

[Sheldon L. Hitchcock]
[HSE Coordinator]

March 11, 2019

Bradford Billings Oil Conservation Division 1220 S. St Francis Dr. #3 Santa Fe, NM 87505

**Re:** Closure Report

**Gettysburg State Com #001H** 

API #: 30-025-41928

RP#: 1RP-4701 & 1RP-4805

Unit Letter D Section 16, Township 23S, Range 34 E

Lea County, NM

Mr. Billings,

COG Operating, LLC (COG) is pleased to submit for your consideration the following closure report for the Gettysburg State Com #001H. There were two overlapping releases at this site. The first release was on May 13, 2017 (1RP-4701) and the second was on September 7, 2017 (1RP-4805). Following each release an assessment of impacted soils was conducted. Two separate remediation work plans were submitted to and subsequently approved by the New Mexico Oil Conservation Division (NMOCD), Copies of the approved work plans are attached in Appendix V. Both of the releases were remediated simultaneously.

#### **BACKGROUND**

The Gettysburg State Com #001 is located in Unit Letter D, Section 16, Township 23 South and Range 34 East in Lea County, New Mexico. More specifically the latitude and longitude for this release are 32.3113899 North and -103.4824753 West.

On May 13, 2017, the day tank overflowed resulting in the release of approximately seven (7) barrels (bbls) of Oil. All of the fluid remained on location. On September 7, 2017 the day tank overflowed again resulting in a release of approximately eight (8) bbls of oil. This release overlapped the previous release on the location and also impacted the pasture.

Remediation of both releases was conducted simultaneously and in accordance with the approved work plans. The analytical results from the NMOCD stipulated confirmation soil sampling activities are summarized in the table below. A site diagram of the excavated area is presented in Appendix I.

March 11, 2019

#### GROUNDWATER AND SITE RANKING

According New Mexico Office of the State Engineer groundwater in the project vicinity is approximately two-hundred (200) feet below ground surface (BGS) (Appendix II). No water well or surface water was observed within one-thousand (1,000) feet of the release site. Therefore the site ranking for this release is zero (0) based on the following:

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

#### **CONFIRMATION SOIL SAMPLING RESULTS**

0 1 10	Sample	0 1 5 (	Soil	Status		TPH (m	g/kg)		Benzene	Total BTEX	Chloride
Sample ID	Depth (ft)	Sample Date	In-Situ	Removed	GRO	DRO	MRO	Total	(mg/kg)	(mg/kg)	(mg/kg)
NMOCD RRAL L	imits (mg/kg)				-	-	-	5,000	10	50	600
SW-1	N/A	1/14/2019	Χ		<10.0	<10.0	<10.0	0.0	<0.050	<0.300	64.0
SW-2	N/A	1/14/2019	Χ		<10.0	<10.0	<10.0	0.0	<0.050	<0.300	112.0
SW-3	N/A	1/14/2019	Χ		<10.0	149.0	18.7	167.7	<0.050	<0.300	64.0
SW-4	N/A	1/14/2019	Χ		<10.0	<10.0	<10.0	0.0	<0.050	<0.300	80.0
SW-5	N/A	1/14/2019	Χ		<10.0	<10.0	<10.0	0.0	<0.050	<0.300	16.0
SW-6	N/A	1/14/2019	Χ		<10.0	1500	229	1729.0	<0.050	<0.300	32.0
SW-7	N/A	1/14/2019	Χ		<10.0	39.6	21.7	61.3	<0.050	<0.300	16.0
SW-8	N/A	1/14/2019	Χ		<10.0	<10.0	<10.0	0.0	<0.050	<0.300	32.0
SW-9	N/A	1/14/2019	Χ		<10.0	<10.0	<10.0	0.0	<0.050	<0.300	16.0
SW-10	N/A	1/14/2019	Χ		<10.0	<10.0	<10.0	0.0	<0.050	<0.300	<16.0
SW-11	N/A	1/14/2019	Χ		<10.0	<10.0	<10.0	0.0	<0.050	<0.300	48.0
T-1 BTTM	4	1/14/2019	Χ		<10.0	91.2	<10.0	91.2	<0.050	<0.300	16.0
T-2 BTTM	7	1/14/2019	Χ		<10.0	<10.0	<10.0	0.0	<0.050	<0.300	48.0
T-3 BTTM	3	1/14/2019	Χ		<10.0	<10.0	<10.0	0.0	<0.050	<0.300	32.0
T-2 W. BTTM	7'	1/22/2019	Χ		<10.0	<10.0	<10.0	0.0	<0.050	<0.300	32.0
T-2/T-3	N/A	1/22/2019	Χ		<10.0	<10.0	<10.0	0.0	<0.050	<0.300	<16.0
T-1/T-3	N/A	1/22/2019	Χ		<10.0	<10.0	<10.0	0.0	<0.050	<0.300	16.0

#### REMEDIAL ACTIONS

- The impacted area in the vicinity of sample location T-1 was excavated to a depth of four (4) feet BGS.
- The impacted area in the vicinity of sample location T-2 was excavated to a depth of seven (7) feet BGS.
- The impacted area in the vicinity of sample location T-3 was excavated to a depth of three (3) feet BGS.
- Confirmation soil samples were taken from the bottom and sidewalls of the excavated area per NMOCD stipulations.
- All of the excavated material was hauled to an NMOCD approved solid waste disposal facility.
- Upon receipt of analytical results confirming that all impacted soil above NMOCD RRAL's was successfully removed the excavation was backfilled and contoured to match the surrounding location.
- The affected area in the pasture will be re-seeded with the landowners preferred seed mixture once proper seasonal conditions exist.

### **CLOSURE REQUEST**

COG Operating, LLC respectfully requests that the New Mexico Oil Conservation Division grant closure approval for the Gettysburg State Com #001H incidents that occurred on May 13, 2017 (1RP-4701) and September 7, 2017 (1RP-4805).

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

Sincerely,

Sheldon L. Hitchcock HSE Coordinator

Sheldon Witam

slhitchcock@concho.com

#### Enclosed:

Appendix I: Site Diagram

Appendix II: Groundwater Data Appendix III: Initial C-141 (Copy)

Appendix IV: Final C-141

Appendix V: Work Plan (Copy)

Appendix VI: Analytical Reports and Chain-of-Custody Forms

Appendix VII: Photographic Documentation

## APPENDIX I

## APPENDIX II



# New Mexico Office of the State Engineer Water Column/Average Depth to Water

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

C=the file is closed)

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

(quarters are smallest to largest) (NAD83 UTM in meters)

(In feet)

 POD

 Sub Q Q Q
 Depth Depth Water

 POD Number
 Code basin County 64 16 4 Sec Tws Rng
 X
 Y
 Distance Well Water Column

 CP 01730 POD1
 CP LE 2 2 1 16 23S 34E 643549 3575824
 587 594 200 394

Average Depth to Water: 200 feet

Minimum Depth: 200 feet

Maximum Depth: 200 feet

Record Count: 1

**Basin/County Search:** 

County: Lea

UTMNAD83 Radius Search (in meters):

**Easting (X):** 642962 **Northing (Y):** 3575816 **Radius:** 1000

3/9/19 11:58 AM

## APPENDIX III

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

### State of New Mexico Energy Minerals and Natural Resources

Form C-141 Revised August 8, 2011

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe. NM 87505 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

1220 S. St. Flan	CIS DI., Santa P	e, 14141 87303		Sa	nta Fe	, NM 875	05					
Release Notification and Corrective Action												
						OPERA'	ГOR		✓ Initial	l Report		Final Report
Name of Company: COG Operating LLC OGRID # 229137   C					Contact:			ert McNe				
Address: 600 West Illinois Avenue, Midland TX 79701					relephone 1		_	-683-7443				
Facility Nar	ne: Gettysbi	arg State Co	om #00 <u>1</u> 1	Η	I	Facility Typ	e: Production E	quipme	nt (Well P	ad)		
Surface Ow	ner: State	e		Mineral C	wner:				API No.	30-02	5-419	28
				LOCA	TION	OF RE	LEASE					
Unit Letter D	Section 16	Township 23S	Range 34E	Feet from the	1.50	South Line North	Feet from the 330		/est Line /est		Coun	*
				Latitude 32.3			le -103.4824753					
						OF REL						
Type of Rele	กรค <sup>,</sup>			1178.1	UKE	Volume of		T	Volume R	ecovered:		
Type of Mele	<b>450</b> .	Oil				***	7 bbls		· Oldino it	6.5 b	bls	
Source of Re	lease:	T-ul-				1	four of Occurrenc			lour of Dis		
Was Immedi	ate Notice Gi	Tank				If YES, To	13, 2017 12:45 pn Whom?	n j	IV.	lay 13, 201	/ 12:4	5 pm
Was Initical	ale Hollee Gi		Yes 🗵	No 🛛 Not Re	equired	11 125, 10	, villom.					
		By Who	m?			Date and I	lour:					
Was a Water	course Reach					If YES, Ve	olume Impacting t	he Wate	rcourse.			
		Ц	Yes 🔯	No								
If a Watercou	urse was Impa	acted, Descri	be Fully.*	•		RE	CEIVED					
									06 am	Mov 1	0 2	017
Describe Cat	ise of Probler	n and Remed	lial Action	Taken.*		БУ	Olivia Yu	al 0.0	Jo alli,	way i	o, z	017
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							knowledge and u					
							nd perform correc					
							arked as "Final R					
should their	operations ha	ve failed to a	dequately	investigate and r	emediate	e contaminat	ion that pose a thro e the operator of the	eat to gr	ound water,	, surtace wa	iter, hi	iman health
fodoral state	nment. In ac	aition, NIVIU s and/or regu	lations	tance of a C-141	герогі а	oes not reliev	e the operator of	responsi	omity for co	mphance v	ziin an	y otner
rederar, state	n l		/ /				OIL CON	SERV	ATION	DIVISIO	)N	
Signature:	elleco	- Hash	W				OIL COIV	<u> JLIÇ                                   </u>	HIIOIV	DIVIDIC	714	
B		<b>D.</b> 1							Ĺ	34-		
Printed Nam	e: 	Rebecca I	Haskell			Approved by	Environmental S		•	<u> </u>		
Title:		Senior HS	E Coordi	nator		Approval Da	5/18/2017 te:	<u>/</u>     1	Expiration I	Date:		
E-mail Addr	PCC'	rhaskell@	concho e	om		Conditions o	f Approval-					
L-man Auu	wud.	HIGSKEING					ached direct	tivo		Attached	V	
Date: May 1	5 2017	Phone:	432.683	-7443		ואם ששפן	acheu unec	ロ۷ピー		1		

Date: May 15, 2017 Phone: 432-683-7443

\* Attach Additional Sheets If Necessary

1RP-4701

nOY1713829831

pOY1713830150

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

Form C-141 Revised August 8, 2011

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

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

	Rele	ase Notificati	on and Co	rrective A	ction				
			OPERA'				Report		Final Repo
Name of Company	COG Operating LLC	OGRID # 229137	Contact:			rt McNei	11		
Address: 600 W	est Illinois Avenue, Mi	dland TX 79701	Telephone 1			683-7443	1)		
Facility Name: GE	ITYSBURG STATE C	OM #001H	Facility Typ	e: Production I	Equipmen	nt (Well P	ad)	_	
Surface Owner: P	rivate	Mineral Owne	r: State			API No.	30-025-	4192	В
	- 10 - 10 - 10 - 10 - 10 - 10 - 10 - 10	LOCATION	ON OF RE	LEASE					
Unit Letter Section D 16	on Township Range 23S 34E	Feet from the No	rth/South Line North	Feet from the 330	East/We			Cour LE	
		Latitude 32.3	113899 Long	gitude -103.482	4753				
		NATUR	E OF REL		- 2				
Type of Release:			Volume of			Volume Re		1.1.	
	Oil		5. 11	8 bbls  Tour of Occurrence	-	Date and H		bls	;
Source of Release:	Tank			ber 7 <sup>th</sup> , 2017 2:00		Sept	ember 7 <sup>th</sup> ,	2017 2	2:00 PM
Was Immediate Noti	ce Given?	Z N	If YES, To		23. 202	San Sin			
		No Not Requir	Date and I	-lour:					
Was a Watercourse I	By Whom?			olume Impacting	the Water	course.	-		
was a watercourse i	Yes D	₫ No		in 100, volume impacting the watercoares					
If a Watercourse was	Impacted, Describe Fully	*	RE	CEIVED					- 1
			By (	Olivia Yu a	+ 2.24	nm S	Son 1/	1 20	17
Danish Course of B	roblem and Remedial Action	n Takan *	Бу	Jiivia Tu a	1 3.24	piii, S	ep 14	, 20	
/									
The release was caus	sed by the test meter on the	test knock out malfund	ctioning which c	aused the vessel t	o overfill.	Fluid wen	t from the	test kr	ock out to th
scrubber pots on gas	compressor via the suction	gas line feeding the co	ompressor. The	scrubber pot sent	fluids to tl	he day tank	and fluid	was re	leased out of
the thief hatch. The l	oad test meter will be repla ted and Cleanup Action Te	ced. ken *	163	-357					
The release occurred	on location and the adjace	nt pasture. A vacuum t	ruck was dispate	ched to remove al	freestand	ling fluids.	Concho v	vill hav	e the spill
area sampled to deli- significant remediati	neate any possible impact f	rom the release and we	will present a r	emediation work j	pian to the	MOCD	tor appro	vai pric	or to aity
I hereby certify that	the information given abov	e is true and complete	to the best of m	knowledge and	understan	d that pursi	uant to NN	ИОCD	rules and
regulations all opera	tors are required to report a	ind/or file certain releas	se notifications	and perform corre	ctive action	ons for rele	ases whic	h may i	endanger
nublic health or the	environment. The acceptar	ice of a C-141 report by	v the NMOCD r	narked as "Final F	Report" do	es not relic	eve the op	erator (	of liability
should their operation	ns have failed to adequate In addition, NMOCD acce	y investigate and reme	diate contamina	tion that pose a th	reat to gro	ound water,	, surrace v	vater, n	uman neamn
	In addition, NINOCD accertions.	plance of a C-141 Tepo	at does not rene	ve the operator of	responsit	mity for co	mpnunce	With the	ny outer
reactus, State, Of 1004		-		OIL CON	ISERV	ATION	DIVISI	ON	
Signature: 5						Δu	1		
Printed Name: Aaron Lieb			110	Turius and 1	O1-11-4.	$\cup$	+		
Frinted Name.	Aaton Lico		Approved b	y Environmental S			4		- 24
Title:	Senior HSE Coord	inator	Approval D	9/14/20	)17 E	Expiration I	Date:		
E-mail Address:	alieb@concho.co	<u>n</u>	Conditions	of Approval:			Attoole	d 🔽	/
			See attached directive   Attached \( \subseteq \)			,			
Date: September 8th		75-748-1553					1		
Attach Additional	Sheets If Necessary		4DD 40	05					
			1RP-48	υυ InOY1	72575	6297		V170	25755233

## APPENDIX IV

District I
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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	COG Operating, LLC	OGRID	229137	
Contact Name	Jennifer Knowlton	Contact Telephone	(432) 683-7443	
Contact email	jknowlton@concho.com	Incident # (assigned by OCD)		
Contact mailing address 600 West Illinois Avenue, Midland, Texas 79701				
Location of Release Source				

Location of Release Source									
Latitude	32.3113899			Ι	Longitude -103.4824753				
	(NAD 83 in decimal degrees to 5 decimal places)								
Site Name		Gettysburg St	ate Com #001h		Site Type	Well			
Date Release Discovered 5/13/2017				API# (if applicable)	30-025-41928				
Unit Letter	Section	Township	Range		County				
D	16	23S	34E		Lea				
Surface Owner: State Federal Tribal Private (Name: Basin Properties									

## Nature and Volume of Release

Materia	l(s) Released (Select all that apply and attach calculations or specific	justification for the volumes provided below)
Crude Oil	Volume Released (bbls) 7	Volume Recovered (bbls) 6.5
Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
Condensate	Volume Released (bbls)	Volume Recovered (bbls)
Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)
Cause of Release		
Tank Overflow		

<b>Received by OCD:</b>	12/2/2022 2:52:30 PM
Form C-141	State of New Mexico
Page 2	Oil Conservation Division

	Page 14 of 1	98
Incident ID		
District RP		
Facility ID		
Application ID		

W7 41	Trayers 6 -14 (A) 1 d 31 d 31 d 31 d 3
Was this a major	If YES, for what reason(s) does the responsible party consider this a major release?
release as defined by 19.15.29.7(A) NMAC?	
19.13.29.7(11) 14141110.	
☐ Yes ■ No	
If YES, was immediate no	latice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?
11 1 22, 111111011111011	energi. The me are a control of them of them of them of them, energy
	Initial Response
The responsible	party must undertake the following actions immediately unless they could create a safety hazard that would result in injury
The source of the rele	ease has been stopped.
	as been secured to protect human health and the environment.
	ave been contained via the use of berms or dikes, absorbent pads, or other containment devices.
	recoverable materials have been removed and managed appropriately.
	ed above have <u>not</u> been undertaken, explain why:
if all the actions described	a doore have hot occir andertaken, explain wily.
Per 19.15.29.8 B. (4) NM	AAC 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 containmen	nt area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.
I hereby certify that the info	ormation given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and
	required to report and/or file certain release notifications and perform corrective actions for releases which may endanger
	ment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have gate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In
addition, OCD acceptance o	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: Sheld	on L. Hitchcock HSE Coordinator
Signature:	3/11/2019
email: slhitchcock	7@concho com 575.746.2010
email:	Telephone: 373-740-2010
OCD Only	
Received by:	Date:

A scaled site and sampling diagram as described in 19.15.29.11 NMAC

Page 15 of 198

Incident ID	nOY1713829831
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.

Photographs of the remediated site prior to backfill or photos must be notified 2 days prior to liner inspection)	of the liner integrity if applicable (Note: appropriate OCD District office				
Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)					
Description of remediation activities					
and regulations all operators are required to report and/or file certain may endanger public health or the environment. The acceptance of should their operations have failed to adequately investigate and renduman health or the environment. In addition, OCD acceptance of a compliance with any other federal, state, or local laws and/or regular restore, reclaim, and re-vegetate the impacted surface area to the confaccordance with 19.15.29.13 NMAC including notification to the Operator Name:  Sheldon L. Hitchcock  Signature:	tions. The responsible party acknowledges they must substantially nditions that existed prior to the release or their final land use in CD when reclamation and re-vegetation are complete.  Title: HSE Coordinator				
email: slhitchcock@concho.com	Telephone: 575-746-2010				
OCD Only					
Received by:	Date:				
remediate contamination that poses a threat to groundwater, surface very party of compliance with any other federal, state, or local laws and/o	of liability should their operations have failed to adequately investigate and water, human health, or the environment nor does not relieve the responsible or regulations.				
Closure Approved by: Luttan Hall	Date: _12/2/2022				
Printed Name: Brittany Hall	Title: Environmental Specialist				

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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

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Application ID	

## **Release Notification**

## **Responsible Party**

		T .	
Responsible Party	COG Operating, LLC	OGRID	229137
G NI		G	
Contact Name	Jennifer Knowlton	Contact Telephone	(432) 683-7443
Contact email	jknowlton@concho.com	Incident # (assigned by OCD)	
~	janemanageenenereen		
Contact mailing address	600 West Illinois Avenue, Midlar	nd, Texas 79701	
	Location of R	elease Source	

#### 32.3113899 -103.4824753 Latitude Longitude (NAD 83 in decimal degrees to 5 decimal places) Site Name Site Type Well Gettysburg State Com #001h Date Release Discovered API# (if applicable) 9/7/2017 30-025-41928 Unit Letter Section Township Range County 34E D 16 **23S** Lea **Basin Properties** Surface Owner: State Federal Tribal Private (Name:

### Nature and Volume of Release

Materia	l(s) Released (Select all that apply and attach calculations or specific	justification for the volumes provided below)
Crude Oil	Volume Released (bbls) 8	Volume Recovered (bbls) 7
Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
Condensate	Volume Released (bbls)	Volume Recovered (bbls)
Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)
Cause of Release		
Tank Overflow		

<b>Received by OCD: 12/2/2022</b>	2 2:52:30 PM
Form C-141	State of New Mexico
Page 2	Oil Conservation Division

	Page 17 of 1	98
Incident ID		
District RP		
Facility ID		
Application ID		

Was this a major release as defined by 19.15.29.7(A) NMAC?  ☐ Yes ■ No	If YES, for what reason(s) does the respon	sible party consider this a major release?
If YES, was immediate n	otice given to the OCD? By whom? To wh	om? When and by what means (phone, email, etc)?
	Initial Ro	esponse
The responsible	party must undertake the following actions immediatel	vunless they could create a safety hazard that would result in injury
■ The source of the rele	ease has been stopped.	
■ The impacted area ha	s been secured to protect human health and	the environment.
Released materials ha	ave been contained via the use of berms or d	ikes, absorbent pads, or other containment devices.
	ecoverable materials have been removed and d above have <u>not</u> been undertaken, explain v	
has begun, please attach	a narrative of actions to date. If remedial	emediation immediately after discovery of a release. If remediation efforts have been successfully completed or if the release occurred lease attach all information needed for closure evaluation.
regulations all operators are public health or the environ failed to adequately investig addition, OCD acceptance of and/or regulations.	required to report and/or file certain release notinent. The acceptance of a C-141 report by the Cate and remediate contamination that pose a threfa C-141 report does not relieve the operator of	best of my knowledge and understand that pursuant to OCD rules and fications and perform corrective actions for releases which may endanger CD does not relieve the operator of liability should their operations have at to groundwater, surface water, human health or the environment. In responsibility for compliance with any other federal, state, or local laws
Printed Name: Sheld	on L. Hitchcock	Title: HSE Coordinator
Signature: Sheldo	n Hitam	Date: 3/11/2019
email: slhitchcock	on L. Hitchcock  The Putana  Concho.com	Date: 3/11/2019 Telephone: 575-746-2010
OCD Only		
Received by:		Date:

<b>Received by OCD: 12/2/202</b>	22 2:52:30 PM
Form C-141	State of New Mexico
Page 6	Oil Conservation Division

	Page 18 of 198
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 photomust be notified 2 days prior to liner inspection)	os of the liner integrity if applicable (Note: appropriate OCD District office
■ Laboratory analyses of final sampling (Note: appropriate OE	OC District office must be notified 2 days prior to final sampling)
■ Description of remediation activities	
and regulations all operators are required to report and/or file certa may endanger public health or the environment. The acceptance of should their operations have failed to adequately investigate and rehuman health or the environment. In addition, OCD acceptance of compliance with any other federal, state, or local laws and/or regulatore, reclaim, and re-vegetate the impacted surface area to the caccordance with 19.15.29.13 NMAC including notification to the	lations. The responsible party acknowledges they must substantially conditions that existed prior to the release or their final land use in OCD when reclamation and re-vegetation are complete.
Printed Name: Sheldon L. Hitchcock	Title: HSE Coordinator
Sheldon L. Hitchcock  Signature: Sheldon D. Hitchcock  Signature: Sheldon D. Hitchcock  Signature: Sheldon D. Hitchcock  Signature: Sheldon D. Hitchcock	Date: 3/11/2019
email: slhitchcock@concho.com	Telephone: 575-746-2010
OCD Only	
	D. (
Received by:	Date:
	y of liability should their operations have failed to adequately investigate and e water, human health, or the environment nor does not relieve the responsible d/or regulations.
Closure Approved by:	Date:
Printed Name:	Title:
_	

## APPENDIX V

Received by OCD:	12/2/2022 2:52:30 1						Page 20 of 1
			SITE INFOR	<u>RMATION</u>			
		Report Ty	ype: Work	Plan 1	RP-4701		
General Site In	formation:						
Site:			State Com #1F	ł			
Company:		COG Opera					
	ship and Range	Unit D	Sec. 16	T 23S	R 34E		
Lease Number:		API No. 30-					
County:		Lea County					
GPS:			32.3113899°	N		103.482	24753° W
Surface Owner		State					
Mineral Owner: Directions:	•			00   D -	- D:- D-I (O	D 04) tol	north on Delaware Basin
			for 0.30 mi, take t				tely 1.10 miles, turn west d continue west for 0.25
Release Data:							
Date Released:		5/13/2017					
Type Release:		Oil					
Source of Conta	mination:	Tank					
Fluid Released:		7 bbls					
Fluids Recovere	ed:	6.5 bbls					
Official Commu	unication:						
Name:	Robert McNeil				Ike Tavare	Z	
Company:	COG Operating, L	LC			Tetra Tech	l	
Address:	One Concho Cent	er			4000 N. Bi	g Spring	
	600 W. Illinois Ave	э.			Ste 401		
City:	Midland Texas, 79	701			Midland, To	exas	
Phone number:	(432) 683-7443				(432) 687-8		
Fax:	(432) 684-7137				<u> </u>		
Email:	rmcneil@concho	presources.cor	n		lke.Tavar	ez@tetratec	h.com

Depth to Groundwater:		Ranking Score		Site Data
<50 ft		20		
50-99 ft		10		
>100 ft.		0		325'-350'
WellHead Protection:		Ranking Score		Site Data
Water Source <1,000 ft., Private <200 ft.		20		
Water Source >1,000 ft., Private >200 ft.		0		0
Cumfo on Dody of Motors		Danking Coore		Cita Data
Surface Body of Water:		Ranking Score		Site Data
<200 ft.		20		
200 ft - 1,000 ft. >1,000 ft.		10 <b>0</b>		0
>1,000 II.		U		<u> </u>
Total Ranking Score:		0		
				_
	Accepta	ble Soil RRAL (m	g/kg)	
	Benzene	Total BTEX	TPH	

50

10

5,000



## **APPROVED**

By Olivia Yu at 2:30 pm, Dec 29, 2017

December 12, 2017

NMOCD approves of the delineation completed and the proposed remediation for 1RP-4701.

Ms. Olivia Yu Environmental Engineer Specialist Oil Conservation Division, District 1 1625 North French Drive Hobbs, New Mexico 88240

Re: Work Plan for the COG Operating LLC., Gettysburg State Com #1H, Unit D, Section 16, Township 23 South, Range 34 East, Lea County, New Mexico. 1RP-4701.

Ms. Yu:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC., (COG) to prepare a work plan for a release that occurred at the Gettysburg State Com #1H, Unit D, Section 16, Township 23 South, Range 34 East, Lea County, New Mexico (Site). The spill site coordinates are N 32.3113899°, W 103.4824753°. The site location is shown on Figures 1 and 2.

#### Background

According to the State of New Mexico C-141 Initial Report, the leak was discovered on May 13, 2017, and released approximately 7 barrels of oil due to a malfunctioning oil dump on the production knock out causing a release at the day tank. A vacuum truck was used to remove the freestanding fluids, recovering 6.5 barrels of oil. The release occurred on the pad area and measured approximately 25' x 85'. The initial C-141 Form is included in Appendix A.

#### Groundwater

No water wells are listed within Section 16 in the New Mexico Office of the State Engineers database. The nearest well listed in the database is located in Section 15, approximately 1.70 miles southeast of the site, with a reported depth to groundwater of 430' below surface. According to the Chevron Texaco Groundwater Trend map, the average depth to groundwater in the area is between 325' and 350' below surface. The groundwater data is shown in Appendix B.

Tetra Tech



### Regulatory

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, dated August 13, 1993. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the depth to groundwater, the proposed RRAL for TPH is 5,000 mg/kg.

### Soil Assessment and Analytical Results

On June 14, 2017, COG personnel were onsite to evaluate and sample the release area. One (1) trench (T-1) was installed in the release area to a total depth of 4.0' below surface. In addition, four (4) additional sample points (North, South, East, and West) were installed to a depth of 1.0' below surface in order to define the horizontal extents of the release. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 1. The trench locations are shown on Figure 3.

Referring to Table 1, the area of trench (T-1) showed TPH, benzene, and total BTEX concentrations above the RRALs at surface, with concentrations of 74,800 mg/kg (TPH), 27.3 mg/kg (benzene) and 725 mg/kg (total BTEX). The concentrations declined to below the RRALs at 1.0' below surface, before increasing to 20,200 mg/kg (TPH), 23.4 mg/kg (benzene) and 533 mg/kg (total BTEX) at 2.0' below surface. The impact declined with depth to below the laboratory reporting limits at 3.0' and 4.0' below surface. Additionally, none of the samples collected showed any significant chloride concentrations to the shallow soils, with a chloride high of 307 mg/kg at surface.

In addition, the horizontal samples (North, South, East, and West) did not show any TPH, benzene or total BTEX concentrations above the RRALs. Additionally, none of the samples collected in the areas of (North, South, East, and West) showed any significant chloride concentrations to the shallow soils.

#### Work Plan

Based on the laboratory results, COG proposes to remove the impacted material as highlighted (green) in Table 1 and shown on Figure 4. The area of trench (T-1) will be excavated to depth of approximately 3.0' below surface. Once excavated to the appropriate depth, the excavation will be backfilled with clean material to surface grade. All of the excavated material will be transported offsite for proper disposal.



The proposed excavation depths may not be reached due to wall cave ins and safety concerns for onsite personnel. In addition, impacted soil around oil and gas equipment, structures or lines may not be feasible or practicable to be removed due to safely concerns for onsite personnel. As such, COG will excavate the impacted soils to the maximum extent practicable.

#### Conclusion

Upon completion, a final report detailing the remediation activities will be submitted to the NMOCD. If you have any questions or comments concerning the assessment or the proposed remediation activities for this site, please call at (432) 682-4559.

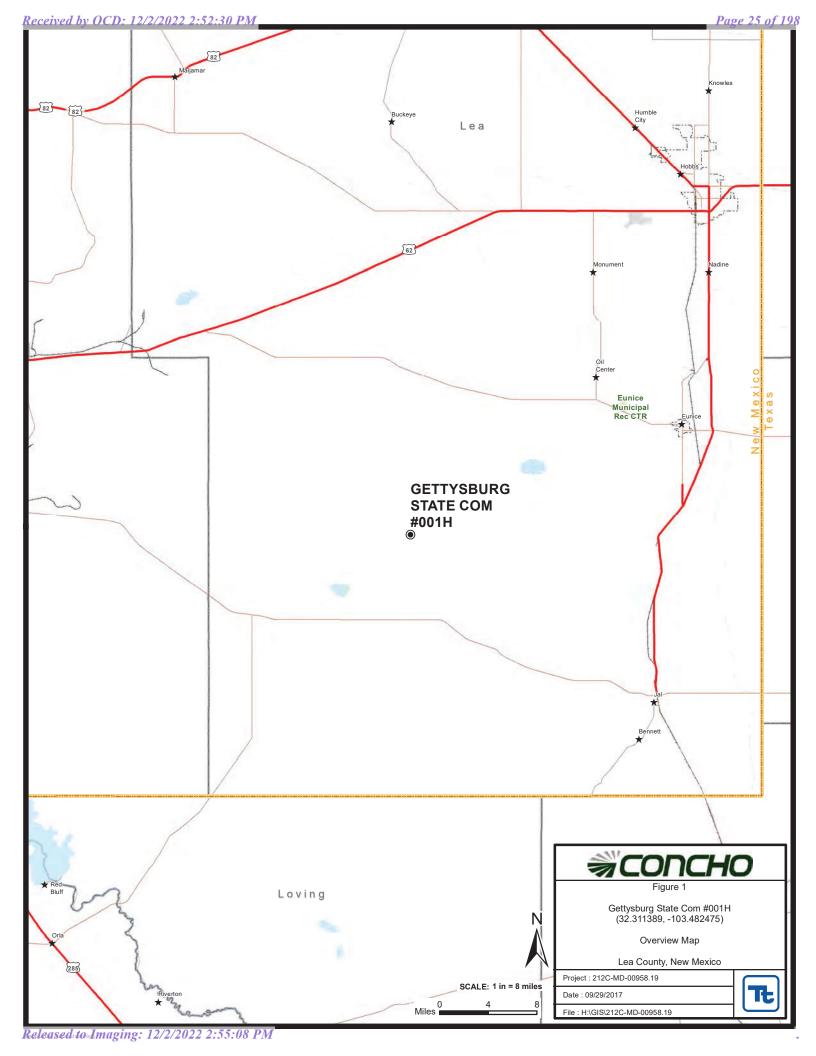
Respectfully submitted, TETRA TECH

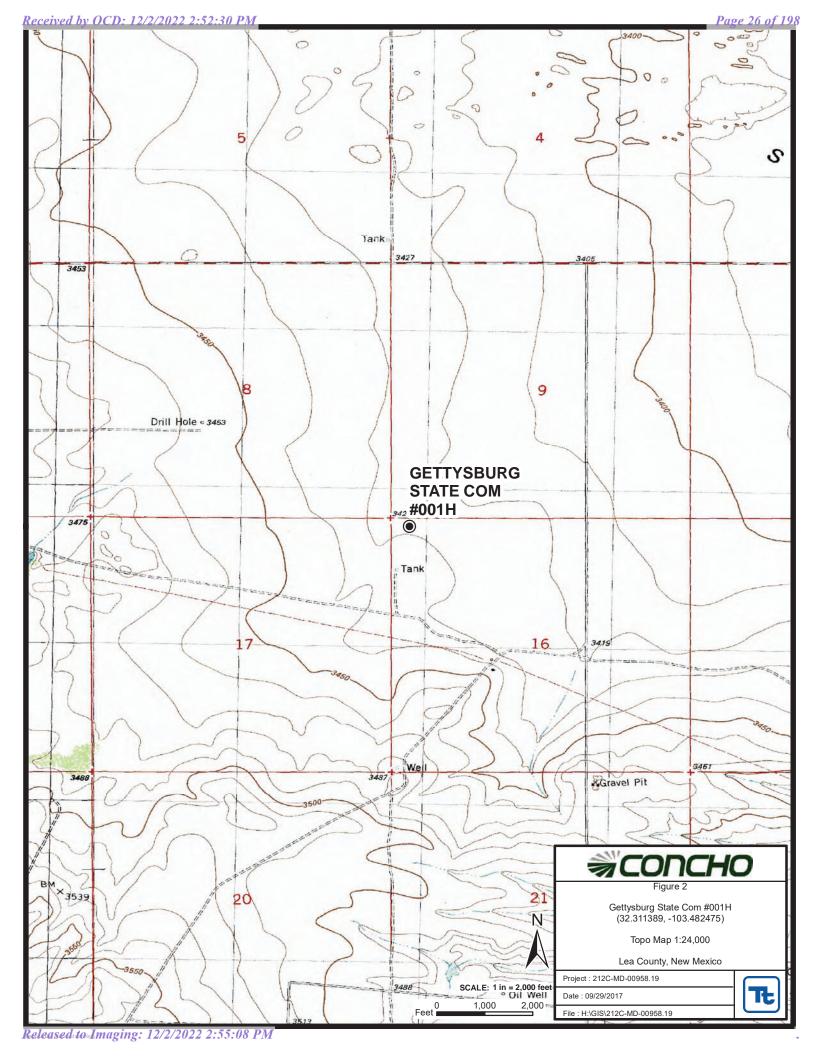
Clair Gonzales, Geologist I

Ike Tavarez, Senior Project Manager, P.G.

cc: Robert McNeill – COG Dakota Neel – COG Rebecca Haskell – COG Amber Groves - SLO

Figures





**Tables** 

Table 1
COG Operating LLC.
Gettysburg State #1H
Lea County, New Mexico

Sample ID		Callinge	100	Soll Status		IFFI (IIII)/Kg)	(Ru/Rii		Benzene	Toluene	Ethlybenzene	Aylene	lotal BIEX	Chloride
	Date	Depth (ft)	In-Situ	Removed	C6-C10	C6-C10 C10-C28 C28-C35	C28-C35	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
./9 <b>1-1</b>	6/14/2017	Surface	×		13,700	22,800	2,730	74,800	27.3	198	133	367	725	307
		1	×		<15.0	<15.0	<15.0	<15.0	<0.00200	0.00525	<0.00200	0.00438	0.00963	<4.98
		2	×		4,740	4,960	798	20,200	23.4	190	88.3	231	533	<5.00
		3	×		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	38.8
	=	4	×		<15.0	<15.0	<15.0	<15.0	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	88.7
North 6/	6/14/2017	Surface	×		<15.0	<15.0	<15.0	<15.0	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	545
	=	1	×		<15.0	<15.0	<15.0	<15.0	<0.00202	0.00224	<0.00202	<0.00202	0.00224	9.99
South 6/	6/14/2017	Surface	×		<15.0	<15.0	<15.0	<15.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	295
	=	-	×		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	20.7
East 6/	6/14/2017	Surface	×		<15.0	328	81.3	409	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	281
	=	-	×		<15.0	43.1	<15.0	43.1	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	61.2
West 6/	6/14/2017	Surface	×		<15.0	22.2	<15.0	22.2	<0.00198	0.00412	0.00366	0.0181	0.0259	455
		1	×		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	25.8

Proposed Excavation Depths

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

Form C-141 Revised August 8, 2011

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

						-,					
Release Notification and Corrective Action											
OPERATOR Initial Report Fin									Final Report		
				OGRID # 229	137	Contact:		ill			
Address:				lland TX 79701		Telephone No. 432-683-7443 Facility Type: Production Equipment (Well Pad)					
Facility Nan	ne: Gettysl	burg State C	om #00 <u>1</u> .	H		Facility Typ	e: Production E	quipment (Well I	'ad)		
Surface Owner: Federal Mineral Owner: API No. 30-025-41928								5-41928			
				LOCA	OIT	N OF REI	LEASE				
Unit Letter D	Section 16	Township 23S	Range 34E	Feet from the 190	Nortl	North/South Line   Feet from the   East/West Line   County   North   330   West   Lea					
	10	230	<u> </u>		113800		<b>e</b> -103.4824753			200	
						_					
TCD-1				NAT	URE	OF REL		I Valuma B			
Type of Relea	ase:	Oil				Volume of	7 bbls	Volume R	.ecoverea: 6.5 l	obls	
Source of Re	lease:					Date and H	lour of Occurrence	e: Date and	Hour of Dis		
		Tanl	ς				13, 2017 12:45 pm	n	4ay 13, 201	7 12:45 pm	
Was Immedia	ite Notice C		Yes 🗵	No 🛛 Not Re	equired	If YES, To	Whom?				
		By Who	om?			Date and H	lour:				
Was a Watercourse Reached?					If YES, Vo	lume Impacting t	he Watercourse.				
		Ц	Yes 🛚	No							
If a Watercou	irse was Im	pacted, Descri	ibe Fully.	k		'					
Describe Cau	se of Proble	em and Reme	dial Action	n Taken.*							
The release u	ine anusad k	su tha ail dum	n on nead	uction knock out	malfun	etionina which	enuead the vece	I to overfill. Fluid :	vant from t	he production knock	
								it of the thief hatch		ne production knock	
		and Cleanup A									
T	1	: A				.U. Garage and disconnections	- fluida Caraba u	uill have the entil o		l to delinente env	
								vill have the spill a al prior to any sign			
								nderstand that purs			
								tive actions for rele			
								eport" does not reli eat to ground water			
								responsibility for co			
		ws and/or regu									
Signature: Rebless Hoshell OIL CONSERVATION DIVISION								<u>NC</u>			
Signature. /	<u>ww</u>	- FID-VIC									
Printed Name	2:	Rebecca	Haskell			Approved by	Environmental S	pecialist:			
Title:		Senior HS	SE Coordi	nator		Approval Da	te:	Expiration	Date:		
E-mail Addre	2SS:	rhaskell@	concho.c	<u>om</u>		Conditions o	Approval:		Attached		

\* Attach Additional Sheets If Necessary

Phone:

432-683-7443

Date: May 15, 2017

Appendix B

# Water Well Data Average Depth to Groundwater (ft) COG - Gettysburg State Com #1H Lea County, New Mexico

	22 \$	South	;	33 East	t
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13 <b>391</b>
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

	22 Sc	outh	34	East	
6	5	4	3	2	1
7	8	9	10	11 30	12 <b>50</b>
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

	22 Sc	uth	35		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

	23 Sc	outh	33	East	
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

	23 Sc	uth	34	East	
6	5	4	3	2	1
7	8 <b>225</b>	9	10	11	12
18	17	16	15 <b>430</b>	14 <b>318</b>	13
19	20	21	22 <b>295</b>	23 <b>265</b>	24
30	29	28	27	26	25
31	32 <b>130</b>	33	34	35	36

	23 Sc	uth	35	East	
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

	24 Sc	outh	33	East	
6	5	4	3	2	1
7	8	9	10 <b>24.6</b>	11	12
18	17	16	15	14	13
19	20	21	22	23 <b>208</b>	24 16.9
30	29	28	27	26	25
31	32	33 <b>93.2</b>	34	35	36

	24 Sc	outh	34	East	
6	5	4	3	2	1
81		475			
7	8	9	10	11	12
				40	
18	17	16	15	14	13
19	20	21	22	23	24
		431			
30	29	28	27	26	25
31	32	33	34	35	36

_	24 Sc	outh	35	East	
6	5	4	3	2	1
7	8	9	10 <b>300</b>	11	12
18	17	16	15	14	13
19	20 97	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

- 88 New Mexico State Engineers Well Reports
- 105 USGS Well Reports
- 90 Geology and Groundwater Conditions in Southern Lea, County, NM (Report 6) Geology and Groundwater Resources of Eddy County, NM (Report 3)
- 34 NMOCD Groundwater Data
- 123 Tetra Tech installed temporary wells and field water level
- 143 NMOCD Groundwater map well location



## New Mexico Office of the State Engineer

## Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.) (R=POD has been replaced, O=orphaned, C=the file is closed)

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

(quarters are smallest to largest) (NAD83 UTM in meters)

UTM in meters) (In feet)

		POD											
		Sub-		Q	Q	Q							Water
POD Number	Code	basin	County	64	16	4	Sec	Tws	Rng	X	Y	DepthWellDepthWa	ter Column
C 03620 POD1		С	LE	1	4	3	32	23S	34E	641790	3569941	480	130 350
<u>CP 00556 POD1</u>		CP	LE	4	4	3	08	23S	34E	641762	3576206	497	255 242
<u>CP 00580</u>		CP	LE	3	4	3	23	23S	34E	646524	3572948*	220	
<u>CP 00606</u>		CP	LE		4	1	23	23S	34E	646613	3573854*	650	265 385
<u>CP 00618</u>		CP	LE	1	2	4	22	23S	34E	645713	3573539*	428	295 133
<u>CP 00637</u>		CP	LE	3	3	4	15	23S	34E	645293	3574541*	430	430 0
<u>CP 00872 POD1</u>		CP	LE	1	1	1	08	23S	34E	641225	3577504*	494	305 189
<u>CP 01075 POD1</u>		CP	LE		1	1	08	23S	34E	641278	3577525 🌑	430	20 410
<u>CP 01120 POD1</u>		CP	LE			3	14	23S	34E	646366	3574753 🌑	397	318 79
<u>CP 01130 POD1</u>		CP	LE	2	1	2	07	23S	34E	640662	3577558	27	
<u>CP 01130 POD2</u>		CP	LE	2	1	2	07	23S	34E	640674	3577549 🌑	27	
<u>CP 01258 POD1</u>		CP	LE	1	4	3	22	23S	34E	645015	3573221	25	
<u>CP 01258 POD2</u>		CP	LE	1	4	3	22	23S	34E	644941	3572883	65	
<u>CP 01258 POD3</u>		CP	LE	1	4	3	22	23S	34E	644938	3573097	25	

Average Depth to Water:

252 feet

Minimum Depth:

20 feet

Maximum Depth:

430 feet

Record Count: 14

PLSS Search:

Township: 23S Range: 34E

\*UTM location was derived from PLSS - see Help

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

8/28/17 11:30 AM

WATER COLUMN/ AVERAGE DEPTH TO

Appendix C

# Certificate of Analysis Summary 555791

COG Operating LLC, Artesia, NM

Project Name: Gettysburg State #1 H

Date Received in Lab: Tue Jun-20-17 10:05 am

Keisey Brooks Project Manager:

28-JUN-17	Valean Brooks
Report Date:	Designet Manager.

