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Marshall & Winston, Inc.
Klein 16 State 2H
Sec. 16-T19S-R35E, Lea Co., NM
Affected Surface Area – 6,475 sq. ft. / .15 acre
GPS Coordinates: N32.66568 W103.45459

OCD Case Number 1RP-4680

APPROVED

NMOCD approves of the
remediation for 1RP-4680
and grants approval for
backfilling.

Marshall & Winston, Inc.

Klein 16 State 2H

Produced Water Spill (Some Oil)

Affected Surface Area - 6,475 sq. ft. / .15 acre

GPS Coordinates: N32.66568

W103.45459

BCC, Inc.

Land Reclamation Weed Control



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Marshall & Winston Klein 16 State 2H



**GPS Track and Confirmation Soil Sample Locations
After Excavation**

Marshall & Winston, Inc.
Klein 16 State 2H
OCD Case Number 1RP-4680

CONFIRMATION SOIL SAMPLES

Sample ID	Depth (in. or ft.)	Field or Lab Test	Benzene (mg/kg)	BTEX (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)	GPS Coordinates
Sample 2A	Sidewall	Lab			<25.0	<25.0	N32.665785 W103.454799
Sample 2B	Sidewall	Lab			<25.0	<25.0	N32.665827 W103.454584
Sample 2C	Sidewall	Lab			<25.0	<25.0	N32.665727 W103.454429
Sample 2D	Sidewall	Lab			67.1	<25.0	N32.665613 W103.454547
Sample 2E	Sidewall	Lab			<25.0	<25.0	N32.665654 W103.454750
2F - Bottom	48 in.	Lab			<25.0	177	N32.665768 W103.454752
2G - Bottom	54 in.	Lab			<25.0	<25.0	N32.665774 W103.454592
2H - Bottom	30 in.	Lab			<25.0	156	N32.665664 W103.454556
2I - Bottom	36 in.	Lab			<25.0	89.3	N32.665687 W103.454689



07 11 2017



07 11 2017



07/11/2017



07 11 2017



07/11/2017



07 11 2017



07/11/2017



07-11-2017



07 11 2017



Certificate of Analysis Summary 558901

BCC, Inc.-Lubbock, Lubbock, TX

Project Name: Marshall & Winston, Inc.

Project Id:

Contact: Paul Porter

Project Location: Klein 16 State 2H (NM)

Date Received in Lab: Mon Jul-31-17 03:50 pm

Report Date: 04-AUG-17

Project Manager: Brandi Ritcherson

Analysis Requested	Lab Id:	558901-001	558901-002	558901-003	558901-004	558901-005	558901-006
	Field Id:	Sample 2A	Sample 2B	Sample 2C	Sample 2D	Sample 2E	Sample 2F-Bottom
	Depth:						
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Jul-24-17 14:00	Jul-24-17 14:10	Jul-24-17 14:20	Jul-24-17 14:30	Jul-24-17 14:40	Jul-24-17 15:00
Chloride by EPA 300	Extracted:	Aug-03-17 10:00	Aug-03-17 10:00	Aug-03-17 10:00	Aug-03-17 10:00	Aug-03-17 10:00	Aug-03-17 10:00
	Analyzed:	Aug-03-17 20:03	Aug-03-17 20:15	Aug-03-17 20:28	Aug-03-17 20:40	Aug-03-17 21:17	Aug-03-17 21:30
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<25.0 25.0	<25.0 25.0	<25.0 25.0	<25.0 25.0	<25.0 25.0	177 125
DRO-ORO By SW8015B	Extracted:	Aug-01-17 13:32	Aug-01-17 13:32	Aug-01-17 13:32	Aug-01-17 13:32	Aug-01-17 13:32	Aug-01-17 13:32
	Analyzed:	Aug-01-17 16:30	Aug-01-17 18:10	Aug-01-17 18:43	Aug-01-17 19:15	Aug-01-17 19:48	Aug-01-17 20:21
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Diesel Range Organics (DRO)		<25.0 25.0	<25.0 25.0	<25.0 25.0	26.2 25.0	<25.0 25.0	<25.0 25.0
Oil Range Hydrocarbons (ORO)		<25.0 25.0	<25.0 25.0	<25.0 25.0	40.9 25.0	<25.0 25.0	<25.0 25.0
TPH GRO by EPA 8015 Mod.	Extracted:	Aug-01-17 14:00	Aug-01-17 14:00	Aug-01-17 14:00	Aug-01-17 14:00	Aug-01-17 14:00	Aug-01-17 14:00
	Analyzed:	Aug-02-17 03:33	Aug-02-17 05:23	Aug-02-17 05:50	Aug-02-17 06:17	Aug-02-17 06:44	Aug-02-17 07:11
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
TPH-GRO		<3.94 3.94	<3.82 3.82	<3.68 3.68	<3.75 3.75	<3.75 3.75	<3.93 3.93

