

September 29, 2017

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

Amber Groves Hobbs Field Office New Mexico State Land Office 2827 N. Dal Paso St., Suite 117 Hobbs, New Mexico 88240

# APPROVED

By Olivia Yu at 10:31 am, Oct 16, 2017

NMOCD approves of the delineation completed for 1RP-4695. For the proposed remediation, confirmation sidewall and bottom samples are required for the area represented by T-1 and T-2.

#### Re: Work Plan

Macho Nacho State #001H (1RP-4695) Unit Letter A, Section 07, Township 24S,Range 33E Lea County, NM

Ms. Yu/Ms. Groves,

COG Operating LLC is pleased to submit for your consideration the following work plan for the Macho Nacho State #001H Tank Battery. The plan is in response to a crude oil release that occurred on May 9, 2017. Subsequent to the release a C-141 Initial report was submitted to the New Mexido Oil Conservation Division (NMOCD) and New Mexico State Land Office (NMSLO) on May 10, 2017 (1RP-4695).

#### BACKGROUND

On May 8, 2017, during maintenance activities the well and compressor were shut in and the heater treater was isolated. When the compressor came back online on May 9, 2017, the casing and choke were not shut in and it resulted in fluid being sent to the flare. The fluid from the release oversprayed a portion of the location as well as the adjacent pasture. A vacuum truck was dispatched to remove any standing fluids from within the bermed area around the flare. A crew was dispatched to perform an initial scrape of the area on location and to spray microblaze on the impacted soil and vegetation in the pasture.

#### GROUNDWATER

A groundwater database maintained by the New Mexico Office of the State of Engineer (NMOSE) did not identify any registered water wells in Section 07, Township 24S, Range 33E. The Chevron Trend Map utilized by the NMOCD Hobbs District Office indicates depth to groundwater is greater than 100 feet below groundsurface (bgs). No

CORPORATE ADDRESS One Concho Center | 600 West Illinois Avenue | Midland, Texas 79701 PHONE 432.683.7443 | FAX 432.683.7441 LOCAL ADDRESS Concho West | 2208 Main Street | Artesia, New Mexico 88210 PHONE 575.748.6940 | FAX 575.746.2096 NMOCD September 29, 2017 Page 2

> water wells or surface water was observed within 1,000 feet of the release site. Based on the NMOCD ranking criteria, the release area would be classified at a site ranking of zero (0).

#### ANALYTICAL RESULTS

On July 25, 2017, COG personnel collected 29 soil samples from the subject area. Soil samples were collected from five (5) trenches at depths ranging from surface to twelve (12) feet bgs. The soil samples were submitted to a laboratory for analysis of benzene, toluene, ethylbenzne and sylenes (BTEX), total petroleum hydrocarbons (TPH) and chloride.

Analytical results indicate chloride concentration were within the recommended remedial action loevels (RRAL)s for a site ranking of zero (0). Chlorde concentration ranged from <4.92 mg/Kg is soil sample T2-1' to 54.7 mg/Kg for soil sample T2-Surface. TPH and BTEX concentrations are elevated for sample area T1 to a depth of three (3) feet and in T2 at surface level (see attached site diagram and sample table). TPH concentrations ranged from <14.9 mg/Kg to 19,700 in soil sample T2-Surface. BTEX concentrations ranged from <0.00198 mg/Kg to 354 mg/Kg in soil sample T1-2'.

#### WORK PLAN

Based on the analytical results of soil samples collected on July 25, 2017, COG proposes the excavation of three (3) feet of material in the area of T1 and six (6) inches in the area of T2. The excavated areas will be backfilled with non-impacted like material and the area in the pasture will be reseeded. The excavated soil will be transported to a NMOCD approved disposal facility. If there are no objections or further stipulations, COG Operating LLC would like to begin the proposed remediation at this time. Please feel free to contact me with any questions or concerns at (432) 215-2783.

Sincerely,

hot New

Dakota Neel HSE Coordinator

Enclosed

(1) Site Diagram and Summary Table
 (2) Laboratory Analysis
 (3) C-141 Initial (Copy)

	Macho Nacho	State #1H	
SAMPLE ID	Chloride (mg/kg)	Total TPH (mg/kg)	Total BTEX (mg/kg)
T1 - Surface	<4.96	6390	10.8
TI -1'	<4.96	10300	160
T1 -2'	<4.98	12900	354
T1 -3'	<5.00	11700	302
T1 -4'	<4.98	470	0.332
TI -5'	<4.97	61.8	0.0113
T1 -7'	<4.95	29.1	<0.00341
T1 -10'	<4.95	<15.0	<0.00200
T1 -12'	6.19	19.7	< 0.00330
T2 -Surface	54.7	19700	0.264
T2 -1'	<4.92	19.0	<0.00201
T2 -2'	<4.96	21.0	<0.00355
T2 -3'	<4.98	32.8	<0.00200
T2 -5	<4 97	33.7	< 0.00199
T3- Surface	<4 98	15.4	<0.00198
T3 - 1'	<4 98	19.0	<0.00200
T3 -2'	<4.96	<15.0	<0.00358
T3 -3'	<4.99	<14.9	<0.00336
T3 -4'	<4.98	735	<0.00327
T4 - Surface	<4.96	<15.0	<0.00199
T4 -1'	<4.91	<14.9	<0.00198
T4 -2'	<4.91	<15.0	<0.00351
T4 -3'	<4.93	<14.9	< 0.00199
T4 -4'	<4.95	56.5	< 0.00346
T5 - Surface	<4.98	<15.0	< 0.00361
T5 -1'	<4 97	<15.0	<0.00200
T5 -2'	<4.97	<15.0	<0.00199
T5 -3'	<4 93	<14.9	<0.00198
T5 -4'	<4.97	<150	<0.00202

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	Legend Excavate 6° Excavate to 3° BS Sample Points NO Excavation	Total BTEX (ma/ka)	10.8	160	354	302	0.0113	<0.00341	<0.00200	<0.00330	0.264	<0.00201	<0.00355	<0.00200	<0.00199	<0.00198	<0.00200	<0.00358	<0.00336	<0.0032/	<0.00198	<0.00351	<0.00199	<0.00346	<0.00361	<0.00200	<0.00199	<0.00198	<0.00202	ALC AND ALC			U N C H	
		Total TPH (mg/ kg)	6390	10300	12900	470	61.8	29.1	<15.0	19.7	19700	19.0	21.0	32.8	33.7	15.4	19.0	<15.0	<14.9	(32)	<14.9	<15.0	<14.9	56.5	<15.0	<15.0	<15.0	<14.9	<15.0	L. S. S. S. S.	il. The		0	
е #1H		Chloride (mg/ kg)	<4.96	<4.96	<4.98	<5.00	<4.97	<4.95	<4.95	6.19	54.7	<4.92	<4.96	<4.98	<4.97	<4.98	<4.98	<4.96	<4.99	<4.98	<4.91	<4.91	<4.93	<4.95	<4.98	<4.97	<4.97	<4.93	<4.97	- A - A - A - A	あり、	11-		
Macho Nacho State #1H		Sample (D	T1 - Surface	T1-1'	T1-2"	11-4.	71-5	T1 -7'	T1 -10'	T1 -12'	T2 -Surface	12 -1'	T2 -2'	T2 -3'	T2-5	T3- Surface	13-1 T2 21	13-2	12.5	T4 - Suface	T4 -1'	T4 -2'	T4 -3'	T4 -4'	T5 - Surface	T5-1'	T5-2'	T5-3*	T5-4'	のいたちとあったのであると		「「「、、、、、、、、、、、、、、、、、、、、、、、、、、、、、、、、、、、		
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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 I Copy to appropriate District Office in accordance with 19.15.29 NMAC,

<b>Release Notification</b>	and	Corrective	Action
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	OPERATO	R 🛛 🛛 Initial Reg	port 🔲 Final Report
Name of Company: COG Operating LLC OGRI	D # 229137 Contact:	Robert McNeill	
Address: 600 West Illinois Avenue, Midland T	K 79701 Telephone No.	432-683-7443	
Facility Name: Macho Nacho State #001H	Facility Type:	Tank Battery	
Surface Owner: State M	ineral Owner:	API No.	30-025-39882

				LOCA	TION OF REI	LEASE			
Unit Letter	Section	Township	Range		North/South Line		East/West Line	County	

				300	North	330	East	Lea	
Δ	07	245	33E	380	Month	210	E		
 County Provide	Dection	[ rownanth	remiße	I feet trout the	I TAOLITE DOMITI FINE	reethout uic	Easy west Line	Lounry 1	

Latitude 32.2384529 Longitude -103.6039429

#### NATURE OF RELEASE

Type of Release: Oil	Volume of Release: 8 bbls	Volume Recovered: 4 bbls
Source of Release: Flore	Date and Hour of Occurrence: May 9, 2017 12:00 pm	Date and Hour of Discovery: May 9, 2017 12:00 pm
Was Immediate Notice Given?	If YES, To Whom?	
By Whom?	Date and Hour:	
Was a Watercourse Reached?	If YES, Volume Impacting the W	atercourse.
If a Watercourse was Impacted, Describe Fully.*	RECEIVED	
Describe Cause of Problem and Remedial Action Taken.*	By Olivia Yu at	t 11:34 am, May 10, 2017 🛏
On May 8, 2017 the well and compressor was shut in and the heater treate and the compressor came back on line and sent fluid out the top of the flat Describe Area Affected and Cleanup Action Taken.* The release was on location and within the adjacent pasture. A vacuum tru area sampled to delineate any possible impact from the release and we will significant remediation activities. I hereby certify that the information given above is true and complete to the regulations all operators are required to report and/or file certain release and public health or the environment. The acceptance of a C-141 report by the should their operations have failed to adequately investigate and remediate or the environment. In addition, NMOCD acceptance of a C-141 report d federal, state, or local laws and/or regulations.	re. uck was dispatched to remove all fre Il present a remediation work plan to he best of my knowledge and unders otifications and perform corrective a e NMOCD marked as "Final Report e contamination that pose a threat to	estanding fluids. Concho will have the spill o the NMOCD for approval prior to any stand that pursuant to NMOCD rules and actions for releases which may endanger " does not relieve the operator of liability pround water, surface water, human health
Signature: Rebecco Harkell	OIL CONSER	VATION DIVISION
Printed Name: Rebecca Haskell	Approved by Environmental Special	list: OY
Title: Senior HSE Coordinator	Approval Date: 5/10/2017	Expiration Date:
E-mail Address: thaskell@concho.com	Conditions of Approval:	Attached D
Date: May 10, 2017 Phone: 432-683-7443	see attached directive	
Attach Additional Sheets If Necessary		

1RP-4695

nOY1713041830

pOY1713042045



**Project Location:** 

# Certificate of Analysis Summary 559042 COG Operating LLC, Artesia, NM Project Name: Macho Nacho State #1H



Date Received in Lab: Tuc Aug-01-17 03:06 pm Report Date: 24-AUG-17 Project Manager: Kclscy Brooks

	Lab Id:	559042-001	559042-002	559042-003	559042-004	559042-005	559042-006
Analysis Romostod	Field Id:	TI - Surface	11 - 11	T1 -2'	TI -3'	T1 4'	Tl -5'
magna have been the	Depth:		1- A	2- A	3- N	4- A	5- A
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Jul-25-17 09:30	Jul-25-17 09:45				
BTEX by EPA 8021B	Extracted:	Aug-04-17 08:15	Aug-04-17 08:15	Aug-04-17 08:15	Aug-07-17 08:00	Aug-03-17 07:30	Aug-03-17 07:30
_	Analyzed:	Aug-04-17 14:54	Aug-04-17 14 16	Aug-04-17 20:11	** ** ** **	Aug-03-17 17:46	Aug-03-17 18:05
	Units/RL:	mg/kg RL	mg/kg RL				
Benzene		<0.0202 0.0202	0.557 0.201	1.69 0.398	2.22 0.198	<0.00201 0.00201	*0.00199 0.00199
Tolucne		1.53 0.0202	30.7 0.201	77.4 0.398	79.2 D 0.401	0.00903 0.00201	0.00326 0.00199
Ethylbenzene		1.86 0.0202	26.2 0.201	58.5 0.398	37.0 0.198	0.0497 0.00201	<0.00199 0.00199
m.p-Xylencs		5.11 0.0404	73.1 0.402	156 0.797	152 D 0.802	0.170 0.00402	0.00501 0.00398
o-Xylcnc		2.32 0.0202	29,1 0.201	80.6 0.398	31.3 0.198	0.103 0.00201	0.00303 0.00109
Total Xylcnes		7.43 0.0202	102 0.201	217 0.398	183 0,198	0.273 0.00201	0.00804 0.00199
Total BTEX		10.8 0.0202	160 0.201	354 0.398	302 0.198	0.332 0.00201	0.0113 0.00199
Inorganic Anions by EPA 300/300.1	Extracted:	Aug-07-17 14:50	Aug-07-17 14:50				
	Analyzed:	Aug-07-17 17-17	Aug-07-17 17:24	Aug-07-17 17:32	Aug-07-17 17:40	Aug-07-17 18:03	Aug-07-17 18:10
	Units/RL:		mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<4.96 4.96	<4.96 4.96	<4.98 4.98	<5.00 5.00	<4.98 4.98	<4.97 4.97
TPH By SW8015 Mod	Extracted:	Aug-03-17 14:00	Aug-03-17 14:00				
	Analyzed:	Aug-03-17 23:18	Aug-03-17 23:39	Aug-04-17 23:59	Aug-04-17 00:21	Aug-04-17 00:42	Aug-04-17 01:03
	Units/RL:	mg/kg RL	mg/kg RL				
Gasoline Range Hydrocarbons (GRO)		303 74,8	2280 74.9	3860 74.8	3170 75.0	37.3 15.0	<14.9 = 14.9
Dicsel Range Organics (DRO)		5360 74.8	7080 74.9	8040 74.8	7570 75.0	406 15.0	61,8 14.9
Oil Range [lydrocarbons (ORO)		722 74.8	914 74.9	1020 74.8	913 75.0	26.6 15.0	<14.9 14.9
Total TPI4		6390 74.8	10300 74.9	12900 74.8	11700 75.0	470 15.0	61.8 14.9

This analytical report, and the entire data parlcage it represents, has been made for your exclusive and confidential use. The interpretations and results capressed throughout this analytical report repressent 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 invoteed for this work order unless otherwise agreed to in writing.

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

Kund Moan Kelsey Brooks Project Manager



Project Location:

Certificate of Analysis Summary 559042 COG Operating LLC, Artesia, NM Project Name: Macho Nacho State #1H



Date Received in Lab: Tuc Aug-01-17 03:06 pm Report Date: 24-AUG-17 Project Manager: Kelsey Brooks

	Lab Id:	559042-007	559042-008	008	559042-009	559042-010	559042-011	559042-012	2
Analysis Roanostod	Field Id:	TI -7'	T1 -10'	0,	T1 -12*	T2 -Surface	T2 -1'	T2 - 2'	
	Depth:	7 A	10- ft		12- A		1- A	2- A	
	Matrix:	SOIL	SOIL	,	SOIL	SOIL	SOIL	SOIL	
	Sampled:	Jul-25-17 09:45	Jul-25-17 09:45	09:45	Jul-25-17 09:45	Jul-25-17 10:00	Jul-25-17 10:00	Jul-25-17 10:00	00:
BTEX by EPA 8021B	Extracted:	Aug-04-17 15:45	Aug-03-17 07:30	07:30	Aug-04-17 15:45	Aug-04-17 15:45	Aug-03-17 07:30	Aug-04-17 15:45	5:45
	Analyzed:	Aug-05-17 02:56	Aug-03-17 18:42	18:42	Aug-05-17 03:15	Aug-05-17 01:25	Aug-03-17 19:39	Aug-05-17 03:34	3:34
	Units/RL:	mg/kg RL	L mg/kg	RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg	RL
Benzene		<0.00341 0.00341	41 <0.00200	0.00200	<0.00330 0.00330	<0.00317 0.00317	<0.00201 0.00201	<0.00355	0.00355
Tolucne		<0.00341 0.00341	41 <0.00200	0.00200	<0.00330 0.00330	0.00822 0.00317	<0.00201 0.00201	<0.00355	0.00355
Ethylbenzene		<0.00341 0.00341	41 <0.00200	0.00200	<0.00330 0.00330	0.0332 0.00317	<0.00201 0.00201	<0.00355	0.00355
m,p-Xylencs		<0.00683 0.00683	83 <0.00399	0.00399	<0.00660 0.00660	0.143 0.00635	<0.00402 0.00402	<0.00709	0.00709
o-Xylene		<0.00341 0.00341	41 <0.00200	0.00200	<0.00330 0.00330	0.0799 0.00317	<0.00201 0.00201	<0.00355	0.00355
Total Xylcncs		<0.00341 0.00341	41 < <0.00200	0.00200	<0.00330 0.00330	0.223 0.00317	10200.0 10200.0	<0.00355	0.00355
Total BTEX	_	<0.00341 0.00341	<0.00200	0.00200	<0.00330 0.00330	0.264 0.00317	<0.00201 0.00201	<0.00355	0.00355
Inorganic Anions by EPA 300/300.1	Extracted:	Aug-07-17 14:50	Aug-07-17 14:50	14:50	Aug-07-17 14:50	Aug-07-17 14:50	Aug-07-17 14:50	Aug-07-17 14:50	4:50
	Analyzed:	Aug-07-17 18:18	Aug-07-17 18:26	18:26	Aug-07-17 18:33	Aug-07-17 19:04	Aug-07-17 19:12	Aug-07-17 19:35	9:35
	Units/RL:	mg/kg RL	L mg/kg	RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg	RL
Chloride		<4.95 4.95	35 <4.95	4.95	6.19 4,97	54.7 4.94	<4.92 4.92	<4.96	4.96
TPH By SW8015 Mod	Extracted:	Aug-03-17 14:00	Aug-03-17 14:00	14:00	Aug-03-17 14:00	Aug-03-17 14:00	Aug-03-17 14:00	Aug-03-17 14:00	00;†
	Analyzed:	Aug-04-17 01:23	Aug-04-17 02:25	02:25	Aug-04-17 02:46	Aug-04-17 03:06	Aug-04-17 04:09	Aug-04-17 04:29	1:29
	Units/RL:	mg/kg RL	L mg/kg	RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<14.9 14.9	9 <15.0	15.0	<15.0 15.0	466 74.9	<15.0 15.0	<14.9	14.9
Dicsel Range Organics (DRO)		29.1 14	14.9 <15.0	= 15.0	19.7 15.0	16300 74.9	19.0 15.0	21.0	14.9
Oil Range Ilydrocarbons (ORO)		<14.9 14.9	9 <15.0	15.0	<15.0 15.0	2960 74.9	<15.0 15.0	<14.9	14.9
Total TPH		29.1 14.9	9 <15.0	15.0	19.7 15.0	19700 74.9	19.0 =15.0	21.0	14.9

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

Kund Moa Kelsey Brooks Project Manager

Final 1,001



Project Location:

Certificate of Analysis Summary 559042 COG Operating LLC, Artesia, NM Project Name: Macho Nacho State #1H



Date Received in Lab: Tuc Aug-01-17 03:06 pm Report Date: 24-AUG-17 Project Manager: Kelscy Brooks

