



June 3, 2019

Robert Hamlet
Oil Conservation Division, District 2
811 S First St.
Artesia, NM 88210

Jim Amos
Bureau of Land Management, CFO
620 E. Green Street
Carlsbad, NM 88220

(Revised) Closure Report:

Screwdriver 24 Federal Com #002H

API#: 30-015-42914

RP#: 2RP-5233

DOR: January 23, 2019

GPS: 32.64086 -103.81511

**Unit Letter P, Section 24, Township 19 South, Range 31 East
Eddy County, New Mexico**

Mr. Hamlet/Mr. Amos,

COG Operating, LLC (COG) is pleased to submit the following revised closure report in response to a release that occurred at the Screwdriver 24 Federal Com #002H Tank Battery. The release was located in Unit Letter P, Section 24, Township 19 South and Range 31 East in Eddy County, New Mexico. More specifically the latitude and longitude for the release are 32.64086 North and -103.81511 West.

BACKGROUND

The release was discovered on January 23, 2019. A C-141 report was submitted to the New Mexico Oil Conservation Division (NMOCD) and the Bureau of Land Management (BLM). The C-141 is presented in Appendix A. A discharge lined failed due to corrosion resulting in the release of approximately twelve (12) barrels (bbls) of oil. A vacuum truck was utilized to recover approximately ten (10) bbls of oil.

GROUNDWATER AND REGULATORY FRAMEWORK

According to the United States Geological Survey (USGS) the nearest water well with measurement data (323712103491001) indicates that groundwater in the project vicinity is approximately six-hundred and sixty-one (661) feet below ground surface (BGS). The water well information is shown in Appendix B.

A risk based evaluation and site determinations were performed in accordance to the New Mexico Oil Conservation Division (NMOCD) Rule (Title 19 Chapter 15 Part 29) for releases on oil and gas development and production in New Mexico (effective August 14, 2018). According to the site characterization evaluation, no other receptors (water wells, playas, karst, water course, lake beds or ordinance boundaries) were located within each specific boundaries or distance from the site. The groundwater data and the site characterization evaluation data is summarized in Appendix B. The delineation and closure criteria are listed below:

GENERAL SITE CHARACTERIZATION AND GROUNDWATER:

Site Characterization	Average Groundwater Depth (ft.)
None Located	>100 feet

DELINEATION AND CLOSURE CRITERIA:

Table I Closure Criteria	
Chlorides	20,000 mg/kg
TPH (GRO and DRO and MRO)	2,500 mg/kg
TPH (GRO and DRO)	1,000 mg/kg
Benzene	10 mg/kg
Total BTEX	50 mg/kg

Remedial Actions

- The impacted area was excavated to depths from two (2) to four (4) feet BGS utilizing field screenings, visual observations, and laboratory analysis to guide the extent of the excavation.
- All of the excavated material was hauled to an NMOCD approved solid waste disposal facility.
- Confirmation soil samples were taken from the bottom and sidewalls of the excavation per NMAC 19.15.29.
- Upon receipt of acceptable analytical results from the confirmation soil sampling activities the excavation was backfilled with clean “like” material.

SITE RECLAMATION AND RESTORATION


Per NMED 19.15.29.13 the affected area was backfilled with non-contaminated material with concentrations below 600 mg/kg of chlorides. The surface was left in a rough condition to approximate natural surface deviations. The site will be mechanically seeded with BLM LPC seed mixture and monitored for regrowth.

CLOSURE REQUEST

COG Operating, LLC respectfully requests that the New Mexico Oil Conservation Division and the Bureau of Land Management grant closure approval for the Screwdriver 24 Federal Com #002H incident that occurred on January 23, 2019.

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

Sincerely,



Sheldon L. Hitchcock
HSE Coordinator
slhitchcock@concho.com

FIGURES

Screwdriver 24 Federal Com #002H



TABLES

Table 1
COG Operating LLC.
Screwdriver 24 Federal Com #002H
Eddy County, New Mexico

[illegible]

APPENDIX A

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 Department

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

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party	OGRID
Contact Name	Contact Telephone
Contact email	Incident # (assigned by OCD)
Contact mailing address	

Location of Release Source

Latitude _____ Longitude _____
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Site Type
Date Release Discovered	API# (if applicable)

Unit Letter	Section	Township	Range	County

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☐ Private (Name: _____)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

Incident ID	
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? <input type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release?
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?	

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

<input type="checkbox"/> The source of the release has been stopped. <input type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD 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.	
Printed Name: _____	Title: _____
Signature: <u>Delann Opreant</u>	Date: _____
email: _____	Telephone: _____
<u>OCD Only</u>	
Received by: _____	Date: _____

Incident ID	
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	_____ (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Did the release impact areas not on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input type="checkbox"/> No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

<p>Characterization Report Checklist: <i>Each of the following items must be included in the report.</i></p> <ul style="list-style-type: none"><input type="checkbox"/> Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.<input type="checkbox"/> Field data<input type="checkbox"/> Data table of soil contaminant concentration data<input type="checkbox"/> Depth to water determination<input type="checkbox"/> Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release<input type="checkbox"/> Boring or excavation logs<input type="checkbox"/> Photographs including date and GIS information<input type="checkbox"/> Topographic/Aerial maps<input type="checkbox"/> Laboratory data including chain of custody
--

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

Incident ID	
District RP	
Facility ID	
Application ID	

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD 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.

Printed Name: _____ Title: _____
Signature: Sheldon Nitan Date: _____
email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

Incident ID	
District RP	
Facility ID	
Application ID	

Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: *Each of the following items must be included in the closure report.*

- ☐ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☐ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- ☐ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- ☐ Description of 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 OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD 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. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: _____ Title: _____

Signature: Sheldon Hittman Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

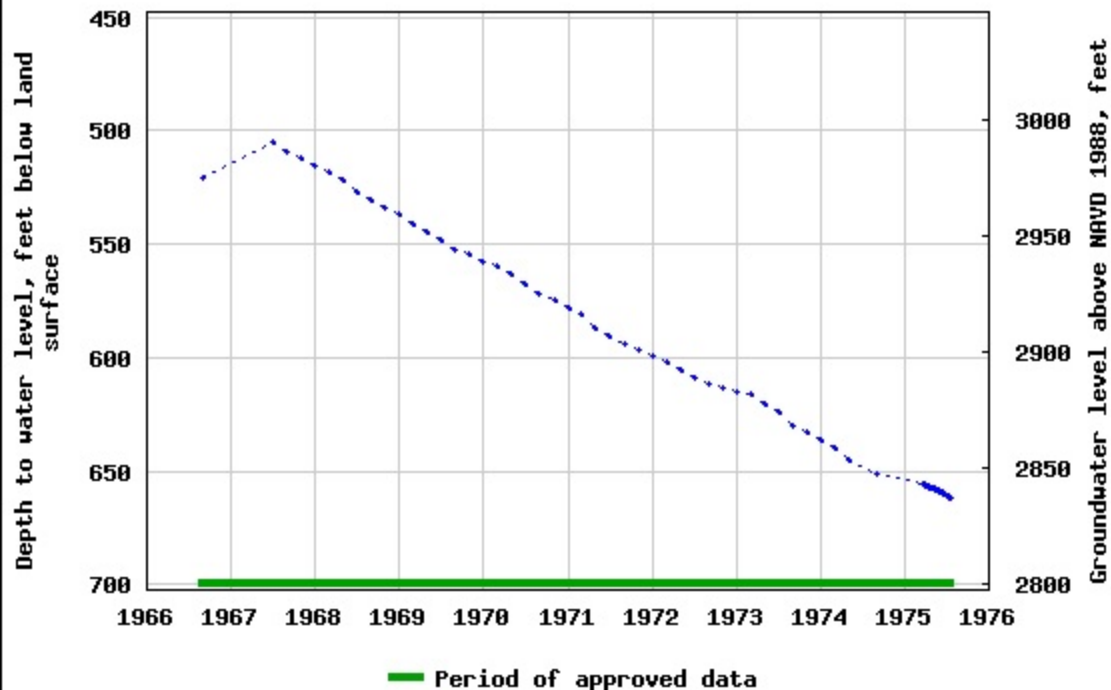
Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