	Lab Id:	555791-001	555791-002	555791-003	555791-004	555791-005	555791-006	
Analysis Pognostad	Field Id:	North - Surf	North - 1'	South - Surf	South - 1'	East - Surf	East - 1'	
Thursday Neducen	Depth:		1 ft		1 ft		1 ft	
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	
	Sampled:	Jun-14-17 10:30						
BTEX by EPA 8021B	Extracted:	Jun-26-17 11:00	Jun-26-17 16:30					
	Analyzed:	Jun-26-17 13:50	Jun-27-17 08:45	Jun-26-17 23:08	Jun-26-17 23:24	Jun-26-17 23:40	Jun-26-17 23:56	
	Units/RL:	mg/kg RL	mg/kg R	RL				
Benzene		<0.00202 0.00202	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	199
Toluene		<0.00202 0.00202	0.00224 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	199
Ethylbenzene		<0.00202 0.00202	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	199
m_p-Xylenes		<0.00403 0.00403	<0.00405 0.00405	<0.00398 0.00398	<0.00400 0.00400	<0.00402 0.00402	<0.00398 0.00398	398
o-Xylene		<0.00202 0.00202	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	199
Total Xylenes		<0.00202 0.00202	<0.00202 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	199
Total BTEX		<0.00202 0.00202	0.00224 0.00202	<0.00199 0.00199	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	199
Chloride by EPA 300	Extracted:	Jun-27-17 12:00						
	Analyzed:	Jun-27-17 15:36	Jun-27-17 15:59	Jun-27-17 16:06	Jun-27-17 16:14	Jun-27-17 16:22	Jun-27-17 16:44	
	Units/RL:	mg/kg RL	mg/kg R	RL				
Chloride		545 4.91	56.6 4.97	295 4.97	50.7 4.96	281 4.98	61.2 4.9	4.92
TPH By SW8015 Mod	Extracted:	Jun-24-17 12:00						
	Analyzed:	Jun-24-17 16:19	Jun-24-17 17:19	Jun-24-17 17:40	Jun-24-17 18:00	Jun-24-17 18:20	Jun-24-17 18:40	
	Units/RL:	mg/kg RL	mg/kg R	RL				
C6-C10 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	15.0
C10-C28 Diesel Range Organics		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	328 15.0	43.1 15	15.0
C28-C35 Oil Range Hydrocarbons		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	81.3 15.0	<15.0 15	15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	409 15.0	43.1 15	15.0
	_		-	-	-	-		٦

Kelsey Brooks Project Manager

Page 1 of 28

Final 1.000

Getysburg ST. #1 H Aaron Lieb

Project Location:

Project Id: Contact:

# Certificate of Analysis Summary 555791

COG Operating LLC, Artesia, NM

Project Name: Gettysburg State #1 H



Date Received in Lab: Tue Jun-20-17 10:05 am

Project Manager: Kelsey Brooks Report Date: 28-JUN-17

Analysis Requested Field Id: Depth: Matrix:				
	West - Surf	urf	West - 1'	
Matrix:			1 ft	
	SOIL		SOIL	
Sampled:	Jun-14-17 1	10:30	Jun-14-17 10:30	:30
BTEX by EPA 8021B Extracted:	Jun-26-17 1	16:30	Jun-26-17 16:30	:30
Analyzed:	Jun-27-17 00:12	00:12	Jun-27-17 00:28	7.58
Units/RL:	mg/kg	RL	mg/kg	RL
Benzene	<0.00198	0.00198	<0.00200 0.	0.00200
Toluene	0.00412	0.00198	<0.00200 0.	0.00200
Ethylbenzene	0.00366	0.00198	<0.00200 0.00200	0.00200
m_p-Xylenes	0.0101	0.00396	<0.00401 0.	0.00401
o-Xylene	0.00798	0.00198	<0.00200 0.	0.00200
Total Xylenes	0.0181	0.00198	<0.00200 0.00200	0.00200
Total BTEX	0.0259	0.00198	<0.00200 0.00200	0.00200
Chloride by EPA 300 Extracted:	Jun-27-17 12:00	12:00	Jun-27-17 12:00	00:
Analyzed:	Jun-27-17 1	16:52	Jun-27-17 17:00	00:
Units/RL:	mg/kg	RL	mg/kg	RL
Chloride	455	4.97	25.8	4.98
TPH By SW8015 Mod Extracted:	Jun-24-17 12:00	12:00	Jun-24-17 12:00	00:
Analyzed:	Jun-24-17 1	00:61	Jun-24-17 19:20	.20
Units/RL:	mg/kg	RL	mg/kg	RL
C6-C10 Gasoline Range Hydrocarbons	<15.0	15.0	<15.0	15.0
C10-C28 Diesel Range Organics	22.2	15.0	<15.0	15.0
C28-C35 Oil Range Hydrocarbons	<15.0	15.0	<15.0	15.0
Total TPH	22.2	15.0	<15.0	15.0

Project Manager Kelsey Brooks

Page 2 of 28

Final 1.000

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

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

Getysburg ST. #1 H Aaron Lieb

Project Location:

Project Id: Contact:

### **Analytical Report 555791**

tor
COG Operating LLC

Project Manager: Aaron Lieb Gettysburg State #1 H

28-JUN-17

Collected By: Client





### 1211 W. Florida Ave, Midland TX 79701

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

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295) Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400)

Xenco-San Antonio: Texas (T104704534)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757) Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)





28-JUN-17

Project Manager: Aaron Lieb COG Operating LLC 2407 Pecos Avenue Artesia, NM 88210

Reference: XENCO Report No(s): 555791

Gettysburg State #1 H

Project Address: Getysburg ST. #1 H

### **Aaron Lieb:**

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) 555791. 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. 555791 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

**Kelsey Brooks** 

Knis Roah

Project Manager

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

Certified and approved by numerous States and Agencies.

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



### **Sample Cross Reference 555791**



### COG Operating LLC, Artesia, NM

Gettysburg State #1 H

Sample Id	Matrix	<b>Date Collected</b>	Sample Depth	Lab Sample Id
North - Surf	S	06-14-17 10:30		555791-001
North - 1'	S	06-14-17 10:30	- 1 ft	555791-002
South - Surf	S	06-14-17 10:30		555791-003
South - 1'	S	06-14-17 10:30	- 1 ft	555791-004
East - Surf	S	06-14-17 10:30		555791-005
East - 1'	S	06-14-17 10:30	- 1 ft	555791-006
West - Surf	S	06-14-17 10:30		555791-007
West - 1'	S	06-14-17 10:30	- 1 ft	555791-008

### **CASE NARRATIVE**

Client Name: COG Operating LLC Project Name: Gettysburg State #1 H

Project ID: Report Date: 28-JUN-17 Work Order Number(s): 555791 Date Received: 06/20/2017

### Sample receipt non conformances and comments:

### Sample receipt non conformances and comments per sample:

None

### Analytical non conformances and comments:

Batch: LBA-3020734 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3020817 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.





### COG Operating LLC, Artesia, NM

Gettysburg State #1 H

Sample Id: North - Surf Matrix: Soil Date Received:06.20.17 10.05

Lab Sample Id: 555791-001

Date Collected: 06.14.17 10.30

Prep Method: E300P

Analytical Method: Chloride by EPA 300

Tech:

MGO

% Moisture:

Analyst: MGO Date Prep:

06.27.17 12.00

Basis:

Wet Weight

Seq Number: 3020942

Parameter	Cas Number	Result	RL	Units	<b>Analysis Date</b>	Flag	Dil
Chloride	16887-00-6	545	4.91	mg/kg	06.27.17 15.36		1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech: Analyst: ARMARM

Date Prep: 06.24.17 12.00 Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0		mg/kg	06.24.17 16.19	U	1
C10-C28 Diesel Range Organics	C10C28DRO	<15.0	15.0		mg/kg	06.24.17 16.19	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<15.0	15.0		mg/kg	06.24.17 16.19	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	06.24.17 16.19	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	106	%	70-135	06.24.17 16.19		
o-Terphenyl		84-15-1	110	%	70-135	06.24.17 16.19		





### COG Operating LLC, Artesia, NM

Gettysburg State #1 H

Sample Id: North - Surf

Matrix: Soil

Date Received:06.20.17 10.05

Lab Sample Id: 555791-001

Date Collected: 06.14.17 10.30

Prep Method: SW5030B

% Moisture:

Tech: ALJ

Analyst:

ALJ

Analytical Method: BTEX by EPA 8021B

Date Prep: 06.26.17 11.00

Basis: W

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00202	0.00202		mg/kg	06.26.17 13.50	U	1
Toluene	108-88-3	< 0.00202	0.00202		mg/kg	06.26.17 13.50	U	1
Ethylbenzene	100-41-4	< 0.00202	0.00202		mg/kg	06.26.17 13.50	U	1
m_p-Xylenes	179601-23-1	< 0.00403	0.00403		mg/kg	06.26.17 13.50	U	1
o-Xylene	95-47-6	< 0.00202	0.00202		mg/kg	06.26.17 13.50	U	1
Total Xylenes	1330-20-7	< 0.00202	0.00202		mg/kg	06.26.17 13.50	U	1
Total BTEX		< 0.00202	0.00202		mg/kg	06.26.17 13.50	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	119	%	80-120	06.26.17 13.50		
4-Bromofluorobenzene		460-00-4	111	%	80-120	06.26.17 13.50		





### COG Operating LLC, Artesia, NM

Gettysburg State #1 H

Sample Id: North - 1'

Matrix: Soil

Date Received:06.20.17 10.05

Lab Sample Id: 555791-002

Date Collected: 06.14.17 10.30

Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech:

MGO

% Moisture:

Analyst: MGO

Date Prep:

06.27.17 12.00 Basis:

Wet Weight

Seq Number: 3020942

Parameter	Cas Number	Result	RL	Units	<b>Analysis Date</b>	Flag	Dil
Chloride	16887-00-6	56.6	4.97	mg/kg	06.27.17 15.59		1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech:

ARM

% Moisture:

Analyst: ARM

Date Prep: 06.24.17 12.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0		mg/kg	06.24.17 17.19	U	1
C10-C28 Diesel Range Organics	C10C28DRO	<15.0	15.0		mg/kg	06.24.17 17.19	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<15.0	15.0		mg/kg	06.24.17 17.19	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	06.24.17 17.19	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	108	%	70-135	06.24.17 17.19		
o-Terphenyl		84-15-1	104	%	70-135	06.24.17 17.19		



Lab Sample Id: 555791-002

Analyst:

### **Certificate of Analytical Results 555791**



### COG Operating LLC, Artesia, NM

Gettysburg State #1 H

Sample Id: Matrix: North - 1'

Soil Date Collected: 06.14.17 10.30 Date Received:06.20.17 10.05

Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B

% Moisture:

Tech: ALJ

Seq Number: 3020817

ALJ

06.26.17 16.30 Date Prep:

Basis: Wet Weight

Parameter	Cas Number	r Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00202	0.00202		mg/kg	06.27.17 08.45	U	1
Toluene	108-88-3	0.00224	0.00202		mg/kg	06.27.17 08.45		1
Ethylbenzene	100-41-4	< 0.00202	0.00202		mg/kg	06.27.17 08.45	U	1
m_p-Xylenes	179601-23-1	< 0.00405	0.00405		mg/kg	06.27.17 08.45	U	1
o-Xylene	95-47-6	< 0.00202	0.00202		mg/kg	06.27.17 08.45	U	1
Total Xylenes	1330-20-7	< 0.00202	0.00202		mg/kg	06.27.17 08.45	U	1
Total BTEX		0.00224	0.00202		mg/kg	06.27.17 08.45		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	109	%	80-120	06.27.17 08.45		
1,4-Difluorobenzene		540-36-3	102	%	80-120	06.27.17 08.45		





### COG Operating LLC, Artesia, NM

Gettysburg State #1 H

Sample Id: South - Surf

Analytical Method: Chloride by EPA 300

Matrix: Soil Date Received:06.20.17 10.05

Lab Sample Id: 555791-003

Date Collected: 06.14.17 10.30

Prep Method: E300P

MGO

% Moisture:

Tech:

Date Prep:

Analyst: MGO Seq Number: 3020942 06.27.17 12.00

Basis:

Wet Weight

Parameter Cas Number Result RLUnits **Analysis Date** Flag Dil Chloride 16887-00-6 06.27.17 16.06 295 4.97 mg/kg 1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech: Analyst: ARM ARM

Date Prep: 06.24.17 12.00 Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0		mg/kg	06.24.17 17.40	U	1
C10-C28 Diesel Range Organics	C10C28DRO	<15.0	15.0		mg/kg	06.24.17 17.40	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<15.0	15.0		mg/kg	06.24.17 17.40	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	06.24.17 17.40	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	105	%	70-135	06.24.17 17.40		
o-Terphenyl		84-15-1	107	%	70-135	06.24.17 17.40		





### COG Operating LLC, Artesia, NM

Gettysburg State #1 H

Sample Id: South - Surf Matrix: Soil Date Received:06.20.17 10.05

Lab Sample Id: 555791-003

Date Collected: 06.14.17 10.30

Prep Method: SW5030B

Analytical Method: BTEX by EPA 8021B

% Moisture:

Tech:

Analyst:

ALJ ALJ

06.26.17 16.30 Date Prep:

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199		mg/kg	06.26.17 23.08	U	1
Toluene	108-88-3	< 0.00199	0.00199		mg/kg	06.26.17 23.08	U	1
Ethylbenzene	100-41-4	< 0.00199	0.00199		mg/kg	06.26.17 23.08	U	1
m_p-Xylenes	179601-23-1	< 0.00398	0.00398		mg/kg	06.26.17 23.08	U	1
o-Xylene	95-47-6	< 0.00199	0.00199		mg/kg	06.26.17 23.08	U	1
Total Xylenes	1330-20-7	< 0.00199	0.00199		mg/kg	06.26.17 23.08	U	1
Total BTEX		< 0.00199	0.00199		mg/kg	06.26.17 23.08	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	83	%	80-120	06.26.17 23.08		
4-Bromofluorobenzene		460-00-4	87	%	80-120	06.26.17 23.08		





### COG Operating LLC, Artesia, NM

Gettysburg State #1 H

Sample Id: South - 1' Matrix: Soil Date Received:06.20.17 10.05

Lab Sample Id: 555791-004

Date Collected: 06.14.17 10.30

RL

4.96

Sample Depth: 1 ft

**Analysis Date** 

06.27.17 16.14

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech:

Parameter

Chloride

MGO

Date Prep:

% Moisture:

Wet Weight

Analyst: MGO

Seq Number: 3020942

Cas Number

16887-00-6

Result

50.7

06.27.17 12.00

Basis:

Units

mg/kg

Dil

1

Flag

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech: Analyst: ARM ARM

Date Prep: 06.24.17 12.00 Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0		mg/kg	06.24.17 18.00	U	1
C10-C28 Diesel Range Organics	C10C28DRO	<15.0	15.0		mg/kg	06.24.17 18.00	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<15.0	15.0		mg/kg	06.24.17 18.00	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	06.24.17 18.00	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	105	%	70-135	06.24.17 18.00		
o-Terphenyl		84-15-1	103	%	70-135	06.24.17 18.00		





### COG Operating LLC, Artesia, NM

Gettysburg State #1 H

Sample Id: South - 1' Matrix:

Soil Date Received:06.20.17 10.05

Lab Sample Id: 555791-004 Date Collected: 06.14.17 10.30

Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 06.26.17 16.30

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	06.26.17 23.24	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	06.26.17 23.24	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	06.26.17 23.24	U	1
m_p-Xylenes	179601-23-1	< 0.00400	0.00400		mg/kg	06.26.17 23.24	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	06.26.17 23.24	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	06.26.17 23.24	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	06.26.17 23.24	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	99	%	80-120	06.26.17 23.24		
1,4-Difluorobenzene		540-36-3	115	%	80-120	06.26.17 23.24		





### COG Operating LLC, Artesia, NM

Gettysburg State #1 H

Sample Id: East - Surf

Matrix: Soil

Date Received:06.20.17 10.05

Lab Sample Id: 555791-005

Date Collected: 06.14.17 10.30

Prep Method: E300P

Taala MGO

% Moisture:

Tech:

Analyst:

MGO MGO

Analytical Method: Chloride by EPA 300

Date Prep: 06.27.17 12.00

Basis:

Wet Weight

Seq Number: 3020942

 Parameter
 Cas Number
 Result
 RL
 Units
 Analysis Date
 Flag
 Dil

 Chloride
 16887-00-6
 281
 4.98
 mg/kg
 06.27.17 16.22
 1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech:
Analyst:

ARM ARM

Date Prep: 06.24.17 12.00

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0		mg/kg	06.24.17 18.20	U	1
C10-C28 Diesel Range Organics	C10C28DRO	328	15.0		mg/kg	06.24.17 18.20		1
C28-C35 Oil Range Hydrocarbons	PHCG2835	81.3	15.0		mg/kg	06.24.17 18.20		1
Total TPH	PHC635	409	15.0		mg/kg	06.24.17 18.20		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	106	%	70-135	06.24.17 18.20		
o-Terphenyl		84-15-1	103	%	70-135	06.24.17 18.20		





### COG Operating LLC, Artesia, NM

Gettysburg State #1 H

Sample Id: East - Surf

Analytical Method: BTEX by EPA 8021B

Matrix: Soil

Date Received:06.20.17 10.05

Lab Sample Id: 555791-005

Date Collected: 06.14.17 10.30

Prep Method: SW5030B

06.26.17 16.30

% Moisture:

Tech: ALJ

Analyst:

ALJ Date Prep:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00201	0.00201		mg/kg	06.26.17 23.40	U	1
Toluene	108-88-3	< 0.00201	0.00201		mg/kg	06.26.17 23.40	U	1
Ethylbenzene	100-41-4	< 0.00201	0.00201		mg/kg	06.26.17 23.40	U	1
m_p-Xylenes	179601-23-1	< 0.00402	0.00402		mg/kg	06.26.17 23.40	U	1
o-Xylene	95-47-6	< 0.00201	0.00201		mg/kg	06.26.17 23.40	U	1
Total Xylenes	1330-20-7	< 0.00201	0.00201		mg/kg	06.26.17 23.40	U	1
Total BTEX		< 0.00201	0.00201		mg/kg	06.26.17 23.40	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	98	%	80-120	06.26.17 23.40		
1,4-Difluorobenzene		540-36-3	96	%	80-120	06.26.17 23.40		





### COG Operating LLC, Artesia, NM

Gettysburg State #1 H

Sample Id: East - 1'

Matrix: Soil Date Received:06.20.17 10.05

Lab Sample Id: 555791-006

Date Collected: 06.14.17 10.30

Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech:

MGO

Date Prep:

% Moisture:

Wet Weight

Analyst:

MGO

06.27.17 12.00

Basis:

Flag

Seq Number: 3020942

Parameter Cas Number Chloride 16887-00-6

Result RL

61.2

Units 4.92 mg/kg

**Analysis Date** 06.27.17 16.44 Dil 1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech: Analyst: ARM ARM

Date Prep:

06.24.17 12.00

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0		mg/kg	06.24.17 18.40	U	1
C10-C28 Diesel Range Organics	C10C28DRO	43.1	15.0		mg/kg	06.24.17 18.40		1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<15.0	15.0		mg/kg	06.24.17 18.40	U	1
Total TPH	PHC635	43.1	15.0		mg/kg	06.24.17 18.40		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	104	%	70-135	06.24.17 18.40		
o-Terphenyl		84-15-1	105	%	70-135	06.24.17 18.40		





### COG Operating LLC, Artesia, NM

Gettysburg State #1 H

Sample Id: East - 1'

Matrix: Soil

Date Received:06.20.17 10.05

Lab Sample Id: 555791-006

Date Collected: 06.14.17 10.30

Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech:

ALJ

% Mois

% Moisture:

Analyst: ALJ

Date Prep:

06.26.17 16.30

Basis: Wet Weight

Seq Number:	3020817
<b>D</b>	

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199		mg/kg	06.26.17 23.56	U	1
Toluene	108-88-3	< 0.00199	0.00199		mg/kg	06.26.17 23.56	U	1
Ethylbenzene	100-41-4	< 0.00199	0.00199		mg/kg	06.26.17 23.56	U	1
m_p-Xylenes	179601-23-1	< 0.00398	0.00398		mg/kg	06.26.17 23.56	U	1
o-Xylene	95-47-6	< 0.00199	0.00199		mg/kg	06.26.17 23.56	U	1
Total Xylenes	1330-20-7	< 0.00199	0.00199		mg/kg	06.26.17 23.56	U	1
Total BTEX		< 0.00199	0.00199		mg/kg	06.26.17 23.56	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	99	%	80-120	06.26.17 23.56		
1,4-Difluorobenzene		540-36-3	107	%	80-120	06.26.17 23.56		





### COG Operating LLC, Artesia, NM

Gettysburg State #1 H

Sample Id: West - Surf Matrix: Soil

Result

455

Date Received:06.20.17 10.05

Lab Sample Id: 555791-007

Date Collected: 06.14.17 10.30

Prep Method: E300P

Tech:

MGO

Analytical Method: Chloride by EPA 300

% Moisture:

Analyst:

Parameter

Chloride

MGO

Cas Number

16887-00-6

Units

mg/kg

Wet Weight

Seq Number: 3020942

Date Prep: 06.27.17 12.00

4.97

RL

Basis:

Dil

1

Flag

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

**Analysis Date** 

06.27.17 16.52

% Moisture:

Tech: Analyst: ARM ARM

Date Prep: 06.24.17 12.00 Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0		mg/kg	06.24.17 19.00	U	1
C10-C28 Diesel Range Organics	C10C28DRO	22.2	15.0		mg/kg	06.24.17 19.00		1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<15.0	15.0		mg/kg	06.24.17 19.00	U	1
Total TPH	PHC635	22.2	15.0		mg/kg	06.24.17 19.00		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	103	%	70-135	06.24.17 19.00		
o-Terphenyl		84-15-1	105	%	70-135	06.24.17 19.00		





### COG Operating LLC, Artesia, NM

Gettysburg State #1 H

Sample Id: West - Surf Matrix: Soil

Date Prep:

Date Received:06.20.17 10.05

Lab Sample Id: 555791-007

Date Collected: 06.14.17 10.30

Prep Method: SW5030B

Tech: ALJ

Analyst:

ALJ

Analytical Method: BTEX by EPA 8021B

% Moisture:

06.26.17 16.30

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
Benzene	71-43-2	< 0.00198	0.00198		mg/kg	06.27.17 00.12	U	1
Toluene	108-88-3	0.00412	0.00198		mg/kg	06.27.17 00.12		1
Ethylbenzene	100-41-4	0.00366	0.00198		mg/kg	06.27.17 00.12		1
m_p-Xylenes	179601-23-1	0.0101	0.00396		mg/kg	06.27.17 00.12		1
o-Xylene	95-47-6	0.00798	0.00198		mg/kg	06.27.17 00.12		1
Total Xylenes	1330-20-7	0.0181	0.00198		mg/kg	06.27.17 00.12		1
Total BTEX		0.0259	0.00198		mg/kg	06.27.17 00.12		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	91	%	80-120	06.27.17 00.12		
1,4-Difluorobenzene		540-36-3	112	%	80-120	06.27.17 00.12		





### COG Operating LLC, Artesia, NM

Gettysburg State #1 H

Sample Id: West - 1'

Matrix: Soil

Date Received:06.20.17 10.05

Lab Sample Id: 555791-008

Date Collected: 06.14.17 10.30

Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech:

MGO

% Moisture:

Analyst: MGO

06.27.17 12.00

Basis: Wet Weight

Seq Number: 3020942

Parameter	Cas Number	Result	RL	Units	<b>Analysis Date</b>	Flag	Dil
Chloride	16887-00-6	25.8	4.98	mg/kg	06.27.17 17.00		1

Date Prep:

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech: Analyst: ARM ARM

Date Prep: 06.24.17 12.00

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0		mg/kg	06.24.17 19.20	U	1
C10-C28 Diesel Range Organics	C10C28DRO	<15.0	15.0		mg/kg	06.24.17 19.20	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<15.0	15.0		mg/kg	06.24.17 19.20	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	06.24.17 19.20	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	103	%	70-135	06.24.17 19.20		
o-Terphenyl		84-15-1	103	%	70-135	06.24.17 19.20		



Lab Sample Id: 555791-008

### **Certificate of Analytical Results 555791**



### COG Operating LLC, Artesia, NM

Gettysburg State #1 H

Sample Id: West - 1' Matrix:

Matrix: Soil

Date Received:06.20.17 10.05

Date Collected: 06.14.17 10.30

Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B

% Moisture:

Tech: ALJ

Analyst: ALJ

Seq Number: 3020817

Date Prep: 06.26.17 16.30

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	06.27.17 00.28	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	06.27.17 00.28	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	06.27.17 00.28	U	1
m_p-Xylenes	179601-23-1	< 0.00401	0.00401		mg/kg	06.27.17 00.28	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	06.27.17 00.28	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	06.27.17 00.28	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	06.27.17 00.28	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	Recovery	Units	Limits	<b>Analysis Date</b>	F
4-Bromofluorobenzene	460-00-4	113	%	80-120	06.27.17 00.28	
1,4-Difluorobenzene	540-36-3	98	%	80-120	06.27.17 00.28	





### **Flagging Criteria**



- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F RPD exceeded lab control limits.
- J The target analyte was positively identified below the quantitation limit and above the detection limit.
- U Analyte was not detected.
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K Sample analyzed outside of recommended hold time.
- JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- \*\* Surrogate recovered outside laboratory control limit.
- BRL Below Reporting Limit.
- **RL** Reporting Limit

MDL Method Detection Limit	SDL Sample Detection Limit	LOD Limit of Detection

PQL Practical Quantitation Limit MQL Method Quantitation Limit LOQ Limit of Quantitation

**DL** Method Detection Limit

NC Non-Calculable

- + NELAC certification not offered for this compound.
- \* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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



### **QC Summary** 555791

### **COG Operating LLC**

Gettysburg State #1 H

Analytical Method: Chloride by EPA 300

Seq Number: 3020942

MB Sample Id: 726858-1-BLK

Matrix: Solid LCS Sample Id: 726858-1-BKS

E300P Prep Method:

Date Prep: 06.27.17

LCSD Sample Id: 726858-1-BSD

MB Spike LCS LCS Limits %RPD RPD LCSD LCSD Units Analysis Flag **Parameter** Result Limit Date Result Amount %Rec Result %Rec

Chloride 94 90-110 20 06.27.17 15:21 < 5.00 250 241 96 235 3 mg/kg

Analytical Method: Chloride by EPA 300

Seq Number: 3020942

555791-001

Matrix: Soil

E300P Prep Method:

06.27.17

Date Prep:

Parent Sample Id: MS Sample Id: 555791-001 S MSD Sample Id: 555791-001 SD

Parent MS MS %RPD RPD Spike MSD MSD Limits Units Analysis Flag **Parameter** Result Amount Result %Rec Limit Date Result %Rec Chloride 545 246 770 91 768 91 90-110 0 20 mg/kg 06.27.17 15:44

Analytical Method: Chloride by EPA 300

Seq Number:

Parent Sample Id:

3020942

555794-003

Matrix:

Soil

MS Sample Id: 555794-003 S Prep Method:

E300P

06.27.17 Date Prep: MSD Sample Id: 555794-003 SD

RPD MS Parent Spike MS **MSD** MSD Limits %RPD Units Analysis Flag **Parameter** Result Limit Result Date Amount %Rec Result %Rec

20 06.27.17 17:30 Chloride < 5.00 250 286 114 284 114 90-110 X mg/kg

Analytical Method: TPH By SW8015 Mod

Seq Number: 3020966

Matrix: Solid

Prep Method:

TX1005P

Flag

06.24.17

Date Prep: LCS Sample Id: 726684-1-BKS LCSD Sample Id: 726684-1-BSD MB Sample Id: 726684-1-BLK

RPD %RPD MB Spike LCS LCS Limits Units Analysis LCSD LCSD **Parameter** Limit Result Amount Result %Rec Date Result %Rec 06.24.17 14:08 C6-C10 Gasoline Range Hydrocarbons 1000 1190 119 70-135 12 35 <15.0 1060 106 mg/kg 06.24.17 14:08 C10-C28 Diesel Range Organics 1000 1140 114 1020 70-135 11 35 <15.0 102 mg/kg

MB MB LCS LCS LCSD Limits Units Analysis LCSD **Surrogate** %Rec Flag %Rec Flag Flag Date %Rec 1-Chlorooctane 79 118 110 70-135 % 06.24.17 14:08 108 06.24.17 14:08 o-Terphenyl 85 117 70-135 %

Flag

Flag



Seq Number:

Parent Sample Id:

### QC Summary 555791

### **COG Operating LLC**

Gettysburg State #1 H

Analytical Method: TPH By SW8015 Mod

3020966 Matrix: Soil

555791-001 MS Sample Id: 555791-001 S

Prep Method: TX1005P

Date Prep: 06.24.17

MSD Sample Id: 555791-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	1090	109	1020	102	70-135	7	35	mg/kg	06.24.17 16:39	
C10-C28 Diesel Range Organics	<15.0	1000	1080	108	1060	106	70-135	2	35	mg/kg	06.24.17 16:39	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	94		104		70-135	%	06.24.17 16:39
o-Terphenyl	85		102		70-135	%	06.24.17 16:39

Analytical Method: BTEX by EPA 8021B

 Seq Number:
 3020734

 MB Sample Id:
 726754-1-BLK

3020734 Matrix: Solid 726754-1-BLK LCS Sample Id: 726754-1-BKS Prep Method: SW5030B Date Prep: 06.26.17

LCSD Sample Id: 726754-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date
Benzene	< 0.00199	0.0994	0.0935	94	0.0918	92	70-130	2	35	mg/kg	06.26.17 12:13
Toluene	< 0.00199	0.0994	0.0853	86	0.0865	87	70-130	1	35	mg/kg	06.26.17 12:13
Ethylbenzene	< 0.00199	0.0994	0.0942	95	0.0913	91	71-129	3	35	mg/kg	06.26.17 12:13
m_p-Xylenes	< 0.00398	0.199	0.169	85	0.165	83	70-135	2	35	mg/kg	06.26.17 12:13
o-Xylene	< 0.00199	0.0994	0.0902	91	0.0885	89	71-133	2	35	mg/kg	06.26.17 12:13

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	87		96		82		80-120	%	06.26.17 12:13
4-Bromofluorobenzene	101		96		94		80-120	%	06.26.17 12:13

Analytical Method: BTEX by EPA 8021B

 Seq Number:
 3020817

 MB Sample Id:
 726772-1-BLK

Matrix: Solid LCS Sample Id: 726772-1-BKS Prep Method: SW5030B Date Prep: 06.26.17

LCSD Sample Id: 726772-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	1
Benzene	< 0.00199	0.0994	0.107	108	0.101	101	70-130	6	35	mg/kg	06.26.17 21:15	
Toluene	< 0.00199	0.0994	0.0991	100	0.103	103	70-130	4	35	mg/kg	06.26.17 21:15	
Ethylbenzene	< 0.00199	0.0994	0.106	107	0.106	106	71-129	0	35	mg/kg	06.26.17 21:15	
m_p-Xylenes	< 0.00398	0.199	0.193	97	0.185	93	70-135	4	35	mg/kg	06.26.17 21:15	
o-Xylene	< 0.00199	0.0994	0.108	109	0.103	103	71-133	5	35	mg/kg	06.26.17 21:15	
Summagata	MB	MB	L	CS I	<b>.CS</b>	LCSI	D LCS	SD Li	mits	Units	Analysis	

Surrogate	%Rec	Flag	%Rec	Flag	%Rec	Flag		Date
1,4-Difluorobenzene	89		110		87	80-120	%	06.26.17 21:15
4-Bromofluorobenzene	87		118		90	80-120	%	06.26.17 21:15

Flag

Flag



Seq Number:

Parent Sample Id:

### **QC Summary** 555791

### **COG Operating LLC**

Gettysburg State #1 H

555791-001 S

Analytical Method: BTEX by EPA 8021B

555791-001

3020734 Matrix: Soil

SW5030B Prep Method: Date Prep: 06.26.17

MSD Sample Id: 555791-001 SD

%RPD RPD Spike MS MS Limits Parent MSD **MSD** Units Analysis **Parameter** Result Limit Date Result Amount %Rec Result %Rec < 0.00200 0.0790 0.0885 70-130 35 06.26.17 12:46 Benzene 0.100 79 89 11 mg/kg Toluene 0.0770 77 0.0778 78 70-130 35 06.26.17 12:46 < 0.00200 0.100 1 mg/kg Ethylbenzene 0.0829 83 0.0862 71-129 4 35 06.26.17 12:46 < 0.00200 0.10087 mg/kg m p-Xylenes < 0.00401 0.200 0.149 75 0.152 76 70-135 2 35 06.26.17 12:46 mg/kg 0.0870 mg/kg 06.26.17 12:46 o-Xylene < 0.00200 0.100 0.0837 84 87 71-133 35

MS Sample Id:

MS MS MSD **MSD** Limits Units Analysis **Surrogate** Flag %Rec Flag Date %Rec 115 105 80-120 % 06.26.17 12:46 1,4-Difluorobenzene % 06.26.17 12:46 4-Bromofluorobenzene 120 110 80-120

Analytical Method: BTEX by EPA 8021B

Seq Number: 3020817 Parent Sample Id:

Matrix: Soil MS Sample Id: 555831-002 S 555831-002

Prep Method: SW5030B

06.26.17

Date Prep: MSD Sample Id: 555831-002 SD

MS %RPD RPD Spike MS Limits Units Analysis Parent MSD MSD **Parameter** Result Amount Result %Rec Limit Date %Rec Result 06.26.17 21:47 Benzene < 0.00200 0.1000.0955 96 0.0951 95 70-130 0 35 mg/kg Toluene < 0.00200 0.100 0.0847 85 0.0843 84 70-130 0 35 06.26.17 21:47 mg/kg 0.0942 06.26.17 21:47 Ethylbenzene < 0.00200 0.100 0.0884 88 94 71-129 6 35 mg/kg 70-135 06.26.17 21:47 m p-Xylenes < 0.00401 0.200 0.165 83 0.168 84 2 35 mg/kg 0.0900 71-133 06.26.17 21:47 o-Xylene < 0.00200 0.10090 0.101101 12 35 mg/kg

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	119		119		80-120	%	06.26.17 21:47
4-Bromofluorobenzene	116		119		80-120	%	06.26.17 21:47

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### CHAIN OF CUSTODY

San Antonio, Texas (210-509-3334)

Phoenix, Arizona (480-355-0900)

Company Address   Company Ad	Client / Reporting Information	Pn	WWW  Project Informal	ect Info	www.xenco.com		Xenco Quote #	Analytical information	Xence Job #
Commert: Alarcon Lieb	Avenue	3	Set Location:	L K	45	# 11			
Collection  Sample Date Time Marin bodies H Authority (preserved bodies H No. No. H EX. (de No. H Date) (preserved bodies H No. H	alieb@concho.com dnssl2@concho.com rhas	8-1553		Operating LLC Robert Mcneill		1	€0		
Collection  Collection  Collection  Sample Date  Time Matrix boiles H Namber of preserved bodiles  Legith Date  Time Matrix boiles H Namber of preserved bodiles  A Namber of preserved bodiles  Legith Date  Time Matrix boiles H Namber of preserved bodiles  A Namber of preserved b	Project Contact: Aaron Lieb		10000	nd TX 79701			NB		
Sample Date Time:  Sample Date D	Samplers's Name- Aaron Lieb		Number:				٤.		
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8 WCST / 1 9   Data Deliverable Information	West- 5	1					×,	7	
9   10   Turnaround Time (Business days)   Data Deliverable Information   Data Pkg /raw data)   Data Deliverable Information   Data Pkg /raw data)   Data Deliverable Information   Data Pkg /raw data)   Data Deliverable Information   Data Deliverable Information   Data Deliverable Information   Data Pkg /raw data)   Data Pkg /ra		1	-	-					
Turnaround Time (Business days)	9			w					
Turnaround Time ( Business days)   Data Deliverable information	10								
Same Day TAT    Some Day TAT   Song TAT   Level    Std QC		_		Data C	Deliverable Informa	tion			Notes:
Next Day EMERGENCY		TAT		Level II Std QC		Level IV (Full I		_	
2 Day EMERGENCY   Contract TAT   Level 3 (CLP Forms)   UST / RG 411   3 Day EMERGENCY   TRRP Checklist				Level III Std QC	+ Forms	TRRP Level IV			
TAT Starts Day received by 5:00 pm  SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY Relinquished by Sampler  Received By:  Received By:  Received By:  Received By:  Received By:  Relinquished By:  Date Time:  3		# TAT		Level 3 (CLP Fo	rms)	UST / RG -411			
TAT Starts Day received by 5:00 pm  SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY  Relinquished by Sampler  Date Time:  Received By:  Relinquished by:  Received By:  Relinquished By:  Reli	3 Day EMERGENCY			TRRP Checklist					
Relinquished by Samples    Sample custody must be Documented Below Each time samples counting counting counting delivery   1/2	TAT Starts Day received by Lab, if received	by 5:00 pm						FEI	-EX / UPS: Trackir
Relinquished by:    Date Time:   Received By:   Part Relinquished By:   Relinquished By:   Part Time:   Received By:   Relinquished By:   Date Time:   Received By:   Relinquished By:   Date Time:   Received By:   Relinquished By:   Date Time:   Received By:   R	1	CUSTODY MUST BE DOO	UMENTED BELOV	VEACH TIME SAN	APLES CHANGE P	OSSESSION, INCLUDIN	G COURIER DELIVER		
Relinquished by:  Date Time:  Received By:  Relinquished By:  Date Time:	27	6-14-17	100 A Recei	id Buth	1-41-9	Relinguished B	Mr. 11:40		Received
	Property and the second	Date Time:		ed By:		Relinquish		Date Time:	Received



### XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: COG Operating LLC

Date/ Time Received: 06/20/2017 10:05:00 AM

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

Work Order #: 555791

Temperature Measuring device used: R8

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

Must be completed for after-hours delivery of samples prior to placing in the refrigerator										
Analyst:		PH Device/Lot#:								
Checklist co	mpleted by:	Jessica Kramer	Date: <u>06/21/2017</u>							
Checklist re	eviewed by:	Murs Moah  Kelsey Brooks	Date: <u>06/21/2017</u>							