24	Lab Id:	559042-013	559042-014	559042-015	559042-016	559042-017	559042-018
Ambreic Ronnoclad	Field Id:	- 12 -3'	T2 -5	T3- Surface	T3 - 1*	T3 -2'	T3 -3'
	Depth:	3- R	5- A		1- Ĥ	2- ft	3- A
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Jul-25-17 10:00	Jul-25-17 10:00	Jul-25-17 10:15	Jul-25-17 10:15	Jul-25-17 10:15	Jul-25-17 10:15
BTEX by EPA 8021B	Extracted:	Aug-03-17 07:30	Aug-03-17 10:00	Aug-03-17 10:00	Aug-03-17 10:00	Aug-04-17 15:45	Aug-04-17 15:45
	Analyzed:	Aug-03-17 19:58	Aug-04-17 00:00	Aug-04-17 00:19	Aug-04-17 00:38	Aug-05-17 03:53	Aug-05-17 04:12
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00358 0.00358	<0.00336 0.00336
Tolucne		<0.00200 0.00200	<0.00199 0.00199	86100.0 86100.0>	<0.00200 0.00200	<0.00358 0.00358	<0.00336 0.00336
Ethylbenzene		<0.00200 0.00200	66100'0 66100'0>	<0.00198 0.00198	<0.00200 0.00200	<0.00358 0.00358	<0.00336 0.00336
m.p-Xylcnes		<0.00399 0.00399	80100.0 80100.0>	>0.00396 0.00396	<0.00401 0.00401	<0.00717 0.00717	×0.00671 0.00671
o-Xylene		<0.00200 0.00200	<0.00199 0.00199	86100.0 86100.0>	<0.00200 0.00200	<0.00358 0.00358	<0.00336 0.00336
Total Xylenes		<0.00200 0.00200	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00358 0.00358	<0.00336 0.00336
Total BTEX		<0.00200 0.00200	<0.00199 0.00199	×0.00198 0.00198	<<0.00200 0.00200	<0.00358 0.00358	<0.00336 0.00336
Inorganic Anions by EPA 300/300.1	Extracted:	Aug-07-17 14:50	Aug-07-17 14:50	Aug-07-17 14:50	Aug-07-17 14:50	Aug-07-17 14:50	Aug-07-17 14:50
	Analyzed:	Aug-07-17 19:42	Aug-07-17 19:50	Aug-07-17 19:58	Aug-07-17 20:05	Aug-07-17 20:13	Aug-07-17 20:21
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chlaride		<4.98 4.98	<4.97 4.97	<4.98 4.98	<4.98 4.98	<4.96 4.96	<4.99 4.99
TPH By SW8015 Mod	Extracted:	Aug-03-17 14:00	Aug-03-17 14:00	Aug-03-17 14:00	Aug-03-17 14:00	Aug-03-17 14:00	Aug-03-17 14:00
	Analyzed:	Aug-04-17 04:50	Aug-04-17 05:10	Aug-04-17 05:31	Aug-04-17 05:52	Aug-04-17 06:12	Aug-04-17 06:33
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)	_	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9
Dicscl Range Organics (DRO)		32.8 15.0	33.7 15.0	15.4 15.0	19.0 15.0	<15.0 15.0	<14.9 14.9
Oil Range Hydrocarbons (ORO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9
Total TPH		32.8 15.0	33,7 15.0	15.4 15.0	19.0 15.0	×15.0 15.0	<14,9 14,9

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Hund Word

Kelsey Brooks Project Manager



Project Location:

Certificate of Analysis Summary 559042 COG Operating LLC, Artesia, NM Project Name: Macho Nacho State #1H



Date Received in Lab: Tue Aug-01-17 03:06 pm Report Date: 24-AUG-17 Project Manager: Kelsey Brooks

	Lab Id:	559042-019	559042-020	559042-021	559042-022	559042-023	559042-024
Analusis Ronnostad	Field Id:	T3 4'	T4 - Surface	T'4 - I'	T4 -2'	74 -3'	T4 -4'
TENNER ALCHERCHER	Depth:	4- A		l⊡ fì	2- N	3- A	4- N
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Jul-25-17 10:15	Jul-25-17 10:30				
BTEX by EPA 8021B	Extracted:	Aug-04-17 15:45	Aug-03-17 10:00	Aug-03-17 10:00	Aug-04-17 15:45	Aug-03-17 10:00	Aug-04-17 15:45
	Analyzed:	Aug-05-17 04:49	Aug-04-17 02:29	Aug-04-17 02:47	Aug-05-17 04:30	Aug-04-17 03:25	Aug-05-17 05:08
	Units/RL:	mg/kg RL					
Benzene		<0.00327 0.00327	46100.0 66100.0*	<0.00198 0.00198	<0.00351 0.00351	66100 0 66100 0>	<0.00346 0.00346
Tolucne		<0.00327 0.00327	<0.00199 0.00199	86100.0 86100.0>	<0.00351 0.00351	66100.0 66100.0>	<0.00346 0.00346
Ethylbenzene		<0.00327 0.00327	66100'0 66100'0>	86100.0 86100.0>	<0.00351 0.00351	<0.00199 0.00199	<0.00346 0.00346
m.p-Xylenes		<0.00654 0.00654	<0.00398 0.00398	<0.00396 0.00396	<0.00702 0.00702	<0.00398 0.00398	<0.00692 0.00692
o-Xylcnc		<0.00327 0.00327	<0.00199 0.00199	86100.0 86100.0>	<0.00351 0.00351	66100'0 66100'0>	<0.00346 0.00346
Total Xylencs		<0.00327 0.00327	<0.00199 0.00199	86100.0 86100.0>	<0.00351 0.00351	<0.00199 0.00199	<0.00346 0.00346
Total BTEX		<0.00327 0.00327	66100.0 66100.0>	<0.00198 0.00198	<0.00351 0.00351	<0.00199 0.00199	<0.00346 0.00346
Inorganic Anions by EPA 300/300.1	Extracted:	Aug-07-17 14:50	Aug-07-17 14:50	Aug-07-17 16:40	Aug-07-17 16:40	Aug-07-17 16:40	Aug-07-17 16:40
	Analyzed:	Aug-07-17 18:41	Aug-07-17 16:53	Aug-07-17 23:02	Aug-07-17 23:25	Aug-07-17 23:33	Aug-07-17 23:40
	Units/RL:	mg/kg RL					
Chloride		<4.98 4.98	<4.96 4.96	<4.91 4.91	<4.91 4.91	<4,93 4,93	<4.95 4.95
TPH By SW8015 Mod	Extracted:	Aug-03-17 14:00	Aug-03-17 14:00	Aug-03-17 10:00	Aug-03-17 10:00	Aug-03-17 10:00	Aug-03-17 10:00
	Analyzed:	Aug-04-17 06:55	Aug-04-17 07:16	Aug-03-17 20:36	Aug-03-17 20:56	Aug-03-17 21:17	Aug-03-17 21:36
	Units/RL:	mg/kg RL					
Gasoline Range Hydrocarbons (GRO)		<14.9 14.9	<15.0 15.0	<14.9 14.9	<15.0 15.0	<14.9 14.9	<15.0 15.0
Dicscl Range Organics (DRO)		594 14.9	<15.0 15.0	<14.9 14.9	<15.0 15.0	<14.9 14.9	56.5 15.0
Oil Range Hydrocarbons (ORO)		141 14.9	<15.0 15.0	<14.9 14.9	<15,0 15,0	<14.9 14.9	<15.0 15.0
Total TPH		725 14-0	15.0 12.0				

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

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Kurr Woah Kelsey Brooks Project Manager

Final 1,001



Project Location:

Certificate of Analysis Summary 559042 COG Operating LLC, Artesia, NM Project Name: Macho Nacho State #1H



Date Received in Lab: Tuc Aug-01-17 03:06 pm Report Date: 24-AUG-17 Project Manager: Kelsey Brooks

	Lab Id:	559042-025	559042-026	559042-027	559042-028	559042-029	
Analysis Romovial	Field Id:	T5 - Surface	T5 -1*	T5 -2'	T5 -3'	T5 -4'	
macanta sections	Depth:		1- A	2- A	3- A	4- A	
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	
	Sampled:	Jul-25-17 10:45	Jul-25-17 10:45	Jul-25-17 10:45	Jul-25-17 10:45	Jul-25-17 10:45	
BTEX by EPA 8021B	Extracted:	Aug-07-17 08:00	Aug-03-17 10:00	Aug-03-17 10:00	Aug-03-17 10:00	Aug-03-17 10:00	
	Analyzed:	Aug-07-17 18:17	Aug-03-17 22:46	Aug-03-17 23:04	Aug-03-17 23:23	Aug-03-17 23:41	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Benzene	-	<0.00361 0.00361	<0.00200 0.00200	<0.00199 0.00199	86100.0 86100.0>	<0.00202 0.00202	
Tolucne		≤0.00361 0.00361	<0.00200 0.00200	<0.00199 0.00199	\$6100.0 \$6100.0>	<0.00202 0.00202	
Ethylbenzene		<0.00361 0.00361	<0.00200 0.00200	66100'0 66100'0>	86100'0 86100'0>	<0.00202 0.00202	
m.p-Xylenes		<0.00722 0.00722	10H00'0 10H00'0>	<0.00398 0.00398	<0.00397 0.00397	<0.00404 0.00404	
o-Xylcnc		<0.00361 0.00361	<0.00200 0.00200	66100'0 66100'0>	<0.00198 0.00198	<0.00202 0.00202	
Total Xylencs		<0.00361 0.00361	<0.00200 0.00200	e0:00199 0.00199	<0.00198 0.00198	<0.00202 0.00202	
Total BTEX		<0.00361 0.00361	<0.00200 0.00200	66100'0 66100'0>	86100'0 86100'0>	<0.00202 0.00202	
Inorganic Anions by EPA 300/300.1	Extracted:	Aug-07-17 16:40	Aug-07-17 16:40	Aug-07-17 16:40	Aug-07-17 16:40	Aug-07-17 16:40	
	Analyzed:	Aug-07-17 23:48	Aug-08-17 00:11	Aug-08-17 00:19	Aug-08-17 00:27	Aug-08-17 00:34	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		<4.98 4.98	<4.97 4.97	<4.97 4.97	<4.93 4.93	<4.97 4.97	
TPH By SW8015 Mod	Extracted:	Aug-04-17 16:00	Aug-04-17 16:00	Aug-04-17 16:00	Aug-04-17 16:00	Aug-04-17 16:00	
	Analyzed:	Aug-04-17 19:55	Aug-04-17 21:00	Aug-04-17 21:22	Aug-04-17 21:43	Aug-04-17 22:05	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	
Dicsel Range Organics (DRO)	_	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	
Oil Range Ilydrocarbons (ORO)	_	<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	<15.0 15.0	
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<14.9 14.9	×15.0 15.0	

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Hund Moak Kelsey Brooks

Project Manager

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## Analytical Report 559042

for

**COG Operating LLC** 

Project Manager: Aaron Lieb Macho Nacho State #1H

#### 24-AUG-17

Collected By: Client





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

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

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295) Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400) Xenco-San Antonio: Texas (T104704534) Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757) Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

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

Reference: XENCO Report No(s): 559042 Macho Nacho State #1H Project Address: Macho Nacho State

#### Aaron Lieb:

24-AUG-17

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) 559042. 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. 559042 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,

Huns rah

Kelsey Brooks Project Manager

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#### Sample Cross Reference 559042



#### COG Operating LLC, Artesia, NM

Macho Nacho State #1H

T1 - Surface S 07-25-17 09:30 55904	2-001
T1 -1' S 07-25-17 09:30 1 ft 55904	2-002
T1 -2' S 07-25-17 09:30 2 ft 55904	2-003
T1 -3' S 07-25-17 09:30 3 ft 55904	2-004
TI -4' S 07-25-17 09:30 4 ft 55904	2-005
TI -5' S 07-25-17 09:45 5 ft 55904	2-006
T1 -7' S 07-25-17 09:45 7 ft 55904	2-007
T1 -10' S 07-25-17 09:45 10 ft 55904	2-008
T1 -12' S 07-25-17 09:45 12 ft 55904	2-009
T2 -Surface S 07-25-17 10:00 55904	2-010
T2 -1' S 07-25-17 10:00 1 ft 55904	2-011
T2 -2' S 07-25-17 10:00 2 ft 55904	2-012
T2 -3' S 07-25-17 10:00 3 ft 55904	2-013
T2 -5 S 07-25-17 10:00 5 ft 55904	2-014
T3- Surface S 07-25-17 10:15 55904	2-015
T3 - I' S 07-25-17 10:15 1 ft 55904	2-016
T3 -2' S 07-25-17 10:15 2 ft 55904	2-017
T3 -3' S 07-25-17 10:15 3 ft 55904	2-018
T3 -4' S 07-25-17 10:15 4 ft 55904	2-019
T4 - Surface S 07-25-17 10:30 55904	2-020
T4 -1' S 07-25-17 10:30 1 ft 55904	2-021
T4 -2' S 07-25-17 10:30 2 ft 55904	2-022
T4 -3' S 07-25-17 10:30 3 ft 55904	2-023
T4 -4' S 07-25-17 10:30 4 ft 55904	2-024
T5 - Surface S 07-25-17 10:45 55904	2-025
T5 -1' S 07-25-17 10:45 1 ft 55904	2-026
T5 -2' S 07-25-17 10:45 2 ft 55904	2-027
T5 -3' S 07-25-17 10:45 3 ft 55904	2-028
T5 -4' S 07-25-17 10:45 4 ft 55904	2-029

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Final 1:001



#### CASE NARRATIVE

Client Name: COG Operating LLC Project Name: Macho Nacho State #1H

Project ID: Work Order Number(a)

Work Order Number(s): 559042

Report Date: 24-AUG-17 Date Received: 08/01/2017

Sample receipt non conformances and comments: Revision to try to correct file size- Original generation was too large to send and didn't compress

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments: Batch: LBA-3024005 BTEX by EPA 8021B Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3024007 BTEX by EPA 8021B Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3024166 BTEX by EPA 8021B Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3024179 BTEX by EPA 8021B Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3024257 BTEX by EPA 8021B Surrogate 1,4-Difluorobenzene recovered below QC limits. Matrix interferences is suspected; data confirmed by re-analysis. Samples affected are: 559042-004.

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





## COG Operating LLC, Artesia, NM

Sample Id: Lab Sample Id	<b>T1 - Surface</b> I: 559042-001		Matrix: Date Colle	Soil cted: 07.25.17 09.30		Date Received	1:08.01.	17 15.06	í
Analytical Mo Tech: Analyst: Seq Number:	thod: Inorganic Anior MGO MGO 3024270	is by EPA 300/300.1	Date Prep:	08.07.17 14.50		Prep Method: % Moisture: Basis:	E300P Wet W		
Parameter		Cas Number	Result	RL	Units	Analysis Da	nte I	Flag	Dil
Chloride	, <u>_</u>	16887-00-6	<4.96	4.96	mg/kg	08.07.17 17.	17	U	1

Analytical Method: TPH By SW801 Tech: ARM	5 Mod					Prep Method: 7 % Moisture:	TX1005P	
Analyst: ARM		Date Pro	2p: 08.03	.17 14.00	I	Basis: V	Vet Weight	
Seq Number: 3024054							-	
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	303	74.8		mg/kg	08.03.17 23.18	\$	5
Diesel Range Organics (DRO)	C10C28DRO	5360	74.8		mg/kg	08.03.17 23.18	l .	5
Oil Range Hydrocarbons (ORO)	PHCG2835	722	74,8		mg/kg	08.03.17 23.18		5
Total TPH	PHC635	6390	74,8		mg/kg	08.03.17 23.18	1	5
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Dat	e Flag	
1-Chlorooctane		111-85-3	127	%	70-135	08.03.17 23.1	8	
o-Terphenyl		84-15-1	91	96	70-135	08.03.17 23.1	8	





#### COG Operating LLC, Artesia, NM Macho Nacho State #1H

Sample Id: T1 - Surface Lab Sample Id: 559042-001		Matrix: Date Coll	Soil ected: 07,25	.17 09.30	l	Date Received:08	.01.17 15.0	6
Analytical Method: BTEX by EPA & Tech: ALJ Analyst: ALJ Seq Number: 3024166	021B	Date Prep	): 08.04	.17 08.15	9	Prep Method: SV % Moisture: Basis: Wo	/5030B et Weight	
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0202	0.0202		mg/kg	08.04.17 14.54	U	10
Toluene	108-88-3	1.53	0.0202		mg/kg	08.04.17 14.54		10
Ethylbenzene	100-41-4	1.86	0.0202		mg/kg	08.04.17 14.54		10
m,p-Xylenes	179601-23-1	5.11	0.0404		mg/kg	08.04.17 14.54		10
o-Xylene	95-47-6	2.32	0.0202		mg/kg	08.04.17 14.54		10
Total Xylenes	1330-20-7	7.43	0.0202		mg/kg	08.04.17 14.54		10
Total BTEX		10.8	0.0202		mg/kg	08.04.17 14.54		10
Surrogate 4-Bromofluorobenzene 1,4-Difluorobenzene		<b>Cas Number</b> 460-00-4 540-36-3	% Recovery 119 88	Units %	Limits 80-120 80-120	Analysis Date 08.04.17 14.54 08.04.17 14.54	Flag	

Final 1:001





#### COG Operating LLC, Artesia, NM Macho Nacho State #1H

Sample Id: Lab Sample Id	<b>T1 -1'</b> l: 559042-002		Matrix: Date Colle	Soil cted: 07.25.17 09.30		Date Received 08 Sample Depth: 1		6
Analytical Me Tech: Analyst: Seq Number:	thod: Inorganic Anior MGO MGO 3024270	ns by EPA 300/300.	l Date Prep:	08.07.17 14.50		Prep Method: E: % Moisture: Basis: W	300P 'et Weight	
Parameter		Cas Number	Result	RL.	Units	Analysis Date	Flag	Dil
Chloride	<u></u>	16887-00-6	<4.96	4.96	mg/kg	08.07.17 17.24	U	1

Analytical Method:TPH By SW801Tech:ARMAnalyst:ARMSeq Number:3024054	5 Mod	Date Pre	ep: 08.03	.17 14.00	q	Prep Method: TX % Moisture: Basis: We	1005P t Weight	
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	2280	74,9		mg/kg	08.03.17 23.39		5
Diesel Range Organics (DRO)	C10C28DRO	7080	74.9		mg/kg	08.03 17 23 39		5
Oll Range Hydrocarbons (ORO)	PHCG2835	914	74.9		mg/kg	08.03.17 23.39		5
Total TPH	PHC635	10300	74.9		mg/kg	08.03.17 23.39		5
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	123	%	70-135	08.03.17 23.39		
o-Terphenyl		84-15-1	114	%	70-135	08.03.17 23.39		

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## COG Operating LLC, Artesia, NM

