APPROVED
By Olivia Yu at 7:14 am, Jul 18, 2018

ARCADIS Design & Consultancy for natural and built assets

Ms. Olivia Yu
New Mexico Oil Conservation Division – District I
Environmental Specialist
1625 N French Drive
Hobbs, New Mexico 88240

Arcadis U.S., Inc.
410 N. 44th Street
Suite 1000
Roseville
California 95678
Tel 916 786 0320
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Subject:
Response to Comments on the Letter dated June 15, 2018 Regarding *2018 Remediation Activities – Scope of Work*, 2018 HES Transfer Site – State A-10, Lea county, New Mexico
Case No. 1RP-3637

ENVIRONMENT

Contact:
Brett Krehbiel

Date:
June 28, 2018

Phone:
916.786.5382

Email:
Brett.Krehbiel@arcadis.com

Our ref:
B0048625.0A10

Dear Ms. Yu:

On behalf of Chevron U.S.A. Inc. under the direction of Chevron Environmental Management Company (CEMC), Arcadis U.S., Inc. (Arcadis) is providing this letter in response to the New Mexico Oil Conservation Division (NMOCD) comments regarding the *2018 Remediation Activities – Scope of Work*, 2018 HES Transfer Site – State A-10, Lea county, New Mexico received on June 15, 2018.

For ease of review, the comments are presented in italicized text, followed by the responses in standard text.

1. *Were groundwater data from the monitoring wells previously submitted either to me or Mr. Bradford Billings? Pardon if I missed them in my inbox. Please resubmit the groundwater sampling results in electronic format.*

Response:

Three monitoring wells (StateA10-MW1, StateA10-MW2 and StateA10-MW3) were installed at State A-10 in September 2016 (**Attachment 1**). Groundwater samples were collected and submitted to Xenco Laboratories (Xenco), a Texas-certified laboratory, for the analysis of Chloride in accordance with United States Environmental Protection Agency (USEPA) Method 300/300.1 in September 2016 and June 2017. An electric copy of the groundwater sampling results from the State A-10 monitoring wells are provided in attached laboratory reports (**Attachment 2).** Analytical results are summarized in **Table 1.**

2. *The release was a combination of oil and produced water. Were BTEX and TPH extended tested? If not, confirmation sidewalls and base of excavation will need to be tested for BTEX and TPH extended.*

Response:

CEMC collected four soil samples (1, 2, 3, and 4) on July 6, 2015 to initially assess the impacted area at State A-10. The location of collected samples are presented in **Attachment 1**. Soil samples were collected in laboratory provided bottles and submitted to Cardinal Laboratories, a Texas-certified laboratory, for the following compounds:

- Benzene, toluene, ethylene, and xylenes (collectively referred to as BTEX) in accordance with United States Environmental Protection Agency (USEPA) Method 8021B
- Chloride in accordance with Standard Method 4500Cl-B
- Total petroleum hydrocarbons (TPH) Gasoline Range Organics (GRO) and Diesel Range Organics (DRO) in accordance with USEPA Method 8015M

BTEX were detected below laboratory reporting limits. The laboratory report and chain of custody are presented in **Attachment 3**. Soil sample analytical results are summarized in **Table 2**.

In June 2016 and September 2017 Arcadis conducted an additional soil assessment to evaluate extent of the impacted area. Five soil borings (StateA10-01 through StateA10-05) were advanced to depths ranging 4 to 70 feet below ground surface (ft bgs) and two soil borings (StateA10-06 and StateA10-07) were advanced to 4 ft bgs. Boring locations are presented in **Attachment 1.** Soil samples were collected at depths summarized in **Table 2**. Soil samples were collected in laboratory provided containers and submitted to Xenco, to be analyzed for the following compounds:

- Chloride in accordance with USEPA Method 300/300.1
- TPH GRO and DRO in accordance with SW8015 Modified
- Percent moisture in accordance with American Standard Testing Materials (ASTM) International Method D2216
- pH in accordance with USEPA Method 9045C

Note, samples collected in September 2017 were only submitted for the analysis of chloride.

TPH GRO and DRO were detected below laboratory reporting limits. Chloride detections were below NMOCD regulatory limit of 600 mg/kg with the exception of the 70-foot sample from StateA10-02 at a concentration of 865 mg/kg. Due to the location of monitoring well StateA10-MW1 (downgradient of StateA10-02), chloride concentrations show no impact to groundwater. The analytical laboratory report is provided in **Attachment 3** and results are summarized in **Table 2**.

3. *In the subsequent report, please remember to include soil bore logs and the laboratory reports with chain of custody of the samples collected on July 6, 2015, in addition to the EM survey data as mentioned in the report. NMOCD do not appear to have any records aside from the initial C-141 for this release.*

Response:

Comment noted. CEMC did not draft boring logs during the initial response. The laboratory report and chain of custody for the samples collected July 6, 2015 are presented in **Attachment 3**. The electromagnetic surveys survey data completed in December 2017 will be provided in a subsequent report.

Please contact me with any questions or concerns.

Sincerely,

Arcadis U.S., Inc.

Brett Krehbiel
Certified Project Manager

Copies:
Jason Michelson, Chevron Environmental Management Company
Amy Barnhill, Mid-Continent Business Unit
Bradford Billings, New Mexico Oil Conservation Division
Greg Cutshall, Arcadis

Tables:
Table 1 – State A-10 Groundwater Analytical Results
Table 2 – State A-10 Soil Sample Analytical Results

Attachments:
Attachment 1 – Soil Boring and Groundwater Monitoring Well Locations – State A-10
Attachment 2 – Groundwater Analytical Laboratory Report
Attachment 3 – Soil Sample Analytical Laboratory Reports

TABLE 1

State A-10 Groundwater Analytical Results

Table 1
Groundwater Analytical Results
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Well ID	Sample Date	Chloride [1]
StateA10-MW1	9/20/2016	82.3
	6/27/2017	66.7
StateA10-MW2	9/24/2016	128
	9/20/2016 (DUP)	135
	6/27/2017	102
	6/27/2017 (DUP)	104
StateA10-MW3	9/24/2016	73.2
	6/27/2017	23.6
Equipment Blank	9/20/2016	0.659
	6/27/2017	<0.0858
	8/15/2017	<0.500
	12/7/2017	<0.500

Notes
1. Chloride analyzed by EPA Method 300/300.1. Results reported in milligrams per liter (mg/L).

TABLE 2

State A-10 Soil Sample Analytical Results

Table 2
Soil Analytical Results
Chevron EMC
Moran No. 2-6 Site Assessment
Lea County, New Mexico

Boring Location ID	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	Chloride (mg/kg)	% Moisture	pH
1	7/6/2015	1	<0.050	<0.050	0.12	0.496	0.619	<50.0	9140	928	--	--
2	7/6/2015	1	<0.200	<0.200	1.02	4.07	5.09	538	10800	832	--	--
3	7/6/2015	1	<0.100	<0.100	0.10	0.929	1.03	167	6550	752	--	--
4	7/6/2015	1	<0.050	<0.050	<0.050	<0.150	<0.300	<50.0	4190	512	--	--
StateA10-01	6/24/2016	4	--	--	--	--	--	<15.6	<15.6	441	4.23	8.22
		10	--	--	--	--	--	<15.4	<15.4	<10.3	2.9	9.08
		20	--	--	--	--	--	<15.6	<15.6	<10.4	3.89	9.11
		30	--	--	--	--	--	<16.1	<16.1	<10.7	6.76	8.82
StateA10-02	6/24/2016	4	--	--	--	--	--	<16.5	<16.5	86.4	9.44	9.41
		10	--	--	--	--	--	<16.5	<16.5	131	9.6	9.69
		20	--	--	--	--	--	<17.2	<17.2	316	12.6	9.6
		30	--	--	--	--	--	<15.9	<15.9	418	5.72	9.68
		50	--	--	--	--	--	--	--	1630	--	--
		70	--	--	--	--	--	--	--	865	--	--
StateA10-03	6/24/2016	4	--	--	--	--	--	<15.6	<15.6	131	3.94	8.63
		10	--	--	--	--	--	<16.0	<16.0	73.7	6.18	8.97
		20	--	--	--	--	--	<16.5	<16.5	<10.1	9.16	8.97
		30	--	--	--	--	--	<16.0	<16.0	<10.5	6.29	9.04
StateA10-04	6/24/2016	4	--	--	--	--	--	<15.9	<15.9	94.3	5.73	8.12
		10	--	--	--	--	--	<18.0	<18.0	45.9	16.9	8.46
		20	--	--	--	--	--	16	<15.1	29.5	<1.00	8.99
		30	--	--	--	--	--	<15.8	<15.8	<10.7	5.06	8.83
StateA10-05	6/24/2016	4	--	--	--	--	--	<15.6	<15.6	47.5	3.84	8.92
		10	--	--	--	--	--	<16.2	<16.2	<10.8	7.45	9.04
		20	--	--	--	--	--	<15.2	<15.2	14.2	1.61	9.27
		30	--	--	--	--	--	<16.3	<16.3	23.4	8.11	8.84
State A10-06	8/14/2017	4	--	--	--	--	--	--	--	16.5	--	--
State A10-07	8/14/2017	4	--	--	--	--	--	--	--	120	--	--

Legend:

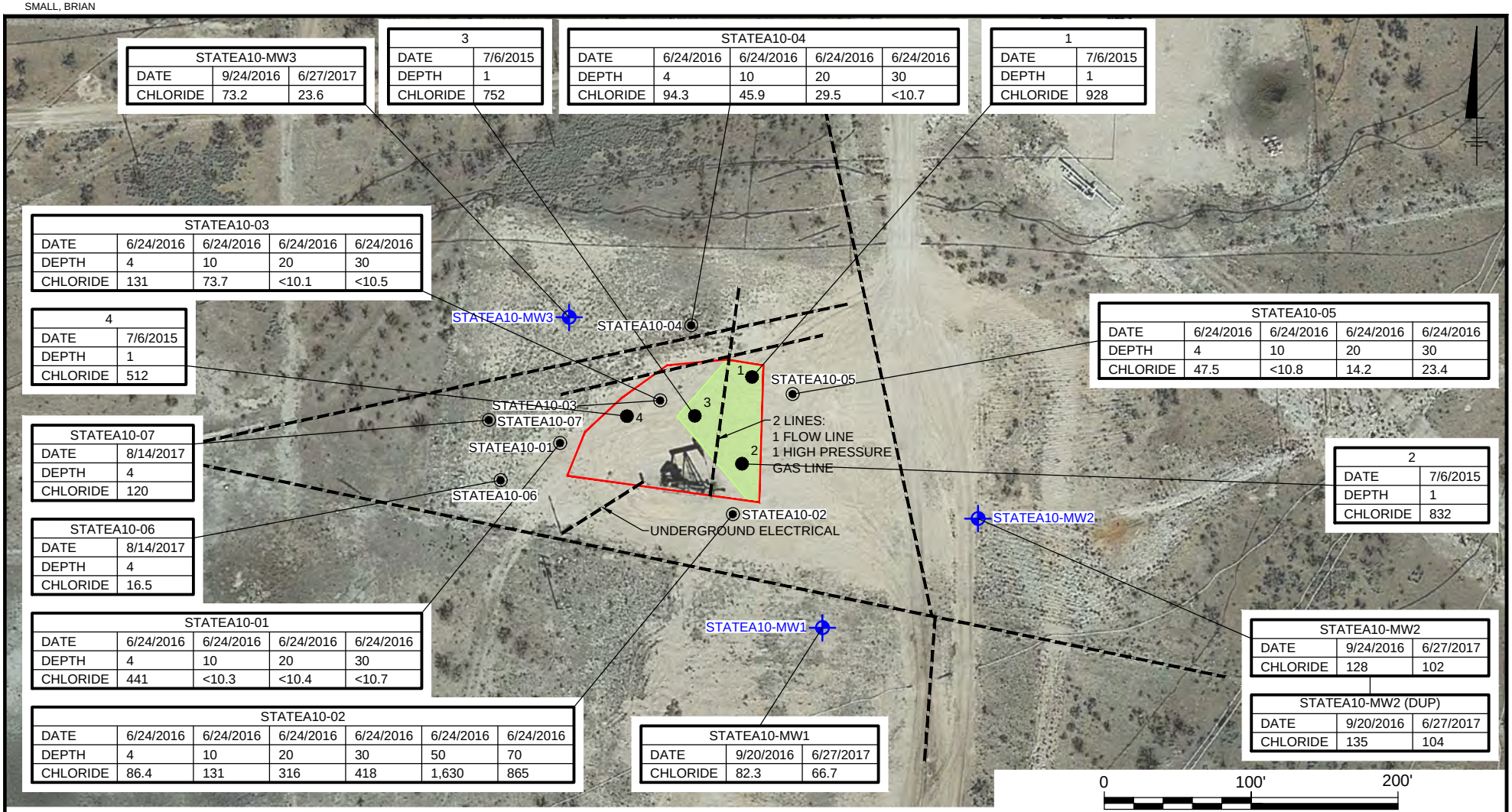
mg/Kg	milligrams per killigram	bgs	Below ground surface
NMOCD	New Mexico Oil Conservation Division	BTEX	Benzene, toluene, ethylbenzene, and total xylenes
USEPA	United States Evironmental Protection Agency	TPH-GRO	Total Petroleum Hydrocarbons as Gasoline Range Organics
--	Not analyzed or not applicable	TPH-DRO	Total Petroleum Hydrocarbons as Diesel Range Organics
<	Not detected above indicated laboratory reporting limit	%	Percent

Notes:
Regulatory limits are based on the New Mexico Oil Conservation Division "Guidelines for Remedation of Leaks, Spills, and Releases", August 13, 1993

ATTACHMENT 1

Soil Boring and Groundwater Monitoring Well Locations – State A-10

CITY: MANCHESTER DIV/GROUP: ENVCAD DB: B.SMALL PM: TM
C:\Users\BSSmall\OneDrive - ARCADIS\BIM 360 Docs\CHEVRON CORPORATION\State A-10\2018\B0048625.1701\01-DWG\Data-Soil-Fig1.dwg LAYOUT: 2 SAVED: 4/26/2018 7:22 PM ACADVER: 20.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 5/1/2018 2:11 PM BY: SMALL, BRIAN



STATEA10-MW3		
DATE	9/24/2016	6/27/2017
CHLORIDE	73.2	23.6

3	
DATE	7/6/2015
DEPTH	1
CHLORIDE	752

STATEA10-04				
DATE	6/24/2016	6/24/2016	6/24/2016	6/24/2016
DEPTH	4	10	20	30
CHLORIDE	94.3	45.9	29.5	<10.7

1	
DATE	7/6/2015
DEPTH	1
CHLORIDE	928

STATEA10-03				
DATE	6/24/2016	6/24/2016	6/24/2016	6/24/2016
DEPTH	4	10	20	30
CHLORIDE	131	73.7	<10.1	<10.5

4	
DATE	7/6/2015
DEPTH	1
CHLORIDE	512

STATEA10-05				
DATE	6/24/2016	6/24/2016	6/24/2016	6/24/2016
DEPTH	4	10	20	30
CHLORIDE	47.5	<10.8	14.2	23.4

STATEA10-07	
DATE	8/14/2017
DEPTH	4
CHLORIDE	120

2	
DATE	7/6/2015
DEPTH	1
CHLORIDE	832

STATEA10-06	
DATE	8/14/2017
DEPTH	4
CHLORIDE	16.5

STATEA10-01				
DATE	6/24/2016	6/24/2016	6/24/2016	6/24/2016
DEPTH	4	10	20	30
CHLORIDE	441	<10.3	<10.4	<10.7

STATEA10-MW2		
DATE	9/24/2016	6/27/2017
CHLORIDE	128	102

STATEA10-MW2 (DUP)		
DATE	9/20/2016	6/27/2017
CHLORIDE	135	104

STATEA10-02						
DATE	6/24/2016	6/24/2016	6/24/2016	6/24/2016	6/24/2016	6/24/2016
DEPTH	4	10	20	30	50	70
CHLORIDE	86.4	131	316	418	1,630	865

STATEA10-MW1		
DATE	9/20/2016	6/27/2017
CHLORIDE	82.3	66.7

LEGEND:

- JULY 2015 ASSESSMENT SOIL SAMPLING LOCATION
- SOIL BORING LOCATION
- MONITORING WELL LOCATION
- APPROXIMATE EXTENT OF RELEASE
- UNDERGROUND UTILITY LINE
- PROPOSED EXCAVATION AREA

NOTES:

1. AERIAL PHOTOGRAPH FROM GOOGLE EARTH PRO.
2. FMT REQUIRES BORING TO BE AT MINIMUM 10 FEET FROM UNDERGROUND UTILITIES.
3. ALL RESULTS ARE IN MILLIGRAMS PER KILOGRAM (mg/kg) FOR SOIL AND MILLIGRAMS PER LITER (mg/L) FOR GROUNDWATER.
4. NEW MEXICO OIL CONSERVATION DIVISION (NMOCD) SOIL REMEDIATION ACTION LEVEL OF 250 mg/kg FOR LATERAL DELINEATION
5. NMOCD SOIL REMEDIATION ACTION LEVEL OF 600 mg/kg FOR VERTICAL DELINEATION
6. NMOCD GROUNDWATER REMEDIATION ACTION LEVEL OF 250 mg/L

VACUUM/LOVINGTON FUNCTIONAL MANAGEMENT TEAM UNITS
LEA COUNTY, NEW MEXICO
2018 REMEDIATION ACTIVITIES SCOPE OF WORK

STATE A-10 SOIL AND GROUNDWATER ANALYTICAL RESULTS

ARCADIS Design & Consultancy for natural and built assets

FIGURE
2

ATTACHMENT 2

Groundwater Analytical Lab Reports

Analytical Report 537535

for

Arcadis - Houston

Project Manager: Jonathan Olsen

HES Transfer

04-OCT-16

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

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)

Table of Contents

04-OCT-16

Project Manager: **Jonathan Olsen**
Arcadis - Houston
2929 Briarpark Dr., Ste 300
Houston, TX 77042

Reference: XENCO Report No(s): **537535**
HES Transfer
Project Address: Lovington NM

Jonathan Olsen:

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) 537535. 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. 537535 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

Sample Cross Reference 537535

Arcadis - Houston, Houston, TX

HES Transfer

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
VGWU61-03B (40')	S	09-20-16 15:38	- 40 ft	537535-001
VGWU61-MW1	W	09-20-16 14:54		537535-004
VGWU61-MW2	W	09-20-16 13:15		537535-005
EB-1	W	09-20-16 12:00		537535-006
DUP-1	W	09-20-16 00:00		537535-007
StateA10-MW1	W	09-20-16 11:21		537535-008
StateA10-MW2	W	09-20-16 10:13		537535-009
StateA10-MW3	W	09-20-16 08:48		537535-010
VGWU61-03B (50')	S	09-20-16 15:43	- 50 ft	Not Analyzed
VGWU61-03B (60')	S	09-20-16 15:50	- 60 ft	Not Analyzed

Sample receipt non conformances and comments:

Direct bill to Chevron/PM Rob Speer

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 537535

Arcadis - Houston, Houston, TX

Project Name: HES Transfer

Project Id:
Contact: Jonathan Olsen
Project Location: Lovington NM

Date Received in Lab: Tue Sep-27-16 10:18 am
Report Date: 04-OCT-16
Project Manager: Kelsey Brooks

Analysis Requested															
	Lab Id:	537535-001		537535-004		537535-005		537535-006		537535-007		537535-008			
	Field Id:	VGWU61-03B (40')		VGWU61-MW1		VGWU61-MW2		EB-1		DUP-1		StateA10-MW1			
	Depth:	40 ft													
	Matrix:	SOIL		WATER		WATER		WATER		WATER		WATER			
	Sampled:	Sep-20-16 15:38		Sep-20-16 14:54		Sep-20-16 13:15		Sep-20-16 12:00		Sep-20-16 00:00		Sep-20-16 11:21			
Inorganic Anions by EPA 300/300.1	***Extracted:***	Oct-03-16 11:00		Oct-03-16 08:45		Oct-03-16 08:45		Oct-03-16 08:45		Oct-03-16 08:45		Oct-03-16 08:45			
	Analyzed:	Oct-03-16 17:23		Oct-03-16 12:00		Oct-03-16 12:22		Oct-03-16 17:16		Oct-03-16 12:36		Oct-03-16 12:43			
	Units/RL:	mg/kg	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL		
Chloride		8.49	5.00	176	2.50	97.4	2.50	0.659	0.500	135	2.50	82.3	2.50		