### Certificate of Analysis Summary 555794 COG Operating LLC, Artesia, NM

Project Name: Gettysburg State #1 H



Date Received in Lab: Tue Jun-20-17 10:05 am Report Date: 28-JUN-17

Project Manager: Kelsey Brooks

Analysis Requested         Field Id: Depth:         T1 - Surf Soll         T1 - 1         T1 - 1         T1 - 1           Matrix: Sampled:         Soll Jun-14-17 09:00         SOIL Jun-14-17 09:00         Jun-14-17 09:00	TT-1'  1 ft  SOIL  Jun-14-17 09:00  Jun-26-17 16:30  Jun-27-17 08:29  mg/kg RL  <0.00200 0.00200  0.00525 0.00200  0.00525 0.00200  <0.00200 0.00200  <0.00200 0.00200  <0.002438 0.00200  0.00438 0.00200  0.00438 0.00200	ff ff DIL 17 09:0 17 14:5 17 14:5 17 14:5 3	TI - 3' 3 ft SOIL Jun-14-17 09:00 Jun-26-17 11:00 Jun-26-17 17:45 mg/kg RL <0.00200 0.00200 <0.00200 0.00200 <0.00200 0.00399	TI - 4' 4 ft SOIL SOIL Jun-14-17 09:00 Jun-26-17 11:00 Jun-26-17 17:28 mg/kg RL <0.00202 0.00202 <0.00202 0.00202 <0.00202 0.00203
Matrix   SOIL   SOIL   SOIL	SOIL Jun-14-17 09:00 Jun-26-17 16:30 Jun-27-17 08:29 mg/kg RL <0.00200 0.00200 0.00525 0.00200 0.00538 0.00200 <0.00438 0.00200 0.009438 0.00200 0.009438 0.00200	2 ft SOIL Jun-14-17 09:00 Jun-27-17 10:30 Jun-27-17 14:58 mg/kg RL 23.4 1.00 190 1.00 88.3 1.00 168 2.01 168 2.01	3 ft SOIL Jun-14-17 09:00 Jun-26-17 11:00 Jun-26-17 17:45 mg/kg RL <0.00200 0.00200 <0.00200 <0.00200 <0.00200 <0.00399 0.00399	SOIL  SOIL  Jun-14-17 09:00  Jun-26-17 11:00  Jun-26-17 17:28  mg/kg RL  <0.00202 0.00202  <0.00202 0.00202  <0.00202 0.00202  <0.00202 0.00202
BTEX by EPA 8021B         Extracted: Jun-14-17 09:00         Jun-14-17 09:00         Jun-14-17 09:00           BTEX by EPA 8021B         Extracted: Jun-27-17 10:30         Jun-26-17 16:30         Analyzed: Jun-27-17 10:00         Jun-27-17 09:00           ic         Units/RL: Triangle by EPA 8021B         Extracted: Jun-27-17 14:42         Jun-27-17 09:00         RL mg/kg         <	SOIL Jun-14-17 09:00 Jun-26-17 16:30 Jun-27-17 08:29 mg/kg RL <0.00200 0.00200 0.00525 0.00200 0.00525 0.00200 <0.00200 0.00200 0.00438 0.00200 0.00438 0.00200 0.00438 0.00200	SOIL Jun-14-17 09:00 Jun-27-17 10:30 Jun-27-17 14:58 mg/kg RL 23.4 1.00 190 1.00 88.3 1.00 63.2 1.00	SOIL Jun-14-17 09:00 Jun-26-17 11:00 Jun-26-17 17:45 mg/kg RL <0.00200 0.00200 <0.00200 0.00200 <0.00200 0.00399	SOIL Jun-14-17 09:00 Jun-26-17 11:00 Jun-26-17 17:28 mg/kg RL <0.00202 0.00202 <0.00202 0.00202 <0.00202 0.00202 <0.00403 0.00403
BTEX by EPA 8021B         Extracted:         Jun-14-17 09:00         Jun-14-17 09:00           Analyzed:         Jun-27-17 10:30         Jun-26-17 16:30           Vnits/RL:         mg/kg         RL         mg/kg         RL           ie         Vnits/RL:         Mg/kg         RL         Mg/kg <t< th=""><th>Jun-14-17 09:00 Jun-26-17 16:30 Jun-27-17 08:29 mg/kg RL &lt;0.00200 0.00525 0.00200 &lt;0.00528 0.00200 &lt;0.00438 0.00438 0.00438 0.00438 0.00438 0.00438</th><th>Jun-14-17 09:00 Jun-27-17 10:30 Jun-27-17 14:58 mg/kg RL 23.4 1.00 190 1.00 88.3 1.00 168 2.01 168 2.01</th><th>Jun-14-17 09:00  Jun-26-17 11:00  Jun-26-17 17:45  mg/kg  RL  &lt;0.00200  &lt;0.00200  &lt;0.00200  &lt;0.00200  &lt;0.00399  0.00399</th><th>Jun-14-17 09:00 Jun-26-17 11:00 Jun-26-17 17:28 mg/kg RL &lt;0.00202 0.00202 &lt;0.00202 &lt;0.00202 &lt;0.00202 &lt;0.00202</th></t<>	Jun-14-17 09:00 Jun-26-17 16:30 Jun-27-17 08:29 mg/kg RL <0.00200 0.00525 0.00200 <0.00528 0.00200 <0.00438 0.00438 0.00438 0.00438 0.00438 0.00438	Jun-14-17 09:00 Jun-27-17 10:30 Jun-27-17 14:58 mg/kg RL 23.4 1.00 190 1.00 88.3 1.00 168 2.01 168 2.01	Jun-14-17 09:00  Jun-26-17 11:00  Jun-26-17 17:45  mg/kg  RL  <0.00200  <0.00200  <0.00200  <0.00200  <0.00399  0.00399	Jun-14-17 09:00 Jun-26-17 11:00 Jun-26-17 17:28 mg/kg RL <0.00202 0.00202 <0.00202 <0.00202 <0.00202 <0.00202
BTEX by EPA 8021B         Extracted:         Jun-27-17 10:30         Jun-26-17 16:30           Analyzed:         Jun-27-17 14:42         Jun-27-17 08:29           Chits/RL:         mg/kg         RL         mg/kg         RL           198         0.998         <-0.00200         0.00200           198         0.998         <-0.00200         0.00200           198         0.998         <-0.00200         0.00400           198         0.998         <-0.00200         0.00400           198         0.998         <-0.00200         0.00200           198         0.998         <-0.00200         0.00200           109         0.998         <-0.00200         0.00200           109         0.998         <-0.00200         0.00200           109         0.998         <-0.00200         0.00200           109         0.998         <-0.00200         0.00200           109         0.998         <-0.00200         0.00200           109         0.998         <-0.00200         0.00200           109         0.998         <-0.00200         0.00200           100         <-0.998         <-0.00200         0.00200           100 <t< th=""><th>Jun-26-17 16:30 Jun-27-17 08:29 mg/kg RL &lt;0.00200 0.00200 0.00525 0.00200 &lt;0.00528 0.00200 &lt;0.00438 0.00200 0.00438 0.00200 0.00438 0.00200 0.009438 0.00200</th><th>Jun-27-17 10:30 Jun-27-17 14:58 mg/kg RL 23.4 1.00 190 1.00 88.3 1.00 168 2.01 63.2 1.00</th><th>Jun-26-17 11:00 Jun-26-17 17:45 mg/kg RL &lt;0.00200 0.00200 &lt;0.00200 0.00200 &lt;0.00200 0.00399</th><th>Jun-26-17 11:00 Jun-26-17 11:08 mg/kg RL &lt;0.00202 0.00202 &lt;0.00202 0.00202 &lt;0.00202 0.00202 &lt;0.00204 0.00202</th></t<>	Jun-26-17 16:30 Jun-27-17 08:29 mg/kg RL <0.00200 0.00200 0.00525 0.00200 <0.00528 0.00200 <0.00438 0.00200 0.00438 0.00200 0.00438 0.00200 0.009438 0.00200	Jun-27-17 10:30 Jun-27-17 14:58 mg/kg RL 23.4 1.00 190 1.00 88.3 1.00 168 2.01 63.2 1.00	Jun-26-17 11:00 Jun-26-17 17:45 mg/kg RL <0.00200 0.00200 <0.00200 0.00200 <0.00200 0.00399	Jun-26-17 11:00 Jun-26-17 11:08 mg/kg RL <0.00202 0.00202 <0.00202 0.00202 <0.00202 0.00202 <0.00204 0.00202
Analyzed: Jun-27-17 14:42   Jun-27-17 08:29     Units/RL: mg/kg RL mg/kg RL	Jun-27-17 08:29 mg/kg RL <0.00200 0.00200 0.00525 0.00200 <0.00200 0.00200 0.00438 0.00200 <0.00438 0.00200 0.00438 0.00200 0.00438 0.00200	mg/kg RL 23.4 1.00 190 1.00 88.3 1.00 63.2 1.00	Jun-26-17 17:45 mg/kg RL <0.00200 0.00200 <0.00200 0.00200 <0.00200 0.00399	Jun-26-17 17:28 mg/kg RL <0.00202 0.00202 <0.00202 0.00202 <0.00202 0.00202 <0.00403 0.00403
Units/RL: mg/kg RL mg/kg RL mg/kg RL mg/kg RL	00 8 00 8 8	4 0 8 8 2	00 00 00	3 2 2 3
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$				
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$				
133 0.998				
Sample   S				
cs				_
Chloride by EPA 300  Extracted: Jun-27-17 12:00  Units/RL: mg/kg RL			<0.00200 0.00200	<0.00202 0.00202
Chloride by EPA 300  Extracted: Jun-27-17 12:00 Jun-27-17 12:00  Analyzed: Jun-27-17 17:07 Jun-27-17 17:15  Units/RL: mg/kg RL mg/kg RL 307 4.97 <-4.98 4.98		231 1.00	<0.00200 0.00200	<0.00202 0.00202
Chloride by EPA 300         Extracted:         Jun-27-17 12:00         Jun-27-17 12:00           Analyzed:         Jun-27-17 17:07         Jun-27-17 17:15           Units/RL:         mg/kg         RL         mg/kg         RL           307         4.97         <4.98		533 1.00	<0.00200 0.00200	<0.00202 0.00202
Analyzed:         Jun-27-17 17:07         Jun-27-17 17:15           Units/RL:         mg/kg         RL         mg/kg         RL           307         4.97         <4.98         4.98	Jun-27-17 12:00	Jun-27-17 12:00	Jun-27-17 12:00	Jun-27-17 12:00
Units/RL:         mg/kg         RL         mg/kg         RL         mg           307         4.97         <4.98         4.98         mg		Jun-27-17 17:22	Jun-27-17 17:45	Jun-27-17 17:53
307 4.98 4.98		mg/kg RL	mg/kg RL	mg/kg RL
		<5.00 5.00	38.8 4.92	88.7 5.00
TPH By SW8015 Mod Extracted: Jun-24-17 12:00 Jun-24-17 12:00 Jun-24-1	Jun-24-17 12:00	Jun-24-17 12:00	Jun-24-17 12:00	Jun-24-17 12:00
Analyzed: Jun-24-17 19:41 Jun-24-17 20:02 Jun-24-1	Jun-24-17 20:02	Jun-24-17 21:04	Jun-24-17 21:25	Jun-24-17 21:46
Units/RL: mg/kg RL mg/kg RL mg/kg		mg/kg RL	mg/kg RL	mg/kg RL
C6-C10 Gasoline Range Hydrocarbons 13700 75.0 <15.0 15.0 4740		4740 15.0	<15.0 15.0	<15.0 15.0
C10-C28 Diesel Range Organics 22800 75.0 <15.0 15.0 4960		4960 15.0	<15.0 15.0	<15.0 15.0
C28-C35 Oil Range Hydrocarbons   2730 75.0   <15.0 15.0   796		798 15.0	<15.0 15.0	<15.0 15.0
Total TPH 74800 75.0 <15.0 15.0 2020		20200 15.0	<15.0 15.0	<15.0 15.0

Project Manager Kelsey Brooks

Final 1.000

Page 1 of 22

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

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.

Getysburg ST. # 1 H

Project Location:

Project Id: Contact:

Aaron Lieb

### Analytical Report 555794 for

**COG Operating LLC** 

Project Manager: Aaron Lieb Gettysburg State #1 H

28-JUN-17

Collected By: Client





### 1211 W. Florida Ave, Midland TX 79701

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

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295) Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400)

Xenco-San Antonio: Texas (T104704534)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757) Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)





28-JUN-17

Project Manager: Aaron Lieb COG Operating LLC 2407 Pecos Avenue Artesia, NM 88210

Reference: XENCO Report No(s): 555794

Gettysburg State #1 H

Project Address: Getysburg ST. #1 H

### **Aaron Lieb:**

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) 555794. 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. 555794 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

**Kelsey Brooks** 

Knis Roah

Project Manager

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

Certified and approved by numerous States and Agencies.

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



### **Sample Cross Reference 555794**



### COG Operating LLC, Artesia, NM

Gettysburg State #1 H

Sample Id	Matrix	<b>Date Collected</b>	Sample Depth	Lab Sample Id
TI - Surf	S	06-14-17 09:00		555794-001
TI - 1'	S	06-14-17 09:00	- 1 ft	555794-002
TI - 2'	S	06-14-17 09:00	- 2 ft	555794-003
TI - 3'	S	06-14-17 09:00	- 3 ft	555794-004
TI - 4'	S	06-14-17 09:00	- 4 ft	555794-005

### CASE NARRATIVE

Client Name: COG Operating LLC
Project Name: Gettysburg State #1 H

Project ID: Report Date: 28-JUN-17 Work Order Number(s): 555794 Date Received: 06/20/2017

### Sample receipt non conformances and comments:

### Sample receipt non conformances and comments per sample:

None

### Analytical non conformances and comments:

Batch: LBA-3020734 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3020817 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3020887 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3020942 Chloride by EPA 300

Lab Sample ID 555794-003 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 555794-001, -002, -003, -004, -005. The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.





### COG Operating LLC, Artesia, NM

Gettysburg State #1 H

Sample Id: TI - Surf Matrix: Soil Date Received:06.20.17 10.05

Lab Sample Id: 555794-001

Date Collected: 06.14.17 09.00

Prep Method: E300P

MGO

Analytical Method: Chloride by EPA 300

% Moisture:

Tech: Analyst:

Parameter

Chloride

MGO

RL

Basis:

Units

mg/kg

Wet Weight

Flag

Seq Number: 3020942

Date Prep: 06.27.17 12.00

4.97

**Analysis Date** 

06.27.17 17.07

Dil

1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech: Analyst: ARM ARM

Date Prep:

Result

307

Cas Number

16887-00-6

06.24.17 12.00

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	13700	75.0		mg/kg	06.24.17 19.41		5
C10-C28 Diesel Range Organics	C10C28DRO	22800	75.0		mg/kg	06.24.17 19.41		5
C28-C35 Oil Range Hydrocarbons	PHCG2835	2730	75.0		mg/kg	06.24.17 19.41		5
Total TPH	PHC635	74800	75.0		mg/kg	06.24.17 19.41		5
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	117	%	70-135	06.24.17 19.41		
o-Terphenyl		84-15-1	91	%	70-135	06.24.17 19.41		





### COG Operating LLC, Artesia, NM

Gettysburg State #1 H

Sample Id: TI - Surf

Matrix: Soil

Date Prep:

Date Received:06.20.17 10.05

Lab Sample Id: 555794-001

Date Collected: 06.14.17 09.00

Prep Method: SW5030B

Analytical Method: BTEX by EPA 8021B

% Moisture:

Tech: ALJ

Analyst:

ALJ

06.27.17 10.30

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	27.3	0.998		mg/kg	06.27.17 14.42		500
Toluene	108-88-3	198	0.998		mg/kg	06.27.17 14.42		500
Ethylbenzene	100-41-4	133	0.998		mg/kg	06.27.17 14.42		500
m_p-Xylenes	179601-23-1	258	2.00		mg/kg	06.27.17 14.42		500
o-Xylene	95-47-6	109	0.998		mg/kg	06.27.17 14.42		500
Total Xylenes	1330-20-7	367	0.998		mg/kg	06.27.17 14.42		500
Total BTEX		725	0.998		mg/kg	06.27.17 14.42		500
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	87	%	80-120	06.27.17 14.42		
1,4-Difluorobenzene		540-36-3	87	%	80-120	06.27.17 14.42		





### COG Operating LLC, Artesia, NM

Gettysburg State #1 H

TI - 1' Sample Id:

Matrix:

Date Received:06.20.17 10.05

Lab Sample Id: 555794-002

Soil Date Collected: 06.14.17 09.00

Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech:

MGO

% Moisture:

Wet Weight

Analyst: MGO

Seq Number: 3020942

Date Prep:

06.27.17 12.00

Basis:

Parameter Cas Number Result RLUnits **Analysis Date** Flag Dil Chloride 06.27.17 17.15 U 16887-00-6 < 4.98 4.98 mg/kg 1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech:

Analyst:

ARM ARM

Date Prep: 06.24.17 12.00 Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0		mg/kg	06.24.17 20.02	U	1
C10-C28 Diesel Range Organics	C10C28DRO	<15.0	15.0		mg/kg	06.24.17 20.02	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<15.0	15.0		mg/kg	06.24.17 20.02	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	06.24.17 20.02	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	98	%	70-135	06.24.17 20.02		
o-Terphenyl		84-15-1	98	%	70-135	06.24.17 20.02		





# COG Operating LLC, Artesia, NM

Gettysburg State #1 H

Sample Id: TI - 1'

Matrix: Soil

Date Received:06.20.17 10.05

Lab Sample Id: 555794-002

Date Collected: 06.14.17 09.00

Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech:

Analyst:

ALJ ALJ

06.26.17 16.30 Date Prep:

% Moisture:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	06.27.17 08.29	U	1
Toluene	108-88-3	0.00525	0.00200		mg/kg	06.27.17 08.29		1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	06.27.17 08.29	U	1
m_p-Xylenes	179601-23-1	0.00438	0.00400		mg/kg	06.27.17 08.29		1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	06.27.17 08.29	U	1
Total Xylenes	1330-20-7	0.00438	0.00200		mg/kg	06.27.17 08.29		1
Total BTEX		0.00963	0.00200		mg/kg	06.27.17 08.29		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	83	%	80-120	06.27.17 08.29		
4-Bromofluorobenzene		460-00-4	88	%	80-120	06.27.17 08.29		





# COG Operating LLC, Artesia, NM

Gettysburg State #1 H

TI - 2' Sample Id:

Matrix: Soil Date Received:06.20.17 10.05

Lab Sample Id: 555794-003

Date Collected: 06.14.17 09.00

RL

5.00

Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P % Moisture:

Tech:

MGO

< 5.00

Result

Cas Number

16887-00-6

Units

mg/kg

**Analysis Date** 

06.27.17 17.22

Wet Weight

Parameter

Chloride

Analyst: MGO Seq Number: 3020942 Date Prep:

06.27.17 12.00

Basis:

Flag

U

Dil

1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech: Analyst: ARM

ARM

Date Prep: 06.24.17 12.00 Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	4740	15.0		mg/kg	06.24.17 21.04		1
C10-C28 Diesel Range Organics	C10C28DRO	4960	15.0		mg/kg	06.24.17 21.04		1
C28-C35 Oil Range Hydrocarbons	PHCG2835	798	15.0		mg/kg	06.24.17 21.04		1
Total TPH	PHC635	20200	15.0		mg/kg	06.24.17 21.04		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	125	%	70-135	06.24.17 21.04		
o-Terphenyl		84-15-1	96	%	70-135	06.24.17 21.04		





# COG Operating LLC, Artesia, NM

Gettysburg State #1 H

Sample Id: TI - 2'

Matrix: Soil

Date Received:06.20.17 10.05

Lab Sample Id: 555794-003

Date Collected: 06.14.17 09.00

Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech:

ALJ

% Moisture:

Analyst: ALJ

Date Prep:

06.27.17 10.30

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	23.4	1.00		mg/kg	06.27.17 14.58		500
Toluene	108-88-3	190	1.00		mg/kg	06.27.17 14.58		500
Ethylbenzene	100-41-4	88.3	1.00		mg/kg	06.27.17 14.58		500
m_p-Xylenes	179601-23-1	168	2.01		mg/kg	06.27.17 14.58		500
o-Xylene	95-47-6	63.2	1.00		mg/kg	06.27.17 14.58		500
Total Xylenes	1330-20-7	231	1.00		mg/kg	06.27.17 14.58		500
Total BTEX		533	1.00		mg/kg	06.27.17 14.58		500
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	83	%	80-120	06.27.17 14.58		
1,4-Difluorobenzene		540-36-3	100	%	80-120	06.27.17 14.58		





# COG Operating LLC, Artesia, NM

Gettysburg State #1 H

TI - 3' Sample Id:

Matrix:

Result

38.8

Date Received:06.20.17 10.05

Lab Sample Id: 555794-004

Soil Date Collected: 06.14.17 09.00

RL

4.92

Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P % Moisture:

Tech: Analyst:

Chloride

Tech:

MGO MGO

Date Prep:

16887-00-6

Wet Weight

Seq Number: 3020942

Parameter Cas Number 06.27.17 12.00

Basis:

Units

mg/kg

Dil

1

Flag

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

**Analysis Date** 

06.27.17 17.45

ARM

% Moisture:

ARM Analyst:

Date Prep: 06.24.17 12.00 Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0		mg/kg	06.24.17 21.25	U	1
C10-C28 Diesel Range Organics	C10C28DRO	<15.0	15.0		mg/kg	06.24.17 21.25	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<15.0	15.0		mg/kg	06.24.17 21.25	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	06.24.17 21.25	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	102	%	70-135	06.24.17 21.25		
o-Terphenyl		84-15-1	104	%	70-135	06.24.17 21.25		





# COG Operating LLC, Artesia, NM

Gettysburg State #1 H

Sample Id: Matrix: Soil TI - 3'

Date Received:06.20.17 10.05

Lab Sample Id: 555794-004

Date Collected: 06.14.17 09.00 Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ % Moisture:

ALJ Analyst:

06.26.17 11.00 Date Prep:

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	06.26.17 17.45	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	06.26.17 17.45	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	06.26.17 17.45	U	1
m_p-Xylenes	179601-23-1	< 0.00399	0.00399		mg/kg	06.26.17 17.45	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	06.26.17 17.45	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	06.26.17 17.45	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	06.26.17 17.45	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	93	%	80-120	06.26.17 17.45		
1,4-Difluorobenzene		540-36-3	105	%	80-120	06.26.17 17.45		





# COG Operating LLC, Artesia, NM

Gettysburg State #1 H

Sample Id: TI - 4'

Matrix:

Result

88.7

Cas Number

16887-00-6

Date Received:06.20.17 10.05

Lab Sample Id: 555794-005

Soil Date Collected: 06.14.17 09.00

Sample Depth: 4 ft

Prep Method: E300P

**Analysis Date** 

06.27.17 17.53

Analytical Method: Chloride by EPA 300

% Moisture:

Tech: Analyst:

Chloride

MGO

MGO

Date Prep: 06.27.17 12.00

RL

5.00

Basis:

Units

mg/kg

Wet Weight

Flag

Dil

1

Seq Number: 3020942

Parameter

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech:

ARM

ARM Analyst:

Date Prep: 06.24.17 12.00 Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0		mg/kg	06.24.17 21.46	U	1
C10-C28 Diesel Range Organics	C10C28DRO	<15.0	15.0		mg/kg	06.24.17 21.46	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<15.0	15.0		mg/kg	06.24.17 21.46	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	06.24.17 21.46	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	115	%	70-135	06.24.17 21.46		
o-Terphenyl		84-15-1	112	%	70-135	06.24.17 21.46		





# COG Operating LLC, Artesia, NM

Gettysburg State #1 H

Sample Id: TI - 4' Matrix: Soil

Date Received:06.20.17 10.05

Lab Sample Id: 555794-005 Date Collected: 06.14.17 09.00

Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 06.26.17 11.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
Benzene	71-43-2	< 0.00202	0.00202		mg/kg	06.26.17 17.28	U	1
Toluene	108-88-3	< 0.00202	0.00202		mg/kg	06.26.17 17.28	U	1
Ethylbenzene	100-41-4	< 0.00202	0.00202		mg/kg	06.26.17 17.28	U	1
m_p-Xylenes	179601-23-1	< 0.00403	0.00403		mg/kg	06.26.17 17.28	U	1
o-Xylene	95-47-6	< 0.00202	0.00202		mg/kg	06.26.17 17.28	U	1
Total Xylenes	1330-20-7	< 0.00202	0.00202		mg/kg	06.26.17 17.28	U	1
Total BTEX		< 0.00202	0.00202		mg/kg	06.26.17 17.28	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	98	%	80-120	06.26.17 17.28		
4-Bromofluorobenzene		460-00-4	110	%	80-120	06.26.17 17.28		





# **Flagging Criteria**



- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F RPD exceeded lab control limits.
- J The target analyte was positively identified below the quantitation limit and above the detection limit.
- U Analyte was not detected.
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K Sample analyzed outside of recommended hold time.
- JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- \*\* Surrogate recovered outside laboratory control limit.
- BRL Below Reporting Limit.
- **RL** Reporting Limit

MDL Method Detection Limit	SDL Sample Detection Limit	LOD Limit of Detection

PQL Practical Quantitation Limit MQL Method Quantitation Limit LOQ Limit of Quantitation

**DL** Method Detection Limit

NC Non-Calculable

- + NELAC certification not offered for this compound.
- \* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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1211 W Florida Ave, Midland, TX 79701	(432) 563-1800	(432) 563-1713
2525 W. Huntington Dr Suite 102, Tempe AZ 85282	(602) 437-0330	



Seq Number:

MB Sample Id:

#### **QC Summary** 555794

# **COG Operating LLC**

Gettysburg State #1 H

Analytical Method: Chloride by EPA 300

726858-1-BLK

3020942 Matrix: Solid

> LCS Sample Id: 726858-1-BKS

E300P Prep Method:

Date Prep: 06.27.17

LCSD Sample Id: 726858-1-BSD

E300P

MB Spike LCS LCS Limits %RPD RPD LCSD LCSD Units Analysis Flag **Parameter** Result Limit Date Result Amount %Rec Result %Rec

Chloride 94 90-110 20 06.27.17 15:21 < 5.00 250 241 96 235 3 mg/kg

Analytical Method: Chloride by EPA 300

Seq Number: 3020942

Parent Sample Id: 555791-001 Matrix: Soil Date Prep: 06.27.17

MS Sample Id: 555791-001 S MSD Sample Id: 555791-001 SD

Parent MS MS %RPD RPD Spike MSD MSD Limits Units Analysis Flag **Parameter** Result Amount Result %Rec Limit Date Result %Rec

Chloride 545 246 770 91 768 91 90-110 0 20 mg/kg 06.27.17 15:44

Analytical Method: Chloride by EPA 300

Seq Number: 3020942 Matrix: Soil Prep Method: E300P

Prep Method:

06.27.17 Date Prep:

MS Sample Id: 555794-003 S Parent Sample Id: 555794-003

MSD Sample Id: 555794-003 SD

RPD MS Parent Spike MS **MSD** MSD Limits %RPD Units Analysis Flag **Parameter** Result Limit Result Date Amount %Rec Result %Rec

20 06.27.17 17:30 Chloride < 5.00 250 286 114 284 114 90-110 X mg/kg

Analytical Method: TPH By SW8015 Mod

Prep Method:

TX1005P

Seq Number: 3020966 Matrix: Solid 06.24.17 Date Prep: 726684-1-BSD MB Sample Id:

726684-1-BLK

LCS Sample Id: 726684-1-BKS LCSD Sample Id:

Flag

RPD %RPD MB Spike LCS LCS Limits Units Analysis LCSD LCSD **Parameter** Limit Result Amount Result %Rec Date Result %Rec

06.24.17 14:08 C6-C10 Gasoline Range Hydrocarbons 1000 1190 119 70-135 12 35 <15.0 1060 106 mg/kg 06.24.17 14:08 C10-C28 Diesel Range Organics 1000 1140 114 1020 70-135 11 35 <15.0 102 mg/kg

MB MB LCS LCS LCSD Limits Units Analysis LCSD **Surrogate** %Rec Flag %Rec Flag Flag Date %Rec 1-Chlorooctane 79 118 110 70-135 % 06.24.17 14:08 108 06.24.17 14:08 o-Terphenyl 85 117 70-135 %

Flag

Flag



Parent Sample Id:

**Parameter** 

#### **QC Summary** 555794

# **COG Operating LLC**

Gettysburg State #1 H

MSD

Result

Limits

**MSD** 

%Rec

Analytical Method: TPH By SW8015 Mod

Seq Number: 3020966 Matrix: Soil

Parent

Result

MS Sample Id: 555791-001 S 555791-001

MS

Result

Spike

Amount

TX1005P Prep Method:

Date Prep: 06.24.17 MSD Sample Id: 555791-001 SD

%RPD RPD Units Analysis Flag Limit Date

C6-C10 Gasoline Range Hydrocarbons 06.24.17 16:39 <15.0 1000 1090 109 1020 102 70-135 7 35 mg/kg 70-135 2 35 06.24.17 16:39 C10-C28 Diesel Range Organics <15.0 1000 1080 108 1060 106 mg/kg

MS

%Rec

MS MS MSD **MSD** Limits Units Analysis **Surrogate** Flag %Rec %Rec Flag Date

1-Chlorooctane 94 104 70-135 % 06 24 17 16:39 o-Terphenyl 85 102 70-135 % 06.24.17 16:39

SW5030B Analytical Method: BTEX by EPA 8021B Prep Method:

Seq Number: 3020734 Matrix: Solid Date Prep: 06.26.17 LCS Sample Id: 726754-1-BKS LCSD Sample Id: 726754-1-BSD MB Sample Id: 726754-1-BLK

RPD MB LCS LCS %RPD Units Spike Limits Analysis LCSD LCSD **Parameter** Result Amount Result %Rec %Rec Limit Date Result < 0.00199 0.0994 94 0.0918 70-130 2 35 06.26.17 12:13 Benzene 0.0935 mg/kg Toluene < 0.00199 0.0994 0.0853 86 0.0865 87 70-130 35 06.26.17 12:13 1 mg/kg 06.26.17 12:13 71-129 Ethylbenzene < 0.00199 0.0994 0.0942 95 0.0913 91 3 35 mg/kg 06.26.17 12:13 m\_p-Xylenes < 0.00398 0.199 0.169 85 0.165 83 70-135 2 35 mg/kg < 0.00199 0.0994 0.0902 0.0885 71-133 35 06.26.17 12:13 o-Xylene mg/kg

LCSD MB MB LCS LCS LCSD Limits Units Analysis **Surrogate** %Rec Flag %Rec Flag Flag Date %Rec 1.4-Difluorobenzene 87 96 82 80-120 % 06.26.17 12:13 06.26.17 12:13 4-Bromofluorobenzene 101 96 94 80-120 %

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B

Seq Number: 3020817 Matrix: Solid Date Prep: 06.26.17 LCS Sample Id: 726772-1-BKS LCSD Sample Id: 726772-1-BSD MB Sample Id: 726772-1-BLK

LCS %RPD RPD MB Spike LCS LCSD LCSD Limits Units Analysis **Parameter** Amount Result %Rec Limit Date Result Result %Rec 06.26.17 21:15 < 0.00199 0.0994 0.107 108 0.101 35 Benzene 101 70-130 6 mg/kg Toluene < 0.00199 0.0994 0.0991 100 0.103 103 70-130 4 35 mg/kg 06.26.17 21:15 06.26.17 21:15 Ethylbenzene < 0.00199 0.0994 0.106 107 0.106 106 71-129 0 35 mg/kg 70-135 0.193 0.185 06.26.17 21:15 < 0.00398 0.199 97 93 4 35 m\_p-Xylenes mg/kg 06.26.17 21:15 < 0.00199 0.0994 0.108 109 0.103 103 71-133 35 o-Xylene mg/kg

MB MB LCS LCS LCSD LCSD Limits Units Analysis **Surrogate** %Rec Flag %Rec Flag %Rec Flag Date 1,4-Difluorobenzene 89 80-120 % 06.26.17 21:15 110 87 4-Bromofluorobenzene 87 118 90 80-120 % 06.26.17 21:15

06.26.17 12:13

Flag

Flag



1,4-Difluorobenzene

87

# QC Summary 555794

# **COG Operating LLC**

Gettysburg State #1 H

82

80-120

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Seq Number:	3020887	Matrix:	Solid	Date Prep:	06.27.17
MB Sample Id:	726832-1-BLK	LCS Sample Id:	726832-1-BKS	LCSD Sample Id:	726832-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	< 0.00201	0.100	0.0945	95	0.0920	92	70-130	3	35	mg/kg	06.26.17 12:13	
Toluene	< 0.00201	0.100	0.0862	86	0.0867	87	70-130	1	35	mg/kg	06.26.17 12:13	
Ethylbenzene	< 0.00201	0.100	0.0951	95	0.0915	92	71-129	4	35	mg/kg	06.26.17 12:13	
m_p-Xylenes	< 0.00402	0.201	0.170	85	0.165	83	70-135	3	35	mg/kg	06.26.17 12:13	
o-Xylene	< 0.00201	0.100	0.0911	91	0.0887	89	71-133	3	35	mg/kg	06.26.17 12:13	
Surrogate	MB	MB Flag			LCS Flag	LCSI			imits	Units	Analysis Date	

4-Bromofluorobenzene 101 96 94 80-120 % 06.26.17 12:13

Analytical Method:BTEX by EPA 8021BPrep Method:SW5030BSeq Number:3020734Matrix:SoilDate Prep:06.26.17Parent Sample Id:555791-001MS Sample Id:555791-001 SMSD Sample Id:555791-001 SD

96

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date
Benzene	< 0.00200	0.100	0.0790	79	0.0885	89	70-130	11	35	mg/kg	06.26.17 12:46
Toluene	< 0.00200	0.100	0.0770	77	0.0778	78	70-130	1	35	mg/kg	06.26.17 12:46
Ethylbenzene	< 0.00200	0.100	0.0829	83	0.0862	87	71-129	4	35	mg/kg	06.26.17 12:46
m_p-Xylenes	< 0.00401	0.200	0.149	75	0.152	76	70-135	2	35	mg/kg	06.26.17 12:46
o-Xylene	< 0.00200	0.100	0.0837	84	0.0870	87	71-133	4	35	mg/kg	06.26.17 12:46

Surrogate	MS %Rec	MS MSD Flag %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	115	105		80-120	%	06.26.17 12:46
4-Bromofluorobenzene	120	110		80-120	%	06.26.17 12:46

Analytical Method:BTEX by EPA 8021BPrep Method:SW5030BSeq Number:3020817Matrix: SoilDate Prep:06.26.17

Parent Sample Id: 555831-002 MS Sample Id: 555831-002 S MSD Sample Id: 555831-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date
Benzene	< 0.00200	0.100	0.0955	96	0.0951	95	70-130	0	35	mg/kg	06.26.17 21:47
Toluene	< 0.00200	0.100	0.0847	85	0.0843	84	70-130	0	35	mg/kg	06.26.17 21:47
Ethylbenzene	< 0.00200	0.100	0.0884	88	0.0942	94	71-129	6	35	mg/kg	06.26.17 21:47
m_p-Xylenes	< 0.00401	0.200	0.165	83	0.168	84	70-135	2	35	mg/kg	06.26.17 21:47
o-Xylene	< 0.00200	0.100	0.0900	90	0.101	101	71-133	12	35	mg/kg	06.26.17 21:47

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	119		119		80-120	%	06.26.17 21:47
4-Bromofluorobenzene	116		119		80-120	%	06.26.17 21:47



1,4-Difluorobenzene

4-Bromofluorobenzene

#### **QC Summary** 555794

# **COG Operating LLC**

Gettysburg State #1 H

Analytical Method: BTEX by EPA 8021B

3020887 Matrix: Soil Prep Method: SW5030B Date Prep: 06.27.17

80-120

80-120

%

%

Seq Number: MS Sample Id: 555831-003 S Parent Sample Id: 555831-003

94

97

MSD Sample Id: 555831-003 SD

06.27.17 11:42

06.27.17 11:42

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	< 0.00202	0.101	0.0799	79	0.0923	91	70-130	14	35	mg/kg	06.27.17 11:42	
Toluene	0.00356	0.101	0.0932	89	0.119	114	70-130	24	35	mg/kg	06.27.17 11:42	
Ethylbenzene	< 0.00202	0.101	0.0777	77	0.0925	92	71-129	17	35	mg/kg	06.27.17 11:42	
m_p-Xylenes	0.00978	0.202	0.161	75	0.200	95	70-135	22	35	mg/kg	06.27.17 11:42	
o-Xylene	0.00360	0.101	0.0806	76	0.100	95	71-133	21	35	mg/kg	06.27.17 11:42	
Surrogate					MS Flag	MSD %Re			imits	Units	Analysis Date	

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# CHAIN OF CUSTODY

Setting the Standard since 1990 Stafford, Texas (281-240-4200)		San Antonio,	nio, Texas	Texas (210-509-3334)	3334)						Phoen	ix, Ariz	Phoenix, Arizona (480-355-0900)	(0060-				
Dallas Texas (214-902-0300)		Midland	Midland, Texas (432-704-5251)	704-525	-									1				
				W	www.xenco.com	.com					Xenco Quote #	Juote #		_	Xenco Job # 055370	555	2794	
													Analytical Information	ormatio				Matrix Codes
Client / Reporting Information			Proje	Project Information	ation													
Company Name / Branch: COG Operating LLC		Project Na	Project Name/Number:	chuer	Te	Cta	4	7	11			_						W = Water
Company Address: 2407 PECOS Avenue Artesia NM 89210		Project Location	200	2	H	-	+											GW =Ground Water DW = Drinking Water
Email:    Phone No: 576-748   alieb@concho.com rhaskell@concho.com   com rhaskell@concho.com   c	Phone No: 575-748-1553 m rhaskell@concho.com	Invoice To:	10 4 0	rating LL							03							SW = Surface water SL = Sludge
Project Contact: Aaron Lieb			Midland T	X 79701							r							WI = Wipe
Samplers's Name-Aaron Lieb		Po Number:									13.							O = Oil WW= Waste Water
		Collection		r		Nun	iber of	reserv	Number of preserved bottles	98	17							A= Air
No. Fleid ID / Point of Collection		_	Time	Matrix	# of bottles	_	EONH	HSSO4	POSHEN	NONE	} H9T	BTEX Chloride	Žariania.					Field Comments
1 TI SURF	.)	KHT	0	Ŝ	_						×	×						
2 +1-11	_			-	-						X	X						
371-21	6				_						×	X						
4 77-31	~				_						×	×						
5 71 - 41	J				~				L		X	X						
φ 1				1		-		+	1	H			+		+	1		
8					1	-		+		-		+						
a					$\Box$			H		H		$\forall$				H		
10 Turnaround Time ( Business days)				- 8	a Deliver	Data Deliverable Information	mation	-		-				Notes:		7		
Same Day TAT	☐ 5 Day TAT		Lev	Level II Std QC	· u			Level	V (Full C	Level IV (Full Data Pkg /raw data)	/raw da	ata)						
Next Day EMERGENCY	7 Day TAT		Lev	Level III Std QC+ Forms	C+ For	all s		TRRP	TRRP Level IV									
2 Day EMERGENCY	Contract TAT		Lev	Level 3 (CLP Forms)	Forms)			UST/I	UST / RG -411									
3 Day EMERGENCY			TR.	TRRP Checklist	ist													
TAT Starts Day received by Lab, if received by 5:00 pm	, if received by 5:00 pm	1000	DEL ONICE	1	1000	0.00	1000			100	1		FED	EX/D	FED-EX / UPS: Tracking #	*		
Relinquished by Sampler:	Date Time:	ne: 0,0	Received By:	Syj	A A A	10:00 12	feet .	Relinqu	Relinquished By:	W. Cours	MER DEL		Date Time: 11:454		Received By:	X	101	11/01
Relinquished by: 6	Date Ti		Received By:	эу:			1	Relinqu	Relinquished By:	Ä		٥	Date Time:		Received By			
Relinquished by:	Date Time:	100	Received By:	By:		l	1	Custod	Custody Seal #			Preserv	Preserved where applicable	icable		On Ice	Cooler Temp.	Thermo. Corr. Factor



# XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: COG Operating LLC

Date/ Time Received: 06/20/2017 10:05:00 AM

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

Work Order #: 555794

Temperature Measuring device used: R8

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

Must be	completed for after-hours de	livery of samples prior to plac	ing in the refrigerator
Analyst:		PH Device/Lot#:	
	Checklist completed by:	Jessica Kramer	Date: <u>06/21/2017</u>
	Checklist reviewed by:	Kelsey Brooks	Date: <u>06/21/2017</u>

eceived by OCD:	12/2/2022 2·52·30 P			ATION			Page 87 of 1
		511	E INFORM	ATION			
		Report Type	e: Work PI	an 1F	RP-4805		
General Site Inf	ormation:						
Site:		Gettysburg Sta					
Company:		COG Operating					
Section, Towns		Unit D	Sec. 16	T 23S	R 34E		
Lease Number:		API No. 30-025	-41928				
County:		Lea County	0.04400000 N			400 400	47500 144
GPS:		State	2.3113899° N			103.482	4753° W
Surface Owner: Mineral Owner:		State					
Directions:		From the intersec	stion of Hun, 129	and Dolowaro	Basin Pd (C	2 21) traval i	north on Delaware Basin
Directions.		Rd for approxima	tely 10.10 miles,	turn south on	to lease road	for approxiat	ely 1.10 miles, turn west
		and continue for ( miles to the locati		lease road to	the north of the	ne facility and	d continue west for 0.25
		miles to the locati	ion.				
Release Data:							
Date Released:		9/7/2017					
Type Release:		Oil					
Source of Conta	mination:	Tank					
Fluid Released:		8 bbls					
Fluids Recovere		7 bbls					
Official Commu	nication:						
Name:	Robert McNeil				Ike Tavarez	<u>'</u>	
Company:	COG Operating, L	LC			Tetra Tech		
Address:	One Concho Cente	er			4000 N. Big	Spring	
	600 W. Illinois Ave				Ste 401		
City:	Midland Texas, 79	701			Midland, Te	xas	
Phone number:	(432) 683-7443				(432) 687-8	110	
Fax:	(432) 684-7137						
Email:	rmcneil@concho	resources.com			Ike.Tavare	z@tetratecl	h.com

Depth to Groundwater:		Ranking Score		Site Data
<50 ft		20		
50-99 ft		10		
>100 ft.		0		325'-350'
WellHead Protection:		Ranking Score		Site Data
Water Source <1,000 ft., Private <200 ft.		20		
Water Source >1,000 ft., Private >200 ft.		0		0
Surface Body of Water:		Ranking Score		Site Data
<200 ft.		20		
200 ft - 1,000 ft.		10		
>1,000 ft.		0		0
Total Ranking Score:		0		
Total Ranking Score.		U		
	Acceptab	ole Soil RRAL (m	g/kg)	
Г	Benzene	Total BTEX	TPH	
	10	50	5,000	



December 27, 2017

Ms. Olivia Yu Environmental Engineer Specialist Oil Conservation Division, District 1 1625 North French Drive Hobbs, New Mexico 88240

Re: Work Plan for the COG Operating LLC., Gettysburg State Com #1H, Unit D, Section 16, Township 23 South, Range 34 East, Lea County, New Mexico. 1RP-4805.