APPENDIX B

USGS 323712103491001 19S.32E.31.114



Legend

OSE PODs

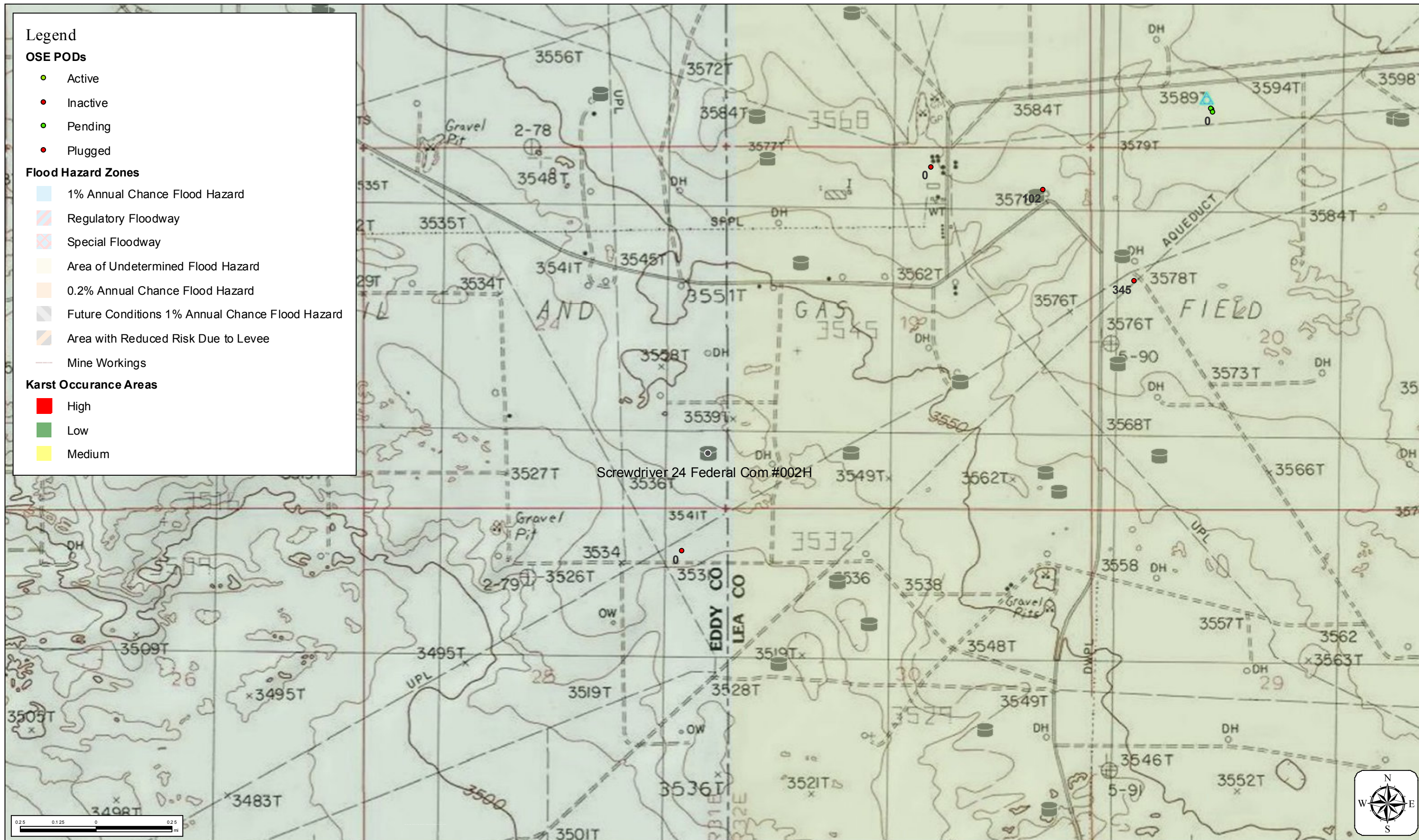
- Active
- Inactive
- Pending
- Plugged

Flood Hazard Zones

- 1% Annual Chance Flood Hazard
- Regulatory Floodway
- Special Floodway
- Area of Undetermined Flood Hazard
- 0.2% Annual Chance Flood Hazard
- Future Conditions 1% Annual Chance Flood Hazard
- Area with Reduced Risk Due to Levee
- Mine Workings

Karst Occurance Areas

- High
- Low
- Medium



APPENDIX C



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

February 19, 2019

SHELDON HITCHCOCK

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: SCREWDRIVER 24 FED COM #2H

Enclosed are the results of analyses for samples received by the laboratory on 02/18/19 13:20.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. 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 accredited 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,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive style with a large, stylized 'C' and 'K'.

Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

 COG OPERATING
 SHELDON HITCHCOCK
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	02/18/2019	Sampling Date:	02/18/2019
Reported:	02/19/2019	Sampling Type:	Soil
Project Name:	SCREWDRIVER 24 FED COM #2H	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: BTM - 11 2' (H900631-01)

BTM 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	0.861	0.500	02/18/2019	ND	1.67	83.6	2.00	0.123	
Toluene*	11.4	0.500	02/18/2019	ND	1.56	78.0	2.00	0.723	QM-07
Ethylbenzene*	12.5	0.500	02/18/2019	ND	1.53	76.4	2.00	0.516	QM-07
Total Xylenes*	20.9	1.50	02/18/2019	ND	4.64	77.3	6.00	0.0458	
Total BTEX	45.6	3.00	02/18/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	02/19/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS						S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	389	10.0	02/18/2019	ND	186	93.0	200	4.53	QM-07	
DRO >C10-C28*	1770	10.0	02/18/2019	ND	183	91.6	200	5.19	QM-07	
EXT DRO >C28-C36	244	10.0	02/18/2019	ND						

Surrogate: 1-Chlorooctane 158 % 41-142

Surrogate: 1-Chlorooctadecane 135 % 37.6-147

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 and 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 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 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

Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
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

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Client Name: COG-Artesia		Site Manager: Sheldon Hitchcock	
Project Name: SCUSD driver 24 Fed.com # 24			
Project Location: (county, state) Edley Co. NM		Project #:	
Invoice to: Sheldon Hitchcock			
Receiving Laboratory: Cardinal		Sampler Name: Sheldon Hitchcock	
Comments: Rush			
LAB # H900631 (LAB USE ONLY)		SAMPLE IDENTIFICATION	
1		B44m-11 Z	
2/19		11:20	
WATER		X	
SOIL		X	
HCL		X	
HNO3		X	
ICE		X	
# CONTAINERS		1	
Grab(G) / Comp(C)		C	
TPH 8015M (GRO - DRO - MRO)		X	
BTX 8021B		X	
Chloride		X	
LAB USE ONLY		LAB USE ONLY	
Sample Temperature		8.10	
RUSH: Same Day 24 hr 48 hr 72 hr		#97	
Special Report Limits or TRRP Report			

ORIGINAL COPY



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

February 19, 2019

SHELDON HITCHCOCK

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: SCREWDRIVER 24 FED COM #2H

Enclosed are the results of analyses for samples received by the laboratory on 02/18/19 13:20.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. 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 accredited 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

Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
SHELDON HITCHCOCK
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	02/18/2019	Sampling Date:	02/18/2019
Reported:	02/19/2019	Sampling Type:	Soil
Project Name:	SCREWDRIVER 24 FED COM #2H	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: BTM - 1 2' (H900632-01)

BTX 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	02/19/2019	ND	1.67	83.6	2.00	0.123	
Toluene*	0.119	0.050	02/19/2019	ND	1.56	78.0	2.00	0.723	
Ethylbenzene*	0.554	0.050	02/19/2019	ND	1.53	76.4	2.00	0.516	
Total Xylenes*	1.83	0.150	02/19/2019	ND	4.64	77.3	6.00	0.0458	
Total BTEX	2.52	0.300	02/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.8 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	96.0	16.0	02/19/2019	ND	416	104	400	0.00		

TPH 8015M	mg/kg		Analyzed By: MS					S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	76.9	10.0	02/18/2019	ND	186	93.0	200	4.53	
DRO >C10-C28*	4420	10.0	02/18/2019	ND	183	91.6	200	5.19	
EXT DRO >C28-C36	855	10.0	02/18/2019	ND					

Surrogate: 1-Chlorooctane 128 % 41-142

Surrogate: 1-Chlorooctadecane 249 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
SHELDON HITCHCOCK
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	02/18/2019	Sampling Date:	02/18/2019
Reported:	02/19/2019	Sampling Type:	Soil
Project Name:	SCREWDRIVER 24 FED COM #2H	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: BTM - 2 2' (H900632-02)

BTM 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	4.40	0.500	02/18/2019	ND	1.67	83.6	2.00	0.123	
Toluene*	35.1	0.500	02/18/2019	ND	1.56	78.0	2.00	0.723	
Ethylbenzene*	27.1	0.500	02/18/2019	ND	1.53	76.4	2.00	0.516	
Total Xylenes*	44.6	1.50	02/18/2019	ND	4.64	77.3	6.00	0.0458	
Total BTEX	111	3.00	02/18/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 109 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	02/19/2019	ND	416	104	400	0.00	
TPH 8015M									S-06

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	802	50.0	02/18/2019	ND	186	93.0	200	4.53	
DRO >C10-C28*	9260	50.0	02/18/2019	ND	183	91.6	200	5.19	
EXT DRO >C28-C36	1860	50.0	02/18/2019	ND					

Surrogate: 1-Chlorooctane 276 % 41-142

Surrogate: 1-Chlorooctadecane 411 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
SHELDON HITCHCOCK
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	02/18/2019	Sampling Date:	02/18/2019
Reported:	02/19/2019	Sampling Type:	Soil
Project Name:	SCREWDRIVER 24 FED COM #2H	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: BTM - 3 2' (H900632-03)

BTM 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	02/18/2019	ND	1.67	83.6	2.00	0.123	
Toluene*	0.302	0.050	02/18/2019	ND	1.56	78.0	2.00	0.723	
Ethylbenzene*	1.14	0.050	02/18/2019	ND	1.53	76.4	2.00	0.516	
Total Xylenes*	2.34	0.150	02/18/2019	ND	4.64	77.3	6.00	0.0458	
Total BTEX	3.79	0.300	02/18/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	288	16.0	02/19/2019	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*	32.7	10.0	02/18/2019	ND	186	93.0	200	4.53	
DRO >C10-C28*	1320	10.0	02/18/2019	ND	183	91.6	200	5.19	
EXT DRO >C28-C36	298	10.0	02/18/2019	ND					

Surrogate: 1-Chlorooctane 96.6 % 41-142

Surrogate: 1-Chlorooctadecane 146 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
SHELDON HITCHCOCK
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	02/18/2019	Sampling Date:	02/18/2019
Reported:	02/19/2019	Sampling Type:	Soil
Project Name:	SCREWDRIVER 24 FED COM #2H	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: BTM - 4 2' (H900632-04)

BTM 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	0.778	0.500	02/19/2019	ND	1.67	83.6	2.00	0.123	
Toluene*	5.47	0.500	02/19/2019	ND	1.56	78.0	2.00	0.723	
Ethylbenzene*	4.27	0.500	02/19/2019	ND	1.53	76.4	2.00	0.516	
Total Xylenes*	7.60	1.50	02/19/2019	ND	4.64	77.3	6.00	0.0458	
Total BTEX	18.1	3.00	02/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.0 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	02/19/2019	ND	416	104	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
				S-04					

Surrogate: 1-Chlorooctane 152 % 41-142

Surrogate: 1-Chlorooctadecane 194 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
SHELDON HITCHCOCK
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	02/18/2019	Sampling Date:	02/18/2019
Reported:	02/19/2019	Sampling Type:	Soil
Project Name:	SCREWDRIVER 24 FED COM #2H	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: BTM - 5 2' (H900632-05)

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	02/19/2019	ND	1.67	83.6	2.00	0.123	
Toluene*	<0.050	0.050	02/19/2019	ND	1.56	78.0	2.00	0.723	
Ethylbenzene*	<0.050	0.050	02/19/2019	ND	1.53	76.4	2.00	0.516	
Total Xylenes*	<0.150	0.150	02/19/2019	ND	4.64	77.3	6.00	0.0458	
Total BTEX	<0.300	0.300	02/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 94.0 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	02/19/2019	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*	<10.0	10.0	02/18/2019	ND	186	93.0	200	4.53	
DRO >C10-C28*	113	10.0	02/18/2019	ND	183	91.6	200	5.19	
EXT DRO >C28-C36	78.0	10.0	02/18/2019	ND					

Surrogate: 1-Chlorooctane 74.0 % 41-142

Surrogate: 1-Chlorooctadecane 76.7 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
SHELDON HITCHCOCK
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	02/18/2019	Sampling Date:	02/18/2019
Reported:	02/19/2019	Sampling Type:	Soil
Project Name:	SCREWDRIVER 24 FED COM #2H	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: BTM - 6 2' (H900632-06)

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	02/19/2019	ND	1.67	83.6	2.00	0.123	
Toluene*	<0.050	0.050	02/19/2019	ND	1.56	78.0	2.00	0.723	
Ethylbenzene*	<0.050	0.050	02/19/2019	ND	1.53	76.4	2.00	0.516	
Total Xylenes*	<0.150	0.150	02/19/2019	ND	4.64	77.3	6.00	0.0458	
Total BTEX	<0.300	0.300	02/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.7 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	400	16.0	02/19/2019	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*	<10.0	10.0	02/18/2019	ND	186	93.0	200	4.53	
DRO >C10-C28*	1320	10.0	02/18/2019	ND	183	91.6	200	5.19	
EXT DRO >C28-C36	266	10.0	02/18/2019	ND					

Surrogate: 1-Chlorooctane 89.6 % 41-142

Surrogate: 1-Chlorooctadecane 134 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
SHELDON HITCHCOCK
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	02/18/2019	Sampling Date:	02/18/2019
Reported:	02/19/2019	Sampling Type:	Soil
Project Name:	SCREWDRIVER 24 FED COM #2H	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: BTM - 7 2' (H900632-07)

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	02/19/2019	ND	1.67	83.6	2.00	0.123	
Toluene*	<0.050	0.050	02/19/2019	ND	1.56	78.0	2.00	0.723	
Ethylbenzene*	<0.050	0.050	02/19/2019	ND	1.53	76.4	2.00	0.516	
Total Xylenes*	<0.150	0.150	02/19/2019	ND	4.64	77.3	6.00	0.0458	
Total BTEX	<0.300	0.300	02/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.8 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	176	16.0	02/19/2019	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*	<10.0	10.0	02/18/2019	ND	186	93.0	200	4.53	
DRO >C10-C28*	33.0	10.0	02/18/2019	ND	183	91.6	200	5.19	
EXT DRO >C28-C36	11.2	10.0	02/18/2019	ND					