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 537535

Arcadis - Houston, Houston, TX

Project Name: HES Transfer

Project Id:
Contact: Jonathan Olsen
Project Location: Lovington NM

Date Received in Lab: Tue Sep-27-16 10:18 am
Report Date: 04-OCT-16
Project Manager: Kelsey Brooks

Analysis Requested							
	Lab Id:	537535-009		537535-010			
	Field Id:	StateA10-MW2		StateA10-MW3			
	Depth:						
	Matrix:	WATER		WATER			
	Sampled:	Sep-20-16 10:13		Sep-20-16 08:48			
Inorganic Anions by EPA 300/300.1	***Extracted:***	Oct-03-16 08:45		Oct-03-16 08:45			
	Analyzed:	Oct-03-16 13:04		Oct-03-16 13:11			
	Units/RL:	mg/L	RL	mg/L	RL		
Chloride		128	2.50	73.2	2.50		

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

BS / BSD Recoveries

Project Name: HES Transfer

Work Order #: 537535 **Project ID:**

Analyst: MNR **Date Prepared:** 10/03/2016 **Date Analyzed:** 10/03/2016

Lab Batch ID: 3001263 **Sample:** 714496-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<0.500	25.0	25.3	101	25.0	26.1	104	3	90-110	20	

Analyst: MNR **Date Prepared:** 10/03/2016 **Date Analyzed:** 10/03/2016

Lab Batch ID: 3001267 **Sample:** 714494-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	269	108	250	261	104	3	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

Form 3 - MS / MSD Recoveries

Project Name: HES Transfer

Work Order # : 537535 **Project ID:**

Lab Batch ID: 3001263 **QC- Sample ID:** 537535-004 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 10/03/2016 **Date Prepared:** 10/03/2016 **Analyst:** MNR

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 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
Chloride	176	125	308	106	125	313	110	2	90-110	20	

Lab Batch ID: 3001267 **QC- Sample ID:** 537535-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/03/2016 **Date Prepared:** 10/03/2016 **Analyst:** MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 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
Chloride	8.49	250	262	101	250	259	100	1	90-110	20	

Lab Batch ID: 3001267 **QC- Sample ID:** 537766-003 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/03/2016 **Date Prepared:** 10/03/2016 **Analyst:** MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 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
Chloride	2270	1250	3520	100	1250	3550	102	1	90-110	20	

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

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

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

ARCADIS
Infrastructure Water Environment Buildings

ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 1 of 1

Lab Work Order #: 501535

Send Results to:

Contact & Company Name: Jonathan Olson/Arcadis
Telephone: 713.953.4874
Address: 2929 Briar Park Dr. Suite 300
Fax:
City: Houston State: TX Zip: 77042
E-mail Address: Jonathan.Olson@Arcadis.com
Project Name/Location (City, State): HES Transfer/Lovington, NM
Project #: (Direct Bill to Chevron/PM)
Sampler's Printed Name: Ryan Nanny
Sampler's Signature:

Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	Preservative	Filtered (✓)	# of Containers	Container Information	Chloride	REMARKS
						E	NA	10	7		
VGWU61-03B(40')	9-20-16	1538		✓	SO					1	
VGWU61-03B(50')	9-20-16	1543		✓	SO					1	Hold
VGWU61-03B(60')	9-20-16	1550		✓	SO					1	Hold
VGWU61-MW1	9-23-16	1454		✓	W					1	
VGWU61-MW2	9-23-16	1315		✓	W					1	
EB-1	9-23-16	1200		✓	W					1	
DUP-1	9-24-16	—		✓	W					1	
StateA10-MW1 (9-23-16)	9-23-16	1121		✓	W					1	
StateA10-MW2	9-24-16	1013		✓	W					1	
StateA10-MW3	9-24-16	0848		✓	W					1	

Keys

Preservation Key:
A. H_2SO_4
B. HCL
C. HNO_3
D. NaOH
E. None
F. Other: _____
G. Other: _____
H. Other: _____

Container Information Key:
1. 40 ml Vial
2. 1 L Amber
3. 250 ml Plastic
4. 500 ml Plastic
5. Encore
6. 2 oz. Glass
7. 4 oz. Glass
8. 8 oz. Glass
9. Other: _____
10. Other: _____

Matrix Key:
SO - Soil
W - Water
T - Tissue
SE - Sediment
SL - Sludge
A - Air
NL - NAPL/Oil
SW - Sample Wipe
Other: _____

Special Instructions/Comments:
* Direct Bill to Chevron/PM: Rob Sparr *

☐ **Special QA/QC Instructions(✓):**
* Standard TAT *

Laboratory Information and Receipt
Lab Name: Xenco
☑ Cooler packed with ice (✓)
Cooler Custody Seal (✓) ☐ Intact ☐ Not Intact
Specify Turnaround Requirements: Standard
Shipping Tracking #:
Sample Receipt: Condition/Cooler Temp: 2.5°C

Relinquished By	Received By	Relinquished By	Laboratory Received By
Printed Name: Ryan Nanny	Printed Name: JESSICA KRAMER	Printed Name:	Printed Name:
Signature:	Signature:	Signature:	Signature:
Firm: Arcadis	Firm/Courier: Xenco	Firm/Courier:	Firm:
Date/Time: 9-26-16 1700	Date/Time: 9-27-16 1019	Date/Time:	Date/Time:

20730826 CofC AR Form 01.12.2007

Distribution: WHITE – Laboratory returns with results YELLOW – Lab copy PINK – Retained by ARCADIS

ORIGIN ID:LBBA (806) 543-1945
RYAN NANNY

1000 MCGUIRE ST

LUBBOCK, TX 79416
UNITED STATES US

SHIP DATE: 26SEP16
ACTWGT: 52.90 LB
CAD: 6996848/SSFO1704
DIMS: 24x14x14 IN

BILL THIRD PARTY

TO **XENCO LAB**
SAMPLE RECEIVING
1211 W FLORIDA AVE

MIDLAND TX 79701
(432) 563-1800 REF:
INV:
PO: DEPT:

FedEx
Express

E

J162016072450 uv

TUE - 27 SEP 10:30A
PRIORITY OVERNIGHT

TRK# 0201 **7841 8857 6880**

41 MAFA

79701
TX-US **LBB**

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: Arcadis - Houston

Date/ Time Received: 09/27/2016 10:18:00 AM

Work Order #: 537535

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	2.5
#2 *Shipping container in good condition?	**N/A**
#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)?	**N/A**
#21 VOC samples have zero headspace (less than 1/4 inch bubble)?	**N/A**
#22 <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**
#23 >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: Jessica Kramer Date: 09/27/2016
Jessica Kramer

Checklist reviewed by: Kelsey Brooks Date: 09/27/2016
Kelsey Brooks

Analytical Report 556451

for

Arcadis - Roseville, CA

Project Manager: Brett Krehbiel

State A 10

06-JUL-17

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

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)

Table of Contents

06-JUL-17

Project Manager: **Brett Krehbiel**
Arcadis - Roseville, CA
101 Creekside Ridge
CT 200
Roseville, CA 95678

Reference: XENCO Report No(s): **556451**
State A 10
Project Address: Buckeye NM

Brett Krehbiel:

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) 556451. 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. 556451 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

Sample Cross Reference 556451

Arcadis - Roseville, CA, Roseville, CA

State A 10

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-3-W-170627	W	06-27-17 11:03		556451-001
EB-1-W-170627	W	06-27-17 11:11		556451-002
MW-1-W-170627	W	06-27-17 11:26		556451-003
MW-2-W-170627	W	06-27-17 11:46		556451-004
DUP-01-W-170627	W	06-27-17 00:00		556451-005

CASE NARRATIVE SUMMARY

Client Name: ***Arcadis - Roseville, CA***

Project Name: ***State A 10***

Project ID:

Work Order Number: *556451*

Report Date: *06-JUL-17*

Date Received: *28-JUN-17*

Kelsey Brooks
Project Manager

Certificate of Analytical Results

556451

Arcadis - Roseville, CA, Roseville, CA

State A 10

Sample Id: **MW-3-W-170627** Matrix: Water Sample Depth:

Lab Sample Id: 556451-001 Date Collected: 06.27.17 11.03 Date Received: 06.28.17 10.00

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Analyst: MGO % Moist: Tech: MGO

Seq Number: 3021487 Date Prep: 06.30.17 13.30

Prep seq: 727067

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**23.6**	0.500	0.0858	mg/L	06.30.17 14:02		1

Sample Id: **EB-1-W-170627** Matrix: Water Sample Depth:

Lab Sample Id: 556451-002 Date Collected: 06.27.17 11.11 Date Received: 06.28.17 10.00

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Analyst: MGO % Moist: Tech: MGO

Seq Number: 3021487 Date Prep: 07.03.17 16.00

Prep seq: 727067

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.0858	0.500	0.0858	mg/L	07.04.17 03:41	U	1

Sample Id: **MW-1-W-170627** Matrix: Water Sample Depth:

Lab Sample Id: 556451-003 Date Collected: 06.27.17 11.26 Date Received: 06.28.17 10.00

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Analyst: MGO % Moist: Tech: MGO

Seq Number: 3021487 Date Prep: 06.30.17 13.30

Prep seq: 727067

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**66.7**	0.500	0.0858	mg/L	06.30.17 14:33		1

Sample Id: **MW-2-W-170627** Matrix: Water Sample Depth:

Lab Sample Id: 556451-004 Date Collected: 06.27.17 11.46 Date Received: 06.28.17 10.00

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Analyst: MGO % Moist: Tech: MGO

Seq Number: 3021487 Date Prep: 06.30.17 13.30

Prep seq: 727067

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**102**	2.50	0.429	mg/L	06.30.17 14:40		5

Certificate of Analytical Results

556451

Arcadis - Roseville, CA, Roseville, CA

State A 10

Sample Id: **DUP-01-W-170627** Matrix: Water Sample Depth:

Lab Sample Id: 556451-005 Date Collected: 06.27.17 00.00 Date Received: 06.28.17 10.00

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Analyst: MGO % Moist: Tech: MGO

Seq Number: 3021487 Date Prep: 06.30.17 13.30

Prep seq: 727067

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**104**	2.50	0.429	mg/L	06.30.17 14:48		5

Certificate of Analytical Results

556451

Arcadis - Roseville, CA, Roseville, CA

State A 10

Sample Id: **727067-1-BLK** Matrix: Water Sample Depth:

Lab Sample Id: 727067-1-BLK Date Collected: Date Received:

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Analyst: MGO % Moist: Tech: MGO

Seq Number: 3021487 Date Prep: 06.30.17 13.30

Prep seq: 727067

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.0858	0.500	0.0858	mg/L	06.30.17 13:40	U	1

CHRONOLOGY OF HOLDING TIMES

Analytical Method : Inorganic Anions by EPA 300/300.1
Client : Arcadis - Roseville, CA
Work Order #: **556451**
Project ID:
Date Received: 06/28/17

Field Sample ID	Lab Sample ID	Date Collected	Date Extracted	Max Holding Time Extracted (Days)	Time Held Extracted (Days)	Date Analyzed	Max Holding Time Analyzed (Days)	Time Held Analyzed (Days)	Q
MW-3-W-170627	556451-001	06/27/17				06/30/17	28	3	P
EB-1-W-170627	556451-002	06/27/17				07/04/17	28	7	P
MW-1-W-170627	556451-003	06/27/17				06/30/17	28	3	P
MW-2-W-170627	556451-004	06/27/17				06/30/17	28	3	P
DUP-01-W-170627	556451-005	06/27/17				06/30/17	28	3	P

F = These samples were analyzed outside the recommended holding time.
P = Samples analyzed within the recommended holding time.

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

Analytical Log

Analytical Method:	Inorganic Anions by EPA 300/300.1	Batch #:	3021487
Project Name:	State A 10	Project ID:	
Client Name:	Arcadis - Roseville, CA	WO Number:	556451

Client Sample Id	Lab Sample Id	QC Types
DUP-01-W-170627	556451-005	SMP
EB-1-W-170627	556451-002	SMP
MW-1-W-170627	556451-003	SMP
MW-2-W-170627	556451-004	SMP
MW-3-W-170627	556451-001	SMP
	556451-001 S	MS
	556451-001 SD	MSD
	727067-1-BKS	BKS
	727067-1-BLK	BLK
	727067-1-BSD	BSD

BS / BSD Recoveries

Project Name: State A 10

Work Order #: 556451 **Project ID:**

Analyst: MGO **Date Prepared:** 06/30/2017 **Date Analyzed:** 06/30/2017

Lab Batch ID: 3021487 **Sample:** 727067-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<0.0858	25.0	23.5	94	25.0	23.8	95	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

Form 3 - MS / MSD Recoveries

Project Name: State A 10

Work Order # : 556451 **Project ID:**

Lab Batch ID: 3021487 **QC- Sample ID:** 556451-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 06/30/2017 **Date Prepared:** 06/30/2017 **Analyst:** MGO

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 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
Chloride	23.6	25.0	46.8	93	25.0	47.4	95	1	90-110	20	

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

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

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.

Attachment A Laboratory Data Package Cover Page

Project Name: **State A 10** Laboratory Number: **556451**

This Data package consists of : Laboratory Batch No(s) **727067**

This signature page, the laboratory review checklist, and the following reportable data:

[X] R1 Field chain-of-custody documentation;

[X] R2 Sample identification cross-reference;

[X] R3 Test reports (analytical data sheets) for each environmental sample that includes:
- a) Items consistent with NELAC 5
- b) dilution factors,
- c) preparation methods,
- d) cleanup methods, and
- e) if required for the project, tentatively identified compounds (TICs).

[X] R4 Surrogate Recovery data including:
- a) Calculated recovery (%R), and
- b) The laboratory's surrogate QC limits.

[X] R5 Test reports/summary forms for blank samples;

[X] R6 Test reports/summary forms for laboratory control samples (LCSs) including:
- a) LCS spiking amounts,
- b) Calculated %R for each analyte, and
- c) The laboratory's LCS QC limits.

[X] R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
- a) Samples associated with the MS/MSD clearly identified,
- b) MS/MSD spiking amounts,
- c) Concentration of each MS/MSD analyte measured in the parent and spiked samples,
- d) Calculated %Rs and relative percent differences (RPDs) and
- e) The laboratory's MS/MSD QC limits

[X] R8 Laboratory anaytical duplicate (if applicable) recovery and precision:
- a) the amount of analyte measured in the duplicate,
- b) the calculated RPD, and
- c) the laboratory's QC limits for analytical duplicates.

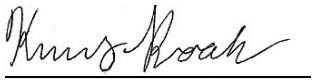
[X] R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix;

[X] R10 Other problems or anomalies.

[X] Exception Report for every "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies, observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC 25.6 and was last inspection by [ ] TCEQ or [ ] _____ on (enter date of last inspection). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The offical signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Kelsey Brooks		**Project Manager**	**06-JUL-17**
Name (Printed)	Signature	Official Title (printed)	Date

A1

Attachment A (cont'd) : Laboratory Review Checklist: Reportable Data

Laboratory Name:	XENCO LABORATORIES	LRC Date :	06-JUL-17
Project Name:	State A 10	Laboratory Job Number :	556451
Reviewer Name:	KEB	Batch Number(s) :	727067

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
R1	OI	**Chain-of-Custody (COC)**					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?			X		
R2	OI	**Sample and Quality Control (QC) Identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test Reports**					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results <MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soil/solid samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, were TICs reported?			X		
R4	O	**Surrogate Recovery Data**					
		Were surrogates added prior to extraction?			X		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	OI	**Test Reports/Summary Forms for Blank Samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency ?	X				
		Were method blanks taken through the entire analytical procedure, including preparation and, if applicable, cleanup procedures ?	X				
		Were Blank Concentrations <MQL?	X				
R6	OI	**Laboratory Control Samples (LCS):**					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within the QC limits?	X				
R7	OI	**Matrix Spike (MS) and Matrix Spike Duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
		Were MS/MSD RPDs within the laboratory QC limits?	X				
R8	OI	**Analytical Duplicate Data**					
		Were appropriate analytical duplicates analyzed for each matrix?			X		
		Were analytical duplicates analyzed at the appropriate frequency?			X		
		Were RPDs or relative standard deviations within the laboratory QC limits?			X		
R9	OI	**Method Quantitation Limits (MQLs)**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	**Other Problems/Anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				

Attachment A (cont'd) : Laboratory Review Checklist: Reportable Data

Laboratory Name:	XENCO LABORATORIES	LRC Date :	06-JUL-17
Project Name:	State A 10	Laboratory Job Number :	556451
Reviewer Name:	KEB	Batch Number(s) :	727067

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	**Initial Calibration (ICAL)**					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and the highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and Continuing Calibration Verification (ICCV and CCV) and continuing calibration blank (**					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB <MDL?			X		
S3	O	**Mass Spectral Tuning**					
		Was the appropriate compound for the method used for tuning?			X		
		Were ion abundance data within the method-required QC limits?			X		
S4	O	**Internal Standard (IS)**					
		Were IS area counts and retention times within the method-required QC limits?			X		
S5	OI	**Raw Data (NELAC 5.5.10)**					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	**Dual Column Confirmation**					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively Identified Compounds (TICs)**					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) Results**					
		Were percent recoveries within method QC limits?			X		
S9	I	**Serial Dilutions, Post Digestions Spikes, and Method of Standard Additions**					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
S10	OI	**Method Detection Limit (MDL) Studies**					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency Test Reports**					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards Documentation**					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/Analyte Identification Procedures**					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of Analyst Competency (DOC)**					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/Validation Documentation for Methods (NELAC Chapter 5)**					
		Are all methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory Standard Operating Procedures (SOPs)**					
		Are laboratory SOPs current and on file for each method performed?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted to the TCEQ-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable).
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report Identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Attachment A (cont'd): Laboratory Review Checklist: Exception Reports

Laboratory Name: XENCO LABORATORIES	LRC Date: 06-JUL-17
Project Name: State A 10	Laboratory Job Number: 556451
Reviewer Name: KEB	Batch Number(s) : 727067

ER# [1]	DESCRIPTION

1 ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No is checked on the LRC).

