V), HCl pH<2 (H), H2SO4 pH<2 (S), HNO3 pH<2 (N), Asbc Acid&NaOH (A), Zn&NaOH (Z), (Cool, <4C) (C), None (NA), See Label (L), Other (O)
Cont. Size: 4oz (4), 8oz (8), 32oz (32), 40ml VOA (40), 1L (1), 500ml (5), Tadar Bag (B), Various (V), Other _____
Cont. Type: Glass Amb (A), Glass Clear (C), Plastic (P), Various (V)
Matrix: Air (A), Product (P), Solid (S), Water (W), Liquid (L)

Notice: Signature of this document and relinquishment of these samples constitutes a valid purchase order from client company to Xenco Laboratories and its affiliates, subcontractors and assigns under Xenco's standard terms and conditions of service unless previously negotiated under a fully executed client contract.

Committed to Excellence in Service and Quality

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XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In



Client: Talon LPE

Date/ Time Received: 11/19/2015 08:05:00 AM

Work Order #: 519768

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	6
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Sample instructions complete on Chain of Custody?	Yes
#9 Any missing/extra samples?	No
#10 Chain of Custody signed when relinquished/ received?	Yes
#11 Chain of Custody agrees with sample label(s)?	Yes
#12 Container label(s) legible and intact?	Yes
#13 Sample matrix/ properties agree with Chain of Custody?	Yes
#14 Samples in proper container/ bottle?	Yes
#15 Samples properly preserved?	Yes
#16 Sample container(s) intact?	Yes
#17 Sufficient sample amount for indicated test(s)?	Yes
#18 All samples received within hold time?	Yes
#19 Subcontract of sample(s)?	No
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	N/A
#21 <2 for all samples preserved with HNO ₃ , HCL, H ₂ SO ₄ ? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	N/A
#22 >10 for all samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH?	N/A

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:

PH Device/Lot#:

Checklist completed by:

Carley Owens

Carley Owens

Date: 11/19/2015

Checklist reviewed by:

Kelsey Brooks

Kelsey Brooks

Date: 11/19/2015

Analytical Report 519769

**for
Talon LPE**

Project Manager: Sheldon Hitchcock

Cal A/B Launcher

25-NOV-15

Collected By: Client



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-15-19), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
Oklahoma (9218)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Texas (T104704477), Louisiana (04176), USDA (P330-07-00105)

Xenco-Lakeland: Florida (E84098)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

Xenco Tucson (EPA Lab code: AZ000989): Arizona (AZ0758)



25-NOV-15

Project Manager: **Sheldon Hitckcock**
Talon LPE
408 W. Texas St.
Artesia, NM 88210

Reference: XENCO Report No(s): **519769**
Cal A/B Launcher
Project Address: NM

Sheldon Hitckcock:

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(s) 519769. 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. The uncertainty of measurement associated with the results of analysis reported is available upon request. 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. 519769 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,

Julian Martinez
Project Manager

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Sample Cross Reference 519769



Talon LPE, Artesia, NM

Cal A/B Launcher

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SP-1	S	11-18-15 13:37	- 0 ft	519769-001



CASE NARRATIVE



Client Name: Talon LPE

Project Name: Cal A/B Launcher

Project ID:

Work Order Number(s): 519769

Report Date: 25-NOV-15

Date Received: 11/19/2015

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analysis Summary 519769

Talon LPE, Artesia, NM
Project Name: Cal A/B Launcher

Date Received in Lab: Thu Nov-19-15 08:05 am
Report Date: 25-NOV-15
Project Manager: Kelsey Brooks

Project Id:
Contact: Sheldon Hittcock
Project Location: NM

Analysis Requested	Lab Id: 519769-001				
	Field Id:	Depth:	Matrix:	Sampled:	
		-0 ft	SOIL	Nov-18-15 13:37	
TCLP Mercury by SW 7470A SUB: T104704295-TX	Extracted:	Nov-25-15 07:45			
	Analyzed:	Nov-25-15 11:43			
	Units/RL:	mg/L RL			
Mercury		ND 0.000100			
TCLP Metals per ICP by SW846 6010B SUB: T104704295-TX	Extracted:	Nov-25-15 05:45			
	Analyzed:	Nov-25-15 11:46			
	Units/RL:	mg/L RL			
Arsenic		ND 0.0250			
Barium		0.399 0.0250			
Cadmium		ND 0.0125			
Chromium		ND 0.0125			
Lead		ND 0.0300			
Selenium		ND 0.0250			
Silver		ND 0.0100			