Surrogate: 1-Chlorooctane 81.6 % 41-142

Surrogate: 1-Chlorooctadecane 78.9 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
SHELDON HITCHCOCK
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	02/18/2019	Sampling Date:	02/18/2019
Reported:	02/19/2019	Sampling Type:	Soil
Project Name:	SCREWDRIVER 24 FED COM #2H	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: BTM - 8 2' (H900632-08)

BTM 8021B			mg/kg		Analyzed By: ms				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	0.131	0.050	02/19/2019	ND	1.67	83.6	2.00	0.123	
Toluene*	0.313	0.050	02/19/2019	ND	1.56	78.0	2.00	0.723	
Ethylbenzene*	0.106	0.050	02/19/2019	ND	1.53	76.4	2.00	0.516	
Total Xylenes*	0.193	0.150	02/19/2019	ND	4.64	77.3	6.00	0.0458	
Total BTEX	0.743	0.300	02/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.2 % 73.3-129

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AC				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	02/19/2019	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*	<10.0	10.0	02/18/2019	ND	186	93.0	200	4.53	
DRO >C10-C28*	627	10.0	02/18/2019	ND	183	91.6	200	5.19	
EXT DRO >C28-C36	109	10.0	02/18/2019	ND					

Surrogate: 1-Chlorooctane 90.5 % 41-142

Surrogate: 1-Chlorooctadecane 105 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
SHELDON HITCHCOCK
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	02/18/2019	Sampling Date:	02/18/2019
Reported:	02/19/2019	Sampling Type:	Soil
Project Name:	SCREWDRIVER 24 FED COM #2H	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: BTM - 9 2' (H900632-09)

BTM 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	26.3	0.500	02/19/2019	ND	1.67	83.6	2.00	0.123	
Toluene*	147	0.500	02/19/2019	ND	1.56	78.0	2.00	0.723	
Ethylbenzene*	65.8	0.500	02/19/2019	ND	1.53	76.4	2.00	0.516	
Total Xylenes*	93.9	1.50	02/19/2019	ND	4.64	77.3	6.00	0.0458	
Total BTEX	333	3.00	02/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 106 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	02/19/2019	ND	416	104	400	0.00	
TPH 8015M									S-06

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	3300	50.0	02/18/2019	ND	186	93.0	200	4.53	
DRO >C10-C28*	9530	50.0	02/18/2019	ND	183	91.6	200	5.19	
EXT DRO >C28-C36	1490	50.0	02/18/2019	ND					

Surrogate: 1-Chlorooctane 921 % 41-142

Surrogate: 1-Chlorooctadecane 897 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
SHELDON HITCHCOCK
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received: 02/18/2019
Reported: 02/19/2019
Project Name: SCREWDRIVER 24 FED COM #2H
Project Number: NONE GIVEN
Project Location: COG - EDDY CO NM

Sampling Date: 02/18/2019
Sampling Type: Soil
Sampling Condition: ** (See Notes)
Sample Received By: Tamara Oldaker

Sample ID: BTM - 10 2' (H900632-10)

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	02/19/2019	ND	1.67	83.6	2.00	0.123	
Toluene*	0.051	0.050	02/19/2019	ND	1.56	78.0	2.00	0.723	
Ethylbenzene*	0.088	0.050	02/19/2019	ND	1.53	76.4	2.00	0.516	
Total Xylenes*	0.170	0.150	02/19/2019	ND	4.64	77.3	6.00	0.0458	
Total BTEX	0.310	0.300	02/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.0 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	02/19/2019	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*	<10.0	10.0	02/18/2019	ND	186	93.0	200	4.53	
DRO >C10-C28*	243	10.0	02/18/2019	ND	183	91.6	200	5.19	
EXT DRO >C28-C36	64.2	10.0	02/18/2019	ND					

Surrogate: 1-Chlorooctane 88.2 % 41-142

Surrogate: 1-Chlorooctadecane 88.4 % 37.6-147

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager

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.
S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
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

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager

Rush

ANALYSIS REQUEST
(Circle or Specify Method No.)

Date: Time:

8.1e

(Circle) HAND DELIVERED FEDEX UPS Tracking #

ORIGINAL COPY



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

February 19, 2019

SHELDON HITCHCOCK

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: SCREWDRIVER 24 FED COM #2H

Enclosed are the results of analyses for samples received by the laboratory on 02/18/19 13:20.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. 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 accredited 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

Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
SHELDON HITCHCOCK
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	02/18/2019	Sampling Date:	02/18/2019
Reported:	02/19/2019	Sampling Type:	Soil
Project Name:	SCREWDRIVER 24 FED COM #2H	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: SW - 1 (H900633-01)

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	02/19/2019	ND	1.67	83.6	2.00	0.123	
Toluene*	<0.050	0.050	02/19/2019	ND	1.56	78.0	2.00	0.723	
Ethylbenzene*	<0.050	0.050	02/19/2019	ND	1.53	76.4	2.00	0.516	
Total Xylenes*	<0.150	0.150	02/19/2019	ND	4.64	77.3	6.00	0.0458	
Total BTEX	<0.300	0.300	02/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.2 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	192	16.0	02/19/2019	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*	<10.0	10.0	02/18/2019	ND	186	93.0	200	4.53	
DRO >C10-C28*	12.7	10.0	02/18/2019	ND	183	91.6	200	5.19	
EXT DRO >C28-C36	<10.0	10.0	02/18/2019	ND					

Surrogate: 1-Chlorooctane 82.1 % 41-142

Surrogate: 1-Chlorooctadecane 78.2 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
SHELDON HITCHCOCK
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	02/18/2019	Sampling Date:	02/18/2019
Reported:	02/19/2019	Sampling Type:	Soil
Project Name:	SCREWDRIVER 24 FED COM #2H	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: SW - 2 (H900633-02)

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	02/19/2019	ND	1.67	83.6	2.00	0.123	
Toluene*	0.343	0.050	02/19/2019	ND	1.56	78.0	2.00	0.723	
Ethylbenzene*	1.39	0.050	02/19/2019	ND	1.53	76.4	2.00	0.516	
Total Xylenes*	3.14	0.150	02/19/2019	ND	4.64	77.3	6.00	0.0458	
Total BTEX	4.87	0.300	02/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 118 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	02/19/2019	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*	33.8	10.0	02/18/2019	ND	186	93.0	200	4.53	
DRO >C10-C28*	802	10.0	02/18/2019	ND	183	91.6	200	5.19	
EXT DRO >C28-C36	124	10.0	02/18/2019	ND					

Surrogate: 1-Chlorooctane 100 % 41-142

Surrogate: 1-Chlorooctadecane 106 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
SHELDON HITCHCOCK
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	02/18/2019	Sampling Date:	02/18/2019
Reported:	02/19/2019	Sampling Type:	Soil
Project Name:	SCREWDRIVER 24 FED COM #2H	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: SW - 3 (H900633-03)

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	02/19/2019	ND	1.67	83.6	2.00	0.123	
Toluene*	<0.050	0.050	02/19/2019	ND	1.56	78.0	2.00	0.723	
Ethylbenzene*	<0.050	0.050	02/19/2019	ND	1.53	76.4	2.00	0.516	
Total Xylenes*	<0.150	0.150	02/19/2019	ND	4.64	77.3	6.00	0.0458	
Total BTEX	<0.300	0.300	02/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 95.3 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	02/19/2019	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*	<10.0	10.0	02/18/2019	ND	186	93.0	200	4.53	
DRO >C10-C28*	11.3	10.0	02/18/2019	ND	183	91.6	200	5.19	
EXT DRO >C28-C36	<10.0	10.0	02/18/2019	ND					

