

May 9, 2018

Olivia Yu
Oil Conservation Division, District 1
1625 N. French Dr.
Hobbs, NM 88240

APPROVED

By Olivia Yu at 1:46 pm, Sep 14, 2018

**NMOCD grants closure
to 1RP-4853.**

**Re: Closure Letter
Raspberry State Com #001H
API #: 30-025-43179
RP#: 1RP-4853
Unit Letter P Section 27, Township 21S, Range 33E
Lea County, NM**

Ms. Yu,

COG Operating, LLC (COG) is pleased to submit for your consideration the following closure report for the Raspberry State Com #001H. This release occurred on October 20, 2017. Following the release an assessment of impacted soils was conducted. A remediation work plan was submitted to and subsequently approved by NMOCD on January 2, 2018.

BACKGROUND

The Raspberry State Com #001H release is located in Unit Letter P, Section 27, Township 21 South, and Range 33 East in Lea County, New Mexico. More specifically the latitude and longitude for this release are 32.44345842 North and -103.5524045 West.

On October 20, 2017, the throttle head did not engage to open the Kimray dump and sent fluid through the flare resulting in the release of approximately twelve (12) barrels (bbls) of oil. A vacuum truck was dispatched to the site to recover freestanding fluids. Approximately eight (8) bbls of oil were recovered.

On December 13, 2017, a site assessment and soil sampling were conducted in order to vertically and horizontally define the impacted area. A site diagram is included in Appendix I. The analytical results from the soil sampling activities are summarized in the table below.

GROUNDWATER AND SITE RANKING

According to the New Mexico Office of the State Engineer (NMOSE) groundwater in the project vicinity is approximately five-hundred and eighty-two (582) feet below ground surface (BGS) (Appendix II). No water well or surface water was observed within one-thousand (1,000) feet of the release site. Therefore the site ranking for this release is zero (0) based on the following:

Depth to groundwater	>100-feet
Distance to surface water body	>1000-feet
Wellhead Protection Area	>1000-feet

Analytical Results

Initial Soil Sampling (12/13/2017)

Sample ID	Depth (feet)	Benzene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)	Total TPH (mg/kg)
T-1	0	<0.050	<0.300	2070	4840
T-1	1	<0.050	<0.300	<10.0	72.8
T-1	2	<0.050	<0.300	<10.0	<10.0
T-1	3	<0.050	<0.300	19.3	<10.0
T-1	4	<0.050	<0.300	<10.0	<10.0
T-2	0	<0.050	<0.300	147	4063
T-2	1	<0.050	<0.300	12.2	66.7
T-2	2	<0.050	<0.300	<10.0	<10.0
T-2	3	<0.050	<0.300	<10.0	<10.0
T-2	4	<0.050	<0.300	<10.0	<10.0
T-3	0	<0.050	<0.300	57.4	757
T-3	1	<0.050	<0.300	11.8	<10.0
T-3	2	<0.050	<0.300	<10.0	<10.0
T-3	3	<0.050	<0.300	13.8	<10.0
NORTH	0	<0.050	<0.300	<10.0	<10.0
SOUTH	0	<0.050	<0.300	484	105
EAST	0	<0.050	<0.300	<10.0	<10.0
WEST	0	<0.050	<0.300	18.0	<10.0

Confirmation Soil Sampling (3/23/18)

Sample ID	Depth (feet)	Benzene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)	Total TPH (mg/kg)
T-1	1	<0.050	<0.300	48.6	103.3
T-1 N.	SIDEWALL	<0.050	<0.300	63.0	196.1
T-1 S.	SIDEWALL	<0.050	<0.300	203	<10.0
T-1 E.	SIDEWALL	<0.050	<0.300	45	<10.0
T-1 W.	SIDEWALL	<0.050	<0.300	10.7	<10.0
T-2	0	<0.050	<0.300	<10.0	<10.0

REMEDIAL ACTIONS

- The impacted area in the vicinity of sample location T-1 was excavated to a depth of 1-foot BGS.
- Per New Mexico Oil Conservation Division (NMOCD) stipulations confirmation soil samples were taken from the bottom and sidewalls of the excavated area. The laboratory analysis of these soil samples confirmed that the remaining soil is below NMOCD Recommended Remedial Action Levels (RRAL's).
- Per NMOCD stipulations a soil sample was collected at sample location T-2. The laboratory analysis of this soil sample confirmed that the remaining soil is below NMOCD RRAL's.
- All of the excavated material was transported to an NMOCD approved solid waste disposal facility.
- The excavation was backfilled, contoured to match the surrounding terrain and seeded with a land owner requested seed mixture.

CLOSURE REQUEST

COG Operating, LLC respectfully requests that the New Mexico Oil Conservation Division grant closure approval for the Raspberry State Com #001H incident that occurred on October 20, 2017.

Should you have any questions or concerns please do not hesitate to contact me.

Sincerely,



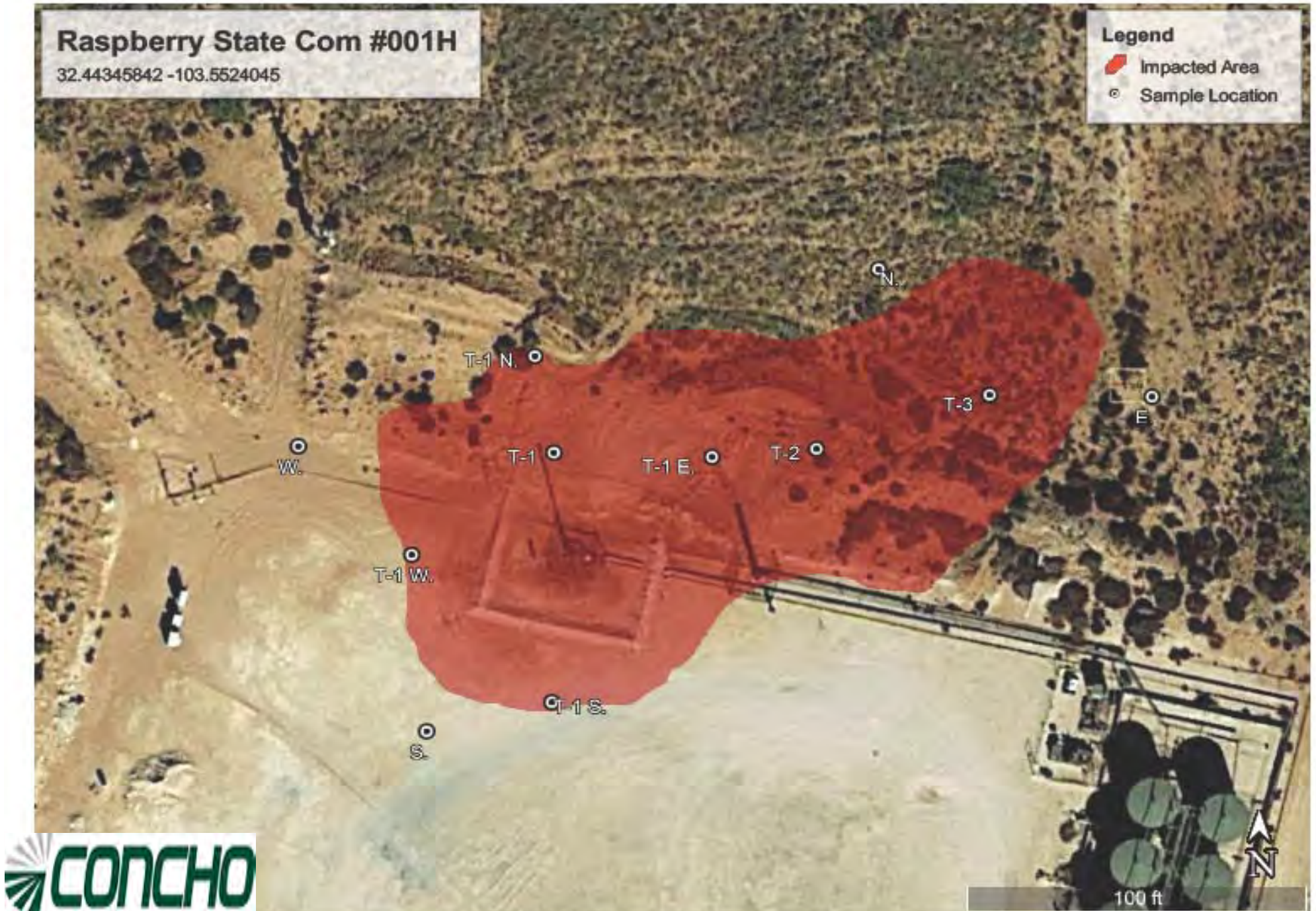
Sheldon L. Hitchcock
HSE Coordinator
slhitchcock@concho.com

Enclosed:

- Appendix I: Site Diagram
- Appendix II: Groundwater Data
- Appendix III: Initial C-141 (Copy)
- Appendix IV: Final C-141
- Appendix V: Work Plan (Copy)
- Appendix VI: Photo Documentation
- Appendix VII: Analytical Reports and Chain-of-Custody Forms