Arcadis - Roseville, CA, Roseville, CA

State A 10

Analytical Method: Inorganic Anions by EPA 300/300.1 Matrix: Water

Parameter	Spike Amount	Actual Amount	Units
Chloride	0.250	0.177	mg/L

ARCADIS
Infrastructure. Water. Environment. Buildings

ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 1 of 1

Lab Work Order # 5564451

Send Results to:

Contact & Company Name: Brett Krchbiel / ARCADIS
Telephone: 916-786-5382
Address: 701 Creekside Ridge Court Suite 200
Fax:
City: Roseville State: CA Zip: 95678
E-mail Address: Brett.Krchbiel@arcadis.com
Project Name/Location (City, State): Stake A 10 Buckeye, NM
Project #:
Sampler's Printed Name: Jerry Silongwell
Sampler's Signature:

Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	Preservative	Filtered (✓)	# of Containers	Container Information	Cl
MW-3-W-170627	06/27/17	1103		X	W			5	3	1
EBO1-W-170627	06/27/17	1111		X	W					1
MW-1-W-170627	06/27/17	1125		X	W					1
MW-2-W-170627	06/27/17	1140		X	W					1
DUP-01-W-170627	06/27/17			X	W					1

PARAMETER ANALYSIS & METHOD

Keys

Preservation Key:
A. H_2SO_4
B. HCL
C. HNO_3
D. NaOH
E. None
F. Other: _____
G. Other: _____
H. Other: _____

Container Information Key:
1. 40 ml Vial
2. 1 L Amber
3. 250 ml Plastic
4. 500 ml Plastic
5. Encore
6. 2 oz. Glass
7. 4 oz. Glass
8. 8 oz. Glass
9. Other: _____
10. Other: _____

Matrix Key:
SO - Soil
W - Water
T - Tissue
SE - Sediment
SL - Sludge
A - Air
NL - NAPL/Oil
SW - Sample Wipe
Other: _____

REMARKS

Stake A-10 Samples

Temp: 4.9°C IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 4.7°C

Special Instructions/Comments:

☐ Special QA/QC Instructions(✓):

Laboratory Information and Receipt

Lab Name: Xenco
☑ Cooler packed with ice (✓)
Specify Turnaround Requirements: Standard
Shipping Tracking #:

Cooler Custody Seal (✓) ☐ Intact ☐ Not Intact
Sample Receipt:
Condition/Cooler Temp: _____

Relinquished By	Received By	Relinquished By	Laboratory Received By
Printed Name: Jerry Silongwell	Printed Name: Brianne Wichter	Printed Name:	Printed Name: Mary A Negron
Signature:	Signature: Brianne Wichter	Signature:	Signature:
Firm: ARCADIS	Firm/Courier:	Firm/Courier:	Firm: Xenco
Date/Time: 06/27/17 1602	Date/Time: 06/27/17 1602	Date/Time:	Date/Time: 6/28/17 1000

20730826 CofC AR Form 01.12.2007

Distribution: WHITE – Laboratory returns with results YELLOW – Lab copy PINK – Retained by ARCADIS

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: ARCADIS

Date/ Time Received: 06/28/2017 10:00:00 AM

Work Order #: 556451

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	4.7
#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)?	**N/A**
#21 VOC samples have zero headspace?	**N/A**

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

Analyst: JKR

PH Device/Lot#: 213315

Checklist completed by: Jessica Kramer
Jessica Kramer

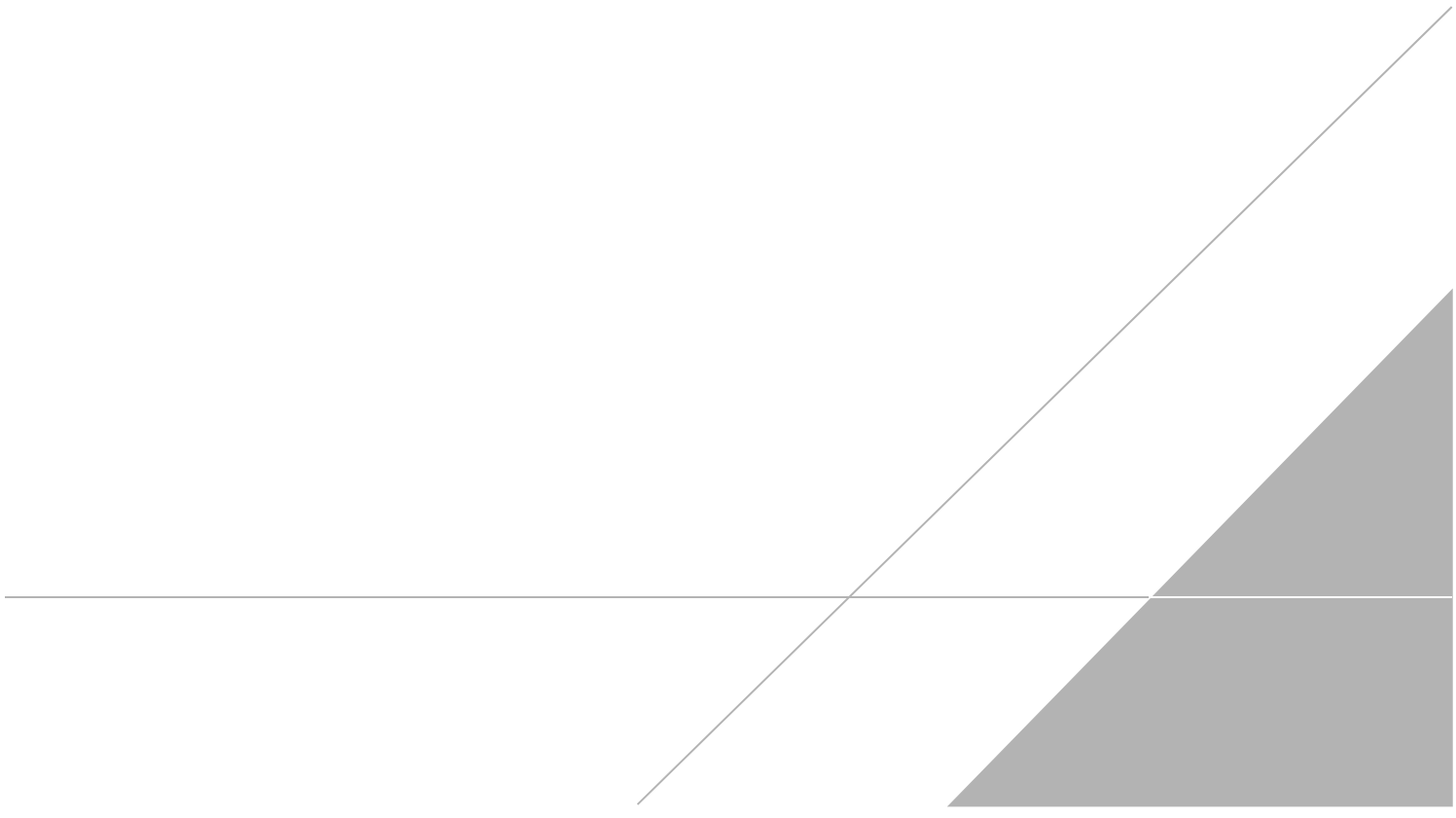
Date: 06/28/2017

Checklist reviewed by:

Date:

ATTACHMENT 3

Soil Sample Analytical Lab Reports



CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

July 13, 2015

NICK MOSCHETTI

Chevron - Lovington

HCR 60 Box 423

Lovington, NM 88260

RE: SOIL SAMPLES

Enclosed are the results of analyses for samples received by the laboratory on 07/06/15 15:52.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Chevron - Lovington
NICK MOSCHETTI
HCR 60 Box 423
Lovington NM, 88260
Fax To: None

Received:	07/06/2015	Sampling Date:	07/06/2015
Reported:	07/13/2015	Sampling Type:	Soil
Project Name:	SOIL SAMPLES	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: STATE A-10 1 (H501713-01)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/13/2015	ND	2.13	107	2.00	3.67	
Toluene*	<0.050	0.050	07/13/2015	ND	1.90	95.2	2.00	3.76	
Ethylbenzene*	**0.123**	0.050	07/13/2015	ND	1.82	91.1	2.00	4.21	
Total Xylenes*	**0.496**	0.150	07/13/2015	ND	5.38	89.6	6.00	4.75	
Total BTEX	**0.619**	0.300	07/13/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID	*120 %*	*61-154*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**928**	16.0	07/09/2015	ND	416	104	400	0.00	

TPH 8015M mg/kg **Analyzed By: MS** **S-06**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<50.0	50.0	07/09/2015	ND	199	99.4	200	6.45	
DRO >C10-C28	**9140**	50.0	07/09/2015	ND	207	104	200	7.40	

Surrogate: 1-Chlorooctane	*93.3 %*	*47.2-157*
Surrogate: 1-Chlorooctadecane	*178 %*	*52.1-176*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Chevron - Lovington
NICK MOSCHETTI
HCR 60 Box 423
Lovington NM, 88260
Fax To: None

Received:	07/06/2015	Sampling Date:	07/06/2015
Reported:	07/13/2015	Sampling Type:	Soil
Project Name:	SOIL SAMPLES	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: STATE A-10 2 (H501713-02)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	07/13/2015	ND	2.13	107	2.00	3.67	
Toluene*	<0.200	0.200	07/13/2015	ND	1.90	95.2	2.00	3.76	
Ethylbenzene*	**1.02**	0.200	07/13/2015	ND	1.82	91.1	2.00	4.21	
Total Xylenes*	**4.07**	0.600	07/13/2015	ND	5.38	89.6	6.00	4.75	
Total BTEX	**5.09**	1.20	07/13/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID *105 %* *61-154*

Chloride, SM4500Cl-B mg/kg Analyzed By: AP

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**832**	16.0	07/09/2015	ND	416	104	400	0.00	

TPH 8015M mg/kg Analyzed By: MS S-06

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	**538**	50.0	07/09/2015	ND	199	99.4	200	6.45	
DRO >C10-C28	**10800**	50.0	07/09/2015	ND	207	104	200	7.40	

Surrogate: 1-Chlorooctane *163 %* *47.2-157*

Surrogate: 1-Chlorooctadecane *161 %* *52.1-176*

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Chevron - Lovington
NICK MOSCHETTI
HCR 60 Box 423
Lovington NM, 88260
Fax To: None

Received:	07/06/2015	Sampling Date:	07/06/2015
Reported:	07/13/2015	Sampling Type:	Soil
Project Name:	SOIL SAMPLES	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: STATE A-10 3 (H501713-03)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.100	0.100	07/13/2015	ND	2.13	107	2.00	3.67	
Toluene*	<0.100	0.100	07/13/2015	ND	1.90	95.2	2.00	3.76	
Ethylbenzene*	**0.103**	0.100	07/13/2015	ND	1.82	91.1	2.00	4.21	
Total Xylenes*	**0.929**	0.300	07/13/2015	ND	5.38	89.6	6.00	4.75	
Total BTEX	**1.03**	0.600	07/13/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID *104 %* *61-154*

Chloride, SM4500Cl-B mg/kg Analyzed By: AP

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**752**	16.0	07/09/2015	ND	416	104	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	**167**	50.0	07/09/2015	ND	199	99.4	200	6.45	
DRO >C10-C28	**6550**	50.0	07/09/2015	ND	207	104	200	7.40	

Surrogate: 1-Chlorooctane *119 %* *47.2-157*

Surrogate: 1-Chlorooctadecane *147 %* *52.1-176*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Chevron - Lovington
NICK MOSCHETTI
HCR 60 Box 423
Lovington NM, 88260
Fax To: None

Received:	07/06/2015	Sampling Date:	07/06/2015
Reported:	07/13/2015	Sampling Type:	Soil
Project Name:	SOIL SAMPLES	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: STATE A-10 4 (H501713-04)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/13/2015	ND	2.13	107	2.00	3.67	
Toluene*	<0.050	0.050	07/13/2015	ND	1.90	95.2	2.00	3.76	
Ethylbenzene*	<0.050	0.050	07/13/2015	ND	1.82	91.1	2.00	4.21	
Total Xylenes*	<0.150	0.150	07/13/2015	ND	5.38	89.6	6.00	4.75	
Total BTEX	<0.300	0.300	07/13/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID *105 %* *61-154*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**512**	16.0	07/09/2015	ND	416	104	400	0.00	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<50.0	50.0	07/09/2015	ND	199	99.4	200	6.45	
DRO >C10-C28	**4190**	50.0	07/09/2015	ND	207	104	200	7.40	

Surrogate: 1-Chlorooctane *89.9 %* *47.2-157*

Surrogate: 1-Chlorooctadecane *145 %* *52.1-176*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Notes and Definitions

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

Company Name: Chevron	**BILL TO**
Project Manager: Nick Hampton	P.O. #:
Address: 56 Texas Camp Road	Company: Chevron
City: Lovington State: NM Zip: 88260	Attn: Nick Moschetti
Phone #: 985-502-2342 Fax #:	Address: 56 Texas Camp Rd.
Project #: Project Owner:	City: Lovington, ~~NM~~
Project Name:	State: NM Zip: 88260
Project Location:	Phone #: 575-396-4414 x201
Sampler Name:	Fax #:

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE	ICE / COOL	OTHER :	SAMPLING: DATE	TIME	ANALYSIS REQUEST: TPH	Benzene	Chlorides
H501713 ~~H502977~~																	
1	State A-10 1	G	1			✓					✓		7/6/15	1:20pm	✓	✓	✓
2	State A-10 2																
3	State A-10 3																
4	State A-10 4																

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequental damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: Nick Hampton	Date: 7/6/15 Time: 3:52pm	Received By: Jodi Henson	Phone Result: ☐ Yes ☐ No Add'l Phone #:
Relinquished By: Nick Hampton	Date: Time:	Received By:	Fax Result: ☐ Yes ☐ No Add'l Fax #:
Delivered By: (Circle One) Sampler - UPS - Bus - Other: 2.4°C	Sample Condition Cool: ☑ Yes ☐ No Intact: ☐ Yes ☐ No	CHECKED BY: (Initials)	REMARKS:

† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326

#54

Analytical Report 532368

for

ARCADIS

Project Manager: Arti Patel

Chevron Sites

713.953.4841

21-JUL-16

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

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)

21-JUL-16

Project Manager: **Arti Patel**
ARCADIS
1004 N. Big Spring St.
Midland, TX 79701

Reference: XENCO Report No(s): **532368**
Chevron Sites
Project Address: Hobbs, NM

Arti Patel:

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) 532368. 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. 532368 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

Sample Cross Reference 532368

ARCADIS, Midland, TX

Chevron Sites

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
STATEA-10-04 4'	S	06-24-16 00:00	- 4 ft	532368-001
STATEA-10-04 10'	S	06-24-16 00:00	- 10 ft	532368-002
STATEA-10-04 20'	S	06-24-16 00:00	- 20 ft	532368-003
STATEA-10-04 30'	S	06-24-16 00:00	- 30 ft	532368-004
STATEA-10-03 4'	S	06-24-16 00:00	- 4 ft	532368-005
STATEA-10-03 10'	S	06-24-16 00:00	- 10 ft	532368-006
STATEA-10-03 20'	S	06-24-16 00:00	- 20 ft	532368-007
STATEA-10-03 30'	S	06-24-16 00:00	- 30 ft	532368-008
STATEA-10-01 4'	S	06-24-16 00:00	- 4 ft	532368-009
STATEA-10-01 10'	S	06-24-16 00:00	- 10 ft	532368-010
STATEA-10-01 20'	S	06-24-16 00:00	- 20 ft	532368-011
STATEA-10-01 30'	S	06-24-16 00:00	- 30 ft	532368-012
STATEA-10-02 4'	S	06-24-16 00:00	- 4 ft	532368-013
STATEA-10-02 10'	S	06-24-16 00:00	- 10 ft	532368-014
STATEA-10-02 20'	S	06-24-16 00:00	- 20 ft	532368-015
STATEA-10-02 30'	S	06-24-16 00:00	- 30 ft	532368-016
STATEA-10-02 50'	S	06-24-16 00:00	- 50 ft	532368-018
STATEA-10-02 70'	S	06-24-16 00:00	- 70 ft	532368-020
STATEA-10-05 4'	S	06-24-16 00:00	- 4 ft	532368-021
STATEA-10-05 10'	S	06-24-16 00:00	- 10 ft	532368-022
STATEA-10-05 20'	S	06-24-16 00:00	- 20 ft	532368-023
STATEA-10-05 30'	S	06-24-16 00:00	- 30 ft	532368-024
VGWUSAT3-02 4'	S	06-24-16 00:00	- 4 ft	532368-025
VGWUSAT3-02 10'	S	06-24-16 00:00	- 10 ft	532368-026
VGWUSAT3-02 20'	S	06-24-16 00:00	- 20 ft	532368-027
VGWUSAT3-02 30'	S	06-24-16 00:00	- 30 ft	532368-028
VGWUSAT3-02 60'	S	06-24-16 00:00	- 60 ft	532368-031
VGWUSAT3-04 4'	S	06-24-16 00:00	- 4 ft	532368-032
VGWUSAT3-04 30'	S	06-24-16 00:00	- 30 ft	532368-035
VGWUSAT3-01 4'	S	06-24-16 00:00	- 4 ft	532368-036
VGWUSAT3-01 10'	S	06-24-16 00:00	- 10 ft	532368-037
STATEA-10-02 40'	S	06-24-16 00:00	- 40 ft	Not Analyzed
STATEA-10-02 60'	S	06-24-16 00:00	- 60 ft	Not Analyzed
VGWUSAT3-02 40'	S	06-24-16 00:00	- 40 ft	Not Analyzed
VGWUSAT3-02 50'	S	06-24-16 00:00	- 50 ft	Not Analyzed
VGWUSAT3-04 10'	S	06-24-16 00:00	- 10 ft	Not Analyzed
VGWUSAT3-04 20'	S	06-24-16 00:00	- 20 ft	Not Analyzed
VGWUSAT3-01 20'	S	06-24-16 00:00	- 20 ft	Not Analyzed
VGWUSAT3-01 30'	S	06-24-16 00:00	- 30 ft	Not Analyzed

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-997612 Inorganic Anions by EPA 300/300.1
Lab Sample ID 532437-015 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 532368-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016, -021.
The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Hits Summary 532368

ARCADIS, Midland, TX

Chevron Sites

Sample Id : **STATEA-10-04 4'** Matrix : Soil % Moisture : 5.73
Lab Sample Id : 532368-001 Date Collected : 06.24.16 00.00 Basis : Dry Weight
Sample Depth : 4 ft Date Received : 06.25.16 10.30

Analytical Method : Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Seq Number 997612 Date Prep: 07.06.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	131	mg/kg	07.06.16 19.22		1

Sample Id : **STATEA-10-04 4'** Matrix : Soil % Moisture :
Lab Sample Id : 532368-001 Date Collected : 06.24.16 00.00 Basis : Wet Weight
Sample Depth : 4 ft Date Received : 06.25.16 10.30

Analytical Method : Soil pH by EPA 9045C
Seq Number 997530

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
pH	12408-02-5	8.12	SU	07.05.16 11.48		1

Sample Id : **STATEA-10-04 10'** Matrix : Soil % Moisture : 16.89
Lab Sample Id : 532368-002 Date Collected : 06.24.16 00.00 Basis : Dry Weight
Sample Depth : 10 ft Date Received : 06.25.16 10.30

Analytical Method : Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Seq Number 997612 Date Prep: 07.06.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	73.7	mg/kg	07.06.16 19.30		1

Sample Id : **STATEA-10-04 10'** Matrix : Soil % Moisture :
Lab Sample Id : 532368-002 Date Collected : 06.24.16 00.00 Basis : Wet Weight
Sample Depth : 10 ft Date Received : 06.25.16 10.30

Analytical Method : Soil pH by EPA 9045C
Seq Number 997530

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
pH	12408-02-5	8.46	SU	07.05.16 11.48		1

Hits Summary 532368

ARCADIS, Midland, TX

Chevron Sites

Sample Id : **STATEA-10-04 20'** Matrix : Soil % Moisture : .84
Lab Sample Id : 532368-003 Date Collected : 06.24.16 00.00 Basis : Dry Weight
Sample Depth : 20 ft Date Received : 06.25.16 10.30

Analytical Method : TPH By SW8015B Mod Prep Method: TX1005P
Seq Number 997171 Date Prep: 06.28.16 15.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	C6C10GRO	16.0	mg/kg	06.28.16 22.35		1
Total TPH	PHC635	16.0	mg/kg	06.28.16 22.35		1

Sample Id : **STATEA-10-04 20'** Matrix : Soil % Moisture :
Lab Sample Id : 532368-003 Date Collected : 06.24.16 00.00 Basis : Wet Weight
Sample Depth : 20 ft Date Received : 06.25.16 10.30

Analytical Method : Soil pH by EPA 9045C
Seq Number 997530

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
pH	12408-02-5	8.99	SU	07.05.16 11.48		1

Sample Id : **STATEA-10-04 30'** Matrix : Soil % Moisture :
Lab Sample Id : 532368-004 Date Collected : 06.24.16 00.00 Basis : Wet Weight
Sample Depth : 30 ft Date Received : 06.25.16 10.30

Analytical Method : Soil pH by EPA 9045C
Seq Number 997530

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
pH	12408-02-5	8.83	SU	07.05.16 11.48		1

Sample Id : **STATEA-10-03 4'** Matrix : Soil % Moisture : 3.94
Lab Sample Id : 532368-005 Date Collected : 06.24.16 00.00 Basis : Dry Weight
Sample Depth : 4 ft Date Received : 06.25.16 10.30

Analytical Method : Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Seq Number 997612 Date Prep: 07.06.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	94.3	mg/kg	07.06.16 20.09		1

Hits Summary 532368

ARCADIS, Midland, TX

Chevron Sites

Sample Id : **STATEA-10-03 4'** Matrix : Soil % Moisture :
Lab Sample Id : 532368-005 Date Collected : 06.24.16 00.00 Basis : Wet Weight
Sample Depth : 4 ft Date Received : 06.25.16 10.30

Analytical Method : Soil pH by EPA 9045C
Seq Number 997530

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
pH	12408-02-5	8.63	SU	07.05.16 11.48		1

Sample Id : **STATEA-10-03 10'** Matrix : Soil % Moisture : 6.18
Lab Sample Id : 532368-006 Date Collected : 06.24.16 00.00 Basis : Dry Weight
Sample Depth : 10 ft Date Received : 06.25.16 10.30

Analytical Method : Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Seq Number 997612 Date Prep: 07.06.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	45.9	mg/kg	07.06.16 20.17		1

Sample Id : **STATEA-10-03 10'** Matrix : Soil % Moisture :
Lab Sample Id : 532368-006 Date Collected : 06.24.16 00.00 Basis : Wet Weight
Sample Depth : 10 ft Date Received : 06.25.16 10.30

Analytical Method : Soil pH by EPA 9045C
Seq Number 997530

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
pH	12408-02-5	8.97	SU	07.05.16 11.48		1

Sample Id : **STATEA-10-03 20'** Matrix : Soil % Moisture : 9.16
Lab Sample Id : 532368-007 Date Collected : 06.24.16 00.00 Basis : Dry Weight
Sample Depth : 20 ft Date Received : 06.25.16 10.30

