



May 8, 2019

Mike Bratcher
Oil Conservation Division, District 2
811 S First St.
Artesia, NM 88210

Crystal Weaver
Bureau of Land Management, CFO
620 E. Green Street
Carlsbad, NM 88220

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. Bratcher/Ms. Weaver,

COG Operating, LLC (COG) is pleased to submit the following 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 three (3) 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
shitchcock@concho.com

FIGURES

Screwdriver 24 Federal Com #002H



TABLES

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

Sample ID	Sample Depth (ft)	Sample Date	Soil Status		TPH (mg/kg)						Benzene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)	
			In-Situ	Removed	GRO	DRO	MRO	Total	GRO	DRO				Total
NMOCDD RRAL Limits (mg/kg)					-			2,500	-			10	50	20,000
BTTM-1	2	2/18/2019		X	76.9	4420	855	5351.9	76.9	4420	4,496.9	<0.050	2.52	96.0
BTTM-2	2	2/18/2019		X	802	9260	1860	11922.0	802	9260	10,062.0	4.4	111	64.0
BTTM-3	2	2/18/2019		X	32.7	1320	298	1650.7	32.7	1320	1,352.7	<0.050	3.79	288.0
BTTM-4	2	2/18/2019		X	177	3320	601	4098.0	177	3320	3,497.0	0.778	18.1	16.0
BTTM-5	2	2/18/2019	X		<10.0	113	78	191.0	<10.0	113	113.0	<0.050	<0.300	16.0
BTTM-6	2	2/18/2019		X	<10.0	1320	266	1586.0	<10.0	1320	1,320.0	<0.050	<0.300	400.0
BTTM-7	2	2/18/2019	X		<10.0	33	11.2	44.2	<10.0	33	33.0	<0.050	<0.300	176.0
BTTM-8	2	2/18/2019	X		<10.0	627	109	736.0	<10.0	627	627.0	0.131	0.743	32.0
BTTM-9	2	2/18/2019		X	3300	9530	1490	14320.0	3300	9530	12,830.0	26.3	333	48.0
BTTM-10	2	2/18/2019	X		<10.0	243	64.2	307.2	<10.0	243	243.0	<0.050	0.31	16.0
BTTM-11	2	2/18/2019		X	389	1770	244	2403.0	389	1770	2,159.0	0.861	45.6	16.0
SW-1	N/A	2/18/2019	X		<10.0	12.7	<10.0	12.7	<10.0	12.7	12.7	<0.050	<0.300	192.0
SW-2	N/A	2/18/2019	X		33.8	802	124	959.8	33.8	802	835.8	<0.050	4.87	64.0
SW-3	N/A	2/18/2019	X		<10.0	11.3	<10.0	11.3	<10.0	11.3	11.3	<0.050	<0.300	16.0
SW-4	N/A	2/18/2019	X		<10.0	<10.0	<10.0	0.0	<10.0	<10.0	0.0	<0.050	<0.300	48.0
SW-5	N/A	2/18/2019	X		<10.0	<10.0	<10.0	0.0	<10.0	<10.0	0.0	<0.050	<0.300	<16.0
SW-6	N/A	2/18/2019	X		<10.0	<10.0	<10.0	0.0	<10.0	<10.0	0.0	<0.050	<0.300	16.0
SW-7	N/A	2/18/2019	X		<10.0	<10.0	<10.0	0.0	<10.0	<10.0	0.0	<0.050	<0.300	32.0
SW-8	N/A	2/18/2019	X		<10.0	<10.0	<10.0	0.0	<10.0	<10.0	0.0	<0.050	<0.300	16.0
BTTM-1	3	2/26/2019	X		<10.0	167.0	12.8	179.8	<10.0	167	167.0	<0.050	<0.300	80.0
BTTM-2	2.5	2/26/2019	X		10.0	990.0	212.0	1212.0	10	990	1,000.0	<0.050	<0.300	32.0
BTTM-3	2.5	2/26/2019	X		<10.0	20.7	<10.0	20.7	<10.0	20.7	20.7	<0.050	<0.300	48.0
BTTM-4	2.5	2/26/2019	X		<10.0	<10.0	<10.0	0.0	<10.0	<10.0	0.0	<0.050	<0.300	80.0
BTTM-6	2.5	2/26/2019	X		<10.0	<10.0	<10.0	0.0	<10.0	<10.0	0.0	<0.050	<0.300	48.0
BTTM-9	3	2/26/2019	X		<10.0	<10.0	<10.0	0.0	<10.0	<10.0	0.0	<0.050	<0.300	32.0
BTTM-11	3	2/26/2019	X		<10.0	121	<10.0	121.0	<10.0	121	121.0	<0.050	<0.300	32.0

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

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

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

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 not 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: Delann Opreat Date: _____

email: _____ Telephone: _____

OCD Only

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.