Macho Nacho State #1H

Sample Id: T1 -1'		Matrix:	Soil			Date Received:0	8.01.17 15.06	1
Lab Sample Id: 559042-002		Date Col	lected: 07.25	17 09.30		Sample Depth: I	ft	
Analytical Method: BTEX by EPA 8	021B					Prep Method: S	W5030B	
Tech: ALJ					3	% Moisture:		
Analyst: ALJ		Date Prer	o; 08.04.	17 08 15		Basis: W	et Weight	
Seq Number: 3024166		L.						
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.557	0.201	_	mg/kg	08.04.17 14.16		100
Toluene	108-88-3	30.7	0.201		mg/kg	08.04.17 14.16		100
Ethylbenzene	100-41-4	26.2	0.201		mg/kg	08.04.17 14.16		100
m,p-Xylenes	179601-23-1	73.1	0.402		mg/kg	08.04.17 14.16		100
o-Xylene	95-47-6	29.1	0.201		mg/kg	08.04.17 14.16		100
Total Xylenes	1330-20-7	102	0.201		mg/kg	08.04.17 14.16		100
Total BTEX		160	0.201		mg/kg	08.04 17 14 16		100
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	81	%	80-120	08.04.17 14.16		
4-Bromofluorobenzene		460-00-4	107	%	80-120	08.04.17 14.16		

Final 1,001





# COG Operating LLC, Artesia, NM

03 ganic Anions by EPA 300/300.	1	ted: 07.25.17 09.30		Sample Depth: 2 Prep Method: E3 % Moisture:		
ganic Anions by EPA 300/300.					100P	
				% Moisture:		
	Date Prep:	08.07.17 14.50		Basis: W	et Weight	
	• 20				5	
Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
16887-00-6	<4.98	4.98	mg/kg	08.07.17 17.32	U	1
		Cas Number Result	Cas Number Result RL	Cas Number Result RL Units	Cas Number Result RL Units Analysis Date	Cas Number Result RL Units Analysis Date Flag

Analytical Method: TPH By SW801	5 Mod				F	Prep Method: T	X1005P	
Tech: ARM						% Moisture:		
Analyst: ARM		Date Pre	ep: 08.03	.17 14.00	E	Basis: W	et Weight	
Seq Number: 3024054			•					
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	3860	74.8		mg/kg	08.04.17 23,59		5
Diesel Range Organics (DRO)	C10C28DRO	8040	74.8		mg/kg	08.04.17 23.59		5
Oil Range Hydrocarbons (ORO)	PHCG2835	1020	74.8		mg/kg	08.04.17 23.59		5
Total TPH	PHC635	12900	74.8		mg/kg	08,04.17 23,59		5
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
I-Chlorooctane		111-85-3	128	%	70-135	08.04 17 23.59		
o-Terphenyl		84-15-1	107	%	70-135	08.04.17 23.59		





# COG Operating LLC, Artesia, NM

Macho Nacho State #1H

Sample Id: T1 -2'		Matrix:	Soil		I	Date Received:08	01.17 15.06	i
Lab Sample Id: 559042-003		Date Col	llected: 07.25	.17 09,30	:	Sample Depth: 2 f	t	
Analytical Method: BTEX by EPA 80	)21B				1	Prep Method: SV	/5030B	
Tech: ALJ						% Moisture:		
Analyst: ALJ		Date Pre	p: 08.04.	17 08.15	I	Basis: We	t Weight	
Seq Number: 3024166			F -					
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	1.69	0.398		mg/kg	08.04.17 20.11		200
Toluene	108-88-3	77.4	0.398		mg/kg	08.04.17 20.11		200
Ethylbenzene	100-41-4	58.5	0.398		mg/kg	08.04.17 20.11		200
m,p-Xylenes	179601-23-1	156	0.797		mg/kg	08.04.17 20.11		200
o-Xylene	95-47-6	60.6	0.398		mg/kg	08.04.17 20.11		200
Total Xylenes	1330-20-7	217	0.398		mg/kg	08.04.17 20.11		200
Total BTEX		354	0.398		mg/kg	08.04.17 20.11		200
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	80	%	80-120	08.04.17 20.11	-	
4-Bromofluorobenzene		460-00-4	82	%	80-120	08.04.17 20.11		

Final 1,001





# COG Operating LLC, Artesia, NM

Chloride		16887-00-6	<5.00	5.00	mg/kg	08.07.17 17.40	U	1
Parameter		Cas Number	Result	RL	Units	Analysis Date	Fing	Dil
Seq Number:	3024270							
Analyst:	MGO		Date Prep:	08.07.17 14.50		Basis: W	/et Weight	
Tech:	MGO					% Moisture:		
Analytical Mo	thod: Inorganic Anior	is by EPA 300/300.1				Prep Method: E	300P	
Lab Sample Id	1: 559042-004		Date Colle	cted: 07.25.17 09.30	Sample Depth: 3 ft		ft	
Sample Id:	ample Id: T1 -3' bb Sample Id: 559042-004		Matrix:	Soil	Date Received:08.01.17 15.06			

Analytical Method: TPH By SW801 Tech: ARM	5 Mod				5	Prep Method: TX % Moisture:			
Analyst: ARM		Date Pre	p: 08.03	17 14.00	1	Basis: We	et Weight		
Seq Number: 3024054									
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil	
Gasoline Range Hydrocarbons (GRO)	PHC610	3170	75.0		mg/kg	08.04.17 00.21		5	-
Diesel Range Organics (DRO)	CI0C28DRO	7570	75.0		mg/kg	08.04.17 00.21		5	
Oil Range Hydrocarbons (ORO)	PHCG2835	913	75.0		mg/kg	08.04.17 00.21		5	
Total TPH	PHC635	11700	75.0		mg/kg	08.04.17 00.21		5	
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1-Chlorooctane		111-85-3	126	%	70-135	08.04.17 00.21			
o-Terphenyl		84-15-L	110	%	70-135	08.04.17 00.21			





#### COG Operating LLC, Artesia, NM

Sample Id: T1 -3'		Matrix:	Soil			Date Received:0	8.01.17 15.0	6
Lab Sample Id: 559042-004		Date Coll	lected: 07.25.	17 09.30	:	Sample Depth: 3	ft	
Analytical Method: BTEX by EPA 8	021B					Prep Method: S	W5030B	
Tech: ALJ						% Moisture:		
Analyst: ALJ		Date Prep	o: 08.07.	7 08.00	1	Basis: V	Vet Weight	
Seq Number: 3024257		•					Ũ	
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	2.22	0.198		mg/kg	08.04.17 14.35		100
Tolucne	108-88-3	79.2	0.401		mg/kg	08.07.17 19.32	D	200
Ethylbenzene	100-41-4	37.0	0.198		mg/kg	08.04.17 14.35		100
m,p-Xylenes	179601-23-1	152	0.802		mg/kg	08.07.17 19.32	D	200
o-Xylene	95-47-6	31.3	0.198		mg/kg	08.04.17 14.35		100
Total Xylenes	1330-20-7	183	0.198		mg/kg	08.07 17 19 32		200
Total BTEX		302	0.198		mg/kg	08.07.17 19.32		200
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	e Flag	
1,4-Difluorobenzene		540-36-3	77	<sup>6</sup> / <sub>0</sub>	80-120	08.04.17 14.35	5 ***	
4-Bromofluorobenzene		460-00-4	90	8/0	80+120	08.04.17 14.35	5	





#### COG Operating LLC, Artesia, NM

Sample Id:	ample Id: T1 -4' ab Sample Id: 559042-005		Matrix:	Soil	Date Received:08.01.17 15.06			
Lab Sample I	d: 559042-005		Date Collec	cted: 07.25.17 09.30		Sample Depth:	4 ft	
Analytical M	ethod: Inorganic Anions	s by EPA 300/300.1				Prep Method:	E300P	
Tech:	MGO					% Moisture:		
Analyst:	MGO		Date Prep:	08.07.17 14.50		Basis:	Wet Weight	
Seq Number:	3024270		-				-	
Parameter		Cas Number	Result	RL	Units	Analysis Da	te Flag	Dil
Chloride		16887-00-6	<4.98	4.98	mg/kg	08.07.17 18.0	)3 U	I

Analytical Method: TPH By SW801 Tech: ARM					Prep Method: TX1005P % Moisture:			
Analyst: ARM		Date Pre	p: 08.03	.17 14.00	I	Basis: W	et Weight	
Seq Number: 3024054			-				-	
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	37.3	15.0		mg/kg	08.04.17 00.42		1
Diesel Range Organics (DRO)	CI0C28DRO	406	15.0		mg/kg	08.04.17 00.42		1
Oil Range Hydrocarbons (ORO)	PHCG2835	26.6	15.0		mg/kg	08.04.17 00.42		1
Total TPH	P11C635	470	15.0		mg/kg	08.04.17 00.42		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	[19	%	70-135	08.04.17 00.42		
o-Terphenyl		84-15-1	95	%	70-135	08 04 17 00 47		





#### COG Operating LLC, Artesia, NM

Macho Nacho State #1H

Sample Id: T1 -4'		Matrix:	Soil		Date Received:0	8,01,17 15,00	5
Lab Sample Id: 559042-005		Date Col	llected: 07.25.17 09.30		Sample Depth: 4	ft	
Analytical Method: BTEX by EPA	8021B				Prep Method: S	W5030B	
Tech: ALJ					% Moisture:		
Analyst: ALJ		Date Pre	p: 08.03.17 07.30		Basis: W	et Weight	
Seq Number: 3024005			-			-	
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dii
Parameter Benzene	Cas Number 71-43-2	Result <0.00201	RL 0.00201	Units mg/kg	Analysis Date 08.03.17 17.46		Dil I
· · · · · · · · · · · · · · · · · · ·						U	Dii I 1
Benzene	71-43-2	<0.00201	0.00201	mg/kg	08.03.17 17.46	U	<b>Dii</b> 1 1
Benzene Toluene	71-43-2 108-88-3	<0.00201 0.00903	0.00201	mg/kg mg/kg	08.03.17 17.46 08.03.17 17.46	U	Dit 1 1 1
Benzene Toluene Ethylbenzene	71-43-2 108-88-3 100-41-4	<0.00201 0.00903 0.0497	0.00201 0.00201 0.00201	mg/kg mg/kg mg/kg	08.03.17 17.46 08.03.17 17.46 08.03.17 17.46	U	Dii 1 1 1 1

Total BTEX	0.332	0.00201		mg/kg	08.03.17 17.46	
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	107	%	80-120	08.03.17 17.46	
1.4-Difluorobenzene	540-36-3	95	%	80-120	08.03 17 17.46	

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#### COG Operating LLC, Artesia, NM

Sample Id: T1 -5'		Matrix:	Soil		Date Received:08.	01.17 15.0	6
Lab Sample Id: 559042-006		Date Colle	cted: 07.25.17 09.45		Sample Depth: 5 ft		
Analytical Method: Inorganic Anio	ns by EPA 300/300.	1			Prep Method: E30	)0P	
Tech: MGO					% Moisture:		
Analyst: MGO		Date Prep:	08.07.17 14.50		Basis: We	t Weight	
Seq Number: 3024270							
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.97	4.97	mg/kg	08.07.17 18.10	U	1
Analytical Method: TPH By SW80	15 Mod				Prep Method: TX	1005P	
Tech: ARM					% Moisture:		
Analyst: ARM		Date Prep:	08.03.17 14.00			Weight	
Seq Number: 3024054		Date 1 tep:					
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	08.04.17 01.03	U	1
Diesel Range Organics (DRO)	C10C28DRO	61.8	14.9	mg/kg	08.04.17 01.03		1
Oil Range Hydrocarbons (ORO)	PHCG2835	< 4.9	14.9	mg/kg	08.04.17 01.03	U	1

Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9		mg/kg	08.04.17 01.03	U	1
Total TPH	PHC635	61.8	14.9		mg/kg	08.04.17 01.03		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
I-Chlorooctane		111-85-3	122	%	70-135	08.04.17 01.03		
o-Terphenyl		84-15-1	87	%	70-135	08.04.17 01.03		





## COG Operating LLC, Artesia, NM

Macho Nacho State #1H

Sample Id: T1 -5'		Matrix:	Soil		Date Received:08.01.17 15.06			
Lab Sample Id: 559042-006		Date Co	llected: 07.25	.17 09.45	Sample Depth: 5 ft			
Analytical Method: BTEX by E	EPA 8021B				1	Prep Method: SW	/5030B	
Tech: ALJ						6 Moisture:		
Analyst: ALJ		Date Pre	p: 08.03	.17 07.30	î	Basis: We	t Weight	
Seq Number: 3024005			ţ.				-Q	
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199		mg/kg	08.03.17 18.05	U	1
Toluene	108-88-3	0.00326	0.00199		mg/kg	08.03.17 18.05		t
Ethylbenzene	100-41-4	<0.00199	0.00199		mg/kg	08.03.17 18.05	U	1
m,p-Xylenes	179601-23-1	0.00501	0.00398		mg/kg	08.03.17 18.05		1
o-Xylene	95-47-6	0.00303	0.00199		mg/kg	08.03.17 18.05		1
Total Xylenes	1330-20-7	0.00804	0.00199		mg/kg	08.03.17 18.05		1
Total BTEX		0.0113	0.00199		mg/kg	08.03.17 18.05		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	:	540-36-3	95	%	80-120	08.03.17 18.05		
4-Bromofluorobenzene		460-00-4	107	%	80-120	08-03.17 18.05		





## COG Operating LLC, Artesia, NM

Sample Id: T1 -		Matrix:	Soil		Date Received	l:08.01.17 15.	06
Lab Sample Id: 5590	42-007	Date Collec	ted: 07.25.17 09.45		Sample Depth	:7 ft	
Analytical Method:	norganic Anions by EPA 300/300.1				Prep Method:	E300P	
Tech: MGO					% Moisture:		
Analyst: MGO		Date Prep:	08.07.17 14.50		Basis:	Wet Weight	
Seq Number: 30242	70						
Parameter	Cas Number	Result	RL	Units	Analysis Da	nte Flag	Dil
Chloride	16887-00-6	<4.95	4.95	mg/kg	08.07.17 18.	18 U	i

Analytical Method: TPH By SW80 Tech: ARM Analyst: ARM Seq Number: 3024054	15 Mod	Date Pre	p: 08.03	.17 14,00	0	Prep Method: TX % Moisture: Basis: We	1005P t Weight	
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9		mg/kg	08.04.17 01.23	U	
Diesel Range Organics (DRO)	C10C28DRO	29.1	14.9		mg/kg	08.04.17 01.23		E
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9		mg/kg	08.04.17 01.23	U	L
Total TPH	PHC635	29.1	14.9		mg/kg	08.04.17 01.23		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	122	%	70-135	08.04.17 01.23		
o-Terphenyl		84-15-1	89	%	70-135	08.04.17 01.23		



Surrogate

4-Bromofluorobenzene

1,4-Difluorobenzene

#### **Certificate of Analytical Results 559042**



#### COG Operating LLC, Artesia, NM

Units

%

%

Limits

80-120

80-120

Analysis Date

08.05.17 02.56

08.05.17 02.56

Flag

Macho Nacho State #1H

Sample Id:	TI -7'		Matrix:	Soil		Date Received (	08.01.17 15.0	)6
Lab Sample Id	d: 559042-007		Date Col	llected: 07.25.17 09.45		Sample Depth: 7	7 ft	
Analytical Me	ethod: BTEX by EP	A 8021B				Prep Method: 5	SW5030B	
Tech:	ALJ					% Moisture:		
Analyst:	ALJ		Date Pre	p: 08.04.17 15.45		Basis: \	Wet Weight	
Seq Number:	3024179							
Parameter		Cas Number	Result	RL	Units	Analysis Date	e Flag	Dil
Benzene		71-43-2	<0.00341	0.00341	mg/kg	08.05.17 02.56	5 U	1
Toluene		108-88-3	<0.00341	0.00341	mg/kg	08.05.17 02.56	5 U	1
Ethylbenzene		100-41-4	<0.00341	0.00341	mg/kg	08.05.17 02.56	i U	T.
m,p-Xylenes		179601-23-1	<0.00683	0.00683	mg/kg	08.05.17 02.56	5 U	L
o-Xylene		95-47-6	<0.00341	0.00341	mg/kg	08.05.17 02.56	5 U	1
Total Xylenes		1330-20-7	<0.00341	0.00341	mg/kg	08.05.17 02.56	5 U	1
Total BTEX			<0.00341	0.00341	mg/kg	08.05.17 02.56	i U	L
E			<b>.</b>	%				

Recovery

103

101

**Cas** Number

460-00-4

540-36-3





#### COG Operating LLC, Artesia, NM

Macho Nacho State #1H

Sample Id: T1 -1 Lab Sample Id: 5590		Matrix: Date Collec	Soil cted: 07.25.17 09.45		Date Received:0 Sample Depth: 1	- 10 TON 10	6
Analytical Method: 1 Tech: MGO Analyst: MGO Seq Number: 30242	organic Anions by EPA 300/300.1	Date Prep:	08.07.17 14.50		Prep Method: E % Moisture: Basis: V	300P Vet Weight	
Parameter Chloride	Cas Number 16887-00-6	Result <4.95	RL	Units mg/kg	Analysis Date 08.07.17 18 26		Dil 1

Analytical Method: TPH By SW80 Tech: ARM Analyst: ARM Seq Number: 3024054	15 Mod	Date Pre	p: 08.03	.17 14.00	9	Prep Method: T. % Moisture: Basis: W	X1005P 'et Weight	
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	08.04.17 02.25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	08.04 17 02.25	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0		mg/kg	08.04.17 02.25	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	08.04.17 02.25	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	122	%	70-135	08 04.17 02 25		
o-Terphenyl		84-15-1	86	%	70-135	08.04.17 02.25		

1





## COG Operating LLC, Artesia, NM

Macho Nacho State #1H

Sample Id:	T1 -10'		Matrix:	Soil		Date Received:08	.01.17 15.0	6
Lab Sample	ld: 559042-008		Date Col	llected: 07.25.17 09.45		Sample Depth: 10	ft	
Analytical N	lethod: BTEX by El	PA 8021B				Prep Method: SV	V5030B	
Tech:	ALJ				1	% Moisture:		
Analyst:	ALJ		Date Pre	p: 08.03.17 07.30		Basis: Wo	et Weight	
Seq Number	3024005			-			•	
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene		71-43-2	<0.00200	0.00200	mg/kg	08.03.17 18.42	U	1
Toluene		108-88-3	<0.00200	0.00200	mg/kg	08.03.17 18.42	U	1
Ethylbenzene		100-41-4	<0.00200	0.00200	mg/kg	08.03.17 18.42	U	1

m,p-Xylenes	179601-23-1	<0.00399	0.00399		mg/kg	08.03.17 18.42	U	1
o-Xylene	95-47-6	<0.00200	0.00200		mg/kg	08.03.17 18.42	U	L
Total Xylenes	1330-20-7	<0.00200	0.00200		mg/kg	08.03.17 18.42	U	1
Total BTEX		<0.00200	0.00200		mg/kg	08.03.17 18.42	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	109	%	80-120	08.03.17 18.42		
1,4-Difluorobenzene		540-36-3	95	%	80-120	08.03.17 18.42		2

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# COG Operating LLC, Artesia, NM