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.

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Brandi Ritcherson
Project Manager



Certificate of Analysis Summary 558901

BCC, Inc.-Lubbock, Lubbock, TX

Project Name: Marshall & Winston, Inc.

Project Id:

Contact: Paul Porter

Project Location: Klein 16 State 2H (NM)

Date Received in Lab: Mon Jul-31-17 03:50 pm

Report Date: 04-AUG-17

Project Manager: Brandi Ritcherson

Analysis Requested	Lab Id:	558901-007	558901-008	558901-009			
	Field Id:	Sample 2G-Bottom	Sample 2H-Bottom	Sample 2I-Bottom			
	Depth:						
	Matrix:	SOIL	SOIL	SOIL			
	Sampled:	Jul-24-17 15:10	Jul-24-17 15:20	Jul-24-17 15:30			
Chloride by EPA 300	Extracted:	Aug-03-17 10:00	Aug-03-17 10:00	Aug-03-17 10:00			
	Analyzed:	Aug-03-17 22:32	Aug-03-17 22:44	Aug-03-17 22:57			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		<25.0 25.0	156 125	89.3 25.0			
DRO-ORO By SW8015B	Extracted:	Aug-01-17 13:32	Aug-01-17 13:32	Aug-01-17 13:32			
	Analyzed:	Aug-01-17 20:54	Aug-01-17 21:26	Aug-01-17 22:00			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Diesel Range Organics (DRO)		<25.0 25.0	<25.0 25.0	<25.0 25.0			
Oil Range Hydrocarbons (ORO)		<25.0 25.0	<25.0 25.0	<25.0 25.0			
TPH GRO by EPA 8015 Mod.	Extracted:	Aug-01-17 14:00	Aug-01-17 14:00	Aug-01-17 14:00			
	Analyzed:	Aug-02-17 07:38	Aug-02-17 08:06	Aug-02-17 08:32			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
TPH-GRO		<3.69 3.69	<3.77 3.77	<3.69 3.69			

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.

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Brandi Ritcherson
Project Manager

Analytical Report 558901

**for
BCC, Inc.-Lubbock**

**Project Manager: Paul Porter
Marshall & Winston, Inc.**

04-AUG-17

Collected By: Client



6701 Aberdeen, Suite 9 Lubbock, TX 79424

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

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400)
Xenco-San Antonio: Texas (T104704534)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)



04-AUG-17

Project Manager: **Paul Porter**

BCC, Inc.-Lubbock

3302 122nd St

P.O. Box 53427

Lubbock, TX 79453

Reference: XENCO Report No(s): **558901**

Marshall & Winston, Inc.

Project Address: Klein 16 State 2H (NM)

Paul Porter :

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) 558901. 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. 558901 will be filed for 45 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,

A handwritten signature in black ink that reads 'Brandi Ritcherson'. The signature is written in a cursive, flowing style.

Brandi Ritcherson

Project Manager

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

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America



Sample Cross Reference 558901

BCC, Inc.-Lubbock, Lubbock, TX

Marshall & Winston, Inc.