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Julian Martinez
Project Manager



Certificate of Analysis Summary 519769

Talon LPE, Artesia, NM

Project Name: Cal A/B Launcher

Project Id:

Contact: Sheldon Hitecock

Project Location: NM

Date Received in Lab: Thu Nov-19-15 08:05 am

Report Date: 25-NOV-15

Project Manager: Kelsey Brooks



Analysis Requested	Lab Id:		519769-001	SP-1	0 ft	SOIL	Nov-18-15 13:37				
	Field Id:	Depth:									
BTEX by EPA 8021B	Matrix:										
	Sampled:										
	Extracted:										
	Analyzed:										
	Units/RL:										
Benzene											
Toluene											
Ethylbenzene											
m,p-Xylenes											
o-Xylene											
Total Xylenes											
Total BTEX											
Inorganic Anions by EPA 300/300.1	Extracted:										
	Analyzed:										
	Units/RL:										
Chloride											
TPH by SW 8015B	Extracted:										
	Analyzed:										
	Units/RL:										
C6-C10 Gasoline Range Hydrocarbons											
C10-C28 Diesel Range Hydrocarbons											
C28-C35 Oil Range Hydrocarbons											
Total TPH											

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Julian Martinez
Project 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 affect the recovery of the spike concentration. This condition could also affect 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 quantitation limit and above the detection limit.
- 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.
- **** Surrogate recovered outside laboratory control limit.
- BRL** Below Reporting Limit.
- RL** Reporting Limit
- MDL** Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection
- PQL** Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation
- DL** Method Detection Limit
- NC** Non-Calculable
- +** NELAC certification not offered for this compound.
- *** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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(770) 449-8800	(770) 449-5477
(602) 437-0330	



Form 2 - Surrogate Recoveries

Project Name: Cal A/B Launcher

Work Orders : 519769, 519769

Lab Batch #: 982003

Sample: 519769-001 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/23/15 20:14

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0269	0.0300	90	80-120	
4-Bromofluorobenzene	0.0348	0.0300	116	80-120	

Lab Batch #: 982033

Sample: 519769-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/23/15 22:52

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.2	99.8	91	70-135	
o-Terphenyl	42.4	49.9	85	70-135	

Lab Batch #: 982033

Sample: 701239-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 11/20/15 11:33

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	100	100	70-135	
o-Terphenyl	43.7	50.0	87	70-135	

Lab Batch #: 982003

Sample: 701277-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 11/23/15 17:29

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0359	0.0300	120	80-120	

Lab Batch #: 982033

Sample: 701239-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 11/20/15 12:08

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	119	100	119	70-135	
o-Terphenyl	46.6	50.0	93	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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



Form 2 - Surrogate Recoveries

Project Name: Cal A/B Launcher

Work Orders : 519769, 519769

Project ID:

Lab Batch #: 982003

Sample: 701277-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 11/23/15 16:38

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0253	0.0300	84	80-120	
4-Bromofluorobenzene	0.0305	0.0300	102	80-120	

Lab Batch #: 982033

Sample: 701239-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 11/20/15 12:47

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	100	116	70-135	
o-Terphenyl	44.4	50.0	89	70-135	

Lab Batch #: 982003

Sample: 701277-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 11/23/15 16:54

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0249	0.0300	83	80-120	
4-Bromofluorobenzene	0.0311	0.0300	104	80-120	

Lab Batch #: 982033

Sample: 519769-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 11/21/15 09:15

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	105	99.8	105	70-135	
o-Terphenyl	37.9	49.9	76	70-135	

Lab Batch #: 982003

Sample: 519768-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 11/23/15 20:31

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0326	0.0300	109	80-120	
4-Bromofluorobenzene	0.0320	0.0300	107	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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



Form 2 - Surrogate Recoveries

Project Name: Cal A/B Launcher

Work Orders : 519769, 519769

Project ID:

Lab Batch #: 982033

Sample: 519769-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/21/15 09:54

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.7	99.9	97	70-135	
o-Terphenyl	35.1	50.0	70	70-135	

Lab Batch #: 982003

Sample: 519768-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/23/15 20:47

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0291	0.0300	97	80-120	
4-Bromofluorobenzene	0.0345	0.0300	115	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



BS / BSD Recoveries



Project Name: Cal A/B Launcher

Work Order #: 519769, 519769

Analyst: SYG

Lab Batch ID: 982003

Units: mg/kg

Date Prepared: 11/23/2015
Batch #: 1

Sample: 701277-1-BKS

Project ID:

Date Analyzed: 11/23/2015

Matrix: Solid

BLANK / BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blank Spike Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
BTEX by EPA 8021B											
Benzene	<0.00100	0.100	0.0909	91	0.100	0.0930	93	2	70-130	35	
Toluene	<0.00200	0.100	0.0907	91	0.100	0.0949	95	5	70-130	35	
Ethylbenzene	<0.00100	0.100	0.0951	95	0.100	0.0994	99	4	71-129	35	
m,p-Xylenes	<0.00200	0.200	0.197	99	0.201	0.208	103	5	70-135	35	
o-Xylene	<0.00100	0.100	0.0931	93	0.100	0.0981	98	5	71-133	35	

Analyst: MNR

Lab Batch ID: 981896

Units: mg/kg

Date Prepared: 11/20/2015
Batch #: 1

Sample: 701200-1-BKS

Date Analyzed: 11/21/2015

Matrix: Solid

BLANK / BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blank Spike Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<2.00	50.0	50.4	101	50.0	49.9	100	1	90-110	20	

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

Project Name: Cal A/B Launcher

Work Order #: 519769, 519769

Analyst: DAT

Lab Batch ID: 982154

Units: mg/L

Date Prepared: 11/25/2015

Batch #: 1

Sample: 701344-1-BKS

Project ID:

Date Analyzed: 11/25/2015

Matrix: Water

BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY													
Units:	mg/L												
		TCLP Mercury by SW 7470A	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
Analytes													
Mercury			<0.000100	0.00500	0.00508	102	0.00500	0.00513	103	1	85-115	20	

Date Prepared: 11/25/2015

Batch #: 1

Sample: 701333-1-BKS

Date Analyzed: 11/25/2015

Matrix: Water

Units: mg/L		BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
TCLP Metals per ICP by SW846 6010B		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
Analytes												
	Arsenic	<0.0250	2.50	2.46	98	2.50	2.47	99	0	85-115	20	
	Barium	<0.0250	2.50	2.31	92	2.50	2.33	93	1	85-115	20	
	Cadmium	<0.0125	2.50	2.32	93	2.50	2.32	93	0	85-115	20	
	Chromium	<0.0125	2.50	2.28	91	2.50	2.34	94	3	85-115	20	
	Lead	<0.0300	2.50	2.23	89	2.50	2.23	89	0	85-115	20	
	Selenium	<0.0250	2.50	2.56	102	2.50	2.58	103	1	85-115	20	
	Silver	<0.0100	2.50	2.25	90	2.50	2.29	92	2	85-115	20	

Relative Percent Difference RPD = $200 * [(C-F)/(C+F)]$

Blank Spike Recovery [D] = $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] = $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



BS / BSD Recoveries



Project Name: Cal A/B Launcher

Work Order #: 519769, 519769

Analyst: PJB

Date Prepared: 11/20/2015

Project ID:

Date Analyzed: 11/20/2015

Lab Batch ID: 982033

Sample: 701239-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK / BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

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
TPH by SW 8015B											
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	977	98	1000	1000	100	2	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	1120	112	1000	1120	112	0	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: Cal A/B Launcher



Work Order #: 519769

Lab Batch #: 981896

Date Analyzed: 11/21/2015

QC- Sample ID: 519702-001 S

Reporting Units: mg/kg

Project ID:

Analyst: MNR

Date Prepared: 11/20/2015

Batch #: 1

Matrix: Soil

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	138	1000	1140	100	80-120	

Lab Batch #: 981896

Date Analyzed: 11/23/2015

QC- Sample ID: 519768-002 S

Reporting Units: mg/kg

Date Prepared: 11/20/2015

Batch #: 1

Analyst: MNR

Matrix: Soil

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	10.4	250	263	101	80-120	

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

BRL - Below Reporting Limit



Form 3 - MS / MSD Recoveries

Project Name: Cal A/B Launcher



Work Order #: 519769

Lab Batch ID: 982003

Date Analyzed: 11/23/2015

Reporting Units: mg/kg

Project ID:

QC- Sample ID: 519768-001 S Batch #: 1 Matrix: Soil

Date Prepared: 11/23/2015 Analyst: SYG

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Analytes	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
BTEX by EPA 8021B											
Benzene	<0.00101	0.101	0.0810	80	0.101	0.0892	88	10	70-130	35	
Toluene	<0.00202	0.101	0.0815	81	0.101	0.0873	86	7	70-130	35	
Ethylbenzene	<0.00101	0.101	0.0815	81	0.101	0.0906	90	11	71-129	35	
m,p-Xylenes	<0.00202	0.202	0.166	82	0.202	0.187	93	12	70-135	35	
o-Xylene	<0.00101	0.101	0.0815	81	0.101	0.0907	90	11	71-133	35	

Lab Batch ID: 982154 QC- Sample ID: 519768-001 S Batch #: 1 Matrix: Soil

Date Analyzed: 11/25/2015 Date Prepared: 11/25/2015 Analyst: DAT

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Analytes	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
TCLP Mercury by SW 7470A											
Mercury	<0.000100	0.00500	0.00507	101	0.00500	0.00507	101	0	75-125	20	

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

ND = Not Detected, I = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQ = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is ≥ 4 times the amount spiked.

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



Form 3 - MS / MSD Recoveries



Project Name: Cal A/B Launcher

Work Order #: 519769

Lab Batch ID: 982158

Date Analyzed: 11/25/2015

Reporting Units: mg/L

Project ID:

QC- Sample ID: 519768-001 S Batch #: 1 Matrix: Soil

Date Prepared: 11/25/2015 Analyst: DAT

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TCLP Metals per ICP by SW846 6010B										
Analytes										
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
Arsenic	<0.0250	2.43	97	2.50	2.42	97	0	75-125	20	
Barium	0.364	2.54	87	2.50	2.56	88	1	75-125	20	
Cadmium	<0.0125	2.10	84	2.50	2.11	84	0	75-125	20	
Chromium	<0.0125	2.29	92	2.50	2.29	92	0	75-125	20	
Lead	<0.0300	2.07	83	2.50	2.07	83	0	75-125	20	
Selenium	<0.0250	2.55	102	2.50	2.54	102	0	75-125	20	
Silver	<0.0100	2.31	92	2.50	2.33	93	1	75-125	20	

Lab Batch ID: 982033

Date Analyzed: 11/21/2015

Reporting Units: mg/kg

QC- Sample ID: 519769-001 S

Date Prepared: 11/20/2015 Analyst: PJB

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW 8015B		Analytes									
	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-C10 Gasoline Range Hydrocarbons	<15.0	998	995	100	999	929	93	7	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	998	1050	105	999	986	99	6	70-135	35	

Matrix Spike Percent Recovery $[D] = 100 \times (C-A)/B$

Relative Percent Difference $RPD = 200 \times |(C-F)/(C+F)|$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQU = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