Analytical Method : Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Seq Number 997612 Date Prep: 07.06.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	29.5	mg/kg	07.06.16 20.25		1

Hits Summary 532368

ARCADIS, Midland, TX

Chevron Sites

Sample Id : **STATEA-10-03 20'** Matrix : Soil % Moisture :
Lab Sample Id : 532368-007 Date Collected : 06.24.16 00.00 Basis : Wet Weight
Sample Depth : 20 ft Date Received : 06.25.16 10.30

Analytical Method : Soil pH by EPA 9045C
Seq Number 997530

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
pH	12408-02-5	8.97	SU	07.05.16 11.48		1

Sample Id : **STATEA-10-03 30'** Matrix : Soil % Moisture :
Lab Sample Id : 532368-008 Date Collected : 06.24.16 00.00 Basis : Wet Weight
Sample Depth : 30 ft Date Received : 06.25.16 10.30

Analytical Method : Soil pH by EPA 9045C
Seq Number 997530

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
pH	12408-02-5	9.04	SU	07.05.16 11.48		1

Sample Id : **STATEA-10-01 4'** Matrix : Soil % Moisture : 4.23
Lab Sample Id : 532368-009 Date Collected : 06.24.16 00.00 Basis : Dry Weight
Sample Depth : 4 ft Date Received : 06.25.16 10.30

Analytical Method : Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Seq Number 997612 Date Prep: 07.06.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	441	mg/kg	07.07.16 07.29		1

Sample Id : **STATEA-10-01 4'** Matrix : Soil % Moisture :
Lab Sample Id : 532368-009 Date Collected : 06.24.16 00.00 Basis : Wet Weight
Sample Depth : 4 ft Date Received : 06.25.16 10.30

Analytical Method : Soil pH by EPA 9045C
Seq Number 997530

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
pH	12408-02-5	8.22	SU	07.05.16 11.48		1

Hits Summary 532368

ARCADIS, Midland, TX

Chevron Sites

Sample Id : **STATEA-10-01 10'** Matrix : Soil % Moisture :
Lab Sample Id : 532368-010 Date Collected : 06.24.16 00.00 Basis : Wet Weight
Sample Depth : 10 ft Date Received : 06.25.16 10.30

Analytical Method : Soil pH by EPA 9045C
Seq Number 997530

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
pH	12408-02-5	9.08	SU	07.05.16 11.48		1

Sample Id : **STATEA-10-01 20'** Matrix : Soil % Moisture :
Lab Sample Id : 532368-011 Date Collected : 06.24.16 00.00 Basis : Wet Weight
Sample Depth : 20 ft Date Received : 06.25.16 10.30

Analytical Method : Soil pH by EPA 9045C
Seq Number 997530

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
pH	12408-02-5	9.11	SU	07.05.16 11.48		1

Sample Id : **STATEA-10-01 30'** Matrix : Soil % Moisture :
Lab Sample Id : 532368-012 Date Collected : 06.24.16 00.00 Basis : Wet Weight
Sample Depth : 30 ft Date Received : 06.25.16 10.30

Analytical Method : Soil pH by EPA 9045C
Seq Number 997530

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
pH	12408-02-5	8.82	SU	07.05.16 11.48		1

Sample Id : **STATEA-10-02 4'** Matrix : Soil % Moisture : 9.44
Lab Sample Id : 532368-013 Date Collected : 06.24.16 00.00 Basis : Dry Weight
Sample Depth : 4 ft Date Received : 06.25.16 10.30

Analytical Method : Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Seq Number 997612 Date Prep: 07.06.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	86.4	mg/kg	07.07.16 08.31		1

Hits Summary 532368

ARCADIS, Midland, TX

Chevron Sites

Sample Id : **STATEA-10-02 4'** Matrix : Soil % Moisture :
Lab Sample Id : 532368-013 Date Collected : 06.24.16 00.00 Basis : Wet Weight
Sample Depth : 4 ft Date Received : 06.25.16 10.30

Analytical Method : Soil pH by EPA 9045C
Seq Number 997530

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
pH	12408-02-5	9.41	SU	07.05.16 11.48		1

Sample Id : **STATEA-10-02 10'** Matrix : Soil % Moisture : 9.6
Lab Sample Id : 532368-014 Date Collected : 06.24.16 00.00 Basis : Dry Weight
Sample Depth : 10 ft Date Received : 06.25.16 10.30

Analytical Method : Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Seq Number 997612 Date Prep: 07.06.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	131	mg/kg	07.07.16 08.39		5

Sample Id : **STATEA-10-02 10'** Matrix : Soil % Moisture :
Lab Sample Id : 532368-014 Date Collected : 06.24.16 00.00 Basis : Wet Weight
Sample Depth : 10 ft Date Received : 06.25.16 10.30

Analytical Method : Soil pH by EPA 9045C
Seq Number 997530

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
pH	12408-02-5	9.69	SU	07.05.16 11.48		1

Sample Id : **STATEA-10-02 20'** Matrix : Soil % Moisture : 12.62
Lab Sample Id : 532368-015 Date Collected : 06.24.16 00.00 Basis : Dry Weight
Sample Depth : 20 ft Date Received : 06.25.16 10.30

Analytical Method : Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Seq Number 997612 Date Prep: 07.06.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	316	mg/kg	07.07.16 08.47		5

Hits Summary 532368

ARCADIS, Midland, TX

Chevron Sites

Sample Id : **STATEA-10-02 20'** Matrix : Soil % Moisture :
Lab Sample Id : 532368-015 Date Collected : 06.24.16 00.00 Basis : Wet Weight
Sample Depth : 20 ft Date Received : 06.25.16 10.30

Analytical Method : Soil pH by EPA 9045C
Seq Number 997530

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
pH	12408-02-5	9.60	SU	07.05.16 11.48		1

Sample Id : **STATEA-10-02 30'** Matrix : Soil % Moisture : 5.72
Lab Sample Id : 532368-016 Date Collected : 06.24.16 00.00 Basis : Dry Weight
Sample Depth : 30 ft Date Received : 06.25.16 10.30

Analytical Method : Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Seq Number 997612 Date Prep: 07.06.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	418	mg/kg	07.07.16 08.55		5

Sample Id : **STATEA-10-02 30'** Matrix : Soil % Moisture :
Lab Sample Id : 532368-016 Date Collected : 06.24.16 00.00 Basis : Wet Weight
Sample Depth : 30 ft Date Received : 06.25.16 10.30

Analytical Method : Soil pH by EPA 9045C
Seq Number 997530

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
pH	12408-02-5	9.68	SU	07.05.16 11.48		1

Sample Id : **STATEA-10-02 50'** Matrix : Soil % Moisture :
Lab Sample Id : 532368-018 Date Collected : 06.24.16 00.00 Basis : Wet Weight
Sample Depth : 50 ft Date Received : 06.25.16 10.30

Analytical Method : Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Seq Number 998310 Date Prep: 07.18.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1630	mg/kg	07.18.16 20.11		10

Hits Summary 532368

ARCADIS, Midland, TX

Chevron Sites

Sample Id : **STATEA-10-02 70'** Matrix : Soil % Moisture : 6.09
Lab Sample Id : 532368-020 Date Collected : 06.24.16 00.00 Basis : Dry Weight
Sample Depth : 70 ft Date Received : 06.25.16 10.30

Analytical Method : Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Seq Number 998464 Date Prep: 07.20.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	865	mg/kg	07.20.16 16.46		5

Sample Id : **STATEA-10-05 4'** Matrix : Soil % Moisture : 3.84
Lab Sample Id : 532368-021 Date Collected : 06.24.16 00.00 Basis : Dry Weight
Sample Depth : 4 ft Date Received : 06.25.16 10.30

Analytical Method : Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Seq Number 997612 Date Prep: 07.06.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	47.5	mg/kg	07.07.16 09.02		1

Sample Id : **STATEA-10-05 4'** Matrix : Soil % Moisture :
Lab Sample Id : 532368-021 Date Collected : 06.24.16 00.00 Basis : Wet Weight
Sample Depth : 4 ft Date Received : 06.25.16 10.30

Analytical Method : Soil pH by EPA 9045C
Seq Number 997531

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
pH	12408-02-5	8.92	SU	07.05.16 15.52		1

Sample Id : **STATEA-10-05 10'** Matrix : Soil % Moisture :
Lab Sample Id : 532368-022 Date Collected : 06.24.16 00.00 Basis : Wet Weight
Sample Depth : 10 ft Date Received : 06.25.16 10.30

Analytical Method : Soil pH by EPA 9045C
Seq Number 997531

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
pH	12408-02-5	9.04	SU	07.05.16 15.52		1

Hits Summary 532368

ARCADIS, Midland, TX

Chevron Sites

Sample Id : **STATEA-10-05 20'** Matrix : Soil % Moisture : 1.61
Lab Sample Id : 532368-023 Date Collected : 06.24.16 00.00 Basis : Dry Weight
Sample Depth : 20 ft Date Received : 06.25.16 10.30

Analytical Method : Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Seq Number 997641 Date Prep: 07.06.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	14.2	mg/kg	07.07.16 10.21		1

Sample Id : **STATEA-10-05 20'** Matrix : Soil % Moisture :
Lab Sample Id : 532368-023 Date Collected : 06.24.16 00.00 Basis : Wet Weight
Sample Depth : 20 ft Date Received : 06.25.16 10.30

Analytical Method : Soil pH by EPA 9045C
Seq Number 997531

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
pH	12408-02-5	9.27	SU	07.05.16 15.52		1

Sample Id : **STATEA-10-05 30'** Matrix : Soil % Moisture : 8.11
Lab Sample Id : 532368-024 Date Collected : 06.24.16 00.00 Basis : Dry Weight
Sample Depth : 30 ft Date Received : 06.25.16 10.30

Analytical Method : Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Seq Number 997641 Date Prep: 07.06.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	23.4	mg/kg	07.07.16 10.28		1

Sample Id : **STATEA-10-05 30'** Matrix : Soil % Moisture :
Lab Sample Id : 532368-024 Date Collected : 06.24.16 00.00 Basis : Wet Weight
Sample Depth : 30 ft Date Received : 06.25.16 10.30

Analytical Method : Soil pH by EPA 9045C
Seq Number 997531

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
pH	12408-02-5	8.84	SU	07.05.16 15.52		1

Hits Summary 532368

ARCADIS, Midland, TX

Chevron Sites

Sample Id : **VGWUSAT3-02 4'** Matrix : Soil % Moisture : 0
Lab Sample Id : 532368-025 Date Collected : 06.24.16 00.00 Basis : Dry Weight
Sample Depth : 4 ft Date Received : 06.25.16 10.30

Analytical Method : Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Seq Number 998464 Date Prep: 07.20.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3340	mg/kg	07.20.16 17.09		20

Sample Id : **VGWUSAT3-02 10'** Matrix : Soil % Moisture : 0
Lab Sample Id : 532368-026 Date Collected : 06.24.16 00.00 Basis : Dry Weight
Sample Depth : 10 ft Date Received : 06.25.16 10.30

Analytical Method : Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Seq Number 998464 Date Prep: 07.20.16 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3590	mg/kg	07.20.16 17.17		20

Sample Id : **VGWUSAT3-02 20'** Matrix : Soil % Moisture :
Lab Sample Id : 532368-027 Date Collected : 06.24.16 00.00 Basis : Wet Weight
Sample Depth : 20 ft Date Received : 06.25.16 10.30

Analytical Method : Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Seq Number 998310 Date Prep: 07.18.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	546	mg/kg	07.18.16 20.18		5

Sample Id : **VGWUSAT3-02 30'** Matrix : Soil % Moisture :
Lab Sample Id : 532368-028 Date Collected : 06.24.16 00.00 Basis : Wet Weight
Sample Depth : 30 ft Date Received : 06.25.16 10.30

Analytical Method : Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Seq Number 998310 Date Prep: 07.18.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	635	mg/kg	07.18.16 20.26		5

Hits Summary 532368

ARCADIS, Midland, TX

Chevron Sites

Sample Id : **VGWUSAT3-02 60'** Matrix : Soil % Moisture : 7.45
Lab Sample Id : 532368-031 Date Collected : 06.24.16 00.00 Basis : Dry Weight
Sample Depth : 60 ft Date Received : 06.25.16 10.30

Analytical Method : Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Seq Number 997641 Date Prep: 07.06.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	22.9	mg/kg	07.07.16 10.36		1

Sample Id : **VGWUSAT3-04 4'** Matrix : Soil % Moisture :
Lab Sample Id : 532368-032 Date Collected : 06.24.16 00.00 Basis : Wet Weight
Sample Depth : 4 ft Date Received : 06.25.16 10.30

Analytical Method : Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Seq Number 998310 Date Prep: 07.18.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	58.4	mg/kg	07.18.16 20.34		1

Sample Id : **VGWUSAT3-04 30'** Matrix : Soil % Moisture : 7.45
Lab Sample Id : 532368-035 Date Collected : 06.24.16 00.00 Basis : Dry Weight
Sample Depth : 30 ft Date Received : 06.25.16 10.30

Analytical Method : Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Seq Number 997641 Date Prep: 07.06.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	72.2	mg/kg	07.07.16 10.44		1

Sample Id : **VGWUSAT3-01 4'** Matrix : Soil % Moisture :
Lab Sample Id : 532368-036 Date Collected : 06.24.16 00.00 Basis : Wet Weight
Sample Depth : 4 ft Date Received : 06.25.16 10.30

Analytical Method : Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Seq Number 998310 Date Prep: 07.18.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	681	mg/kg	07.18.16 20.42		5

Hits Summary 532368

ARCADIS, Midland, TX

Chevron Sites

Sample Id : **VGWUSAT3-01 10'**
Lab Sample Id : 532368-037
Sample Depth : 10 ft

Matrix : Soil
Date Collected : 06.24.16 00.00
Date Received : 06.25.16 10.30

% Moisture : 7.45
Basis : Dry Weight

Analytical Method : Inorganic Anions by EPA 300/300.1
Seq Number 997641

Prep Method: E300P
Date Prep: 07.06.16 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	54.4	mg/kg	07.07.16 11.07		1

Certificate of Analysis Summary 532368

ARCADIS, Midland, TX

Project Name: Chevron Sites

Project Id: 713.953.4841
Contact: Arti Patel
Project Location: Hobbs, NM

Date Received in Lab: Sat Jun-25-16 10:30 am
Report Date: 21-JUL-16
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	532368-001		532368-002		532368-003		532368-004		532368-005		532368-006	
	Field Id:	STATEA-10-04 4'		STATEA-10-04 10'		STATEA-10-04 20'		STATEA-10-04 30'		STATEA-10-03 4'		STATEA-10-03 10'	
	Depth:	4 ft		10 ft		20 ft		30 ft		4 ft		10 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jun-24-16 00:00		Jun-24-16 00:00		Jun-24-16 00:00		Jun-24-16 00:00		Jun-24-16 00:00		Jun-24-16 00:00	
Percent Moisture	***Extracted:***												
	Analyzed:	Jul-01-16 17:05		Jul-01-16 17:05		Jul-01-16 17:05		Jul-01-16 17:05		Jul-01-16 17:05		Jul-01-16 17:05	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		5.73	1.00	16.9	1.00	<1.00	1.00	5.06	1.00	3.94	1.00	6.18	1.00

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 532368

ARCADIS, Midland, TX

Project Name: Chevron Sites

Project Id: 713.953.4841
Contact: Arti Patel
Project Location: Hobbs, NM

Date Received in Lab: Sat Jun-25-16 10:30 am
Report Date: 21-JUL-16
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	532368-001		532368-002		532368-003		532368-004		532368-005		532368-006	
	Field Id:	STATEA-10-04 4'		STATEA-10-04 10'		STATEA-10-04 20'		STATEA-10-04 30'		STATEA-10-03 4'		STATEA-10-03 10'	
	Depth:	4 ft		10 ft		20 ft		30 ft		4 ft		10 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jun-24-16 00:00		Jun-24-16 00:00		Jun-24-16 00:00		Jun-24-16 00:00		Jun-24-16 00:00		Jun-24-16 00:00	
Inorganic Anions by EPA 300/300.1	***Extracted:***	Jul-06-16 12:00		Jul-06-16 12:00		Jul-06-16 12:00		Jul-06-16 12:00		Jul-06-16 12:00		Jul-06-16 12:00	
	Analyzed:	Jul-06-16 19:22		Jul-06-16 19:30		Jul-06-16 19:38		Jul-06-16 20:01		Jul-06-16 20:09		Jul-06-16 20:17	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		131	10.6	73.7	12.0	<10.1	10.1	<10.5	10.5	94.3	10.4	45.9	10.7
Soil pH by EPA 9045C	***Extracted:***												
	Analyzed:	Jul-05-16 11:48		Jul-05-16 11:48		Jul-05-16 11:48		Jul-05-16 11:48		Jul-05-16 11:48		Jul-05-16 11:48	
	Units/RL:	SU	RL	SU	RL	SU	RL	SU	RL	SU	RL	SU	RL
pH		8.12		8.46		8.99		8.83		8.63		8.97	
TPH By SW8015B Mod	***Extracted:***	Jun-28-16 15:00		Jun-28-16 15:00		Jun-28-16 15:00		Jun-28-16 15:00		Jun-28-16 15:00		Jun-28-16 15:00	
	Analyzed:	Jun-28-16 20:53		Jun-28-16 22:10		Jun-28-16 22:35		Jun-28-16 23:01		Jun-28-16 23:27		Jun-28-16 23:55	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C10 Gasoline Range Hydrocarbons		<15.9	15.9	<18.0	18.0	16.0	15.1	<15.8	15.8	<15.6	15.6	<16.0	16.0
C10-C28 Diesel Range Hydrocarbons		<15.9	15.9	<18.0	18.0	<15.1	15.1	<15.8	15.8	<15.6	15.6	<16.0	16.0
Total TPH		<15.9	15.9	<18.0	18.0	16.0	15.1	<15.8	15.8	<15.6	15.6	<16.0	16.0

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 532368

ARCADIS, Midland, TX

Project Name: Chevron Sites

Project Id: 713.953.4841
Contact: Arti Patel
Project Location: Hobbs, NM

Date Received in Lab: Sat Jun-25-16 10:30 am
Report Date: 21-JUL-16
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	532368-007		532368-008		532368-009		532368-010		532368-011		532368-012	
	Field Id:	STATEA-10-03 20'		STATEA-10-03 30'		STATEA-10-01 4'		STATEA-10-01 10'		STATEA-10-01 20'		STATEA-10-01 30'	
	Depth:	20 ft		30 ft		4 ft		10 ft		20 ft		30 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jun-24-16 00:00		Jun-24-16 00:00		Jun-24-16 00:00		Jun-24-16 00:00		Jun-24-16 00:00		Jun-24-16 00:00	
Percent Moisture	***Extracted:***												
	Analyzed:	Jul-01-16 17:05		Jul-01-16 17:05		Jul-01-16 17:05		Jul-01-16 17:05		Jul-01-16 17:05		Jul-01-16 17:05	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		9.16	1.00	6.29	1.00	4.23	1.00	2.90	1.00	3.89	1.00	6.76	1.00

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 532368

ARCADIS, Midland, TX

Project Name: Chevron Sites

Project Id: 713.953.4841
Contact: Arti Patel
Project Location: Hobbs, NM

Date Received in Lab: Sat Jun-25-16 10:30 am
Report Date: 21-JUL-16
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	532368-007		532368-008		532368-009		532368-010		532368-011		532368-012	
	Field Id:	STATEA-10-03 20'		STATEA-10-03 30'		STATEA-10-01 4'		STATEA-10-01 10'		STATEA-10-01 20'		STATEA-10-01 30'	
	Depth:	20 ft		30 ft		4 ft		10 ft		20 ft		30 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jun-24-16 00:00		Jun-24-16 00:00		Jun-24-16 00:00		Jun-24-16 00:00		Jun-24-16 00:00		Jun-24-16 00:00	
Inorganic Anions by EPA 300/300.1	***Extracted:***	Jul-06-16 12:00		Jul-06-16 12:00		Jul-06-16 12:00		Jul-06-16 12:00		Jul-06-16 12:00		Jul-06-16 12:00	
	Analyzed:	Jul-06-16 20:25		Jul-06-16 20:32		Jul-07-16 07:29		Jul-07-16 07:52		Jul-07-16 08:00		Jul-07-16 08:23	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		29.5	11.0	<10.7	10.7	441	10.4	<10.3	10.3	<10.4	10.4	<10.7	10.7
Soil pH by EPA 9045C	***Extracted:***												
	Analyzed:	Jul-05-16 11:48		Jul-05-16 11:48		Jul-05-16 11:48		Jul-05-16 11:48		Jul-05-16 11:48		Jul-05-16 11:48	
	Units/RL:	SU	RL	SU	RL	SU	RL	SU	RL	SU	RL	SU	RL
pH		8.97		9.04		8.22		9.08		9.11		8.82	
TPH By SW8015B Mod	***Extracted:***	Jun-28-16 15:00		Jun-28-16 15:00		Jun-28-16 15:00		Jun-28-16 15:00		Jun-28-16 15:00		Jun-28-16 15:00	
	Analyzed:	Jun-29-16 00:21		Jun-29-16 00:48		Jun-29-16 01:16		Jun-29-16 01:42		Jun-29-16 02:35		Jun-29-16 02:59	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C10 Gasoline Range Hydrocarbons		<16.5	16.5	<16.0	16.0	<15.6	15.6	<15.4	15.4	<15.6	15.6	<16.1	16.1
C10-C28 Diesel Range Hydrocarbons		<16.5	16.5	<16.0	16.0	<15.6	15.6	<15.4	15.4	<15.6	15.6	<16.1	16.1
Total TPH		<16.5	16.5	<16.0	16.0	<15.6	15.6	<15.4	15.4	<15.6	15.6	<16.1	16.1