Characterization Report Checklist: Each of the following items must be included in the report.

- Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- Field data
- Data table of soil contaminant concentration data
- Depth to water determination
- Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
- Boring or excavation logs
- Photographs including date and GIS information
- Topographic/Aerial maps
- 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 Quito Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

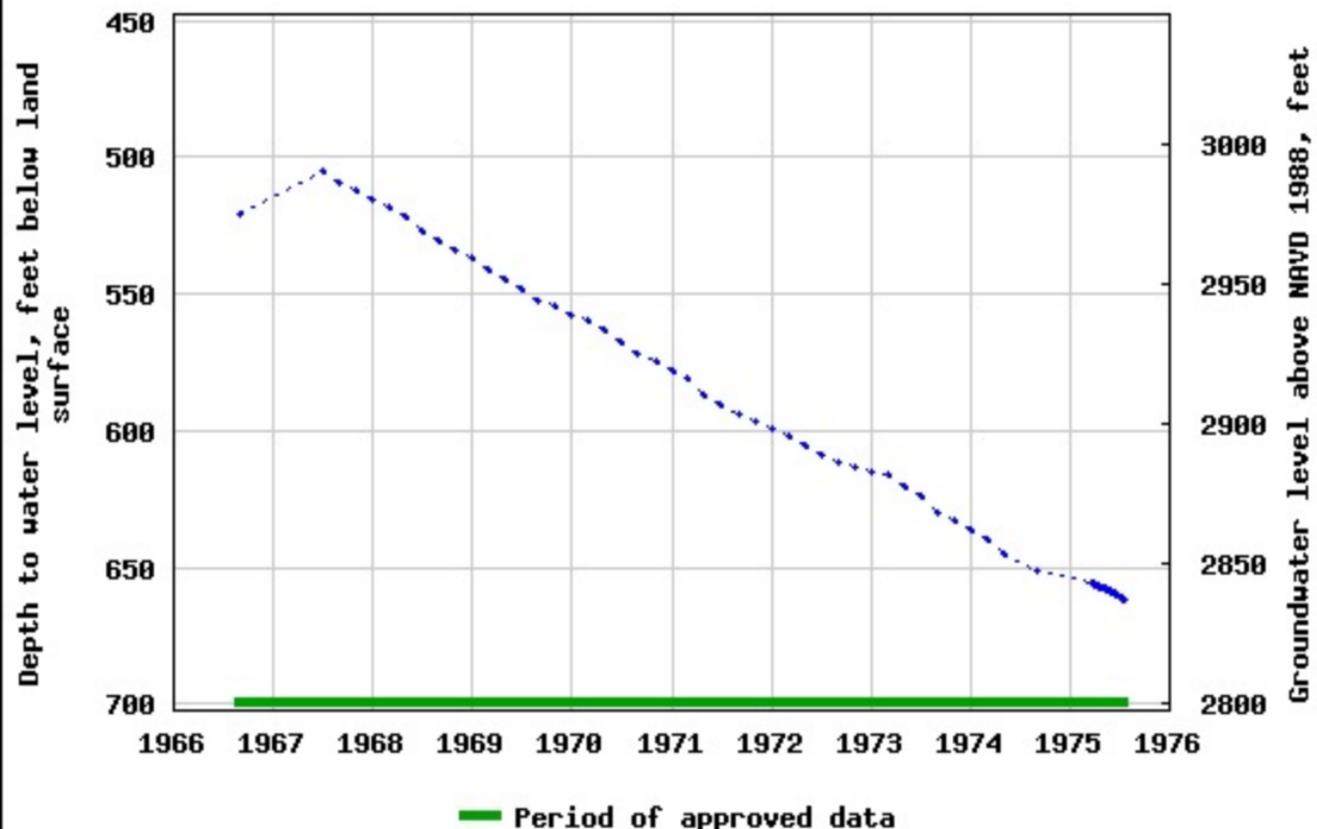
Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance 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