Surrogate: 1-Chlorooctane 81.6 % 41-142

Surrogate: 1-Chlorooctadecane 79.5 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
SHELDON HITCHCOCK
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	02/18/2019	Sampling Date:	02/18/2019
Reported:	02/19/2019	Sampling Type:	Soil
Project Name:	SCREWDRIVER 24 FED COM #2H	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: SW - 4 (H900633-04)

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	02/19/2019	ND	1.67	83.6	2.00	0.123	
Toluene*	<0.050	0.050	02/19/2019	ND	1.56	78.0	2.00	0.723	
Ethylbenzene*	<0.050	0.050	02/19/2019	ND	1.53	76.4	2.00	0.516	
Total Xylenes*	<0.150	0.150	02/19/2019	ND	4.64	77.3	6.00	0.0458	
Total BTEX	<0.300	0.300	02/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 95.9 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	02/19/2019	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*	<10.0	10.0	02/18/2019	ND	186	93.0	200	4.53	
DRO >C10-C28*	<10.0	10.0	02/18/2019	ND	183	91.6	200	5.19	
EXT DRO >C28-C36	<10.0	10.0	02/18/2019	ND					

Surrogate: 1-Chlorooctane 78.5 % 41-142

Surrogate: 1-Chlorooctadecane 75.0 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
SHELDON HITCHCOCK
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	02/18/2019	Sampling Date:	02/18/2019
Reported:	02/19/2019	Sampling Type:	Soil
Project Name:	SCREWDRIVER 24 FED COM #2H	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: SW - 5 (H900633-05)

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	02/19/2019	ND	1.67	83.6	2.00	0.123	
Toluene*	<0.050	0.050	02/19/2019	ND	1.56	78.0	2.00	0.723	
Ethylbenzene*	<0.050	0.050	02/19/2019	ND	1.53	76.4	2.00	0.516	
Total Xylenes*	<0.150	0.150	02/19/2019	ND	4.64	77.3	6.00	0.0458	
Total BTEX	<0.300	0.300	02/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 95.4 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	02/19/2019	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*	<10.0	10.0	02/18/2019	ND	186	93.0	200	4.53	
DRO >C10-C28*	<10.0	10.0	02/18/2019	ND	183	91.6	200	5.19	
EXT DRO >C28-C36	<10.0	10.0	02/18/2019	ND					

Surrogate: 1-Chlorooctane 79.3 % 41-142

Surrogate: 1-Chlorooctadecane 76.1 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
SHELDON HITCHCOCK
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	02/18/2019	Sampling Date:	02/18/2019
Reported:	02/19/2019	Sampling Type:	Soil
Project Name:	SCREWDRIVER 24 FED COM #2H	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: SW - 6 (H900633-06)

BTX 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	02/19/2019	ND	1.67	83.6	2.00	0.123	
Toluene*	<0.050	0.050	02/19/2019	ND	1.56	78.0	2.00	0.723	
Ethylbenzene*	<0.050	0.050	02/19/2019	ND	1.53	76.4	2.00	0.516	
Total Xylenes*	<0.150	0.150	02/19/2019	ND	4.64	77.3	6.00	0.0458	
Total BTX	<0.300	0.300	02/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.3 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	02/19/2019	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*	<10.0	10.0	02/18/2019	ND	186	93.0	200	4.53	
DRO >C10-C28*	<10.0	10.0	02/18/2019	ND	183	91.6	200	5.19	
EXT DRO >C28-C36	<10.0	10.0	02/18/2019	ND					

Surrogate: 1-Chlorooctane 79.1 % 41-142

Surrogate: 1-Chlorooctadecane 75.6 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
SHELDON HITCHCOCK
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	02/18/2019	Sampling Date:	02/18/2019
Reported:	02/19/2019	Sampling Type:	Soil
Project Name:	SCREWDRIVER 24 FED COM #2H	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: SW - 7 (H900633-07)

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	02/19/2019	ND	1.67	83.6	2.00	0.123	
Toluene*	<0.050	0.050	02/19/2019	ND	1.56	78.0	2.00	0.723	
Ethylbenzene*	<0.050	0.050	02/19/2019	ND	1.53	76.4	2.00	0.516	
Total Xylenes*	<0.150	0.150	02/19/2019	ND	4.64	77.3	6.00	0.0458	
Total BTEX	<0.300	0.300	02/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.4 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	02/19/2019	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*	<10.0	10.0	02/18/2019	ND	186	93.0	200	4.53	
DRO >C10-C28*	<10.0	10.0	02/18/2019	ND	183	91.6	200	5.19	
EXT DRO >C28-C36	<10.0	10.0	02/18/2019	ND					

Surrogate: 1-Chlorooctane 77.9 % 41-142

Surrogate: 1-Chlorooctadecane 73.7 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
SHELDON HITCHCOCK
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	02/18/2019	Sampling Date:	02/18/2019
Reported:	02/19/2019	Sampling Type:	Soil
Project Name:	SCREWDRIVER 24 FED COM #2H	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: SW - 8 (H900633-08)

BTX 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	02/19/2019	ND	1.67	83.6	2.00	0.123	
Toluene*	<0.050	0.050	02/19/2019	ND	1.56	78.0	2.00	0.723	
Ethylbenzene*	<0.050	0.050	02/19/2019	ND	1.53	76.4	2.00	0.516	
Total Xylenes*	<0.150	0.150	02/19/2019	ND	4.64	77.3	6.00	0.0458	
Total BTX	<0.300	0.300	02/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.2 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	02/19/2019	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*	<10.0	10.0	02/18/2019	ND	186	93.0	200	4.53	
DRO >C10-C28*	<10.0	10.0	02/18/2019	ND	183	91.6	200	5.19	
EXT DRO >C28-C36	<10.0	10.0	02/18/2019	ND					

Surrogate: 1-Chlorooctane 75.2 % 41-142

Surrogate: 1-Chlorooctadecane 70.6 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

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

One Concho Center/600/Illinois
Avenue/Midland, Texas
Tel (432) 683-7443

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March 04, 2019

DAKOTA NEEL

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: SCREWDRIVER 24 FED COM #2H

Enclosed are the results of analyses for samples received by the laboratory on 03/01/19 10:40.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. 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 accredited 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

Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
DAKOTA NEEL
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	03/01/2019	Sampling Date:	02/26/2019
Reported:	03/04/2019	Sampling Type:	Soil
Project Name:	SCREWDRIVER 24 FED COM #2H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: BOTTOM - 1 3' (H900807-01)

BTX 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	03/01/2019	ND	2.19	110	2.00	1.72	
Toluene*	<0.050	0.050	03/01/2019	ND	2.01	101	2.00	1.88	
Ethylbenzene*	<0.050	0.050	03/01/2019	ND	2.10	105	2.00	0.961	
Total Xylenes*	<0.150	0.150	03/01/2019	ND	6.35	106	6.00	0.649	
Total BTX	<0.300	0.300	03/01/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 95.2 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	03/02/2019	ND	432	108	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*	<10.0	10.0	03/01/2019	ND	204	102	200	0.396	
DRO >C10-C28*	167	10.0	03/01/2019	ND	225	113	200	0.801	
EXT DRO >C28-C36	12.8	10.0	03/01/2019	ND					

Surrogate: 1-Chlorooctane 88.4 % 41-142

Surrogate: 1-Chlorooctadecane 94.4 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
DAKOTA NEEL
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	03/01/2019	Sampling Date:	02/26/2019
Reported:	03/04/2019	Sampling Type:	Soil
Project Name:	SCREWDRIVER 24 FED COM #2H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: BOTTOM - 2 2.5' (H900807-02)