Sample Id:	T1 -12'		Matrix:	Soil		Date Received	1.08.01.17 15.0	6
Lab Sample I	d: 559042-009		Date Colle	cted: 07.25.17 09.45		Sample Depth	:12 ft	
Analytical Me	thod: Inorganic Anions	by EPA 300/300.1				Prep Method:	E300P	
Tech:	MGO					% Moisture:		
Analyst:	MGO		Date Prep:	08.07.17 14.50		Basis:	Wet Weight	
Seq Number:	3024270						-	
Parameter		Cas Number	Result	RL	Units	Analysis Da	ate Flag	Dii
Chloride		16887-00-6	6.19	4.97	mg/kg	08.07.17 18.	33	1

Analytical Method: TPH By SW80 Tech: ARM	15 Mod					Prep Method: TX % Moisture:	1005P	
Analyst: ARM		Date Pre	p: 08.03	.17 14.00	1	Basis: We	t Weight	
Seq Number: 3024054								
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	1.00	mg/kg	08.04.17 02.46	U	1
<b>Diesel Range Organics (DRO)</b>	C10C28DRO	19.7	15.0		mg/kg	08.04.17 02.46		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0		mg/kg	08.04.17 02.46	U	1
Total TPH	PHC635	19.7	15.0		mg/kg	08.04.17 02.46		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	124	%	70-135	08-04.17 02.46		
o-Terphenyl		84-15-1	88	%	70-135	08.04.17 02.46		





## COG Operating LLC, Artesia, NM

Units

%

%

Limits

80-120

80-120

Analysis Date

08.05.17 03.15

08.05.17 03-15

Flag

Macho Nacho State #1H

Sample Id: T1 -12' Lab Sample Id: 559042-009		Matrix: Date Col	Soil llected: 07.25.17 09.45		Date Received: Sample Depth:	5.5	)6
Analytical Method: BTEX b Tech: ALJ	y EPA 8021B				Prep Method: 3 % Moisture:	SW5030B	
Analyst: ALJ		Date Pre	p: 08.04.17 15.45		Basis:	Wet Weight	
Seq Number: 3024179			•			-	
Parameter	Cas Number	Result	RL	Units	Analysis Dat	e Flag	Dil
Benzene	71-43-2	<0.00330	0.00330	mg/kg	08.05.17 03.1	5 U	-
Toluene	108-88-3	< 0.00330	0.00330	mg/kg	08.05.17 03.1	5 U	L
Ethylbenzene	100-41-4	<0.00330	0.00330	mg/kg	08.05.17 03.1	5 U	t
m,p-Xylenes	179601-23-1	<0.00660	0.00660	mg/kg	08.05.17 03.1	5 U	1
o-Xylene	95-47-6	<0.00330	0.00330	mg/kg	08.05.17 03.1	5 U	1
Total Xylenes	1330-20-7	<0.00330	0.00330	mg/kg	08.05.17 03.1	5 U	1
Total BTEX		<0.00330	0.00330	mg/kg	08.05.17 03.1	5 U	F
Surroata		Cas Number	%	* *			

Recovery

99

97

**Cas Number** 

460-00-4

540-36-3

Surrogate 4-Bromofluorobenzene 1,4-Difluorobenzene

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# COG Operating LLC, Artesia, NM

Macho Nacho State #1H

Sample Id: T2 -Surface Lab Sample Id: 559042-010		Matrix: Date Collec	Soil cted: 07.25.17 10.00		Date Received:08.	01.17 15.0	6
Analytical Method: Inorganic Anion	s by EPA 300/300.1				Prep Method: E30	)0P	
Tech: MGO					% Moisture:		
Analyst: MGO		Date Prep:	08.07.17 14.50		Basis: We	t Weight	
Seq Number: 3024270		·					
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	54.7	4.94	mg/kg	08.07,17 19.04		l
Analytical Method: TPH By SW801	5 Mod				Prep Method: TX	1005P	
Tech: ARM					% Moisture:		
Analyst: ARM		Date Prep:	08.03.17 14.00		Basis: We	t Weight	
Seq Number: 3024054		•02				-	
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	466	74.9	mg/kg	08.04.17 03.06		5
Diesel Range Organics (DRO)	CI0C28DRO	16300	74.9	mg/kg	08.04.17 03.06		5
Oil Range Hydrocarbons (ORO)	PHCG2835	2960	74.9	mg/kg	08.04.17 03.06		5
Total TPH	PHC635	19700	74.9	mg/kg	08.04.17 03.06		5

Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
111-85-3	129	%	70-135	08.04.17 03.06		
84-15-1	118	%	70-135	08.04.17 03.06		
	111-85-3 84-15-1	Cas Number Recovery 111-85-3 129 84-15-1 118	Cas Number         Recovery         Units           111-85-3         129         %           84-15-1         118         %	%         Units         Limits           111-85-3         129         %         70-135           84-15-1         118         %         70-135	%         Units         Limits         Analysis Date           111-85-3         129         %         70-135         08.04.17         03.06           84-15-1         118         %         70-135         08.04.17         03.06	%         Limits         Analysis Date         Fing           111-85-3         129         %         70-135         08.04.17         03.06           84-15-1         118         %         70-135         08.04.17         03.06





## COG Operating LLC, Artesia, NM

Macho Nacho State #1H

Sample Id: T2 -Surface		Matrix:	Soil			Date Received 08.	01.17 15.0	6
Lab Sample Id: 559042-010		Date Co	llected: 07.25	5.17 10.00				
Analytical Method: BTEX by EPA 8	021B				]	Prep Method: SW	/5030B	
Tech: ALJ					3	% Moisture:		
Analyst: ALJ		Date Pre	p: 08.04	.17 15,45	1	Basis: We	t Weight	
Seq Number: 3024179			•				5	
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00317	0.00317		mg/kg	08.05.17 01.25	U	1
Toluene	108-88-3	0.00822	0.00317		mg/kg	08.05.17 01.25		1
Ethylbenzene	100-41-4	0.0332	0.00317		mg/kg	08.05.17 01.25		1
m,p-Xylenes	179601-23-1	0.143	0.00635		mg/kg	08.05.17 01.25		1
o-Xylene	95-47-6	0.0799	0.00317		mg/kg	08.05.17 01.25		1
Total Xylenes	1330-20-7	0.223	0.00317		mg/kg	08.05.17 01.25		1
Total BTEX		0.264	0.00317		mg/kg	08.05.17 01.25		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	89	%	80-120	08.05.17 01.25		
4-Bromofluorobenzene		460-00-4	110	9/0	80-120	08.05.17 01.25		

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## COG Operating LLC, Artesia, NM

559042-011		Date Collec	ted: 07.25.17 10.00		Sample Depth: 1 ft		
od: Inorganic Anion	s by EPA 300/300.1				Prep Method: E30	00P	
MGO					% Moisture:		
MGO		Date Prep:	08.07.17 14.50		Basis: We	t Weight	
3024270							
	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
	16887-00-6	<4.92	4.92	mg/kg	08.07.17 19.12	U	l
	nod: Inorganic Anion: MGO MGO	ood: Inorganic Anions by EPA 300/300.1 MGO MGO 3024270 Cas Number	aod: Inorganic Anions by EPA 300/300.1 MGO MGO Date Prep: 3024270 <b>Cas Number Result</b>	nod: Inorganic Anions by EPA 300/300.1 MGO MGO Date Prep: 08.07.17 14.50 3024270 Cas Number Result RL	nod: Inorganic Anions by EPA 300/300.1 MGO MGO Date Prep: 08.07.17 14.50 3024270 Cas Number Result RL Units	aod: Inorganic Anions by EPA 300/300.1 Prep Method: E30 MGO Date Prep: 08.07.17 14.50 Basis: We 3024270 Cas Number Result RL Units Analysis Date	aod: Inorganic Anions by EPA 300/300.1 Prep Method: E300P MGO Date Prep: 08.07.17 14.50 Basis: Wet Weight 3024270 Cas Number Result RL Units Analysis Date Fiag

Analytical Method: TPH By SW8015 Mod					Prep Method: TX1005P				
Tech: ARM					9	6 Moisture:			
Analyst: ARM		Date Pre	p: 08.03.17 14.00		Basis: We		et Weight	t Weight	
Seq Number: 3024054			- 7						
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil	
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	08.04.17 04.09	U	1	
Diesel Range Organics (DRO)	CI0C28DRO	19.0	15.0		mg/kg	08.04.17 04.09		1	
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0		mg/kg	08.04.17 04.09	U	1	
Total TPH	PHC635	19.0	15.0		mg/kg	08.04,17 04.09		1	
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
I-Chlorooctane		111-85-3	122	%	70-135	08.04.17 04.09			
o-Terphenyl		84-15-1	86	%	70-135	08.04.17 04.09			





# COG Operating LLC, Artesia, NM

Macho Nacho State #1H

Sample Id: T2 -1' Lab Sample Id: 559042-011 Analytical Method: BTEX by EPA 8021B			Matrix:	Soil	Date Received:08.01.17 15.06 Sample Depth: 1 ft				
			Date Col	lected: 07.25.17 10.00					
						Prep Method: SW5030B			
Tech:	ALJ				1	% Moisture:			
Analyst:	ALI		Date Pre	p: 08.03.17 07.30		Basis: V	Vet Weight		
Seq Number	:: 3024005						-		
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil	
Benzene		71-43-2	<0.00201	0.00201	mg/kg	08.03 17 19 39	U U	-	
Tolucne		108-88-3	<0.00201	0.00201	mg/kg	08.03.17 19.39	U (	L	
Ethylbenzene		100-41-4	<0.00201	0.00201	mg/kg	08.03.17 19.39	U	1	
m,p-Xylenes		179601-23-1	<0.00402	0.00402	mø/ke	08.03.17 19.39	U U	1	

o-Xylene	95-47-6	< 0.00201	0.00201		mg/kg	08.03 17 19.39	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201		mg/kg	08.03.17 19.39	U	1
Total BTEX		<0.00201	0.00201		mg/kg	08.03.17 19.39	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	106	%	80-120	08.03.17 19.39	_	
1,4-Difluorobenzene		540-36-3	94	%	80-120	08.03.17 (9.39		

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### COG Operating LLC, Artesia, NM

Macho Nacho State #1H

Sample Id:	T2 -2'		Matrix:	Soil		Date Received 08.0	01.17 15.0	6
Lab Sample k	d: 559042-012		Date Collec	cted: 07.25.17 10.00		Sample Depth: 2 ft		
Analytical Me	thod: Inorganic Anio	ns by EPA 300/300.1				Prep Method: E30	0P	
Tech:	MGO					% Moisture:		
Analyst:	MGO		Date Prep:	08.07.17 14.50		Basis: We	Weight	
Seq Number:	3024270		-					
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	3.	16887-00-6	<4.96	4.96	mg/kg	08.07.17 19:35	U	I

Analytical Method: TPH By SW801	5 Mod				F	rep Method: T7	K1005P	
Tech: ARM					0	6 Moisture:		
Analyst: ARM		Date Pre	p: 08.03	.17 14.00	E	Basis: W	et Weight	
Seq Number: 3024054								
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9		mg/kg	08.04.17 04.29	U	1
Diesel Range Organics (DRO)	CI0C28DRO	21.0	14.9		mg/kg	08.04.17 04.29		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9		mg/kg	08.04.17 04 29	U	1
Total TPH	PHC635	21.0	14.9		mg/kg	08.04.17 04.29		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
I-Chlorooctane		111-85-3	128	%	70-135	08.04.17 04.29		
o-Terphenyl		84-15-1	98	%	70-135	08.04.17 04.29		

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### COG Operating LLC, Artesia, NM

Macho Nacho State #1H

Sample Id:	T2 -2'		Matrix:	Soil		Date Received 0	8.01.17 15.0	6
Lab Sample Id	1: 559042-012		Date Col	lected: 07.25.17 10.00		Sample Depth: 2	: ft	
Analytical Me	thod: BTEX by EPA 8	021B				Prep Method: S	W5030B	
Tech:	ALJ					% Moisture:		
Analyst:	ALJ		Date Pre	p: 08.04.17 15.45		Basis: V	Vet Weight	
Seq Number:	3024179							
Parameter		Cas Number	Result	RL	Units	Analysis Date	e Flag	Dil
Benzene		71-43-2	< 0.00355	0.00165				
		11-45-2	<0.00222	0.00355	mg/kg	08.05.17 03.34	0	1
Tolucne		108-88-3	<0.00355	0.00355	mg/kg mg/kg	08.05.17 03.34	-	1
Toluene Ethylbenzene							U	1 1
		108-88-3	<0.00355	0.00355	mg/kg	08.05.17 03.34	U U	1 1 1
Ethylbenzene		108-88-3 100-41-4	<0.00355 <0.00355	0.00355 0.00355	mg/kg mg/kg	08.05.17 03.34 08.05.17 03.34		
Ethylbenzene m,p-Xylenes		108-88-3 100-41-4 179601-23-1	<0.00355 <0.00355 <0.00709	0.00355 0.00355 0.00709	mg/kg mg/kg mg/kg	08.05.17 03.34 08.05.17 03.34 08.05.17 03.34		

tal BTEX	<0.00355	0.00355		mg/kg	08.05.17 03.34	U
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	97	%	80-120	08.05.17 03.34	
4-Bromofluorobenzene	460-00-4	98	%	80-120	08.05.17 03.34	

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#### COG Operating LLC, Artesia, NM

Sample Id:	T2 -3'		Matrix:	Soil		Date Received:	08.01.17 15.06	5
Lab Sample Id	559042-013		Date Collec	ted: 07.25.17 10.00		Sample Depth:	3 ft	
Analytical Me	thod: Inorganic Anions	by EPA 300/300.1				Prep Method:	E300P	
Tech:	MGO					% Moisture:		
Analyst:	MGO		Date Prep:	08.07.17 14.50		Basis:	Wet Weight	
Seq Number:	3024270	2					_	
Parameter		Cas Number	Result	RL	Units	Analysis Dat	le Flag	Dil
Chloride		16887-00-6	<4.98	4.98	mg/kg	08.07.17 19.4	2 U	1
Analytical Me	thod: TPH By SW8015	Mod				Prep Method:	TX1005P	
Tech:	ARM					% Moisture:		
Analyst:	ARM		Date Prep:	08.03.17 14.00		Basis:	Wet Weight	
Seq Number:	3024054							

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	P11C610	<15.0	15.0		mg/kg	08.04.17 04.50	U	I
Diesel Range Organics (DRO)	C10C28DRO	32.8	15.0		mg/kg	08.04.17 04.50		I
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0		mg/kg	08.04.17 04.50	U	ł
Total TPH	PHC635	32,8	15.0		mg/kg	08.04.17 04.50		L
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
I-Chlorooctane		111-85-3	130	9/0	70-135	08.04.17 04.50		
o-Terphenyl		84-15-1	92	%	70-135	08_04.17 04.50		



Surrogate

1,4-Difluorobenzene

4-Bromofluorobenzene

## **Certificate of Analytical Results 559042**



# COG Operating LLC, Artesia, NM

Units

%

%

Recovery

96

110

Limits

80-120

80+120

Analysis Date

08 03 17 19 58

08.03.17 19.58

Flag

Macho Nacho State #1H

Sample Id: T2 -3'		Matrix:	Soil	I	Date Received:08	01.17 15.0	6
Lab Sample Id: 559042-013		Date Col	llected: 07.25.17 10.00	5	Sample Depth: 3 f	È	
Analytical Method: BTEX by	EPA 8021B			I	Prep Method: SW	/5030B	
Tech: ALJ				Q	% Moisture:		
Analyst: ALJ		Date Pre	p: 08.03.17 07.30	E	Basis: We	t Weight	
Seq Number: 3024005			•			_	
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.03.17 19.58	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.03.17 19.58	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200	mg/kg	08.03.17 19.58	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	08.03.17 19.58	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.03.17 19.58	U	1
Total Xylenes	1330-20-7	< 0.00200	0.00200	mg/kg	08.03.17 19.58	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.03.17 19.58	U	1
Cumunate		C N	₩ <b>.</b>	T. Paula	A successful to the state		

Cas Number

540-36-3

460-00-4

Final 1.001





#### COG Operating LLC, Artesia, NM

Sample Id: T2 -5		Matrix:	Soil		Date Received:08.	01.17 15.0	6
Lab Sample Id: 559042-014		Date Colle	cted: 07.25.17 10.00		Sample Depth: 5 ft		
Analytical Method: Inorganic Anio	ns by EPA 300/300.1	L			Prep Method: E30	)0P	
Tech: MGO					% Moisture:		
Analyst: MGO		Date Prep:	08.07.17 14.50		Basis: We	t Weight	
Seq Number: 3024270						-	
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.97	4.97	mg/kg	08.07.17 19.50	Ŭ	I
Analytical Method: TPH By SW80	15 Mod				Prep Method: TX	1005P	
Tech: ARM					% Moisture:		
Analyst: ARM		Date Prep:	08.03.17 14.00		Basis: We	t Weight	
Seq Number: 3024054							
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.04.17 05.10	U	1

Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	08_04_17_05.10	U	1	
Diesel Range Organics (DRO)	C10C28DRO	33.7	15.0		mg/kg	08.04.17 05.10		1	
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0		mg/kg	08.04.17 05.10	U	1	
Total TPH	PHC635	33.7	15.0		mg/kg	08.04.17 05.10		1	
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
I-Chlorooctane		111-85-3	129	%	70-135	08.04.17 05.10			
o-Terphenyl		84-15-1	92	%	70-135	08.04.17 05.10			



1,4-Difluorobenzene

4-Bromofluorobenzene

## **Certificate of Analytical Results 559042**



# COG Operating LLC, Artesia, NM

Macho Nacho State #1H

100

105

%

%

80-120

80-120

08.04.17 00.00

08.04.17 00.00

Sample Id: T2 -5		Matrix:	Soil		Date Received:08	.01.17 15.0	6
Lab Sample Id: 559042-014		Date Co	llected: 07.25.17 1	0.00	Sample Depth: 5 f	ì	
Analytical Method: BTEX by EPA 8	021B				Prep Method: SV	V5030B	
Tech: ALJ					% Moisture:		
Analyst: ALJ		Date Pre	p: 08.03.17 1	0.00	Basis: We	et Weight	
Seq Number: 3024007			• •			-	
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.04 17 00.00	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.04.17 00.00	U	1
Ethylbenzene	100-41-4	< 0.00199	99100.0	mg/kg	08.04.17 00.00	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.04.17 00.00	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.04.17 00.00	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.04.17 00.00	U	1
Total BTEX		< 0.00199	0.00199	mg/kg	08.04.17 00.00	U	ι
Surrogate		Cas Number	% Recovery Ur	nits Limit:	Analysis Date	Flag	

540-36-3

460-00-4

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Final 1,001





# COG Operating LLC, Artesia, NM

Sample Id:	T3- Surface		Matrix:	Soil		Date Received:08.	01.17 15.0	6
Lab Sample I	d: 559042-015		Date Colle	ected: 07.25.17 10.15				
Analytical M	ethod: Inorganic Anio	ns by EPA 300/300.1				Prep Method: E3	00P	
Tech:	MGO					% Moisture:		
Analyst:	MGO		Date Prep	08.07.17 14.50		Basis: We	t Weight	
Seq Number:	3024270							
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	R	16887-00-6	<4.98	4.98	mg/kg	08.07.17 19.58	U	1