Ms. Yu:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC., (COG) to prepare a work plan for a release that occurred at the Gettysburg State Com #1H, Unit D, Section 16, Township 23 South, Range 34 East, Lea County, New Mexico (Site). The spill site coordinates are N 32.3113899°, W 103.4824753°. The site location is shown on Figures 1 and 2.

# **Background**

According to the State of New Mexico C-141 Initial Report, the leak was discovered on September 7, 2017, and released approximately 8 barrels of oil due to a malfunctioning oil dump on the production knock out causing a release at the day tank. A vacuum truck was used to remove the freestanding fluids, recovering 7 barrels of oil. Majority of the release migrated into the pasture measuring approximately 50' x 140'. The initial C-141 Form is included in Appendix A.

## Groundwater

No water wells are listed within Section 16 in the New Mexico Office of the State Engineers database. The nearest well listed in the database is located in Section 15, approximately 1.70 miles southeast of the site, with a reported depth to groundwater of 430' below surface. According to the Chevron Texaco Groundwater Trend map, the average depth to groundwater in the area is between 325' and 350' below surface. The groundwater data is shown in Appendix B.

Tetra Tech



# Regulatory

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, dated August 13, 1993. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the depth to groundwater, the proposed RRAL for TPH is 5,000 mg/kg.

# Soil Assessment and Analytical Results

On October 17, 2017, COG personnel were onsite to evaluate and sample the release area. A total of (3) three trenches (T-1, T-2 and T-3) were installed in the release area to a total depth of 10.0' to 12.0' below surface. In addition, four (4) additional sample points (North, South, East, and West) were installed to a depth of 1.0' below surface in order to define the horizontal extents of the release. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 1. The trench locations are shown on Figure 3.

Referring to Table 1, the trench areas (T-1, T-1 and T-3) either showed TPH, benzene, or total BTEX concentrations exceeding the RRALs in the subsurface soils but decline depth below the RRALs at 4.0', 7.0' and 3.0' below surface, respectively. Additionally, none of the samples collected showed any significant chloride concentrations to the shallow soils, with a chloride high of 307 mg/kg at surface. The horizontal samples (North, South, East, and West) did not show any TPH, benzene or total BTEX concentrations above the RRALs. Additionally, none of the samples collected in the areas of (North, South, East, and West) showed any significant chloride concentrations to the shallow soils.

## **Work Plan**

Based on the laboratory results, COG proposes to remove the impacted material as highlighted (green) in Table 1 and shown on Figure 4. The area of trench (T-1) will be excavated to depth of approximately 4.0' below surface. In addition, the areas of T-2 and T-3 will be excavated to a depth of 3.0' and 4.0' respectively. Once excavated to the appropriate depth, the excavation will be backfilled with clean material to surface grade. All of the excavated material will be transported offsite for proper disposal.

The proposed excavation depths may not be reached due to wall cave ins and safety concerns for onsite personnel. In addition, impacted soil around oil and gas equipment, structures or lines may not be feasible or practicable to be removed due to safely concerns for onsite personnel. As such, COG will excavate the impacted soils to the maximum extent practicable.



# Conclusion

Upon completion, a final report detailing the remediation activities will be submitted to the NMOCD. If you have any questions or comments concerning the assessment or the proposed remediation activities for this site, please call at (432) 682-4559.

Respectfully submitted, TETRA TECH

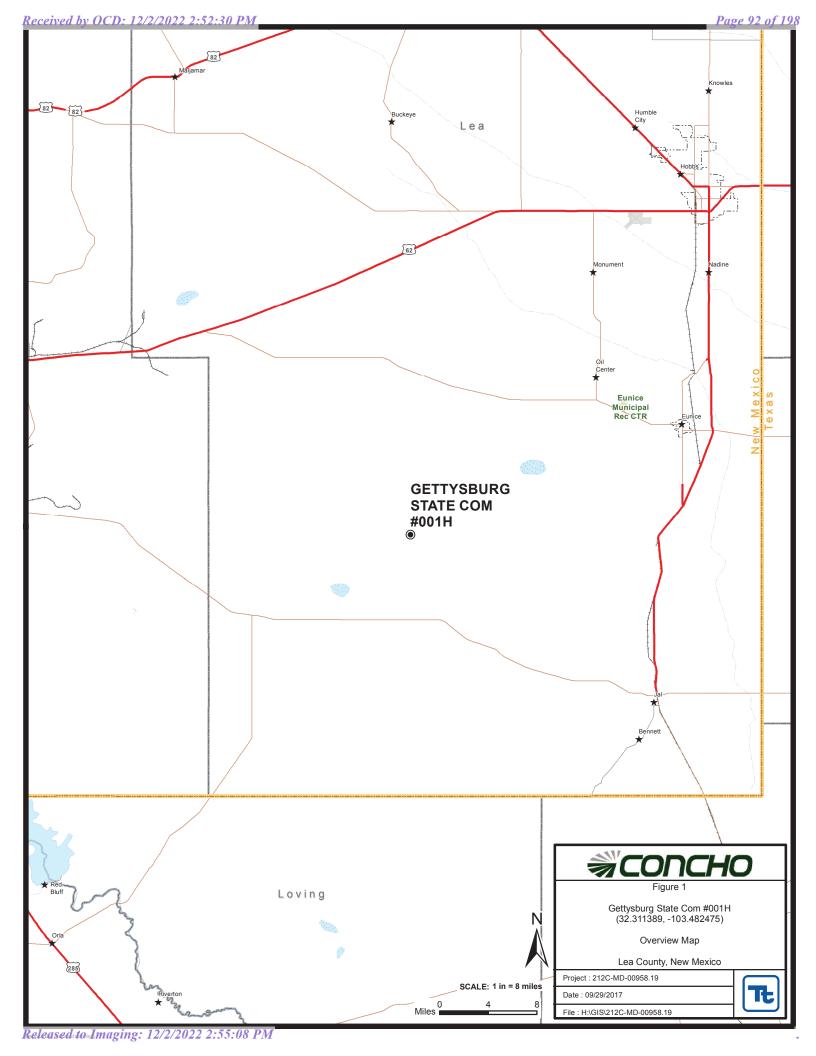
Geologist I

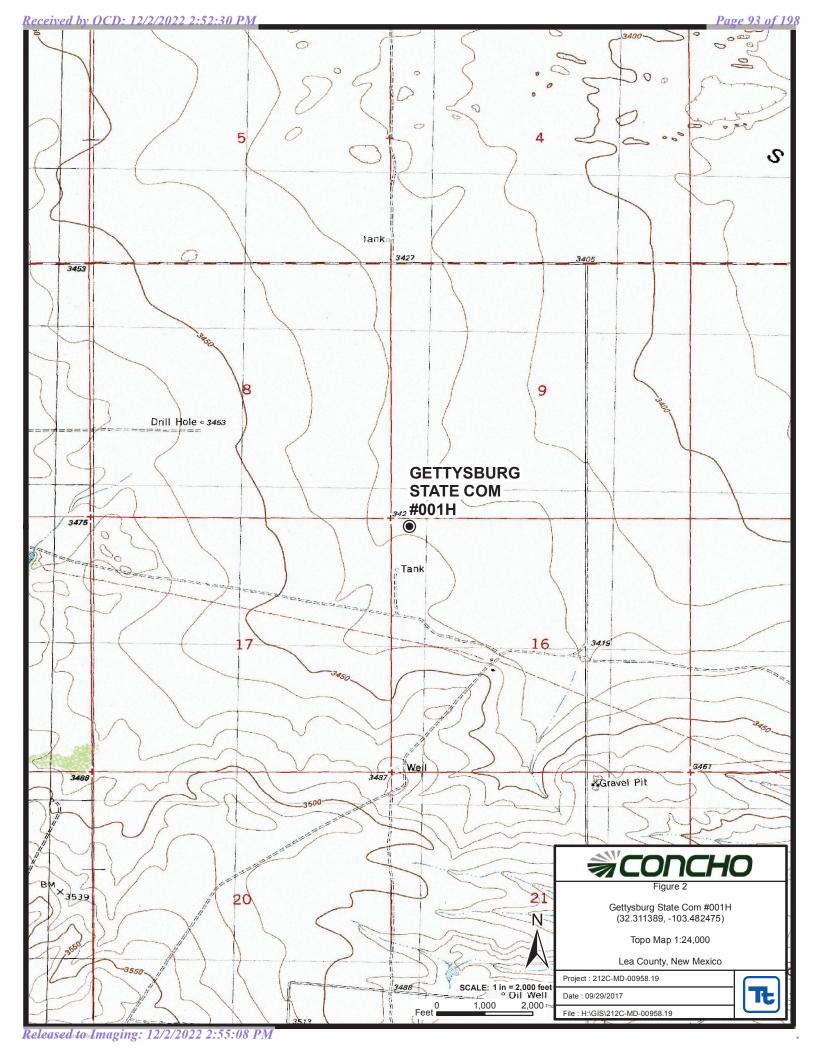
Ike Tavarez,

Senior Project Manager, P.G.

cc: Robert McNeill – COG Dakota Neel – COG Rebecca Haskell – COG Amber Groves - SLO

Figures





Project: 212C-MD-00958.19

File: H:\GIS\212C-MD-00958.19

Date: 12/19/2017

SCALE: 1 IN = 70 FEET

Eeet D

TRENCH SAMPLE LOCATIONS

SPILL AREA

# **EXPLANATION** SAMPLE LOCATIONS

TRENCH SAMPLE LOCATIONS PROPOSED EXCAVATION AREA

SCALE: 1 IN = 70 FEET

© 2Feet •

Proposed Excavation Areas & Depths Map

Lea County, New Mexico

Project: 212C-MD-00958.19

Date: 12/19/2017

File: H:\GIS\212C-MD-00958.19

**Tables** 

Table 1
COG Operating LLC.
Gettysburg State #1H
Release #2
Lea County, New Mexico

Sample ID	Sample Date	Sample	Soil	Soil Status		TPH (I	TPH (mg/kg)		Benzene	Toluene	Ethlybenzene	Xylene	Total BTEX	Chloride
		_	In-Situ	Removed	C6-C10	C10-C28	C28-C35	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
T-1	10/17/2017	Surface	×		3300	4780	64.1	8140	2.62	78.8	35.5	116	233	8.88
	:	1.0'	×		2520	3850	80.0	6450	2.13	94.3	50.4	183	330	12.3
	=	2.0'	×		4300	7800	502	12600	14.8	97.5	19.0	96.4	228	33.1
	=	3.0'	×		3820	7180	316	11300	19.7	97.8	25.7	164	307	109
	=	4.0'	×		<25.0	<25.0	<25.0	<25.0	0.00497	0.0134	0.00204	0.00978	0.0302	2.69
	=	5.0'	×		<25.0	<25.0	<25.0	<25.0	0.0114	0.00920	<0.00199	<0.00199	0.0206	<4.96
	=	10.0'	×			1	,		,					<4.96
T-2	10/17/2017	Surface	×		2460	11700	325	14500	0.0379	0.0980	0.0254	0.349	0.510	5.35
	=	1.0'	×		5140	11800	313	17300	0.0632	0.0629	0.00373	0.0211	0.151	<4.96
	=	2.0,	×		5220	0606	323	14600	16.5	190	88.5	332	627	<4.94
	=	3.0'	×		2990	4760	108	7860	8.17	84.1	24.0	103	220	5.99
	=	4.0'	×		3160	4790	62.3	8010	14.3	91.9	20.7	92.6	220	<4.97
	=	5.0'	×		3250	4360	92.8	7700	51.0	223	68.3	182	524	48.3
	:	6.0'	×		674	1340	76.3	2090	096.0	19.6	60'6	28.2	6'29	100
	Ξ	7.0'	×		<25.0	<25.0	<25.0	<25.0	0.0165	0.0218	<0.00202	0.00682	0.0451	13.9
	=	12.0'	×					-			-		-	42.1
T-3	10/17/2017	Surface	×		4010	11700	537	16200	0.833	30.0	25.4	110	166	<4.90
	=	1.0'	×		4230	9720	457	14400	0.737	11.4	12.5	78.2	103	<5.00
	=	2.0'	×		4270	6300	266	10800	16.3	161	56.6	152	386	<4.94
	=	3.0'	×		<24.9	<24.9	<24.9	<24.9	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<4.93
	=	4.0'	×		<25.0	<25.0	<25.0	<25.0	0.00323	0.0158	0.00240	0.0194	0.0408	<4.93
	Ξ	5.0'	×		<25.0	<25.0	<25.0	<25.0	<0.00199	0.00391	<0.00199	<0.00199	0.00391	<4.92
	=	10.0'	×										-	7.34
North	10/17/2017	Surface	×		<24.9	<24.9	<24.9	<24.9	0.0278	0.0555	0.0177	0.0961	0.197	<4.95
	=	1.0'	×		<25.0	<25.0	<25.0	<25.0	0.0376	0.101	0.0147	0.0639	0.217	<4.91
South	10/17/2017	Surface	×		<24.9	<24.9	<24.9	<24.9	<0.00351	<0.00351	<0.00351	<0.00351	<0.00351	<4.96
	=	1.0'	×		<24.9	<24.9	<24.9	<24.9	0.0267	0.0424	0.0114	0.0328	0.113	<4.90
East	10/17/2017	Surface	×		<25.0	<25.0	<25.0	<25.0	0.0401	0.219	0.0337	0.0936	0.386	<4.95
	=	1.0'	×		<24.9	<24.9	<24.9	<24.9	<0.00336	<0.00336	<0.00336	<0.00336	<0.00336	<4.97
West	10/17/2017	Surface	×		<25.0	<25.0	<25.0	<25.0	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	192
	Ξ	1.0'	×		<25.0	<25.0	<25.0	<25.0	0.0285	0.0275	<0.00332	<0.00332	0990.0	47.3
7 - 14 - 14 - 1														

( - ) Not Analyzed

Proposed Excavation Depths

Appendix A

Form C-141

Revised August 8, 2011

<u>District 1</u> 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

# State of New Mexico **Energy Minerals and Natural Resources**

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

Oil Conservation Division 1220 South St. Francis Dr.

1220 S. St. Francis Dr., Santa Fe, NM 87505 Santa Fe, NM 87505 **Release Notification and Corrective Action** Final Repo **OPERATOR** Robert McNeill Contact: Name of Company: COG Operating LLC OGRID # 229137 432-683-7443 Telephone No. 600 West Illinois Avenue, Midland TX 79701 Facility Type: Production Equipment (Well Pad) Facility Name: GETTYSBURG STATE COM #001H API No. 30-025-41928 Mineral Owner: State Surface Owner: Private LOCATION OF RELEASE County East/West Line Feet from the North/South Line Feet from the Unit Letter Section Township Range **LEA** West North 330 190 34E D 16 **23S** Latitude 32.3113899 Longitude -103.4824753 NATURE OF RELEASE Volume Recovered: Volume of Release: Type of Release: 7 bbls 8 bbls Oil Date and Hour of Discovery: Date and Hour of Occurrence: Source of Release: September 7th, 2017 2:00 PM September 7<sup>th</sup>, 2017 2:00 PM Tank If YES, To Whom? Was Immediate Notice Given? ☐ Yes ☒ No ☒ Not Required Date and Hour: By Whom? If YES, Volume Impacting the Watercourse. Was a Watercourse Reached? ☐ Yes 🛛 No RECEIVED If a Watercourse was Impacted, Describe Fully.\* By Olivia Yu at 3:24 pm, Sep 14, 2017 Describe Cause of Problem and Remedial Action Taken.\* The release was caused by the test meter on the test knock out malfunctioning which caused the vessel to overfill. Fluid went from the test knock out to the scrubber pots on gas compressor via the suction gas line feeding the compressor. The scrubber pot sent fluids to the day tank and fluid was released out of the thief hatch. The bad test meter will be replaced. Describe Area Affected and Cleanup Action Taken.\* The release occurred on location and the adjacent pasture. A vacuum truck was dispatched to remove all freestanding fluids. Concho will have the spill area sampled to delineate any possible impact from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation activities. I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. OIL CONSERVATION DIVISION Signature: Printed Name: Aaron Lieb Approved by Environmental Specialist: 9/14/2017 Approval Date: **Expiration Date:** Senior HSE Coordinator Title: alieb@concho.com Conditions of Approval: E-mail Address: Attached \[ \sqrt{} / see attached directive Date: September 8th, 2017 575-748-1553 Phone: \* Attach Additional Sheets If Necessary

1RP-4805

Released to Imaging: 12/2/2022 2:55:08 PM

pOY1725756297

nOY1725755233

Appendix B

# Water Well Data Average Depth to Groundwater (ft) COG - Gettysburg State Com #1H Lea County, New Mexico

	22 Sc	outh	33	East	
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13 <b>391</b>
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

	22 Sc	outh	34	East	
6	5	4	3	2	1
7	8	9	10	11 30	12 <b>50</b>
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

	22 Sc	outh	35	East	
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

	23 Sc	outh	33	East	
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

	23 8	outh	3	4 East	
6	5	4	3	2	1
7	8 <b>225</b>	9	10	11	12
18	17	16	15 <b>430</b>	14 <b>318</b>	13
19	20	21	22 <b>295</b>	23 <b>265</b>	24
30	29	28	27	26	25
31	32 <b>130</b>	33	34	35	36

	23 Sc	outh	35	East	
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

_	24 Sc	outh	33	East	
6	5	4	3	2	1
7	8	9	10 <b>24.6</b>	11	12
18	17	16	15	14	13
19	20	21	22	23 <b>208</b>	24 16.9
30	29	28	27	26	25
31	32	33 93.2	34	35	36

	24 Sc	outh	34	East	
6	5	4	3	2	1
81		475			
7	8	9	10	11	12
				40	
18	17	16	15	14	13
19	20	21	22	23	24
		431			
30	29	28	27	26	25
31	32	33	34	35	36

	24 Sc	outh	35	East	
6	5	4	3	2	1
7	8	9	10 <b>300</b>	11	12
18	17	16	15	14	13
19	20 97	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

- 88 New Mexico State Engineers Well Reports
- 105 USGS Well Reports
- 90 Geology and Groundwater Conditions in Southern Lea, County, NM (Report 6) Geology and Groundwater Resources of Eddy County, NM (Report 3)
- 34 NMOCD Groundwater Data
- 123 Tetra Tech installed temporary wells and field water level
- **143** NMOCD Groundwater map well location



# New Mexico Office of the State Engineer

# Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.) (R=POD has been replaced, O=orphaned, C=the file is

closed)

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

(quarters are smallest to largest) (NAD83 UTM in meters)

UTM in meters) (In feet)

		POD												
		Sub-		Q	Q	Q							Water	
POD Number	Code	basin	County	64	16	4	Sec	Tws	Rng	X	Y	<b>DepthWellDepthW</b>	ater Column	
C 03620 POD1		C	LE	1	4	3	32	23S	34E	641790	3569941	480	130 350	)
<u>CP 00556 POD1</u>		CP	LE	4	4	3	08	23S	34E	641762	3576206	497	255 242	2
<u>CP 00580</u>		CP	LE	3	4	3	23	23S	34E	646524	3572948*	220		
<u>CP 00606</u>		CP	LE		4	1	23	23S	34E	646613	3573854*	650	265 385	5
<u>CP 00618</u>		CP	LE	1	2	4	22	23S	34E	645713	3573539*	428	295 133	3
<u>CP 00637</u>		CP	LE	3	3	4	15	23S	34E	645293	3574541*	430	430	)
<u>CP 00872 POD1</u>		CP	LE	1	1	1	08	23S	34E	641225	3577504*	494	305 189	)
<u>CP 01075 POD1</u>		CP	LE		1	1	08	23S	34E	641278	3577525	430	20 410	)
<u>CP 01120 POD1</u>		CP	LE			3	14	23S	34E	646366	3574753	397	318 79	)
<u>CP 01130 POD1</u>		CP	LE	2	1	2	07	23S	34E	640662	3577558	27		
<u>CP 01130 POD2</u>		CP	LE	2	1	2	07	23S	34E	640674	3577549	27		
<u>CP 01258 POD1</u>		CP	LE	1	4	3	22	23S	34E	645015	3573221	25		
<u>CP 01258 POD2</u>		CP	LE	1	4	3	22	23S	34E	644941	3572883	65		
<u>CP 01258 POD3</u>		CP	LE	1	4	3	22	23S	34E	644938	3573097	25		

Average Depth to Water:

252 feet

Minimum Depth:

20 feet

Maximum Depth:

430 feet

Record Count: 14

PLSS Search:

Township: 23S Range: 34E

\*UTM location was derived from PLSS - see Help

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

8/28/17 11:30 AM

WATER COLUMN/ AVERAGE DEPTH TO

Appendix C

# **Analytical Report 566209**

for COG Operating, LLC

Project Manager: Sheldon Hitchcock Gettysburg St. Com #1H

30-OCT-17

Collected By: Client





# 1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122): Texas (T104704215-17-23), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054) Oklahoma (2017-142)

> Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-17-15), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab code: TX00127): Texas (T104704221-17-12)
Xenco-Lubbock (EPA Lab code: TX00139): Texas (T104704219-17-16)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-17-13)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)
Xenco-Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)





30-OCT-17

Project Manager: Sheldon Hitchcock

COG Operating, LLC 600 W Illinois

600 W Illinois Midland, TX 79701

Reference: XENCO Report No(s): 566209

Gettysburg St. Com #1H Project Address: D-16-23S-34E

# **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) 566209. 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. 566209 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

**Kelsey Brooks** 

Knis Roah

Project Manager

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

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# **Sample Cross Reference 566209**

# Page 106 of 198

# COG Operating, LLC, Midland, TX

Gettysburg St. Com #1H

Sample Id	Matrix	<b>Date Collected</b>	Sample Depth	Lab Sample Id
T-1 Surface	S	10-17-17 09:00	0	566209-001
T-1 1'	S	10-17-17 09:02	1	566209-002
T-1 2'	S	10-17-17 09:04	2	566209-003
T-1 3'	S	10-17-17 09:06	3	566209-004
T-1 4'	S	10-17-17 09:08	4	566209-005
T-1 5'	S	10-17-17 09:10	5	566209-006
T-1 10'	S	10-17-17 09:15	10	566209-007
T-2 Surface	S	10-17-17 09:20	0	566209-008
T-2 1'	S	10-17-17 09:22	1	566209-009
T-2 2'	S	10-17-17 09:24	2	566209-010
T-2 3'	S	10-17-17 09:26	3	566209-011
T-2 4'	S	10-17-17 09:28	4	566209-012
T-2 5'	S	10-17-17 09:30	5	566209-013
T-2 6'	S	10-17-17 09:32	6	566209-014
T-2 7'	S	10-17-17 09:34	7	566209-015
T-2 12'	S	10-17-17 09:40	12	566209-016
T-3 Surface	S	10-17-17 10:00	0	566209-017
T-3 1'	S	10-17-17 10:02	1	566209-018
T-3 2'	S	10-17-17 10:04	2	566209-019
T-3 3'	S	10-17-17 10:06	3	566209-020
T-3 4'	S	10-17-17 10:08	4	566209-021
T-3 5'	S	10-17-17 10:10	5	566209-022
T-3 10'	S	10-17-17 10:20	10	566209-023

Page 3 of 37

# **CASE NARRATIVE**

Client Name: COG Operating, LLC Project Name: Gettysburg St. Com #1H

Project ID: Report Date: 30-OCT-17
Work Order Number(s): 566209 Date Received: 10/19/2017

# Sample receipt non conformances and comments:

# Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3031638 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3031655 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3031663 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3031730 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3031744 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

# Certificate of Analysis Summary 566209

COG Operating, LLC, Midland, TX

Project Name: Gettysburg St. Com #1H

Date Received in Lab: Thu Oct-19-17 11:45 am Report Date: 30-OCT-17

Project Manager: Kelsey Brooks

	Lab Id:	566209-001	566209-002	566209-003	566209-004	566209-005	566209-006
Analysis Dogwood	Field Id:	T-1 Surface	T-1 1'	T-1 2'	T-1 3'	T-1 4'	T-1 5'
Analysis Neduesieu	Depth:	-0	1-	2-	3-	4-	5-
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Oct-17-17 09:00	Oct-17-17 09:02	Oct-17-17 09:04	Oct-17-17 09:06	Oct-17-17 09:08	Oct-17-17 09:10
BTEX by EPA 8021B	Extracted:	Oct-25-17 08:45	Oct-26-17 11:00	Oct-26-17 10:30	Oct-26-17 11:00	Oct-26-17 11:00	Oct-27-17 10:00
	Analyzed:	Oct-25-17 13:45	Oct-26-17 17:50	Oct-26-17 18:45	Oct-26-17 18:09	Oct-26-17 21:18	Oct-27-17 16:42
	Units/RL:	mg/kg RL					
Benzene		2.62 0.199	2.13 0.497	14.8 0.994	19.7 0.495	0.00497 0.00201	0.0114 0.00199
Toluene		78.8 D 0.399	94.3 0.497	97.5 0.994	97.8 0.495	0.0134 0.00201	0.00920 0.00199
Ethylbenzene		35.5 D 0.399	50.4 0.497	19.0 0.994	25.7 0.495	0.00204 0.00201	<0.00199 0.00199
m,p-Xylenes		77.0 D 0.798	131 0.994	66.8 1.99	118 0.990	0.00620 0.00402	<0.00398 0.00398
o-Xylene		39.2 0.199	52.4 0.497	29.6 0.994	45.8 0.495	0.00358 0.00201	<0.00199 0.00199
Total Xylenes		116 0.199	183 0.497	96.4 0.994	164 0.495	0.00978 0.00201	<0.00199 0.00199
Total BTEX		233 0.199	330 0.497	228 0.994	307 0.495	0.0302 0.00201	0.0206 0.00199
Chloride by EPA 300	Extracted:	Oct-24-17 12:00	Oct-24-17 12:00	Oct-24-17 16:00	Oct-24-17 16:00	Oct-24-17 16:00	Oct-24-17 16:00
	Analyzed:	Oct-25-17 01:37	Oct-25-17 01:44	Oct-25-17 03:46	Oct-25-17 04:06	Oct-25-17 04:13	Oct-25-17 04:20
	Units/RL:	mg/kg RL					
Chloride		8.88 4.92	12.3 4.95	33.1 4.94	109 4.92	69.7 4.92	<4.96 4.96
TPH by Texas1005	Extracted:	Oct-26-17 08:00					
	Analyzed:	Oct-26-17 11:13	Oct-26-17 11:33	Oct-27-17 08:31	Oct-27-17 08:50	Oct-26-17 12:32	Oct-26-17 13:32
	Units/RL:	mg/kg RL					
C6-C12 Range Hydrocarbons		3300 24.9	2520 24.9	4300 125	3820 125	<25.0 25.0	<25.0 25.0
C12-C28 Range Hydrocarbons		4780 24.9	3850 24.9	7800 125	7180 125	<25.0 25.0	<25.0 25.0
C28-C35 Range Hydrocarbons		64.1 24.9	80.0 24.9	502 125	316 125	<25.0 25.0	<25.0 25.0
Total TPH		8140 24.9	6450 24.9	12600 125	11300 125	<25.0 25.0	<25.0 25.0

Kelsey Brooks

Project Manager

Final 1.000

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Version: 1.%

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D-16-23S-34E Project Location:

# Certificate of Analysis Summary 566209

COG Operating, LLC, Midland, TX

Project Name: Gettysburg St. Com #1H

TAN MANAGEMENT OF THE PARTY OF

Date Received in Lab: Thu Oct-19-17 11:45 am

Report Date: 30-OCT-17

Project Manager: Kelsey Brooks

	Lab Id:	566209-007	566209-008	566209-009	566209-010	566209-011	566209-012	2
Amalucie Domoctod	Field Id:	T-1 10'	T-2 Surface	T-2 1'	T-2 2'	T-2 3'	T-2 4'	
Analysis Nequesieu	Depth:	10-	-0	1-	2-	3-	4	
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	
	Sampled:	Oct-17-17 09:15	Oct-17-17 09:20	Oct-17-17 09:22	Oct-17-17 09:24	Oct-17-17 09:26	Oct-17-17 09:28	3:28
BTEX by EPA 8021B	Extracted:		Oct-25-17 08:45	Oct-25-17 08:45	Oct-26-17 11:00	Oct-26-17 11:00	Oct-26-17 11:00	00:
	Analyzed:		Oct-25-17 15:54	Oct-25-17 16:21	Oct-26-17 16:28	Oct-26-17 17:31	Oct-26-17 17:12	7:12
	Units/RL:		mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg	RL
Benzene			0.0379 0.00199	0.0632 0.00200	16.5 1.01	8.17 0.497	14.3	0.499
Toluene			0.0980 0.00199	0.0629 0.00200	190 1.01	84.1 0.497	91.9	0.499
Ethylbenzene			0.0254 0.00199	0.00373 0.00200	88.5 1.01	24.0 0.497	20.7	0.499
m,p-Xylenes			0.165 0.00398	0.0140 0.00399	244 2.01	75.9 0.994	68.5	866.0
o-Xylene			0.184 0.00199	0.00710 0.00200	87.6 1.01	27.4 0.497	24.1	0.499
Total Xylenes			0.349 0.00199	0.0211 0.00200	332 1.01	103 0.497	92.6	0.499
Total BTEX			0.510 0.00199	0.151 0.00200	627 1.01	220 0.497	220	0.499
Chloride by EPA 300	Extracted:	Oct-24-17 16:00	00:9					
	Analyzed:	Oct-25-17 04:27	Oct-25-17 05:07	Oct-25-17 05:14	Oct-25-17 05:21	Oct-25-17 05:41	Oct-25-17 05:48	:48
	Units/RL:	mg/kg RL	mg/kg	RL				
Chloride		<4.96 4.96	5.35 4.96	<4.96 4.96	<4.94 4.94	5.99 4.92	<4.97	4.97
TPH by Texas1005	Extracted:		Oct-26-17 08:00	00:8				
	Analyzed:		Oct-27-17 09:10	Oct-27-17 09:30	Oct-27-17 09:50	Oct-26-17 14:53	Oct-26-17 15:53	:53
	Units/RL:	_	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg	RL
C6-C12 Range Hydrocarbons			2460 125	5140 125	5220 125	2990 24.9	3160	24.9
C12-C28 Range Hydrocarbons			11700 125	11800 125	9090 125	4760 24.9	4790	24.9
C28-C35 Range Hydrocarbons			325 125	313 125	323 125	108 24.9	62.3	24.9
Total TPH			14500 125	17300 125	14600 125	7860 24.9	8010	24.9

Kelsey Brooks

Project Manager

Final 1.000

Page 6 of 37

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

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

Version: 1.%

Sheldon Hitchcock D-16-23S-34E

Project Location:

Project Id:

Contact:

# Certificate of Analysis Summary 566209

COG Operating, LLC, Midland, TX

Project Name: Gettysburg St. Com #1H

Date Received in Lab: Thu Oct-19-17 11:45 am

Report Date: 30-OCT-17

)	Kelsey Brooks
	Project Manager:

Analysis Requested         Field Id.         T-2 f         T-2 f         T-2 T         T-2 T         T-3 Surface           BUEX by EPA 8021B         Extracted, Analyzed, Coct-26-17 16:10         Coct-17-17 09:34         Coct-17-17 09:34         Coct-17-17 09:34         Coct-17-17 09:34         Coct-17-17 09:34         Coct-17-17 00:40         Coct-17-17 00:40         Coct-17-17 00:40         Coct-17-17 00:40         Coct-17-17 00:40         Coct-17-17 00:34		Lab Id:	566209-013		566209-014	4	566209-015	566209-016	566209-017	5.	566209-018	
National   Deptit   Soll   S	Aunthois Dogwood	Field Id:	T-2 5'		T-2 6'		T-2 7'	T-2 12'	T-3 Surface		T-3 1'	
Nauiyzed:         SOIL         Cot-17-17 10:00         Cot-17-17 10:00         Cot-17-17 10:00         Cot-25-17 10:40         Cot-17-17 10:00         Cot-25-17 10:41         Cot-25-17 10:40	Analysis Requesied	Depth:	5-		-9		7-	12-	-0		1-	
N 8021B         Extracted:         Oct-17-17 09:30         Oct-17-17 09:34         Oct-17-17 09:42		Matrix:	SOIL		SOIL		SOIL	SOIL	SOIL		SOIL	
V 8021B         Extracted, Analyzed:         Oct-25-17 16:00         Oct-25-17 08:45         Oct-25-17 08:45         Oct-25-17 08:45         Oct-25-17 16:40         Oct-25-17 16		Sampled:	Oct-17-17 09:	30	Oct-17-17 0	9:32	Oct-17-17 09:34	Oct-17-17 09:40	Oct-17-17 10:00	Oct	Oct-17-17 10:02	02
Anadyzed: Oct-26-17 16:10   Oct-25-17 17:58   Oct-25-17 16:40   Oct-27-17 04:12   Img/kg RL   Img/k	BTEX by EPA 8021B	Extracted:		00	Oct-25-17 08	3:45	Oct-25-17 08:45		Oct-26-17 16:00	Oct	Oct-26-17 16:00	00
ChitoKBL: Right   Ri		Analyzed:		10	Oct-25-17 17	7:58	Oct-25-17 16:40		Oct-27-17 04:12	Oct	Oct-27-17 03:53	53
10   10   10   10   10   10   10   10		Units/RL:	mg/kg	RL	mg/kg	RL					mg/kg	RL
19.6   19.6	Benzene		51.0	2.01	096.0	0.100				00	0.737	0.201
Fig. 10	Toluene		223	2.01	19.6	0.100				00	11.4	0.201
136	Ethylbenzene		68.3	2.01	60.6	0.100				00	12.5	0.201
18.0   19.00	m,p-Xylenes		136	4.02	20.8	0.201		-		66	55.0	0.402
182 2.01   28.2 0.100 0.0451 0.00202   110 0.200   1	o-Xylene		46.0	2.01	7.40	0.100		6		00	23.2	0.201
FA 300         524         2.01         57.9         0.100         0.0451         0.00202         166         0.200           PA 300         Extracted:         Oct-24-17 16:00         Oct-24-17 16:00         Oct-24-17 16:00         Oct-24-17 16:00         Oct-24-17 16:00         Oct-27-17 12:30           A nalyzed:         Oct-25-17 06:08         Oct-25-17 06:15         Oct-25-17 06:22         RL         mg/kg         RL         mg/kg         RL         mg/kg         RL           A nalyzed:         Oct-26-17 08:00           A nalyzed:         Oct-26-17 16:13         Oct-26-17 16:52         Oct-26-17 17:12         Oct-26-17 18:0         Oct-26-17 18:0         Oct-26-17 18:0           A nalyzed:         Oct-26-17 16:13         Oct-26-17 16:52         Oct-26-17 17:12         Oct-26-17 17:32         mg/kg         RL         mg/kg         RL           A nalyzed:         Oct-26-17 16:32         Oct-26-17 17:12         Oct-26-17 17:12         Oct-26-17 17:12         Oct-26-17 17:12           A nalyzed:         Oct-26-17 16:32         Oct-26-17 17:12         Oct-26-17 17:12         Oct-26-17 17:12         Oct-26-17 17:12           A nalyzed: <th>Total Xylenes</th> <th></th> <th>182</th> <th>2.01</th> <th>28.2</th> <th>0.100</th> <th></th> <th></th> <th></th> <th>00</th> <th>78.2</th> <th>0.201</th>	Total Xylenes		182	2.01	28.2	0.100				00	78.2	0.201
PA 300         Extracted:         Oct-24-17 16:00         Oct-24-17 16:00         Oct-24-17 16:00         Oct-24-17 16:00         Oct-27-17 12:30           Analyzed:         Oct-25-17 06:08         Oct-25-17 06:15         Oct-25-17 06:22         Oct-25-17 06:29         Oct-27-17 15:34           as1005         Extracted:         Oct-26-17 08:00         Oct-26-17 08:00         Oct-26-17 08:00         Oct-26-17 08:00         Oct-26-17 08:00           as1005         Extracted:         Oct-26-17 08:00         Oct-26-17 08:00         Oct-26-17 08:00         Oct-26-17 08:00         Oct-26-17 17:32           Analyzed:         Oct-26-17 16:13         Oct-26-17 16:52         Oct-26-17 17:12         Oct-26-17 17:32         Oct-26-17 17:32           Analyzed:         Oct-26-17 16:13         Oct-26-17 16:52         Oct-26-17 17:32         Oct-26-17 17:32           Analyzed:         Oct-26-17 16:13         Oct-26-17 16:52         Oct-26-17 17:32         Oct-26-17 17:32           Analyzed:         Oct-26-17 16:13         Oct-26-17 16:23         Oct-26-17 17:32           Analyzed:         Oct-26-17 16:23         Oct-26-17 17:32           Analyzed:         Oct-26-17 16:23         Oct-26-17 17:03           Analyzed:         Oct-26-17 16:23         Oct-26-17 17:03           Analyzed:         Oct-26-17 16:23	Total BTEX		524	2.01	57.9	0.100		2		00	103	0.201
Analyzed:         Oct-25-17 06:08         Oct-25-17 06:15         Oct-25-17 06:25         Oct-25-17 06:29         Oct-27-17 15:34           Asslubos         Extracted:         Oct-26-17 08:00         Oct-26-17 08:00         Oct-26-17 08:00         Oct-26-17 08:00         Oct-26-17 17:12         Act. Ag. Ag. Ag. Ag. Ag. Ag. Ag. Ag. Ag. Ag	Chloride by EPA 300	Extracted:		00	Oct-24-17 16	90:9	Oct-24-17 16:00	Oct-24-17 16:00	Oct-27-17 12:30	Oct	Oct-27-17 12:30	30
48.1 mg/kg         RL         <		Analyzed:	Oct-25-17 06:	80	Oct-25-17 06	5:15	Oct-25-17 06:22	Oct-25-17 06:29	Oct-27-17 15:34	Oct	Oct-27-17 15:53	53
as1005         Extracted:         Oct-26-17 08:00         Oct-26-17 08:00         Oct-26-17 08:00         Oct-26-17 08:00         Oct-26-17 08:00         Oct-26-17 10:32           Analyzed:         Oct-26-17 16:13         Oct-26-17 16:52         Oct-26-17 17:12         Oct-26-17 17:32           Units/RL:         mg/kg         RL         mg/kg         RL         mg/kg         RL           A 3250         24.9         76.3         24.9         <25.0		Units/RL:	mg/kg	RL	mg/kg	RL		mg/kg			mg/kg	RL
as1005         Extracted:         Oct-26-17 08:00         Oct-26-17 08:00         Oct-26-17 16:13         Oct-26-17 16:32         Oct-26-17 17:12         Oct-26-17 17:32           Inits/RL:         mg/kg         RL         mg/kg         RL         mg/kg         RL           Inits/RL:         mg/kg         RL         mg/kg         RL         mg/kg         RL           Inits/RL:         mg/kg         RL         c25.0         25.0         25.0         4010         125           Inits/RL:         mg/kg         RL         c25.0         25.0         25.0         11700         125           Inits/RL:         mg/kg         RL:         c25.0         25.0         25.0         25.0         11700         125	Chloride		48.3	4.95	100	4.97		42.1			<5.00	5.00
Analyzed:         Oct-26-17 16:13         Oct-26-17 16:13         Oct-26-17 17:32         Oct-26-17 17:32           Units/RL:         mg/kg         RL         mg/kg         RL         mg/kg         RL           3250         24.9         674         24.9         <25.0         25.0         4010         125           4360         24.9         76.3         24.9         <25.0         25.0         11700         125           92.8         24.9         76.3         24.9         <25.0         25.0         35.0         11700         125	TPH by Texas1005	Extracted:	Oct-26-17 08:	00	Oct-26-17 08	3:00	Oct-26-17 08:00		Oct-26-17 08:00	Oct	Oct-26-17 08:00	00
Units/RL:         mg/kg         RL         mg/kg         RL         mg/kg         RL         mg/kg         RL           3250         24.9         674         24.9         <25.0         25.0         4010         125           4360         24.9         1340         24.9         <25.0         25.0         11700         125           92.8         24.9         76.3         24.9         <25.0         25.0         5.0         11700         125		Analyzed:		13	Oct-26-17 16	5:52	Oct-26-17 17:12		Oct-26-17 17:32	Oct	Oct-26-17 17:52	52
3250         24.9         674         24.9         <25.0		Units/RL:	mg/kg	RL	mg/kg	RL					mg/kg	RL
4360         24.9         1340         24.9         <25.0	C6-C12 Range Hydrocarbons		3250	24.9	674	24.9					4230	125
92.8 24.9 76.3 24.9 <25.0 25.0 537	C12-C28 Range Hydrocarbons		4360	24.9	1340	24.9				25	9720	125
	C28-C35 Range Hydrocarbons		92.8	24.9	76.3	24.9				25	457	125
Total TPH 7700 24.9 2090 24.9 <25.0 25.0 16200 125	Total TPH		7700	24.9	2090	24.9					14400	125

Kelsey Brooks Project Manager

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Sheldon Hitchcock D-16-23S-34E

# Certificate of Analysis Summary 566209

COG Operating, LLC, Midland, TX

Project Name: Gettysburg St. Com #1H

Date Received in Lab: Thu Oct-19-17 11:45 am

Ď IQ

30-OCT-17	Kelsev Brooks
Report Date:	Project Manager.