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	03/01/2019	ND	2.19	110	2.00	1.72		
Toluene*	<0.050	0.050	03/01/2019	ND	2.01	101	2.00	1.88		
Ethylbenzene*	<0.050	0.050	03/01/2019	ND	2.10	105	2.00	0.961		
Total Xylenes*	<0.150	0.150	03/01/2019	ND	6.35	106	6.00	0.649		
Total BTEx	<0.300	0.300	03/01/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	03/02/2019	ND	432	108	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*	10.0	10.0	03/01/2019	ND	204	102	200	0.396	
DRO >C10-C28*	990	10.0	03/01/2019	ND	225	113	200	0.801	
EXT DRO >C28-C36	212	10.0	03/01/2019	ND					

Surrogate: 1-Chlorooctane 88.1 % 41-142

Surrogate: 1-Chlorooctadecane 119 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
DAKOTA NEEL
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	03/01/2019	Sampling Date:	02/26/2019
Reported:	03/04/2019	Sampling Type:	Soil
Project Name:	SCREWDRIVER 24 FED COM #2H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: BOTTOM - 3 2.5' (H900807-03)

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	03/01/2019	ND	2.19	110	2.00	1.72	
Toluene*	<0.050	0.050	03/01/2019	ND	2.01	101	2.00	1.88	
Ethylbenzene*	<0.050	0.050	03/01/2019	ND	2.10	105	2.00	0.961	
Total Xylenes*	<0.150	0.150	03/01/2019	ND	6.35	106	6.00	0.649	
Total BTEx	<0.300	0.300	03/01/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 95.9 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	03/02/2019	ND	432	108	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*	<10.0	10.0	03/01/2019	ND	204	102	200	0.396	
DRO >C10-C28*	20.7	10.0	03/01/2019	ND	225	113	200	0.801	
EXT DRO >C28-C36	<10.0	10.0	03/01/2019	ND					

Surrogate: 1-Chlorooctane 71.9 % 41-142

Surrogate: 1-Chlorooctadecane 75.0 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
DAKOTA NEEL
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	03/01/2019	Sampling Date:	02/26/2019
Reported:	03/04/2019	Sampling Type:	Soil
Project Name:	SCREWDRIVER 24 FED COM #2H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: BOTTOM - 4 2.5' (H900807-04)

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	03/01/2019	ND	2.19	110	2.00	1.72	
Toluene*	<0.050	0.050	03/01/2019	ND	2.01	101	2.00	1.88	
Ethylbenzene*	<0.050	0.050	03/01/2019	ND	2.10	105	2.00	0.961	
Total Xylenes*	<0.150	0.150	03/01/2019	ND	6.35	106	6.00	0.649	
Total BTEx	<0.300	0.300	03/01/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 94.2 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	03/02/2019	ND	432	108	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*	<10.0	10.0	03/02/2019	ND	204	102	200	0.396	
DRO >C10-C28*	<10.0	10.0	03/02/2019	ND	225	113	200	0.801	
EXT DRO >C28-C36	<10.0	10.0	03/02/2019	ND					

Surrogate: 1-Chlorooctane 66.9 % 41-142

Surrogate: 1-Chlorooctadecane 67.8 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
DAKOTA NEEL
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	03/01/2019	Sampling Date:	02/26/2019
Reported:	03/04/2019	Sampling Type:	Soil
Project Name:	SCREWDRIVER 24 FED COM #2H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: BOTTOM - 6 2.5' (H900807-05)

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	03/01/2019	ND	2.19	110	2.00	1.72		
Toluene*	<0.050	0.050	03/01/2019	ND	2.01	101	2.00	1.88		
Ethylbenzene*	<0.050	0.050	03/01/2019	ND	2.10	105	2.00	0.961		
Total Xylenes*	<0.150	0.150	03/01/2019	ND	6.35	106	6.00	0.649		
Total BTEX	<0.300	0.300	03/01/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 95.5 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	03/02/2019	ND	432	108	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*	<10.0	10.0	03/02/2019	ND	204	102	200	0.396	
DRO >C10-C28*	<10.0	10.0	03/02/2019	ND	225	113	200	0.801	
EXT DRO >C28-C36	<10.0	10.0	03/02/2019	ND					

Surrogate: 1-Chlorooctane 80.0 % 41-142

Surrogate: 1-Chlorooctadecane 80.4 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

COG OPERATING
DAKOTA NEEL
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	03/01/2019	Sampling Date:	02/26/2019
Reported:	03/04/2019	Sampling Type:	Soil
Project Name:	SCREWDRIVER 24 FED COM #2H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: BOTTOM - 9 3' (H900807-06)

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	03/01/2019	ND	2.19	110	2.00	1.72	
Toluene*	<0.050	0.050	03/01/2019	ND	2.01	101	2.00	1.88	
Ethylbenzene*	<0.050	0.050	03/01/2019	ND	2.10	105	2.00	0.961	
Total Xylenes*	<0.150	0.150	03/01/2019	ND	6.35	106	6.00	0.649	
Total BTEx	<0.300	0.300	03/01/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.0 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	03/02/2019	ND	432	108	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*	<10.0	10.0	03/02/2019	ND	204	102	200	0.396	
DRO >C10-C28*	<10.0	10.0	03/02/2019	ND	225	113	200	0.801	
EXT DRO >C28-C36	<10.0	10.0	03/02/2019	ND					

Surrogate: 1-Chlorooctane 72.9 % 41-142

Surrogate: 1-Chlorooctadecane 72.8 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 COG OPERATING
 DAKOTA NEEL
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received:	03/01/2019	Sampling Date:	02/26/2019
Reported:	03/04/2019	Sampling Type:	Soil
Project Name:	SCREWDRIVER 24 FED COM #2H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: BOTTOM - 11 3' (H900807-07)

BTX 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	03/01/2019	ND	2.19	110	2.00	1.72	
Toluene*	<0.050	0.050	03/01/2019	ND	2.01	101	2.00	1.88	
Ethylbenzene*	<0.050	0.050	03/01/2019	ND	2.10	105	2.00	0.961	
Total Xylenes*	<0.150	0.150	03/01/2019	ND	6.35	106	6.00	0.649	
Total BTX	<0.300	0.300	03/01/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.1 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	03/02/2019	ND	432	108	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*	<10.0	10.0	03/02/2019	ND	204	102	200	0.396	
DRO >C10-C28*	121	10.0	03/02/2019	ND	225	113	200	0.801	
EXT DRO >C28-C36	<10.0	10.0	03/02/2019	ND					

Surrogate: 1-Chlorooctane 74.8 % 41-142

Surrogate: 1-Chlorooctadecane 82.6 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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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

5. Please fax written changes to 575-393-2476



Certificate of Analysis Summary 625271

COG Operating LLC, Artesia, NM

Project Name: Screwdriver 24 Federal #002H



Project Id:

Contact: Sheldon Hitchcock

Project Location: Eddy, NM

Date Received in Lab: Thu May-23-19 12:00 am

Report Date: 28-MAY-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	625271-001	625271-002	625271-003	625271-004	625271-005	625271-006
	<i>Field Id:</i>	Bttm-1 4'	Bttm-2 4'	Bttm-5 4'	Bttm-8 4'	Bttm-10 4'	Bttm-11 4'
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	May-22-19 10:00	May-22-19 10:02	May-22-19 10:04	May-22-19 10:06	May-22-19 10:08	May-22-19 10:10
TPH By SW8015 Mod	<i>Extracted:</i>	May-25-19 10:00	May-25-19 10:00	May-25-19 10:00	May-25-19 10:00	May-25-19 10:00	May-25-19 10:00
	<i>Analyzed:</i>	May-25-19 14:56	May-25-19 16:11	May-25-19 16:35	May-25-19 17:00	May-25-19 17:25	May-25-19 17:50
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	32.5 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	32.5 15.0