APPENDIX I

Raspberry State Com #001H



APPENDIX II



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced,
O=orphaned,
C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
CP 01411 POD1	CP	LE		2	2	34	21S	33E		635968	3590386	228	1149		
CP 01411 POD2	CP	LE		1	2	34	21S	33E		635534	3590380	463	1125		
CP 01349 POD1	CP	LE		2	3	1	27	21S	33E	635304	3591576	1153	1188	572	616
CP 01355 POD1	CP	LE		2	1	3	27	21S	33E	634773	3591061	1246	1192	582	610
CP 01357 POD1	CP	LE		4	3	1	27	21S	33E	634782	3591347	1368	1286	578	708
CP 01356 POD1	CP	LE		4	2	2	33	21S	33E	634560	3590014	1500	1098	555	543

Average Depth to Water: **571 feet**

Minimum Depth: **555 feet**

Maximum Depth: **582 feet**

Record Count: 6

Basin/County Search:

County: Lea

UTMNAD83 Radius Search (in meters):

Easting (X): 635936

Northing (Y): 3590612

Radius: 2000

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

APPENDIX III

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

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised April 3, 2017

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: COG Operating, LLC (OGRID# 229137)	Contact: Robert McNeill
Address: 600 West Illinois Avenue, Midland TX 79701	Telephone No.: 432-683-7443
Facility Name: Raspberry State Com #001H	Facility Type: Tank Battery

Surface Owner: Fee	Mineral Owner: State	API No.: 30-025-43179
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LOCATION OF RELEASE

Unit Letter P	Section 27	Township 21S	Range 33E	Feet from the 330	North/South Line South	Feet from the 200	East/West Line East	County Lea
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Latitude: 32.44345842 Longitude: -103.5524045 NAD83

NATURE OF RELEASE

Type of Release: Oil	Volume of Release: 12bbls	Volume Recovered: 8bbls
Source of Release: Flare	Date and Hour of Occurrence: 10/20/17 7:00am	Date and Hour of Discovery: 10/20/17 7:00am
Was Immediate Notice Given? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour:	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

RECEIVED

By Olivia Yu at 1:08 pm, Oct 27, 2017

Describe Cause of Problem and Remedial Action Taken.*

The throttle head did not engage to open Kimray dump and sent fluid through the flare. The back pressure regulator was rebuilt and the throttle head was replaced with a snap head.

Describe Area Affected and Cleanup Action Taken.*

The release impacted the pasture adjacent to the location. A vacuum truck was dispatched to recover all free standing fluids. Approximately 8bbls of oil were recovered. Concho will have the spill area evaluated for any possible impact from the release and will present a remediation work plan to the NMOCD for approval prior to any significant remediation activities.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: <i>Sheldon Hitchcock</i>		OIL CONSERVATION DIVISION	
Printed Name: Sheldon L. Hitchcock		Approved by Environmental Specialist: <i>[Signature]</i>	
Title: HSE Coordinator		Approval Date: 10/27/2017	Expiration Date:
E-mail Address: slhitchcock@concho.com		Conditions of Approval: see attached directive	Attached <input checked="" type="checkbox"/>
Date: 10/23/2017	Phone: 575-746-2010		

* Attach Additional Sheets If Necessary

1RP-4853

nOY1730048212

pOY1730048559

APPENDIX IV

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

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised April 3, 2017

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

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company: COG Operating, LLC (OGRID# 229137)	Contact: Robert McNeill	
Address: 600 West Illinois Avenue, Midland TX 79701	Telephone No.: 432-683-7443	
Facility Name: Raspberry State Com #001H	Facility Type: Tank Battery	
Surface Owner: Fee	Mineral Owner: State	API No.: 30-025-43179

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
P	27	21S	33E	330	South	200	East	Lea

Latitude: 32.44345842 Longitude: -103.5524045 NAD83

NATURE OF RELEASE

Type of Release: Oil	Volume of Release: 12bbbls	Volume Recovered: 8bbbls
Source of Release: Flare	Date and Hour of Occurrence: 10/20/17 7:00am	Date and Hour of Discovery: 10/20/17 7:00am
Was Immediate Notice Given? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour:	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

APPROVED
By Olivia Yu at 1:47 pm, Sep 14, 2018

Describe Cause of Problem and Remedial Action Taken.*

The throttle head did not engage to open Kimray dump and sent fluid through the flare. The back pressure regulator was rebuilt and the throttle head was replaced with a snap head.

Describe Area Affected and Cleanup Action Taken.*

COG had the impacted area evaluated and drafted a remediation work plan that was subsequently approved by NMOCD. The remediation was carried out in accordance with the approved work plan.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: <i>Sheldon Hitchcock</i>		OIL CONSERVATION DIVISION	
Printed Name: Sheldon L. Hitchcock		Approved by Environmental Specialist: <i>[Signature]</i>	
Title: HSE Coordinator	Approval Date: 9/14/2018	Expiration Date: xx/xx/xxxx	
E-mail Address: slhitchcock@concho.com	Conditions of Approval: NMSLO approval		Attached <input type="checkbox"/>
Date: 10/23/2017	Phone: 575-746-2010		

* Attach Additional Sheets If Necessary

1RP-4853

APPENDIX V

December 28, 2017

Olivia Yu
Oil Conservation Division, District 1
1625 N. French Dr.
Hobbs, NM 88240

APPROVED

By Olivia Yu at 4:01 pm, Jan 02, 2018

NMOCD approves of the delineation completed for 1RP-4853. Proposed remediation is approved with stipulations indicated in email correspondence.

**Re: Work Plan
Raspberry State Com #001H
API #: 30-025-43179
RP#: 1RP-4853
Unit Letter P Section 27, Township 21S, Range 33E
Lea County, NM**

Ms. Yu/Ms. Tucker,

COG Operating, LLC (COG) is pleased to submit for your consideration the following remediation work plan for the Raspberry State Com #001H. This plan is in response to an oil water release that occurred on October 20, 2017. Subsequent to the release a C-141 initial report was submitted to the New Mexico Oil Conservation Division (NMOCD) on October 23, 2017.

BACKGROUND

The Raspberry State Com #001H release is located in Unit Letter P, Section 27, Township 21 South, and Range 33 East in Lea County, New Mexico. More specifically the latitude and longitude for this release are 32.44345842 North and -103.5524045 West.

On October 20, 2017, the throttle head did not engage to open the Kimray dump and sent fluid through the flare resulting in the release of approximately twelve (12) barrels (bbls) of oil. A vacuum truck was dispatched to the site to recover freestanding fluids. Approximately eight (8) bbls of oil were recovered.

On December 13, 2017, a site assessment and soil sampling were conducted in order to vertically and horizontally define the impacted area. A site diagram is included in Appendix I. The analytical results from the soil sampling activities are summarized in the table below.

GROUNDWATER AND SITE RANKING

According to the New Mexico Office of the State Engineer (NMOSE) groundwater in the project vicinity is approximately five-hundred and eighty-two (582) feet below ground surface (BGS) (Appendix II). No water well or surface water was observed within one-thousand (1,000) feet of the release site. Therefore the site ranking for this release is zero (0) based on the following:

Depth to groundwater >100-feet
 Distance to surface water body >1000-feet
 Wellhead Protection Area >1000-feet

Analytical Results

Sample ID	Depth (feet)	Benzene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)	Total TPH (mg/kg)
T-1	0	<0.050	<0.300	2070	4840
T-1	1	<0.050	<0.300	<10.0	72.8
T-1	2	<0.050	<0.300	<10.0	<10.0
T-1	3	<0.050	<0.300	19.3	<10.0
T-1	4	<0.050	<0.300	<10.0	<10.0
T-2	0	<0.050	<0.300	147	4063
T-2	1	<0.050	<0.300	12.2	66.7
T-2	2	<0.050	<0.300	<10.0	<10.0
T-2	3	<0.050	<0.300	<10.0	<10.0
T-2	4	<0.050	<0.300	<10.0	<10.0
T-3	0	<0.050	<0.300	57.4	757
T-3	1	<0.050	<0.300	11.8	<10.0
T-3	2	<0.050	<0.300	<10.0	<10.0
T-3	3	<0.050	<0.300	13.8	<10.0
NORTH	0	<0.050	<0.300	<10.0	<10.0
SOUTH	0	<0.050	<0.300	484	105
EAST	0	<0.050	<0.300	<10.0	<10.0
WEST	0	<0.050	<0.300	18.0	<10.0

PROPOSED REMEDIAL ACTIONS

- The impacted area in the vicinity of sample location T-1 will be excavated to a depth of one (1) foot BGS.
- All of the excavated material will be transported to an NMOCD approved solid waste disposal facility.
- The excavation will backfilled with clean “like” material and contoured to match the surrounding terrain.

Should you have any questions or concerns please do not hesitate to contact me.

Sincerely,



Sheldon L. Hitchcock
HSE Coordinator
slhitchcock@concho.com

Enclosed:

Appendix I: Site Diagram
Appendix II: Groundwater Data
Appendix III: Initial C-141 (Copy)
Appendix IV: Analytical Reports and Chain-of-Custody Forms

APPENDIX VI

May 2, 2018

COG OPERATING LLC
RASPBERRY STATE COM #1H
UL P SEC.26-T21S-R33E
330' FSL & 200' FEL
LEA COUNTY, NM
API #30-025-43179





APPENDIX VII

December 27, 2017

SHELDON HITCHCOCK

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: RASPBERRY ST. COM #1H

Enclosed are the results of analyses for samples received by the laboratory on 12/13/17 13:25.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-17-10. 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/ga/lab_accred_certif.html.