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 532368

ARCADIS, Midland, TX

Project Name: Chevron Sites

Project Id: 713.953.4841
Contact: Arti Patel
Project Location: Hobbs, NM

Date Received in Lab: Sat Jun-25-16 10:30 am
Report Date: 21-JUL-16
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	532368-013		532368-014		532368-015		532368-016		532368-018		532368-020	
	Field Id:	STATEA-10-02 4'		STATEA-10-02 10'		STATEA-10-02 20'		STATEA-10-02 30'		STATEA-10-02 50'		STATEA-10-02 70'	
	Depth:	4 ft		10 ft		20 ft		30 ft		50 ft		70 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jun-24-16 00:00		Jun-24-16 00:00		Jun-24-16 00:00		Jun-24-16 00:00		Jun-24-16 00:00		Jun-24-16 00:00	
Percent Moisture	***Extracted:***												
	Analyzed:	Jul-01-16 17:05		Jul-01-16 17:05		Jul-01-16 17:05		Jul-01-16 17:05		Jul-01-16 17:05		Jul-01-16 17:05	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		9.44	1.00	9.60	1.00	12.6	1.00	5.72	1.00	9.15	1.00	6.09	1.00

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 532368

ARCADIS, Midland, TX

Project Name: Chevron Sites

Project Id: 713.953.4841
Contact: Arti Patel
Project Location: Hobbs, NM

Date Received in Lab: Sat Jun-25-16 10:30 am
Report Date: 21-JUL-16
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	532368-013		532368-014		532368-015		532368-016		532368-018		532368-020	
	Field Id:	STATEA-10-02 4'		STATEA-10-02 10'		STATEA-10-02 20'		STATEA-10-02 30'		STATEA-10-02 50'		STATEA-10-02 70'	
	Depth:	4 ft		10 ft		20 ft		30 ft		50 ft		70 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jun-24-16 00:00		Jun-24-16 00:00		Jun-24-16 00:00		Jun-24-16 00:00		Jun-24-16 00:00		Jun-24-16 00:00	
Inorganic Anions by EPA 300/300.1	***Extracted:***	Jul-06-16 12:00		Jul-06-16 12:00		Jul-06-16 12:00		Jul-06-16 12:00		Jul-18-16 14:00		Jul-20-16 12:00	
	Analyzed:	Jul-07-16 08:31		Jul-07-16 08:39		Jul-07-16 08:47		Jul-07-16 08:55		Jul-18-16 20:11		Jul-20-16 16:46	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		86.4	11.0	131	55.3	316	57.2	418	53.0	1630	100	865	53.2
Soil pH by EPA 9045C	***Extracted:***												
	Analyzed:	Jul-05-16 11:48		Jul-05-16 11:48		Jul-05-16 11:48		Jul-05-16 11:48					
	Units/RL:	SU	RL	SU	RL	SU	RL	SU	RL				
pH		9.41		9.69		9.60		9.68					
TPH By SW8015B Mod	***Extracted:***	Jun-28-16 15:00		Jun-28-16 15:00		Jun-28-16 15:00		Jun-28-16 15:00					
	Analyzed:	Jun-29-16 03:25		Jun-29-16 03:51		Jun-29-16 04:17		Jun-29-16 04:44					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
C6-C10 Gasoline Range Hydrocarbons		<16.5	16.5	<16.5	16.5	<17.2	17.2	<15.9	15.9				
C10-C28 Diesel Range Hydrocarbons		<16.5	16.5	<16.5	16.5	<17.2	17.2	<15.9	15.9				
Total TPH		<16.5	16.5	<16.5	16.5	<17.2	17.2	<15.9	15.9				

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 532368

ARCADIS, Midland, TX

Project Name: Chevron Sites

Project Id: 713.953.4841
Contact: Arti Patel
Project Location: Hobbs, NM

Date Received in Lab: Sat Jun-25-16 10:30 am
Report Date: 21-JUL-16
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	532368-021		532368-022		532368-023		532368-024		532368-025		532368-026	
	Field Id:	STATEA-10-05 4'		STATEA-10-05 10'		STATEA-10-05 20'		STATEA-10-05 30'		VGWUSAT3-02 4'		VGWUSAT3-02 10'	
	Depth:	4 ft		10 ft		20 ft		30 ft		4 ft		10 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jun-24-16 00:00		Jun-24-16 00:00		Jun-24-16 00:00		Jun-24-16 00:00		Jun-24-16 00:00		Jun-24-16 00:00	
Percent Moisture	***Extracted:***												
	Analyzed:	Jul-01-16 17:05		Jul-01-16 17:05		Jul-01-16 17:05		Jul-01-16 17:05					
	Units/RL:	%	RL	%	RL	%	RL	%	RL				
Percent Moisture		3.84	1.00	7.45	1.00	1.61	1.00	8.11	1.00				

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 532368

ARCADIS, Midland, TX

Project Name: Chevron Sites

Project Id: 713.953.4841
Contact: Arti Patel
Project Location: Hobbs, NM

Date Received in Lab: Sat Jun-25-16 10:30 am
Report Date: 21-JUL-16
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	532368-021		532368-022		532368-023		532368-024		532368-025		532368-026	
	Field Id:	STATEA-10-05 4'		STATEA-10-05 10'		STATEA-10-05 20'		STATEA-10-05 30'		VGWUSAT3-02 4'		VGWUSAT3-02 10'	
	Depth:	4 ft		10 ft		20 ft		30 ft		4 ft		10 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jun-24-16 00:00		Jun-24-16 00:00		Jun-24-16 00:00		Jun-24-16 00:00		Jun-24-16 00:00		Jun-24-16 00:00	
Inorganic Anions by EPA 300/300.1	***Extracted:***	Jul-06-16 12:00		Jul-06-16 14:00		Jul-06-16 14:00		Jul-06-16 14:00		Jul-20-16 12:00		Jul-20-16 12:00	
	Analyzed:	Jul-07-16 09:02		Jul-07-16 09:57		Jul-07-16 10:21		Jul-07-16 10:28		Jul-20-16 17:09		Jul-20-16 17:17	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		47.5	10.4	<10.8	10.8	14.2	10.2	23.4	10.9	3340	200	3590	200
Soil pH by EPA 9045C	***Extracted:***												
	Analyzed:	Jul-05-16 15:52		Jul-05-16 15:52		Jul-05-16 15:52		Jul-05-16 15:52					
	Units/RL:	SU	RL	SU	RL	SU	RL	SU	RL				
pH		8.92		9.04		9.27		8.84					
TPH By SW8015B Mod	***Extracted:***	Jun-29-16 14:00		Jun-29-16 14:00		Jun-29-16 14:00		Jun-29-16 14:00					
	Analyzed:	Jun-29-16 15:39		Jun-29-16 16:59		Jun-29-16 17:26		Jun-29-16 17:53					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
C6-C10 Gasoline Range Hydrocarbons		<15.6	15.6	<16.2	16.2	<15.2	15.2	<16.3	16.3				
C10-C28 Diesel Range Hydrocarbons		<15.6	15.6	<16.2	16.2	<15.2	15.2	<16.3	16.3				
Total TPH		<15.6	15.6	<16.2	16.2	<15.2	15.2	<16.3	16.3				

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 532368

ARCADIS, Midland, TX

Project Name: Chevron Sites

Project Id: 713.953.4841
Contact: Arti Patel
Project Location: Hobbs, NM

Date Received in Lab: Sat Jun-25-16 10:30 am
Report Date: 21-JUL-16
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	532368-027		532368-028		532368-031		532368-032		532368-035		532368-036	
	Field Id:	VGWUSAT3-02 20'		VGWUSAT3-02 30'		VGWUSAT3-02 60'		VGWUSAT3-04 4'		VGWUSAT3-04 30'		VGWUSAT3-01 4'	
	Depth:	20 ft		30 ft		60 ft		4 ft		30 ft		4 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jun-24-16 00:00		Jun-24-16 00:00		Jun-24-16 00:00		Jun-24-16 00:00		Jun-24-16 00:00		Jun-24-16 00:00	
Inorganic Anions by EPA 300/300.1	***Extracted:***	Jul-18-16 14:00		Jul-18-16 14:00		Jul-06-16 14:00		Jul-18-16 14:00		Jul-06-16 14:00		Jul-18-16 14:00	
	Analyzed:	Jul-18-16 20:18		Jul-18-16 20:26		Jul-07-16 10:36		Jul-18-16 20:34		Jul-07-16 10:44		Jul-18-16 20:42	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		546	50.0	635	50.0	22.9	10.8	58.4	10.0	72.2	10.8	681	50.0

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 532368

ARCADIS, Midland, TX

Project Name: Chevron Sites

Project Id: 713.953.4841
Contact: Arti Patel
Project Location: Hobbs, NM

Date Received in Lab: Sat Jun-25-16 10:30 am
Report Date: 21-JUL-16
Project Manager: Kelsey Brooks

Analysis Requested							
	Lab Id:	532368-037					
	Field Id:	VGWUSAT3-01 10'					
	Depth:	10 ft					
	Matrix:	SOIL					
	Sampled:	Jun-24-16 00:00					
Inorganic Anions by EPA 300/300.1	***Extracted:***	Jul-06-16 14:00					
	Analyzed:	Jul-07-16 11:07					
	Units/RL:	mg/kg	RL				
Chloride		54.4	10.8				

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

Form 2 - Surrogate Recoveries

Project Name: Chevron Sites

Work Orders : 532368, 532368 **Project ID:** 713.953.4841

Lab Batch #: 997171 **Sample:** 532368-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/28/16 20:53

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	99.9	101	70-135	
o-Terphenyl	52.5	50.0	105	70-135	

Lab Batch #: 997171 **Sample:** 532368-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/28/16 22:10

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.5	99.9	97	70-135	
o-Terphenyl	46.9	50.0	94	70-135	

Lab Batch #: 997171 **Sample:** 532368-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/28/16 22:35

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.0	99.7	94	70-135	
o-Terphenyl	44.2	49.9	89	70-135	

Lab Batch #: 997171 **Sample:** 532368-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/28/16 23:01

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	84.2	100	84	70-135	
o-Terphenyl	41.0	50.0	82	70-135	

Lab Batch #: 997171 **Sample:** 532368-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/28/16 23:27

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.9	99.8	88	70-135	
o-Terphenyl	42.4	49.9	85	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: Chevron Sites

Work Orders : 532368, 532368 **Project ID:** 713.953.4841

Lab Batch #: 997171 **Sample:** 532368-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/28/16 23:55

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.0	99.8	92	70-135	
o-Terphenyl	44.9	49.9	90	70-135	

Lab Batch #: 997171 **Sample:** 532368-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/29/16 00:21

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.0	99.7	86	70-135	
o-Terphenyl	42.2	49.9	85	70-135	

Lab Batch #: 997171 **Sample:** 532368-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/29/16 00:48

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.9	99.7	90	70-135	
o-Terphenyl	43.7	49.9	88	70-135	

Lab Batch #: 997171 **Sample:** 532368-009 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/29/16 01:16

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.3	99.7	93	70-135	
o-Terphenyl	45.0	49.9	90	70-135	

Lab Batch #: 997171 **Sample:** 532368-010 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/29/16 01:42

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.9	99.9	86	70-135	
o-Terphenyl	41.6	50.0	83	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: Chevron Sites

Work Orders : 532368, 532368 **Project ID:** 713.953.4841

Lab Batch #: 997171 **Sample:** 532368-011 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/29/16 02:35

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.8	99.8	93	70-135	
o-Terphenyl	45.9	49.9	92	70-135	

Lab Batch #: 997171 **Sample:** 532368-012 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/29/16 02:59

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.9	99.9	100	70-135	
o-Terphenyl	50.1	50.0	100	70-135	

Lab Batch #: 997171 **Sample:** 532368-013 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/29/16 03:25

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.4	99.9	96	70-135	
o-Terphenyl	48.3	50.0	97	70-135	

Lab Batch #: 997171 **Sample:** 532368-014 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/29/16 03:51

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.5	99.7	95	70-135	
o-Terphenyl	46.7	49.9	94	70-135	

Lab Batch #: 997171 **Sample:** 532368-015 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/29/16 04:17

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	49.6	50.0	99	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: Chevron Sites

Work Orders : 532368, 532368 **Project ID:** 713.953.4841

Lab Batch #: 997171 **Sample:** 532368-016 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/29/16 04:44

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.7	99.8	98	70-135	
o-Terphenyl	48.7	49.9	98	70-135	

Lab Batch #: 997250 **Sample:** 532368-021 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/29/16 15:39

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.0	99.7	92	70-135	
o-Terphenyl	46.1	49.9	92	70-135	

Lab Batch #: 997250 **Sample:** 532368-022 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/29/16 16:59

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.6	99.8	92	70-135	
o-Terphenyl	45.7	49.9	92	70-135	

Lab Batch #: 997250 **Sample:** 532368-023 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/29/16 17:26

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.4	99.7	93	70-135	
o-Terphenyl	44.7	49.9	90	70-135	

Lab Batch #: 997250 **Sample:** 532368-024 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/29/16 17:53

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.9	99.9	95	70-135	
o-Terphenyl	47.1	50.0	94	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: Chevron Sites

Work Orders : 532368, 532368 **Project ID:** 713.953.4841

Lab Batch #: 997171 **Sample:** 710455-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/28/16 19:37

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	100	103	70-135	
o-Terphenyl	51.6	50.0	103	70-135	

Lab Batch #: 997250 **Sample:** 710500-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/29/16 14:19

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	100	103	70-135	
o-Terphenyl	52.2	50.0	104	70-135	

Lab Batch #: 997171 **Sample:** 710455-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/28/16 20:02

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	124	100	124	70-135	
o-Terphenyl	56.5	50.0	113	70-135	

Lab Batch #: 997250 **Sample:** 710500-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/29/16 14:45

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	124	100	124	70-135	
o-Terphenyl	58.7	50.0	117	70-135	

Lab Batch #: 997171 **Sample:** 710455-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/28/16 20:27

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	121	100	121	70-135	
o-Terphenyl	55.3	50.0	111	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: Chevron Sites

Work Orders : 532368, 532368 **Project ID:** 713.953.4841

Lab Batch #: 997250 **Sample:** 710500-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/29/16 15:12

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	130	100	130	70-135	
o-Terphenyl	59.2	50.0	118	70-135	

Lab Batch #: 997171 **Sample:** 532368-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/28/16 21:19

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	99.9	115	70-135	
o-Terphenyl	51.1	50.0	102	70-135	

Lab Batch #: 997250 **Sample:** 532368-021 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/29/16 16:05

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	110	99.9	110	70-135	
o-Terphenyl	45.1	50.0	90	70-135	

Lab Batch #: 997171 **Sample:** 532368-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/28/16 21:45

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	123	99.8	123	70-135	
o-Terphenyl	54.4	49.9	109	70-135	

Lab Batch #: 997250 **Sample:** 532368-021 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/29/16 16:32

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	99.7	109	70-135	
o-Terphenyl	46.1	49.9	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.

BS / BSD Recoveries

Project Name: Chevron Sites

Work Order #: 532368, 532368 **Project ID:** 713.953.4841

Analyst: MNR **Date Prepared:** 07/06/2016 **Date Analyzed:** 07/06/2016

Lab Batch ID: 997612 **Sample:** 710654-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<10.0	250	236	94	250	228	91	3	90-110	20	

Analyst: MNR **Date Prepared:** 07/06/2016 **Date Analyzed:** 07/07/2016

Lab Batch ID: 997641 **Sample:** 710669-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<10.0	250	231	92	250	233	93	1	90-110	20	

Analyst: MNR **Date Prepared:** 07/18/2016 **Date Analyzed:** 07/18/2016

Lab Batch ID: 998310 **Sample:** 711075-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<10.0	250	246	98	250	250	100	2	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: Chevron Sites

Work Order #: 532368, 532368 **Project ID:** 713.953.4841

Analyst: MNR **Date Prepared:** 07/20/2016 **Date Analyzed:** 07/20/2016

Lab Batch ID: 998464 **Sample:** 711178-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<10.0	250	257	103	250	268	107	4	90-110	20	

Analyst: ARM **Date Prepared:** 06/28/2016 **Date Analyzed:** 06/28/2016

Lab Batch ID: 997171 **Sample:** 710455-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	918	92	1000	899	90	2	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	965	97	1000	963	96	0	70-135	35	

Analyst: ARM **Date Prepared:** 06/29/2016 **Date Analyzed:** 06/29/2016

Lab Batch ID: 997250 **Sample:** 710500-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	991	99	1000	1040	104	5	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	1100	110	1000	1080	108	2	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: Chevron Sites

Work Order #: 532368

Lab Batch #: 997612 **Project ID:** 713.953.4841

Date Analyzed: 07/07/2016 **Date Prepared:** 07/06/2016 **Analyst:** MNR

QC- Sample ID: 532368-009 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Inorganic Anions by EPA 300 Analytes	MATRIX / MATRIX SPIKE RECOVERY STUDY					
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	441	261	635	74	80-120	X

Lab Batch #: 997612

Date Analyzed: 07/06/2016 **Date Prepared:** 07/06/2016 **Analyst:** MNR

QC- Sample ID: 532437-015 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Inorganic Anions by EPA 300 Analytes	MATRIX / MATRIX SPIKE RECOVERY STUDY					
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	529	1250	1620	87	80-120	

Lab Batch #: 997641

Date Analyzed: 07/07/2016 **Date Prepared:** 07/06/2016 **Analyst:** MNR

QC- Sample ID: 532368-022 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Inorganic Anions by EPA 300 Analytes	MATRIX / MATRIX SPIKE RECOVERY STUDY					
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	<10.8	270	231	86	80-120	

Lab Batch #: 997641

Date Analyzed: 07/07/2016 **Date Prepared:** 07/06/2016 **Analyst:** MNR

QC- Sample ID: 532413-005 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Inorganic Anions by EPA 300 Analytes	MATRIX / MATRIX SPIKE RECOVERY STUDY					
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	2150	2500	4800	106	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 Recoveries

Project Name: Chevron Sites

Work Order #: 532368

Lab Batch #: 998310 **Project ID:** 713.953.4841

Date Analyzed: 07/18/2016 **Date Prepared:** 07/18/2016 **Analyst:** MNR

QC- Sample ID: 532328-017 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	28.7	250	258	92	80-120	

Lab Batch #: 998310

Date Analyzed: 07/18/2016 **Date Prepared:** 07/18/2016 **Analyst:** MNR

QC- Sample ID: 533521-001 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	<10.0	250	274	110	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: Chevron Sites

Work Order # : 532368 **Project ID:** 713.953.4841

Lab Batch ID: 998464 **QC- Sample ID:** 533505-007 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 07/20/2016 **Date Prepared:** 07/20/2016 **Analyst:** MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 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
Chloride	717	1250	2040	106	1250	2010	103	1	80-120	20	

Lab Batch ID: 997171 **QC- Sample ID:** 532368-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 06/28/2016 **Date Prepared:** 06/28/2016 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015B Mod 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	<15.9	1060	904	85	1060	1090	103	19	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.9	1060	977	92	1060	1080	102	10	70-135	35	

Lab Batch ID: 997250 **QC- Sample ID:** 532368-021 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 06/29/2016 **Date Prepared:** 06/29/2016 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015B Mod 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	<15.6	1040	887	85	1040	880	85	1	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.6	1040	1010	97	1040	1010	97	0	70-135	35	