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

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 625271

COG Operating LLC, Artesia, NM

Project Name: Screwdriver 24 Federal #002H



Project Id:

Contact: Sheldon Hitchcock

Project Location: Eddy, NM

Date Received in Lab: Thu May-23-19 12:00 am

Report Date: 28-MAY-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	625271-007					
	Field Id:	SW-2					
	Depth:						
	Matrix:	SOIL					
	Sampled:	May-22-19 10:12					
TPH By SW8015 Mod	Extracted:	May-25-19 10:00					
	Analyzed:	May-25-19 18:15					
	Units/RL:	mg/kg RL					
Gasoline Range Hydrocarbons			<15.0	15.0			
Diesel Range Organics			<15.0	15.0			
Motor Oil Range Hydrocarbons (MRO)			<15.0	15.0			
Total TPH			<15.0	15.0			

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

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Jessica Kramer
Project Assistant

Analytical Report 625271

for
COG Operating LLC

Project Manager: Sheldon Hitchcock

Screwdriver 24 Federal #002H

28-MAY-19

Collected By: Client



**1211 W. Florida Ave
Midland TX 79701**

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-19-19), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)



28-MAY-19

Project Manager: **Sheldon Hitchcock**
COG Operating LLC
2407 Pecos Avenue
Artesia, NM 88210

Reference: XENCO Report No(s): **625271**
Screwdriver 24 Federal #002H
Project Address: Eddy, NM

Sheldon Hitchcock:

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) 625271. 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. 625271 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,

Jessica Kramer
Project Assistant

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

Certified and approved by numerous States and Agencies.

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

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



Sample Cross Reference 625271



COG Operating LLC, Artesia, NM

Screwdriver 24 Federal #002H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Bttm-1 4'	S	05-22-19 10:00		625271-001
Bttm-2 4'	S	05-22-19 10:02		625271-002
Bttm-5 4'	S	05-22-19 10:04		625271-003
Bttm-8 4'	S	05-22-19 10:06		625271-004
Bttm-10 4'	S	05-22-19 10:08		625271-005
Bttm-11 4'	S	05-22-19 10:10		625271-006
SW-2	S	05-22-19 10:12		625271-007



CASE NARRATIVE

Client Name: COG Operating LLC

Project Name: Screwdriver 24 Federal #002H

Project ID:

Work Order Number(s): 625271

Report Date: 28-MAY-19

Date Received: 05/23/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3090331 TPH By SW8015 Mod

Surrogate o-Terphenyl recovered below QC limits. Matrix interferences is suspected.

Samples affected are: 625271-001,625271-006,625271-005,625271-004.



Certificate of Analytical Results 625271



COG Operating LLC, Artesia, NM

Screwdriver 24 Federal #002H

Sample Id: **Bttm-1 4'**

Matrix: Soil

Date Received: 05.23.19 00.00

Lab Sample Id: 625271-001

Date Collected: 05.22.19 10.00

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 05.25.19 10.00

Basis: Wet Weight

Seq Number: 3090331

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	05.25.19 14.56	U	1
Diesel Range Organics	C10C28DRO	<15.0	15.0	mg/kg	05.25.19 14.56	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.25.19 14.56	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.25.19 14.56	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	84	%	70-135	05.25.19 14.56		
o-Terphenyl	84-15-1	67	%	70-135	05.25.19 14.56	**	



Certificate of Analytical Results 625271



COG Operating LLC, Artesia, NM

Screwdriver 24 Federal #002H

Sample Id: **Bttm-2 4'**

Matrix: Soil

Date Received: 05.23.19 00.00

Lab Sample Id: 625271-002

Date Collected: 05.22.19 10.02

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 05.25.19 10.00

Basis: Wet Weight

Seq Number: 3090331

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	05.25.19 16.11	U	1
Diesel Range Organics	C10C28DRO	<15.0	15.0	mg/kg	05.25.19 16.11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.25.19 16.11	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.25.19 16.11	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	90	%	70-135	05.25.19 16.11		
o-Terphenyl	84-15-1	89	%	70-135	05.25.19 16.11		



Certificate of Analytical Results 625271



COG Operating LLC, Artesia, NM

Screwdriver 24 Federal #002H

Sample Id: **Bttm-5 4'**

Matrix: Soil

Date Received: 05.23.19 00.00

Lab Sample Id: 625271-003

Date Collected: 05.22.19 10.04

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 05.25.19 10.00

Basis: Wet Weight

Seq Number: 3090331

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	05.25.19 16.35	U	1
Diesel Range Organics	C10C28DRO	<15.0	15.0	mg/kg	05.25.19 16.35	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.25.19 16.35	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.25.19 16.35	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	94	%	70-135	05.25.19 16.35		
o-Terphenyl	84-15-1	72	%	70-135	05.25.19 16.35		



Certificate of Analytical Results 625271



COG Operating LLC, Artesia, NM

Screwdriver 24 Federal #002H

Sample Id: **Bttm-8 4'**
Lab Sample Id: 625271-004

Matrix: Soil
Date Collected: 05.22.19 10.06

Date Received: 05.23.19 00.00

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 05.25.19 10.00

Basis: Wet Weight

Seq Number: 3090331

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	05.25.19 17.00	U	1
Diesel Range Organics	C10C28DRO	<15.0	15.0	mg/kg	05.25.19 17.00	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.25.19 17.00	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.25.19 17.00	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	88	%	70-135	05.25.19 17.00		
o-Terphenyl	84-15-1	67	%	70-135	05.25.19 17.00	**	



Certificate of Analytical Results 625271



COG Operating LLC, Artesia, NM

Screwdriver 24 Federal #002H

Sample Id: **Bttm-10 4'**

Matrix: Soil

Date Received: 05.23.19 00.00

Lab Sample Id: 625271-005

Date Collected: 05.22.19 10.08

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 05.25.19 10.00

Basis: Wet Weight

Seq Number: 3090331

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	05.25.19 17.25	U	1
Diesel Range Organics	C10C28DRO	<15.0	15.0	mg/kg	05.25.19 17.25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.25.19 17.25	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.25.19 17.25	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	91	%	70-135	05.25.19 17.25		
o-Terphenyl	84-15-1	64	%	70-135	05.25.19 17.25	**	



Certificate of Analytical Results 625271



COG Operating LLC, Artesia, NM

Screwdriver 24 Federal #002H

Sample Id: **Bttm-11 4'**

Matrix: Soil

Date Received: 05.23.19 00.00

Lab Sample Id: 625271-006

Date Collected: 05.22.19 10.10

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 05.25.19 10.00

Basis: Wet Weight

Seq Number: 3090331

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	05.25.19 17.50	U	1
Diesel Range Organics	C10C28DRO	32.5	15.0	mg/kg	05.25.19 17.50		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.25.19 17.50	U	1
Total TPH	PHC635	32.5	15.0	mg/kg	05.25.19 17.50		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	87	%	70-135	05.25.19 17.50		
o-Terphenyl	84-15-1	65	%	70-135	05.25.19 17.50	**	



Certificate of Analytical Results 625271



COG Operating LLC, Artesia, NM

Screwdriver 24 Federal #002H

Sample Id: **SW-2**
Lab Sample Id: 625271-007

Matrix: Soil
Date Collected: 05.22.19 10.12

Date Received: 05.23.19 00.00

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 05.25.19 10.00

Basis: Wet Weight

Seq Number: 3090331

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	05.25.19 18.15	U	1
Diesel Range Organics	C10C28DRO	<15.0	15.0	mg/kg	05.25.19 18.15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.25.19 18.15	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.25.19 18.15	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	105	%	70-135	05.25.19 18.15		
o-Terphenyl	84-15-1	91	%	70-135	05.25.19 18.15		