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

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

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

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

Lab Director/Quality Manager

Analytical Results For:COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210Project: RASPBERRY ST. COM #1H
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONEReported:
27-Dec-17 16:55

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
T-1 0'	H703451-01	Soil	13-Dec-17 11:20	13-Dec-17 13:25
T-1 1'	H703451-02	Soil	13-Dec-17 11:22	13-Dec-17 13:25
T-1 2'	H703451-03	Soil	13-Dec-17 11:24	13-Dec-17 13:25
T-1 3'	H703451-04	Soil	13-Dec-17 11:26	13-Dec-17 13:25
T-1 4'	H703451-05	Soil	13-Dec-17 11:28	13-Dec-17 13:25
T-2 0'	H703451-06	Soil	13-Dec-17 11:35	13-Dec-17 13:25
T-2 1'	H703451-07	Soil	13-Dec-17 11:37	13-Dec-17 13:25
T-2 2'	H703451-08	Soil	13-Dec-17 11:39	13-Dec-17 13:25
T-2 3'	H703451-09	Soil	13-Dec-17 11:41	13-Dec-17 13:25
T-2 4'	H703451-10	Soil	13-Dec-17 11:43	13-Dec-17 13:25
T-3 0'	H703451-11	Soil	13-Dec-17 12:00	13-Dec-17 13:25
T-3 1'	H703451-12	Soil	13-Dec-17 12:02	13-Dec-17 13:25
T-3 2'	H703451-13	Soil	13-Dec-17 12:04	13-Dec-17 13:25
T-3 3'	H703451-14	Soil	13-Dec-17 12:06	13-Dec-17 13:25

Cardinal Laboratories

*=Accredited Analyte

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 client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage 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 the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: RASPBERRY ST. COM #1H
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
27-Dec-17 16:55

T-1 0'
H703451-01 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050	0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Toluene*	<0.050	0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Ethylbenzene*	<0.050	0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Total Xylenes*	<0.150	0.150	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Total BTEX	<0.300	0.300	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Surrogate: 4-Bromofluorobenzene (PID)		96.9 %		72-148	7121503	MS	15-Dec-17	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0	10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
DRO >C10-C28*	3750	10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
EXT DRO >C28-C36	1090	10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
Surrogate: 1-Chlorooctane		65.8 %		28.3-164	7121801	MS	18-Dec-17	8015B	
Surrogate: 1-Chlorooctadecane		131 %		34.7-157	7121801	MS	18-Dec-17	8015B	

Green Analytical Laboratories

Soluble (DI Water Extraction)

Chloride	2070	100	mg/kg wet	100	B712171	JDA	27-Dec-17	EPA300.0	
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Cardinal Laboratories

*=Accredited Analyte

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 client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage 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 the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: RASPBERRY ST. COM #1H
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
27-Dec-17 16:55

T-1 1' H703451-02 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Toluene*	<0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	7121503	MS	15-Dec-17	8021B	
<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			95.8 %	72-148		7121503	MS	15-Dec-17	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
DRO >C10-C28*	25.9		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
EXT DRO >C28-C36	46.9		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
<i>Surrogate: 1-Chlorooctane</i>			97.5 %	28.3-164		7121801	MS	18-Dec-17	8015B	
<i>Surrogate: 1-Chlorooctadecane</i>			96.2 %	34.7-157		7121801	MS	18-Dec-17	8015B	

Green Analytical Laboratories

Soluble (DI Water Extraction)

Chloride	<10.0		10.0	mg/kg wet	10	B712171	JDA	23-Dec-17	EPA300.0	
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Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: RASPBERRY ST. COM #1H
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
27-Dec-17 16:55

T-1 2' H703451-03 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Toluene*	<0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	7121503	MS	15-Dec-17	8021B	
<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			93.6 %	72-148		7121503	MS	15-Dec-17	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
<i>Surrogate: 1-Chlorooctane</i>			85.4 %	28.3-164		7121801	MS	18-Dec-17	8015B	
<i>Surrogate: 1-Chlorooctadecane</i>			85.4 %	34.7-157		7121801	MS	18-Dec-17	8015B	

Green Analytical Laboratories

Soluble (DI Water Extraction)

Chloride	<10.0		10.0	mg/kg wet	10	B712171	JDA	23-Dec-17	EPA300.0	
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Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: RASPBERRY ST. COM #1H
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
27-Dec-17 16:55

T-1 3' H703451-04 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Toluene*	<0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	7121503	MS	15-Dec-17	8021B	
<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			<i>94.3 %</i>	<i>72-148</i>		<i>7121503</i>	<i>MS</i>	<i>15-Dec-17</i>	<i>8021B</i>	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
<i>Surrogate: 1-Chlorooctane</i>			<i>95.8 %</i>	<i>28.3-164</i>		<i>7121801</i>	<i>MS</i>	<i>18-Dec-17</i>	<i>8015B</i>	
<i>Surrogate: 1-Chlorooctadecane</i>			<i>97.0 %</i>	<i>34.7-157</i>		<i>7121801</i>	<i>MS</i>	<i>18-Dec-17</i>	<i>8015B</i>	

Green Analytical Laboratories

Soluble (DI Water Extraction)

Chloride	19.3		10.0	mg/kg wet	10	B712171	JDA	23-Dec-17	EPA300.0	
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Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: RASPBERRY ST. COM #1H
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
27-Dec-17 16:55

T-1 4'
H703451-05 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Toluene*	<0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	7121503	MS	15-Dec-17	8021B	
<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			<i>94.8 %</i>	<i>72-148</i>		<i>7121503</i>	<i>MS</i>	<i>15-Dec-17</i>	<i>8021B</i>	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
<i>Surrogate: 1-Chlorooctane</i>			<i>96.3 %</i>	<i>28.3-164</i>		<i>7121801</i>	<i>MS</i>	<i>18-Dec-17</i>	<i>8015B</i>	
<i>Surrogate: 1-Chlorooctadecane</i>			<i>95.8 %</i>	<i>34.7-157</i>		<i>7121801</i>	<i>MS</i>	<i>18-Dec-17</i>	<i>8015B</i>	

Green Analytical Laboratories

Soluble (DI Water Extraction)

Chloride	<10.0		10.0	mg/kg wet	10	B712171	JDA	23-Dec-17	EPA300.0	
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: RASPBERRY ST. COM #1H
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
27-Dec-17 16:55

T-2 0'
H703451-06 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Toluene*	<0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	7121503	MS	15-Dec-17	8021B	
<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			<i>94.8 %</i>	<i>72-148</i>		<i>7121503</i>	<i>MS</i>	<i>15-Dec-17</i>	<i>8021B</i>	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
DRO >C10-C28*	3170		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
EXT DRO >C28-C36	893		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
<i>Surrogate: 1-Chlorooctane</i>			<i>93.9 %</i>	<i>28.3-164</i>		<i>7121801</i>	<i>MS</i>	<i>18-Dec-17</i>	<i>8015B</i>	
<i>Surrogate: 1-Chlorooctadecane</i>			<i>146 %</i>	<i>34.7-157</i>		<i>7121801</i>	<i>MS</i>	<i>18-Dec-17</i>	<i>8015B</i>	

Green Analytical Laboratories

Soluble (DI Water Extraction)

Chloride	147		10.0	mg/kg wet	10	B712171	JDA	23-Dec-17	EPA300.0	
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: RASPBERRY ST. COM #1H
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
27-Dec-17 16:55

T-2 1' H703451-07 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Toluene*	<0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	7121503	MS	15-Dec-17	8021B	
<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			95.5 %	72-148		7121503	MS	15-Dec-17	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
DRO >C10-C28*	24.1		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
EXT DRO >C28-C36	42.6		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
<i>Surrogate: 1-Chlorooctane</i>			97.0 %	28.3-164		7121801	MS	18-Dec-17	8015B	
<i>Surrogate: 1-Chlorooctadecane</i>			97.2 %	34.7-157		7121801	MS	18-Dec-17	8015B	

Green Analytical Laboratories

Soluble (DI Water Extraction)

Chloride	12.2		10.0	mg/kg wet	10	B712171	JDA	23-Dec-17	EPA300.0	
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: RASPBERRY ST. COM #1H
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
27-Dec-17 16:55

T-2 2' H703451-08 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Toluene*	<0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	7121503	MS	15-Dec-17	8021B	
<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			<i>94.4 %</i>	<i>72-148</i>		<i>7121503</i>	<i>MS</i>	<i>15-Dec-17</i>	<i>8021B</i>	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
<i>Surrogate: 1-Chlorooctane</i>			<i>101 %</i>	<i>28.3-164</i>		<i>7121801</i>	<i>MS</i>	<i>18-Dec-17</i>	<i>8015B</i>	
<i>Surrogate: 1-Chlorooctadecane</i>			<i>103 %</i>	<i>34.7-157</i>		<i>7121801</i>	<i>MS</i>	<i>18-Dec-17</i>	<i>8015B</i>	

Green Analytical Laboratories

Soluble (DI Water Extraction)

Chloride	<10.0		10.0	mg/kg wet	10	B712171	JDA	23-Dec-17	EPA300.0	
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: RASPBERRY ST. COM #1H
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
27-Dec-17 16:55