Analytical Method: TPH By SW80	15 Mod				P	rep Method: TX	1005P	
Tech: ARM					9	6 Moisture:		
Analyst: ARM		Date Pre	p: 08.03	17 14.00	E	Basis: We	et Weight	
Seq Number: 3024054								
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	08.04.17 05.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	15.4	15.0		mg/kg	08.04.17 05.31		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0		mg/kg	08.04.17 05.31	U	1
Total TPH	PHC635	15.4	15.0		mg/kg	08.04.17 05.31		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	128	%	70-135	08.04.17 05.31	0	
o-Terphenyl		84-15-1	89	%	70-135	08.04.17 05.31		







## COG Operating LLC, Artesia, NM

Macho Nacho State #1H

Sample Id: T3- Surface		Matrix:	Soil		ſ	Date Received:08.	01.17 15.00	5
Lab Sample Id: 559042-015		Date Co	llected: 07.25	17 10.15				
Analytical Method: BTEX by EPA	8021B				F	Prep Method: SW	5030B	
Tech: ALJ					9	6 Moisture:		
Analyst: ALJ		Date Pre	p: 08.03	17 10.00	E	Basis: We	t Weight	
Seq Number: 3024007			- 1100-c				U	
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00198	0.00198		mg/kg	08.04.17 00.19	U	1
Toluene	108-88-3	< 0.00198	0.00198		mg/kg	08.04.17 00.19	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198		mg/kg	08.04.17 00.19	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396		mg/kg	08.04.17 00.19	U	1
o-Xylene	95-47-6	<0.00198	0.00198		mg/kg	08.04.17 00.19	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198		mg/kg	08.04.17 00.19	U	1
Total BTEX		<0.00198	0.00198		mg/kg	08.04.17 00.19	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	114	%	80-120	08.04.17 00.19		
1.4-Difluorobenzene		540-36-3	107	%	80-120	08.04.17 00.19		

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Final 1.001





### COG Operating LLC, Artesia, NM

Chloride		16887-00-6	<4.98	4.98	mg/kg	08.07.17 20.05	U	1
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Seq Number:	3024270							
Analyst:	MGO		Date Prep:	08.07.17 14.50		Basis: We	et Weight	
Tech:	MGO					% Moisture:		
Analytical Me	thod: Inorganic Anio	ons by EPA 300/300,	1			Prep Method: E3	00P	
Lab Sample Id	d: 559042-016		Date Colle	cted: 07.25.17 10.15	Sample Depth: 1 ft			
Sample Id:	T3 - 1'		Matrix:	Soil		Date Received:08.01.17 15.06		

Analytical Method: TPH By SW801	5 Mod				I	Prep Method: T2	K1005P	
Tech: ARM					9	6 Moisture:		
Analyst: ARM		Date Pre	p: 08.03	17 14.00	E	Basis: W	et Weight	
Seq Number: 3024054			6 - 10 AS					
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	08_04.17 05_52	U	1
<b>Diesel Range Organics (DRO)</b>	C10C28DRO	19.0	15,0		mg/kg	08.04.17 05.52		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0		mg/kg	08.04.17 05.52	U	E
Total TPH	PHC635	19.0	15.0		mg/kg	08.04.17 05.52		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	125	%	70-135	08.04.17 05.52		
o-Terphenyl		84-15-1	99	9/0	70-135	08.04.17 05.52		





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### COG Operating LLC, Artesia, NM

Macho Nacho State #1H

Sample Id: T3 - 1'		Matrix:	Soil		Date Received:08.	01.17 15.0	6
Lab Sample Id: 559042-016		Date Col	lected: 07.25.17 10.15		Sample Depth: 1 ft		
Analytical Method: BTEX by E	PA 8021B				Prep Method: SW	5030B	
Tech: ALJ				2	% Moisture:		
Analyst: ALJ		Date Pre	p: 08.03.17 10.00		Basis: We	t Weight	
Seq Number: 3024007							
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.04.17 00.38	U	1
Tolucne	108-88-3	<0.00200	0.00200	mg/kg	08.04.17 00.38	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.04.17 00.38	U	E
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	08.04.17 00.38	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.04.17 00.38	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	malka	09 04 17 00 29	T T	1

Total Xylenes	1330-20-7	< 0.00200	0.00200		mg/kg	08-04-17 00.38	U	
Total BTEX		< 0.00200	0.00200		mg/kg	08.04.17 00.38	U	
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1.4-Difluorobenzene		540-36-3	98	%	80-120	08.04.17 00.38		
4-Bromofluorobenzene		460-00-4	104	%	80-120	08.04.17.00.38		

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## COG Operating LLC, Artesia, NM

Macho Nacho State #1H

Sample Id:	T3 -2'		Matrix:	Soil		Date Received 0	8.01.17 15.0	6	
Lab Sample Id	1: 559042-017		Date Colle	cted: 07.25.17 10.15	Sample Depth: 2 ft				
Analytical Me	thod: Inorganic Anion	is by EPA 300/300.1				Prep Method: E	E300P		
Tech:	MGO					% Moisture:			
Analyst:	MGO		Date Prep:	08.07.17 14.50		Basis: V	Vet Weight		
Seq Number:	3024270								
Parameter		Cas Number	Result	RL	Units	Analysis Date	e Flag	Dil	
Chloride		16887-00-6	<4.96	4.96	mg/kg	08.07.17 20.13	U	1	

Analytical Method: TPH By SW80	15 Mod				I	Prep Method: T	K1005P	
Tech: ARM					9	6 Moisture:		
Analyst: ARM		Date Prep	p: 08.03	17 14,00	E	Basis: W	et Weight	
Seq Number: 3024054								
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	08.04.17 06.12	U	1
Diesel Range Organics (DRO)	CI0C28DRO	<15.0	15.0		mg/kg	08.04.17 06.12	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0		mg/kg	08.04.17 06.12	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	08.04.17 06.12	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	122	%	70-135	08.04.17 06.12		
o-Temhenyl		84-15-1	88	9/0	70-135	08.04.17 06.12		

Final 1:001





# COG Operating LLC, Artesia, NM

Macho Nacho State #1H

Sample Id:	T3 -2'		Matrix:	Soil		Date Received:	08.01.17 15.0	)6
Lab Sample	Id: 559042-017		Date Collected: 07.25.17 10.15		Sample Depth: 2 ft		2 ft	
Analytical M	fethod: BTEX by EI	PA 8021B				Prep Method:	SW5030B	
Tech:	ALJ					% Moisture:		
Analyst:	ALJ		Date Pre	p: 08.04.17 15.45		Basis:	Wet Weight	
Seq Number	: 3024179							
Parameter		Cas Number	Result	RL	Units	Analysis Dat	ie Flag	Dil
Benzene		71-43-2	<0.00358	0.00358	mg/kg	08.05.17 03.5	3 U	1
Tolucne		108-88-3	< 0.00358	0.00358	mg/kg	08.05.17 03.5	3 U	1

1,4-Difluorobenzene		540-36-3	99	%	80-120	08.05.17 03.53			
4-Bromofluorobenzene		460-00-4	IOL	%	80-120	08.05.17 03.53			
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
Total BTEX		<0.00358	0.00358		mg/kg	08.05.17 03.53	U	1	
Total Xylenes	1330-20-7	<0.00358	0.00358		mg/kg	08.05.17 03.53	U	1	
o-Xylene	95-47-6	<0.00358	0.00358		mg/kg	08.05.17 03.53	U	1	
m,p-Xylenes	179601-23-1	<0.00717	0.00717		mg/kg	08.05.17 03.53	U	L	
Ethylbenzene	100-41-4	<0.00358	0.00358		mg/kg	08.05.17 03.53	U	1	
Toluene	108-88-3	<0.00358	0.00358		mg/kg	08.05.17 03.53	U	1	

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## COG Operating LLC, Artesia, NM

Sample Id:	T3 -3'		Matrix:	Soil		Date Received	1:08:01.17 15.0	)6
Lab Sample I	d: 559042-018		Date Colle	cted: 07.25.17 10.15		Sample Depth	:3 ft	
Analytical Me	ethod: Inorganic Anion	s by EPA 300/300.1				Prep Method:	E300P	
Tech:	MGO					% Moisture:		
Analyst:	MGO		Date Prep:	08.07.17 14.50		Basis:	Wet Weight	
Seq Number:	3024270							
Parameter		Cas Number	Result	RL	Units	Analysis Da	ate Flag	Dil
Chloride		16887-00-6	<4.99	4.99	mg/kg	08.07.17 20.	21 U	l

Analytical Method: TPH By SW80	15 Mod					Prep Method: T	C1005P	
Tech: ARM					្ព	Moisture:		
Analyst: ARM		Date Pre	p: 08.03	17 14.00	I	Basis; W	et Weight	
Seq Number: 3024054								
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9		mg/kg	08.04.17 06.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9		mg/kg	08.04.17 06.33	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9		mg/kg	08.04.17 06.33	U	1
Total TPH	PHC635	<14.9	14,9		mg/kg	08.04.17 06.33	U	<u>_</u> 1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	116	%	70-135	08.04.17 06.33		
o-Terphenyl		84-15-1	82	%	70-135	08.04.17 06.33		

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1

# COG Operating LLC, Artesia, NM

Macho Nacho State #1H

Sample Id: T3 -3'		Matrix:	Soil		Date Received:	08.01.17 15.0	6	
Lab Sample Id: 559042-018		Date Co	llected: 07.25.17 10.15		Sample Depth: 3 ft			
Analytical Method: BTEX by	EPA 8021B				Prep Method: S	SW5030B		
Tech: ALJ					% Moisture:			
Analyst: ALJ		Date Pre	p: 08.04.17 15.45		Basis: \	Wet Weight		
Seq Number: 3024179			-			_		
Parameter	Cas Number	Result	RL	Units	Analysis Date	e Flag	Dil	
Benzene	71-43-2	<0.00336	0.00336	mg/kg	08.05.17 04.12	2 U	1	
Tolucne	108-88-3	<0.00336	0.00336	mg/kg	08.05.17 04.13	2 U	1	
Ethylbenzene	100-41-4	<0.00336	0.00336	mg/kg	08.05.17 04.12	2 U	1	
m,p-Xylenes	179601-23-1	<0.00671	0.00671	mg/kg	08.05.17 04.12	2 U	1	
o-Xylene	95-47-6	<0.00336	0.00336	mg/kg	08.05.17 04.12	2 U	1	
Total Xylenes	1330-20-7	<0.00336	0.00336	mg/kg	08.05.17 04.12	2 U	1	

, ,	 0.000000			<i>0</i> b	00.001111 01110	· ·	
Total BTEX	<0.00336	0.00336		mg/kg	08.05.17 04.12	U	
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzenc	540-36-3	105	%	80-120	08.05.17 04.12		
4-Bromofluorobenzene	460-00-4	105	%	80-120	08.05.17 04.12		

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## COG Operating LLC, Artesia, NM

Macho Nacho State #1H

Chloride		16887-00-6	<4.98	4.98	mg/kg	08.07.17 18.41	U	1
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Seq Number:	3024270							
Analyst:	MGO		Date Prep:	08.07.17 14.50		Basis: We	t Weight	
Tech:	MGO				2	% Moisture:		
Analytical Mo	ethod: Inorganic Anior	is by EPA 300/300.	1			Prep Method: E3	00P	
Lab Sample I	d: 559042-019		Date Collected: 07.25.17 10.15 Sample Depth: 4 ft					
Sample Id:	T3 -4'		Matrix:	Soil	Date Received:08.01.17 15.			6

Analytical Method: TPH By SW80 Tech: ARM Analyst: ARM Seq Number: 3024054	15 Mod	Date Pre	p: 08.03	.17 14.00	9	Prep Method: TX 6 Moisture: Basis: Wet	1005P t Weight	
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9		mg/kg	08.04.17 06.55	U	1
Diesel Range Organics (DRO)	C10C28DRO	594	14.9		mg/kg	08.04.17 06.55		1
Oil Range Hydrocarbons (ORO)	PHCG2835	141	14.9		mg/kg	08,04,17 06,55		1
Total TPH	PHC635	735	14.9		mg/kg	08.04.17 06.55		E
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
I-Chlorooctane		111-85-3	129	%	70-135	08.04.17 06.55		
o-Terphenyl		84-15-1	120	%	70-135	08.04.17 06.55		

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Total Xylenes

Total BTEX

Surrogate

4-Bromofluorobenzene

1,4-Difluorobenzene

### **Certificate of Analytical Results 559042**



08 05 17 04 49

08.05.17 04.49

Analysis Date

08.05.17 04.49

08.05.17 04.49

mg/kg

mg/kg

Limits

80-120

80-120

U

U

Flag

1

T.

## COG Operating LLC, Artesia, NM

Macho Nacho State #1H

Sample Id: T3 -4'		Matrix:	Soil		Date Received:08.	01.17 15.0	6	
Lab Sample Id: 559042-01	9	Date Colle	ected: 07.25.17 10.15	1	Sample Depth: 4 f	ł		
Analytical Method: BTEX	( by EPA 8021B				Prep Method: SW	/5030B		
Tech: ALJ				1	% Moisture:			
Analyst: ALJ		Date Prep	; 08.04.17 15.45		Basis: We	t Weight		
Analyst: ALJ Seq Number: 3024179		Date riep, 00.04.17 15.45		Dasis Wei Weight				
Parameter	Cas Number	Result	RL.	Units	Analysis Date	Flag	Dil	
Parameter Benzene	Cas Number 71-43-2	Result <0.00327	RL. 0.00327	Units mg/kg	Analysis Date 08.05.17 04.49	Flag	Dil	
							Dil l	
Benzene	71-43-2	<0.00327	0.00327	mg/kg	08.05.17 04.49	U	Dil l l l	
Benzene Toluene	71-43-2 108-88-3	<0.00327 <0.00327	0.00327 0.00327	mg/kg mg/kg	08.05.17 04.49 08.05.17 04.49	U U U	Dil 1 1 1	

< 0.00327

< 0.00327

Cas Number

460-00-4

540-36-3

0.00327

0.00327

%

Recovery

102

99

Units

%

%

1330-20-7

Final 1.001





# COG Operating LLC, Artesia, NM

Sample Id:	T4 - Surface		Matrix:	Soil		Date Received:08.	01.17 15.00	5
Lab Sample Id	1: 559042-020		Date Collec	cted: 07.25.17 10.30	7.25.17 10.30			
Analytical Me	thod: İnorganic Anions	by EPA 300/300.1				Prep Method: E3	00P	
Tech:	MGO					% Moisture:		
Analyst:	MGO		Date Prep:	08.07.17 14.50		Basis: We	t Weight	
Seq Number:	3024270							
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride		16887-00-6	<4.96	4.96	mg/kg	08.07.17 16.53	U	1

Analytical Method: TPH By SW80	15 Mod				F	Prep Method: TX	1005P	
Tech: ARM					9	Moisture:		
Analyst: ARM		Date Pro	p: 08.03	.17 14.00	E	Basis: We	t Weight	
Seq Number: 3024054								
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	08.04.17 07.16	U	l
Diesel Range Organics (DRO)	CI0C28DRO	<15.0	15.0		mg/kg	08.04.17 07.16	U	l
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0		mg/kg	08.04.17 07.16	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	08.04.17 07.16	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
I-Chlorooctane		111-85-3	122	%	70-135	08.04.17 07.16		
o-Terphenyl		84-15-1	90	%	70-135	08.04.17 07.16		

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### COG Operating LLC, Artesia, NM

Macho Nacho State #1H

Sample Id: T4 - Surface		Matrix:	Soil		1	Date Received:08.	01.17 15.0	6
Lab Sample Id: 559042-020		Date Co	llected: 07.25	.17 10.30				
Analytical Method: BTEX by EPA	3021B				1	Prep Method: SW	5030B	
Tech: ALJ					0	% Moisture:		
Analyst: ALJ		Date Pre	p: 08.03	.17 10.00	1	Basis: We	t Weight	
Seq Number: 3024007			•GF - 5550					
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199		mg/kg	08.04.17 02.29	U	I
Toluene	108-88-3	<0.00199	0.00199		mg/kg	08-04.17 02.29	U	L
Ethylbenzene	100-41-4	<0.00199	0.00199		mg/kg	08.04.17 02.29	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398		mg/kg	08.04.17 02.29	U	<b>3</b> 1
o-Xylene	95-47-6	< 0.00199	0.00199		mg/kg	08.04.17 02.29	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199		mg/kg	08.04.17 02.29	U	1
Total BTEX		<0.00199	0.00199		mg/kg	08.04.17 02.29	U	1
Surrogate		Cas Number	* Recovery	Units	Limits	Analysis Date	Flag	
1.4-Difluorobenzene		540-36-3	99	%	80-120	08.04.17 02.29		
4-Bromofluorobenzene		460-00-4	108	0/0	80-120	08.04.17 02.29		

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# COG Operating LLC, Artesia, NM

Sample Id:	T4 -1*		Matrix:	Soil		Date Received:	08.01.17 15.0	)6
Lab Sample le	d: 559042-021		Date Colle	cted: 07.25.17 10.30		Sample Depth:	1 ft	
Analytical Mo	ethod: Inorganic Anion	s by EPA 300/300.1				Prep Method:	E300P	
Tech:	MGO					% Moisture:		
Analyst:	MGO		Date Prep:	08.07.17 16.40		Basis:	Wet Weight	
Seq Number:	3024302							
Parameter		Cas Number	Result	RL	Units	Analysis Dat	e Flag	Dil
Chloride		16887-00-6	<4.91	4.91	mg/kg	08.07.17 23.0	2 U	l

Analytical Method: TPH By SW80	15 Mod				F	Prep Method: T2	C1005P	
Tech: ARM					8	6 Moisture:		
Analyst: ARM		Date Pro	p: 08.03	.17 10.00	F	Basis: W	et Weight	
Seq Number: 3024053			•					
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9		mg/kg	08.03.17 20.36	U	1
Diesel Range Organics (DRO)	CI0C28DRO	<14.9	14.9		mg/kg	08.03.17 20.36	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14,9		mg/kg	08.03.17 20.36	U	1
Total TPH	PHC635	<14.9	14.9		mg/kg	08.03.17 20.36	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
I-Chlorooctane		111-85-3	130	%	70-135	08.03.17 20.36		
o-Terphenyl		84-15-1	108	9/4	70-135	08.03 17 20.36		





# COG Operating LLC, Artesia, NM

Macho Nacho State #1H

Sample Id: T4 -1'		Matrix:	Soil	1	Date Received:08	8.01.17 15.0	6
Lab Sample Id: 559042-021		Date Col	lected: 07.25.17 10.30	1	Sample Depth: 1	ft	
Analytical Method: BTEX by EPA	8021B			l	Prep Method: SV	V5030B	
Tech: ALJ				3	% Moisture:		
Analyst: ALJ		Date Prep	p: 08.03.17 10.00	1	Basis: W	et Weight	
Seq Number: 3024007		·					
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Parameter Benzene	Cas Number 71-43-2	Result <0.00198	RL 0.00198	Units mg/kg	Analysis Date 08.04.17 02.47	Flag	Dil
	01						Dil I
Benzene	71-43-2	<0.00198	0.00198	mg/kg	08.04.17 02.47	U	Dil     
Benzene Toluene	71-43-2 108-88-3	<0.00198 <0.00198	0.00198 0.00198	mg/kg mg/kg	08.04.17 02.47 08.04.17 02.47	UUU	Dil 1 1 1
Benzene Toluene Ethylbenzene	71-43-2 108-88-3 100-41-4	<0.00198 <0.00198 <0.00198	0.00198 0.00198 0.00198	mg/kg mg/kg mg/kg	08.04.17 02.47 08.04.17 02.47 08.04.17 02.47	U U U U	<b>Dil</b> 1 1 1 1
Benzene Toluene Ethylbenzene m,p-Xylenes	71-43-2 108-88-3 100-41-4 179601-23-1	<0.00198 <0.00198 <0.00198 <0.00396	0.00198 0.00198 0.00198 0.00396	mg/kg mg/kg mg/kg mg/kg	08.04.17 02.47 08.04.17 02.47 08.04.17 02.47 08.04.17 02.47 08.04.17 02.47	U U U U U	Dil 1 1 1 1 1