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Sample 2A	S	07-24-17 14:00		558901-001
Sample 2B	S	07-24-17 14:10		558901-002
Sample 2C	S	07-24-17 14:20		558901-003
Sample 2D	S	07-24-17 14:30		558901-004
Sample 2E	S	07-24-17 14:40		558901-005
Sample 2F-Bottom	S	07-24-17 15:00		558901-006
Sample 2G-Bottom	S	07-24-17 15:10		558901-007
Sample 2H-Bottom	S	07-24-17 15:20		558901-008
Sample 2I-Bottom	S	07-24-17 15:30		558901-009



CASE NARRATIVE

Client Name: BCC, Inc.-Lubbock

Project Name: Marshall & Winston, Inc.

Project ID:

Work Order Number(s): 558901

Report Date: 04-AUG-17

Date Received: 07/31/2017

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3023779 TPH GRO by EPA 8015 Mod.

Lab Sample ID 558901-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). TPH-GRO Relative Percent Difference (RPD) between matrix spike and duplicate was above quality control limits.

Samples in the analytical batch are: 558901-001, -002, -003, -004, -005, -006, -007, -008, -009

Outlier/s are due to possible matrix interference.



Certificate of Analytical Results 558901

BCC, Inc.-Lubbock, Lubbock, TX

Marshall & Winston, Inc.

Sample Id: **Sample 2A**

Matrix: Soil

Date Received: 07.31.17 15.50

Lab Sample Id: 558901-001

Date Collected: 07.24.17 14.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: RNL

% Moisture:

Analyst: RNL

Date Prep: 08.03.17 10.00

Basis: Wet Weight

Seq Number: 3024008

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<25.0	25.0	mg/kg	08.03.17 20.03	U	1

Analytical Method: DRO-ORO By SW8015B

Prep Method: SW8015P

Tech: PGM

% Moisture:

Analyst: PGM

Date Prep: 08.01.17 13.32

Basis: Wet Weight

Seq Number: 3023767

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	08.01.17 16.30	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<25.0	25.0	mg/kg	08.01.17 16.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Tricosane	638-67-5	80	%	65-144	08.01.17 16.30	
n-Triacontane	638-68-6	83	%	46-152	08.01.17 16.30	

Analytical Method: TPH GRO by EPA 8015 Mod.

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 08.01.17 14.00

Basis: Wet Weight

Seq Number: 3023779

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<3.94	3.94	mg/kg	08.02.17 03.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	87	%	76-123	08.02.17 03.33	
a,a,a-Trifluorotoluene	98-08-8	103	%	69-120	08.02.17 03.33	



Certificate of Analytical Results 558901

BCC, Inc.-Lubbock, Lubbock, TX

Marshall & Winston, Inc.

Sample Id: **Sample 2B**

Matrix: Soil

Date Received: 07.31.17 15.50

Lab Sample Id: 558901-002

Date Collected: 07.24.17 14.10

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: RNL

% Moisture:

Analyst: RNL

Date Prep: 08.03.17 10.00

Basis: Wet Weight

Seq Number: 3024008

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<25.0	25.0	mg/kg	08.03.17 20.15	U	1

Analytical Method: DRO-ORO By SW8015B

Prep Method: SW8015P

Tech: PGM

% Moisture:

Analyst: PGM

Date Prep: 08.01.17 13.32

Basis: Wet Weight

Seq Number: 3023767

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	08.01.17 18.10	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<25.0	25.0	mg/kg	08.01.17 18.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Tricosane	638-67-5	92	%	65-144	08.01.17 18.10	
n-Triacontane	638-68-6	112	%	46-152	08.01.17 18.10	

Analytical Method: TPH GRO by EPA 8015 Mod.

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 08.01.17 14.00

Basis: Wet Weight

Seq Number: 3023779

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<3.82	3.82	mg/kg	08.02.17 05.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	89	%	76-123	08.02.17 05.23	
a,a,a-Trifluorotoluene	98-08-8	101	%	69-120	08.02.17 05.23	



Certificate of Analytical Results 558901

BCC, Inc.-Lubbock, Lubbock, TX

Marshall & Winston, Inc.