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

XENCO Laboratories

4143 Greenbrier Drive, Stamford, TX 77477 281-240-4200
5532, Blackberry Drive, San Antonio, TX 78238 210-509-3334

ANALYSIS REQUEST & CHAIN OF CUSTODY RECORD

5701 Harry Hines Blvd., Dallas, TX 75220 214-902-0300
12800 West I-20 East, Odessa, TX 79765 432-563-1800

Serial #: 330846

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Company: City		Phone	
TALON LP		Metesia, NM 88210 575-689-5148	
Project Name-Location		Previously done at XENCO Project ID	
CAL 413 Launching			
Proj. State: TX, AL, FL, GA, LA, MS, NC, NJ, PA, SC, TN, UT Other NM		Proj. Manager (PM) Johnnie Beardford	
E-mail Results to: EPM and Smithcheck@talonlp.com / Johnnie.Beardford@talonlp.com		Fax No: 505-689-5148	
Invoice to: Accounting Inc. Invoice with Final Report Invoice must have a P.O.		Bill to: Rachel Johnson -ETP	
Quote/Pricing:		P.O. No: Call for P.O.	
Reg Program: UST DRY-CLEAN Land-Fill Waste-Disp NPDES DW TRRP		QAPP Per-Contract CLP AGCEE NAVY DOE DOD USACE OTHER:	
Special DLS (GW DW QAPP MDLS RLS See Lab PM Included Call PM)			
Sampler Name	Johnnie Beardford	Signature	Johnnie Beardford
Sample ID	SP-1	Sampling Date	11/18/2014 13:37
		Depth	0' 5"
		Matrix	Composite
		Grab	# Containers
		Container Size	1 gal
		Container Type	C
		Preservatives	C
		VOA: Full-List BTEX-MTBE EIOH Oxyg VOHS VOAs	
		VOA: PP TCL DW Appdx-1 Appdx-2 CALL Other:	
		PAHs SIM 8310 8270	
		TX-1005 DRO GRO MAEPH MA VPH	
		SVOCs: Full-List DW BN&AE TCLP PP Appdx-2 CALL	
		OC Pesticides PCBs Herbicides OP Pesticides	
		Metals: RCRA-8 RCRA-4 Pb 13PP 23TAL Appdx 1 Appdx 2	
		SPLP - (CLP) (Metals) VOCs SVOCs Pest. Herb. PCBs	
		EDB / DBCP	
		TPH - 8015m	
		BETX - 8021 B	
		Chlorides	
		TATASAP 5h 12h 24h 48h 3d 5d 7d 10d 21d	
		Addn: PAH above mg/L W, mg/Kg S Highest Hit	
		Hold Samples (Surcharges will apply and are pre-approved)	
		Sample Clean-ups are pre-approved as needed	
		Remarks	
		Addn: Date Rcv. by: From:	
Relinquished by (Initials and Sign)	11/19/2015	Relinquished to (Initials and Sign)	11/19/15 8:05
1) Johnnie Beardford		2) Johnnie Beardford	
3) Rachel Johnson		4) Rachel Johnson	
5) Rachel Johnson		6) Rachel Johnson	

Preservatives: Various (V), HCl pH<2 (H), H2SO4 pH<2 (S), HNO3 pH<2 (N), Ascorbic Acid (A), ZnAc&NaOH (Z), (Cool <4C) (C), None (NA) See Label (L), Other (O)
Cont. Size: 4oz (4), 8oz (8), 32oz (32), 40ml VOA (40), 1L (1), 500ml (5), Tedlar Bag (B), Various (V), Other _____
Cont. Type: Glass Amb (A), Glass Clear (C), Plastic (P), Various (V)
Matrix: Air (A), Product (P), Solid (S), Water (W), Liquid (L)

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Notice: Signature of this document and relinquishment of these samples constitutes a valid purchase order from client company to Xenco Laboratories and its affiliates, subcontractors and assigns under Xenco's standard terms and conditions of service unless previously negotiated under a fully executed client contract.



XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In



Client: Talon LPE

Date/ Time Received: 11/19/2015 08:05:00 AM

Work Order #: 519769

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	6
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Sample instructions complete on Chain of Custody?	Yes
#9 Any missing/extra samples?	No
#10 Chain of Custody signed when relinquished/ received?	Yes
#11 Chain of Custody agrees with sample label(s)?	Yes
#12 Container label(s) legible and intact?	Yes
#13 Sample matrix/ properties agree with Chain of Custody?	Yes
#14 Samples in proper container/ bottle?	Yes
#15 Samples properly preserved?	Yes
#16 Sample container(s) intact?	Yes
#17 Sufficient sample amount for indicated test(s)?	Yes
#18 All samples received within hold time?	Yes
#19 Subcontract of sample(s)?	No
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	N/A
#21 <2 for all samples preserved with HNO ₃ , HCL, H ₂ SO ₄ ? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	N/A
#22 >10 for all samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH?	N/A

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:

PH Device/Lot#:

Checklist completed by:

Carley Owens
Carley Owens

Date: 11/19/2015

Checklist reviewed by:

Kelsey Brooks
Kelsey Brooks

Date: 11/19/2015