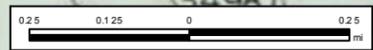
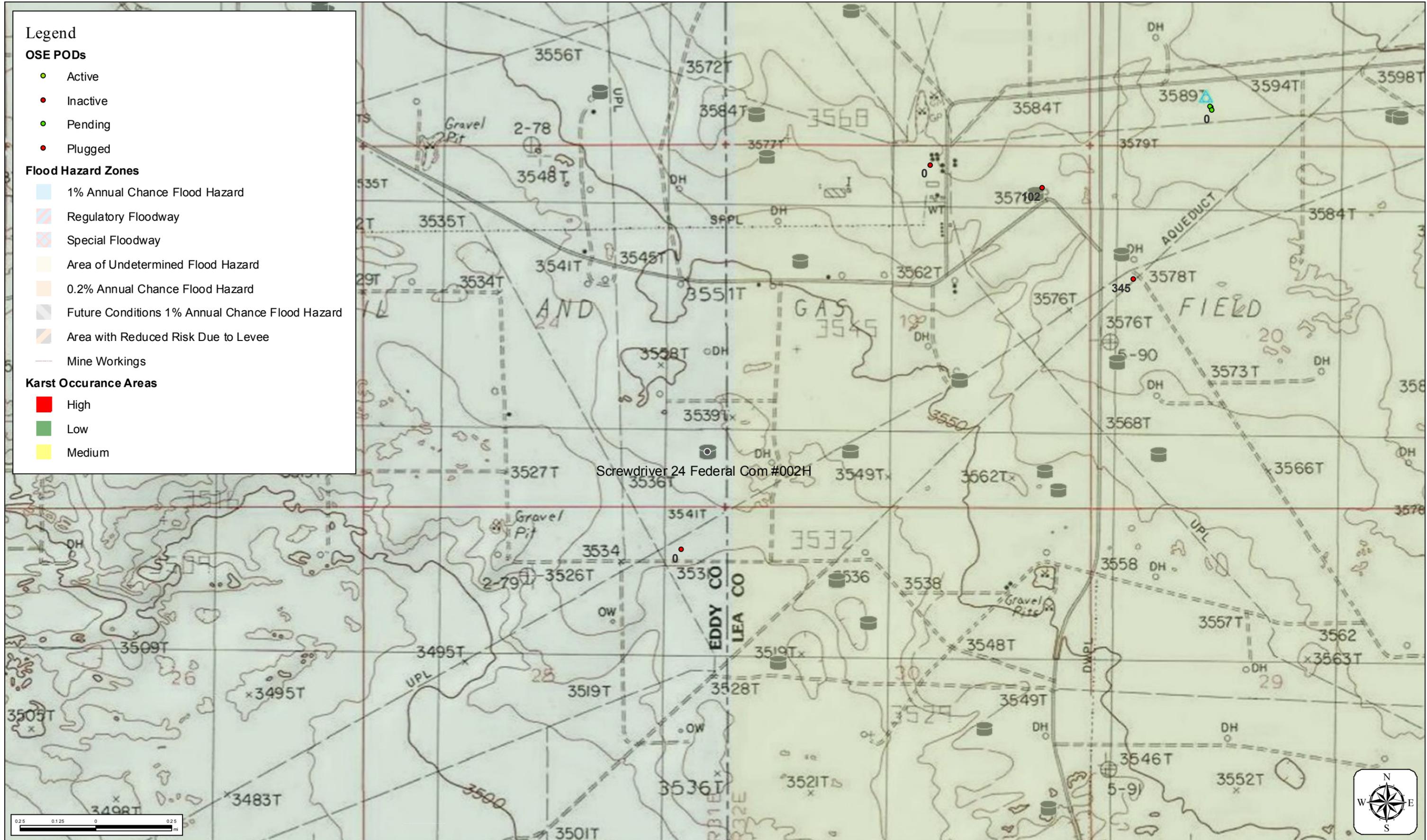
- Active
- Inactive
- Pending
- Plugged

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



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, flowing style.

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)

BTEX 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



Celey D. Keene, Lab Director/Quality Manager

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)

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*	0.119	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

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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)

BTEX 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		mg/kg		Analyzed By: MS						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

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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: BTTM - 3 2' (H900632-03)

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	02/18/2019	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: BTTM - 4 2' (H900632-04)

BTEX 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, 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						S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	177	10.0	02/18/2019	ND	186	93.0	200	4.53		
DRO >C10-C28*	3320	10.0	02/18/2019	ND	183	91.6	200	5.19		
EXT DRO >C28-C36	601	10.0	02/18/2019	ND						

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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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)

BTEX 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: BTTM - 9 2' (H900632-09)

BTEX 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		mg/kg		Analyzed By: MS						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	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 - 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

*=Accredited Analyte

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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





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, flowing "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: 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

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: 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
 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: SW - 6 (H900633-06)

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) 96.3 % 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*	<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

Cardinal Laboratories

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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)

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) 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

Cardinal Laboratories

*=Accredited Analyte

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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