Sample Id: **Sample 2C**

Matrix: Soil

Date Received: 07.31.17 15.50

Lab Sample Id: 558901-003

Date Collected: 07.24.17 14.20

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: RNL

% Moisture:

Analyst: RNL

Date Prep: 08.03.17 10.00

Basis: Wet Weight

Seq Number: 3024008

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<25.0	25.0	mg/kg	08.03.17 20.28	U	1

Analytical Method: DRO-ORO By SW8015B

Prep Method: SW8015P

Tech: PGM

% Moisture:

Analyst: PGM

Date Prep: 08.01.17 13.32

Basis: Wet Weight

Seq Number: 3023767

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	08.01.17 18.43	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<25.0	25.0	mg/kg	08.01.17 18.43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Tricosane	638-67-5	93	%	65-144	08.01.17 18.43	
n-Triacontane	638-68-6	95	%	46-152	08.01.17 18.43	

Analytical Method: TPH GRO by EPA 8015 Mod.

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 08.01.17 14.00

Basis: Wet Weight

Seq Number: 3023779

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<3.68	3.68	mg/kg	08.02.17 05.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	89	%	76-123	08.02.17 05.50	
a,a,a-Trifluorotoluene	98-08-8	101	%	69-120	08.02.17 05.50	



Certificate of Analytical Results 558901

BCC, Inc.-Lubbock, Lubbock, TX

Marshall & Winston, Inc.

Sample Id: **Sample 2D**

Matrix: Soil

Date Received: 07.31.17 15.50

Lab Sample Id: 558901-004

Date Collected: 07.24.17 14.30

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: RNL

% Moisture:

Analyst: RNL

Date Prep: 08.03.17 10.00

Basis: Wet Weight

Seq Number: 3024008

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<25.0	25.0	mg/kg	08.03.17 20.40	U	1

Analytical Method: DRO-ORO By SW8015B

Prep Method: SW8015P

Tech: PGM

% Moisture:

Analyst: PGM

Date Prep: 08.01.17 13.32

Basis: Wet Weight

Seq Number: 3023767

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	26.2	25.0	mg/kg	08.01.17 19.15		1
Oil Range Hydrocarbons (ORO)	PHCG2835	40.9	25.0	mg/kg	08.01.17 19.15		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Tricosane	638-67-5	98	%	65-144	08.01.17 19.15	
n-Triacontane	638-68-6	146	%	46-152	08.01.17 19.15	

Analytical Method: TPH GRO by EPA 8015 Mod.

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 08.01.17 14.00

Basis: Wet Weight

Seq Number: 3023779

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<3.75	3.75	mg/kg	08.02.17 06.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	88	%	76-123	08.02.17 06.17	
a,a,a-Trifluorotoluene	98-08-8	100	%	69-120	08.02.17 06.17	



Certificate of Analytical Results 558901

BCC, Inc.-Lubbock, Lubbock, TX

Marshall & Winston, Inc.

Sample Id: **Sample 2E**

Matrix: Soil

Date Received: 07.31.17 15.50

Lab Sample Id: 558901-005

Date Collected: 07.24.17 14.40

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: RNL

% Moisture:

Analyst: RNL

Date Prep: 08.03.17 10.00

Basis: Wet Weight

Seq Number: 3024008

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<25.0	25.0	mg/kg	08.03.17 21.17	U	1

Analytical Method: DRO-ORO By SW8015B

Prep Method: SW8015P

Tech: PGM

% Moisture:

Analyst: PGM

Date Prep: 08.01.17 13.32

Basis: Wet Weight

Seq Number: 3023767

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	08.01.17 19.48	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<25.0	25.0	mg/kg	08.01.17 19.48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Tricosane	638-67-5	82	%	65-144	08.01.17 19.48	
n-Triacontane	638-68-6	88	%	46-152	08.01.17 19.48	

Analytical Method: TPH GRO by EPA 8015 Mod.