### Principle By Exhaucted being Exhaucted being Exhaucted being Exhaucted being Exhaucted by EPA 300		Lab Id:	566209-019	566209-020	566209-021	566209-022	566209-023	
National Depths   2-   3-   4-   5-   5-   10-     Marice   Depths   Soll   Soll   Soll   Soll   Soll   Soll     Extracted:	Annie Donnoctod	Field Id:	T-3 2'	T-3 3'	T-3 4'	T-3 5'	T-3 10'	
BIEX by EPA 8021B         Soult         SOIL         BOLT-7-17 10:00         Oct-17-17 10:10         Oct-17-17 10:10 <th>Thursday Neducestea</th> <th>Depth:</th> <th>2-</th> <th>3-</th> <th>-4</th> <th>5-</th> <th>10-</th> <th></th>	Thursday Neducestea	Depth:	2-	3-	-4	5-	10-	
BTEX by EPA 801B         Extracted: Coct-17-17 10:00         Oct-17-17 10:00         Oct-25-17 00:05         Oct-25-17 00:05         Oct-25-17 00:05         Oct-17-17 10:10         Oct-17-17 10:00         Oct-17-17 10:00         Oct-17-17 10:00         Oct-17-17 10:00         Oct-17-17 10:00         Oct-17-17 10:00         Oct-25-17 00:04         Oct-25-17 00:04         Oct-25-17 00:04         Oct-25-17 00:04         Oct-17-17 10:10         Oct-17-17 00:10         Oct-25-17 17:00         Oct-17-17 10:10         Oct-17-17 00:10         Oct-25-17 17:00         Oct-17-17 10:10         Oct-17-17 00:10         Oct-25-17 17:00         Oct-17-17 10:10         Oct-25-17 17:00         Oct-25-17 17:00         Oct-17-17 10:00         Oct-25-17 17:00		Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	
BTEX by EPA 8021B         Extracted: Coct-27-17 10:00         Oct-25-17 16:00         Oct-25-17 17:02         Oct-25-17 08:45         Oct-25-17 08:45           Analyzed: Coct-27-17 18:41         Oct-27-17 18:41         Oct-27-17 18:41         Oct-27-17 18:41         Oct-27-17 18:41         Oct-27-17 17:20         RL         mg/kg		Sampled:	Oct-17-17 10:04	Oct-17-17 10:06	Oct-17-17 10:08	Oct-17-17 10:10	Oct-17-17 10:20	
Analyzed:         Oct-27-17 18:41         Oct-27-17 02:19         Oct-25-17 17:02         Oct-25-17 17:02           nee         Units/RL:         ng/kg         RL         ng/kg         NC	BTEX by EPA 8021B	Extracted:		Oct-26-17 16:00	Oct-25-17 08:45	Oct-25-17 08:45		
Chicarpoonument   Chicarpoon		Analyzed:		Oct-27-17 02:19	Oct-25-17 17:02	Oct-25-17 17:20		
16.3   2.01   4.00199   0.00193   0.00199		Units/RL:						
161 2.01   c.0.0199 0.00199 0.0158 0.0240 0.00391 0.00199   c.0.0199 0.00199	Benzene							
ces         56.6         2.01 <a.001.99< th="">         0.00219         0.00201         <a.001.99< th="">         0.001.99</a.001.99<></a.001.99<>	Toluene							
cs         111         402 <a.0.0398< th="">         0.00398         0.00492         <a.0.0398< th="">         0.0039         c.00039         c.00039         c.00039         c.00039         c.00039         c.00039         c.00039         c.00019         c.00019&lt;</a.0.0398<></a.0.0398<>	Ethylbenzene							
A	m,p-Xylenes							
This by Texas 1005   Cot-27-17 18:30   Cot-27-	o-Xylene							
X         X         386         2.01         <0.00199	Total Xylenes							
Chloride by EPA 300         Extracted:         Oct-27-17 12:30         Oct-27-17 16:30         Oct-27-17 16:30         Oct-27-17 16:30         Oct-24-17 16:00         Oct-25-17 06:35         Oct-25-17 06:42         Analyse         RL         mg/kg	Total BTEX							
TPH by Texas 1005         Extracted:         Oct-27-17 15:59         Oct-27-17 16:06         Oct-25-17 06:35         Oct-25-17 06:35         Oct-25-17 06:42         Aug/kg         RL         mg/kg         RL <th< th=""><th>Chloride by EPA 300</th><th>Extracted:</th><th></th><th>Oct-27-17 12:30</th><th>Oct-24-17 16:00</th><th>Oct-24-17 16:00</th><th>Oct-24-17 16:00</th><th></th></th<>	Chloride by EPA 300	Extracted:		Oct-27-17 12:30	Oct-24-17 16:00	Oct-24-17 16:00	Oct-24-17 16:00	
TPH by Texas1005         Extracted:         c.4.94         4.94         RL         mg/kg         RL         mg/		Analyzed:		Oct-27-17 16:06	Oct-25-17 06:35	Oct-25-17 06:42	Oct-25-17 06:49	
TPH by Texas1005         C4.94         4.94         4.94         4.94         4.94         4.94         4.94         4.94         4.94         4.94         4.94         4.94         4.94         4.94         4.94         4.94         4.94         4.94         4.94         4.93         4.93         4.92         4.92         4.92         7.34           TPH by Texas1005         Extracted:         Oct-26-17 08:00         Oct-26-17 18:31         Oct-26-17 18:50         Oct-26-17 18:50         Oct-26-17 18:50         Oct-26-17 19:10           ange Hydrocarbons         Lang/kg         RL         mg/kg         RL         mg/kg         RL         mg/kg         RL           Aange Hydrocarbons         C 42.9         24.9         24.9         24.9         24.9         25.0         25.0         25.0         25.0           Aange Hydrocarbons         C 42.9         24.9         24.9         24.9         25.0         25.0         25.0         25.0         25.0           Aange Hydrocarbons         C 42.9         24.9         24.9         24.9         25.0         25.0         25.0         25.0         25.0           Aange Hydrocarbons         C 4		Units/RL:						
TPH by Texas1005         Extracted:         Oct-26-17 08:00         Oct-26-17 08:00         Oct-26-17 08:00         Oct-26-17 18:31         Oct-26-17 18:50         Oct-26-17 19:10:10           ange Hydrocarbons         Units/RL:         mg/kg         RL         mg/kg         RL         mg/kg         RL         mg/kg           sange Hydrocarbons         4270         125         <24.9         24.9         24.9         25.0         25.0           sange Hydrocarbons         266         125         <24.9         24.9         24.9         25.0         25.0           sange Hydrocarbons         266         125         <24.9         24.9         25.0         25.0         25.0           sange Hydrocarbons         266         125         <24.9         24.9         25.0         25.0         25.0	Chloride							
Analyzed:         Oct-27-17 10:10         Oct-26-17 18:31         Oct-26-17 18:50         Oct-26-17 19:10           ange Hydrocarbons         Units/RL:         mg/kg         RL         mg/kg         RL         mg/kg         RL         mg/kg           Aange Hydrocarbons         6300         125         <24.9         24.9         <25.0         25.0         <25.0           Aange Hydrocarbons         266         125         <24.9         24.9         <25.0         25.0         <25.0           Aange Hydrocarbons         10800         125         <24.9         24.9         <25.0         25.0         <25.0	TPH by Texas1005	Extracted:	Oct-26-17 08:00	Oct-26-17 08:00	Oct-26-17 08:00	Oct-26-17 08:00		
ange Hydrocarbons         Units/RL.         mg/kg         RL         mg/kg         RC         SC         SC <t< th=""><th></th><th>Analyzed:</th><th></th><th>Oct-26-17 18:31</th><th>Oct-26-17 18:50</th><th>Oct-26-17 19:10</th><th></th><th></th></t<>		Analyzed:		Oct-26-17 18:31	Oct-26-17 18:50	Oct-26-17 19:10		
ange Hydrocarbons         4270         125         <24.9		Units/RL:						
Range Hydrocarbons         6300         125         <24.9	C6-C12 Range Hydrocarbons							
Range Hydrocarbons         266         125         <24.9	C12-C28 Range Hydrocarbons							
10800 125	C28-C35 Range Hydrocarbons							
	Total TPH		10800 125	<24.9 24.9	<25.0 25.0	<25.0 25.0		

Kelsey Brooks Project Manager

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Sheldon Hitchcock D-16-23S-34E

Project Location:

Project Id:

Contact:





## **Flagging Criteria**



- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F RPD exceeded lab control limits.
- J The target analyte was positively identified below the quantitation limit and above the detection limit.
- U Analyte was not detected.
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K Sample analyzed outside of recommended hold time.
- JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- \*\* Surrogate recovered outside laboratory control limit.
- BRL Below Reporting Limit.
- **RL** Reporting Limit

MDL Method Detection Limit	SDL Sample Detection Limit	LOD Limit of Detection

PQL Practical Quantitation Limit MQL Method Quantitation Limit LOQ Limit of Quantitation

**DL** Method Detection Limit

NC Non-Calculable

- + NELAC certification not offered for this compound.
- \* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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1211 W Florida Ave, Midland, TX 79701	(432) 563-1800	(432) 563-1713
2525 W. Huntington Dr Suite 102, Tempe AZ 85282	(602) 437-0330	



Batch:

Project Name: Gettysburg St. Com #1H

Work Orders: 566209,

**Sample:** 566209-001 / SMP

**Project ID:** 

Lab Batch #: 3031730 Sample

- 1 10/05/17 10 45

1 Matrix: Soil

Units: mg/kg Date An	alyzed: 10/25/17/13:45	SU	RROGATE RE	ECOVERY S	STUDY	
BTEX by EPA 8	021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes		,	( )	[D]		
1,4-Difluorobenzene		0.0293	0.0300	98	80-120	
4-Bromofluorobenzene		0.0350	0.0300	117	80-120	

Lab Batch #: 3031730 Sample: 566209-008 / SMP Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 10/25/17 15:54 SURROGATE RECOVERY STUDY Amount True Control BTEX by EPA 8021B Limits **Found** Flags Amount Recovery [A] [B] %R %R [D] **Analytes** 1,4-Difluorobenzene 0.0266 0.0300 89 80-120 4-Bromofluorobenzene 0.0299 0.0300 100 80-120

Units: mg/kg Date Analyzed: 10/25/17 16:21 SURROGATE RECOVERY STUDY

BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0289	0.0300	96	80-120	
4-Bromofluorobenzene	0.0269	0.0300	90	80-120	

Lab Batch #: 3031730 Sample: 566209-015 / SMP Batch: 1 Matrix: Soil

Units:	mg/kg	<b>Date Analyzed:</b> 10/25/17 16:40	SU	RROGATE RE	ECOVERY S	STUDY	
	BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1.17:0		Analytes					
1,4-Difluor	robenzene		0.0358	0.0300	119	80-120	
4-Bromoflu	uorobenzene		0.0347	0.0300	116	80-120	

Units:	mg/kg	<b>Date Analyzed:</b> 10/25/17 17:02	SU	RROGATE RE	ECOVERY S	STUDY	
	ВТЕ	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
		Analytes			[D]		
1,4-Difluorol	benzene		0.0326	0.0300	109	80-120	
4-Bromofluo	orobenzene		0.0308	0.0300	103	80-120	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 \* A / B

All results are based on MDL and validated for QC purposes.

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Gettysburg St. Com #1H

Work Orders: 566209,

**Sample:** 566209-022 / SMP

**Project ID:** 

**Lab Batch #:** 3031730 Unite. mø/kø Date Analyzed: 10/25/17 17:20 Batch: Matrix: Soil - 1

Units:	mg/kg	<b>Date Analyzed:</b> 10/25/17 17:20	SU	RROGATE RI	ECOVERY S	STUDY	
	BTE	X by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorober	nzene	- I I I I I I I I I I I I I I I I I I I	0.0345	0.0300	115	80-120	
4-Bromofluoro	benzene		0.0352	0.0300	117	80-120	

**Lab Batch #:** 3031730 Sample: 566209-001 / DL Batch: 1 Matrix: Soil

Units: mg/kg **Date Analyzed:** 10/25/17 17:39 SURROGATE RECOVERY STUDY Amount True Control BTEX by EPA 8021B Found Limits Flags Amount Recovery [A] [B] %R %R [D] **Analytes** 1,4-Difluorobenzene 0.0250 0.0300 83 80-120 4-Bromofluorobenzene 0.0245 0.0300 82 80-120

**Lab Batch #:** 3031730 Sample: 566209-014 / SMP Batch: Matrix: Soil

**Units:** mg/kg Date Analyzed: 10/25/17 17:58 SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
1,4-Difluorobenzene	0.0337	0.0300	112	80-120		
4-Bromofluorobenzene	0.0343	0.0300	114	80-120		

**Lab Batch #: 3031675** Sample: 566209-001 / SMP Batch: Matrix: Soil

Units:	mg/kg	<b>Date Analyzed:</b> 10/26/17 11:13	SURROGATE RECOVERY STUDY						
	TP	H by Texas1005	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
		Analytes			[D]				
o-Terpheny	/1		38.0	49.9	76	70-130			
1-Chlorooc	tane		110	99.7	110	70-130			

Lab Batch #: 3031675 Sample: 566209-002 / SMP Batch: Matrix: Soil

Units:	mg/kg	<b>Date Analyzed:</b> 10/26/17 11:33	SURROGATE RECOVERY STUDY						
	TP	H by Texas1005	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
		Analytes			[D]				
o-Terpheny	1		61.0	49.9	122	70-130			
1-Chlorooct	tane		108	99.7	108	70-130			

<sup>\*</sup> Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 \* A / B

All results are based on MDL and validated for QC purposes.

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Gettysburg St. Com #1H

Work Orders: 566209,

Sample: 566209-005 / SMP

**Project ID:** 

**Lab Batch #:** 3031675 Units: mø/kø **Date Analyzed:** 10/26/17 12:32

Matrix: Soil Batch:

Units:	mg/kg	<b>Date Analyzed:</b> 10/26/17 12:32	SURROGATE RECOVERY STUDY					
	TPI	H by Texas1005  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
o-Terphenyl			53.6	49.9	107	70-130		
1-Chloroocta	ane		95.7	99.8	96	70-130		

**Lab Batch #:** 3031675 Sample: 566209-006 / SMP Batch: 1 Matrix: Soil

Units: mg/kg **Date Analyzed:** 10/26/17 13:32 SURROGATE RECOVERY STUDY Amount True Control TPH by Texas1005 Limits Found Flags Amount Recovery [A] [B] %R %R [D] **Analytes** o-Terphenyl 54.3 50.0 109 70-130 1-Chlorooctane 97.2 99.9 97 70-130

**Lab Batch #:** 3031675 Sample: 566209-011 / SMP Batch: Matrix: Soil

**Units:** mg/kg Date Analyzed: 10/26/17 14:53 SURROGATE RECOVERY STUDY

TPH by Texas1005  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
o-Terphenyl	39.5	49.8	79	70-130	
1-Chlorooctane	116	99.6	116	70-130	

**Lab Batch #:** 3031675 Sample: 566209-012 / SMP Batch: Matrix: Soil

Units:	mg/kg	<b>Date Analyzed:</b> 10/26/17 15:53	SURROGATE RECOVERY STUDY						
	TP	H by Texas1005  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
o-Terpheny	[	Analytes	39.3	49.8	79	70-130			
1-Chlorooct			111	99.6	111	70-130			

Lab Batch #: 3031655 Sample: 566209-013 / SMP Batch: Matrix: Soil

Units:	mg/kg	<b>Date Analyzed:</b> 10/26/17 16:10	SURROGATE RECOVERY STUDY					
	BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
		Analytes			[10]			
1,4-Difluorob	enzene		0.0265	0.0300	88	80-120		
4-Bromofluor	obenzene		0.0279	0.0300	93	80-120		

<sup>\*</sup> Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 \* A / B

All results are based on MDL and validated for QC purposes.

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Gettysburg St. Com #1H

Work Orders: 566209,

**Project ID:** 

Matrix: Soil

**Lab Batch #:** 3031675 **Sample:** 566209-013 / SMP Batch: TT---:4---... \_ /1\_ \_ Data Amalamada 10/06/17 16:12

Units: mg/kg Date Analyzed: 10/26/1/16	SU SU	RROGATE R	ECOVERY S	COVERY STUDY				
TPH by Texas1005	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
Analytes			[D]					
o-Terphenyl	36.9	49.9	74	70-130				
1-Chlorooctane	110	99.7	110	70-130				

**Lab Batch #:** 3031655 Sample: 566209-010 / SMP Batch: 1 Matrix: Soil

**Units:** mg/kg Date Analyzed: 10/26/17 16:28 SURROGATE RECOVERY STUDY Amount True Control BTEX by EPA 8021B **Found** Limits Flags Amount Recovery [A] [B] %R %R [D] **Analytes** 1,4-Difluorobenzene 0.0248 0.0300 83 80-120 4-Bromofluorobenzene 0.0300 0.0261 87 80-120

**Lab Batch #:** 3031675 Sample: 566209-014 / SMP Batch: Matrix: Soil

**Units:** mg/kg Date Analyzed: 10/26/17 16:52 SURROGATE RECOVERY STUDY

TPH by Texas1005  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
o-Terphenyl	63.5	49.8	128	70-130	
1-Chlorooctane	109	99.6	109	70-130	

**Lab Batch #:** 3031655 Sample: 566209-012 / SMP Batch: Matrix: Soil

Units:	mg/kg	<b>Date Analyzed:</b> 10/26/17 17:12	SURROGATE RECOVERY STUDY					
	ВТЕ	X by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
		Allarytes		1				
1,4-Difluor	obenzene		0.0247	0.0300	82	80-120		
4-Bromoflu	orobenzene		0.0283	0.0300	94	80-120		

Lab Batch #: 3031675 Sample: 566209-015 / SMP Batch: Matrix: Soil

Units:	mg/kg	<b>Date Analyzed:</b> 10/26/17 17:12	SURROGATE RECOVERY STUDY						
	TP	H by Texas1005	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
		Analytes			[D]				
o-Terpheny	·1		53.6	49.9	107	70-130			
1-Chlorooc	tane		95.7	99.8	96	70-130			

<sup>\*</sup> Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 \* A / B

All results are based on MDL and validated for QC purposes.

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Gettysburg St. Com #1H

Work Orders: 566209,

**Sample:** 566209-011 / SMP

**Project ID:** 

Lab Batch #: 3031655 TT--:4--ma/lea

Date Analyzed: 10/26/17 17:31

Matrix: Soil Batch: 1

<b>Units:</b> mg/kg <b>Date Analyzed:</b> 10/26/17 17:31	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
	0.0050	0.0200		00.400		
1,4-Difluorobenzene	0.0253	0.0300	84	80-120		
4-Bromofluorobenzene	0.0336	0.0300	112	80-120		

**Lab Batch #:** 3031675 Sample: 566209-017 / SMP Batch: 1 Matrix: Soil

Units: mg/kg **Date Analyzed:** 10/26/17 17:32 SURROGATE RECOVERY STUDY

TPH by Texas1005  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
o-Terphenyl	63.0	49.9	126	70-130	
1-Chlorooctane	124	99.8	124	70-130	

Lab Batch #: 3031655 Sample: 566209-002 / SMP Batch: Matrix: Soil

**Units:** mg/kg **Date Analyzed:** 10/26/17 17:50 SURROGATE RECOVERY STUDY

BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0255	0.0300	85	80-120	
4-Bromofluorobenzene	0.0271	0.0300	90	80-120	

**Lab Batch #:** 3031675 Sample: 566209-018 / SMP Matrix: Soil

Units:	mg/kg	<b>Date Analyzed:</b> 10/26/17 17:52	SURROGATE RECOVERY STUDY					
	TPI	H by Texas1005  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
o-Terpheny	<u>'</u>	Analytes	62.0	50.0	124	70-130		
1-Chlorooc			124	100	124	70-130		

Lab Batch #: 3031655 Sample: 566209-004 / SMP Batch: Matrix: Soil

Units:	mg/kg	<b>Date Analyzed:</b> 10/26/17 18:09	SURROGATE RECOVERY STUDY						
	ВТЕ	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
		Analytes			[D]				
1,4-Difluorobenzene			0.0246	0.0300	82	80-120			
4-Bromofluorobenzene			0.0285	0.0300	95	80-120			

<sup>\*</sup> Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 \* A / B

All results are based on MDL and validated for QC purposes.

Version: 1.%

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Gettysburg St. Com #1H

Work Orders: 566209,

Sample: 566209-020 / SMP

**Project ID:** 

**Lab Batch #:** 3031675

Data Analysis de 10/26/17 19:21

Batch: 1 Matrix: Soil

Units:	Units: mg/kg Date Analyzed: 10/26/1/18:31 SURROGATE RECOVERY STUDY								
	TPF	I by Texas1005	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
		Analytes			[D]				
o-Terphenyl			51.8	49.9	104	70-130			
1-Chloroocta	ne		93.2	99.7	93	70-130			

Units: mg/kg Date Analyzed: 10/26/17 18:45 SURROGATE RECOVERY STUDY Amount True Control BTEX by EPA 8021B Limits **Found** Flags Amount Recovery [A] [B] %R %R [D] **Analytes** 1,4-Difluorobenzene 0.0284 0.0300 95 80-120 4-Bromofluorobenzene 0.0276 0.0300 80-120 92

Lab Batch #: 3031675 Sample: 566209-021 / SMP Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 10/26/17 18:50 SURROGATE RECOVERY STUDY

TPH by Texas1005  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
o-Terphenyl	52.2	50.0	104	70-130	
1-Chlorooctane	95.1	99.9	95	70-130	

Units:	mg/kg	<b>Date Analyzed:</b> 10/26/17 19:10	SURROGATE RECOVERY STUDY						
	TP	H by Texas1005	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
		Analytes			[D]				
o-Terpheny	/1		52.9	50.0	106	70-130			
1-Chlorooc	tane		95.9	99.9	96	70-130			

Lab Batch #: 3031655 Sample: 566209-005 / SMP Batch: 1 Matrix: Soil

Units:	mg/kg	<b>Date Analyzed:</b> 10/26/17 21:18	SURROGATE RECOVERY STUDY					
	BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
		Analytes			[D]			
1,4-Difluorobenzene			0.0268	0.0300	89	80-120		
4-Bromofluo	robenzene		0.0249	0.0300	83	80-120		

<sup>\*</sup> Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 \* A / B

All results are based on MDL and validated for QC purposes.

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Gettysburg St. Com #1H

Work Orders: 566209,

**Project ID:** 

**Lab Batch #:** 3031663 Matrix: Soil Sample: 566209-020 / SMP Batch:

Units: mg/kg Date Analyzed: 10/27/17	02:19	SURROGATE RECOVERY STUDY				
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
1,4-Difluorobenzene	0.0261	0.0300	87	80-120		
4-Bromofluorobenzene	0.0270	0.0300	90	80-120		

**Lab Batch #:** 3031663 Sample: 566209-018 / SMP Batch: Matrix: Soil

Units: mg/kg Date Analyzed: 10/27/17 03:53 SURROGATE RECOVERY STUDY Amount True Control BTEX by EPA 8021B Limits Found Flags Amount Recovery [A] [B] %R %R [D] **Analytes** 1,4-Difluorobenzene 0.0251 0.0300 84 80-120 4-Bromofluorobenzene 0.0304 0.0300

**Lab Batch #:** 3031663 Sample: 566209-017 / SMP Batch: Matrix: Soil

**Units:** mg/kg **Date Analyzed:** 10/27/17 04:12 SURROGATE RECOVERY STUDY

BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0258	0.0300	86	80-120	
4-Bromofluorobenzene	0.0326	0.0300	109	80-120	

**Lab Batch #:** 3031675 Sample: 566209-003 / SMP Batch: Matrix: Soil

Units:	mg/kg	<b>Date Analyzed:</b> 10/27/17 08:31	SURROGATE RECOVERY STUDY					
	TP	H by Texas1005	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
		Analytes			[D]			
o-Terpheny	yl		53.6	49.8	108	70-130		
1-Chlorooc	etane		119	99.6	119	70-130		

Lab Batch #: 3031675 Sample: 566209-004 / SMP Batch: Matrix: Soil

Units:	mg/kg	<b>Date Analyzed:</b> 10/27/17 08:50	SURROGATE RECOVERY STUDY					
	TP	H by Texas1005  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
o-Terphenyl		Timely tes	45.6	50.0	91	70-130		
1-Chlorooctan	ne		94.0	99.9	94	70-130		

<sup>\*</sup> Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 \* A / B

All results are based on MDL and validated for QC purposes.

101

80-120

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Gettysburg St. Com #1H

Work Orders: 566209,

**Sample:** 566209-008 / SMP

**Project ID:** 

**Lab Batch #:** 3031675 Unite.

Date Analyzed: 10/27/17 09:10

Matrix: Soil Batch: - 1

Units:	mg/kg	<b>Date Analyzed:</b> 10/27/17 09:10	SURROGATE RECOVERY STUDY					
	TP	H by Texas1005	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
		Analytes			(-)			
o-Terphenyl			62.2	49.9	125	70-130		
1-Chlorooct	ane		108	99.7	108	70-130		

**Lab Batch #:** 3031675 Sample: 566209-009 / SMP Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 10/27/17 09:30 SURROGATE RECOVERY STUDY Amount True Control TPH by Texas1005 Limits Found Flags Amount Recovery [A] [B] %R %R [D] **Analytes** o-Terphenyl 49.9 129 70-130 64.4 1-Chlorooctane 99.7 124 124 70-130

**Lab Batch #:** 3031675 Sample: 566209-010 / SMP Batch: Matrix: Soil

**Units:** mg/kg Date Analyzed: 10/27/17 09:50 SURROGATE RECOVERY STUDY

TPH by Texas1005  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
o-Terphenyl	57.2	50.0	114	70-130	
1-Chlorooctane	123	99.9	123	70-130	

**Lab Batch #:** 3031675 Sample: 566209-019 / SMP Batch: Matrix: Soil

Units:	mg/kg	<b>Date Analyzed:</b> 10/27/17 10:10	SURROGATE RECOVERY STUDY						
	TP	H by Texas1005	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
		Analytes			[D]				
o-Terpheny	/1		43.5	49.9	87	70-130			
1-Chlorooc	tane		118	99.7	118	70-130			

Lab Batch #: 3031744 Sample: 566209-006 / SMP Batch: Matrix: Soil

Units:	mg/kg	<b>Date Analyzed:</b> 10/27/17 16:42	SURROGATE RECOVERY STUDY						
	ВТЕ	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
		Analytes			[D]				
1,4-Difluorol	benzene		0.0264	0.0300	88	80-120			
4-Bromofluo	orobenzene		0.0314	0.0300	105	80-120			

<sup>\*</sup> Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 \* A / B

All results are based on MDL and validated for QC purposes.

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Gettysburg St. Com #1H

Work Orders: 566209,

Sample: 566209-019 / SMP

**Project ID:** 

Lab Batch #: 3031744 Units: mg/kg **Date Analyzed:** 10/27/17 18:41 Batch: 1 Matrix: Soil

<b>Units:</b> mg/kg <b>Date Analyzed:</b> 10/27/17 18:41	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
Analytes			[2]			
1,4-Difluorobenzene	0.0255	0.0300	85	80-120		
4-Bromofluorobenzene	0.0296	0.0300	99	80-120		

**Lab Batch #:** 3031730 **Sample:** 7633242-1-BLK / BLK Batch: 1 Matrix: Solid

Units:	Jnits: mg/kg Date Analyzed: 10/25/17 10:20 SURROGATE RECOVERY STUDY								
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
		Analytes			[D]				
1,4-Difluoro	obenzene		0.0329	0.0300	110	80-120			
4-Bromofluorobenzene			0.0355	0.0300	118	80-120			

Sample: 7633284-1-BLK / BLK **Lab Batch #:** 3031675 Batch: 1 Matrix: Solid

Date Analyzed: 10/26/17 10:13 **Units:** mg/kg SURROGATE RECOVERY STUDY

TPH by Texas1005  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
o-Terphenyl	55.2	50.0	110	70-130	
1-Chlorooctane	98.4	100	98	70-130	

**Lab Batch #:** 3031638 **Sample:** 7633352-1-BLK / BLK Batch: 1 Matrix: Solid

Units:	mg/kg	<b>Date Analyzed:</b> 10/26/17 11:18	SURROGATE RECOVERY STUDY						
	ВТЕ	X by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1.4-Difluor	obenzene	Allalytes	0.0311	0.0300	104	80-120			
4-Bromofluorobenzene			0.0346	0.0300	115	80-120			

**Lab Batch #:** 3031655 Sample: 7633345-1-BLK / BLK Batch: Matrix: Solid

Units:	mg/kg	<b>Date Analyzed:</b> 10/26/17 15:27	SURROGATE RECOVERY STUDY						
	ВТЕ	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
		Analytes			[2]				
1,4-Difluorob	enzene		0.0288	0.0300	96	80-120			
4-Bromofluor	obenzene		0.0264	0.0300	88	80-120			

<sup>\*</sup> Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 \* A / B

All results are based on MDL and validated for QC purposes.

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Gettysburg St. Com #1H

Work Orders: 566209, Lab Batch #: 3031663

**Sample:** 7633348-1-BLK / BLK

**Project ID:** 

Matrix: Solid Batch: 1

Units: mg/	kg	<b>Date Analyzed:</b> 10/27/17 01:41	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
	A	nalytes			[D]			
1,4-Difluorobenzene			0.0272	0.0300	91	80-120		
4-Bromofluorobenzene			0.0264	0.0300	88	80-120		

**Lab Batch #:** 3031744 Sample: 7633415-1-BLK / BLK Batch: Matrix: Solid

Units:	Jnits: mg/kg Date Analyzed: 10/27/17 13:32 SURROGATE RECOVERY STUDY								
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
		Analytes			[D]				
1,4-Difluoro	obenzene		0.0271	0.0300	90	80-120			
4-Bromofluorobenzene			0.0246	0.0300	82	80-120			

Sample: 7633242-1-BKS / BKS **Lab Batch #:** 3031730 Batch: Matrix: Solid

**Units:** mg/kg Date Analyzed: 10/25/17 08:27 SURROGATE RECOVERY STUDY

BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0307	0.0300	102	80-120	
4-Bromofluorobenzene	0.0345	0.0300	115	80-120	

Lab Batch #: 3031638 **Sample:** 7633352-1-BKS / BKS Batch: Matrix: Solid

Units:	mg/kg	<b>Date Analyzed:</b> 10/26/17 09:43	SURROGATE RECOVERY STUDY						
	ВТЕ	X by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluor	obenzene	Analytes	0.0295	0.0300	98	80-120			
4-Bromoflu	iorobenzene		0.0351	0.0300	117	80-120			

**Lab Batch #:** 3031675 Sample: 7633284-1-BKS / BKS Batch: Matrix: Solid

Units:	mg/kg	<b>Date Analyzed:</b> 10/26/17 10:33	SURROGATE RECOVERY STUDY						
	TP	H by Texas1005	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
		Analytes			[12]				
o-Terphenyl			57.3	50.0	115	70-130			
1-Chlorooct	ane		104	100	104	70-130			

<sup>\*</sup> Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 \* A / B

All results are based on MDL and validated for QC purposes.

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Gettysburg St. Com #1H

Work Orders: 566209, **Lab Batch #:** 3031655

**Sample:** 7633345-1-BKS / BKS

**Project ID:** 

Batch: IInits. mø/kø Date Analyzed: 10/26/17 13:17 SUDDOCATE DECOVEDY STUDY

Matrix: Solid - 1

SURROGATE RECOVERY STUDY								
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
Analytes			[D]					
1,4-Difluorobenzene	0.0279	0.0300	93	80-120				
4-Bromofluorobenzene	0.0312	0.0300	104	80-120				

**Lab Batch #:** 3031663 **Sample:** 7633348-1-BKS / BKS Batch: 1 Matrix: Solid

**Units:** mg/kg Date Analyzed: 10/26/17 23:47 SURROGATE RECOVERY STUDY Amount True Control BTEX by EPA 8021B Found Limits Flags Amount Recovery [A] [B] %R %R [D] **Analytes** 1,4-Difluorobenzene 0.0283 0.0300 94 80-120 4-Bromofluorobenzene 0.0334 0.0300 111 80-120

Lab Batch #: 3031744 **Sample:** 7633415-1-BKS / BKS Batch: Matrix: Solid

**Units:** mg/kg Date Analyzed: 10/27/17 11:38 SURROGATE RECOVERY STUDY

BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0296	0.0300	99	80-120	
4-Bromofluorobenzene	0.0331	0.0300	110	80-120	

**Lab Batch #:** 3031730 **Sample:** 7633242-1-BSD / BSD Batch: Matrix: Solid

Units:	mg/kg	<b>Date Analyzed:</b> 10/25/17 08:46	SURROGATE RECOVERY STUDY						
	ВТЕ	X by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluor	robenzene	Tinary tes	0.0302	0.0300	101	80-120			
4-Bromofluorobenzene			0.0337	0.0300	112	80-120			

Lab Batch #: 3031638 Sample: 7633352-1-BSD / BSD Batch: Matrix: Solid

Units:	mg/kg	<b>Date Analyzed:</b> 10/26/17 10:01	SURROGATE RECOVERY STUDY						
	BTE	X by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorob	penzene	111111111111111111111111111111111111111	0.0302	0.0300	101	80-120			
4-Bromofluor	robenzene		0.0354	0.0300	118	80-120			

<sup>\*</sup> Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 \* A / B

All results are based on MDL and validated for QC purposes.

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Gettysburg St. Com #1H

Work Orders: 566209, **Lab Batch #:** 3031675

**Sample:** 7633284-1-BSD / BSD

**Project ID:** 

IInits. mø/kø **Date Analyzed:** 10/26/17 10:54 Batch: 1 Matrix: Solid

Units:	mg/kg	<b>Date Analyzed:</b> 10/26/17 10:54	SURROGATE RECOVERY STUDY					
	TPl	H by Texas1005  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
- T1		Analytes	50.7	50.0		70.120		
o-Terphenyl			59.7	50.0	119	70-130		
1-Chloroocta	ne		113	100	113	70-130		

**Lab Batch #:** 3031655 **Sample:** 7633345-1-BSD / BSD Batch: 1 Matrix: Solid

Units:	mg/kg	<b>Date Analyzed:</b> 10/26/17 13:36	SURROGATE RECOVERY STUDY						
	ВТЕ	X by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluor	robenzene	Analytes	0.0288	0.0300	96	80-120			
4-Bromoflu	iorobenzene		0.0294	0.0300	98	80-120			

Lab Batch #: 3031663 **Sample:** 7633348-1-BSD / BSD Batch: Matrix: Solid

**Units:** mg/kg Date Analyzed: 10/27/17 00:06 SURROGATE RECOVERY STUDY

BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0284	0.0300	95	80-120	
4-Bromofluorobenzene	0.0322	0.0300	107	80-120	

**Sample:** 7633415-1-BSD / BSD **Lab Batch #:** 3031744 Batch: Matrix: Solid

Units:	mg/kg	<b>Date Analyzed:</b> 10/27/17 11:57	SURROGATE RECOVERY STUDY						
	ВТЕ	X by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluor	robenzene		0.0277	0.0300	92	80-120			
4-Bromofluorobenzene			0.0305	0.0300	102	80-120			

**Lab Batch #:** 3031730 Sample: 566207-002 S / MS Batch: Matrix: Soil

Units:	ng/kg	<b>Date Analyzed:</b> 10/25/17 09:04	SURROGATE RECOVERY STUDY						
	ВТЕ	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
		Analytes			[D]				
1,4-Difluorobenz	ene		0.0325	0.0300	108	80-120			
4-Bromofluorobenzene			0.0346	0.0300	115	80-120			

<sup>\*</sup> Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 \* A / B

All results are based on MDL and validated for QC purposes.

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Gettysburg St. Com #1H

Work Orders: 566209, Lab Batch #: 3031638

Sample: 566321-001 S / MS

**Project ID:** 

Units: mø/kø **Date Analyzed:** 10/26/17 10:19

Matrix: Soil Batch:

100

110

70-130

<b>Units:</b> mg/kg <b>Date Analyzed:</b> 10/26/17 10:19	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
Analytes			[12]			
1,4-Difluorobenzene	0.0352	0.0300	117	80-120		
4-Bromofluorobenzene	0.0352	0.0300	117	80-120		

**Lab Batch #:** 3031675 **Sample:** 566209-005 S / MS Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 10/26/17 12:52 SURROGATE RECOVERY STUDY Amount True Control TPH by Texas1005 Limits Found Flags Amount Recovery [A] [B] %R %R [D] **Analytes** o-Terphenyl 59.0 50.0 118 70-130 1-Chlorooctane

110

**Lab Batch #:** 3031655 Sample: 566321-002 S / MS Batch: Matrix: Soil

**Units:** mg/kg Date Analyzed: 10/26/17 13:55 SURROGATE RECOVERY STUDY

BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0283	0.0300	94	80-120	
4-Bromofluorobenzene	0.0318	0.0300	106	80-120	

**Lab Batch #:** 3031663 **Sample:** 566216-016 S / MS Batch: Matrix: Soil

Units:	mg/kg	<b>Date Analyzed:</b> 10/27/17 00:25	SU	RROGATE R	ECOVERY S	STUDY	
	ВТЕ	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluoro	obenzene	Analytes	0.0281	0.0300	94	80-120	
4-Bromoflu	orobenzene		0.0309	0.0300	103	80-120	

Lab Batch #: 3031744 Sample: 566341-001 S / MS Batch: Matrix: Soil

Units:	mg/kg	<b>Date Analyzed:</b> 10/27/17 12:16	SU	RROGATE RI	ECOVERY S	STUDY	
	ВТЕ	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1,4-Difluoroben	zene		0.0277	0.0300	92	80-120	
4-Bromofluorob	enzene		0.0313	0.0300	104	80-120	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 \* A / B

All results are based on MDL and validated for QC purposes.

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Gettysburg St. Com #1H

**Work Orders :** 566209, **Lab Batch #:** 3031730 **Sample:** 566207-002 SD / MSD **Project ID: Batch:** 1 **Matrix:** Soil

Units: Date Analyzed: 10/25/17 09:22 mg/kg SURROGATE RECOVERY STUDY True Amount Control BTEX by EPA 8021B Found Amount Recovery Limits Flags [A] [B] %R %R [D] **Analytes** 1,4-Difluorobenzene 0.0303 0.0300 101 80-120 4-Bromofluorobenzene 0.0344 0.0300 115 80-120

**Units:** mg/kg **Date Analyzed:** 10/26/17 10:37 SURROGATE RECOVERY STUDY Amount True Control BTEX by EPA 8021B Found Limits Flags Amount Recovery [A] [B] %R %R [D] **Analytes** 1,4-Difluorobenzene 0.0336 0.0300 112 80-120 4-Bromofluorobenzene 0.0300 0.0356 119 80-120

Lab Batch #: 3031675 Sample: 566209-005 SD / MSD Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 10/26/17 13:12 SURROGATE RECOVERY STUDY

TPH by Texas1005  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
o-Terphenyl	57.5	50.0	115	70-130	
1-Chlorooctane	111	99.9	111	70-130	

Units:	mg/kg	<b>Date Analyzed:</b> 10/26/17 14:13	SU	RROGATE R	ECOVERY S	STUDY	
	ВТЕ	X by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluor	obenzene	randy eco	0.0337	0.0300	112	80-120	
4-Bromoflu	iorobenzene		0.0355	0.0300	118	80-120	

Units:	mg/kg	<b>Date Analyzed:</b> 10/27/17 00:44	SU	RROGATE RI	ECOVERY S	STUDY	
	BTEX by	EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	An	alytes		. ,	[D]		
1,4-Difluorol	penzene		0.0282	0.0300	94	80-120	
4-Bromofluo	robenzene		0.0313	0.0300	104	80-120	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 \* A / B

All results are based on MDL and validated for QC purposes.