Celey D. Keene, Lab Director/Quality Manager

Analysis Request of Chain of Custody Record



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

Client Name: COG-Artesia		Site Manager: Sheldon Hitchcock	
Project Name: <i>Scraper driven 24 Fed com # 24</i>			
Project Location: (county, state) <i>Eddy Co NM</i>		Project #:	
Invoice to: Sheldon Hitchcock			
Receiving Laboratory: <i>Cardinal</i>		Sampler Name: Sheldon Hitchcock	
Comments: <i>Rush</i>			

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING		MATRIX		PRESERVATIVE METHOD			# CONTAINERS	Grab(G) / Comp(C)	TPH 8015M (GRO - DRO - MRO)	BTEX 8021B	Chloride
		DATE	TIME	WATER	SOIL	HCL	HNO ₃	ICE					
1	SV-1	2/6	11:45	X		X			1	C	X	X	X
2	SV-2		11:50	X		X			1	C	X	X	X
3	SV-3		11:55	X		X			1	C	X	X	X
4	SV-4		12:05	X		X			1	C	X	X	X
5	SV-5		12:05	X		X			1	C	X	X	X
6	SV-6		12:10	X		X			1	C	X	X	X
7	SV-7		12:15	X		X			1	C	X	X	X
8	SV-8		12:20	X		X			1	C	X	X	X
			12:25	X		X			1	C	X	X	X
			12:30	X		X			1	C	X	X	X

Relinquished by: <i>Sheldon Hitchcock</i>	Date: _____ Time: _____	Received by: <i>Yvonne [Signature]</i>	Date: <i>2-18-19</i> Time: <i>13:20</i>
Relinquished by: _____	Date: _____ Time: _____	Received by: _____	Date: _____ Time: _____

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

LAB USE ONLY

Sample Temperature: *#97*

REMARKS:

RUSH: Same Day 24 hr 48 hr 72 hr

Rush Charges Authorized

Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking # _____

8.10

ORIGINAL COPY



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,

A handwritten signature in black ink that reads "Celey D. Keene".

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)

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) 95.2 % 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, 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	03/01/2019	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, SM4500CI-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, SM4500CI-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, SM4500CI-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)

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) 97.1 % 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



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

BILL TO

ANALYSIS REQUEST

Company Name: COG Operating LLC
 Project Manager: Dakota Neel
 Address: 2208 West Main
 City: Artesia State: NM Zip: 88210
 Phone #: (575) 746-2010 Fax #: 88210
 Project #: Project Owner:
 Project Name: Screwdriver 24 Federal Com #2H
 Project Location:
 Sampler Name: Dakota Neel
 P.O. #: Company: COG Operating LLC
 Attn: Robert McNeill
 Address: 600 W Illinois
 City: Midland
 State: TX Zip: 79701
 Phone #: (432) 221-0388
 Fax #:

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	BTEX	TPH	Chloride
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :					
H900807	Bottom- 1 3'	C	1	X						2/26/19	12:50 PM	X	X	X
	Bottom- 2 2.5'	C	1	X						2/26/19	1:00 PM	X	X	X
	Bottom- 3 2.5'	C	1	X						2/26/19	1:05 PM	X	X	X
	Bottom- 4 2.5'	C	1	X						2/26/19	1:10 PM	X	X	X
	Bottom- 6 2.5'	C	1	X						2/26/19	1:15 PM	X	X	X
	Bottom- 9 3'	C	1	X						2/26/19	1:20 PM	X	X	X
	Bottom- 11 3'	C	1	X						2/26/19	1:25 PM	X	X	X

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Relinquished By: *Dakota Neel* Date: 2-1-19
 Received By: *Dakota Neel* Date: 2-1-19
 Time: 10:40 AM
 Relinquished By: Date: Received By: Time:
 Delivered By: (Circle One) Sample Condition
 Sampler - UPS - Bus - Other: 5.1e #97
 Cool Intact
 Yes No
 Checked By: (Initials) *YN*
 Rush 48 hours

Phone: (505) 221-0388
 Fax: (505) 221-0388
 REMARKS:
 Phone Result: Yes No Add'l Phone #:
 Fax Result: Yes No Add'l Fax #:
 5. Please fax written changes to 575-393-2476

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



NE

E

SE

30

60

90

120

150

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



18 Feb 2019, 12:06:51

N

0

30

NE

60

E

90

☀ 46°NE (T) 📍 32.640713°, -103.815506° ±16.4ft ▲ 3549ft



18 Feb 2019, 12:06:54

NW

N

NE

330

0

30

60

☉ 16°N (T) ● 32.640713°, -103.815468° ±32.8ft ▲ 3551ft



18 Feb 2019, 12:07:00