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

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

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

Sample Duplicate Recovery

Project Name: Chevron Sites

Work Order #: 532368

Lab Batch #: 997612 **Project ID:** 713.953.4841
Date Analyzed: 07/07/2016 07:37 **Date Prepared:** 07/06/2016 **Analyst:** MNR
QC- Sample ID: 532368-009 D **Batch #:** 1 **Matrix:** Soil
Reporting Units: mg/kg

Inorganic Anions by EPA 300/300.1 Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride	441	440	0	20	

Lab Batch #: 997612
Date Analyzed: 07/06/2016 18:51 **Date Prepared:** 07/06/2016 **Analyst:** MNR
QC- Sample ID: 532437-015 D **Batch #:** 1 **Matrix:** Soil
Reporting Units: mg/kg

Inorganic Anions by EPA 300/300.1 Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride	529	502	5	20	

Lab Batch #: 997641
Date Analyzed: 07/07/2016 10:05 **Date Prepared:** 07/06/2016 **Analyst:** MNR
QC- Sample ID: 532368-022 D **Batch #:** 1 **Matrix:** Soil
Reporting Units: mg/kg

Inorganic Anions by EPA 300/300.1 Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride	<10.8	<10.8	0	20	U

Lab Batch #: 997641
Date Analyzed: 07/07/2016 11:54 **Date Prepared:** 07/06/2016 **Analyst:** MNR
QC- Sample ID: 532413-005 D **Batch #:** 1 **Matrix:** Soil
Reporting Units: mg/kg

Inorganic Anions by EPA 300/300.1 Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride	2150	2280	6	20	

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

Sample Duplicate Recovery

Project Name: Chevron Sites

Work Order #: 532368

Lab Batch #: 998310 **Project ID:** 713.953.4841
Date Analyzed: 07/18/2016 20:57 **Date Prepared:** 07/18/2016 **Analyst:** MNR
QC- Sample ID: 532328-017 D **Batch #:** 1 **Matrix:** Soil
Reporting Units: mg/kg

Inorganic Anions by EPA 300/300.1 Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride	28.7	25.5	12	20	

Lab Batch #: 998310
Date Analyzed: 07/18/2016 19:08 **Date Prepared:** 07/18/2016 **Analyst:** MNR
QC- Sample ID: 533521-001 D **Batch #:** 1 **Matrix:** Soil
Reporting Units: mg/kg

Inorganic Anions by EPA 300/300.1 Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride	<10.0	<10.0	0	20	U

Lab Batch #: 997489
Date Analyzed: 07/01/2016 17:05 **Date Prepared:** 07/01/2016 **Analyst:** WRU
QC- Sample ID: 532368-001 D **Batch #:** 1 **Matrix:** Soil
Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	5.73	5.48	4	20	

Lab Batch #: 997489
Date Analyzed: 07/01/2016 17:05 **Date Prepared:** 07/01/2016 **Analyst:** WRU
QC- Sample ID: 532368-011 D **Batch #:** 1 **Matrix:** Soil
Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	3.89	3.66	6	20	

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

Sample Duplicate Recovery

Project Name: Chevron Sites

Work Order #: 532368

Lab Batch #: 997493 **Project ID:** 713.953.4841

Date Analyzed: 07/01/2016 17:05 **Date Prepared:** 07/01/2016 **Analyst:** WRU

QC- Sample ID: 532368-021 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	3.84	3.95	3	20	

Lab Batch #: 997530

Date Analyzed: 07/05/2016 11:48 **Date Prepared:** 07/05/2016 **Analyst:** WRU

QC- Sample ID: 532585-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: SU

Soil pH by EPA 9045C Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
pH	7.78	7.77	0	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

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: ARCADIS

Date/ Time Received: 06/25/2016 10:30:00 AM

Work Order #: 532368

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	4.5
#2 *Shipping container in good condition?	**N/A**
#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 (less than 1/4 inch bubble)?	**N/A**
#22 <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**
#23 >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: Mary Alexis Negron
Mary Negron
Date: 06/27/2016

Checklist reviewed by: Kelsey Brooks
Kelsey Brooks
Date: 06/28/2016

ARCADIS

ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 1 of ___

Lab Work Order # 532368

Send Results to:

Contact & Company Name: Arti Patil

Telephone: 713 953 4841

Address:

Fax:

City State Zip

E-mail Address: Arti.Patil@arcadis.com

Project Name/Location (City, State):

Project #:

Sampler's Printed Name:

Sampler's Signature:

Preservative							
Filtered (✓)							
# of Containers							
Container Information							

PARAMETER ANALYSIS & METHOD

Chloride 24

Keys

Preservation Key:
A. H_2SO_4
B. HCL
C. HNO_3
D. NaOH
E. None
F. Other: _____
G. Other: _____
H. Other: _____

Container Information Key:
1. 40 ml Vial
2. 1 L Amber
3. 250 ml Plastic
4. 500 ml Plastic
5. Encore
6. 2 oz. Glass
7. 4 oz. Glass
8. 8 oz. Glass
9. Other: _____
10. Other: _____

Matrix Key:
SO - Soil, SE - Sediment, NL - NAPL/Oil, W - Water, SL - Sludge, SW - Sample Wipe, T - Tissue, A - Air, Other: _____

Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	REMARKS
A-10 SB-4 4	6-24			✓	SOL	test
10						hold
20						hold
30						hold
SB-3 4						Test
10						hold
20						hold
30						hold
SB-~~1~~ 1 4						test
10						hold
20						hold
30						hold
SB-2 4						~~test~~ hold
10						hold

Special Instructions/Comments:

☐ Special QA/QC Instructions(✓):

Laboratory Information and Receipt

Lab Name:

☐ Cooler packed with ice (✓)

Specify Turnaround Requirements:

Shipping Tracking #:

Cooler Custody Seal (✓)

☑ Intact ☐ Not Intact

Sample Receipt:

Condition/Cooler Temp: 4.5°C

Relinquished By	Received By	Relinquished By	Laboratory Received By
Printed Name: Ken Wicas	Printed Name:	Printed Name:	Printed Name: Julian Martinez
Signature:	Signature:	Signature:	Signature:
Firm: Arcadis	Firm/Courier: MS	Firm/Courier:	Firm: Xenco
Date/Time: 6/24 1700	Date/Time: 6/24	Date/Time:	Date/Time: 6-25-16 10:30

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ARCADIS

ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

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Lab Work Order # 532368

Send Results to:

Contact & Company Name: Arti PuHl

Telephone: 713.953.4841

Address:

Fax:

City State Zip

E-mail Address: Arti.puhl@arcadis.com

Project Name/Location (City, State):

Project #:

Sampler's Printed Name:

Sampler's Signature:

Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix
A-10 SB-2 20	6-24			✓	Soil
30					
40					
50					
60					
70					
SB-5 4					
10					
20					
30					
SAT-3 SB-3 4					
10					
20					
30					

Preservative								
Filtered (✓)								
# of Containers								
Container Information								

PARAMETER ANALYSIS & METHOD

Chlorides

Keys

Preservation Key:
A. H_2SO_4
B. HCL
C. HNO_3
D. NaOH
E. None
F. Other: _____
G. Other: _____
H. Other: _____

Container Information Key:
1. 40 ml Vial
2. 1 L Amber
3. 250 ml Plastic
4. 500 ml Plastic
5. Encore
6. 2 oz. Glass
7. 4 oz. Glass
8. 8 oz. Glass
9. Other: _____
10. Other: _____

Matrix Key:
SO - Soil | SE - Sediment | NL - NAPL/Oil
W - Water | SL - Sludge | SW - Sample Wipe
T - Tissue | A - Air | Other: _____

REMARKS

hold
hold
hold
hold
hold
hold
test
hold
hold
hold
test
hold
hold
hold

Special Instructions/Comments:

☐ Special QA/QC Instructions(✓):

Laboratory Information and Receipt

Lab Name:

Cooler Custody Seal (✓)

☐ Cooler packed with ice (✓)

☐ Intact ☐ Not Intact

Specify Turnaround Requirements:

Sample Receipt:

Shipping Tracking #:

Condition/Cooler Temp: _____

Relinquished By	Received By	Relinquished By	Laboratory Received By
Printed Name: Ken Wicks	Printed Name:	Printed Name:	Printed Name:
Signature:	Signature:	Signature:	Signature:
Firm: Arcadis	Firm/Courier:	Firm/Courier:	Firm:
Date/Time: 6/24 1700	Date/Time: 6/24/16	Date/Time:	Date/Time:

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ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

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Lab Work Order # 532368

Send Results to:

Contact & Company Name: Arti PuHl	Telephone: 713.953.4841
Address:	Fax:
City State Zip	E-mail Address: APti.PuHl@arcadis.com
Project Name/Location (City, State):	Project #:
Sampler's Printed Name:	Sampler's Signature:

Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	Preservative	Filtered (✓)	# of Containers	Container Information	Chlorinity	PARAMETER ANALYSIS & METHOD	REMARKS
SB-3 SB-2 4	6-24			✓	SOL							hold
10												hold
20												hold
30												hold
40												hold
50												hold
60												~~hold~~ test
SB-4 4												hold
10												hold
20												hold
30												test
3												

Keys

Preservation Key:
A. H_2SO_4
B. HCL
C. HNO_3
D. NaOH
E. None
F. Other: _____
G. Other: _____
H. Other: _____

Container Information Key:
1. 40 ml Vial
2. 1 L Amber
3. 250 ml Plastic
4. 500 ml Plastic
5. Encore
6. 2 oz. Glass
7. 4 oz. Glass
8. 8 oz. Glass
9. Other: _____
10. Other: _____

Matrix Key:
SO - Soil | SE - Sediment | NL - NAPL/Oil
W - Water | SL - Sludge | SW - Sample Wipe
T - Tissue | A - Air | Other: _____

Special Instructions/Comments:

☐ Special QA/QC Instructions(✓):

Laboratory Information and Receipt		Relinquished By	Received By	Relinquished By	Laboratory Received By
Lab Name:	Cooler Custody Seal (✓)	Printed Name: Ken Wicks	Printed Name: K Butler	Printed Name:	Printed Name:
☐ Cooler packed with ice (✓)	☐ Intact ☐ Not Intact	Signature:	Signature:	Signature:	Signature:
Specify Turnaround Requirements:	Sample Receipt:	Firm: Arcadis	Firm/Courier:	Firm/Courier:	Firm:
Shipping Tracking #:	Condition/Cooler Temp: _____	Date/Time: 6/24 1700	Date/Time: 6/24/16	Date/Time:	Date/Time:

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ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

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Lab Work Order # 532308

Send Results to:

Contact & Company Name: Arti patel

Telephone: 713.953.4841

Address:

Fax:

City State Zip

E-mail Address: Arti.Patel@arcadis.com

Project Name/Location (City, State):

Project #:

Sampler's Printed Name:

Sampler's Signature:

Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	Preservative	Filtered (✓)	# of Containers	Container Information	Chlorides	REMARKS
Sat 3 SB4 4	6-24			✓	Soil						Hold
10	↓			↓	↓						~~Hold~~ test
20											Hold
30											~~Dup~~ Hold

PARAMETER ANALYSIS & METHOD

Keys

Preservation Key:
A. H_2SO_4
B. HCL
C. HNO_3
D. NaOH
E. None
F. Other: _____
G. Other: _____
H. Other: _____

Container Information Key:
1. 40 ml Vial
2. 1 L Amber
3. 250 ml Plastic
4. 500 ml Plastic
5. Encore
6. 2 oz. Glass
7. 4 oz. Glass
8. 8 oz. Glass
9. Other: _____
10. Other: _____

Matrix Key:
SO - Soil
W - Water
T - Tissue
SE - Sediment
SL - Sludge
A - Air
NL - NAPL/Oil
SW - Sample Wipe
Other: _____

Special Instructions/Comments:

☐ Special QA/QC Instructions(✓):

Laboratory Information and Receipt		Relinquished By	Received By	Relinquished By	Laboratory Received By
Lab Name:	Cooler Custody Seal (✓) ☐ Intact ☐ Not Intact	Printed Name: Ken Wicks	Printed Name: K Butler	Printed Name:	Printed Name:
☐ Cooler packed with ice (✓)		Signature:	Signature:	Signature:	Signature:
Specify Turnaround Requirements:	Sample Receipt:	Firm: Arcadis	Firm/Courier: MS	Firm/Courier:	Firm:
Shipping Tracking #:	Condition/Cooler Temp: _____	Date/Time: 6/24 1700	Date/Time: 6/24/16	Date/Time:	Date/Time:

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ARCADIS

ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 1 of 4

Lab Work Order #

Send Results to:

Contact & Company Name: Arti patel

Telephone: 713 253 4841

Address:

Fax:

City / State / Zip

E-mail Address: Arti.patel@arcadis.com

Project Name/Location (City, State):

Project #:

Sampler's Printed Name:

Sampler's Signature:

Preservative / Filtered (✓) / # of Containers / Container Information

PARAMETER ANALYSIS & METHOD

Sample ID	Date	Time	Comp	Grab	Matrix	Chloride	TPH-GRO	TPH-DRO	percent moisture	pH			REMARKS
A-10 SB-4 4	6-24												test
10				✓	SOL	X	X	X	X	X			hold
20													hold
30													hold
SB-3 4													Test
10													hold
20													hold
30													hold
SB-1 4													test
10													hold
20													hold
30													hold
SB-2 4													~~test~~ hold
10													hold

Run all Samples

Keys

Preservation Key: A. H_2SO_4 B. HCL C. HNO_3 D. NaOH E. None F. Other G. Other H. Other

Container Information Key: 1. 40 ml Vial 2. 1 L Amber 3. 250 ml Plastic 4. 500 ml Plastic 5. Encore 6. 2 oz. Glass 7. 4 oz. Glass 8. 8 oz. Glass 9. Other 10. Other

Matrix Key: SO - Soil W - Water T - Tissue SE - Sediment SL - Sludge A - Air NL - NAPL/Oil SW - Sample Wipe Other

Special Instructions/Comments:

Corrections made by A Patel 06/24/16 18:22

☐ Special QA/QC Instructions(✓):

Laboratory Information and Receipt

Lab Name:

Cooler Custody Seal (✓)

☐ Cooler packed with ice (✓)

☐ Intact ☐ Not Intact

Specify Turnaround Requirements:

Sample Receipt:

Shipping Tracking #:

Condition/Cooler Temp: ____

Relinquished By	Received By	Relinquished By	Laboratory Received By
Printed Name:	Printed Name:	Printed Name:	Printed Name:
Signature:	Signature:	Signature:	Signature:
Firm:	Firm/Courier:	Firm/Courier:	Firm:
Date/Time:	Date/Time:	Date/Time:	Date/Time:

ARCADIS

ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 2 of 4

Lab Work Order #

Send Results to:

Contact & Company Name: Arti Patil

Address:

City: State: Zip:

Telephone: 713.953.4841

Fax:

E-mail Address: Arti.Patil@arcadis.com

Project Name/Location (City, State):

Project #:

Sampler's Printed Name:

Sampler's Signature:

Keys

Preservation Key: A. H_2SO_4 B. HCl C. HNO_3 D. NaOH E. None F. Other: G. Other: H. Other:

Container Information Key: 1. 40 ml Vial 2. 1 L Amber 3. 250 ml Plastic 4. 500 ml Plastic 5. Encore 6. 2 oz. Glass 7. 4 oz. Glass 8. 8 oz. Glass 9. Other: 10. Other:

Matrix Key: SO - Soil, SE - Sediment, NL - NAPL/Oil, W - Water, SL - Sludge, SW - Sample Wipe, T - Tissue, A - Air, Other:

Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	Preservative	Filtered (Y/N)	# of Containers	Container Information
A-10	6-24			✓	Soil				
SB-2 20									
30									
40									
50									
60									
70									
SB-5 4									
10									
20									
30									
SAT-3 SB-3 4									
10									
20									
30									

PARAMETER ANALYSIS & METHOD

- Chlorides
- TPH-DRO
- TPH-DRO (Percent moisture)
- pH

REMARKS

hold
hold
hold
hold
hold
hold
test
hold
hold
hold
test
hold
hold
hold

RUN all

Special Instructions/Comments:

Corrections by A Patil 6/24/16 1822

☐ Special QA/QC Instructions(✓):

Laboratory Information and Receipt

Lab Name:

☐ Cooler packed with ice (✓)

Specify Turnaround Requirements:

Shipping Tracking #:

Cooler Custody Seal (✓) ☐ Intact ☐ Not Intact

Sample Receipt:

Condition/Cooler Temp:

Relinquished By	Received By	Relinquished By	Laboratory Received By
Printed Name:	Printed Name:	Printed Name:	Printed Name:
Signature:	Signature:	Signature:	Signature:
Firm:	Firm/Courier:	Firm/Courier:	Firm:
Date/Time:	Date/Time:	Date/Time:	Date/Time:

ARCADIS

ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 3 of 4

Lab Work Order #

Send Results to:

Contact & Company Name: Arti Pahi

Telephone: 713.953.4841

Address:

Fax:

City: State: Zip:

E-mail Address: Arti.Puhi@arcadis.com

Project Name/Location (City, State):

Project #:

Sampler's Printed Name:

Sampler's Signature:

Preservative	
Filtered (✓)	
# of Containers	
Container Information	

PARAMETER ANALYSIS & METHOD

Keys

Preservation Key: A. H_2SO_4 B. HCL C. HNO_3 D. NaOH E. None F. Other: ____ G. Other: ____ H. Other: ____

Container Information Key: 1. 40 ml Vial 2. 1 L Amber 3. 250 ml Plastic 4. 500 ml Plastic 5. Encore 6. 2 oz. Glass 7. 4 oz. Glass 8. 8 oz. Glass 9. Other: ____ 10. Other: ____

Matrix Key: SO - Soil W - Water T - Tissue SE - Sediment SL - Sludge A - Air NL - NAPL/Oil SW - Sample Wipe Other:

Sample ID			Collection Date	Collection Time	Type Comp	Type Grab	Matrix	Chlorides							REMARKS
Sut-3	SB-2	4	6-24			✓	SOL	X							
		10													hold ✓
		20													hold ✓
		30													hold ✓
		40													hold ✓
		50													hold ✓
		60													hold ✓
	SB-4	4													~~hold~~ test ✓
		10													hold ✓
		20													hold ✓
		30													hold ✓
		3													test ✓

Special Instructions/Comments:

Corrections made by APat 06/24/16 18 20

☐ Special QA/QC Instructions(✓):

Laboratory Information and Receipt		Relinquished By	Received By	Relinquished By	Laboratory Received By
Lab Name:	Cooler Custody Seal (✓)	Printed Name:	Printed Name:	Printed Name:	Printed Name:
☐ Cooler packed with ice (✓)	☐ Intact ☐ Not Intact	Signature:	Signature:	Signature:	Signature:
Specify Turnaround Requirements:	Sample Receipt:	Firm:	Firm/Courier:	Firm/Courier:	Firm:
Shipping Tracking #:	Condition/Cooler Temp:	Date/Time:			

ARCADIS

ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 4 of 4

Lab Work Order #:

Send Results to:

Contact & Company Name: Arti patel

Telephone: 713.953.4841

Address:

Fax:

City: State: Zip:

E-mail Address: Arti.patel@arcadis.com

Project Name/Location (City, State):

Project #:

Sampler's Printed Name:

Sampler's Signature:

Preservative / Filtered (✓) / # of Containers / Container Information

PARAMETER ANALYSIS & METHOD

Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	Chlorides							REMARKS
Sat 3 SB-1 4	6-24			✓	soil	X							hold
↓ 10	↓			↓	↓	↓							~~hold~~ test
20													hold
30													~~test~~ hold

Keys

Preservation Key: A. H_2SO_4 B. HCL C. HNO_3 D. NaOH E. None F. Other: G. Other: H. Other:

Container Information Key: 1. 40 ml Vial 2. 1 L Amber 3. 250 ml Plastic 4. 500 ml Plastic 5. Encore 6. 2 oz. Glass 7. 4 oz. Glass 8. 8 oz. Glass 9. Other: 10. Other:

Matrix Key: SO - Soil W - Water T - Tissue SE - Sediment SL - Sludge A - Air NL - NAPL/Oil SW - Sample Wipe Other:

Special Instructions/Comments:

Corrections made by A Patel 06/24/16 18:20

☐ Special QA/QC Instructions(✓):