T-2 3' H703451-09 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Toluene*	<0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	7121503	MS	15-Dec-17	8021B	
<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			<i>93.9 %</i>	<i>72-148</i>		<i>7121503</i>	<i>MS</i>	<i>15-Dec-17</i>	<i>8021B</i>	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
<i>Surrogate: 1-Chlorooctane</i>			<i>97.5 %</i>	<i>28.3-164</i>		<i>7121801</i>	<i>MS</i>	<i>18-Dec-17</i>	<i>8015B</i>	
<i>Surrogate: 1-Chlorooctadecane</i>			<i>95.9 %</i>	<i>34.7-157</i>		<i>7121801</i>	<i>MS</i>	<i>18-Dec-17</i>	<i>8015B</i>	

Green Analytical Laboratories

Soluble (DI Water Extraction)

Chloride	<10.0		10.0	mg/kg wet	10	B712171	JDA	23-Dec-17	EPA300.0	
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: RASPBERRY ST. COM #1H
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
27-Dec-17 16:55

T-2 4' H703451-10 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Toluene*	<0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	7121503	MS	15-Dec-17	8021B	
<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			<i>94.9 %</i>	<i>72-148</i>		<i>7121503</i>	<i>MS</i>	<i>15-Dec-17</i>	<i>8021B</i>	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
<i>Surrogate: 1-Chlorooctane</i>			<i>99.5 %</i>	<i>28.3-164</i>		<i>7121801</i>	<i>MS</i>	<i>18-Dec-17</i>	<i>8015B</i>	
<i>Surrogate: 1-Chlorooctadecane</i>			<i>99.9 %</i>	<i>34.7-157</i>		<i>7121801</i>	<i>MS</i>	<i>18-Dec-17</i>	<i>8015B</i>	

Green Analytical Laboratories

Soluble (DI Water Extraction)

Chloride	<10.0		10.0	mg/kg wet	10	B712171	JDA	23-Dec-17	EPA300.0	
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Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: RASPBERRY ST. COM #1H
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
27-Dec-17 16:55

T-3 0' H703451-11 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Toluene*	<0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	7121503	MS	15-Dec-17	8021B	
<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			93.8 %	72-148		7121503	MS	15-Dec-17	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
DRO >C10-C28*	593		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
EXT DRO >C28-C36	164		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
<i>Surrogate: 1-Chlorooctane</i>			88.6 %	28.3-164		7121801	MS	18-Dec-17	8015B	
<i>Surrogate: 1-Chlorooctadecane</i>			99.8 %	34.7-157		7121801	MS	18-Dec-17	8015B	

Green Analytical Laboratories

Soluble (DI Water Extraction)

Chloride	57.4		10.0	mg/kg wet	10	B712171	JDA	23-Dec-17	EPA300.0	
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: RASPBERRY ST. COM #1H
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
27-Dec-17 16:55

T-3 1' H703451-12 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Toluene*	<0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	7121503	MS	15-Dec-17	8021B	
<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			<i>95.1 %</i>	<i>72-148</i>		<i>7121503</i>	<i>MS</i>	<i>15-Dec-17</i>	<i>8021B</i>	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
<i>Surrogate: 1-Chlorooctane</i>			<i>90.2 %</i>	<i>28.3-164</i>		<i>7121801</i>	<i>MS</i>	<i>18-Dec-17</i>	<i>8015B</i>	
<i>Surrogate: 1-Chlorooctadecane</i>			<i>90.0 %</i>	<i>34.7-157</i>		<i>7121801</i>	<i>MS</i>	<i>18-Dec-17</i>	<i>8015B</i>	

Green Analytical Laboratories

Soluble (DI Water Extraction)

Chloride	11.8		10.0	mg/kg wet	10	B712171	JDA	23-Dec-17	EPA300.0	
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: RASPBERRY ST. COM #1H
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
27-Dec-17 16:55

T-3 2' H703451-13 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Toluene*	<0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	7121503	MS	15-Dec-17	8021B	
<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			<i>94.7 %</i>	<i>72-148</i>		<i>7121503</i>	<i>MS</i>	<i>15-Dec-17</i>	<i>8021B</i>	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
<i>Surrogate: 1-Chlorooctane</i>			<i>84.9 %</i>	<i>28.3-164</i>		<i>7121801</i>	<i>MS</i>	<i>18-Dec-17</i>	<i>8015B</i>	
<i>Surrogate: 1-Chlorooctadecane</i>			<i>86.7 %</i>	<i>34.7-157</i>		<i>7121801</i>	<i>MS</i>	<i>18-Dec-17</i>	<i>8015B</i>	

Green Analytical Laboratories

Soluble (DI Water Extraction)

Chloride	<10.0		10.0	mg/kg wet	10	B712171	JDA	23-Dec-17	EPA300.0	
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: RASPBERRY ST. COM #1H
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
27-Dec-17 16:55

T-3 3' H703451-14 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	7121503	MS	16-Dec-17	8021B	
Toluene*	<0.050		0.050	mg/kg	50	7121503	MS	16-Dec-17	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	7121503	MS	16-Dec-17	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	7121503	MS	16-Dec-17	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	7121503	MS	16-Dec-17	8021B	
<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			95.8 %	72-148		7121503	MS	16-Dec-17	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
<i>Surrogate: 1-Chlorooctane</i>			88.0 %	28.3-164		7121801	MS	18-Dec-17	8015B	
<i>Surrogate: 1-Chlorooctadecane</i>			87.5 %	34.7-157		7121801	MS	18-Dec-17	8015B	

Green Analytical Laboratories

Soluble (DI Water Extraction)

Chloride	13.8		10.0	mg/kg wet	10	B712171	JDA	23-Dec-17	EPA300.0	
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: RASPBERRY ST. COM #1H
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
27-Dec-17 16:55

Volatile Organic Compounds by EPA Method 8021 - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 7121503 - Volatiles

Blank (7121503-BLK1)

Prepared & Analyzed: 15-Dec-17

Benzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Total Xylenes	ND	0.150	mg/kg							
Total BTEX	ND	0.300	mg/kg							
Surrogate: 4-Bromofluorobenzene (PID)	0.0955		mg/kg	0.100		95.5	72-148			

LCS (7121503-BS1)

Prepared & Analyzed: 15-Dec-17

Benzene	2.01	0.050	mg/kg	2.00		100	79.5-124			
Toluene	1.97	0.050	mg/kg	2.00		98.4	75.5-127			
Ethylbenzene	1.90	0.050	mg/kg	2.00		95.1	77.7-125			
Total Xylenes	5.87	0.150	mg/kg	6.00		97.8	70.9-124			
Surrogate: 4-Bromofluorobenzene (PID)	0.0927		mg/kg	0.100		92.7	72-148			

LCS Dup (7121503-BSD1)

Prepared & Analyzed: 15-Dec-17

Benzene	2.00	0.050	mg/kg	2.00		99.8	79.5-124	0.651	6.5	
Toluene	1.94	0.050	mg/kg	2.00		96.9	75.5-127	1.51	7.02	
Ethylbenzene	1.89	0.050	mg/kg	2.00		94.5	77.7-125	0.643	7.83	
Total Xylenes	5.85	0.150	mg/kg	6.00		97.6	70.9-124	0.266	7.78	
Surrogate: 4-Bromofluorobenzene (PID)	0.0941		mg/kg	0.100		94.1	72-148			

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: RASPBERRY ST. COM #1H
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
27-Dec-17 16:55

Petroleum Hydrocarbons by GC FID - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 7121801 - General Prep - Organics

Blank (7121801-BLK1)

Prepared & Analyzed: 18-Dec-17

GRO C6-C10	ND	10.0	mg/kg							
DRO >C10-C28	ND	10.0	mg/kg							
EXT DRO >C28-C35	ND	10.0	mg/kg							
EXT DRO >C28-C36	ND	10.0	mg/kg							
Total TPH C6-C28	ND	10.0	mg/kg							
Surrogate: 1-Chlorooctane	43.4		mg/kg	50.0		86.8	28.3-164			
Surrogate: 1-Chlorooctadecane	46.0		mg/kg	50.0		92.0	34.7-157			

LCS (7121801-BS1)

Prepared & Analyzed: 18-Dec-17

GRO C6-C10	173	10.0	mg/kg	200		86.4	76.6-119			
DRO >C10-C28	194	10.0	mg/kg	200		97.1	81.4-124			
Total TPH C6-C28	367	10.0	mg/kg	400		91.7	79.4-121			
Surrogate: 1-Chlorooctane	42.8		mg/kg	50.0		85.6	28.3-164			
Surrogate: 1-Chlorooctadecane	42.5		mg/kg	50.0		85.0	34.7-157			

LCS Dup (7121801-BSD1)

Prepared & Analyzed: 18-Dec-17

GRO C6-C10	177	10.0	mg/kg	200		88.5	76.6-119	2.41	7.94	
DRO >C10-C28	200	10.0	mg/kg	200		99.9	81.4-124	2.90	9.83	
Total TPH C6-C28	377	10.0	mg/kg	400		94.2	79.4-121	2.67	8.57	
Surrogate: 1-Chlorooctane	44.5		mg/kg	50.0		88.9	28.3-164			
Surrogate: 1-Chlorooctadecane	44.6		mg/kg	50.0		89.2	34.7-157			

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: RASPBERRY ST. COM #1H
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
27-Dec-17 16:55

Soluble (DI Water Extraction) - Quality Control

Green Analytical Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B712171 - General Prep - Wet Chem

Blank (B712171-BLK1)

Prepared: 20-Dec-17 Analyzed: 22-Dec-17

Chloride	ND	10.0	mg/kg wet							
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LCS (B712171-BS1)

Prepared: 20-Dec-17 Analyzed: 22-Dec-17

Chloride	243	10.0	mg/kg wet	250		97.1	85-115			
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LCS Dup (B712171-BSD1)

Prepared: 20-Dec-17 Analyzed: 22-Dec-17

Chloride	244	10.0	mg/kg wet	250		97.5	85-115	0.489	20	
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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

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

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Celey D. Keene, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Pg 1022



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

December 27, 2017

SHELDON HITCHCOCK

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: RASPBERRY ST. COM #1H

Enclosed are the results of analyses for samples received by the laboratory on 12/13/17 13:25.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-17-10. 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/ga/lab_accred_certif.html.