I BTEX	<0.00198	0.00198		mg/kg	08.04.17 02.47	U
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	100	%	80-120	08.04.17 02.47	
I.4-Difluorobenzene	540-36-3	98	%	80-120	08.04:17 02.47	

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#### COG Operating LLC, Artesia, NM

Chloride		16887-00-6	<4.91	4.91	mg/kg	08.07.17 23 25	U	I
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Seq Number:	3024302							
Analyst:	MGO		Date Prep	08.07.17 16.40		Basis: We	t Weight	
Tech:	MGO					% Moisture:		
Analytical Me	ethod: Inorganic Anio	ns by EPA 300/300.	1			Prep Method: E3	00P	
Lab Sample I	d: 559042-022		Date Colle	ected: 07.25.17 10.30		Sample Depth: 2 f	ì	
Sample Id:	T4 -2'		Matrix:	Soil		Date Received:08.01.17 15.06		

Analytical Method: TPH By SW80 Tech: ARM Analyst: ARM Seq Number: 3024053	Date Pre	p: 08.03	.17 10,00	Prep Method: TX1005P % Moisture: Basis: Wet Weight				
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	08.03.17 20.56	U	l
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	08.03.17 20.56	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0		mg/kg	08.03.17 20.56	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	08.03.17 20.56	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
I-Chlorooctane		111-85-3	122	%	70-135	08.03.17 20.56		
o-Terphenyl		84-15-1	88	%	70-135	08.03.17 20.56		





1 1

#### COG Operating LLC, Artesia, NM

Macho Nacho State #1H

	Matrix:	Soil		Date Received:08.01.17 15.0			
	Date Col	lected: 07.25.17 10.30	1	Sample Depth: 2	2 ft		
A 8021B			į	Prep Method: S	SW5030B		
				% Moisture:			
	Date Pre	p: 08.04.17 15.45	1	Basis: V	Wet Weight		
Cas Number	Result	RL	Units	Analysis Date	e Flag	Dil	
71-43-2	<0.00351	0.00351	mg/kg	08.05.17 04.30	U 0	1	
108-88-3	< 0.00351	0.00351	mg/kg	08.05.17 04.30	U U	1	
100-41-4	<0.00351	0.00351	mg/kg	08.05.17 04.30	) U	I	
[7960]-23-1	<0.00702	0.00702	mg/kg	08.05.17 04.30	0 U	L	
05 47 6	0.00000						
	71-43-2 108-88-3 100-41-4 179601-23-1	Date Col A 8021B Date Pre <u>Cas Number</u> Result 71-43-2 <0.00351 108-88-3 <0.00351 100-41-4 <0.00351 179601-23-1 <0.00702	Cas Number         Result         RL           71-43-2         <0.00351	Date Collected: 07.25.17 10.30           A 8021B           Date Prep:         08.04.17 15.45           Cas Number         Result         RL         Units           71-43-2         <0.00351	Date Collected: 07.25.17 10.30         Sample Depth: 2           A 8021B         Prep Method: 5           Date Prep:         08.04.17 15.45         Basis:           Date Prep:         08.04.17 15.45         Basis:         N           108-88-3         <0.00351	Date Collected: 07.25.17 10.30         Sample Depth: 2 ft           A 8021B         Prep Method: SW5030B           % Moisture:         bate Prep:           Date Prep:         08,04.17 15,45           Basis:         Wet Weight           Cas Number         Result         RL         Units         Analysis Date         Flag           71-43-2         <0.00351	

-								
Total Xylenes	1330-20-7	< 0.00351	0.00351		mg/kg	08.05.17 04.30	U	
Total BTEX		<0.00351	0.00351		mg/kg	08.05.17 04.30	U	
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	102	%	80-120	08.05.17 04.30		
1,4-Difluorobenzene		540-36-3	96	%	80-120	08.05.17 04.30		

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#### COG Operating LLC, Artesia, NM

Chloride	-	16887-00-6	<4.93	4.93	mg/kg	08.07.17 23.33	U	1	
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil	
Seq Number:	3024302								
Analyst:	MGO		Date Prep:	08.07.17 16.40		Basis: W	et Weight		
Tech:	MGO					% Moisture:			
Analytical Me	thod: Inorganic Anion	s by EPA 300/300.	1			Prep Method: E3	OOP		
Lab Sample Id	1: 559042-023		Date Colle	Date Collected: 07.25.17 10.30 Sample Dep					
Sample Id:	ample Id: T4 -3' ab Sample Id: 559042-023			Soil		Date Received 08 01 17 15			

Analytical Method: TPH By SW80 Tech: ARM					Prep Method: TX % Moisture:	1005P		
Analyst: ARM		Date Pre	p: 08.03	.17 10.00	1	Basis: We	t Weight	
Seq Number: 3024053							151	
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9		mg/kg	08.03.17 21.17	U	1
Diesel Range Organics (DRO)	CI0C28DRO	<[4.9	14.9		mg/kg	08.03.17 21.17	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9		mg/kg	08.03.17 21.17	U	1
Total TPH	PHC635	<14.9	14.9		mg/kg	08.03.17 21.17	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
I-Chlorooctane		111-85-3	124	%	70-135	08.03.17 21.17		
o-Terphenyl		84-15-1	91	%	70-135	08.03.17 21.17		





1

### COG Operating LLC, Artesia, NM

Macho Nacho State #1H

Sample Id: T4 -3'		Matrix:	Soil		Date Received:	08.01.17 15.00	б	
Lab Sample Id: 559042-023		Date Col	llected: 07.25.17 10.30		Sample Depth: 3 ft			
Analytical Method: BTEX by EPA	8021B				Prep Method: 5	SW5030B		
Tech: ALJ					% Moisture:			
Analyst: ALJ		Date Pre	p: 08.03.17 10.00		Basis:	Wet Weight		
Seq Number: 3024007			10040-107 <sup>1</sup> 94					
Parameter	Cas Number	Result	RL	Units	Analysis Dat	ie Flag	Dil	
Benzene	71-43-2	<0.00100	0.00199				1	
Detteotto	/1-40-2	<0.00199	0.00199	mg/kg	08.04.17 03.2	5 U		
Tolucne	108-88-3	<0.00199 <0.00199	0.00199	mg/kg mg/kg	08.04.17 03.2		1	
						5 U	1	
Tolucne	108-88-3	<0.00199	0.00199	mg/kg	08.04.17 03.2	5 U 5 U	1	
Tolucne Ethylbenzene	108-88-3 100-41-4	<0.00199 <0.00199	0.00199 0.00199	mg/kg mg/kg	08.04.17 03.2 08.04.17 03.2	5 U 5 U 5 U	1 1 1 1 1	

Total Xylenes	1330-20-7	<0.00199	0.00199		mg/kg	08.04.17 03.25	U	
Total BTEX		< 0.00199	0.00199		mg/kg	08.04.17 03.25	U	
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	99	%	80-120	08.04,17 03,25		
1,4-Difluorobenzene		540-36-3	98	%	80-120	08.04 17 03.25		

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## COG Operating LLC, Artesia, NM

Sample Id: T4 -4'		Matrix:	Soil	Date Received 08.01.17 1		08.01.17 15.0	6
Lab Sample Id: 559042-024		Date Collec	ted: 07.25.17 10.30		Sample Depth	4 ft	
Analytical Method: Inorganic Anio	ns by EPA 300/300.1				Prep Method:	E300P	
Tech: MGO					% Moisture:		
Analyst: MGO		Date Prep:	08.07.17 16.40		Basis:	Wet Weight	
Seq Number: 3024302		-				-	
Parameter	Cas Number	Result	RL	Units	Analysis Da	ite Flag	Dil
Chloride	16887-00-6	<4.95	4.95	mg/kg	08 07 17 23 4	40 U	l
Chloride Analytical Method: TPH By SW80		<4.95	4.95		08:07:17:23.4 Prep Method:		l
		<4.95	4.95				l
Analytical Method: TPH By SW80		<4.95 Date Prep:	4.95		Prep Method:		l

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	08.03.17 21.36	U	l
Diesel Range Organics (DRO)	CI0C28DRO	56.5	15.0		mg/kg	08.03.17 21.36		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0		mg/kg	08.03.17 21.36	U	1
Total TPH	PHC635	56.5	15.0		mg/kg	08.03.17.21.36		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		[]]-85-3	127	%	70-135	08.03.17 21.36		
o-Terphenyl		84-15-1	91	%	70-135	08.03.17 21.36		





# COG Operating LLC, Artesia, NM

Macho Nacho State #1H

Sample Id:				Soil		Date Received:08.01.17 15.06			
Lab Sample I	ld: 559042-024		Date Col	llected: 07.25.17 10.30		Sample Depth: 4	ft		
Analytical M	ethod: BTEX by E	PA 8021B				Prep Method: S	W5030B		
Tech:	ALJ				à.	% Moisture:			
Analyst:	ALJ		Date Pre	p: 08.04.17 15.45		Basis: W	et Weight		
Seq Number:	3024179								
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil	
Benzene		71-43-2	<0.00346	0.00346	mg/kg	08.05.17 05.08	U	l	
Toluene		108-88-3	<0.00346	0.00346	mg/kg	08.05.17 05.08	υ	1	
Ethylbenzene		100-41-4	<0.00346	0.00346	mg/kg	08.05.17 05.08	U	1	

m,p-Xylenes	179601-23-1	<0.00692	0.00692		mg/kg	08.05.17 05.08	U	1
o-Xylene	95-47-6	< 0.00346	0.00346		mg/kg	08-05.17 05.08	U	1
Total Xylenes	1330-20-7	< 0.00346	0.00346		mg/kg	08.05.17 05.08	U	1
Total BTEX		< 0.00346	0.00346		mg/kg	08.05.17 05.08	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	96	9/0	80-120	08.05.17 05.08		
4-Bromofluorobenzene		460-00-4	100	%	80-120	08.05.17 05.08		

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# COG Operating LLC, Artesia, NM

Sample Id:	T5 - Surface		Matrix:	Soil		Date Received:	08.01.17 15.0	6
Lab Sample I	d: 559042-025		Date Colle	cted: 07.25.17 10.45				
Analytical M	thod: Inorganic Anion	s by EPA 300/300.	1			Prep Method: 1	E300P	
Tech:	MGO					% Moisture:		
Analyst:	MGO		Date Prep:	08.07.17 16.40		Basis: V	Wet Weight	
Seq Number:	3024302							
Parameter		Cas Number	Result	RL	Units	Analysis Date	e Flag	Dil
Chloride		16887-00-6	<4.98	4.98	mg/kg	08.07.17 23.48	8 U	1

Analytical Method: TPH By SW80	15 Mod				F	rep Method: TX	1005P	
Tech: ARM					9	6 Moisture:		
Analyst: ARM		Date Pre	p: 08.04	.17 16.00	E	Basis: We	t Weight	
Seq Number: 3024175								
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	08.04.17 19.55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	08.04.17 19.55	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0		mg/kg	08.04.17 19.55	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	08.04.17 19.55	U	1
Surrogate		Cas Number	% = Recovery	Units	Limits	Analysis Date	Flag	
I-Chlorooctane		111-85-3	128	%	70-135	08.04.17 19.55		
o-Terphenyl		84-15-1	91	%	70-135	08.04.17 19.55		





#### COG Operating LLC, Artesia, NM

07.25.17 10.45

Macho Nacho State #1H

Sample Id:	T5 - Surface	Matrix:
Lab Sample Id:	559042-025	Date Collected:

Date Received:08.01.17 15.06

Analytical Method: BTEX by EPA 8021B

Tech:ALJAnalyst:ALJSeq Number:3024257

Date Prep: 08.07.17 08.00

Prep Method: SW5030B % Moisture: Basis: Wet Weight

Parameter	Cas Number	r Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00361	0.00361		mg/kg	08.07.17 18,17	U	1
Toluene	108-88-3	<0.00361	0.00361		mg/kg	08.07.17 18:17	U	1
Ethylbenzene	100-41-4	<0.00361	0.00361		mg/kg	08.07.17 18.17	U	E
m,p-Xylenes	179601-23-1	<0.00722	0.00722		mg/kg	08.07.17 18.17	U	1
o-Xylene	95-47-6	< 0.00361	0.00361		mg/kg	08.07.17 18:17	U	1
Total Xylenes	1330-20-7	<0.00361	0.00361		mg/kg	08.07.17 18.17	U	1
Total BTEX		<0.00361	0.00361		mg/kg	08.07,17 18 17	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	88	%	80-120	08.07.17 18.17		
1,4-Difluorobenzene		540-36-3	125	%	80-120	08.07.17 18.17	**	





## COG Operating LLC, Artesia, NM

Sample Id:	Sample Id: T5 -1'			Soil	Date Received:08.01.17 15.06				
Lab Sample Ic	d: 559042-026		Date Collec	ted: 07.25.17 10.45					
Analytical Me	ethod: Inorganic Anion	s by EPA 300/300.1				Prep Method: E30	)0P		
Tech:	MGO					% Moisture:			
Analyst:	MGO		Date Prep:	08.07.17 16.40		Basis: We	t Weight		
Seq Number:	3024302						-		
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil	
Chloride		16887-00-6	<4.97	4.97	mg/kg	08.08.17 00.11	U	1	
Analytical Me	thod: TPH By SW801	5 Mod				Prep Method: TX	10050		

*						top montout to		
Tech:	ARM					% Moisture:		
Analyst:	ARM		Date Prep:	08.04.17 16.00	1	Basis: W	et Weight	
Seq Number:	3024175		·				-	
_								
Parameter		Cas Number	Result	RL.	Units	Analysis Date	Flag	DH
Gasoline Range I	Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.04,17 21.00	U	1
Diesel Range Org	ganics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.04.17 21.00	U	t
Oil Range Hydro	carbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.04.17 21.00	U	L
Total TPH		PHC635	<15.0	15.0	mg/kg	08.04,17 21.00	U	1

Total TPH	PHC635	<15.0	15.0		mg/kg	08.04,17 21.00	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
I-Chlorooctane		111-85-3	126	%	70-135	08.04.17 21.00		
o-Terphenyl		84-15-1	87	%	70-135	08.04.17 21.00		





Flag

### COG Operating LLC, Artesia, NM

Macho Nacho State #1H

	Matrix:	Soil		Date Received:	08.01.17 15.	06
	Date Col	lected: 07.25.17 10.45		1 ft		
021B				Prep Method:	SW5030B	
				% Moisture:		
	Date Pre	p: 08.03.17 10.00		Basis:	Wet Weight	
		- 22000 - 476			-	
Cas Number	Result	RL	Units	Analysis Dat	le Flag	Dil
71-43-2	<0.00200	0.00200	mg/kg	08.03.17 22.4	6 U	I
108-88-3	<0.00200	0.00200	mg/kg	08.03.17 22.4	6 U	1
100-41-4	<0.00200	0.00200	mg/kg	08.03.17 22.4	6 U	1
179601-23-1	<0.00401	0.00401	mg/kg	08.03.17 22.4	6 U	1
95-47-6	< 0.00200	0.00200	mg/kg	08.03.17 22.4	6 U	1
1330-20-7	< 0.00200	0.00200	mg/kg	08.03.17 22.4	6 U	1
	<0.00200	0.00200	mg/kg	08.03.17 22.4	6 U	1
	71-43-2 108-88-3 100-41-4 179601-23-1 95-47-6	Date Col D21B Date Pres 71-43-2 <0.00200 108-88-3 <0.00200 100-41-4 <0.00200 179601-23-1 <0.00401 95-47-6 <0.00200 1330-20-7 <0.00200	Date Collected: 07.25.17 10.45           D21B         Date Prep:         08.03.17 10.00           Cas Number         Result         RL           71-43-2         <0.00200	Cas Number         Result         RL         Units           71-43-2         <0.00200	Date Collected: 07.25.17 10.45         Sample Depth:           D21B         Prep Method: % Moisture: Date Prep:         % Moisture: Basis:           Cas Number         Result         RL         Units         Analysis Date           71-43-2         <0.00200	Date Collected: 07.25.17 10.45         Sample Depth: 1 ft           D21B         Prep Method: SW5030B % Moisture: Date Prep: 08.03.17 10.00         % Moisture: Basis: Wet Weight           Cas Number         Result         RL         Units         Analysis Date         Flag           71-43-2         <0.00200

al BTEX	<0.00200	0.00200		mg/kg	08.03.17 22.46	
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	
4-Bromofluorobenzene	460-00-4	102	%	80-120	08.03.17 22.46	
I.4-Difluorobenzene	540-36-3	100	%	80-120	08.03.17 22.46	

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#### COG Operating LLC, Artesia, NM

Chloride		16887-00-6	<4.97	4.97	mg/kg	08.08.17 00.19	U	1
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Seq Number:	3024302							
Analyst:	MGO		Date Prep:	08.07.17 16,40	]	Basis: We	t Weight	
Tech:	MGO				8	% Moisture:		
Analytical Me	ethod: Inorganic Anior	is by EPA 300/300.	1			Prep Method: E30	0 <b>P</b>	
Lab Sample I	d: 559042-027		Date Collec	eted: 07.25.17 10.45		Sample Depth: 2 ft	:	
Sample Id:	T5 -2'		Matrix:	Soil		Date Received:08	01.17 15.0	6

Analytical Method: TPH By SW80 Tech: ARM Analyst: ARM Seq Number: 3024175	Date Pre	p: 08.04	17 16.00	q	Prep Method: TX % Moisture: Basis: We	1005P t Weight		
Parameter	Cas Number	Result	RL		Units	Analysis Date	Fing	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	08.04.17 21.22	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	08.04,17 21,22	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0		mg/kg	08.04.17 21.22	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	08.04.17 21.22	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
I-Chlorooctane		111-85-3	130	%	70-135	08.04.17 21.22		
o-Terphenyl		84-15-1	92	%	70-135	08.04.17 21.22		