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 08.01.17 14.00

Basis: Wet Weight

Seq Number: 3023779

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<3.75	3.75	mg/kg	08.02.17 06.44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	86	%	76-123	08.02.17 06.44	
a,a,a-Trifluorotoluene	98-08-8	99	%	69-120	08.02.17 06.44	



Certificate of Analytical Results 558901

BCC, Inc.-Lubbock, Lubbock, TX

Marshall & Winston, Inc.

Sample Id: **Sample 2F-Bottom**

Matrix: Soil

Date Received: 07.31.17 15.50

Lab Sample Id: 558901-006

Date Collected: 07.24.17 15.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: RNL

% Moisture:

Analyst: RNL

Date Prep: 08.03.17 10.00

Basis: Wet Weight

Seq Number: 3024008

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	177	125	mg/kg	08.03.17 21.30	U	1

Analytical Method: DRO-ORO By SW8015B

Prep Method: SW8015P

Tech: PGM

% Moisture:

Analyst: PGM

Date Prep: 08.01.17 13.32

Basis: Wet Weight

Seq Number: 3023767

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	08.01.17 20.21	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<25.0	25.0	mg/kg	08.01.17 20.21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Tricosane	638-67-5	85	%	65-144	08.01.17 20.21	
n-Triacontane	638-68-6	89	%	46-152	08.01.17 20.21	

Analytical Method: TPH GRO by EPA 8015 Mod.

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 08.01.17 14.00

Basis: Wet Weight

Seq Number: 3023779

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<3.93	3.93	mg/kg	08.02.17 07.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	86	%	76-123	08.02.17 07.11	
a,a,a-Trifluorotoluene	98-08-8	101	%	69-120	08.02.17 07.11	



Certificate of Analytical Results 558901

BCC, Inc.-Lubbock, Lubbock, TX

Marshall & Winston, Inc.

Sample Id: **Sample 2G-Bottom**

Matrix: Soil

Date Received: 07.31.17 15.50

Lab Sample Id: 558901-007

Date Collected: 07.24.17 15.10

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: RNL

% Moisture:

Analyst: RNL

Date Prep: 08.03.17 10.00

Basis: Wet Weight

Seq Number: 3024009

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<25.0	25.0	mg/kg	08.03.17 22.32	U	1

Analytical Method: DRO-ORO By SW8015B

Prep Method: SW8015P

Tech: PGM

% Moisture:

Analyst: PGM

Date Prep: 08.01.17 13.32

Basis: Wet Weight

Seq Number: 3023767

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	08.01.17 20.54	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<25.0	25.0	mg/kg	08.01.17 20.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Tricosane	638-67-5	75	%	65-144	08.01.17 20.54	
n-Triacontane	638-68-6	73	%	46-152	08.01.17 20.54	

Analytical Method: TPH GRO by EPA 8015 Mod.

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 08.01.17 14.00

Basis: Wet Weight

Seq Number: 3023779

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<3.69	3.69	mg/kg	08.02.17 07.38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	88	%	76-123	08.02.17 07.38	
a,a,a-Trifluorotoluene	98-08-8	101	%	69-120	08.02.17 07.38	



Certificate of Analytical Results 558901

BCC, Inc.-Lubbock, Lubbock, TX

Marshall & Winston, Inc.

Sample Id: **Sample 2H-Bottom**

Matrix: Soil

Date Received: 07.31.17 15.50

Lab Sample Id: 558901-008

Date Collected: 07.24.17 15.20

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: RNL

% Moisture:

Analyst: RNL

Date Prep: 08.03.17 10.00

Basis: Wet Weight

Seq Number: 3024009

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	156	125	mg/kg	08.03.17 22.44	U	1

Analytical Method: DRO-ORO By SW8015B

Prep Method: SW8015P

Tech: PGM

% Moisture:

Analyst: PGM

Date Prep: 08.01.17 13.32

Basis: Wet Weight

Seq Number: 3023767

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	08.01.17 21.26	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<25.0	25.0	mg/kg	08.01.17 21.26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Tricosane	638-67-5	92	%	65-144	08.01.17 21.26	
n-Triacontane	638-68-6	117	%	46-152	08.01.17 21.26	

Analytical Method: TPH GRO by EPA 8015 Mod.