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

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

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

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

Lab Director/Quality Manager

Analytical Results For:COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210Project: RASPBERRY ST. COM #1H
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONEReported:
27-Dec-17 17:01

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
N. 0'	H703452-01	Soil	13-Dec-17 12:08	13-Dec-17 13:25
S. 0'	H703452-02	Soil	13-Dec-17 12:10	13-Dec-17 13:25
E. 0'	H703452-03	Soil	13-Dec-17 12:12	13-Dec-17 13:25
W. 0'	H703452-04	Soil	13-Dec-17 12:14	13-Dec-17 13:25

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: RASPBERRY ST. COM #1H
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
27-Dec-17 17:01

N. 0'
H703452-01 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050	0.050	mg/kg	50	7121503	MS	16-Dec-17	8021B	
Toluene*	<0.050	0.050	mg/kg	50	7121503	MS	16-Dec-17	8021B	
Ethylbenzene*	<0.050	0.050	mg/kg	50	7121503	MS	16-Dec-17	8021B	
Total Xylenes*	<0.150	0.150	mg/kg	50	7121503	MS	16-Dec-17	8021B	
Total BTEX	<0.300	0.300	mg/kg	50	7121503	MS	16-Dec-17	8021B	
Surrogate: 4-Bromofluorobenzene (PID)		95.4 %		72-148	7121503	MS	16-Dec-17	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0	10.0	mg/kg	1	7121809	MS	18-Dec-17	8015B	
DRO >C10-C28*	<10.0	10.0	mg/kg	1	7121809	MS	18-Dec-17	8015B	
EXT DRO >C28-C36	<10.0	10.0	mg/kg	1	7121809	MS	18-Dec-17	8015B	
Surrogate: 1-Chlorooctane		92.1 %		28.3-164	7121809	MS	18-Dec-17	8015B	
Surrogate: 1-Chlorooctadecane		91.1 %		34.7-157	7121809	MS	18-Dec-17	8015B	

Green Analytical Laboratories

Soluble (DI Water Extraction)

Chloride	<10.0	10.0	mg/kg wet	10	B712171	JDA	22-Dec-17	EPA300.0	
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: RASPBERRY ST. COM #1H
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
27-Dec-17 17:01

S. 0'

H703452-02 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	7121503	MS	16-Dec-17	8021B	
Toluene*	<0.050		0.050	mg/kg	50	7121503	MS	16-Dec-17	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	7121503	MS	16-Dec-17	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	7121503	MS	16-Dec-17	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	7121503	MS	16-Dec-17	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			94.4 %	72-148		7121503	MS	16-Dec-17	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	7121809	MS	19-Dec-17	8015B	
DRO >C10-C28*	60.9		10.0	mg/kg	1	7121809	MS	19-Dec-17	8015B	
EXT DRO >C28-C36	44.5		10.0	mg/kg	1	7121809	MS	19-Dec-17	8015B	
Surrogate: 1-Chlorooctane			78.1 %	28.3-164		7121809	MS	19-Dec-17	8015B	
Surrogate: 1-Chlorooctadecane			78.2 %	34.7-157		7121809	MS	19-Dec-17	8015B	

Green Analytical Laboratories

Soluble (DI Water Extraction)

Chloride	484		10.0	mg/kg wet	10	B712171	JDA	22-Dec-17	EPA300.0	
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: RASPBERRY ST. COM #1H
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
27-Dec-17 17:01

E. 0'
H703452-03 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories
Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	7121503	MS	16-Dec-17	8021B	
Toluene*	<0.050		0.050	mg/kg	50	7121503	MS	16-Dec-17	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	7121503	MS	16-Dec-17	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	7121503	MS	16-Dec-17	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	7121503	MS	16-Dec-17	8021B	
<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			94.9 %	72-148		7121503	MS	16-Dec-17	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	7121809	MS	19-Dec-17	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	7121809	MS	19-Dec-17	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	7121809	MS	19-Dec-17	8015B	
<i>Surrogate: 1-Chlorooctane</i>			87.6 %	28.3-164		7121809	MS	19-Dec-17	8015B	
<i>Surrogate: 1-Chlorooctadecane</i>			85.3 %	34.7-157		7121809	MS	19-Dec-17	8015B	

Green Analytical Laboratories
Soluble (DI Water Extraction)

Chloride	<10.0		10.0	mg/kg wet	10	B712171	JDA	22-Dec-17	EPA300.0	
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: RASPBERRY ST. COM #1H
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
27-Dec-17 17:01

W. 0'
H703452-04 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	7121805	MS	18-Dec-17	8021B	
Toluene*	<0.050		0.050	mg/kg	50	7121805	MS	18-Dec-17	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	7121805	MS	18-Dec-17	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	7121805	MS	18-Dec-17	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	7121805	MS	18-Dec-17	8021B	
<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			96.2 %	72-148		7121805	MS	18-Dec-17	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	7121803	MS	18-Dec-17	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	7121803	MS	18-Dec-17	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	7121803	MS	18-Dec-17	8015B	
<i>Surrogate: 1-Chlorooctane</i>			84.8 %	28.3-164		7121803	MS	18-Dec-17	8015B	
<i>Surrogate: 1-Chlorooctadecane</i>			83.6 %	34.7-157		7121803	MS	18-Dec-17	8015B	

Green Analytical Laboratories

Soluble (DI Water Extraction)

Chloride	18.0		10.0	mg/kg wet	10	B712171	JDA	22-Dec-17	EPA300.0	
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: RASPBERRY ST. COM #1H
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
27-Dec-17 17:01

Volatile Organic Compounds by EPA Method 8021 - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7121503 - Volatiles										
Blank (7121503-BLK1)				Prepared & Analyzed: 15-Dec-17						
Benzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Total Xylenes	ND	0.150	mg/kg							
Total BTEX	ND	0.300	mg/kg							
Surrogate: 4-Bromofluorobenzene (PID)	0.0955		mg/kg	0.100		95.5	72-148			
LCS (7121503-BS1)				Prepared & Analyzed: 15-Dec-17						
Benzene	2.01	0.050	mg/kg	2.00		100	79.5-124			
Toluene	1.97	0.050	mg/kg	2.00		98.4	75.5-127			
Ethylbenzene	1.90	0.050	mg/kg	2.00		95.1	77.7-125			
Total Xylenes	5.87	0.150	mg/kg	6.00		97.8	70.9-124			
Surrogate: 4-Bromofluorobenzene (PID)	0.0927		mg/kg	0.100		92.7	72-148			
LCS Dup (7121503-BSD1)				Prepared & Analyzed: 15-Dec-17						
Benzene	2.00	0.050	mg/kg	2.00		99.8	79.5-124	0.651	6.5	
Toluene	1.94	0.050	mg/kg	2.00		96.9	75.5-127	1.51	7.02	
Ethylbenzene	1.89	0.050	mg/kg	2.00		94.5	77.7-125	0.643	7.83	
Total Xylenes	5.85	0.150	mg/kg	6.00		97.6	70.9-124	0.266	7.78	
Surrogate: 4-Bromofluorobenzene (PID)	0.0941		mg/kg	0.100		94.1	72-148			
Matrix Spike (7121503-MS1)				Source: H703450-04	Prepared: 15-Dec-17 Analyzed: 16-Dec-17					
Benzene	2.02	0.050	mg/kg	2.00	ND	101	70.9-127			
Toluene	1.97	0.050	mg/kg	2.00	0.010	97.8	46-161			
Ethylbenzene	1.91	0.050	mg/kg	2.00	ND	95.5	38.8-164			
Total Xylenes	5.84	0.150	mg/kg	6.00	0.035	96.8	41.9-151			
Surrogate: 4-Bromofluorobenzene (PID)	0.0937		mg/kg	0.100		93.7	72-148			

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: RASPBERRY ST. COM #1H
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
27-Dec-17 17:01

Volatile Organic Compounds by EPA Method 8021 - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 7121503 - Volatiles

Matrix Spike Dup (7121503-MSD1)