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Gettysburg St. Com #1H

 Work Orders: 566209,
 Project ID:

 Lab Batch #: 3031744
 Sample: 566341-001 SD / MSD
 Batch: 1 Matrix: Soil

Units: mg/kg	<b>Date Analyzed:</b> 10/27/17 12:35	SU	RROGATE RE	ECOVERY S	STUDY	
ВТЕХ	X by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	<u> </u>	0.0275	0.0300	92	80-120	
4-Bromofluorobenzene		0.0251	0.0300	84	80-120	

Surrogate Recovery [D] = 100 \* A / B

All results are based on MDL and validated for QC purposes.

<sup>\*</sup> Surrogate outside of Laboratory QC limits

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

## BS / BSD Recoveries



Project Name: Gettysburg St. Com #1H

**Date Prepared:** 10/25/2017 Sample: 7633242-1-BKS

Batch #: 1

**Date Analyzed:** 10/25/2017

Project ID:

Matrix: Solid

Flag Limits %RPD 35 35 35 35 35 BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY 70-130 Control Limits 70-130 71-129 70-135 71-133 %R RPD % 3 9 2 9 Blk. Spk Dup. %R [G] 81 93 86 96 95 Duplicate Result [F] 0.0805 Blank Spike 0.0928 0.0978 0.192 0.0948 Spike Added 0.100 0.100 0.100 0.201 0.100  $\Xi$ Blank Spike %R [D] 83 66 103 102 100 Blank Spike Result 0.0985 0.0831 0.204 0.100 0.103 <u></u> 0.0998 0.0998 0.0998 Spike Added 0.0998 0.200 [B]Sample Result <0.00399 <0.00200 < 0.00200 < 0.00200 <0.00200 Blank BTEX by EPA 8021B mg/kg Analytes Ethylbenzene m,p-Xylenes o-Xylene Benzene Toluene Units:

ALJ Analyst: Sample: 7633345-1-BKS

Lab Batch ID: 3031655

**Date Prepared:** 10/26/2017

Batch #: 1

Date Analyzed: 10/26/2017 Matrix: Solid

Units:	mg/kg		BLAN	K /BLANK S	PIKE / E	STANK S	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY	ICATE 1	RECOVE	ERY STUD	Y.	
B7 Analytes	BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene		<0.00200	0.100	0.0958	96	0.0998	0.0867	87	10	70-130	35	
Toluene		<0.00200	0.100	0.101	101	0.0998	0.0908	91	11	70-130	35	
Ethylbenzene	ene	<0.00200	0.100	0.110	110	0.0998	0.0997	100	10	71-129	35	
m,p-Xylenes	nes	<0.00401	0.200	0.216	108	0.200	0.196	86	10	70-135	35	
o-Xylene		<0.00200	0.100	0.108	108	0.0998	0.0977	86	10	71-133	35	

Blank Spike Recovery [D] = 100\*(C)/[B]Blank Spike Duplicate Recovery [G] = 100\*(F)/[E]All results are based on MDL and Validated for QC Purposes Relative Percent Difference RPD = 200\*(C-F)/(C+F)

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Final 1.000

Analyst:

Lab Batch ID: 3031730

Work Order #: 566209

**Date Prepared:** 10/26/2017

Batch #: 1

Sample: 7633348-1-BKS

**Date Analyzed:** 10/26/2017

Matrix: Solid

BS / BSD Recoveries Project Name: Gettysburg St. Com #1H

Project ID:

**Date Analyzed:** 10/26/2017

Matrix: Solid

Flag Limits %RPD 35 35 35 35 35 BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY 70-130 Control Limits 70-130 71-129 70-135 71-133 %R RPD % 7 4 3 Blk. Spk Dup. %R [G] 102 103 88 93 103 Duplicate Result [F] 0.0884 Blank Spike 0.0937 0.205 0.104 0.104 Spike Added 0.101 0.201 0.101 0.101 0.101  $\Xi$ Blank Spike %R [D] 94 107 107 89 104 Blank Spike Result 0.0949 0.108 0.108 0.0901 0.211 <u></u> Spike Added 0.202 0.101 0.101 0.101 0.101 [B]Sample Result <0.00404 < 0.00202 < 0.00202 < 0.00202 <0.00202 Blank BTEX by EPA 8021B mg/kg Analytes Ethylbenzene m,p-Xylenes o-Xylene Benzene Toluene Units:

**Date Prepared:** 10/26/2017 Lab Batch ID: 3031638 ALJ

Analyst:

Batch #: 1 Sample: 7633352-1-BKS

BI ANK /BI ANK SPIKE / BI ANK SPIKE DIIPI ICATE BECOVEDV STIMV

Flag					
Control Limits %RPD	35	35	35	35	35
Control Limits	70-130	70-130	71-129	70-135	71-133
RPD %	3	5	9	9	\$
BIK. Spk Dup. %R [G]	08	68	94	66	16
Blank Spike Duplicate Result [F]	0.0804	0.0894	0.0943	0.185	0.0907
Spike Added [E]	0.100	0.100	0.100	0.200	0.100
Blank Spike %R [D]	82	93	66	26	95
Blank Spike Result [C]	0.0831	0.0941	0.0997	0.196	0.0958
Spike Added [B]	0.101	0.101	0.101	0.202	0.101
Blank Sample Result [A]	<0.00202	<0.00202	<0.00202	<0.00404	<0.00202
BTEX by EPA 8021B Analytes	Benzene	Toluene	Ethylbenzene	m,p-Xylenes	o-Xylene
	Sample Result   Spike   Blank   Spike   Spik	BTEX by EPA 8021B         Blank Sample Result   Added   Spike   Added   Added	PTEX by EPA 8021B         Blank Sample Result Added Sample Result (A)         Spike Spike (A)         Spike Spike (B)         Spike (B) <t< th=""><th>PTEX by EPA 8021B         Blank sample Result Added Spike Spike Spike Added Spike Spike Spike Spike Spike Added Spike Spike Spike Spike Spike Added Spike Spike</th><th>PTEX by EPA 8021B         Blank least Result Added Sample Result Added Spike Solice IAI         Spike Spike Spike Spike IAI         Spike Spike Spike Spike IAI         Spike Spike Spike Spike IAI         Spike Spike IAI         Spike Spike Spike Spike IAI         Spike Spik</th></t<>	PTEX by EPA 8021B         Blank sample Result Added Spike Spike Spike Added Spike Spike Spike Spike Spike Added Spike Spike Spike Spike Spike Added Spike	PTEX by EPA 8021B         Blank least Result Added Sample Result Added Spike Solice IAI         Spike Spike Spike Spike IAI         Spike Spike Spike Spike IAI         Spike Spike Spike Spike IAI         Spike Spike IAI         Spike Spike Spike Spike IAI         Spike Spik

Relative Percent Difference RPD = 200\*(C-F)/(C+F)

Blank Spike Recovery [D] = 100\*(C)/[B]Blank Spike Duplicate Recovery [G] = 100\*(F)/[E]All results are based on MDL and Validated for QC Purposes

Version: 1.%

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Lab Batch ID: 3031663

ALJ

Analyst:

Work Order #: 566209

## BS / BSD Recoveries





Work Order #: 566209 ALJAnalyst: Lab Batch ID: 3031744

Units:

Sample: 7633415-1-BKS

**Date Prepared:** 10/27/2017

Batch #: 1

Project ID:

**Date Analyzed:** 10/27/2017 Matrix: Solid

Flag Limits %RPD 35 35 35 35 35 BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY 70-130 Control Limits %R 70-130 71-129 70-135 71-133 RPD % 7 14 10 13 6 Blk. Spk Dup. %R [G] 90 100 102 93 104 Duplicate Result [F] 0.0897 Blank Spike 0.0932 0.102 0.104 0.201 Spike Added 0.100 0.100 0.100 0.201 0.100  $\Xi$ Blank Spike %R [D] 102 106 118 109 112 Blank Spike Result 0.119 0.113 0.103 0.107 0.221 <u></u> Spike Added 0.202 0.101 0.101 0.101 0.101 [B]Blank Sample Result <0.00404 <0.00202 < 0.00202 < 0.00202 < 0.00202 BTEX by EPA 8021B mg/kg Analytes

MNV

Sample: 7633143-1-BKS

Lab Batch ID: 3031342

Units:

Analyst:

Ethylbenzene m,p-Xylenes o-Xylene

Benzene Toluene Batch #: 1

**Date Prepared:** 10/24/2017

Matrix: Solid

**Date Analyzed:** 10/24/2017

: mg/kg		BLAN	K /BLANK	SPIKE / I	STANK S	3LANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY	ICATE I	RECOVE	ERY STUD	Y	
Chloride by EPA 300	Blank Sample Result	Spike Added	Blank Spike	Blank Spike	Spike Added	Blank Spike	Blk. Spk Dup.	RPD	Control Limits	Control Limits	<u>~</u>
Analytes	<u></u>	[B]		<b>D</b>	<u>a</u>	Dupncate Result [F]	[ <u>G</u>	0/	%0K	70KFD	
Chloride	<5.00	250	250	100	250	249	100	0	90-110	20	

Flag

Blank Spike Recovery [D] = 100\*(C)/[B]Blank Spike Duplicate Recovery [G] = 100\*(F)/[E]All results are based on MDL and Validated for QC Purposes Relative Percent Difference RPD = 200\*[(C-F)/(C+F)]

Version: 1.%

Date Analyzed: 10/25/2017

Project ID:

## BS / BSD Recoveries

Project Name: Gettysburg St. Com #1H

Work Order #: 566209

**Date Prepared:** 10/24/2017

Flag Limits %RPD BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY Control Limits Matrix: Solid RPD % Blk. Spk Dup. %R [G] Duplicate Result [F] Blank Spike Spike Added  $\Xi$ Blank Spike %R  $\overline{\mathbf{a}}$ Blank Spike Result <u></u> Batch #: Spike Added [B]Blank Sample Result Sample: 7633147-1-BKS Chloride by EPA 300 Lab Batch ID: 3031350 mg/kg Analytes

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY Sample: 7633336-1-BKS mg/kg

20

90-110

0

101

252

250

101

253

250

<5.00

**Date Prepared:** 10/27/2017

Batch #:

Lab Batch ID: 3031683

MNV

Analyst:

Chloride

**Date Analyzed:** 10/27/2017

Matrix: Solid

Flag Control Limits %RPD 20 Control Limits %R 90-110 RPD % 0 Blk. Spk Dup. %R [G] 96 Duplicate Result [F] Blank Spike 240 Spike Added 250  $\Xi$ Blank Spike %R [D] 96 Blank Spike Result 240 Spike Added 250  $\overline{\mathbf{B}}$ Sample Result <5.00 Blank ₹ Chloride by EPA 300 Analytes Chloride Units:

**Date Analyzed:** 10/26/2017 Matrix: Solid **Date Prepared:** 10/26/2017 Batch #: Sample: 7633284-1-BKS Lab Batch ID: 3031675 ARM Analyst:

Units: mg/kg		BLAN	K /BLANK	SPIKE / 1	3LANK S	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY	ICATE	RECOVI	ERY STUD	). V	
TPH by Texas1005	Blank Sample Result	Spike Added	Blank Spike	Blank Spike	Spike Added	Blank Spike	Blk. Spk Dup.	RPD	Control Limits	Control Limits	Flag
Analytes	[A]	[B]	Result [C]	%R [D]	[E]	Duplicate Result [F]	%R [G]	%	% <b>R</b>	%RPD	
C6-C12 Range Hydrocarbons	<25.0	1000	927	93	1000	927	93	0	75-125	25	
C12-C28 Range Hydrocarbons	<25.0	1000	944	94	1000	953	95		75-125	25	

Relative Percent Difference RPD = 200\*[(C-F)/(C+F)]

Blank Spike Recovery [D] = 100\*(C)/[B]Blank Spike Duplicate Recovery [G] = 100\*(F)/[E]All results are based on MDL and Validated for QC Purposes

Version: 1.%

Units:

MN/

Analyst:

Project Name: Gettysburg St. Com #1H



3031638 566209 Work Order #: Lab Batch ID:

10/26/2017 Date Analyzed: Reporting U

QC-Sample ID: 566321-001 S **Date Prepared:** 10/26/2017

Batch #:

Matrix: Soil Analyst: ALJ

Project ID:

porting Units:	mg/kg		Σ	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY	E/MAT	RIX SPIF	KE DUPLICAT	re rec	OVERY S	TUDY		
	BTEX by EPA 8021B	Parent Sample Result	Spike Added	Spiked Sample Spiked Result Sample	Spiked Sample %R	Spike	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits	Control Limits %RPD	Flag
	Analytes	[A]	[B]		[D]		,	[6]				
Benzene		<0.00199	9660.0	0.118	118	0.0992	0.117	118	1	70-130	35	
Toluene		0.00315	9660.0	0.112	109	0.0992	0.103	101	8	70-130	35	
Ethylbenzene		<0.00199	9660.0	0.0959	96	0.0992	0.0847	85	12	71-129	35	
m,p-Xylenes		<0.00398	0.199	0.190	95	0.198	0.167	84	13	70-135	35	
o-Xylene		<0.00199	9660.0	0.0904	91	0.0992	0.0786	62	14	71-133	35	

Analyst: ALJ **QC-Sample ID:** 566321-002 S **Date Prepared:** 10/26/2017

10/26/2017

Date Analyzed:

3031655

Lab Batch ID:

Matrix: Soil

Batch #:

Reporting Units: mg/kg		Σ	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY	E/MAT	RIX SPIF	CE DUPLICAT	TE REC	OVERY S	STUDY		
BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R A [D]	spike dded [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	0.00211	0.100	0.111	109	0.101	0.113	110	2	70-130	35	
Toluene	0.00542	0.100	0.0991	94	0.101	0.0928	87	7	70-130	35	
Ethylbenzene	<0.00201	0.100	0.0881	88	0.101	0.0768	92	14	71-129	35	
m,p-Xylenes	<0.00402	0.201	0.176	88	0.202	0.152	75	15	70-135	35	
o-Xylene	<0.00201	0.100	0.0847	85	0.101	0.0753	75	12	71-133	35	

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

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

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

Flag

# Form 3 - MS / MSD Recoveries

Project Name: Gettysburg St. Com #1H



3031663 566209 Work Order #: Date Analyzed: Lab Batch ID:

10/27/2017 mø/ko

QC-Sample ID: 566216-016 S **Date Prepared:** 10/26/2017

Batch #:

Matrix: Soil

Project ID:

Analyst: ALJ

Reporting Units:	mg/kg		M	ATRIX SPIKI	E/MAT	RIX SPII	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY	TE RECC	OVERY S	STUDY		
	BTEX by EPA 8021B Analytes	Parent Sample Result	Spike Added	Spiked Sample Spiked Result Sample [C] %R	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	_
Benzene		<0.00200	8660.0	0.119	119	0	0.107	107	11	70-130	35	
Toluene		<0.00200	0.0998	0.110	110	9660.0	0.0972	86	12	70-130	35	
Ethylbenzene		<0.00200	0.0998	0.105	105	0.0996	9880.0	68	17	71-129	35	
m,p-Xylenes		<0.00399	0.200	0.212	106	0.199	0.188	94	12	70-135	35	
o-Xylene		<0.00200	0.0998	0.104	104	0.0996	0.0930	93	11	71-133	35	
Lab Batch ID:	3031730 Q	QC- Sample ID: 566207-002 S	566207-	002 S	Ba	Batch #:	1 Matrix: Soil	:: Soil				

Analyst: ALJ Batch #: **Date Prepared:** 10/25/2017

10/25/2017

Date Analyzed:

Reporting Units: mg/kg		M	ATRIX SPIKI	[/MATI	RIX SPIF	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY	TE RECC	VERY S	STUDY		
BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00202	0.101	0.103	102	0.101	0.102	101	1	70-130	35	
Toluene	<0.00202	0.101	0.103	102	0.101	0.0982	76	5	70-130	35	
Ethylbenzene	<0.00202	0.101	0.0895	68	0.101	0.0841	83	9	71-129	35	
m,p-Xylenes	<0.00403	0.202	0.177	88	0.202	0.166	82	9	70-135	35	
o-Xylene	<0.00202	0.101	0.0845	84	0.101	0.0788	78	7	71-133	35	

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

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

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

Project Name: Gettysburg St. Com #1H



3031744 566209 Work Order #: Lab Batch ID:

10/27/2017 Reporting Units: Date Analyzed:

Released to Imaging: 12/2/2022 2:55:08 PM

Batch #: QC-Sample ID: 566341-001 S

**Date Prepared:** 10/27/2017

Matrix: Soil Analyst: ALJ

Project ID:

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B	Parent Sample		Spiked Sample Result	Spiked Sample	Spik	Duplicate c Spiked Sample		RPD	Control Limits	Control Limits	Flag
Analytes	Result [A]	Added [B]	[C] %R	%R [D]	Adde [E]	Result [F]	%R [G]	%	%R	%RPD	
Benzene	0.00630	0.101	0.0589	52	0.100	0.0644	58	6	70-130	35	×
Toluene	0.0546	0.101	0.0688	14	0.100	0.0685	14	0	70-130	35	X
Ethylbenzene	0.0235	0.101	0.0584	35	0.100	0.0668	43	13	71-129	35	X
m,p-Xylenes	0.124	0.202	0.132	4	0.200	0.141	6	7	70-135	35	×
o-Xylene	0.0410	0.101	0.0641	23	0.100	0.0714	30	11	71-133	35	X
Lab Batch ID: 3031342	QC- Sample ID: 566095-006 S	566095	s 900-	Ba	Batch #:	1 Matrix: Soil	: Soil				

Analyst: MNV **Date Prepared:** 10/24/2017

10/24/2017

mg/kg

Reporting Units:

Date Analyzed:

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

	Chloride by EPA 300	Parent	:	Spiked Sample Spil	Spiked		Duplicate	Spiked		Control	Control	1
		Sample	Spike	Result	Sample	Spike	Spiked Sample	Dup.	RPD	Limits	Limits	Flag
		Kesuit	Added	<u></u>	% <b>K</b>	٦,	Result [F]	% <b>K</b>	%	% <b>K</b>	%RPD	
	Analytes	<u></u>	<u>B</u>		<u> </u>			<u>5</u>				
Chloride		58.4	247	308	101	247	310	102	-	90-110	20	
Lab Batch ID:	3031342 QC	- Sample ID:	566207-007 S	007 S	Bat	Satch #:	1 Matrix:	r: Soil				

Analyst: MNV Batch #: QC-Sample ID: 566207-007 S **Date Prepared:** 10/24/2017

10/25/2017

mg/kg

Reporting Units:

Date Analyzed:

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by FPA 300	Parent		Spiked Sample	Spiked		Duplicate	Spiked		Control	Control	
Chichiac by El A 300	Sample	Spike	Result	Sample		Spiked Sample	Dup.	RPD	Limits	Limits	Flag
	Result	Added	<u>C</u>	%R		Result [F]	%R	%	%R	%RPD	
Analytes	[ <u>A</u> ]	[ <u>B</u> ]	1	<u>a</u>	$\Xi$	1	<u>5</u>				
Chloride	93.5	247	345	102	247	344	101	О	90-110	20	

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

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

Page 31 of 37

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

Project Name: Gettysburg St. Com #1H



QC-Sample ID: 566209-003 S 3031350 566209 Work Order #: Lab Batch ID:

Matrix: Soil Batch #:

Project ID:

Flag Limits %RPD 20 Limits Control 90-110 %R MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY RPD % 0 Dup. %R [G] 102 Spiked Sample Duplicate Result [F] 284 Analyst: MNV Spike Added 247  $\Xi$ Sample Spiked %R 101 <u>a</u> Spiked Sample Result  $\overline{\mathbb{Q}}$ 283 **Date Prepared:** 10/24/2017 Spike Added 247 <u>B</u> Parent Sample Result 33.1 Chloride by EPA 300 Analytes 10/25/2017 mg/kg Reporting Units: Date Analyzed: Chloride

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY mg/kg Reporting Units: Date Analyzed:

Matrix: Soil

Batch #:

QC-Sample ID: 566209-010 S

**Date Prepared:** 10/24/2017

10/25/2017

3031350

Lab Batch ID:

Analyst: MNV

Flag Limits %RPD Control 20 90-110 Control Limits %RRPD % 0 Spiked Dup. %R<u>5</u> 107 Spiked Sample Duplicate Result [F] 264 Spike Added 247 Sample Spiked  $\overline{\underline{a}}$ 106 Spiked Sample Result  $\overline{\mathbb{C}}$ 263 Spike Added 247  $\overline{\mathbf{B}}$ Parent Sample Result <4.94 ₹ Chloride by EPA 300 Analytes Chloride

Matrix: Analyst: MNV Batch #: QC-Sample ID: 566209-017 S **Date Prepared:** 10/27/2017 10/27/2017 3031683 Date Analyzed: Lab Batch ID:

mg/kg

Reporting Units:

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Soil

Chloride by FPA 300	Parent		Spiked Sample	Spiked		Duplicate	Spiked		Control	Control	
	Sample	Spike	Result	Sample	Spike	Spiked Sample	Dup.	RPD	Limits	Limits	Flag
	Result	Added	<u>D</u>	%R	Added	Result [F]	%R	%	%R	%RPD	
Analytes	<u>[A]</u>	[B]	•	<u>[</u>	国		<u>5</u>				
Chloride	<4.90	245	252	103	245	250	102	1	90-110	20	

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

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

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

## Project Name: Gettysburg St. Com #1H



**QC-Sample ID:** 566422-006 S 3031683 566209 Work Order #: Lab Batch ID:

Matrix: Soil Batch #:

Project ID:

Analyst: MNV **Date Prepared:** 10/27/2017

Reporting Units: mg/kg	mg/kg		M	ATRIX SPIK	E/MAT	RIX SPI	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY	TE RECC	VERY S	TUDY		
	Chloride by EPA 300	Parent Sample Result	Spike	Spiked Sample Spiked Result Sample	Spiked Sample		Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
	Analytes	[A]	[B]	<u> </u>		Auueu [E]		¥ [5]	•	<b>V</b> 0	New D	
Chloride		<4.99	250	259	104	250	258	103	0	90-110	20	
Lab Batch ID:	3031675	<b>QC- Sample ID: 566209-005 S</b>	566209	005 S	Ba	Batch #:	1 Matrix: Soil	: Soil				

mg/kg		Σ	ATRIX SPIKI	E/MATI	RIX SPI	4ATRIX SPIKE / MATRIX SPIKE DUPLICATE	TE REC	RECOVERY STUDY	STUDY		
TPH by Toyas1005	Parent		Spiked Sample	Spiked		Duplicate	Spiked		Control	Control	
IIII Dy I CAASIOUS	Sample	Spike	Result	Sample	Spike	Spiked Sample	Dup.	RPD	Limits	Limits	Flag
	Result	Added	<u>C</u>	%R	Added	Result [F]	%R	%	%R	%RPD	
Analytes	<u> </u>	[B]	1	[ <u>Q</u> ]	<u> </u>	1	<u>[5]</u>				

Analyst: ARM

**Date Prepared:** 10/26/2017

10/26/2017

Date Analyzed:

Reporting Units:

25 25

4 93

666 666

95 94

1000 1000

<25.0 <25.0

C12-C28 Range Hydrocarbons C6-C12 Range Hydrocarbons

938 951

929 938

75-125 75-125

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

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

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

Page 33 of 37

Date Analyzed:

10/27/2017

Stafford, Texas (281-240-4200) Setting the Standard since 1990

Dallas Texas (214-902-0300)

San Antonio, Texas (210-509-3334)

Phoenix, Arizona (480-355-0900)

		Madeland consistency of the first of the fir	and the state of t		7	
				Analytical Information	(	
Client / Reporting Information		Project Information				Matrix Codes
COG Operating, LLC		Project Name/Number: Gettysburg St Com #1H				W = Water
Company Address: 2407 Pecos Ave. Artesia NM 88210		Project Location: D-16-23S-34E				S = Soil/Sed/Solid GW =Ground Water
Email: <u>slhitchcock@concho.com</u> Phone No: 575-70: dneel2@concho.com; alieb@concho.com; rhaskell@concho.com	3-6475	Invoice To: COG Operating, LLC Attn: Robert McNeill				P = Product SW = Surface water
Project Contact: Sheldon Hitchcock		600 W. Illnois Ave. Midland Tx, 79701				OW =Ocean/Sea Water
Samplers's Name: Sheldon Hitchcock		PO Number:		ED		WI = Wipe
Campora o Imilio. Olicinoli Illulluota						O = Oil  WW= Waste Water
		Collection	Number of preserved bottles			WW= Waste Water A = Air
No. Field ID / Point of Collection	Sample Depth	Date Time Matrix bottles 5		TPH EX		
1 T-1 Sur Carca		17 4 .000 S 1	H K	E		Field Comments
2 T-1 (	_	4:02 5 1				
3 1-1 2	2	4:04 s 1				
4 1-1 3	ယ	4:06 s 1	\			
5 7 4	ድ	4:08 s 1				
6	57	4:10 s 1		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		
7 1-(10)	6	4:15 s 1				
8 T-2 Surpose	0	9:26 s 1				
9 7-2 (	_	φ;22 s 1				
10 T-2 Z	2	4;24 s 1		/		
lumaround lime (Business days)		Data Delivera	Data Deliverable Information	•		
Same Day TAT 5 Day TAT		Level II Std QC	Level IV (Full Data Pkg /raw data)		Temp: 32	5
Next Day EMERGENCY 2 7 Day TAT		Level III Std QC+ Forms	S TRRP Level IV		CF:(0-6: -0.2°C)	מֹבֹיִבֹיבּ
2 Day EMERGENCY Contract TAT	АТ	Level 3 (CLP Forms)	UST/RG -411		(6-23: +0.2°C)	
3 Day EMERGENCY		TRRP Checklist			Corrected Temp: 3	~
TAT Starts Day received by Lab, if received by 5:00 pm	5:00 pm			FED-EX	FED-EX / UPS: Tracking #	
Sampler:	Date Time:	Received By:	COURIER			
Relinquished by:	0/20/17 Date Time:	10 Com 1 Sid Battle		675-17 1 AS	2 Pr	tund
Relinquished by:	1	3	Relinquished By:	Date Time:	Received By:	4
Notice: Notice: Signature of this document and estimatic honors of court	Date IIme:	Received By:	Custody Seal #	Preserved where applicable	e On Ice C	Cooler Temp. Thermo. Corr. Factor
losses or expenses incurred by the Client if such loses are due to circumstances beyond the control of Xenco. A minimum charge of \$75 will be applied to each project. Xenco's liability will be limited to the cost of samples and shall not assume any responsibility for any be enforced unless previously negotiated under a fully executed client contract.	nces beyond the contro	ol of Xenco. A minimum charge of \$75 will be an	ales and subcontractors. It assigns standard terms	and conditions of service. Xenco will	be liable only for the cost of sample	



Dallas Texas (214-902-0300)

## CHAIN OF CUSTODY

San Antonio, Texas (210-509-3334)

Phoenix, Arizona (480-355-0900)

and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any	be liable only for the co	service. Xenco will	itions of	nd condi	erms ar	tandard	ssigns s	tors. It a	bcontrac h project.	es and si	its affiliat	y to Xenco, e of \$75 wi	lient compan limum charge	rder from c enco. A mir	ontrol of X	tes a valid peyond the c	shment of samples constitue are due to circumstances be	Notice: Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms losses or expenses incurred by the Client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75 will be applied to each project. Xenco's liability will be limited by the Client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75 will be applied to each project. Xenco's liability will be limited.	losses or expenses be enforced unless
C00	e On Ice	Preserved where applicable	served	Pres			Seal #	Custody Seal#	C				Received By:	5 Rec		Date Time:			on .
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tens	Received By:	Date Time: 114	-			M	quished By	2 inqui	10-19-17 Relinquished By:	101	7 2	Site	1 ALL A	1000 1	117 %	6/20/17		Pleen-	Relinquished by:
				LIVERY	ER DE	G COUR	LUDIN	ION, INC	OSSESS	ANGE P	PLES CH	TIME SAN	LOW EACH	ENTED BE	E DOCUM	N MUST B	SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY	by Sampler:	Relinquished by Sa
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mp: W	Corrected Temp: 2	လ										TRRP Checklist	☐ TRRP C	П				3 Day EMERGENCY	3 Day E
);;;;	(6-23: +0 2.6.0)						G -411	UST/RG-411			ms)	Level 3 (CLP Forms)	Level 3	П			Contract TAT	2 Day EMERGENCY	2 Day E
°C) IR ID:R-8	CF:(0-6: -0 5°C)	요 :					TRRP Level IV	TRRP L			Forms	Level III Std QC+ Forms	Level II				7 Day TAT	Next Day EMERGENCY	Next Da
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Field Comments				BTEX		меон	NaHSO4	H2SO4 NaOH	HNO3	NaOH/Zi Acetate	tles of	# of Matrix bottles	Time M.		Date	Sample Depth		1	†
A = Air			RIDES	-X   L	XTEN	tles	ed bot	reserv	Number of preserved bottles	Nun				Collection	Coll		llection	Field ID / Point of Collection	No.
0 = 01			3	יטב	IDE													Samplers's Name: Sheldon Hitchcock	Samplers's Nam
WI = Wipe				ט	D.							79701	Midland Tx, 79701	PO Number:	PON			Olicidoli I likelicock	900
P = Product SW = Surface water SL = Sludge												ting, LLC McNeill s Ave.	COG Operating, LLC Attn: Robert McNeill 600 W. Illnois Ave.	Invoice To: C: At	Invoic	73-6475	Phone No: 575-703-6475 rhaskell@concho.com	Phone No: 575-70 dneel2@concho.com; alieb@concho.com; rhaskell@concho.com Proiest Contast: Shaldon Hitchcook	dneel2@conc
GW =Ground Water DW = Drinking Water													-	D-16-23S-34E	D-16-			2407 Pecos Ave. Artesia NM 88210	2407 Pecos Ave
W = Water													Gettysburg St. Com #1H	/sburg St	Geth			ng, LLC	COG Operating, LLC Company Address:
											ion	Project Information	mber:	Project Name/Number:	Proje			/ Branch:	Company Name / Branch:
Matrix Codes	nation	Analytical Information																Client / Reporting Information	Client
LOPOSG SPANOR																			
7	Xenco Job #		ote #	Xenco Quote #	Xe					com	www.xenco.com	www							
												)4-5251)	Midland, Texas (432-704-5251)	and, Tex	Mid			Pallas Lexas (214-502-0300)	Dallas I ex

Stafford, Texas (281-240-4200) Setting the Standard since 1990

San Antonio, Texas (210-509-3334)

Phoenix, Arizona (480-355-0900)

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									Analyt	Analytical Information	ă			Matrix Codes
Client / Reporting Information			Project Information	rmation				$\dashv$						ann Coues
COG Operating, LLC	G P	Project Name/Number: Gettysburg St. Com #1H	om #1H										<b>W</b> =	W = Water
Company Address: 2407 Pecos Ave. Artesia NM 88210	D. PI	Project Location: D-16-23S-34E											GW =	S = Soil/Sed/Solid GW =Ground Water DW = Drinking Water
Email: slhilchcock@concho.com  Phone No: 575-703 dneel2@concho.com; alieb@concho.com; rhaskell@concho.com	1-6475	Invoice To: COG Attn:	COG Operating, LLC Attn: Robert McNeill	Veill									SW SL :	P = Product SW = Surface water SL = Sludge
Project Contact: Sheldon Hitchcock	PI	Midla	Midland Tx, 79701	01				D					WI =	OW =Ocean/Sea Water WI = Wipe
Samplers's Name: Sheldon Hitchcock								DE	6				0 =	0 = 0il
	C	Collection			Number	Number of preserved bottles	ottles	ΓΕΝ	DES				A W	WW= Waste Water A = Air
No. Field ID / Point of Collection					n		9		RII					
	Sample Depth	Date Time	e Matrix	# of O	NaOH/Z Acetate	laOH	MEOH	TPH BTEX	CHLC				!	•
1 7-3 4'		7 6			ļ	ı	ı	-	\				Lield CC	ried Collillens
2 7-3 5	2	_	s 8	-			~		,					
3 7-3 10	0	1020	8 8	1			\	-	\					
4			S	_				-						
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6			S	_				+						
7			S	_				+						
σ			S	_				-	+					
9			S	<b>-</b> 3:				+						
10			S	<b>-</b> 3				+	+					
Turnaround Time (Business days)				Data Deliveral	Data Deliverable Information					Notes:				
Same Day TAT 5 Day TAT	TAT		Level II Std QC	QC	П	Level IV (Fu	Level IV (Full Data Pkg /raw	aw data)		7	Toma 2 )	١		
Next Day EMERGENCY	AT		Level III Sto	Level III Std QC+ Forms	» П	TRRP Level IV	∨			Ω ;	CF:(0-6: 0 2:0)		IR ID:R-8	ω
2 Day EMERGENCY Contract TAT	ct TAT		Level 3 (CLP Forms)	P Forms)	П	UST/RG -411	3				(6-23			
3 Day EMERGENCY			TRRP Checklist	klist						Co	rrected	Corrected Temp. 2		
TAT Starts Day received by Lab, if received	if received by 5:00 pm									FED-EX/Ura	J. 1144			
Relinquished by Sampler:	SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER D	CUMENTED BELC	W EACH TIM	E SAMPLES C	CHANGE POSS	SSION, INCLUE	ING COURIER	DELIVERY						, 
in	w/zo/n	(0)00 1 A	1 Jul butte	the '	10-19-17	Relinquished By:	with		Date Time:	V	7 45 Repélyed By:	+	R	2
ω 	Date IIIIe:	3	Received By:			Relinquished	By:		Date Time:		Received By:			7
reiliquisiled by:	Date Time:	Recei	Received By:			Custody Seal #	#	Pres	Preserved where applicable	-		On Ice Cooler Temp.		Thermo. Corr. Factor



## XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: COG Operating, LLC

Date/ Time Received: 10/19/2017 11:45:00 AM

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

Work Order #: 566209

Temperature Measuring device used: R8

	Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?		13.4	
#2 *Shipping container in good condition?		Yes	
#3 *Samples received on ice?		Yes	
#4 *Custody Seals intact on shipping contain	ner/ 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 relinquish	ed/ 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 t	est(s)?	Yes	
#16 All samples received within hold time?		Yes	
#17 Subcontract of sample(s)?		No	
#18 Water VOC samples have zero headspa	ace?	N/A	

* Must be completed for after-hours delivery of samples prior to placing in the refrigerator									
Analyst:		PH Device/Lot#:							
	Checklist completed by:	Comme Hernandez	Date: 10/23/2017						
	Checklist reviewed by:	Mus Moah Kelsey Brooks	Date: <u>10/23/2017</u>						

## **Analytical Report 566212**

for COG Operating, LLC

Project Manager: Sheldon Hitchcock
Gettysburg St Com #1H

30-OCT-17

Collected By: Client





## 1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122): Texas (T104704215-17-23), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054) Oklahoma (2017-142)

> Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-17-15), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab code: TX00127): Texas (T104704221-17-12)
Xenco-Lubbock (EPA Lab code: TX00139): Texas (T104704219-17-16)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-17-13)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)
Xenco-Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)





30-OCT-17

Project Manager: Sheldon Hitchcock

COG Operating, LLC

600 W Illinois Midland, TX 79701

Reference: XENCO Report No(s): 566212

**Gettysburg St Com #1H** Project Address: D-16-23S-34E

## **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) 566212. 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. 566212 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

**Kelsey Brooks** 

Knis Roah

Project Manager

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

Certified and approved by numerous States and Agencies.

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

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



## **Sample Cross Reference 566212**



## COG Operating, LLC, Midland, TX

Gettysburg St Com #1H

Sample Id	Matrix	<b>Date Collected</b>	Sample Depth	Lab Sample Id
N. Surface	S	10-17-17 00:00	0	566212-001
N. 1'	S	10-17-17 00:00	1	566212-002
S. Surface	S	10-17-17 00:00	0	566212-003
S. 1'	S	10-17-17 00:00	1	566212-004
E. Surface	S	10-17-17 00:00	0	566212-005
E. 1'	S	10-17-17 00:00	1	566212-006
W. Surface	S	10-17-17 00:00	0	566212-007
W. 1'	S	10-17-17 00:00	1	566212-008

## CASE NARRATIVE

Client Name: COG Operating, LLC Project Name: Gettysburg St Com #1H

Project ID: Report Date: 30-OCT-17
Work Order Number(s): 566212 Date Received: 10/19/2017

## Sample receipt non conformances and comments:

## Sample receipt non conformances and comments per sample:

None

## Analytical non conformances and comments:

Batch: LBA-3031366 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3031638 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3031732 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

### Certificate of Analysis Summary 566212 COG Operating, LLC, Midland, TX

Project Name: Gettysburg St Com #1H

Date Received in Lab: Thu Oct-19-17 11:45 am Report Date: 30-OCT-17

Project Manager: Kelsey Brooks

Heid Id:         N. Surface         N. I ·         S. Surface         S. I ·         E. Surface           Analysis Requested         Pepil:         0 ·         1 ·         0 ·         1 ·         0 ·         1 ·         0 ·           BTEX by EPA 8021B         Sxumpled:         Oct-17-17 00:00         Cecl-17-17 00:00		Lab Id:	566212-001		566212-002		566212-003	3	566212-004	90	566212-005	05	566212-006	900
Mark   Depth   Depth	Analysis Pounostad	Field Id:	N. Surface		N. 1.		S. Surface	1)	S. 1.		E. Surfac	e	E. 1'	
BIEX by EPA 8021B         Extracted: Extracted: Coct-17-17 00:00	Analysis Neduesieu	Depth:	-0		1		-0		1		-0		1-	
BTEX by EPA 8021B         Sampled:         Oct-17-17 00:00         Oct-27-17 10:00         Oct-27-17 10:0		Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
BTEX by EPA 801B         Extracted;         Oct-25-17 08:00         Oct-26-17 10:30         Oct-25-17 08:00         Oct-25-17 08:00         Oct-25-17 08:00         Oct-25-17 08:00         Oct-25-17 08:00         Oct-25-17 08:00         Oct-25-17 10:30         Oct-25-17 10:		Sampled:	Oct-17-17 00:00		Oct-17-17 00:0	00	Oct-17-17 00	00:0	Oct-17-17 (	00:00	Oct-17-17 0	0:00	Oct-17-17 00:00	00:00
Chiefachie Coet-25-17 16:23   Oct-25-17 16:42   Oct-25-17 17:20   Oct-25-17 17:39   Oct-25-17 17:30   Oct-25-17 17:30	BTEX by EPA 8021B	Extracted:	Oct-25-17 08:00		Oct-25-17 08:0	00	Oct-26-17 10	30	Oct-25-17 0	00:8	Oct-25-17 0	8:00	Oct-26-17 10:30	0:30
DiricyRL   DiricyRL		Analyzed:	Oct-25-17 16:23		Oct-25-17 16:4	42	Oct-26-17 13	:29	Oct-25-17 1	7:20	Oct-25-17 1	7:39	Oct-26-17 13:49	3:49
Chloride by EPA 300   Cot-23-17 15:00   Cot-24-17 16:00   Cot-25-17 16:00   Cot-25		Units/RL:		RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride by EPA 300   Cot-25-17   Licol Chloride by EPA 300   Extracted: Cot-25-17   Licol Cot-25-17   Licol Chloride by EPA 300   Extracted: Cot-25-17   Licol Cot-25-17	Benzene			100		00100		0.00351	0.0267	0.0100	0.0401	0.0100	<0.00336	0.00336
ces         O.0177         O.0109         O.0147         O.0109         C.0104         C.0104         O.0104         O.0109         O.0147         O.0109         C.0104         O.0104         O.0109         O.0142         O.0000         C.0000         O.00328         O.0010         O.0109         O.00328         O.0010         O.0109         O.00328         O.0109         O.	Toluene			100		00100		0.00351	0.0424	0.0100	0.219	0.0100	<0.00336	0.00336
Chloride by EPA 300   Cot-25-17 11:00   Cot-25	Ethylbenzene			100		00100		0.00351	0.0114	0.0100	0.0337	0.0100	<0.00336	0.00336
Chloride by EPA 300   Cot-25-17   Cot-17   Cot	m,p-Xylenes			1200		0.0200		0.00702	0.0328	0.0200	0.0663	0.0200	<0.00671	0.00671
This incomposes         0.0961         0.0100         0.0639         0.0100         <-0.00351	o-Xylene			100		00100		0.00351	<0.0100	0.0100	0.0273	0.0100	<0.00336	0.00336
Chloride by EPA 300         Extracted;         0.197         0.0100         0.217         0.0100         0.00351         0.00351         0.00351         0.0137         0.0100         0.0100         0.0135         0.0100         0.0145         0.0100         0.015         0.0100	Total Xylenes			100		00100		0.00351	0.0328	0.0100	0.0936	0.0100	<0.00336	0.00336
Chloride by EPA 300         Extracted:         Oct-25-17 11:00         Oct-25-17 11:00         Oct-25-17 11:00         Oct-25-17 11:00         Oct-25-17 11:00         Oct-25-17 11:00           Analyzed:         Oct-25-17 23:17         Oct-25-17 23:30         Oct-25-17 23:30         Oct-25-17 23:51         Oct-25-17 23:57           TPH by Texas 1065         Extracted:         C-12-17 16:00         Oct-24-17 16:00 </th <th>Total BTEX</th> <th></th> <th></th> <th>100</th> <th></th> <th>00100</th> <th></th> <th>0.00351</th> <th>0.113</th> <th>0.0100</th> <th>0.386</th> <th>0.0100</th> <th>&lt;0.00336</th> <th>0.00336</th>	Total BTEX			100		00100		0.00351	0.113	0.0100	0.386	0.0100	<0.00336	0.00336
This/Rel.         Oct-25-17 23:17         Oct-25-17 23:23         Oct-25-17 23:31         Oct-25-17 23:51         Oct-25-17 23:57           This/Rel.         mg/kg         RL         mg/kg         RL         mg/kg         RL         mg/kg         RL         mg/kg         RL           Thy Texas 1005         Extracted         Oct-24-17 16:00         Oct-24-	Chloride by EPA 300	Extracted:	Oct-25-17 11:00		Oct-25-17 11:0	00	Oct-25-17 11	00:	Oct-25-17 1	1:00	Oct-25-17 1	1:00	Oct-25-17 11:00	1:00
TPH by Texas1005         Extracted:         Cet-24-17 16:00         Cet-24-17 16:0		Analyzed:	Oct-25-17 23:17		Oct-25-17 23:2	23	Oct-25-17 23	:30	Oct-25-172	3:51	Oct-25-17 2	3:57	Oct-26-17 00:04	90:04
TPH by Texas1005         Extracted.         Cct-24-17 16:00         Cc		Units/RL:		RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
TPH by Texas1005         Extracted:         Oct-24-17 16:00         Oct-25-17 00:36         Oct-25-17 00:3	Chloride			.95	<4.91	4.91	<4.96	4.96	<4.90	4.90	<4.95	4.95	<4.97	4.97
Analyzed:         Oct-24-17 22:53         Oct-25-17 00:16         Oct-25-17 00:36         Oct-25-17 00:36         Oct-25-17 00:36           ange Hydrocarbons         Linix/RL:         mg/kg         RL	TPH by Texas1005	Extracted:	Oct-24-17 16:00		Oct-24-17 16:0	00	Oct-24-17 16	00:9	Oct-24-17 1	00:9	Oct-24-17 1	00:9	Oct-24-17 16:00	00:9
ange Hydrocarbons		Analyzed:	Oct-24-17 22:53		Oct-24-17 23::	55	Oct-25-17 00	):16	Oct-25-17 0	0:36	Oct-25-17 0	0:56	Oct-25-17 01:16	)1:16
ange Hydrocarbons		Units/RL:		RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Range Hydrocarbons         <24.9	C6-C12 Range Hydrocarbons			4.9	<25.0	25.0	<24.9	24.9	<24.9	24.9	<25.0	25.0	<24.9	24.9
Range Hydrocarbons <24.9 24.9 25.0 25.0 <24.9 24.9 24.9 24.9 <25.0	C12-C28 Range Hydrocarbons			4.9	<25.0	25.0	<24.9	24.9	<24.9	24.9	<25.0	25.0	<24.9	24.9
	C28-C35 Range Hydrocarbons			6.4	<25.0	25.0	<24.9	24.9	<24.9	24.9	<25.0	25.0	<24.9	24.9
<24.9         24.9         <25.0         25.0         <24.9         24.9         <24.9         24.9         <25.0	Total TPH			4.9	<25.0	25.0	<24.9	24.9	<24.9	24.9	<25.0	25.0	<24.9	24.9

Project Manager Kelsey Brooks

Final 1.000

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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.