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 08.01.17 14.00

Basis: Wet Weight

Seq Number: 3023779

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<3.77	3.77	mg/kg	08.02.17 08.06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	87	%	76-123	08.02.17 08.06	
a,a,a-Trifluorotoluene	98-08-8	102	%	69-120	08.02.17 08.06	



Certificate of Analytical Results 558901

BCC, Inc.-Lubbock, Lubbock, TX

Marshall & Winston, Inc.

Sample Id: **Sample 2I-Bottom**

Matrix: Soil

Date Received: 07.31.17 15.50

Lab Sample Id: 558901-009

Date Collected: 07.24.17 15.30

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: RNL

% Moisture:

Analyst: RNL

Date Prep: 08.03.17 10.00

Basis: Wet Weight

Seq Number: 3024009

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	89.3	25.0	mg/kg	08.03.17 22.57	U	1

Analytical Method: DRO-ORO By SW8015B

Prep Method: SW8015P

Tech: PGM

% Moisture:

Analyst: PGM

Date Prep: 08.01.17 13.32

Basis: Wet Weight

Seq Number: 3023767

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	08.01.17 22.00	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<25.0	25.0	mg/kg	08.01.17 22.00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Tricosane	638-67-5	85	%	65-144	08.01.17 22.00	
n-Triacontane	638-68-6	100	%	46-152	08.01.17 22.00	

Analytical Method: TPH GRO by EPA 8015 Mod.

Prep Method: SW5030B

Tech: MIT

% Moisture:

Analyst: MIT

Date Prep: 08.01.17 14.00

Basis: Wet Weight

Seq Number: 3023779

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<3.69	3.69	mg/kg	08.02.17 08.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	88	%	76-123	08.02.17 08.32	
a,a,a-Trifluorotoluene	98-08-8	102	%	69-120	08.02.17 08.32	

- 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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(210) 509-3334	(210) 509-3335
(432) 563-1800	(432) 563-1713
(602) 437-0330	



QC Summary 558901

BCC, Inc.-Lubbock Marshall & Winston, Inc.

Analytical Method: Chloride by EPA 300

Seq Number: 3024008

MB Sample Id: 728736-1-BLK

Matrix: Solid

LCS Sample Id: 728736-1-BKS

Prep Method: E300P

Date Prep: 08.03.17

LCSD Sample Id: 728736-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<25.0	250	257	103	252	101	90-110	2	20	mg/kg	08.03.17 16:07	

Analytical Method: Chloride by EPA 300

Seq Number: 3024009

MB Sample Id: 728737-1-BLK

Matrix: Solid

LCS Sample Id: 728737-1-BKS

Prep Method: E300P

Date Prep: 08.03.17

LCSD Sample Id: 728737-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<25.0	250	258	103	251	100	90-110	3	20	mg/kg	08.03.17 22:07	

Analytical Method: Chloride by EPA 300

Seq Number: 3024008

Parent Sample Id: 558899-006

Matrix: Soil

MS Sample Id: 558899-006 S

Prep Method: E300P

Date Prep: 08.03.17

MSD Sample Id: 558899-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	174	250	335	64	335	64	80-120	0	20	mg/kg	08.03.17 18:36	X

Analytical Method: Chloride by EPA 300

Seq Number: 3024008

Parent Sample Id: 558901-004

Matrix: Soil

MS Sample Id: 558901-004 S

Prep Method: E300P

Date Prep: 08.03.17

MSD Sample Id: 558901-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<25.0	250	251	100	254	102	80-120	1	20	mg/kg	08.03.17 20:52	

Analytical Method: Chloride by EPA 300

Seq Number: 3024009

Parent Sample Id: 558901-009

Matrix: Soil

MS Sample Id: 558901-009 S

Prep Method: E300P

Date Prep: 08.03.17

MSD Sample Id: 558901-009 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<25.0	250	227	91	246	98	80-120	8	20	mg/kg	08.03.17 23:09	



QC Summary 558901

BCC, Inc.-Lubbock Marshall & Winston, Inc.