Source: H703450-04

Prepared: 15-Dec-17 Analyzed: 16-Dec-17

Benzene	2.02	0.050	mg/kg	2.00	ND	101	70.9-127	0.354	3.45	
Toluene	1.97	0.050	mg/kg	2.00	0.010	97.7	46-161	0.0450	5.27	
Ethylbenzene	1.91	0.050	mg/kg	2.00	ND	95.7	38.8-164	0.190	4.92	
Total Xylenes	5.87	0.150	mg/kg	6.00	0.035	97.3	41.9-151	0.520	6.95	
Surrogate: 4-Bromofluorobenzene (PID)	0.0937		mg/kg	0.100		93.7	72-148			

Batch 7121805 - Volatiles

Blank (7121805-BLK1)

Prepared & Analyzed: 18-Dec-17

Benzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Total Xylenes	ND	0.150	mg/kg							
Total BTEX	ND	0.300	mg/kg							
Surrogate: 4-Bromofluorobenzene (PID)	0.0967		mg/kg	0.100		96.7	72-148			

LCS (7121805-BS1)

Prepared & Analyzed: 18-Dec-17

Benzene	1.96	0.050	mg/kg	2.00		98.0	79.5-124			
Toluene	1.95	0.050	mg/kg	2.00		97.5	75.5-127			
Ethylbenzene	1.87	0.050	mg/kg	2.00		93.4	77.7-125			
Total Xylenes	5.84	0.150	mg/kg	6.00		97.3	70.9-124			
Surrogate: 4-Bromofluorobenzene (PID)	0.0948		mg/kg	0.100		94.8	72-148			

LCS Dup (7121805-BSD1)

Prepared & Analyzed: 18-Dec-17

Benzene	1.95	0.050	mg/kg	2.00		97.7	79.5-124	0.335	6.5	
Toluene	1.94	0.050	mg/kg	2.00		97.2	75.5-127	0.250	7.02	
Ethylbenzene	1.87	0.050	mg/kg	2.00		93.5	77.7-125	0.0455	7.83	
Total Xylenes	5.80	0.150	mg/kg	6.00		96.7	70.9-124	0.633	7.78	
Surrogate: 4-Bromofluorobenzene (PID)	0.0937		mg/kg	0.100		93.7	72-148			

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: RASPBERRY ST. COM #1H
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
27-Dec-17 17:01

Volatile Organic Compounds by EPA Method 8021 - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 7121805 - Volatiles

Matrix Spike (7121805-MS1)

Source: H703452-04

Prepared & Analyzed: 18-Dec-17

Benzene	1.99	0.050	mg/kg	2.00	ND	99.7	70.9-127			
Toluene	2.00	0.050	mg/kg	2.00	0.046	97.5	46-161			
Ethylbenzene	1.94	0.050	mg/kg	2.00	ND	97.1	38.8-164			
Total Xylenes	6.01	0.150	mg/kg	6.00	ND	100	41.9-151			
Surrogate: 4-Bromofluorobenzene (PID)	0.0926		mg/kg	0.100		92.6	72-148			

Matrix Spike Dup (7121805-MSD1)

Source: H703452-04

Prepared & Analyzed: 18-Dec-17

Benzene	2.01	0.050	mg/kg	2.00	ND	101	70.9-127	0.959	3.45	
Toluene	1.99	0.050	mg/kg	2.00	0.046	97.4	46-161	0.106	5.27	
Ethylbenzene	1.96	0.050	mg/kg	2.00	ND	98.0	38.8-164	0.937	4.92	
Total Xylenes	6.07	0.150	mg/kg	6.00	ND	101	41.9-151	0.898	6.95	
Surrogate: 4-Bromofluorobenzene (PID)	0.0928		mg/kg	0.100		92.8	72-148			

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: RASPBERRY ST. COM #1H
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
27-Dec-17 17:01

Petroleum Hydrocarbons by GC FID - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 7121803 - General Prep - Organics

Blank (7121803-BLK1)

Prepared & Analyzed: 18-Dec-17

GRO C6-C10	ND	10.0	mg/kg							
DRO >C10-C28	ND	10.0	mg/kg							
EXT DRO >C28-C35	ND	10.0	mg/kg							
EXT DRO >C28-C36	ND	10.0	mg/kg							
Total TPH C6-C28	ND	10.0	mg/kg							
Surrogate: 1-Chlorooctane	43.4		mg/kg	50.0		86.7	28.3-164			
Surrogate: 1-Chlorooctadecane	43.4		mg/kg	50.0		86.9	34.7-157			

LCS (7121803-BS1)

Prepared & Analyzed: 18-Dec-17

GRO C6-C10	197	10.0	mg/kg	200		98.3	76.6-119			
DRO >C10-C28	180	10.0	mg/kg	200		90.1	81.4-124			
Total TPH C6-C28	377	10.0	mg/kg	400		94.2	79.4-121			
Surrogate: 1-Chlorooctane	46.7		mg/kg	50.0		93.4	28.3-164			
Surrogate: 1-Chlorooctadecane	45.4		mg/kg	50.0		90.9	34.7-157			

LCS Dup (7121803-BSD1)

Prepared & Analyzed: 18-Dec-17

GRO C6-C10	220	10.0	mg/kg	200		110	76.6-119	11.3	7.94	QR-02
DRO >C10-C28	207	10.0	mg/kg	200		103	81.4-124	13.9	9.83	QR-02
Total TPH C6-C28	427	10.0	mg/kg	400		107	79.4-121	12.5	8.57	QR-02
Surrogate: 1-Chlorooctane	50.4		mg/kg	50.0		101	28.3-164			
Surrogate: 1-Chlorooctadecane	49.5		mg/kg	50.0		99.0	34.7-157			

Matrix Spike (7121803-MS1)

Source: H703452-04

Prepared & Analyzed: 18-Dec-17

GRO C6-C10	209	10.0	mg/kg	200	3.85	103	39.3-131			
DRO >C10-C28	199	10.0	mg/kg	200	2.77	98.0	18.2-177			
Total TPH C6-C28	408	10.0	mg/kg	400	6.63	100	30-150			
Surrogate: 1-Chlorooctane	43.9		mg/kg	50.0		87.9	28.3-164			
Surrogate: 1-Chlorooctadecane	41.7		mg/kg	50.0		83.4	34.7-157			

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: RASPBERRY ST. COM #1H
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
27-Dec-17 17:01

Petroleum Hydrocarbons by GC FID - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 7121803 - General Prep - Organics

Matrix Spike Dup (7121803-MSD1)		Source: H703452-04			Prepared & Analyzed: 18-Dec-17					
GRO C6-C10	221	10.0	mg/kg	200	3.85	109	39.3-131	5.47	18.5	
DRO >C10-C28	218	10.0	mg/kg	200	2.77	108	18.2-177	9.52	22.5	
Total TPH C6-C28	439	10.0	mg/kg	400	6.63	108	30-150	7.47	117	
Surrogate: 1-Chlorooctane	48.9		mg/kg	50.0		97.7	28.3-164			
Surrogate: 1-Chlorooctadecane	44.2		mg/kg	50.0		88.3	34.7-157			

Batch 7121809 - General Prep - Organics

Blank (7121809-BLK1)		Prepared & Analyzed: 18-Dec-17								
GRO C6-C10	ND	10.0	mg/kg							
DRO >C10-C28	ND	10.0	mg/kg							
EXT DRO >C28-C35	ND	10.0	mg/kg							
EXT DRO >C28-C36	ND	10.0	mg/kg							
Total TPH C6-C28	ND	10.0	mg/kg							
Surrogate: 1-Chlorooctane	51.6		mg/kg	50.0		103	28.3-164			
Surrogate: 1-Chlorooctadecane	54.5		mg/kg	50.0		109	34.7-157			

LCS (7121809-BS1)		Prepared: 18-Dec-17 Analyzed: 19-Dec-17								
GRO C6-C10	206	10.0	mg/kg	200		103	76.6-119			
DRO >C10-C28	243	10.0	mg/kg	200		122	81.4-124			
Total TPH C6-C28	449	10.0	mg/kg	400		112	79.4-121			
Surrogate: 1-Chlorooctane	50.5		mg/kg	50.0		101	28.3-164			
Surrogate: 1-Chlorooctadecane	50.3		mg/kg	50.0		101	34.7-157			

LCS Dup (7121809-BSD1)		Prepared: 18-Dec-17 Analyzed: 19-Dec-17								
GRO C6-C10	199	10.0	mg/kg	200		99.5	76.6-119	3.27	7.94	
DRO >C10-C28	234	10.0	mg/kg	200		117	81.4-124	3.78	9.83	
Total TPH C6-C28	433	10.0	mg/kg	400		108	79.4-121	3.55	8.57	
Surrogate: 1-Chlorooctane	48.9		mg/kg	50.0		97.9	28.3-164			
Surrogate: 1-Chlorooctadecane	49.9		mg/kg	50.0		99.8	34.7-157			

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: RASPBERRY ST. COM #1H
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
27-Dec-17 17:01

Petroleum Hydrocarbons by GC FID - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 7121809 - General Prep - Organics