Sheldon Hitchcock D-16-23S-34E

Project Location:

Project Id:

Contact:

### Certificate of Analysis Summary 566212 COG Operating, LLC, Midland, TX

Project Name: Gettysburg St Com #1H



Date Received in Lab: Thu Oct-19-17 11:45 am

Report Date: 30-OCT-17

Project Manager: Kelsey Brooks

		100217000	200717000	
	Field Id:	W. Surface	W. 1'	
Analysis Nequesieu	Depth:	-0	1-	
V	Matrix:	SOIL	SOIL	
Sa	Sampled:	Oct-17-17 00:00	Oct-17-17 00:00	
BTEX by EPA 8021B Ext	Extracted:	Oct-25-17 10:30	Oct-26-17 10:30	
Am	Analyzed:	Oct-25-17 23:18	Oct-26-17 14:11	
Un	Units/RL:	mg/kg RL	mg/kg RL	
Benzene		<0.00202 0.00202	0.0285 0.00332	
Toluene		<0.00202 0.00202	0.0275 0.00332	
Ethylbenzene		<0.00202 0.00202	<0.00332 0.00332	
m,p-Xylenes		<0.00403 0.00403	<0.00664 0.00664	
o-Xylene		<0.00202 0.00202	<0.00332 0.00332	
Total Xylenes		<0.00202 0.00202	<0.00332 0.00332	
Total BTEX		<0.00202 0.00202	0.0560 0.00332	
Chloride by EPA 300 Ext	Extracted:	Oct-25-17 11:00	Oct-25-17 11:00	
An	Analyzed:	Oct-26-17 00:11	Oct-26-17 00:25	
Un	Units/RL:	mg/kg RL	mg/kg RL	
Chloride		192 4.98	47.3 4.98	
TPH by Texas 1005 Ext	Extracted:	Oct-24-17 16:00	Oct-24-17 16:00	
An	Analyzed:	Oct-25-17 01:37	Oct-25-17 01:57	
Un	Units/RL:	mg/kg RL	mg/kg RL	
C6-C12 Range Hydrocarbons		<25.0 25.0	<25.0 25.0	
C12-C28 Range Hydrocarbons		<25.0 25.0	<25.0 25.0	
C28-C35 Range Hydrocarbons		<25.0 25.0	<25.0 25.0	
Total TPH		<25.0 25.0	<25.0 25.0	

Project Manager Kelsey Brooks

Final 1.000

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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.

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Sheldon Hitchcock D-16-23S-34E

Project Location:

Project Id:

Contact:







- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F RPD exceeded lab control limits.
- J The target analyte was positively identified below the quantitation limit and above the detection limit.
- U Analyte was not detected.
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K Sample analyzed outside of recommended hold time.
- JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- \*\* Surrogate recovered outside laboratory control limit.
- BRL Below Reporting Limit.
- **RL** Reporting Limit

MDL Method Detection Limit	SDL Sample Detection Limit	LOD Limit of Detection

PQL Practical Quantitation Limit MQL Method Quantitation Limit LOQ Limit of Quantitation

**DL** Method Detection Limit

NC Non-Calculable

- + NELAC certification not offered for this compound.
- (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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1211 W Florida Ave, Midland, TX 79701	(432) 563-1800	(432) 563-1713
2525 W. Huntington Dr Suite 102, Tempe AZ 85282	(602) 437-0330	



Project Name: Gettysburg St Com #1H

Work Orders: 566212,

Sample: 566212-001 / SMP

**Project ID:** 

**Lab Batch #:** 3031320 Units: mø/kø **Date Analyzed:** 10/24/17 22:53

Matrix: Soil Batch:

Units:	mg/kg	<b>Date Analyzed:</b> 10/24/17 22:53	SU	RROGATE RI	ECOVERY S	STUDY	
	TPI	H by Texas1005	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
o-Terpheny			47.1	49.9	94	70-130	
1-Chlorooct	ane		104	99.7	104	70-130	

**Lab Batch #:** 3031320 Sample: 566212-002 / SMP Batch: Matrix: Soil

Units: mg/kg **Date Analyzed:** 10/24/17 23:55 SURROGATE RECOVERY STUDY Amount True Control TPH by Texas1005 Limits Found Flags Amount Recovery [A] [B] %R %R [D] **Analytes** o-Terphenyl 45.2 49.9 91 70-130 1-Chlorooctane 97.4 99.8 98 70-130

Lab Batch #: 3031320 Sample: 566212-003 / SMP Batch: Matrix: Soil

**Units:** mg/kg **Date Analyzed:** 10/25/17 00:16 SURROGATE RECOVERY STUDY

TPH by Texas1005  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
o-Terphenyl	48.8	49.8	98	70-130	
1-Chlorooctane	104	99.6	104	70-130	

**Lab Batch #:** 3031320 Sample: 566212-004 / SMP Matrix: Soil

Units:	mg/kg	<b>Date Analyzed:</b> 10/25/17 00:36	SU	RROGATE RI	ECOVERY S	STUDY	
	TPI	H by Texas1005  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
o-Terpheny	/1	rinaryees	46.8	49.8	94	70-130	
1-Chlorooc	etane		98.6	99.6	99	70-130	

Lab Batch #: 3031320 Sample: 566212-005 / SMP Batch: Matrix: Soil

Units:	mg/kg	<b>Date Analyzed:</b> 10/25/17 00:56	SU	RROGATE RE	ECOVERY S	STUDY	
	TP	H by Texas1005  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
o-Terphenyl		Analytes	45.4	50.0	91	70-130	
1-Chlorooctar	ne		101	99.9	101	70-130	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 \* A / B

All results are based on MDL and validated for QC purposes.

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Gettysburg St Com #1H

Work Orders: 566212,

**Sample:** 566212-006 / SMP

**Project ID:** 

**Lab Batch #:** 3031320 Unite. mø/kø Date Analyzed: 10/25/17 01:16 Batch: Matrix: Soil - 1

Units:	mg/kg	<b>Date Analyzed:</b> 10/25/17 01:16	SU	RROGATE RI	ECOVERY S	STUDY	
	TP	H by Texas1005	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
o-Terphenyl			49.9	49.8	100	70-130	
1-Chloroocta	ine		110	99.6	110	70-130	

**Lab Batch #:** 3031320 Sample: 566212-007 / SMP Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 10/25/17 01:37 SURROGATE RECOVERY STUDY Amount True Control TPH by Texas1005 Limits Found Flags Amount Recovery [A] [B] %R %R [D] **Analytes** o-Terphenyl 44.1 49.9 88 70-130 1-Chlorooctane 97.1 99.8 97 70-130

Lab Batch #: 3031320 Sample: 566212-008 / SMP Batch: Matrix: Soil

**Units:** mg/kg Date Analyzed: 10/25/17 01:57 SURROGATE RECOVERY STUDY

TPH by Texas1005  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
o-Terphenyl	45.7	50.0	91	70-130	
1-Chlorooctane	96.5	99.9	97	70-130	

**Lab Batch #: 3031366** Sample: 566212-001 / SMP Batch: Matrix: Soil

Units:	mg/kg	<b>Date Analyzed:</b> 10/25/17 16:23	SU	RROGATE R	ECOVERY S	STUDY	
	ВТЕ	X by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluor	obenzene	Analytes	0.0271	0.0300	90	80-120	
4-Bromoflu	ıorobenzene		0.0287	0.0300	96	80-120	

Lab Batch #: 3031366 Sample: 566212-002 / SMP Batch: Matrix: Soil

Units:	mg/kg	<b>Date Analyzed:</b> 10/25/17 16:42	SU	RROGATE RI	ECOVERY S	STUDY	
	ВТЕ	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1,4-Difluoro	benzene		0.0262	0.0300	87	80-120	
4-Bromofluo	orobenzene		0.0272	0.0300	91	80-120	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 \* A / B

All results are based on MDL and validated for QC purposes.

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Gettysburg St Com #1H

Work Orders: 566212,

**Sample:** 566212-004 / SMP

Project ID:

**Lab Batch #:** 3031366

Data Analyzadi 10/25/17 17:20

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 10/25/1/1/:20	SURROGATE RECOVERY STUDY							
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
Analytes	,	,	[D]					
1,4-Difluorobenzene	0.0261	0.0300	87	80-120				
4-Bromofluorobenzene	0.0247	0.0300	82	80-120				

Units: mg/kg **Date Analyzed:** 10/25/17 17:39 SURROGATE RECOVERY STUDY Amount True Control BTEX by EPA 8021B Limits **Found** Flags Amount Recovery [A] [B] %R %R [D] **Analytes** 1,4-Difluorobenzene 0.0270 0.0300 90 80-120 4-Bromofluorobenzene 0.0283 0.0300 94 80-120

Lab Batch #: 3031732 Sample: 566212-007 / SMP Batch: 1 Matrix: Soil

**Units:** mg/kg **Date Analyzed:** 10/25/17 23:18

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0256	0.0300	85	80-120	
4-Bromofluorobenzene	0.0269	0.0300	90	80-120	

Lab Batch #: 3031638 Sample: 566212-003 / SMP Batch: 1 Matrix: Soil

Units:	mg/kg	<b>Date Analyzed:</b> 10/26/17 13:29	SURROGATE RECOVERY STUDY					
	ВТЕ	X by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluor	robenzene	Analytes	0.0280	0.0300	93	80-120		
4-Bromoflu	ıorobenzene		0.0338	0.0300	113	80-120		

Units:	mg/kg	<b>Date Analyzed:</b> 10/26/17 13:49	SURROGATE RECOVERY STUDY						
	ВТЕ	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
		Analytes			[D]				
1,4-Difluorol	benzene		0.0318	0.0300	106	80-120			
4-Bromofluo	robenzene		0.0253	0.0300	84	80-120			

<sup>\*</sup> Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 \* A / B

All results are based on MDL and validated for QC purposes.

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Gettysburg St Com #1H

Work Orders: 566212,

**Sample:** 566212-008 / SMP

Project ID:

**Lab Batch #:** 3031638

Sample. 300212-006 / Sivii

Batch: 1 Matrix: Soil

Units: mg/kg	<b>Date Analyzed:</b> 10/26/17 14:11	SURROGATE RECOVERY STUDY					
ВТ	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
	Analytes			[D]			
1,4-Difluorobenzene		0.0339	0.0300	113	80-120		
4-Bromofluorobenzene		0.0325	0.0300	108	80-120		

Lab Batch #: 3031320 Sample: 7633149-1-BLK / BLK Batch: 1 Matrix: Solid

**Units:** mg/kg Date Analyzed: 10/24/17 21:50 SURROGATE RECOVERY STUDY Amount True Control TPH by Texas1005 Found Limits Flags Amount Recovery [A] [B] %R %R [D] **Analytes** o-Terphenyl 50.0 111 70-130 55.6 1-Chlorooctane 100 119 119 70-130

Lab Batch #: 3031366 Sample: 7633181-1-BLK / BLK Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 10/25/17 09:59 SURROGATE RECOVERY STUDY

BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0279	0.0300	93	80-120	
4-Bromofluorobenzene	0.0271	0.0300	90	80-120	

Lab Batch #: 3031732 Sample: 7633241-1-BLK / BLK Batch: 1 Matrix: Solid

Units: Date Analyzed: 10/25/17 22:59 mg/kg SURROGATE RECOVERY STUDY True Control Amount BTEX by EPA 8021B Found Amount Recovery Limits Flags %R %R [B] [A] [D] **Analytes** 1,4-Difluorobenzene 0.0255 0.0300 85 80-120 4-Bromofluorobenzene 0.0264 0.0300 80-120 88

Lab Batch #: 3031638 Sample: 7633352-1-BLK / BLK Batch: 1 Matrix: Solid

Units: mg/k	ts: mg/kg		SURROGATE RECOVERY STUDY					
	BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorobenzene	Anarytes	0.0311	0.0300	104	80-120			
4-Bromofluorobenzer	ne	0.0346	0.0300	115	80-120			

<sup>\*</sup> Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 \* A / B

All results are based on MDL and validated for QC purposes.

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Gettysburg St Com #1H

Work Orders: 566212, **Lab Batch #:** 3031320

Sample: 7633149-1-BKS / BKS

**Project ID:** 

Units: mg/kg

Matrix: Solid Batch: 1

Units:	mg/kg	<b>Date Analyzed:</b> 10/24/17 22:11	SURROGATE RECOVERY STUDY				
	TPI	H by Texas1005	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
o-Terphenyl			48.9	50.0	98	70-130	
1-Chloroocta	ane		103	100	103	70-130	

Lab Batch #: 3031366 **Sample:** 7633181-1-BKS / BKS Batch: 1 Matrix: Solid

Units:	mg/kg	<b>Date Analyzed:</b> 10/25/17 08:05	SURROGATE RECOVERY STUDY					
	BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
		Analytes			[2]			
1,4-Difluorobenzene			0.0274	0.0300	91	80-120		
4-Bromoflu	orobenzene		0.0289	0.0300	96	80-120		

**Lab Batch #:** 3031732 **Sample:** 7633241-1-BKS / BKS Batch: Matrix: Solid

**Units:** mg/kg Date Analyzed: 10/25/17 21:07 SURROGATE RECOVERY STUDY

BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0274	0.0300	91	80-120	
4-Bromofluorobenzene	0.0294	0.0300	98	80-120	

**Lab Batch #:** 3031638 **Sample:** 7633352-1-BKS / BKS Batch: 1 Matrix: Solid

Units:	mg/kg	<b>Date Analyzed:</b> 10/26/17 09:43	SURROGATE RECOVERY STUDY						
	ВТЕ	X by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluor	1,4-Difluorobenzene			0.0300	98	80-120			
4-Bromofluorobenzene			0.0351	0.0300	117	80-120			

Lab Batch #: 3031320 Sample: 7633149-1-BSD / BSD Batch: Matrix: Solid

Units:	mg/kg	<b>Date Analyzed:</b> 10/24/17 22:31	SURROGATE RECOVERY STUDY					
	TP	H by Texas1005  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
o-Terphenyl		Analytes	46.2	50.0	92	70-130		
1-Chloroocta	ine		101	100	101	70-130		

<sup>\*</sup> Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 \* A / B

All results are based on MDL and validated for QC purposes.

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Gettysburg St Com #1H

Work Orders: 566212, **Lab Batch #:** 3031366

**Sample:** 7633181-1-BSD / BSD

**Project ID:** 

Units: mg/kg **Date Analyzed:** 10/25/17 08:24

Matrix: Solid Batch: 1

Units:	mg/kg	<b>Date Analyzed:</b> 10/25/17 08:24	SU	RROGATE RI	ECOVERY S	STUDY	
	ВТЕ	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
		Analytes			[-]		
1,4-Difluore	benzene		0.0243	0.0300	81	80-120	
4-Bromofluo	orobenzene		0.0285	0.0300	95	80-120	

**Lab Batch #:** 3031732 **Sample:** 7633241-1-BSD / BSD Batch: 1 Matrix: Solid 1. 10/25/17 21:25

Units:	mg/kg	<b>Date Analyzed:</b> 10/25/17 21:25	SU	RROGATE RI	ECOVERY S	STUDY	
	ВТЕ	X by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluoro	benzene	1 minut y ees	0.0278	0.0300	93	80-120	
4-Bromofluc	orobenzene		0.0297	0.0300	99	80-120	

Lab Batch #: 3031638 **Sample:** 7633352-1-BSD / BSD Batch: Matrix: Solid

**Units:** mg/kg Date Analyzed: 10/26/17 10:01 SURROGATE RECOVERY STUDY

BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0302	0.0300	101	80-120	
4-Bromofluorobenzene	0.0354	0.0300	118	80-120	

**Lab Batch #:** 3031320 Sample: 566212-001 S / MS Batch: Matrix: Soil

Units:	mg/kg	<b>Date Analyzed:</b> 10/24/17 23:15	SU	RROGATE RI	ECOVERY S	STUDY	
	TPl	H by Texas1005	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
o-Terphenyl	<u> </u>	Analytes	48.0	50.0	96	70-130	
1-Chlorooct			102	99.9	102	70-130	

Lab Batch #: 3031366 Sample: 566207-001 S / MS Batch: Matrix: Soil

Units:	ng/kg	<b>Date Analyzed:</b> 10/25/17 08:43	SU	RROGATE RE	ECOVERY S	STUDY	
	BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1.4-Difluorobenz	rene	Analytes	0.0297	0.0300	99	80-120	
4-Bromofluorobe			0.0319	0.0300	106	80-120	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 \* A / B

All results are based on MDL and validated for QC purposes.

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Gettysburg St Com #1H

Work Orders: 566212,

**Sample:** 566212-007 S / MS

Project ID:

**Lab Batch #:** 3031732

P----

Batch: 1 Matrix: Soil

mg/kg Units: Date Analyzed: 10/25/17 21:43 SURROGATE RECOVERY STUDY True Amount Control BTEX by EPA 8021B Found Amount Recovery Limits Flags [A] [B] %R %R [D] **Analytes** 1,4-Difluorobenzene 97 0.0291 0.0300 80-120 4-Bromofluorobenzene 0.0327 0.0300 109 80-120

Lab Batch #: 3031638 Sample: 566321-001 S/MS Batch: 1 Matrix: Soil

**Units:** mg/kg Date Analyzed: 10/26/17 10:19 SURROGATE RECOVERY STUDY Amount True Control BTEX by EPA 8021B Found Limits Flags Amount Recovery [A] [B] %R %R [D] **Analytes** 1,4-Difluorobenzene 0.0352 0.0300 80-120 117 4-Bromofluorobenzene 0.0300 0.0352 117 80-120

Lab Batch #: 3031320 Sample: 566212-001 SD / MSD Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 10/24/17 23:35 SURROGATE RECOVERY STUDY

TPH by Texas1005  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
o-Terphenyl	47.4	49.9	95	70-130	
1-Chlorooctane	99.5	99.8	100	70-130	

Units:	mg/kg	<b>Date Analyzed:</b> 10/25/17 09:02	SU	RROGATE RI	ECOVERY S	STUDY	
	ВТЕ	X by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluor	robenzene	Timuly eco	0.0303	0.0300	101	80-120	
4-Bromoflu	uorobenzene		0.0327	0.0300	109	80-120	

Units: mg	/kg	<b>Date Analyzed:</b> 10/25/17 22:02	SU	RROGATE RE	ECOVERY S	STUDY	
		by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
= 10		nalytes					
1,4-Difluorobenzen	ie		0.0291	0.0300	97	80-120	
4-Bromofluorobenz	zene		0.0320	0.0300	107	80-120	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 \* A / B

All results are based on MDL and validated for QC purposes.

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Gettysburg St Com #1H

 Work Orders: 566212,
 Project ID:

 Lab Batch #: 3031638
 Sample: 566321-001 SD / MSD
 Batch: 1 Matrix: Soil

Units: Date Analyzed: 10/26/17 10:37 mg/kg SURROGATE RECOVERY STUDY Amount True Control BTEX by EPA 8021B Found Amount Limits Recovery Flags [A] [B] %R %R [D] **Analytes** 1,4-Difluorobenzene 0.0336 0.0300 112 80-120 4-Bromofluorobenzene 0.0300 0.0356 119 80-120

Surrogate Recovery [D] = 100 \* A / B

All results are based on MDL and validated for QC purposes.

<sup>\*</sup> Surrogate outside of Laboratory QC limits

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

Project ID:

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Final 1.000

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## BS / BSD Recoveries

Project Name: Gettysburg St Com #1H

**Date Prepared:** 10/25/2017 Work Order #: 566212 ALJ

**Date Analyzed:** 10/25/2017 Matrix: Solid Batch #: 1 Sample: 7633181-1-BKS

Jnits: mg/kg		BLAN	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY	SPIKE / E	STANK S	PIKE DUP	LICATE 1	RECOVI	ERY STUE	λ	
BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	BIK. Spk Dup. %R	RPD	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	Œ	Result [F]	<u>5</u>				
Benzene	<0.00201	0.101	0.121	120	0.100	0.125	125	3	70-130	35	
Toluene	<0.00201	0.101	0.115	114	0.100	0.118	118	3	70-130	35	
Ethylbenzene	<0.00201	0.101	0.115	114	0.100	0.117	117	2	71-129	35	
m,p-Xylenes	<0.00402	0.201	0.229	114	0.200	0.232	116	1	70-135	35	
o-Xylene	<0.00201	0.101	0.110	109	0.100	0.112	112	2	71-133	35	

**Date Analyzed:** 10/25/2017 Matrix: Solid **Date Prepared:** 10/25/2017 Batch #: 1 Sample: 7633241-1-BKS Lab Batch ID: 3031732 ALJ Analyst:

mg/kg

Units:

Limits %RPD Control 35 35 35 35 Control Limits %R 70-130 70-130 71-129 70-135 RPD % 0 7 Blk. Spk Dup. %R [G] 123 124 120 120 Blank Spike Duplicate Result [F] 0.125 0.124 0.121 0.242 Spike Added 0.101 0.101 0.101 0.201  $\Xi$ Blank Spike %R [D] 125 118 118 123 Blank Spike Result 0.126 0.119 0.124 0.239  $\Box$ 0.202 Spike Added 0.101 0.101 0.101 [B]Sample Result <0.00202 <0.00202 < 0.00202 < 0.00404 Blank BTEX by EPA 8021B Analytes Ethylbenzene m,p-Xylenes Benzene Toluene

Flag

RECOVERY STUDY

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE

35

71-133

7

117

0.118

0.101

115

0.116

0.101

< 0.00202

o-Xylene

Blank Spike Recovery [D] = 100\*(C)/[B]Blank Spike Duplicate Recovery [G] = 100\*(F)/[E]All results are based on MDL and Validated for QC Purposes Relative Percent Difference RPD = 200\*(C-F)/(C+F)

Version: 1.%

**Lab Batch ID:** 3031366

Analyst:

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Final 1.000

### Received by OCD: 12/2/2022 2:52:30 PM

## BS / BSD Recoveries

Project Name: Gettysburg St Com #1H

Work Order #: 566212 ALJ Analyst: Sample: 7633352-1-BKS **Lab Batch ID: 3031638** 

**Date Prepared:** 10/26/2017 Batch #: 1

Date Analyzed: 10/26/2017 Project ID:

Matrix: Solid

Units:	mg/kg		BLANF	K/BLANK	SPIKE / I	SLANK S	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY	ICATE I	RECOVI	CRY STUD	Ϋ́	
B7 Analytes	BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits	Control Limits %RPD	Flag
Benzene		<0.00202	0.101	0.0831	82	0.100	0.0804	08	3	70-130	35	
Toluene		<0.00202	0.101	0.0941	93	0.100	0.0894	68	5	70-130	35	
Ethylbenzene	ene	<0.00202	0.101	0.0997	66	0.100	0.0943	94	9	71-129	35	
m,p-Xylenes	1es	<0.00404	0.202	0.196	62	0.200	0.185	93	9	70-135	35	
o-Xylene		<0.00202	0.101	0.0958	95	0.100	0.0907	91	5	71-133	35	

**Date Prepared:** 10/25/2017

Date Analyzed: 10/25/2017

Matrix: Solid

**Batch** #: 1 Sample: 7633172-1-BKS

Lab Batch ID: 3031539

MNV

Analyst:

	ol   ts Flag	
DY	Control Limits %RPD	20
ERY STU	Control Limits %R	90-110
RECOV	RPD %	1
LICATE	Blk. Spk Dup. %R [G]	86
BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY	Blank Spike Duplicate Result [F]	246
BLANKS	Spike Added [E]	250
SPIKE / I	Blank Spike %R [D]	66
K /BLANK	Blank Spike Result [C]	248
BLAN	Spike Added [B]	250
	Blank Sample Result [A]	<5.00
s: mg/kg	Chloride by EPA 300 Analytes	Chloride
Units:		

Blank Spike Recovery [D] = 100\*(C)/[B]Blank Spike Duplicate Recovery [G] = 100\*(F)/[E]All results are based on MDL and Validated for QC Purposes Relative Percent Difference RPD = 200\*[(C-F)/(C+F)]

### Final 1.000

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## BS / BSD Recoveries

Project Name: Gettysburg St Com #1H

**Date Prepared:** 10/24/2017 Work Order #: 566212

Batch #: 1

Sample: 7633149-1-BKS

_	
10/24/201	Solid
<b>Date Analyzed:</b> 10/24/2017	Matrix Solid
Ds	
_	
/2017	

Project ID:

Units: mg/kg		BLAN	K /BLANK	SPIKE / 1	3LANK S	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY	CICATE	RECOVI	ERY STUE	λί	
TPH by Texas1005	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	,	[B]	[C]	<u>[</u>	Ξ	Result [F]	[5]				
C6-C12 Range Hydrocarbons	<25.0	1000	939	94	1000	925	93	2	75-125	25	
C12-C28 Range Hydrocarbons	<25.0	1000	1010	101	1000	1060	106	5	75-125	25	

Blank Spike Recovery [D] = 100\*(C)/[B]Blank Spike Duplicate Recovery [G] = 100\*(F)/[E]All results are based on MDL and Validated for QC Purposes Relative Percent Difference RPD = 200\*[(C-F)/(C+F)]

**Lab Batch ID: 3031320** 

ARM

Analyst:

# Form 3 - MS / MSD Recoveries

Project Name: Gettysburg St Com #1H



10/25/2017 3031366 566212 Work Order #: Date Analyzed: Lab Batch ID:

QC-Sample ID: 566207-001 S **Date Prepared:** 10/25/2017

Batch #:

Matrix: Soil

Project ID:

Analyst: ALJ

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B	Parent Sample Result	Spike Added	Spiked Sample S Result S	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	<u>[v]</u>			<u>[</u> ]	$\Xi$		<u>5</u>				
Benzene	<0.00202	0.101	0.102	101	0.100	0.106	106	4	70-130	35	
Toluene	<0.00202	0.101	0.0922	91	0.100	0.0958	96	4	70-130	35	
Ethylbenzene	<0.00202	0.101	0.0808	80	0.100	0.0821	82	2	71-129	35	
m,p-Xylenes	<0.00403	0.202	0.160	79	0.200	0.162	81	1	70-135	35	
o-Xylene	<0.00202	0.101	0.0784	78	0.100	0.0801	80	2	71-133	35	
Lab Batch ID:         3031638         Q	QC- Sample ID: 566321-001 S	566321-	-001 S	Bat	Batch #:	1 Matrix: Soil	: Soil				

Analyst: ALJ

**Date Prepared:** 10/26/2017

10/26/2017

Date Analyzed:

Reporting Units: mg/kg		Σ	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY	E/MAT	RIX SPIF	KE DUPLICA'	TE REC	OVERY S	STUDY		
BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample S Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00199	9660.0	0.118	118	0.0992	0.117	118	-	70-130	35	
Toluene	0.00315	9660.0	0.112	109	0.0992	0.103	101	∞	70-130	35	
Ethylbenzene	<0.00199	9660.0	0.0959	96	0.0992	0.0847	85	12	71-129	35	
m.p-Xylenes	<0.00398	0.199	0.190	95	0.198	0.167	84	13	70-135	35	
o-Xylene	<0.00199	9660.0	0.0904	91	0.0992	0.0786	79	14	71-133	35	

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

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

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

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Final 1.000

Reporting Units:

# Form 3 - MS / MSD Recoveries

# Project Name: Gettysburg St Com #1H



566212 Work Order #:

3031732 Lab Batch ID:

10/25/2017 Date Analyzed:

QC-Sample ID: 566212-007 S

Batch #:

Date Prenared: 10/25/2017

Matrix: Soil

Project ID:

AI.I Analyst:

Date Analyzeu: 10/23/201/	Date Frepared: 10/23/2017	10/23/20	717	AII	Analyst: ALJ	3					
Reporting Units: mg/kg		M	ATRIX SPIKI	E/MATI	NX SPII	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY	TE REC	VERY S	TUDY		
BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]		Spike Spiked Sample Added Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits	Control Limits %RPD	Flag
Benzene	<0.00199	9660.0	0.123	123	0.100	0.112	112	6	70-130	35	
Toluene	<0.00199	9660.0	0.110	110	0.100	0.0992	66	10	70-130	35	
Ethylbenzene	<0.00199	9660'0	0.104	104	0.100	0.0924	92	12	71-129	35	
m,p-Xylenes	<0.00398	0.199	0.213	107	0.200	0.189	95	12	70-135	35	
o-Xylene	<0.00199	9660.0	0.106	106	0.100	0.0953	95	11	71-133	35	

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Analyst: MNV

Batch #:

QC-Sample ID: 566212-008 S

**Date Prepared:** 10/25/2017

10/26/2017

Date Analyzed:

mg/kg

Reporting Units:

3031539

Lab Batch ID:

Matrix: Soil

Flag Control Limits %RPD 20 Control Limits %R 90-110 RPD % 0 Spiked Dup. %R 5 106 Spiked Sample Result [F] Duplicate 310 Spike Added 249 Sample Spiked %R [D] 106 Spiked Sample Result 310 Spike Added 249 Parent Sample Result 47.3  $\overline{\mathbf{A}}$ Chloride by EPA 300 Analytes Chloride

Analyst: MNV Batch #: QC-Sample ID: 566215-002 S **Date Prepared:** 10/25/2017 10/25/2017 3031539 Date Analyzed:

mg/kg

Reporting Units:

Lab Batch ID:

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Matrix: Soil

Chlorido by FDA 300	Parent		Spiked Sample	92		Duplicate	Spiked		Control	Control	
Cinding by El A 300	Sample	Spike	Result		Spike	Spiked Sample	Dup.	RPD	Limits	Limits	Flag
	Result	Added		%R	Added	Result [F]	%R	%	%R	%RPD	
Analytes	[ <u>A</u> ]	[ <u>B</u> ]		[0]	Ξ		<u>5</u>				
Chloride	5.80	248	266	105	248	569	106	1	90-110	20	

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

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

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

Final 1.000

# Form 3 - MS / MSD Recoveries

## Project Name: Gettysburg St Com #1H



3031320 566212 Work Order #: Lab Batch ID:

10/24/2017 Date Analyzed:

Released to Imaging: 12/2/2022 2:55:08 PM

Reporting Units:

QC-Sample ID: 566212-001 S **Date Prepared:** 10/24/2017

Batch #:

Matrix: Soil

Project ID:

Analyst: ARM

	IATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY
TACK.	KE DUPLICATE R
Amany St. Zaca	/MATRIX SPI
1107	MATRIX SPIKE

TDH by Toyac 1005	Parent		Spiked Sample	Spiked		Duplicate	Spiked		Control	Control	
II II DY ICAASIOUS	Sample	Spike	Result	Sample		Spiked Sample	Dup.	RPD	Limits	Limits	Flag
	Result	Added	<u>[</u>	%R	74	Result [F]	%R	%	%R	%RPD	1
Analytes	[ <u>V</u> ]	[B]		<u>[</u>	E	,	[9]				
C6-C12 Range Hydrocarbons	<25.0	666	1040	104	866	1020	102	2	75-125	25	
C12-C28 Range Hydrocarbons	<25.0	666	1050	105	866	1020	102	3	75-125	25	

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

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

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

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Stafford, Texas (281-240-4200) Setting the Standard since 1990

## CHAIN OF CUSTODY

San Antonio, Texas (210-509-3334)

Phoenix, Arizona (480-355-0900)

The second secon			-525-1)								
			www.xenco.com	IB		Velico Guore #	] ie	Aeii	Xelico Job #	66212	
						-	Analytic	Analytical Information		-	Matrix Codes
Client / Reporting Information		Project Ir	Project Information			_					
Company Name / Branch: COG Operating, LLC	Project Name/Number: Gettysburg St. Com	Project Name/Number: Gettysburg St. Com #1H									W = Water S = Soil/Sed/Solid
Company Address: 2407 Pecos Ave, Artesia NM 88210	Project Location: D-16-23S-34E	ation: 4E									GW =Ground Water DW = Drinking Water
Email: slhiichcock@concho.com Phone No: 575-703-6475 dneel2@concho.com; alieb@concho.com; rhaskell@concho.com	Invoice To:	COG Operating, LLC Attn: Robert McNeill	ng, LLC McNeill								SW = Surface water
Project Contact: Sheldon Hitchcock		600 W. Illnois Ave. Midland Tx, 79701	9701			)					OW =Ocean/Sea Water WI = Wipe
	PO Number:					DED					0 = 0il
Samplers's Name: Sheldon Hitchcock	_					ENE	ES				WW= Waste Water
	Collection			Number of preserved bottles	served bottles	KTE	RIDE				A = Air
No. Field ID / Point of Collection San	Sample Date	Time Matrix	# of	IaOH/Zn .cetate INO3	laOH laHSO4	PH EX	CHLOR				
1 N. Surface	10			E	1	\	•				
2 7 1			S 1				/				
3 S. Surpace 0	<u>.</u>		S 1			///	/				
4 5, 1			S 1			///	/				
5 E. Surface 0	9		S 1			///	//				
6			3			/	/				
7 W. Ser Face			2			/	/				
8 6 7			0			///	/				
0			1								
10			S 1								
Turnaround Time ( Business days)	_		Data Deliverable Information	Information				Notes:			
Same Day TAT 5 Day TAT		Level II Std QC	Std QC		Level IV (Full Data Pkg /raw d	kg /raw data)		Tem	Temn: W		
Next Day EMERGENCY \$\int\ 7 Day TAT		Level III	Level III Std QC+ Forms	П	TRRP Level IV			CF:(	CF:(0-6: -0.2°C)		הוס.ת-מ
2 Day EMERGENCY Contract TAT		Level 3	Level 3 (CLP Forms)	Us	UST / RG -411			<u> </u>	(6-23: +0.2°C)	S C	
3 Day EMERGENCY		TRRP C	TRRP Checklist					Corre	Corrected Temp: 人	b. 人)	
TAT Starts Day received by Lab, if received by 5:00 pm								FEU-LA, U. U.		(	
pler: SAMPLE CUSTOD	ST BE DOCUMENT	Received By:	TIME SAMPLES CHA	NGE POSSESSIC	N, INCLUDING COU	RIER DELIVERY			oived By:		
Relinquished by:	lo(2)// 492-	Received By:		10 A 20	Relinquished By:	20	Date Time:  Date Time:	7=4	Received By:		
Relinquished by: Date	Date Time:	Received By:		Cus	Custody Seal #	Pri	Preserved where applicable	applicable	On Ice	Cooler Temp.	. Thermo. Corr. Factor
recovers a fundamental conditions of service. Supremental in the control of service is the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the Clientif such losses are due to discurstances beyond the control of Xenco. A minimum charge of \$75 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be involved at \$5 per sample. These terms will be involved unless previously negotiated under a fully executed client contract.	the control of Xenc	o. A minimum charg	y to Xenco, its amiliate je of \$75 will be applie	is and subcontractorid to each project.	rs. It assigns standan (enco's liability will be	limited to the c	ost of samples. A	ny samples receive	le only for the cost d by Xenco but no	of samples and shall r t analyzed will be invoi	not assume any responsibility for any iced at \$5 per sample. These terms will



### XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: COG Operating, LLC

Date/ Time Received: 10/19/2017 11:45:00 AM

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

Work Order #: 566212

Temperature Measuring device used: R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	13.2
#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)?	No
#18 Water VOC samples have zero headspace?	N/A

Must be	completed for after-hours de	livery of samples prior to pla	cing in the refrigerator
Analyst:		PH Device/Lot#:	
	Checklist completed by:	Connie Hernandez	Date: 10/23/2017
	Checklist reviewed by:	Mms froak Kelsey Brooks	Date: 10/23/2017

### APPENDIX VI



January 15, 2019

LUPE CARRASCO

MMX

2737 PECOS HWY

CARLSBAD, NM 88220

RE: GETTYSBERG STATE COM #1

Enclosed are the results of analyses for samples received by the laboratory on 01/14/19 15:55.

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 <a href="https://www.tceq.texas.gov/field/ga/lab">www.tceq.texas.gov/field/ga/lab</a> accred certif.html.

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

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

Accreditation applies to public drinking water matrices.