Total BTEX

Surrogate

1,4-Difluorobenzene

4-Bromofluorobenzene

## **Certificate of Analytical Results 559042**



08.03.17 23.04

Analysis Date

08.03.17 23.04

08.03.17 23.04

U

Flag

1

mg/kg

Limits

80-120

80-120

## COG Operating LLC, Artesia, NM

Macho Nacho State #1H

Sample Id:	*			Soil		Date Received:08.01.17 15.06					
Lab Sample I	d: 559042-027		Date Col	llected: 07.25.17 10.45		Sample Depth: 2 ft					
Analytical M	ethod: BTEX by EPA	8021B				Prep Method:	SW5030B				
Tech:	ALJ					% Moisture:					
Analyst:	ALJ		Date Pre	p: 08.03.17 10.00		Basis:	Wet Weight				
Seq Number:	3024007						-				
Parameter		Cas Number	Result	RL	Units	Analysis Dat	ie Flag	Dil			
Benzene	· · · · ·	71-43-2	<0.00199	0.00199	mg/kg	08.03.17 23.0	4 U	1			
Tolucne		108-88-3	< 0.00199	0.00199	mg/kg	08.03.17 23.0	4 U	1			
Ethylbenzene		100-41-4	< 0.00199	0.00199	mg/kg	08.03.17 23.0	4 U	E			
m,p-Xylenes		179601-23-1	<0.00398	0.00398	mg/kg	08.03.17 23.0	4 U	L.			
o-Xylene		95-47-6	<0.00199	0.00199	mg/kg	08.03.17 23.0	4 U	L			
Total Xylenes		1330-20-7	<0.00199	0.00199	mg/kg	08.03.17 23.0	4 U	1			

<0.00199

**Cas Number** 

540-36-3

460-00-4

0.00199

%

Recovery

108

82

Units

%

%

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## COG Operating LLC, Artesia, NM

Chloride		16887-00-6	<4.93	4.93	mg/kg	08.08.17 00.27	U	1	
Parameter	-	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil	
Seq Number:	3024302								
Analyst:	MGO		Date Prep	08.07.17 16.40		Basis: W	et Weight		
Tech:	MGO					% Moisture:			
Analytical Me	ethod: Inorganic Anion	is by EPA 300/300+	l			Prep Method: E3	100P		
Lab Sample Id: 559042-028			Date Colle	ected: 07.25.17 10.45		Sample Depth: 3 ft			
Sample Id:	T5 -3'		Matrix:	Soil		Date Received:08	.01.17 15.0	16	

Analytical Method: TPH By SW80 Tech: ARM					rep Method: TX 6 Moisture:	1005P		
Analyst: ARM		Date Pre	p: 08.04	17 16.00	Έ	Basis: We	t Weight	
Seq Number: 3024175								
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dii
Gasoline Range Hydrocarbons (GRO)	PHC610	< 4.9	14.9		mg/kg	08.04.17 21.43	U	l
Diesel Range Organics (DRO)	CI0C28DRO	<14.9	14.9		mg/kg	08.04.17 21.43	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9		mg/kg	08.04.17 21.43	U	1
Total TPH	PHC635	<14.9	14.9		mg/kg	08.04.17 21.43	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	130	%	70-135	08.04.17 21.43		
o-Terphenyl		84-15-1	93	%	70-135	08.04.17 21.43		





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## COG Operating LLC, Artesia, NM

Sample Id: T5 -3'			Matrix:	Soil		Date Received:	08.01.17 15.0	)6
Lab Sample Id: 559042-028			Date Col	lected: 07.25.17 10.45		Sample Depth:		
Analytical N	Acthod: BTEX by	EPA 8021B				Prep Method:	SW5030B	
Tech:	ALJ					% Moisture:		
Analyst:	ALJ		Date Pre	p: 08.03.17 10.00		Basis	Wet Weight	
Seq Number: 3024007			·				-	
Parameter		Cas Number	Result	RL	Units	Analysis Dat	e Flag	Dil
Benzene		71-43-2	<0.00198	0.00198	mg/kg	08.03.17 23.2	3 U	L2
Tolucne		108-88-3	<0.00198	0.00198	mg/kg	08.03.17 23.2	3 U	L
Ethylbenzene		100-41-4	<0.00198	0.00198	mg/kg	08.03.17 23.2	3 U	1
m,p-Xylenes		179601-23-1	< 0.00397	0.00397	mg/kg	08.03.17.23.2	3 U	1

0-Ayicile	9.0~47-0	<0.00198	0.00198		mg/kg	08.03.17.23.23	U	
Total Xylenes	1330-20-7	<0.00198	0.00198		mg/kg	08.03.17 23.23	U	
Total BTEX		<0.00198	0.00198		mg/kg	08.03.17 23.23	U	
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	iii	%	80-120	08.03.17 23.23		
1,4-Difluorobenzene		540-36-3	98	%	80-120	08.03.17 23.23		





# COG Operating LLC, Artesia, NM

Macho Nacho State #1H

Sample Id: T5 -4'		Matrix:	Soil		6			
Lab Sample Id: 559042-029	Date Colle	ted: 07.25.17 10.45		Sample Depth: 4 ft				
Analytical Method: Inorganic Anic	ns by EPA 300/300.1				Prep Method: E30	00P		
Tech: MGO					% Moisture:			
Analyst: MGO		Date Prep:	08.07.17 16.40		Basis: We	t Weight		
Seq Number: 3024302		•				-		
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil	
Chloride	16887-00-6	<4.97	4.97	mg/kg	08.08.17 00.34	U	1	
Analytical Method: TPH By SW80	15 Mod				Prep Method: TX	1005P		
Tech: ARM					% Moisture:			
Analyst: ARM		Date Prep:	08.04.17 16.00		Basis: We	t Weight		
Seq Number: 3024175						U		
Parameter		Result	RL	Units	Analysis Date	Flag		
	Cas Number	result	KL	Units	Thinky 313 about	Flag	Dil	
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.04.17 22,05	U		
Gasoline Range Hydrocarbons (GRO) Diesel Range Organies (DRO)						-	Dil 1 1	

	<b>u</b> ,							-	•
•	Total TPH	PHC635	<15.0	15.0		mg/kg	08.04.17 22.05	U	1
	Surrogate		Cas Number	% Recoverv	Units	Limits	Analysis Date	Flag	
	I-Chlorooctane		111-85-3	125	%	70-135	08.04.17 22.05	-	
	o-Terphenyl		84-15-1	89	%	70-135	08.04.17 22.05	10 -	

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# COG Operating LLC, Artesia, NM

Macho Nacho State #1H

Sample Id: T5 -4'			Matrix:	Soil		Date Received:	08.01.17 15.0	)6
Lab Sample	ld: 559042-029		Date Collected: 07.25.17 10.45			Sample Depth: 4 ft		
Analytical M	tethod: BTEX by EP.	A 8021B				Prep Method:	SW5030B	
Tech:	ALJ					% Moisture:		
Analyst: ALJ Seq Number: 3024007			Date Pre	p: 08.03.17 10.00		Basis:	Wet Weight	
			- 24 11.200 - 127.					
Parameter		Cas Number	Result	RL	Units	Analysis Dat	ie Flag	Dil
Benzene		71-43-2	<0.00202	0.00202	mg/kg	08 03 17 23.4	1 U	1
Toluene		108-88-3	< 0.00202	0.00202	mg/kg	08.03.17 23.4	I U	1
Ethylbenzene		100-41-4	<0.00202	0.00202	mg/kg	08.03.17 23.4	U	1

m,p-Xylenes	[7960]-23-[	<0.00404	0.00404		mg/kg	08.03.17 23.41	U	1	
o-Xylene	95-47-6	< 0.00202	0.00202		mg/kg	08.03.17 23.41	U	1	
Total Xylenes	1330-20-7	< 0.00202	0.00202		mg/kg	08.03.17 23.41	υ	L	
Total BTEX		<0.00202	0.00202		mg/kg	08.03.17 23.41	U	1	
Surrogate		Cas Number	%	Units	Limits	Analysis Data	Flee		
Surrogate		Cas (vumber	Recovery	Units	Lamus	Analysis Date	Flag		
1,4-Difluorobenzene		540-36-3	97	%	80-120	08.03.17 23.41			
4-Bromofluorobenzene		460-00-4	106	%	80-120	08.03.17 23.41			

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# **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	535

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Macho Nacho State #1H

Analytical Method: Seq Number: MB Sample Id:	Inorganic Anions I 3024270 728877-1-BLK	by EPA 300	Matrix: Solid LCS Sample Id: 728877-1-BKS						Prep Method: E300P Date Prep: 08.07.17 LCSD Sample Id: 728877-1-BSD				
·	MB	Spike	LCS	LCS	LCSD	LCSD	Limits	%RPD	RPD	Units	Analysis		
Parameter	Result	Amount	Result	%Rec	Result	%Rec		/0111 1/	Limit	onid	Date	Flag	
Chloride	<5.00	250	247	99	244	98	90-110	1	20	mg/kg	08.07.17 16:38		
Analytical Method: Seq Number:	Inorganic Anions 1 3024302	oy EPA 300	/300.1	Matrix:	Solid			Pi	ep Meth Date Pi		0P )7.17		
MB Sample Id:	728922-1-BLK		LCS Sa	mple Id:	728922-1	-BKS		LCS	D Sampl	e Id: 728	922-1-BSD		
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag	
Chloride	<5.00	250	242	97	244	98	90-110	L	20	mg/kg	08.07-17 22:47		
Analytical Method: Seq Number:	Inorganic Anions E 3024270	oy EPA 300		Matrix:				Pr	ep Meth Date Pr		0P )7.17		
Parent Sample Id:	559042-019				559042-0	19 S		MSI	O Sample	e Id: 559	042-019 SD		
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag	
Chloride	<4.98	249	253	102	248	100	90-110	2	20	mg/kg	08.07.17 18:49		
Analytical Method:		y EPA 300	/300.1	Matrix:	Soil			Pr	ep Meth Date Pr		0 <b>P</b> 7.17		
Seq Number:	3024270		MC C			0.0				-			
Parent Sample Id:	559042-020	Faile		nple ld;	559042-02		T. Sun FA		O Sample	e Id: 5590	042-020 SD		
- 10 March -		Spike Amount	MS Sar MS Result			20 S MSD %Rec	Limits	MSI %RPD		-		Flag	
Parent Sample Id:	559042-020 Parent		MS	nple ld; MS	559042-0 MSD	MSD	<b>Limits</b> 90-110		) Sample RPD	e Id: 5590	042-020 SD Analysis	Flag	
Parent Sample Id: Parameter	559042-020 Parent Result	Amount	MS Result	nple ld; MS %Rec	559042-02 MSD Result	MSD %Rec		%RPD	O Sample RPD Limit	e Id: 5596 Units	042-020 SD Analysis Date	Flag	
Parent Sample Id: Parameter	559042-020 Parent Result <4.96	Amount 248	MS Result 255 /300.1	nple ld; MS %Rec	559042-0) MSD Result 258	MSD %Rec		%RPD 1	O Sample RPD Limit	units mg/kg	042-020 SD Analysis Date 08.07.17 17:01	Flag	
Parent Sample Id: Parameter Chloride Analytical Method:	559042-020 Parent Result <4.96	Amount 248	MS Result 255	mple ld: MS %Rec 103 Matrix:	559042-0) MSD Result 258	MSD %Rec 104		%RPD 1 Pro	D Sample RPD Limit 20 ep Methe Date Pro	e Id: 5596 Units mg/kg od: E300 ep: 08.0	042-020 SD Analysis Date 08.07.17 17:01	Flag	
Parent Sample Id: Parameter Chloride Analytical Method: Seq Number:	559042-020 Parent Result <4.96 Inorganic Anions b 3024302	Amount 248	MS Result 255	mple ld: MS %Rec 103 Matrix:	559042-03 MSD Result 258 Soil 559042-03 MSD	MSD %Rec 104		%RPD 1 Pro	2) Sample RPD Limit 20 ep Methe Date Pro 5) Sample RPD	e Id: 5596 Units mg/kg od: E300 ep: 08.0	042-020 SD Analysis Date 08.07.17 17:01 08.07.17 17:01 09 7.17 042-021 SD Analysis	Flag Flag	
Parent Sample Id: Parameter Chloride Analytical Method: Seq Number: Parent Sample Id:	559042-020 Parent Result <4.96 Inorganic Anions b 3024302 559042-021 Parent	Amount 248 y EPA 300, Spike	MS Result 255 /300.1 MS Sar MS	nple ld; MS %Rec 103 Matrix; nple ld; MS	559042-02 MSD Result 258 Soil 559042-02	MSD %Rec 104	90-110	%RPD 1 Pro MSE	O Sample RPD Limit 20 ep Metho Date Pro	e Id: 5590 Units mg/kg od: E300 ep: 08.0 : Id: 5590	042-020 SD Analysis Date 08.07.17 17:01 09 7.17 042-021 SD		
Parent Sample Id: Parameter Chloride Analytical Method: Seq Number: Parent Sample Id: Parameter	559042-020 Parent Result <4.96 Inorganic Anions b 3024302 559042-021 Parent Result	Amount 248 y EPA 300, Spike Amount	MS Result 255 /300.1 MS Sar MS Result	nple ld; MS %Rec 103 Matrix; nple ld; MS %Rec	559042-02 MSD Result 258 Soil 559042-02 MSD Result	MSD %Rec 104 21 S MSD %Rec	90-110 Limits	%RPD J Pr MSE %RPD	O Sample RPD Limit 20 ep Methe Date Pro Sample RPD Limit	Dd: 5590 Units mg/kg Dd: E300 ep: 08.0 e1d: 5590 Units	042-020 SD Analysis Date 08.07.17 17:01 08.07.17 17:01 09 09 7.17 042-021 SD Analysis Date		
Parent Sample Id: Parameter Chloride Analytical Method: Seq Number: Parent Sample Id: Parameter	559042-020 Parent Result <4.96 Inorganic Anions b 3024302 559042-021 Parent Result <4.91	Amount 248 y EPA 300 Spike Amount 246	MS Result 255 300.1 MS Sar MS Result 243	nple ld; MS %Rec 103 Matrix; nple ld; MS %Rec	559042-02 MSD Result 258 Soil 559042-02 MSD Result	MSD %Rec 104 21 S MSD %Rec	90-110 Limits	%RPD 1 Pr/ MSE %RPD 2	2) Sample RPD Limit 20 ep Methe Date Pro Date Pro Sample RPD Limit 20	e Id: 5596 Units mg/kg od: E300 ep: 08.0 cod: 5590 Units mg/kg	042-020 SD Analysis Date 08.07.17 17:01 09 7.17 042-021 SD Analysis Date 08.07.17 23:10		
Parent Sample Id: Parameter Chloride Analytical Method: Seq Number: Parent Sample Id: Parameter Chloride Analytical Method: Seq Number:	559042-020 Parent Result <4.96 Inorganic Anions b 3024302 559042-021 Parent Result <4.91	Amount 248 y EPA 300 Spike Amount 246	MS Result 255 300.1 MS Sar MS Result 243 300.1	mple Id; MS %Rec 103 Matrix: mple Id; MS %Rec 99 Matrix:	559042-02 MSD Result 258 Soil 559042-02 MSD Result 239	MSD %Rec 104 21 S MSD %Rec 97	90-110 Limits	%RPD 1 Pr/ MSE %RPD 2	O Sample RPD Limit 20 ep Methe Date Pro Sample RPD Limit	e Id: 5596 Units mg/kg od: E300 ep: 08.0 : Id: 5590 Units mg/kg	042-020 SD Analysis Date 08.07.17 17:01 09 7.17 042-021 SD Analysis Date 08.07.17 23:10		
Parent Sample Id: Parameter Chloride Analytical Method: Seq Number: Parent Sample Id: Parameter Chloride Analytical Method:	559042-020 Parent Result <4.96 Inorganic Anions b 3024302 559042-021 Parent Result <4.91 Inorganic Anions b 3024302 559309-001	Amount 248 y EPA 300 Spike Amount 246 y EPA 300	MS Result 255 300.1 MS Sar MS Result 243 300.1 MS San	mple ld; MS %Rec 103 Matrix: mple ld: 99 Matrix: mple ld:	559042-02 MSD Result 258 Soil 559042-02 MSD Result 239	MSD %Rec 104 21 S MSD %Rec 97	90-110 Limits	%RPD 1 Pro %RPD 2 Pro	2) Sample RPD Limit 20 cp Metho Date Pro 20 RPD Limit 20 cp Metho Date Pro 20 cp Metho Date Pro 20 co Sample	e Id: 5596 Units mg/kg od: E300 ep: 08.0 e Id: 5590 Units mg/kg od: E300 ep: 08,0	042-020 SD Analysis Date 08.07.17 17:01 09 7.17 042-021 SD Analysis Date 08.07.17 23:10		
Parent Sample Id: Parameter Chloride Analytical Method: Seq Number: Parent Sample Id: Parameter Chloride Analytical Method: Seq Number:	559042-020 Parent Result <4.96 Inorganic Anions b 3024302 559042-021 Parent Result <4.91 Inorganic Anions b 3024302	Amount 248 y EPA 300 Spike Amount 246	MS Result 255 300.1 MS Sar MS Result 243 300.1	mple Id; MS %Rec 103 Matrix: mple Id; MS %Rec 99 Matrix:	559042-03 MSD Result 258 Soil 559042-03 MSD Result 239 Soil 559309-00 MSD	MSD %Rec 104 21 S MSD %Rec 97	90-110 Limits	%RPD 1 Pro %RPD 2 Pro	<ul> <li>Sample</li> <li>RPD</li> <li>Limit</li> <li>20</li> <li>ep Methe</li> <li>Date Pro</li> <li>Sample</li> <li>RPD</li> <li>Limit</li> <li>20</li> <li>ep Methe</li> <li>Date Pro</li> </ul>	e Id: 5596 Units mg/kg od: E300 ep: 08.0 e Id: 5590 Units mg/kg od: E300 ep: 08,0	042-020 SD Analysis Date 08.07.17 17:01 09 7.17 042-021 SD Analysis Date 08.07.17 23:10 08.07.17 23:10 09 7.17 509-001 SD Analysis		
Parent Sample Id: Parameter Chloride Analytical Method: Seq Number: Parent Sample Id: Parameter Chloride Analytical Method: Seq Number: Parent Sample Id:	559042-020 Parent Result <4.96 Inorganic Anions b 3024302 559042-021 Parent Result <4.91 Inorganic Anions b 3024302 559309-001 Parent	Amount 248 y EPA 300, Spike Amount 246 y EPA 300, Spike	MS Result 255 /300.1 MS Sar MS Result 243 /300.1 MS San MS	mple ld; MS %Rec 103 Matrix: nple ld: MS %Rec 99 Matrix: nple ld: MS	559042-03 MSD Result 258 Soil 559042-03 MSD Result 239 Soil 559309-00	MSD %Rec 104 21 S MSD %Rec 97	90-110 Limits 90-110	%RPD 1 Pr %RPD 2 Pr MSE	2) Sample RPD Limit 20 cp Metho Date Pro 20 RPD Limit 20 cp Metho Date Pro 20 Sample RPD Limit 20 RPD Sample RPD RPD RPD RPD RPD Limit 20 RPD Retho RPD Retho RPD Retho RPD Retho RPD Retho RPD Retho RPD Retho RPD Retho RPD Retho RPD Retho RPD Retho RPD	e Id: 5590 Units mg/kg od: E300 ep: 08.0 e Id: 5590 Units mg/kg od: E300 ep: 08.0 ep: 08.0 ep: 08.0 ep: 08.0	042-020 SD Analysis Date 08.07.17 17:01 09 7.17 042-021 SD Analysis Date 08.07.17 23:10 09 7.17 09-001 SD	Flag	