Matrix Spike (7121809-MS1)		Source: H703469-29			Prepared: 18-Dec-17 Analyzed: 19-Dec-17					
GRO C6-C10	194	50.0	mg/kg	200	21.2	86.5	39.3-131			
DRO >C10-C28	1830	50.0	mg/kg	200	1760	36.9	18.2-177			
Total TPH C6-C28	2030	50.0	mg/kg	400	1780	61.7	30-150			
Surrogate: 1-Chlorooctane	43.4		mg/kg	50.0		86.8	28.3-164			
Surrogate: 1-Chlorooctadecane	69.9		mg/kg	50.0		140	34.7-157			
Matrix Spike Dup (7121809-MSD1)		Source: H703469-29			Prepared: 18-Dec-17 Analyzed: 19-Dec-17					
GRO C6-C10	212	50.0	mg/kg	200	21.2	95.4	39.3-131	9.77	18.5	QM-07
DRO >C10-C28	1810	50.0	mg/kg	200	1760	28.2	18.2-177	26.7	22.5	
Total TPH C6-C28	2030	50.0	mg/kg	400	1780	61.8	30-150	0.146	117	
Surrogate: 1-Chlorooctane	47.3		mg/kg	50.0		94.6	28.3-164			
Surrogate: 1-Chlorooctadecane	72.4		mg/kg	50.0		145	34.7-157			

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 COG OPERATING
 P. O. BOX 1630
 ARTESIA NM, 88210

 Project: RASPBERRY ST. COM #1H
 Project Number: NONE GIVEN
 Project Manager: SHELDON HITCHCOCK
 Fax To: NONE

 Reported:
 27-Dec-17 17:01

Soluble (DI Water Extraction) - Quality Control
Green Analytical Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B712171 - General Prep - Wet Chem
Blank (B712171-BLK1)

Prepared: 20-Dec-17 Analyzed: 22-Dec-17

Chloride	ND	10.0	mg/kg wet							
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LCS (B712171-BS1)

Prepared: 20-Dec-17 Analyzed: 22-Dec-17

Chloride	243	10.0	mg/kg wet	250		97.1	85-115			
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LCS Dup (B712171-BSD1)

Prepared: 20-Dec-17 Analyzed: 22-Dec-17

Chloride	244	10.0	mg/kg wet	250		97.5	85-115	0.489	20	
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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
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

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Celey D. Keene, Lab Director/Quality Manager



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Concho Resources		P.O. #:		BILL TO																							
Project Manager: Sheldon Hitchcock		Company: COG		ANALYSIS REQUEST																							
Address: 2407 Pecos Avenue		Attn: Robert McNeill																									
City: Artesia		Address: 600 W. Illinois Ave																									
Phone #: 575-703-6475		City: Midland																									
Fax #: State: NM zip: 88210		State: TX zip: 79701																									
Project #:		Project Owner: Concho																									
Project Name: Raspberry St. Corn #14		Phone #:																									
Project Location: P-26-215-33E		Fax #:																									
Sample Name: S. Hitchcock																											
FOR LAB USE ONLY																											
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX			PRESERV	SAMPLING																			
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	TPH	BTEX	Chlorides										
H703452	N.O.	G-1	1										12/31/17	12:08	/	/	EPA 300										
	S.O.	G-1	1										12:10		/	/											
	E.O.	G-1	1										12:12		/	/											
	V.O.	G-1	1										12:14		/	/											
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Relinquished By: <i>Sheldon Hitchcock</i>		Received By: <i>Joel McNeill</i>																									
Time: 1:25		Date: 12/31/17																									
Delivered By: (Circle One) <i>UPS</i>		Sample Condition																									
Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/>		Checked By: <i>Joel McNeill</i>																									
Sampler - UPS - Bus - Other: <i>22.65/22.40</i>		Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No																									
		Add'l Phone #: <i>44</i>																									
		Add'l Fax #:																									
		REMARKS:																									

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

P6 1 of 1

April 02, 2018

SHELDON HITCHCOCK

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: RASPBERRY ST. COM #1H

Enclosed are the results of analyses for samples received by the laboratory on 03/26/18 11:25.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-17-10. 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/ga/lab_accred_certif.html.

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

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

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

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

Lab Director/Quality Manager

Analytical Results For:COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210Project: RASPBERRY ST. COM #1H
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONEReported:
02-Apr-18 17:21

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
T-1 1'	H800849-01	Soil	23-Mar-18 11:00	26-Mar-18 11:25
T-1 N. SIDEWALL	H800849-02	Soil	23-Mar-18 11:10	26-Mar-18 11:25
T-1 S. SIDEWALL	H800849-03	Soil	23-Mar-18 11:20	26-Mar-18 11:25
T-1 E. SIDEWALL	H800849-04	Soil	23-Mar-18 11:30	26-Mar-18 11:25
T-1 W. SIDEWALL	H800849-05	Soil	23-Mar-18 11:40	26-Mar-18 11:25
T-2	H800849-06	Soil	23-Mar-18 11:50	26-Mar-18 11:25

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: RASPBERRY ST. COM #1H
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
02-Apr-18 17:21

T-1 1' H800849-01 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050	0.050	mg/kg	50	8032801	MS	28-Mar-18	8021B	
Toluene*	<0.050	0.050	mg/kg	50	8032801	MS	28-Mar-18	8021B	
Ethylbenzene*	<0.050	0.050	mg/kg	50	8032801	MS	28-Mar-18	8021B	
Total Xylenes*	<0.150	0.150	mg/kg	50	8032801	MS	28-Mar-18	8021B	
Total BTEX	<0.300	0.300	mg/kg	50	8032801	MS	28-Mar-18	8021B	
Surrogate: 4-Bromofluorobenzene (PID)		104 %	72-148		8032801	MS	28-Mar-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0	10.0	mg/kg	1	8032802	MS	28-Mar-18	8015B	
DRO >C10-C28*	68.6	10.0	mg/kg	1	8032802	MS	28-Mar-18	8015B	
EXT DRO >C28-C36	34.7	10.0	mg/kg	1	8032802	MS	28-Mar-18	8015B	
Surrogate: 1-Chlorooctane		104 %	41-142		8032802	MS	28-Mar-18	8015B	
Surrogate: 1-Chlorooctadecane		105 %	37.6-147		8032802	MS	28-Mar-18	8015B	

Green Analytical Laboratories

Soluble (DI Water Extraction)

Chloride	48.6	10.0	mg/kg wet	10	B803195	JDA	28-Mar-18	EPA300.0	
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: RASPBERRY ST. COM #1H
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
02-Apr-18 17:21

T-1 N. SIDEWALL H800849-02 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	8032801	MS	28-Mar-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8032801	MS	28-Mar-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8032801	MS	28-Mar-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8032801	MS	28-Mar-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8032801	MS	28-Mar-18	8021B	
<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			105 %	72-148		8032801	MS	28-Mar-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8032802	MS	28-Mar-18	8015B	
DRO >C10-C28*	156		10.0	mg/kg	1	8032802	MS	28-Mar-18	8015B	
EXT DRO >C28-C36	40.1		10.0	mg/kg	1	8032802	MS	28-Mar-18	8015B	
<i>Surrogate: 1-Chlorooctane</i>			95.6 %	41-142		8032802	MS	28-Mar-18	8015B	
<i>Surrogate: 1-Chlorooctadecane</i>			106 %	37.6-147		8032802	MS	28-Mar-18	8015B	

Green Analytical Laboratories

Soluble (DI Water Extraction)

Chloride	63.0		10.0	mg/kg wet	10	B803195	JDA	28-Mar-18	EPA300.0	
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Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: RASPBERRY ST. COM #1H
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
02-Apr-18 17:21

T-1 S. SIDEWALL H800849-03 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	8032801	MS	28-Mar-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8032801	MS	28-Mar-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8032801	MS	28-Mar-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8032801	MS	28-Mar-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8032801	MS	28-Mar-18	8021B	
<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			107 %	72-148		8032801	MS	28-Mar-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8032802	MS	28-Mar-18	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	8032802	MS	28-Mar-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8032802	MS	28-Mar-18	8015B	
<i>Surrogate: 1-Chlorooctane</i>			94.5 %	41-142		8032802	MS	28-Mar-18	8015B	
<i>Surrogate: 1-Chlorooctadecane</i>			85.6 %	37.6-147		8032802	MS	28-Mar-18	8015B	

Green Analytical Laboratories

Soluble (DI Water Extraction)

Chloride	203		10.0	mg/kg wet	10	B803195	JDA	28-Mar-18	EPA300.0	
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Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: RASPBERRY ST. COM #1H
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
02-Apr-18 17:21

T-1 E. SIDEWALL H800849-04 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	8032801	MS	28-Mar-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8032801	MS	28-Mar-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8032801	MS	28-Mar-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8032801	MS	28-Mar-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8032801	MS	28-Mar-18	8021B	
<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			102 %	72-148		8032801	MS	28-Mar-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8032802	MS	28-Mar-18	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	8032802	MS	28-Mar-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8032802	MS	28-Mar-18	8015B	
<i>Surrogate: 1-Chlorooctane</i>			95.5 %	41-142		8032802	MS	28-Mar-18	8015B	
<i>Surrogate: 1-Chlorooctadecane</i>			86.1 %	37.6-147		8032802	MS	28-Mar-18	8015B	

Green Analytical Laboratories

Soluble (DI Water Extraction)

Chloride	45.0		10.0	mg/kg wet	10	B803195	JDA	28-Mar-18	EPA300.0	
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Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: RASPBERRY ST. COM #1H
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
02-Apr-18 17:21