Laboratory Information and Receipt		Relinquished By	Received By	Relinquished By	Laboratory Received By
Lab Name:	Cooler Custody Seal (✓)	Printed Name:	Printed Name:	Printed Name:	Printed Name:
☐ Cooler packed with ice (✓)	☐ Intact ☐ Not Intact	Signature:	Signature:	Signature:	Signature:
Specify Turnaround Requirements:	Sample Receipt:	Firm:	Firm/Courier:	Firm/Courier:	
Shipping Tracking #:	Condition/Cooler Temp:	Date/Time:	Date/Time:		

20730829 CofC AR Form 05.27.2015

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ARCADIS

ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 1 of ___

Lab Work Order # 532368

Send Results to:

Contact & Company Name: Arti Patel

Telephone: 713 853 4841

Address:

Fax:

City State Zip

E-mail Address: Arti.Patel@arcadis.com

Project Name/Location (City, State)

Project #

Sampler's Printed Name:

Sampler's Signature:

Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	Preservative	Filtered (✓)	# of Containers	Container Information	Chloride	REMARKS
A-10 SB-4 4	6-24			✓	SOL					STATEA10-04 (4')	test
10										(10')	hold
20										(20')	hold
30										(30')	hold
SB-3 4										STATEA10-03 (4')	Test
10										(10')	hold
20										(20')	hold
30										(30')	hold
SB-1 4										STATEA10-01 (4')	test
10										(10')	hold
20										(20')	hold
30										(30')	hold
SB-2 4										STATEA10-02 (4')	test hold
10										(10')	hold

Keys

Preservation Key:
A. H_2SO_4
B. HCL
C. HNO_3
D. NaOH
E. None
F. Other: _____
G. Other: _____
H. Other: _____

Container Information Key:
1. 40 ml Vial
2. 1 L Amber
3. 250 ml Plastic
4. 500 ml Plastic
5. Encore
6. 2 oz. Glass
7. 4 oz. Glass
8. 8 oz. Glass
9. Other: _____
10. Other: _____

Matrix Key:
SO - Soil
W - Water
T - Tissue
SE - Sediment
SL - Sludge
A - Air
NL - NAPL/Oil
SW - Sample Wipe
Other: _____

Special Instructions/Comments:

☐ Special QA/QC Instructions(✓):

Sample Name Corrections A. Patel 07/12/16

Laboratory Information and Receipt

Lab Name:

☐ Cooler packed with ice (✓)

Specify Turnaround Requirements:

Shipping Tracking #:

Cooler Custody Seal (✓) ☑ Intact ☐ Not Intact

Sample Receipt:

Condition/Cooler Temp: 4.5°C

Relinquished By	Received By	Relinquished By	Laboratory Received By
Printed Name: Ken Wicks	Printed Name:	Printed Name:	Printed Name: Julian Martinez
Signature:	Signature:	Signature:	Signature:
Firm: Arcadis	Firm/Courier: MS	Firm/Courier:	Firm: Xenco
Date/Time: 6/24 1700	Date/Time: 6/24	Date/Time:	Date/Time: 6-25-16 10:30

20730826 CofC AR Form 08.27.2015

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ARCADIS

ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 2 of ___

Lab Work Order # 532368

Send Results to:

Contact & Company Name: Arti Patel

Address:

City State Zip

Telephone: 713.953.4841

Fax:

E-mail Address: Arti.Patel@arcadis.com

Project Name/Location (City, State):

Project #:

Sampler's Printed Name:

Sampler's Signature:

Keys

Preservation Key:
A. H_2SO_4
B. HCL
C. HNO_3
D. NaOH
E. None
F. Other: _____
G. Other: _____
H. Other: _____

Container Information Key:
1. 40 ml Vial
2. 1 L Amber
3. 250 ml Plastic
4. 500 ml Plastic
5. Encore
6. 2 oz. Glass
7. 4 oz. Glass
8. 8 oz. Glass
9. Other: _____
10. Other: _____

Matrix Key:
SO - Soil | SE - Sediment | NL - NAPL/Oil
W - Water | SL - Sludge | SW - Sample Wipe
T - Tissue | A - Air | Other: _____

Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	Preservative	Filtered (✓)	# of Containers	Container Information	PARAMETER ANALYSIS & METHOD: Chlorides	REMARKS
A-10 SB-2 20	6-24			✓	SO					STATEA10-02(20')	hold
30										(30')	hold
40										(40')	hold
50										(50')	hold
60										(60')	hold
70										(70')	hold
SB-5 4										STATEA10-05(4')	hold
10										(10')	test
20										(20')	hold
30										(30')	hold
SAT-3 SB-3 4											hold
10											test
20											hold
30											hold

Special Instructions/Comments:

☐ Special QA/QC Instructions(✓):

Sample name corrections J. Patel 07/12/16

Laboratory Information and Receipt

Lab Name:

☐ Cooler packed with ice (✓)

Specify Turnaround Requirements:

Shipping Tracking #:

Cooler Custody Seal (✓) ☐ Intact ☐ Not Intact

Sample Receipt:

Condition/Cooler Temp: _____

Relinquished By	Received By	Relinquished By	Laboratory Received By
Printed Name: Ken Wicks	Printed Name:	Printed Name:	Printed Name:
Signature:	Signature:	Signature:	Signature:
Firm: Arcadis	Firm/Courier:	Firm/Courier:	Firm:
Date/Time: 6/24 1700	Date/Time: 6/24/16	Date/Time:	Date/Time:

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ARCADIS

ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 3 of ___

Lab Work Order #: 532368

Send Results to:

Contact & Company Name: Arti Patel

Telephone: 713.953.4841

Address:

Fax:

City State Zip

E-mail Address: APatel@arcadis.com

Project Name/Location (City, State):

Project #:

Sampler's Printed Name:

Sampler's Signature:

Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	Preservative	Filtered (✓)	# of Containers	Container Information	PARAMETER ANALYSIS & METHOD: Chlorides	REMARKS
~~SB-3~~	6-24			✓	SOIL						
SB-2 4										VOA WUSA T3-02 (4')	hold
10										(10')	hold
20										(20')	hold
30										(30')	hold
40										(40')	hold
50										(50')	hold
60										(60')	~~hold~~ test
~~SB-4~~ 4										VOA WUSA T3-04 (4')	hold
10										(10')	hold
20										(20')	hold
30										(30')	test
5											

Keys

Preservation Key:
A. H_2SO_4
B. HCL
C. HNO_3
D. NaOH
E. None
F. Other: ___
G. Other: ___
H. Other: ___

Container Information Key:
1. 40 ml Vial
2. 1 L Amber
3. 250 ml Plastic
4. 500 ml Plastic
5. Encore
6. 2 oz. Glass
7. 4 oz. Glass
8. 8 oz. Glass
9. Other: ___
10. Other: ___

Matrix Key:
SO - Soil
W - Water
T - Tissue
SE - Sediment
SL - Sludge
A - Air
NL - NAPL/Oil
SW - Sample Wipe
Other: ___

Special Instructions/Comments:

☐ Special QA/QC Instructions(✓):

Sample Name Corrections A Patel 07/12/16

Laboratory Information and Receipt

Lab Name:

☐ Cooler packed with ice (✓)

Specify Turnaround Requirements:

Shipping Tracking #:

Cooler Custody Seal (✓) ☐ Intact ☐ Not Intact

Sample Receipt:

Condition/Cooler Temp: ___

Relinquished By	Received By	Relinquished By	Laboratory Received By
Printed Name: Ken Wicks	Printed Name:	Printed Name:	Printed Name:
Signature:	Signature:	Signature:	Signature:
Firm: ARCADIS	Firm/Courier:	Firm/Courier:	Firm:
Date/Time: 6/24 1700	Date/Time: 6/24/16	Date/Time:	Date/Time:

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ARCADIS

ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 4 of __

Lab Work Order # 53208

Send Results to:

Contact & Company Name: Arti patel

Telephone: 713.953.4841

Address:

Fax:

City / State / Zip

E-mail Address: Arti.patel@arcadis.com

Project Name/Location (City, State):

Project #:

Sampler's Printed Name:

Sampler's Signature:

	Preservative	Filtered (✓)	# of Containers	Container Information

PARAMETER ANALYSIS & METHOD: Chlorides

Keys

Preservation Key: A. H_2SO_4 B. HCL C. HNO_3 D. NaOH E. None F. Other: ___ G. Other: ___ H. Other: ___

Container Information Key: 1. 40 ml Vial 2. 1 L Amber 3. 250 ml Plastic 4. 500 ml Plastic 5. Encore 6. 2 oz. Glass 7. 4 oz. Glass 8. 8 oz. Glass 9. Other: ___ 10. Other: ___

Matrix Key: SO - Soil, W - Water, T - Tissue, SE - Sediment, SL - Sludge, A - Air, NL - NAPL/Oil, SW - Sample Wipe, Other: ___

Sample ID	Collection Date	Collection Time	Type Comp	Type Grab	Matrix	Chlorides	REMARKS
~~Sat 3 SB-1 4~~	6-24			✓	Soil	VGW U Sat 3 (4')	hold
~~10~~	↓			↓	↓	(10')	~~hold~~ test
~~20~~	↓			↓	↓	(20')	hold
~~30~~	↓			↓	↓	(30')	~~Test~~ hold

Special Instructions/Comments:

☐ Special QA/QC Instructions(✓):

Sample Name corrections A. Patel 27/12/16

Laboratory Information and Receipt

Lab Name:

Cooler Custody Seal (✓)

☐ Cooler packed with ice (✓)

☐ Intact ☐ Not Intact

Specify Turnaround Requirements:

Sample Receipt:

Shipping Tracking #:

Condition/Cooler Temp: ___

	Relinquished By	Received By	Relinquished By	Laboratory Received By
Printed Name	Ken Wicks	K Butler		
Signature	[signature]	[signature]		
Firm	Arcadis	MS		
Date/Time	6/24 1700	6/24/16		

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ARCADIS

ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 3 of ___

Lab Work Order # 532368

Send Results to:

Contact & Company Name: Arti Patil

Telephone: 713.953.4841

Address:

Fax:

City State Zip

E-mail Address: Arti.Patil@arcadis.com

Project Name/Location (City, State):

Project #

Sampler's Printed Name:

Sampler's Signature:

Keys

Preservation Key:
A. H_2SO_4
B. HCL
C. HNO_3
D. NaOH
E. None
F. Other: ___
G. Other: ___
H. Other: ___

Container Information Key:
1. 40 ml Vial
2. 1 L Amber
3. 250 ml Plastic
4. 500 ml Plastic
5. Encore
6. 2 oz. Glass
7. 4 oz. Glass
8. 8 oz. Glass
9. Other: ___
10. Other: ___

Matrix Key:
SO - Soil
W - Water
T - Tissue
SE - Sediment
SL - Sludge
A - Air
NL - NAPL/Oil
SW - Sample Wipe
Other: ___

Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	Preservative	Filtered (✓)	# of Containers	Container Information	Chlorides	REMARKS
SB-3	6-24			✓	SO						
SB-2											
4											
10											
20											
30											
40											
50											
60											
SB-4											
4											
10											
20											
30											
5											

PARAMETER ANALYSIS & METHOD

VGWUSAT3-02(4') hold
(10') hold
(20') hold
(30') hold
(40') hold
(50') hold
(60') hold test
VGWUSAT3-04(4') hold
(10') hold
(20') hold
(30') test

Special Instructions/Comments:

☐ Special QA/QC Instructions(✓):

Sample Name Corrections Arti 07/12/16

Laboratory Information and Receipt

Lab Name:

☐ Cooler packed with ice (✓)

Specify Turnaround Requirements:

Shipping Tracking #:

Cooler Custody Seal (✓) ☐ Intact ☐ Not Intact

Sample Receipt:

Condition/Cooler Temp: ___

Relinquished By	Received By	Relinquished By	Laboratory Received By
Printed Name: Ken Wicks	Printed Name: N Butler	Printed Name:	Printed Name:
Signature:	Signature:	Signature:	Signature:
Firm: Arcadis	Firm/Courier:	Firm/Courier:	Firm:
Date/Time: 6/24 1700	Date/Time: 6/24/16	Date/Time:	Date/Time:

20130826 CofC AR Form 08.27.2015

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ARCADIS

ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 1 of ___

Lab Work Order # 532308

Send Results to:

Contact & Company Name: Artipatel

Telephone: 713.953.4841

Address:

Fax:

City / State / Zip

E-mail Address: Arti.Patel@arcadis.com

Project Name/Location (City, State):

Project #:

Sampler's Printed Name:

Sampler's Signature:

Preservative	
Filtered (✓)	
# of Containers	
Container Information	

PARAMETER ANALYSIS & METHOD: Chlorides

Keys

Preservation Key: A. H_2SO_4 B. HCL C. HNO_3 D. NaOH E. None F. Other: ___ G. Other: ___ H. Other: ___

Container Information Key: 1. 40 ml Vial 2. 1 L Amber 3. 250 ml Plastic 4. 500 ml Plastic 5. Encore 6. 2 oz. Glass 7. 4 oz. Glass 8. 8 oz. Glass 9. Other: ___ 10. Other: ___

Matrix Key: SO - Soil, W - Water, T - Tissue, SE - Sediment, SL - Sludge, A - Air, NL - NAPL/Oil, SW - Sample Wipe, Other: ___

Sample ID	Date	Time	Comp	Grab	Matrix	Parameter	REMARKS
~~Sat 3 SB-1~~ 4	6-24			✓	Soil	VGWDSat 3 (4')	hold
10	↓			↓	↓	(10')	~~hold~~ test
20	↓			↓	↓	(20')	hold
30	↓			↓	↓	(30')	~~[illegible]~~ hold

Special Instructions/Comments:

☐ Special QA/QC Instructions(✓):

Sample Name corrections A. Patel 27/1?/16

Laboratory Information and Receipt

Lab Name:

Cooler Custody Seal (✓) ☐ Intact ☐ Not Intact

☐ Cooler packed with ice (✓)

Specify Turnaround Requirements:

Sample Receipt:

Shipping Tracking #:

Condition/Cooler Temp: ___

Relinquished By	Received By	Relinquished By	Laboratory Received By
Printed Name: Ken Wicks	Printed Name: K Butler	Printed Name:	Printed Name:
Signature: [signature]	Signature: [signature]	Signature:	Signature:
Firm: Arcadis	Firm/Courier: MS	Firm/Courier:	Firm:
Date/Time: 6/24 1700	Date/Time: 6/24/16	Date/Time:	Date/Time:

20730826 CofC AR Form 08.27.2015

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XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: ARCADIS

Date/ Time Received: 06/25/2016 10:30:00 AM

Work Order #: 532368

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	4.5
#2 *Shipping container in good condition?	**N/A**
#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 (less than 1/4 inch bubble)?	**N/A**
#22 <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**
#23 >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: Mary Alexis Negron
Mary Negron
Date: 06/27/2016

Checklist reviewed by: Kelsey Brooks
Kelsey Brooks
Date: 06/28/2016

Analytical Report 556451

for

Arcadis - Roseville, CA

Project Manager: Brett Krehbiel

State A 10

06-JUL-17

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

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)

Table of Contents

06-JUL-17

Project Manager: **Brett Krehbiel**
Arcadis - Roseville, CA
101 Creekside Ridge
CT 200
Roseville, CA 95678

Reference: XENCO Report No(s): **556451**
State A 10
Project Address: Buckeye NM

Brett Krehbiel:

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) 556451. 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. 556451 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

Sample Cross Reference 556451

Arcadis - Roseville, CA, Roseville, CA

State A 10

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-3-W-170627	W	06-27-17 11:03		556451-001
EB-1-W-170627	W	06-27-17 11:11		556451-002
MW-1-W-170627	W	06-27-17 11:26		556451-003
MW-2-W-170627	W	06-27-17 11:46		556451-004
DUP-01-W-170627	W	06-27-17 00:00		556451-005

CASE NARRATIVE SUMMARY

Client Name: ***Arcadis - Roseville, CA***

Project Name: ***State A 10***

Project ID:

Work Order Number: *556451*

Report Date: *06-JUL-17*

Date Received: *28-JUN-17*

Kelsey Brooks
Project Manager

Certificate of Analytical Results

556451

Arcadis - Roseville, CA, Roseville, CA

State A 10

Sample Id: **MW-3-W-170627** Matrix: Water Sample Depth:

Lab Sample Id: 556451-001 Date Collected: 06.27.17 11.03 Date Received: 06.28.17 10.00

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Analyst: MGO % Moist: Tech: MGO

Seq Number: 3021487 Date Prep: 06.30.17 13.30

Prep seq: 727067

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**23.6**	0.500	0.0858	mg/L	06.30.17 14:02		1

Sample Id: **EB-1-W-170627** Matrix: Water Sample Depth:

Lab Sample Id: 556451-002 Date Collected: 06.27.17 11.11 Date Received: 06.28.17 10.00

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Analyst: MGO % Moist: Tech: MGO

Seq Number: 3021487 Date Prep: 07.03.17 16.00

Prep seq: 727067

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.0858	0.500	0.0858	mg/L	07.04.17 03:41	U	1

Sample Id: **MW-1-W-170627** Matrix: Water Sample Depth:

Lab Sample Id: 556451-003 Date Collected: 06.27.17 11.26 Date Received: 06.28.17 10.00

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Analyst: MGO % Moist: Tech: MGO

Seq Number: 3021487 Date Prep: 06.30.17 13.30

Prep seq: 727067

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**66.7**	0.500	0.0858	mg/L	06.30.17 14:33		1

Sample Id: **MW-2-W-170627** Matrix: Water Sample Depth:

Lab Sample Id: 556451-004 Date Collected: 06.27.17 11.46 Date Received: 06.28.17 10.00

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Analyst: MGO % Moist: Tech: MGO

Seq Number: 3021487 Date Prep: 06.30.17 13.30

Prep seq: 727067

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**102**	2.50	0.429	mg/L	06.30.17 14:40		5

Certificate of Analytical Results

556451

Arcadis - Roseville, CA, Roseville, CA

State A 10

Sample Id: **DUP-01-W-170627** Matrix: Water Sample Depth:

Lab Sample Id: 556451-005 Date Collected: 06.27.17 00.00 Date Received: 06.28.17 10.00

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Analyst: MGO % Moist: Tech: MGO

Seq Number: 3021487 Date Prep: 06.30.17 13.30

Prep seq: 727067

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**104**	2.50	0.429	mg/L	06.30.17 14:48		5

Certificate of Analytical Results

556451

Arcadis - Roseville, CA, Roseville, CA

State A 10

Sample Id: **727067-1-BLK** Matrix: Water Sample Depth:

Lab Sample Id: 727067-1-BLK Date Collected: Date Received:

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Analyst: MGO % Moist: Tech: MGO

Seq Number: 3021487 Date Prep: 06.30.17 13.30

Prep seq: 727067

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.0858	0.500	0.0858	mg/L	06.30.17 13:40	U	1

CHRONOLOGY OF HOLDING TIMES

Analytical Method : Inorganic Anions by EPA 300/300.1
Client : Arcadis - Roseville, CA
Work Order #: **556451**
Project ID:
Date Received: 06/28/17

Field Sample ID	Lab Sample ID	Date Collected	Date Extracted	Max Holding Time Extracted (Days)	Time Held Extracted (Days)	Date Analyzed	Max Holding Time Analyzed (Days)	Time Held Analyzed (Days)	Q
MW-3-W-170627	556451-001	06/27/17				06/30/17	28	3	P
EB-1-W-170627	556451-002	06/27/17				07/04/17	28	7	P
MW-1-W-170627	556451-003	06/27/17				06/30/17	28	3	P
MW-2-W-170627	556451-004	06/27/17				06/30/17	28	3	P
DUP-01-W-170627	556451-005	06/27/17				06/30/17	28	3	P

F = These samples were analyzed outside the recommended holding time.
P = Samples analyzed within the recommended holding time.

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

Analytical Log

Analytical Method:	Inorganic Anions by EPA 300/300.1	Batch #:	3021487
Project Name:	State A 10	Project ID:	
Client Name:	Arcadis - Roseville, CA	WO Number:	556451

Client Sample Id	Lab Sample Id	QC Types
DUP-01-W-170627	556451-005	SMP
EB-1-W-170627	556451-002	SMP
MW-1-W-170627	556451-003	SMP
MW-2-W-170627	556451-004	SMP
MW-3-W-170627	556451-001	SMP
	556451-001 S	MS
	556451-001 SD	MSD
	727067-1-BKS	BKS
	727067-1-BLK	BLK
	727067-1-BSD	BSD

BS / BSD Recoveries

Project Name: State A 10

Work Order #: 556451 **Project ID:**

Analyst: MGO **Date Prepared:** 06/30/2017 **Date Analyzed:** 06/30/2017

Lab Batch ID: 3021487 **Sample:** 727067-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<0.0858	25.0	23.5	94	25.0	23.8	95	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

Form 3 - MS / MSD Recoveries

Project Name: State A 10

Work Order # : 556451 **Project ID:**

Lab Batch ID: 3021487 **QC- Sample ID:** 556451-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 06/30/2017 **Date Prepared:** 06/30/2017 **Analyst:** MGO

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 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
Chloride	23.6	25.0	46.8	93	25.0	47.4	95	1	90-110	20	

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

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

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.