Analytical Method: DRO-ORO By SW8015B

Seq Number: 3023767

MB Sample Id: 728545-1-BLK

Matrix: Solid

LCS Sample Id: 728545-1-BKS

Prep Method: SW8015P

Date Prep: 08.01.17

LCSD Sample Id: 728545-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Diesel Range Organics (DRO)	<25.0	100	88.5	89	84.1	84	63-139	5	20	mg/kg	08.01.17 13:06	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
Tricosane	90		108		105		65-144	%	08.01.17 13:06			
n-Triacontane	73		90		84		46-152	%	08.01.17 13:06			

Analytical Method: DRO-ORO By SW8015B

Seq Number: 3023779

Parent Sample Id: 558901-001

Matrix: Soil

MS Sample Id: 558901-001 S

Prep Method: SW8015P

Date Prep: 08.01.17

MSD Sample Id: 558901-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Diesel Range Organics (DRO)	<25.0	100	92.7	93	86.5	87	63-139	7	20	mg/kg	08.01.17 17:03	
Surrogate			MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date			
Tricosane			83		82		65-144	%	08.01.17 17:03			
n-Triacontane			83		80		46-152	%	08.01.17 17:03			

Analytical Method: TPH GRO by EPA 8015 Mod.

Seq Number: 3023779

MB Sample Id: 728563-1-BLK

Matrix: Solid

LCS Sample Id: 728563-1-BKS

Prep Method: SW5030B

Date Prep: 08.01.17

LCSD Sample Id: 728563-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
TPH-GRO	<4.00	20.0	20.2	101	20.0	100	35-129	1	20	mg/kg	08.02.17 01:17	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
4-Bromofluorobenzene	85		90		89		76-123	%	08.02.17 01:17			
a,a,a-Trifluorotoluene	101		99		98		69-120	%	08.02.17 01:17			

Analytical Method: TPH GRO by EPA 8015 Mod.

Seq Number: 3023779

Parent Sample Id: 558901-001

Matrix: Soil

MS Sample Id: 558901-001 S

Prep Method: SW5030B

Date Prep: 08.01.17

MSD Sample Id: 558901-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
TPH-GRO	<4.00	20.0	8.18	41	11.1	56	35-129	30	20	mg/kg	08.02.17 04:00	F
Surrogate			MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date			
4-Bromofluorobenzene			93		94		76-123	%	08.02.17 04:00			
a,a,a-Trifluorotoluene			97		97		69-120	%	08.02.17 04:00			



XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In



Client: BCC, Inc.-Lubbock

Date/ Time Received: 07/31/2017 03:50:00 PM

Work Order #: 558901

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : IR-3

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	5.8
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seal present on shipping container/ cooler?	N/A
#5 *Custody Seals intact on shipping container/ cooler?	N/A
#6 Custody Seals intact on sample bottles?	N/A
#7 *Custody Seals Signed and dated?	N/A
#8 *Chain of Custody present?	Yes
#9 Sample instructions complete on Chain of Custody?	Yes
#10 Any missing/extra samples?	No
#11 Chain of Custody signed when relinquished/ received?	Yes
#12 Chain of Custody agrees with sample label(s)?	Yes
#13 Container label(s) legible and intact?	Yes
#14 Sample matrix/ properties agree with Chain of Custody?	Yes
#15 Samples in proper container/ bottle?	Yes
#16 Samples properly preserved?	Yes
#17 Sample container(s) intact?	Yes
#18 Sufficient sample amount for indicated test(s)?	Yes
#19 All samples received within hold time?	Yes
#20 Subcontract of sample(s)?	No
#21 VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brenda Ward
Brenda Ward

Date: 08/01/2017

Checklist reviewed by:

Brandi Ritcherson
Brandi Ritcherson

Date: 08/01/2017