T-1 W. SIDEWALL H800849-05 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	8032801	MS	28-Mar-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8032801	MS	28-Mar-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8032801	MS	28-Mar-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8032801	MS	28-Mar-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8032801	MS	28-Mar-18	8021B	
<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			104 %	72-148		8032801	MS	28-Mar-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8032802	MS	28-Mar-18	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	8032802	MS	28-Mar-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8032802	MS	28-Mar-18	8015B	
<i>Surrogate: 1-Chlorooctane</i>			93.9 %	41-142		8032802	MS	28-Mar-18	8015B	
<i>Surrogate: 1-Chlorooctadecane</i>			84.5 %	37.6-147		8032802	MS	28-Mar-18	8015B	

Green Analytical Laboratories

Soluble (DI Water Extraction)

Chloride	10.7		10.0	mg/kg wet	10	B803195	JDA	28-Mar-18	EPA300.0	
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: RASPBERRY ST. COM #1H
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
02-Apr-18 17:21

T-2

H800849-06 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	8040203	MS	02-Apr-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8040203	MS	02-Apr-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8040203	MS	02-Apr-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8040203	MS	02-Apr-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8040203	MS	02-Apr-18	8021B	
<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			109 %	72-148		8040203	MS	02-Apr-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8032802	MS	28-Mar-18	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	8032802	MS	28-Mar-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8032802	MS	28-Mar-18	8015B	
<i>Surrogate: 1-Chlorooctane</i>			97.7 %	41-142		8032802	MS	28-Mar-18	8015B	
<i>Surrogate: 1-Chlorooctadecane</i>			88.3 %	37.6-147		8032802	MS	28-Mar-18	8015B	

Green Analytical Laboratories

Soluble (DI Water Extraction)

Chloride	<10.0		10.0	mg/kg wet	10	B803195	JDA	28-Mar-18	EPA300.0	
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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: RASPBERRY ST. COM #1H
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
02-Apr-18 17:21

Volatile Organic Compounds by EPA Method 8021 - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 8032801 - Volatiles

Blank (8032801-BLK1)

Prepared & Analyzed: 28-Mar-18

Benzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Total Xylenes	ND	0.150	mg/kg							
Total BTEX	ND	0.300	mg/kg							
Surrogate: 4-Bromofluorobenzene (PID)	0.106		mg/kg	0.100		106	72-148			

LCS (8032801-BS1)

Prepared & Analyzed: 28-Mar-18

Benzene	1.97	0.050	mg/kg	2.00		98.4	79.5-124			
Toluene	2.01	0.050	mg/kg	2.00		101	75.5-127			
Ethylbenzene	2.02	0.050	mg/kg	2.00		101	77.7-125			
Total Xylenes	5.90	0.150	mg/kg	6.00		98.3	70.9-124			
Surrogate: 4-Bromofluorobenzene (PID)	0.102		mg/kg	0.100		102	72-148			

LCS Dup (8032801-BS1)

Prepared & Analyzed: 28-Mar-18

Benzene	2.05	0.050	mg/kg	2.00		102	79.5-124	3.83	6.5	
Toluene	2.08	0.050	mg/kg	2.00		104	75.5-127	3.07	7.02	
Ethylbenzene	2.07	0.050	mg/kg	2.00		104	77.7-125	2.61	7.83	
Total Xylenes	6.02	0.150	mg/kg	6.00		100	70.9-124	2.03	7.78	
Surrogate: 4-Bromofluorobenzene (PID)	0.0989		mg/kg	0.100		98.9	72-148			

Batch 8040203 - Volatiles

Blank (8040203-BLK1)

Prepared & Analyzed: 02-Apr-18

Benzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Total Xylenes	ND	0.150	mg/kg							
Total BTEX	ND	0.300	mg/kg							
Surrogate: 4-Bromofluorobenzene (PID)	0.102		mg/kg	0.100		102	72-148			

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: RASPBERRY ST. COM #1H
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
02-Apr-18 17:21

Volatile Organic Compounds by EPA Method 8021 - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 8040203 - Volatiles

LCS (8040203-BS1)

Prepared & Analyzed: 02-Apr-18

Benzene	2.05	0.050	mg/kg	2.00		103	79.5-124			
Toluene	2.10	0.050	mg/kg	2.00		105	75.5-127			
Ethylbenzene	2.10	0.050	mg/kg	2.00		105	77.7-125			
Total Xylenes	6.10	0.150	mg/kg	6.00		102	70.9-124			
Surrogate: 4-Bromofluorobenzene (PID)	0.104		mg/kg	0.100		104	72-148			

LCS Dup (8040203-BSD1)

Prepared & Analyzed: 02-Apr-18

Benzene	2.07	0.050	mg/kg	2.00		104	79.5-124	1.03	6.5	
Toluene	2.12	0.050	mg/kg	2.00		106	75.5-127	0.715	7.02	
Ethylbenzene	2.14	0.050	mg/kg	2.00		107	77.7-125	1.89	7.83	
Total Xylenes	6.20	0.150	mg/kg	6.00		103	70.9-124	1.71	7.78	
Surrogate: 4-Bromofluorobenzene (PID)	0.105		mg/kg	0.100		105	72-148			

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: RASPBERRY ST. COM #1H
Project Number: NONE GIVEN
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
02-Apr-18 17:21

Petroleum Hydrocarbons by GC FID - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 8032802 - General Prep - Organics

Blank (8032802-BLK1)

Prepared & Analyzed: 28-Mar-18

GRO C6-C10	ND	10.0	mg/kg							
DRO >C10-C28	ND	10.0	mg/kg							
EXT DRO >C28-C35	ND	10.0	mg/kg							
EXT DRO >C28-C36	ND	10.0	mg/kg							
Total TPH C6-C28	ND	10.0	mg/kg							
Surrogate: 1-Chlorooctane	53.0		mg/kg	50.0		106	41-142			
Surrogate: 1-Chlorooctadecane	48.2		mg/kg	50.0		96.5	37.6-147			

LCS (8032802-BS1)

Prepared & Analyzed: 28-Mar-18

GRO C6-C10	214	10.0	mg/kg	200		107	76.5-133			
DRO >C10-C28	226	10.0	mg/kg	200		113	72.9-138			
Total TPH C6-C28	440	10.0	mg/kg	400		110	78-132			
Surrogate: 1-Chlorooctane	51.7		mg/kg	50.0		103	41-142			
Surrogate: 1-Chlorooctadecane	50.3		mg/kg	50.0		101	37.6-147			

LCS Dup (8032802-BSD1)

Prepared & Analyzed: 28-Mar-18

GRO C6-C10	217	10.0	mg/kg	200		108	76.5-133	1.18	20.6	
DRO >C10-C28	226	10.0	mg/kg	200		113	72.9-138	0.178	20.6	
Total TPH C6-C28	443	10.0	mg/kg	400		111	78-132	0.486	18	
Surrogate: 1-Chlorooctane	52.6		mg/kg	50.0		105	41-142			
Surrogate: 1-Chlorooctadecane	50.7		mg/kg	50.0		101	37.6-147			

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 COG OPERATING
 P. O. BOX 1630
 ARTESIA NM, 88210

 Project: RASPBERRY ST. COM #1H
 Project Number: NONE GIVEN
 Project Manager: SHELDON HITCHCOCK
 Fax To: NONE

 Reported:
 02-Apr-18 17:21

Soluble (DI Water Extraction) - Quality Control
Green Analytical Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B803195 - General Prep - Wet Chem										
Blank (B803195-BLK1)										
Prepared & Analyzed: 27-Mar-18										
Chloride	ND	10.0	mg/kg wet							
LCS (B803195-BS1)										
Prepared: 27-Mar-18 Analyzed: 28-Mar-18										
Chloride	242	10.0	mg/kg wet	250		96.6	85-115			
LCS Dup (B803195-BSD1)										
Prepared: 27-Mar-18 Analyzed: 28-Mar-18										
Chloride	242	10.0	mg/kg wet	250		96.7	85-115	0.0662	20	

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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

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

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Celey D. Keene, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: Concho Resources		P.O. #:		BILL TO		ANALYSIS REQUEST	
Project Manager: Sheldon Hitchcock		Company: COG					
Address: 2407 Pecos Avenue		Attn: Robert McNeill					
City: Artesia		Address:					
Phone #: 575-703-6475		City:					
Fax #:		State:					
Project #:		Zip:					
Project Name: Raspberry St. com # 0014		Phone #:					
Project Location: Lea Co, NM		Fax #:					
Sample Name: Chris Grey							
FOR LAB USE ONLY							
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX	PRESERV	SAMPLING	
		GROUNDWATER		WASTEWATER			
		SOIL		OIL			
		SLUDGE		OTHER :			
		ACID/BASE:		ICE / COOL			
		OTHER :					
		DATE	TIME				
H880849	T-1 N. Side Wall	3/23/18	11:00	TPH (extended) 5015M			
	T-1 S. Side Wall		11:10	BTEX 8021B			
	T-1 E. Side Wall		11:20	Chloride EPA 300			
	T-1 W. Side Wall		11:30				
	T-2		11:40				
			11:50				
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Relinquished By: Sheldon Mc		Received By: Scott Henderson		REMARKS:			
Date: 3/26/18		Time: 11:45					
Delivered By: (Circle One) #75		Sample Condition		CHECKED BY: (Initials)			
Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/>		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>		Add'l Phone #: <input type="checkbox"/>		Add'l Fax #: <input type="checkbox"/>			
Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326		corrected -1050					