Attachment A Laboratory Data Package Cover Page

Project Name: **State A 10** Laboratory Number: **556451**

This Data package consists of : Laboratory Batch No(s) **727067**

This signature page, the laboratory review checklist, and the following reportable data:

[X] R1 Field chain-of-custody documentation;

[X] R2 Sample identification cross-reference;

[X] R3 Test reports (analytical data sheets) for each environmental sample that includes:
- a) Items consistent with NELAC 5
- b) dilution factors,
- c) preparation methods,
- d) cleanup methods, and
- e) if required for the project, tentatively identified compounds (TICs).

[X] R4 Surrogate Recovery data including:
- a) Calculated recovery (%R), and
- b) The laboratory's surrogate QC limits.

[X] R5 Test reports/summary forms for blank samples;

[X] R6 Test reports/summary forms for laboratory control samples (LCSs) including:
- a) LCS spiking amounts,
- b) Calculated %R for each analyte, and
- c) The laboratory's LCS QC limits.

[X] R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
- a) Samples associated with the MS/MSD clearly identified,
- b) MS/MSD spiking amounts,
- c) Concentration of each MS/MSD analyte measured in the parent and spiked samples,
- d) Calculated %Rs and relative percent differences (RPDs) and
- e) The laboratory's MS/MSD QC limits

[X] R8 Laboratory anaytical duplicate (if applicable) recovery and precision:
- a) the amount of analyte measured in the duplicate,
- b) the calculated RPD, and
- c) the laboratory's QC limits for analytical duplicates.

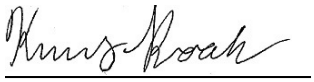
[X] R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix;

[X] R10 Other problems or anomalies.

[X] Exception Report for every "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies, observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC 25.6 and was last inspection by [ ] TCEQ or [ ] _____ on (enter date of last inspection). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The offical signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Kelsey Brooks		**Project Manager**	**06-JUL-17**
Name (Printed)	Signature	Official Title (printed)	Date

A1

Attachment A (cont'd) : Laboratory Review Checklist: Reportable Data

Laboratory Name:	XENCO LABORATORIES	LRC Date :	06-JUL-17
Project Name:	State A 10	Laboratory Job Number :	556451
Reviewer Name:	KEB	Batch Number(s) :	727067

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
R1	OI	**Chain-of-Custody (COC)**					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?			X		
R2	OI	**Sample and Quality Control (QC) Identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test Reports**					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results <MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soil/solid samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, were TICs reported?			X		
R4	O	**Surrogate Recovery Data**					
		Were surrogates added prior to extraction?			X		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	OI	**Test Reports/Summary Forms for Blank Samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency ?	X				
		Were method blanks taken through the entire analytical procedure, including preparation and, if applicable, cleanup procedures ?	X				
		Were Blank Concentrations <MQL?	X				
R6	OI	**Laboratory Control Samples (LCS):**					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within the QC limits?	X				
R7	OI	**Matrix Spike (MS) and Matrix Spike Duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
		Were MS/MSD RPDs within the laboratory QC limits?	X				
R8	OI	**Analytical Duplicate Data**					
		Were appropriate analytical duplicates analyzed for each matrix?			X		
		Were analytical duplicates analyzed at the appropriate frequency?			X		
		Were RPDs or relative standard deviations within the laboratory QC limits?			X		
R9	OI	**Method Quantitation Limits (MQLs)**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	**Other Problems/Anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				

Attachment A (cont'd) : Laboratory Review Checklist: Reportable Data

Laboratory Name:	XENCO LABORATORIES	LRC Date :	06-JUL-17
Project Name:	State A 10	Laboratory Job Number :	556451
Reviewer Name:	KEB	Batch Number(s) :	727067

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	**Initial Calibration (ICAL)**					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and the highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and Continuing Calibration Verification (ICCV and CCV) and continuing calibration blank (**					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB <MDL?			X		
S3	O	**Mass Spectral Tuning**					
		Was the appropriate compound for the method used for tuning?			X		
		Were ion abundance data within the method-required QC limits?			X		
S4	O	**Internal Standard (IS)**					
		Were IS area counts and retention times within the method-required QC limits?			X		
S5	OI	**Raw Data (NELAC 5.5.10)**					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	**Dual Column Confirmation**					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively Identified Compounds (TICs)**					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) Results**					
		Were percent recoveries within method QC limits?			X		
S9	I	**Serial Dilutions, Post Digestions Spikes, and Method of Standard Additions**					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
S10	OI	**Method Detection Limit (MDL) Studies**					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency Test Reports**					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards Documentation**					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/Analyte Identification Procedures**					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of Analyst Competency (DOC)**					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/Validation Documentation for Methods (NELAC Chapter 5)**					
		Are all methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory Standard Operating Procedures (SOPs)**					
		Are laboratory SOPs current and on file for each method performed?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted to the TCEQ-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable).
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report Identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Attachment A (cont'd): Laboratory Review Checklist: Exception Reports

Laboratory Name: XENCO LABORATORIES	LRC Date: 06-JUL-17
Project Name: State A 10	Laboratory Job Number: 556451
Reviewer Name: KEB	Batch Number(s) : 727067

ER# [1]	DESCRIPTION

1 ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No is checked on the LRC).

Arcadis - Roseville, CA, Roseville, CA

State A 10

Analytical Method: Inorganic Anions by EPA 300/300.1 Matrix: Water

Parameter	Spike Amount	Actual Amount	Units
Chloride	0.250	0.177	mg/L

ARCADIS
Infrastructure. Water. Environment. Buildings

ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 1 of 1

Lab Work Order # 5564451

Send Results to:

Contact & Company Name: Brett Krchbiel / ARCADIS
Telephone: 916-786-5382
Address: 701 Creekside Ridge Court Suite 200
Fax:
City: Roseville State: CA Zip: 95678
E-mail Address: Brett.Krchbiel@arcadis.com
Project Name/Location (City, State): Stake A 10 Buckeye, NM
Project #:
Sampler's Printed Name: Jerry Silongwell
Sampler's Signature:

Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	Preservative	Filtered (✓)	# of Containers	Container Information	Cl
MW-3-W-170627	06/27/17	1103		X	W			5	3	1
EBO1-W-170627	06/27/17	1111		X	W					1
MW-1-W-170627	06/27/17	1125		X	W					1
MW-2-W-170627	06/27/17	1140		X	W					1
DUP-01-W-170627	06/27/17			X	W					1

PARAMETER ANALYSIS & METHOD

Keys

Preservation Key:
A. H_2SO_4
B. HCL
C. HNO_3
D. NaOH
E. None
F. Other: _____
G. Other: _____
H. Other: _____

Container Information Key:
1. 40 ml Vial
2. 1 L Amber
3. 250 ml Plastic
4. 500 ml Plastic
5. Encore
6. 2 oz. Glass
7. 4 oz. Glass
8. 8 oz. Glass
9. Other: _____
10. Other: _____

Matrix Key:
SO - Soil
W - Water
T - Tissue
SE - Sediment
SL - Sludge
A - Air
NL - NAPL/Oil
SW - Sample Wipe
Other: _____

REMARKS

Stake A-10 Samples

Temp: 4.9°C IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 4.7°C

Special Instructions/Comments:

☐ Special QA/QC Instructions(✓):

Laboratory Information and Receipt

Lab Name: Xenco
☑ Cooler packed with ice (✓)
Specify Turnaround Requirements: Standard
Shipping Tracking #:

Cooler Custody Seal (✓) ☐ Intact ☐ Not Intact
Sample Receipt:
Condition/Cooler Temp: _____

Relinquished By	Received By	Relinquished By	Laboratory Received By
Printed Name: Jerry Silongwell	Printed Name: Brianne Wichter	Printed Name:	Printed Name: Mary A Negron
Signature:	Signature: Brianne Wichter	Signature:	Signature:
Firm: ARCADIS	Firm/Courier:	Firm/Courier:	Firm: Xenco
Date/Time: 06/27/17 1602	Date/Time: 06/27/17 1602	Date/Time:	Date/Time: 6/28/17 1000

20730826 CofC AR Form 01.12.2007

Distribution: WHITE – Laboratory returns with results YELLOW – Lab copy PINK – Retained by ARCADIS

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: ARCADIS

Date/ Time Received: 06/28/2017 10:00:00 AM

Work Order #: 556451

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	4.7
#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)?	**N/A**
#21 VOC samples have zero headspace?	**N/A**

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

Analyst: JKR

PH Device/Lot#: 213315

Checklist completed by: Jessica Kramer
Jessica Kramer

Date: 06/28/2017

Checklist reviewed by:

Date:

Analytical Report 560293

for

Arcadis - Houston

Project Manager: Jonathan Olsen

HES Transfer Sites

23-AUG-17

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

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)

23-AUG-17

Project Manager: **Jonathan Olsen**
Arcadis - Houston
10205 Westheimer Rd., Suite 800
Houston, TX 77042

Reference: XENCO Report No(s): **560293**
HES Transfer Sites
Project Address: Buckeye, NM

Jonathan Olsen:

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) 560293. 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. 560293 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,

Kelsey Brooks
Project Manager

Sample Cross Reference 560293

Arcadis - Houston, Houston, TX

HES Transfer Sites

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
State A10-07(4')	S	08-14-17 11:22		560293-001
State A10-06(4')	S	08-14-17 12:17		560293-002

CASE NARRATIVE

Client Name: Arcadis - Houston

Project Name: HES Transfer Sites

Project ID:
Work Order Number(s): *560293*

Report Date: *23-AUG-17*
Date Received: *08/16/2017*

Sample receipt non conformances and comments:

Level II Reporting

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 560293

Arcadis - Houston, Houston, TX

Project Name: HES Transfer Sites

Project Id:
Contact: Jonathan Olsen
Project Location: Buckeye, NM

Date Received in Lab: Wed Aug-16-17 10:00 am
Report Date: 23-AUG-17
Project Manager: Kelsey Brooks

Analysis Requested									
	Lab Id:	560293-001		560293-002					
	Field Id:	State A10-07(4')		State A10-06(4')					
	Depth:								
	Matrix:	SOIL		SOIL					
	Sampled:	Aug-14-17 11:22		Aug-14-17 12:17					
Inorganic Anions by EPA 300/300.1	***Extracted:***	Aug-22-17 10:30		Aug-22-17 10:30					
	Analyzed:	Aug-22-17 18:24		Aug-22-17 18:47					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Chloride		16.5	4.92	120	4.96				

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

	Phone	Fax
4147 Greenbriar Dr, Stafford, TX 77477	(281) 240-4200	(281) 240-4280
9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
1211 W Florida Ave, Midland, TX 79701	(432) 563-1800	(432) 563-1713
2525 W. Huntington Dr. - Suite 102, Tempe AZ 85282	(602) 437-0330	

BS / BSD Recoveries

Project Name: HES Transfer Sites

Work Order #: 560293 **Project ID:**

Analyst: MGO **Date Prepared:** 08/22/2017 **Date Analyzed:** 08/22/2017

Lab Batch ID: 3025725 **Sample:** 729750-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<4.90	245	228	93	248	236	95	3	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

Analytical Report 560293

for

Arcadis - Houston

Project Manager: Jonathan Olsen

HES Transfer Sites

23-AUG-17

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

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)

23-AUG-17

Project Manager: **Jonathan Olsen**
Arcadis - Houston
10205 Westheimer Rd., Suite 800
Houston, TX 77042

Reference: XENCO Report No(s): **560293**
HES Transfer Sites
Project Address: Buckeye, NM

Jonathan Olsen:

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) 560293. 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. 560293 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,

Kelsey Brooks
Project Manager

Sample Cross Reference 560293

Arcadis - Houston, Houston, TX

HES Transfer Sites

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
State A10-07(4')	S	08-14-17 11:22		560293-001
State A10-06(4')	S	08-14-17 12:17		560293-002

CASE NARRATIVE

Client Name: Arcadis - Houston

Project Name: HES Transfer Sites

Project ID:
Work Order Number(s): *560293*

Report Date: *23-AUG-17*
Date Received: *08/16/2017*

Sample receipt non conformances and comments:

Level II Reporting

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 560293

Arcadis - Houston, Houston, TX

Project Name: HES Transfer Sites

Project Id:
Contact: Jonathan Olsen
Project Location: Buckeye, NM

Date Received in Lab: Wed Aug-16-17 10:00 am
Report Date: 23-AUG-17
Project Manager: Kelsey Brooks

Analysis Requested									
	Lab Id:	560293-001		560293-002					
	Field Id:	State A10-07(4')		State A10-06(4')					
	Depth:								
	Matrix:	SOIL		SOIL					
	Sampled:	Aug-14-17 11:22		Aug-14-17 12:17					
Inorganic Anions by EPA 300/300.1	***Extracted:***	Aug-22-17 10:30		Aug-22-17 10:30					
	Analyzed:	Aug-22-17 18:24		Aug-22-17 18:47					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Chloride		16.5	4.92	120	4.96				

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

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***** (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	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
1211 W Florida Ave, Midland, TX 79701	(432) 563-1800	(432) 563-1713
2525 W. Huntington Dr. - Suite 102, Tempe AZ 85282	(602) 437-0330	

BS / BSD Recoveries

Project Name: HES Transfer Sites

Work Order #: 560293 **Project ID:**

Analyst: MGO **Date Prepared:** 08/22/2017 **Date Analyzed:** 08/22/2017

Lab Batch ID: 3025725 **Sample:** 729750-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<4.90	245	228	93	248	236	95	3	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

Form 3 - MS / MSD Recoveries

Project Name: HES Transfer Sites

Work Order # : 560293 **Project ID:**

Lab Batch ID: 3025725 **QC- Sample ID:** 560112-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 08/22/2017 **Date Prepared:** 08/22/2017 **Analyst:** MGO

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 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
Chloride	697	246	924	92	246	917	89	1	90-110	20	X

Lab Batch ID: 3025725 **QC- Sample ID:** 560113-004 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 08/22/2017 **Date Prepared:** 08/22/2017 **Analyst:** MGO

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 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
Chloride	14.2	246	279	108	246	277	107	1	90-110	20	

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

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

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.

ARCADIS

ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 1 of 1

Lab Work Order # 560293

Send Results to:

Contact & Company Name: Jonathan Olsen/Arcadis

Telephone: 713-953-4874

Address: 10205 Westheimer Road Suite 800

Fax: NA

City: Houston State: TX Zip: 77042

E-mail Address: jonathan.olsen@arcadis.com

Project Name/Location (City, State): HES Transfer Sites/Buckeye, NM

Project #: B0048625.1701

Sampler's Printed Name: Ryan Nanny

Sampler's Signature:

Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	Preservative	Filtered (✓)	# of Containers	Container Information	Chlorides	REMARKS
						E	—	2	7		
StateA10-07(4')	8-14-17	1122		✓	SO					1	Run Sample.
StateA10-06(4')	8-14-17	1217		✓	SO					1	Run Sample.

Keys

Preservation Key:
A. H_2SO_4
B. HCL
C. HNO_3
D. NaOH
E. None
F. Other: _____
G. Other: _____
H. Other: _____

Container Information Key:
1. 40 ml Vial
2. 1 L Amber
3. 250 ml Plastic
4. 500 ml Plastic
5. Encore
6. 2 oz. Glass
7. 4 oz. Glass
8. 8 oz. Glass
9. Other: _____
10. Other: _____

Matrix Key:
SO - Soil
W - Water
T - Tissue
SE - Sediment
SL - Sludge
A - Air
NL - NAPL/Oil
SW - Sample Wipe
Other: _____

Temp: 1.4 IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 1.2

Special Instructions/Comments:

☐ Special QA/QC Instructions(✓):

Laboratory Information and Receipt

Lab Name: Xenco

☑ Cooler packed with ice (✓)

Cooler Custody Seal (✓) ☐ Intact ☐ Not Intact

Specify Turnaround Requirements: Standard TAT

Shipping Tracking #:

Sample Receipt:

Condition/Cooler Temp: 26.0

Relinquished By	Received By	Relinquished By	Laboratory Received By
Printed Name: Ryan Nanny	Printed Name:	Printed Name:	Printed Name: Shawnee Smith
Signature:	Signature:	Signature:	Signature:
Firm: Arcadis	Firm/Courier:	Firm/Courier:	Firm: Xenco
Date/Time: 8-15-17 1600	Date/Time:	Date/Time:	Date/Time: 8-16-17 10:00

20730826 CofC AR Form 08.27.2015

Distribution: WHITE – Laboratory returns with results YELLOW – Lab copy PINK – Retained by Arcadis

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Arcadis - Houston

Date/ Time Received: 08/16/2017 10:00:00 AM

Work Order #: 560293

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1.2
#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?	**Yes**
#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: Shawnee Smith Date: 08/16/2017
Shawnee Smith

Checklist reviewed by: Kelsey Brooks Date: 08/16/2017
Kelsey Brooks

Form 3 - MS / MSD Recoveries

Project Name: HES Transfer Sites

Work Order # : 560293 **Project ID:**

Lab Batch ID: 3025725 **QC- Sample ID:** 560112-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 08/22/2017 **Date Prepared:** 08/22/2017 **Analyst:** MGO

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 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
Chloride	697	246	924	92	246	917	89	1	90-110	20	X

Lab Batch ID: 3025725 **QC- Sample ID:** 560113-004 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 08/22/2017 **Date Prepared:** 08/22/2017 **Analyst:** MGO

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 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
Chloride	14.2	246	279	108	246	277	107	1	90-110	20	

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

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

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.

ARCADIS

ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 1 of 1

Lab Work Order # 560293

Send Results to:

Contact & Company Name: Jonathan Olsen/Arcadis

Telephone: 713-953-4874

Address: 10205 Westheimer Road Suite 800

Fax: NA

City: Houston State: TX Zip: 77042

E-mail Address: jonathan.olsen@arcadis.com

Project Name/Location (City, State): HES Transfer Sites/Buckeye, NM

Project #: B0048625.1701

Sampler's Printed Name: Ryan Nanny

Sampler's Signature:

Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	Preservative	Filtered (✓)	# of Containers	Container Information	Chlorides	REMARKS
						E	—	2	7		
StateA10-07(4')	8-14-17	1122		✓	SO					1	Run Sample.
StateA10-06(4')	8-14-17	1217		✓	SO					1	Run Sample.

Keys

Preservation Key:
A. H_2SO_4
B. HCL
C. HNO_3
D. NaOH
E. None
F. Other: _____
G. Other: _____
H. Other: _____

Container Information Key:
1. 40 ml Vial
2. 1 L Amber
3. 250 ml Plastic
4. 500 ml Plastic
5. Encore
6. 2 oz. Glass
7. 4 oz. Glass
8. 8 oz. Glass
9. Other: _____
10. Other: _____

Matrix Key:
SO - Soil
W - Water
T - Tissue
SE - Sediment
SL - Sludge
A - Air
NL - NAPL/Oil
SW - Sample Wipe
Other: _____

Temp: 1.4 IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 1.2

Special Instructions/Comments:

☐ Special QA/QC Instructions(✓):

Laboratory Information and Receipt

Lab Name: Xenco

☑ Cooler packed with ice (✓)

Cooler Custody Seal (✓) ☐ Intact ☐ Not Intact

Specify Turnaround Requirements: Standard TAT

Shipping Tracking #:

Sample Receipt:

Condition/Cooler Temp: 26.0

Relinquished By	Received By	Relinquished By	Laboratory Received By
Printed Name: Ryan Nanny	Printed Name:	Printed Name:	Printed Name: Shawnee Smith
Signature:	Signature:	Signature:	Signature:
Firm: Arcadis	Firm/Courier:	Firm/Courier:	Firm: Xenco
Date/Time: 8-15-17 1600	Date/Time:	Date/Time:	Date/Time: 8-16-17 10:00

20730826 CofC AR Form 08.27.2015

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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Arcadis - Houston

Date/ Time Received: 08/16/2017 10:00:00 AM

Work Order #: 560293

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1.2
#2 *Shipping container in good condition?	**Yes**
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*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst: PH Device/Lot#:

Checklist completed by: Shawnee Smith Date: 08/16/2017
Shawnee Smith

Checklist reviewed by: Kelsey Brooks Date: 08/16/2017
Kelsey Brooks