- 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

SMP Client Sample

BLK

Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample

BKSD/LCSD

Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate

MS

Matrix Spike

MSD: Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

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



QC Summary 625271

COG Operating LLC Screwdriver 24 Federal #002H

Analytical Method: TPH By SW8015 Mod

Seq Number: 3090331

MB Sample Id: 7678657-1-BLK

Matrix: Solid

LCS Sample Id: 7678657-1-BKS

Prep Method: TX1005P

Date Prep: 05.25.19

LCSD Sample Id: 7678657-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons	<8.00	1000	991	99	1030	103	70-135	4	20	mg/kg	05.25.19 14:06	
Diesel Range Organics	<8.13	1000	938	94	1060	106	70-135	12	20	mg/kg	05.25.19 14:06	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	99		97		103		70-135	%	05.25.19 14:06
o-Terphenyl	104		109		124		70-135	%	05.25.19 14:06

Analytical Method: TPH By SW8015 Mod

Seq Number: 3090331

Parent Sample Id: 625271-001

Matrix: Soil

MS Sample Id: 625271-001 S

Prep Method: TX1005P

Date Prep: 05.25.19

MSD Sample Id: 625271-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons	8.90	999	877	87	869	86	70-135	1	20	mg/kg	05.25.19 15:21	
Diesel Range Organics	9.43	999	822	81	829	82	70-135	1	20	mg/kg	05.25.19 15:21	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	83		83		70-135	%	05.25.19 15:21
o-Terphenyl	74		71		70-135	%	05.25.19 15:21

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 $\text{Log Diff.} = \text{Log}(\text{Sample Duplicate}) - \text{Log}(\text{Original Sample})$

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

Analysis Request of Chain of Custody Record



One Concho Center/600 Illinois
Avenue/Midland, Texas
Tel (432) 683-7443

Page 1 of 1

Client Name: COG-Artesia		Site Manager: Sheldon Hitchcock	
Project Name: Screwdriver 24 Federal #002H			
Project Location: (county, state) Eddy, NM		Project #:	
Invoice to: Sheldon Hitchcock			
Receiving Laboratory: Xenco		Sampler Name: Sheldon Hitchcock	
Comments: Rush			

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING		MATRIX	PRESERVATIVE METHOD				# CONTAINERS	(C)omposite/(G)rab	ANALYSIS REQUEST (Circle or Specify Method No.)
		YEAR: 2019	DATE		TIME	WATER	SOIL	HCL			
			Btm-1 4'		5/22/2019	10:00	X				
	Btm-2 4'		5/22/2019	10:02	X					1 C	BTEX 8021B
	Btm-5 4'		5/22/2019	10:04	X					1 C	Chloride
	Btm-8 4'		5/22/2019	10:06	X					1 C	
	Btm-10 4'		5/22/2019	10:08	X					1 C	
	Btm-11 4'		5/22/2019	10:10	X					1 C	
	SW-2		5/22/2019	10:12	X					1 C	

Relinquished by: <i>Sheldon Hitchcock</i>	Date: 5/22/14	Time: 15:20	Received by: <i>Control</i>	Date: 5/22/14	Time: 15:20
Relinquished by:	Date:	Time:	Received by:	Date:	Time:

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
------------------	-------	-------	--------------	-------	-------

LAB USE ONLY	REMARKS:
<input checked="" type="checkbox"/> RUSH: Same Day 24 hr 48 hr 72 hr <input type="checkbox"/> Rush Charges Authorized <input type="checkbox"/> Special Report Limits or TRRP Report	

ORIGINAL COPY

ORIGIN ID: CACA (251) 240-4200
SAMPLE CUSTODY
XENCO LABORATORIES NM
1089 N CANAL ST
CARLSBAD, NM 88220
UNITED STATES US

SHIP DATE: 22MAY19
ACTWGT: 11.00 LB
CAD: 114488676/INET4100
DIMS: 13x9x9 IN
BILL SENDER

TO SAMPLE RECEIVING

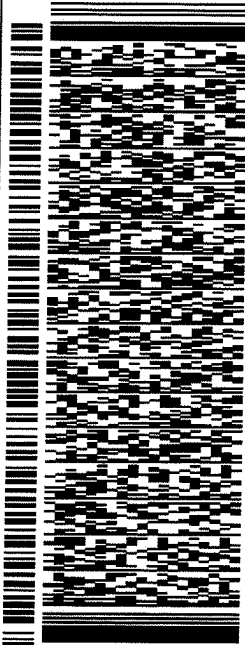
3600 S COUNTY ROAD 1276

MIDLAND TX 79706

(432) 704-5440 REF:

PO: INV:

DEPT:



919181901070111

THU - 23 MAY HOLD

PRIORITY OVERNIGHT

HLD

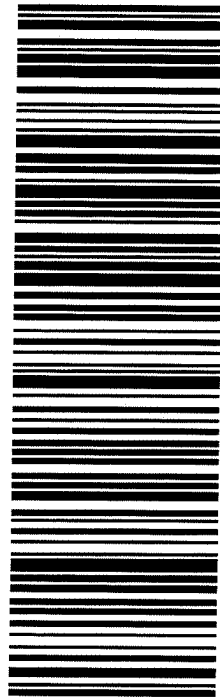
79706

TX-US LBB

TRK# 7752 8913 8633

0201

41 MAFA



1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

After printing this label:

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of \$100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is \$1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our Service Guide. Written claims must be filed within strict time limits, see current FedEx Service Guide.



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: COG Operating LLC

Date/ Time Received: 05/23/2019 12:00:00 AM

Work Order #: 625271

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)?	.3
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	N/A
#18 Water 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:

Brianna Teel

Brianna Teel

Date: 05/23/2019

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 05/23/2019

APPENDIX D

COG OPERATING LLC

SCREWDRIVER 24 FEDERAL COM #2H

UL P SEC.24-T19S-R31E

900' FSL & 190' FEL

EDDY COUNTY, NM

API #30-015-42914 COMM #

SHL: NMLC-0029358 BHL: NMNM-0107697

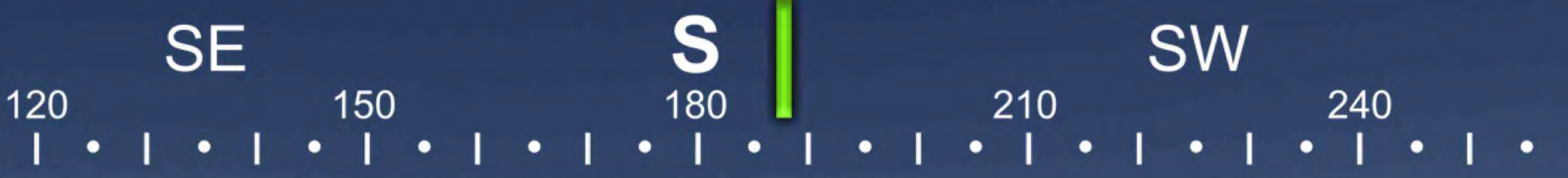




☉ 82°E (T) ● 32.640717°, -103.815498° ±16.4ft ▲ 3547ft







☼ 188°S (T) ● 32°25.113', -104°13.166' ±144318.1ft ▲ 3108ft



22 May 2019, 08:33:10

NE

E

SE

60

90

120

150

☉ 104°E (T) ☉ 32°33.945', -103°49.438' ±33200.4ft ▲ 3108ft



22 May 2019, 08:59:20