Celey D. Keene

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:

MMX LUPE CARRASCO 2737 PECOS HWY CARLSBAD NM, 88220 Fax To: (575) 236-6201

Received: 01/14/2019 Sampling Date: 01/14/2019 Reported: 01/15/2019 Sampling Type: Soil

\*\* (See Notes) Project Name: GETTYSBERG STATE COM #1 Sampling Condition:

Project Number: NONE GIVEN Sample Received By: Tamara Oldaker

Project Location: COG

### Sample ID: SW - 1 (H900112-01)

BTEX 8021B	mg,	/kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/15/2019	ND	2.30	115	2.00	3.36	
Toluene*	<0.050	0.050	01/15/2019	ND	2.19	109	2.00	2.72	
Ethylbenzene*	<0.050	0.050	01/15/2019	ND	2.17	108	2.00	4.67	
Total Xylenes*	<0.150	0.150	01/15/2019	ND	6.57	109	6.00	3.74	
Total BTEX	<0.300	0.300	01/15/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	97.6	% 73.3-12	9						
Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	01/15/2019	ND	432	108	400	7.69	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/15/2019	ND	185	92.6	200	1.11	
DRO >C10-C28*	<10.0	10.0	01/15/2019	ND	188	93.8	200	8.26	
EXT DRO >C28-C36	<10.0	10.0	01/15/2019	ND					
Surrogate: 1-Chlorooctane	90.8	% 41-142	,						
Surrogate: 1-Chlorooctadecane	90.2	% 37.6-14	7						

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Celey D. Keine



### Analytical Results For:

MMX LUPE CARRASCO 2737 PECOS HWY CARLSBAD NM, 88220

Fax To: (575) 236-6201

Received: 01/14/2019 Sampling Date: 01/14/2019

Reported: 01/15/2019 Sampling Type: Soil

Project Name: GETTYSBERG STATE COM #1 Sampling Condition: \*\* (See Notes) Project Number: NONE GIVEN Sample Received By: Tamara Oldaker

Project Location: COG

### Sample ID: SW - 2 (H900112-02)

BTEX 8021B	mg/	'kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/15/2019	ND	2.30	115	2.00	3.36	
Toluene*	<0.050	0.050	01/15/2019	ND	2.19	109	2.00	2.72	
Ethylbenzene*	<0.050	0.050	01/15/2019	ND	2.17	108	2.00	4.67	
Total Xylenes*	<0.150	0.150	01/15/2019	ND	6.57	109	6.00	3.74	
Total BTEX	<0.300	0.300	01/15/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	98.5	% 73.3-12	9						
Chloride, SM4500Cl-B	mg/	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	01/15/2019	ND	432	108	400	7.69	
TPH 8015M	mg/	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/15/2019	ND	185	92.6	200	1.11	
DRO >C10-C28*	<10.0	10.0	01/15/2019	ND	188	93.8	200	8.26	
EXT DRO >C28-C36	<10.0	10.0	01/15/2019	ND					
Surrogate: 1-Chlorooctane	92.3	% 41-142	,						
Surrogate: 1-Chlorooctadecane	90.8	% 37.6-14	7						

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### Analytical Results For:

MMX

LUPE CARRASCO 2737 PECOS HWY CARLSBAD NM, 88220

Fax To: (575) 236-6201

Received: 01/14/2019 Sampling Date: 01/14/2019

Reported: 01/15/2019 Sampling Type: Soil
Project Name: GETTYSBERG STATE COM #1 Sampling Condition: \*\* (See Notes)

Project Number: NONE GIVEN Sample Received By: Tamara Oldaker

Project Location: COG

ma/ka

### Sample ID: SW - 3 (H900112-03)

RTFY 8021R

BIEX 8021B	mg	/ kg	Anaiyze	a By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/15/2019	ND	2.30	115	2.00	3.36	
Toluene*	<0.050	0.050	01/15/2019	ND	2.19	109	2.00	2.72	
Ethylbenzene*	<0.050	0.050	01/15/2019	ND	2.17	108	2.00	4.67	
Total Xylenes*	<0.150	0.150	01/15/2019	ND	6.57	109	6.00	3.74	
Total BTEX	<0.300	0.300	01/15/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	97.0	% 73.3-12	9						
Chloride, SM4500CI-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	01/15/2019	ND	432	108	400	7.69	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/15/2019	ND	185	92.6	200	1.11	
DRO >C10-C28*	149	10.0	01/15/2019	ND	188	93.8	200	8.26	
EXT DRO >C28-C36	18.7	10.0	01/15/2019	ND					
Surrogate: 1-Chlorooctane	90.9	% 41-142							
Surrogate: 1-Chlorooctadecane	95.7	% 37.6-14	7						

Analyzed By: me

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Celey D. Keine



### Analytical Results For:

MMX LUPE CARRASCO 2737 PECOS HWY CARLSBAD NM, 88220

Fax To: (575) 236-6201

Received: 01/14/2019 Sampling Date: 01/14/2019

Reported: 01/15/2019 Sampling Type: Soil

Project Name: GETTYSBERG STATE COM #1 Sampling Condition: \*\* (See Notes)
Project Number: NONE GIVEN Sample Received By: Tamara Oldaker

Analyzed By: ms

Project Location: COG

mg/kg

### Sample ID: SW - 4 (H900112-04)

BTEX 8021B

	9/	9	7	7:					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/15/2019	ND	2.30	115	2.00	3.36	
Toluene*	<0.050	0.050	01/15/2019	ND	2.19	109	2.00	2.72	
Ethylbenzene*	<0.050	0.050	01/15/2019	ND	2.17	108	2.00	4.67	
Total Xylenes*	<0.150	0.150	01/15/2019	ND	6.57	109	6.00	3.74	
Total BTEX	<0.300	0.300	01/15/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	98.5	% 73.3-12	9						
Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	01/15/2019	ND	432	108	400	7.69	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/15/2019	ND	185	92.6	200	1.11	
DRO >C10-C28*	<10.0	10.0	01/15/2019	ND	188	93.8	200	8.26	
EXT DRO >C28-C36	<10.0	10.0	01/15/2019	ND					
Surrogate: 1-Chlorooctane	92.9	% 41-142	)						
Surrogate: 1-Chlorooctadecane	92.4	% 37.6-14	7						

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Celey D. Keine



### Analytical Results For:

MMX LUPE CARRASCO 2737 PECOS HWY CARLSBAD NM, 88220

Fax To: (575) 236-6201

Received: 01/14/2019 Sampling Date: 01/14/2019

Reported: 01/15/2019 Sampling Type: Soil

Project Name: GETTYSBERG STATE COM #1 Sampling Condition: \*\* (See Notes)
Project Number: NONE GIVEN Sample Received By: Tamara Oldaker

Analyzed By: me

Project Location: COG

ma/ka

### Sample ID: SW - 5 (H900112-05)

RTFY 8021R

BIEX 8021B	mg	/кд	Anaiyze	ea By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/15/2019	ND	2.30	115	2.00	3.36	
Toluene*	<0.050	0.050	01/15/2019	ND	2.19	109	2.00	2.72	
Ethylbenzene*	<0.050	0.050	01/15/2019	ND	2.17	108	2.00	4.67	
Total Xylenes*	<0.150	0.150	01/15/2019	ND	6.57	109	6.00	3.74	
Total BTEX	<0.300	0.300	01/15/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	98.2	% 73.3-12	9						
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	01/15/2019	ND	432	108	400	7.69	
TPH 8015M	mg	/kg	Analyze	ed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/15/2019	ND	185	92.6	200	1.11	
DRO >C10-C28*	<10.0	10.0	01/15/2019	ND	188	93.8	200	8.26	
EXT DRO >C28-C36	<10.0	10.0	01/15/2019	ND					
Surrogate: 1-Chlorooctane	94.3	% 41-142	•						
Surrogate: 1-Chlorooctadecane	93.8	% 37.6-14	7						

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Celey D. Keine



### Analytical Results For:

MMX

LUPE CARRASCO 2737 PECOS HWY CARLSBAD NM, 88220

Fax To: (575) 236-6201

Received: 01/14/2019 Sampling Date: 01/14/2019

Reported: 01/15/2019 Sampling Type: Soil Project Name: GETTYSBERG STATE COM #1 Sampling Condition:

\*\* (See Notes) Project Number: NONE GIVEN Sample Received By: Tamara Oldaker

Project Location: COG

### Sample ID: SW - 6 (H900112-06)

BTEX 8021B	mg	/kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/15/2019	ND	2.30	115	2.00	3.36	
Toluene*	<0.050	0.050	01/15/2019	ND	2.19	109	2.00	2.72	
Ethylbenzene*	<0.050	0.050	01/15/2019	ND	2.17	108	2.00	4.67	
Total Xylenes*	<0.150	0.150	01/15/2019	ND	6.57	109	6.00	3.74	
Total BTEX	<0.300	0.300	01/15/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	98.2	% 73.3-12	9						
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	01/15/2019	ND	432	108	400	7.69	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/15/2019	ND	185	92.6	200	1.11	
DRO >C10-C28*	1500	10.0	01/15/2019	ND	188	93.8	200	8.26	
EXT DRO >C28-C36	229	10.0	01/15/2019	ND					
Surrogate: 1-Chlorooctane	98.5	% 41-142	?						
Surrogate: 1-Chlorooctadecane	137	% 37.6-14	7						

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Celey D. Keine



### Analytical Results For:

MMX LUPE CARRASCO

2737 PECOS HWY CARLSBAD NM, 88220

Fax To: (575) 236-6201

Received: 01/14/2019 Sampling Date: 01/14/2019

Reported: 01/15/2019 Sampling Type: Soil

Project Name: GETTYSBERG STATE COM #1 Sampling Condition: \*\* (See Notes)
Project Number: NONE GIVEN Sample Received By: Tamara Oldaker

Analyzed By: me

Project Location: COG

ma/ka

### Sample ID: SW - 7 (H900112-07)

RTFY 8021R

BIEX 8021B	mg	/ kg	Anaiyze	a By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/15/2019	ND	2.30	115	2.00	3.36	
Toluene*	<0.050	0.050	01/15/2019	ND	2.19	109	2.00	2.72	
Ethylbenzene*	<0.050	0.050	01/15/2019	ND	2.17	108	2.00	4.67	
Total Xylenes*	<0.150	0.150	01/15/2019	ND	6.57	109	6.00	3.74	
Total BTEX	<0.300	0.300	01/15/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	98.5	% 73.3-12	9						
Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	01/15/2019	ND	432	108	400	7.69	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/15/2019	ND	185	92.6	200	1.11	
DRO >C10-C28*	39.6	10.0	01/15/2019	ND	188	93.8	200	8.26	
EXT DRO >C28-C36	21.7	10.0	01/15/2019	ND					
Surrogate: 1-Chlorooctane	91.5	% 41-142	)						
Surrogate: 1-Chlorooctadecane	93.2	% 37.6-14	7						

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\*=Accredited Analyte

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### Analytical Results For:

MMX LUPE CARRASCO 2737 PECOS HWY CARLSBAD NM, 88220

Fax To: (575) 236-6201

Received: 01/14/2019 Sampling Date: 01/14/2019

Reported: 01/15/2019 Sampling Type: Soil

Project Name: GETTYSBERG STATE COM #1 Sampling Condition: \*\* (See Notes) Tamara Oldaker Project Number: NONE GIVEN Sample Received By:

Project Location: COG

### Sample ID: SW - 8 (H900112-08)

BTEX 8021B	mg/	kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/15/2019	ND	2.30	115	2.00	3.36	
Toluene*	<0.050	0.050	01/15/2019	ND	2.19	109	2.00	2.72	
Ethylbenzene*	<0.050	0.050	01/15/2019	ND	2.17	108	2.00	4.67	
Total Xylenes*	<0.150	0.150	01/15/2019	ND	6.57	109	6.00	3.74	
Total BTEX	<0.300	0.300	01/15/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	98.8	% 73.3-12	9						
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	01/15/2019	ND	432	108	400	7.69	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/15/2019	ND	185	92.6	200	1.11	
DRO >C10-C28*	<10.0	10.0	01/15/2019	ND	188	93.8	200	8.26	
EXT DRO >C28-C36	<10.0	10.0	01/15/2019	ND					
Surrogate: 1-Chlorooctane	88.8	% 41-142	!						
Surrogate: 1-Chlorooctadecane	89.0	% 37.6-14	7						

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### Analytical Results For:

MMX LUPE CARRASCO 2737 PECOS HWY CARLSBAD NM, 88220

Fax To: (575) 236-6201

Received: 01/14/2019 Sampling Date: 01/14/2019

Reported: 01/15/2019 Sampling Type: Soil

Project Name: GETTYSBERG STATE COM #1 Sampling Condition: \*\* (See Notes) Tamara Oldaker Project Number: NONE GIVEN Sample Received By:

Project Location: COG

### Sample ID: SW - 9 (H900112-09)

BTEX 8021B	mg/	kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/15/2019	ND	2.30	115	2.00	3.36	
Toluene*	<0.050	0.050	01/15/2019	ND	2.19	109	2.00	2.72	
Ethylbenzene*	<0.050	0.050	01/15/2019	ND	2.17	108	2.00	4.67	
Total Xylenes*	< 0.150	0.150	01/15/2019	ND	6.57	109	6.00	3.74	
Total BTEX	<0.300	0.300	01/15/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	97.8	% 73.3-12	9						
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	01/15/2019	ND	432	108	400	7.69	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/15/2019	ND	185	92.6	200	1.11	
DRO >C10-C28*	<10.0	10.0	01/15/2019	ND	188	93.8	200	8.26	
EXT DRO >C28-C36	<10.0	10.0	01/15/2019	ND					
Surrogate: 1-Chlorooctane	90.5	% 41-142	?						
Surrogate: 1-Chlorooctadecane	91.0	% 37.6-14	7						

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Tamara Oldaker

### Analytical Results For:

MMX LUPE CARRASCO 2737 PECOS HWY CARLSBAD NM, 88220 Fax To: (575) 236-6201

 Received:
 01/14/2019
 Sampling Date:
 01/14/2019

 Reported:
 01/15/2019
 Sampling Type:
 Soil

Project Name: GETTYSBERG STATE COM #1 Sampling Condition: \*\* (See Notes)

Project Number: NONE GIVEN Sample Received By:
Project Location: COG

mg/kg

### Sample ID: SW - 10 (H900112-10) BTEX 8021B

	9/	9	7	7:					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/15/2019	ND	2.30	115	2.00	3.36	
Toluene*	<0.050	0.050	01/15/2019	ND	2.19	109	2.00	2.72	
Ethylbenzene*	<0.050	0.050	01/15/2019	ND	2.17	108	2.00	4.67	
Total Xylenes*	<0.150	0.150	01/15/2019	ND	6.57	109	6.00	3.74	
Total BTEX	<0.300	0.300	01/15/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	99.7	% 73.3-12	9						
Chloride, SM4500CI-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	01/15/2019	ND	432	108	400	7.69	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/15/2019	ND	185	92.6	200	1.11	
DRO >C10-C28*	<10.0	10.0	01/15/2019	ND	188	93.8	200	8.26	
EXT DRO >C28-C36	<10.0	10.0	01/15/2019	ND					
Surrogate: 1-Chlorooctane	87.0	% 41-142	,						
Surrogate: 1-Chlorooctadecane	87.2	% 37.6-14	7						

Analyzed By: ms

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### Analytical Results For:

MMX LUPE CARRASCO 2737 PECOS HWY CARLSBAD NM, 88220 Fax To: (575) 236-6201

Received: 01/14/2019 Sampling Date: 01/14/2019

Reported: 01/15/2019 Sampling Type: Soil

Project Name: GETTYSBERG STATE COM #1 Sampling Condition: \*\* (See Notes) Tamara Oldaker Project Number: NONE GIVEN Sample Received By:

Project Location: COG

### Sample ID: SW - 11 (H900112-11)

BTEX 8021B	mg/	/kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/15/2019	ND	2.30	115	2.00	3.36	
Toluene*	<0.050	0.050	01/15/2019	ND	2.19	109	2.00	2.72	
Ethylbenzene*	<0.050	0.050	01/15/2019	ND	2.17	108	2.00	4.67	
Total Xylenes*	<0.150	0.150	01/15/2019	ND	6.57	109	6.00	3.74	
Total BTEX	<0.300	0.300	01/15/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	99.3	% 73.3-12	9						
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	01/15/2019	ND	432	108	400	7.69	
TPH 8015M	mg/	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/15/2019	ND	185	92.6	200	1.11	
DRO >C10-C28*	<10.0	10.0	01/15/2019	ND	188	93.8	200	8.26	
EXT DRO >C28-C36	<10.0	10.0	01/15/2019	ND					
Surrogate: 1-Chlorooctane	84.7	% 41-142	ı						
Surrogate: 1-Chlorooctadecane	85.2	% 37.6-14	7						

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### Analytical Results For:

MMX

LUPE CARRASCO 2737 PECOS HWY CARLSBAD NM, 88220

Fax To: (575) 236-6201

Received: 01/14/2019 Sampling Date: 01/14/2019

Reported: 01/15/2019 Sampling Type: Soil
Project Name: GETTYSBERG STATE COM #1 Sampling Condition: \*\*(

Project Name: GETTYSBERG STATE COM #1 Sampling Condition: \*\* (See Notes)
Project Number: NONE GIVEN Sample Received By: Tamara Oldaker

Analyzed By: me

Project Location: COG

### Sample ID: T1 BOTTOM (H900112-12)

RTFY 8021R

BIEX 8021B	mg	/ kg	Anaiyze	a By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/15/2019	ND	2.30	115	2.00	3.36	
Toluene*	<0.050	0.050	01/15/2019	ND	2.19	109	2.00	2.72	
Ethylbenzene*	<0.050	0.050	01/15/2019	ND	2.17	108	2.00	4.67	
Total Xylenes*	<0.150	0.150	01/15/2019	ND	6.57	109	6.00	3.74	
Total BTEX	<0.300	0.300	01/15/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	97.7	% 73.3-12	9						
Chloride, SM4500CI-B	mg	/kg	Analyze	ed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	01/15/2019	ND	432	108	400	7.69	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/15/2019	ND	185	92.6	200	1.11	
DRO >C10-C28*	91.2	10.0	01/15/2019	ND	188	93.8	200	8.26	
EXT DRO >C28-C36	<10.0	10.0	01/15/2019	ND					
Surrogate: 1-Chlorooctane	90.0	% 41-142	•						
Surrogate: 1-Chlorooctadecane	93.7	% 37.6-14	7						

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### Analytical Results For:

MMX LUPE CARRASCO 2737 PECOS HWY CARLSBAD NM, 88220

Fax To: (575) 236-6201

Received: 01/14/2019 Sampling Date: 01/14/2019

Reported: 01/15/2019 Sampling Type: Soil
Project Name: GETTYSBERG STATE COM #1 Sampling Condition: \*\*(

Project Name: GETTYSBERG STATE COM #1 Sampling Condition: \*\* (See Notes)
Project Number: NONE GIVEN Sample Received By: Tamara Oldaker

Project Location: COG

### Sample ID: T2 BOTTOM (H900112-13)

BTEX 8021B	mg,	/kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/15/2019	ND	2.30	115	2.00	3.36	
Toluene*	<0.050	0.050	01/15/2019	ND	2.19	109	2.00	2.72	
Ethylbenzene*	<0.050	0.050	01/15/2019	ND	2.17	108	2.00	4.67	
Total Xylenes*	<0.150	0.150	01/15/2019	ND	6.57	109	6.00	3.74	
Total BTEX	<0.300	0.300	01/15/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	97.5	% 73.3-12	9						
Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	01/15/2019	ND	432	108	400	7.69	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/15/2019	ND	185	92.6	200	1.11	
DRO >C10-C28*	<10.0	10.0	01/15/2019	ND	188	93.8	200	8.26	
EXT DRO >C28-C36	<10.0	10.0	01/15/2019	ND					
Surrogate: 1-Chlorooctane	91.8	% 41-142	)						
Surrogate: 1-Chlorooctadecane	91.2	% 37.6-14	7						

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### Analytical Results For:

MMX LUPE CARRASCO 2737 PECOS HWY CARLSBAD NM, 88220

Fax To: (575) 236-6201

Received: 01/14/2019 Sampling Date: 01/14/2019

Reported: 01/15/2019 Sampling Type: Soil

Project Name: GETTYSBERG STATE COM #1 Sampling Condition: \*\* (See Notes)

Project Number: NONE GIVEN Sample Received By: Tamara Oldaker

Analyzed By: me

Project Location: COG

### Sample ID: T3 BOTTOM (H900112-14)

RTFY 8021R

B1EX 8021B	mg	/ kg	Anaiyze	a By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/15/2019	ND	2.30	115	2.00	3.36	
Toluene*	<0.050	0.050	01/15/2019	ND	2.19	109	2.00	2.72	
Ethylbenzene*	<0.050	0.050	01/15/2019	ND	2.17	108	2.00	4.67	
Total Xylenes*	<0.150	0.150	01/15/2019	ND	6.57	109	6.00	3.74	
Total BTEX	<0.300	0.300	01/15/2019	ND					
Surrogate: 4-Bromofluorobenzene (PID	98.8	% 73.3-12	9						
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	01/15/2019	ND	416	104	400	3.92	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/15/2019	ND	185	92.6	200	1.11	
DRO >C10-C28*	<10.0	10.0	01/15/2019	ND	188	93.8	200	8.26	
EXT DRO >C28-C36	<10.0	10.0	01/15/2019	ND					
Surrogate: 1-Chlorooctane	89.1	% 41-142	)						
Surrogate: 1-Chlorooctadecane	87.5	% 37.6-14	7						

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### **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  $6^{\circ}\text{C}$ 

Samples reported on an as received basis (wet) unless otherwise noted on report

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Celeg D. Freene

Relinquished By:

Relinguished By:

Time: 2:5 Date:

Received By:

Time:

Date:

Received By:

Fax Result: REMARKS:

☐ Yes

☐ No Add'I Phone #:
☐ No Add'I Fax #:

email

Informer incliquent com



# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

11/1/1/		THE PARTY OF THE P
Project Manager: (2002 (2002 50)	P.O. #:	
Address:	Company: COG	
City: State: Zip:	Attn: Sheldon H.	
Phone #: Fax #:	Address:	
Project #: Project Owner:	City:	
Project Name: Getyshury State Con	# State: Zip:	
Project Location:	Phone #:	
Sampler Name: (upe Carrasco)	Fax#:	5
FOR LAB USE ONLY	MATRIX PRESERV. SAMPLING	/v.
	ATER FER	EX Ortal
Sample I.D.	UDGE HER: ID/BASE E/COOL HER:	BT Chi
1 500-1	( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )	× × × ×
250-2		1 2 X X
3 50-3		2, 2, 2,
4 50-4		2 2 2
50-5		2
6 X2-6		2 2
7 50-7		R R F.
9 50-9		P. Q. Y.
10 500-10		N & X
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+ Parrinal rannot arrent verhal rhannee Bleace fav written rhannee to 1575) 202\_2226 Sample Condition
Cool Intact
Yes Yes
No No

8.90

CHECKED BY: (Initials)

Sampler - UPS - Bus - Other: Delivered By: (Circle One)

Relinquished By:

ssors arising out of or related to the performance of services hereunder by

Date:

Time: 3:15

Date: Time:

Received By:

service. In no event shall Cardinal be liable for incidental or consequental damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries

rdinal, regardless of whether such claim is based upon any of the above stated Received By:

Phone Result:
Fax Result:
REMARKS:

☐ Yes

□ □ No No

Add'l Phone #: Add'l Fax #:

Remail: Informer inc Comailicon

Relinquished By:



# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name:	Mille			ANALYSIS REQUEST	
Project Manager:	Lupe Carrasco		P.O. #:		
Address:			Company: Coc		
City:	State:	Zip:	Attn: Sheldon Hitches	ach	
Phone #:	Fax #:		Address:		
Project #:	Project Owner:	er:	City:		
Project Name:	Cottabura State Con	/#/	State: Zip:		
Project Location:			Phone #:	5	
Sampler Name:	Luga Carrisco	22	Fax #:	1/2:	
FOR LAB USE ONLY		MATRIX	PRESERV. SAMPLING	10	
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP. # CONTAINERS GROUNDWATER WASTEWATER SOIL OIL SLUDGE	OTHER: ACID/BASE: ICE / COOL OTHER:	SIE TPH Chlori	
[]	50-11	& Q	1/19/16	XXXX	
/2	TI BHON	S Q		S S S S S S S S S S S S S S S S S S S	
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14	13 Other	R	,	× × × × × × × × × × × × × × × × × × ×	
PLEASE NOTE: Liability and	PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. Cardinal within 30 days after completion of the applicable	or any claim arising whether based in contra	ct or tort, shall be limited to the amount paid by the	client for the explicable	
analyses All claims including	those for negligence and any other cause whatsoever shall	be deemed waived unless made in writing a	nd received by Cardinal within 30 days after compli	etion of the applicable	

Cardinal rannot arrent verhal rhannes Bleace fav written rhannes to IETEI 202\_2226

8.90

Sample Condition
Cool Intact
Pes Pes
No No

CHECKED BY: (Initials)

Delivered By: (Circle One)
Sampler - UPS - Bus - Other:

2012



January 22, 2019

LUPE CARRASCO

MMX

2737 PECOS HWY

CARLSBAD, NM 88220

RE: GETTYSBURG STATE COM #1H

Enclosed are the results of analyses for samples received by the laboratory on 01/21/19 11:35.

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 <a href="https://www.tceq.texas.gov/field/ga/lab">www.tceq.texas.gov/field/ga/lab</a> accred certif.html.

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

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

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

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

Method EPA 552.2 Total Haloacetic Acids (HAA-5)

Celecy D. Keine

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

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

Sincerely,

Celey D. Keene

Lab Director/Quality Manager

MMX

2737 PECOS HWY

CARLSBAD NM, 88220



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

### Analytical Results For:

Project: GETTYSBURG STATE COM #1H

Project Number: NONE GIVEN
Project Manager: LUPE CARRASCO

Fax To: (575) 236-6201

Reported: 22-Jan-19 14:08

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
T2 WEST BOTTOM	H900192-01	Soil	21-Jan-19 00:00	21-Jan-19 11:35
T2 -T3 T1 - T3	H900192-02 H900192-03	Soil Soil	21-Jan-19 00:00 21-Jan-19 00:00	21-Jan-19 11:35 21-Jan-19 11:35

Sample ID for H900192-03 revised from T1-T2 to T1-T3 as per Lupe 01/22/19. This is the revised report that will replace the one sent earlier 01/22/19.

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Celes D. Keens



### **Analytical Results For:**

MMX 2737 PECOS HWY CARLSBAD NM, 88220 Project: GETTYSBURG STATE COM #1H

Project Number: NONE GIVEN

Project Manager: LUPE CARRASCO

Fax To: (575) 236-6201

Reported: 22-Jan-19 14:08

### T2 WEST BOTTOM

H900192-01 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardina	al Laborat	ories					
Inorganic Compounds										
Chloride	32.0		16.0	mg/kg	4	9012207	AC	22-Jan-19	4500-Cl-B	
Volatile Organic Compounds I	oy EPA Method	8021								
Benzene*	< 0.050		0.050	mg/kg	50	9012115	ms	22-Jan-19	8021B	
Toluene*	< 0.050		0.050	mg/kg	50	9012115	ms	22-Jan-19	8021B	
Ethylbenzene*	< 0.050		0.050	mg/kg	50	9012115	ms	22-Jan-19	8021B	
Total Xylenes*	< 0.150		0.150	mg/kg	50	9012115	ms	22-Jan-19	8021B	
Total BTEX	< 0.300		0.300	mg/kg	50	9012115	ms	22-Jan-19	8021B	
Surrogate: 4-Bromofluorobenzene (PID)	)		103 %	73.3	-129	9012115	ms	22-Jan-19	8021B	
Petroleum Hydrocarbons by C	GC FID									
GRO C6-C10*	<10.0		10.0	mg/kg	1	9012114	MS	22-Jan-19	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	9012114	MS	22-Jan-19	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	9012114	MS	22-Jan-19	8015B	
Surrogate: 1-Chlorooctane			90.7 %	41	142	9012114	MS	22-Jan-19	8015B	
Surrogate: 1-Chlorooctadecane			89.5 %	37.6	-147	9012114	MS	22-Jan-19	8015B	

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Celeg D. Keine



### **Analytical Results For:**

MMX 2737 PECOS HWY CARLSBAD NM, 88220 Project: GETTYSBURG STATE COM #1H

Project Number: NONE GIVEN
Project Manager: LUPE CARRASCO

Fax To: (575) 236-6201

Reported: 22-Jan-19 14:08

T2 -T3 H900192-02 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardina	l Laborat	ories					
Inorganic Compounds										
Chloride	<16.0		16.0	mg/kg	4	9012207	AC	22-Jan-19	4500-Cl-B	
Volatile Organic Compounds by	EPA Method	8021								
Benzene*	< 0.050		0.050	mg/kg	50	9012115	ms	22-Jan-19	8021B	
Toluene*	< 0.050		0.050	mg/kg	50	9012115	ms	22-Jan-19	8021B	
Ethylbenzene*	< 0.050		0.050	mg/kg	50	9012115	ms	22-Jan-19	8021B	
Total Xylenes*	< 0.150		0.150	mg/kg	50	9012115	ms	22-Jan-19	8021B	
Total BTEX	< 0.300		0.300	mg/kg	50	9012115	ms	22-Jan-19	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			102 %	73.3	-129	9012115	ms	22-Jan-19	8021B	
Petroleum Hydrocarbons by GC	FID									
GRO C6-C10*	<10.0		10.0	mg/kg	1	9012114	MS	22-Jan-19	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	9012114	MS	22-Jan-19	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	9012114	MS	22-Jan-19	8015B	
Surrogate: 1-Chlorooctane			97.6 %	41-	142	9012114	MS	22-Jan-19	8015B	
Surrogate: 1-Chlorooctadecane			96.4 %	37.6	-147	9012114	MS	22-Jan-19	8015B	

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Celes D. Keene



### **Analytical Results For:**

MMX 2737 PECOS HWY Project: GETTYSBURG STATE COM #1H

Reported: 22-Jan-19 14:08

CARLSBAD NM, 88220

Project Number: NONE GIVEN
Project Manager: LUPE CARRASCO
Fax To: (575) 236-6201

T1 - T3 H900192-03 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardina	al Laborat	tories					
Inorganic Compounds										
Chloride	16.0		16.0	mg/kg	4	9012207	AC	22-Jan-19	4500-Cl-B	
Volatile Organic Compound	s by EPA Method	8021								
Benzene*	< 0.050		0.050	mg/kg	50	9012115	ms	22-Jan-19	8021B	
Toluene*	< 0.050		0.050	mg/kg	50	9012115	ms	22-Jan-19	8021B	
Ethylbenzene*	< 0.050		0.050	mg/kg	50	9012115	ms	22-Jan-19	8021B	
Total Xylenes*	< 0.150		0.150	mg/kg	50	9012115	ms	22-Jan-19	8021B	
Total BTEX	< 0.300		0.300	mg/kg	50	9012115	ms	22-Jan-19	8021B	
Surrogate: 4-Bromofluorobenzene (Pl	(D)		101 %	73.3	-129	9012115	ms	22-Jan-19	8021B	
Petroleum Hydrocarbons by	GC FID									
GRO C6-C10*	<10.0		10.0	mg/kg	1	9012114	MS	22-Jan-19	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	9012114	MS	22-Jan-19	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	9012114	MS	22-Jan-19	8015B	
Surrogate: 1-Chlorooctane			94.5 %	41-	142	9012114	MS	22-Jan-19	8015B	
Surrogate: 1-Chlorooctadecane			92.3 %	37.6	-147	9012114	MS	22-Jan-19	8015B	

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Celey D. Keine



### Analytical Results For:

MMX 2737 PECOS HWY CARLSBAD NM, 88220 Project: GETTYSBURG STATE COM #1H

Reported: 22-Jan-19 14:08

Project Number: NONE GIVEN Project Manager: LUPE CARRASCO

Fax To: (575) 236-6201

### **Inorganic Compounds - Quality Control**

### **Cardinal Laboratories**

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 9012207 - General Prep - Wet Chem										
Blank (9012207-BLK1)				Prepared &	Analyzed:	22-Jan-19				
Chloride	ND	16.0	mg/kg							
LCS (9012207-BS1)				Prepared &	Analyzed:	22-Jan-19				
Chloride	432	16.0	mg/kg	400		108	80-120			
LCS Dup (9012207-BSD1)				Prepared &	Analyzed:	22-Jan-19				
Chloride	416	16.0	mg/kg	400		104	80-120	3.77	20	

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Celey D. Keene



%REC

### Analytical Results For:

MMX 2737 PECOS HWY Project: GETTYSBURG STATE COM #1H
Project Number: NONE GIVEN

Spike

Source

Reported: 22-Jan-19 14:08

RPD

CARLSBAD NM, 88220

Project Manager: LUPE CARRASCO Fax To: (575) 236-6201

### Volatile Organic Compounds by EPA Method 8021 - Quality Control

### **Cardinal Laboratories**

Reporting

		recporting		Spine	Bource		/ or care		ICI D	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 9012115 - Volatiles										
Blank (9012115-BLK1)				Prepared &	દે Analyzed:	21-Jan-19				
Benzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Total Xylenes	ND	0.150	mg/kg							
Total BTEX	ND	0.300	mg/kg							
Surrogate: 4-Bromofluorobenzene (PID)	0.100		mg/kg	0.100		100	73.3-129			
LCS (9012115-BS1)				Prepared &	દે Analyzed:	21-Jan-19				
Benzene	1.93	0.050	mg/kg	2.00		96.6	72.2-131			
Toluene	1.86	0.050	mg/kg	2.00		92.8	71.7-126			
Ethylbenzene	1.85	0.050	mg/kg	2.00		92.3	68.9-126			
Total Xylenes	5.61	0.150	mg/kg	6.00		93.4	71.4-125			
Surrogate: 4-Bromofluorobenzene (PID)	0.100		mg/kg	0.100		100	73.3-129			
LCS Dup (9012115-BSD1)				Prepared &	k Analyzed:	21-Jan-19				
Benzene	1.94	0.050	mg/kg	2.00		97.0	72.2-131	0.384	6.91	
Toluene	1.85	0.050	mg/kg	2.00		92.7	71.7-126	0.183	7.12	
Ethylbenzene	1.85	0.050	mg/kg	2.00		92.6	68.9-126	0.340	7.88	
Total Xylenes	5.63	0.150	mg/kg	6.00		93.9	71.4-125	0.489	7.46	
Surrogate: 4-Bromofluorobenzene (PID)	0.0992		mg/kg	0.100		99.2	73.3-129			

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Celes D. Keene



### **Analytical Results For:**

MMX 2737 PECOS HWY CARLSBAD NM, 88220 Project: GETTYSBURG STATE COM #1H
Project Number: NONE GIVEN

STATE COM #1H Reported: 22-Jan-19 14:08

Project Manager: LUPE CARRASCO Fax To: (575) 236-6201

### Petroleum Hydrocarbons by GC FID - Quality Control

### **Cardinal Laboratories**

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

DI 1 (0010114 DI 171)				D 10 4	1 1 21 7 10				
Blank (9012114-BLK1)				Prepared & Anal	lyzed: 21-Jan-19				
GRO C6-C10	ND	10.0	mg/kg						
DRO >C10-C28	ND	10.0	mg/kg						
EXT DRO >C28-C36	ND	10.0	mg/kg						
Total TPH C6-C28	ND	10.0	mg/kg						
Surrogate: 1-Chlorooctane	49.7		mg/kg	50.0	99.3	41-142			
Surrogate: 1-Chlorooctadecane	52.1		mg/kg	50.0	104	37.6-147			
LCS (9012114-BS1)				Prepared & Anal	lyzed: 21-Jan-19				
GRO C6-C10	191	10.0	mg/kg	200	95.7	76.5-133			
DRO >C10-C28	208	10.0	mg/kg	200	104	72.9-138			
Total TPH C6-C28	399	10.0	mg/kg	400	99.8	78-132			
Surrogate: 1-Chlorooctane	50.3		mg/kg	50.0	101	41-142			
Surrogate: 1-Chlorooctadecane	50.9		mg/kg	50.0	102	37.6-147			
LCS Dup (9012114-BSD1)				Prepared & Anal	lyzed: 21-Jan-19				
GRO C6-C10	189	10.0	mg/kg	200	94.6	76.5-133	1.13	20.6	
DRO >C10-C28	208	10.0	mg/kg	200	104	72.9-138	0.114	20.6	
Total TPH C6-C28	397	10.0	mg/kg	400	99.3	78-132	0.482	18	
Surrogate: 1-Chlorooctane	49.3		mg/kg	50.0	98.7	41-142			
Surrogate: 1-Chlorooctadecane	49.6		mg/kg	50.0	99.2	37.6-147			

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Celeg D. Keene



### **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. Keine

Celey D. Keene, Lab Director/Quality Manager

Page 9 of 10

Relinquished By:

Date: Time:

Received By:

Delivered By: (Circle One)
Sampler - UPS - Bus - Other:

5

CHECKED BY: (Initials)

Cash



## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

	(3/3) 333-2320 FAA (3/3) 333-24/0	0			
Company Name:	NAM		BILL TO	ANALYSIS REQUEST	JEST
Project Manager:	luge Carrisco		P.O. #: 806		
Address:	The second secon		Company: Co6		
City:	State:	Zip:	Attn: Shaldon M	likhooch	
Phone #:	Fax#:		Address:		
Project #:	Project Owner:		City:		
Project Name:	Gethysland State Com	n #/H	State: Zip:		
Project Location:			Phone #:		
Sampler Name:			Fax #:	5	
FOR LAB USE ONLY		MATRIX	PRESERV. SAMPLING		
		ERS ATER		1600 1872 - 194	
Lab I.D.	Sample I.D.	CONTAIN CONTAIN ROUNDW ASTEWA DIL LUDGE	THER: CID/BASE E / COOL THER:	Ch 12	
-	To Clest Bother	X		N C R	
2	72-73	X	,	XXX	
Cu	77-72 71-73 Th	× ×		XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	
DI EASE NOTE: Liability and	Pamanoe Cardinal's liability and client's exclusive remedy for a	ny claim arising whether based in contract	or for shall be limited to the amount no	the the client for the	
PLEASE NOTE: Liability and analyses. All claims including service. In no event shall Car	PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or lort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequental damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries,	ny claim arising whether based in contract deemed waived unless made in writing and without limitation, business interruptions,	t or tort, shall be limited to the amount pa d received by Cardinal within 30 days afte loss of use, or loss of profits incurred by	d by the client for the roughly completion of the applicable short, its subsidiaries,	
Relinquished By:	Relinquished By:  Date:  Received By:	Received By:	is passed upon any or the access are in	ult: □ Yes □ No	
	Time:	Jamas "		REMARKS:	
	11.10	111111111111111111111111111111111111111			

### APPENDIX VII

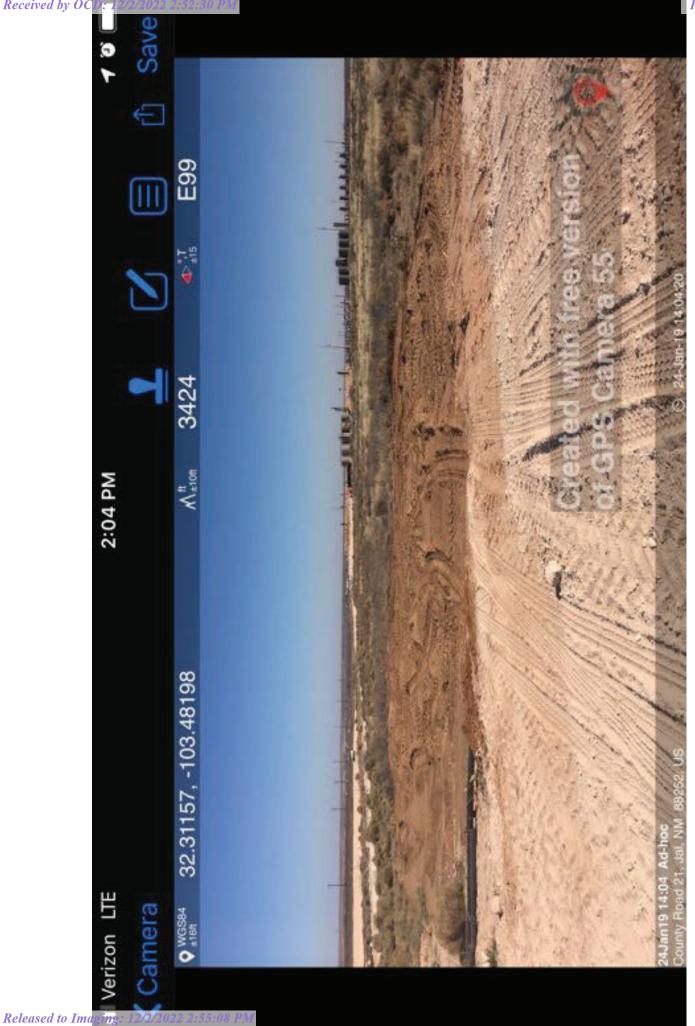
② 280°W (T) ③ 32.820232°, -104.028732° ±96110.3ft ▲ 3609ft







Received by OCD: 1 Page 197 of 198 f Save



District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

District II 811 S. First St., Artesia, NM 88210 Phone:(575) 748-1283 Fax:(575) 748-9720 District III

1000 Rio Brazos Rd., Aztec, NM 87410 Phone:(505) 334-6178 Fax:(505) 334-6170

1220 S. St Francis Dr., Santa Fe, NM 87505 Phone:(505) 476-3470 Fax:(505) 476-3462

### **State of New Mexico Energy, Minerals and Natural Resources Oil Conservation Division** 1220 S. St Francis Dr. **Santa Fe, NM 87505**

CONDITIONS

Action 163449

### **CONDITIONS**

Operator:	OGRID:
COG OPERATING LLC	229137
600 W Illinois Ave	Action Number:
Midland, TX 79701	163449
	Action Type:
	[IM-SD] Incident File Support Doc (ENV) (IM-BNF)

### CONDITIONS

С	reated	Condition	Condition
B	y		Date
k	ohall	Area of remediation will need to meet 19.15.29.13 NMAC at plugging and abandonment.	12/2/2022