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Macho Nacho State #1H

Analytical Method:	TPH By S	SW8015 M	lod						Pr	ep Meth	od: TX	1005P	
Seq Number:	3024053				Matrix:	Solid				Date Pr	ep: 08.0	3.17	
MB Sample Id:	•					728721-1	-BKS		LCS	D Sampl	e ld: 728	721-1-BSD	
Parameter		MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarb	ons (GRO)	<15.0	1000	1010	101	979	98	70-135	3	35	mg/kg	08.03.17 13:11	
Diesel Range Organics	(DRO)	<15.0	1000	1060	106	1040	104	70-135	2	35	mg/kg	08.03.17 13:11	
Surrogate	12	MB %Rec	MB Flag	_	CS Rec	LCS Flag	LCSI %Re			mits	Units	Analysis Date	
I-Chlorooctane		132		1	27		124		70	-135	%	08.03.17 13:11	
o-Terphenyl		97		9	97		96		70	-135	%	08.03.17 13:11	

Analytical Method: Seq Number: MB Sample Id;	TPH By 5 3024054 728722-1-		lod	LCS Sar	Matrix: nple Id:		-BKS		Prep Method: TX1005P Date Prep: 08.03.17 LCSD Sample Id: 728722-1-BSD				
Parameter		MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarb	ons (GRO)	<15.0	1000	1030	103	993	99	70-135	4	35	mg/kg	08.03.17 22:37	
Diesel Range Organics	(DRO)	<15.0	1000	1030	103	1060	106	70+135	3	35	mg/kg	08.03.17 22:37	
Surrogate		MB %Rec	MB Flag		CS Rec	LCS Flag	LCSI %Ree			mits	Units	Analysis Date	
I-Chlorooctane		128		l	22		126		70	-135	%	08.03.17 22:37	
o-Terphenyl		96		1	08		96		70	-135	%	08.03.17 22:37	

Analytical Method:	TPH By S	SW8015 M	lod						Pi	ep Meth	od: TXI	1005P	
Seq Number:	3024175				Matrix:	Solid				Date Pr	ep: 08.0	4.17	
MB Sample Id;	728839-1-	BLK		LCS Sar	nple Id:	728839-1	-BKS		LCS	D Sample	e Ida 728	839-1-BSD	
Parameter		MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPÐ Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarb	ons (GRO)	<15.0	1000	805	81	949	95	70-135	16	35	mg/kg	08.04.17 19:11	
Diesel Range Organics	(DRO)	<15.0	1000	886	89	983	98	70-135	10	35	mg/kg	08.04.17 19:11	
Surrogate		MB %Rec	MB Flag			LCS Flag	LCSI %Re			mits	Units	Analysis Date	
I-Chlorooctane		130		1	13		128		70	-135	%	08.04.17 19:11	
o-Terphenyl		96		٤	30		90		70	-135	%	08.04.17.19.11	

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Macho Nacho State #1H

Analytical Method: Seq Number: Parent Sample Id:	<b>TPH By S</b> 3024053 558952-00	Iod		Matrix: nple Id:	Soil 558952-0	05 S			ep Meth Date Pr D Sample	ep: 08.0	005P 3.17 952-005 SD		
Parameter		Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarb	ons (GRO)	<15.0	999	968	97	975	98	70-135	ι	35	mg/kg	08.03.17 14:32	
Diesel Range Organics	(DRO)	16.2	999	1060	104	1080	107	70-135	2	35	mg/kg	08.03.17 14:32	
Surrogate					IS Rec	MS Flag	MSD %Re			mits	Units	Analysis Date	
1-Chlorooctane				1	27		128		70	-135	%	08.03.17 14:32	
o-Terphenyl				9	91		93		70	-135	%	08.03.17 14:32	

Analytical Method:	TPH By 5	SW8015 N	lod						Prep Method: TX1005P					
Seq Number:	3024054				Matrix:	Soil				Date Pr	ep: 08.0	03.17		
Parent Sample Id:	559042-00	07		MS Sar	nple Id;	559042-0	07 S		MS	D Sampl	e Id: 559	042-007 SD		
Parameter		Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag	
Gasoline Range Hydrocarb	ons (GRO)	<15.0	998	950	95	988	99	70-135	4	35	mg/kg	08.04.17 01:44		
Diesel Range Organics (	(DRO)	29,1	998	1030	100	<del>9</del> 98	97	70-135	3	35	mg/kg	08.04.17 01:44		
Surrogate					IS Rec	MS Flag	MSD %Re			imits	Units	Analysis Date		
1-Chlorooctane				1	29		123		70	-135	%	08.04.17 01:44		
o-Terphenyl				1	23		104		70	-135	%	08.04.17 01:44		

Analytical Method: Seq Number: Parent Sample Id:	lod		Matrix: mple Id:		25 S			ep Meth Date Pr D Sampl	ер: 08.0	1005P 94.17 042-025 SD			
Parameter		Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbor	ıs (GRO)	<15.0	997	1020	102	997	100	70-135	2	35	mg/kg	08.04.17 20:17	
Diesel Range Organics (E	ORO)	<15.0	997	1020	102	1000	100	70-135	2	35	mg/kg	08.04.17 20:17	
Surrogate					IS Rec	MS Flag	MSD %Re			mits	Units	Analysis Date	
1-Chlorooctane				1	27		127		70	-135	%	08.04.17 20:17	
o-Terphenyl				9	91		90		70	-135	%	08.04.17 20:17	

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Macho Nacho State #1H

<b>Analytical Method:</b>	BTEX by EPA 8021B	
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Analytical Method: Seq Number: MB Sample Id:	BTEX by EPA 802 3024005 728728-1-BLK	1 <b>B</b>	Matrix: Solid LCS Sample Id: 728728-1-BKS LCS LCS LCS LCSD LCSD Lin					Prep Method: SW5030B Date Prep: 08.03.17 LCSD Sample Id: 728728-1-BSD					
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag	
Benzene	< 0.00202	101.0	0.0894	89	0.0888	88	70-130	1	35	mg/kg	08.03 17 10 38		
Toluene	< 0.00202	0.101	0.0916	91	0.0924	91	70-130	l	35	mg/kg	08.03.17 10.38		
Ethylbenzene	< 0.00202	0.101	0.0964	95	0.0969	96	71-129	L	35	mg/kg	08.03.17 10:38		
m,p-Xylenes	< 0.00404	0.202	0.186	92	0.187	93	70-135	1	35	mg/kg	08.03.17 10:38		
o-Xylene	<0.00202	0.101	0.0945	94	0.0955	95	71-133	1	35	mg/kg	08.03.17 10:38		
Surrogate	MB %Rec	MB Flag		CS Rec	LCS Flag	LCSI %Re			mits	Units	Analysis Date		
1,4-Difluorobenzene	100		1	08		114		80	-120	%	08.03.17 10:38		
4-Bromofluorobenzene	105		1	10		113		80	-120	%	08.03.17 10:38		

Analytical Method: Seq Number; MB Sample Id:	BTEX by EPA 802 3024007 728729-1-BLK	1B		Matrix; nple Id;	Solid 728729-1	-BKS			rep Meth Date Pr D Sample	ep: 08.0	5030B 3.17 729-1-BSD	
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0858	86	0.0842	84	70-130	2	35	mg/kg	08.03.17 20:54	
Toluene	<0.00200	0.0998	0.0899	90	0.0880	88	70-130	2	35	mg/kg	08.03.17 20:54	
Ethylbenzene	<0.00200	0.0998	0.0984	99	0.0972	97	71-129	1	35	mg/kg	08.03.17 20:54	
m,p-Xylenes	< 0.00399	0.200	0.189	95	0.188	94	70-135	E	35	mg/kg	08.03 17 20:54	
o-Xylene	<0.00200	0.0998	0.0981	98	0.0990	99	71-133	L	35	mg/kg	08.03.17 20:54	
Surrogate	MB %Rec	MB Flag	-	CS Rec	LCS Flag	LCSE %Rec			imits	Units	Analysis Date	
1,4-Difluorobenzene	98		L.	00		99		80	-120	%	08.03.17 20:54	
4-Bromofluorobenzene	105		1	05		105		80	-120	%	08.03.17 20:54	

Analytical Method:	BTEX by EPA 802	1 <b>B</b>						P	rep Meth	od: SW:	5030B	
Seq Number:	3024166			Matrix:	Solid				Date Pr	ер: 08.0	4.17	
MB Sample Id:	728837-1-BLK		LCS Sar	nple Id;	728837-1	-BKS		LCS	D Sample	e Id: 728	837-1-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	0.101	0.108	107	0.116	115	70-130	7	35	mg/kg	08,04,17 08;18	
Tolucne	<0.00201	0.101	0.107	106	0.115	114	70-130	7	35	mg/kg	08.04.17 08:18	
Ethylbenzene	< 0.00201	0.101	0.110	109	0.117	116	71-129	6	35	mg/kg	08 04 17 08 18	
m,p-Xylenes	< 0.00402	0.201	0.213	106	0.228	113	70-135	7	35	mg/kg	08.04.17 08:18	
o-Xylene	< 0.00201	0.101	0.106	105	0.113	112	71-133	6	35	mg/kg	08.04.17 08:18	
Surrogate	MB %Rec	MB Flag			LCS Flag	LCSE %Ree			imlts	Units	— Analysis Date	
I,4-Difluorobenzene	100		l I	06		105		80	-120	%	08.04,17 08:18	
4-Bromofluorobenzene	103		l	04		103		80	-120	%	08.04.17 08:18	



## **COG Operating LLC**

Macho Nacho State #1H

Analytical Method: Seq Number:	3024179	IB		Matrix:					rep Meth Date Pr	ep: 08.0	5030B 94.17	
MB Sample Id:	728847-1-BLK		LCS Sat	mple Id:	728847-1	-BKS		LCS	D Sample	e Id: 728	847-1-BSD	
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.107	106	0.117	116	70-130	9	35	mg/kg	08.04.17 20:49	
Tolucne	< 0.00202	0.101	0.109	108	0.119	118	70-130	9	35	mg/kg	08.04.17 20:49	
Ethylbenzene	< 0.00202	101.0	0.110	109	0.122	[2]	71-129	10	35	mg/kg	08.04.17 20:49	
m,p-Xylenes	< 0.00403	0 202	0.215	106	0.238	118	70-135	10	35	mg/kg	08.04.17 20:49	
o-Xylene	<0.00202	0.101	0.108	107	0.119	118	71-133	10	35	mg/kg	08.04.17 20:49	
Surrogate	MB %Rec	MB Flag	_	CS Rec	LCS Flag	LCSI %Rec			mits	Units	Analysis Date	
1,4-Difluorobenzene	98		9	98		103		80	-120	%	08.04.17.20.49	
4-Bromofluorobenzene	96		1	01		107		80	-120	%	08.04.17 20:49	

Analytical Method: Seq Number: MB Sample Id:	BTEX by EPA 802 3024257 728907-1-BLK	18	LCS Sar	Matrix: nple Id:		-BKS			rep Meth Date Pr D Sample	ep: 08.0	5030B 17.17 907-1-BSD	
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Llmit	Units	Analysis Date	Flag
Benzene	<0.00201	0.101	0.0969	96	0.0977	98	70-130	1	35	mg/kg	08.07.17 08:13	
Toluene	<0.00201	0.101	0.104	103	0,104	104	70-130	0	35	mg/kg	08.07.17 08:13	
Ethylbenzene	<0.00201	0.101	0.0984	97	0.0993	99	71-129	1	35	mg/kg	08.07.17 08:13	
m,p-Xylenes	< 0.00402	0.201	0.192	96	0.194	97	70-135	1	35	mg/kg	08.07.17 08:13	
o-Xylene	<0.00201	0,101	0.0945	94	0.0962	96	71-133	2	35	mg/kg	08.07.17 08:13	
Surrogate	MB %Rec	MB Flag			LCS Flag	LCSD %Rec			imits	Units	Analysis Date	
1,4-Difluorobenzene	99		l.	04		105		80	-120	%	08.07:17 08:13	
4-Bromofluorobenzene	105		L.	04		105		80	-120	%	08.07-17 08:13	

Analytical Method: Seq Number:	3024005	1B		Matrix:				Pi	rep Meth Date Pr		5030B 3.17	
Parent Sample Id:	559040-006		MS Sar	nple Id:	559040-0	)6 S		MS	D Sample	e Id: 559	040-006 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.101	0.0748	74	0,105	104	70-130	34	35	mg/kg	08.03 17 16:31	
Toluene	< 0.00201	0.101	0.0750	74	0.0933	92	70-130	22	35	mg/kg	08.03.17 16:31	
Ethylbenzene	<0.00201	0.101	0.0816	81	0.0910	90	71-129	11	35	mg/kg	08.03 17 16 31	
m,p-Xylenes	<0.00402	0.201	0.157	78	0,166	82	70-135	6	35	mg/kg	08.03.17 16 31	
o-Xylene	<0.00201	0.101	0.0846	84	0.0800	79	71-133	б	35	mg/kg	08.03 17 16:31	
Surrogate			•	1S Rec	MS Flag	MSD %Rea			mits	Units	Analysis Date	
1,4-Difluorobenzene			- I	03		101		80	-120	%	08.03,17 16 31	
4-Bromofluorobenzene			l	12		89		80	-120	%	08.03.17 16:31	

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# **COG Operating LLC**

Macho Nacho State #1H

Analytical Method:	÷	1 <b>B</b>			a "			P	rep Meth		5030B	
Seq Number:	3024007			Matrix:	Soil				Date Pr	ep: 08.0	3.17	
Parent Sample Id:	559042-029		MS Sar	nple Id:	559042-02	29 S		MS	D Sample	e Id: 559	042-029 SD	
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	0.0834	83	0.0753	75	70-130	10	35	mg/kg	08.04.17 07:14	
Toluene	< 0.00202	0.101	0.0813	80	0.0754	75	70-130	8	35	mg/kg	08.04.17 07:14	
Ethylbenzene	<0.00202	0.101	0.0825	82	0.0902	90	71-129	9	35	mg/kg	08.04.17.07:14	
m,p-Xylenes	< 0.00403	0.202	0.158	78	0.178	89	70-135	12	35	mg/kg	08.04.17 07:14	
o-Xylene	<0.00202	0.101	0.0799	79	0.0996	100	71-133	22	35	mg/kg	08.04.17 07:14	
Surrogate			-	15 Rec	MS Flag	MSD %Re			mits	Units	Analysis Date	
1,4-Difluorobenzene			1	05		109		80	-120	%	08.04.17 07:14	
4-Bromofluorobenzene			1	02		106		80	-120	%	08.04.17 07:14	
Ethylbenzene m.p-Xylenes o-Xylene <b>Surrogate</b> 1,4-Difluorobenzene	<0.00202 <0.00403	0.101 0.202	0.0825 0.158 0.0799 N *=	82 78 79 <b>IS</b> Rec 05	0.0902 0.178 0.0996 MS	90 89 100 <b>MSD</b> %Re 109	71-129 70-135 71-133 MSI c Flag	9 12 22 ) La g 8 80	35 35 35 mits	mg/kg mg/kg mg/kg Units	08.04.17 07:14 08.04.17 07:14 08.04.17 07:14 08.04.17 07:14 Analysis Date 08.04.17 07:14	

Analytical Method: Seq Number: Parent Sample Id:	BTEX by EPA 802 3024166 559039-005	1B		Matrix: nple Id:		05 S			rep Meth Date Pr D Sample	ep: 08.0	5030B 44.17 039-005 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	< 0.00201	0.101	0.0988	98	0.101	100	70-130	2	35	mg/kg	08.04.17 08:56	
Tolucne	< 0.00201	0,101	0.0983	97	0.100	99	70-130	2	35	mg/kg	08.04.17 08:56	
Ethylbenzene	< 0.00201	0.101	0.101	100	0.102	101	71-129	1	35	mg/kg	08.04.17 08:56	
m,p-Xylenes	< 0.00402	0.201	0.196	98	0.199	99	70-135	2	35	mg/kg	08.04.17 08:56	
o-Xylene	<0.00201	0.101	0.0977	97	0.0990	98	71-133	I.	35	mg/kg	08.04.17 08:56	
Surrogate				1S Rec	MS Flag	MSD %Rec			imits	Units	Analysis Date	
1,4-Difluorobenzene			1	05		105		80	-120	%	08.04 17 08 56	
4-Bromofluorobenzene			1	07		108		80	-120	%	08.04.17 08 56	

Analytical Method: Seq Number: Parent Sample Id:	BTEX by EPA 802 3024179 559258-001	1B	MS San	Matrix: nple Id:		01 S			rep Meth Date Pr D Sample	ep: 08.0	5030B 4,17 258-001 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.0851	85	0,101	101	70-130	17	35	mg/kg	08.04 17 21 26	
Tolucne	<0.00201	0.100	0.0804	80	0.0965	97	70-130	18	35	mg/kg	08.04 17 21 26	
Ethylbenzene	<0.00201	0.100	0.0828	83	0.0975	98	71-129	16	35	mg/kg	08.04 17 21 26	
m,p-Xylenes	< 0.00402	0 201	0.161	80	0.188	94	70-135	15	35	mg/kg	08.04.17 21.26	
o-Xylene	<0.00201	0.100	0.0849	85	0.0962	96	71-133	12	35	mg/kg	08.04.17 21:26	
Surrogate				IS Rec	MS Flag	MSD %Ree			mits	Units	Analysis Date	
1,4-Difluorobenzene			10	07		103		80	-120	G/0	08.04.17 21:26	
4-Bromofluorobenzene			10	09		107		80	-120	%	08.04 17 21:26	

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Final 1:001



# COG Operating LLC Macho Nacho State #1H

Analytical Method:	BTEX by EPA 802	1B						Pi	rep Meth	od: SW	5030B	
Seq Number:	3024257			Matrix:	Soil				Date Pr	ep: 08.0	7.17	
Parent Sample Id:	559041-001		MS Sar	nple Id:	559041-0	01 S		MS	D Sample	e Id: 559	041-001 SD	
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	0.0757	75	0.0640	64	70-130	17	35	mg/kg	08.07,17 15:10	x
Toluene	< 0.00202	0.101	0,0718	71	0.0683	68	70-130	5	35	mg/kg	08.07.17 15 10	X
Ethylbenzene	< 0.00202	0,101	0.0620	61	0.0561	56	71-129	10	35	mg/kg	08.07.17 15 10	х
m,p-Xylenes	0.00745	0.202	0.119	55	0.109	51	70-135	9	35	mg/kg	08.07.17 15:10	х
o-Xylene	0.00285	0.101	0.0606	57	0.0553	52	71-133	9	35	mg/kg	08.07.17 15:10	х
Surrogate				1S Rec	MS Flag	MSD %Rec			mits	Units	Analysis Date	
1,4-Difluorobenzene			9	97		106		80	-120	9/a	08.07.17 15:10	
4-Bromofluorobenzene			1	05		114		80	-120	%	08.07.17 15:10	

	D 2 Day EMERGENCY Contract TAT Lavel 3 (CLP Forms) UST / R0 411 (0-23: +0.2 V)	Rext Day EMERGENCY     To ay TAT     Lavel III Std QC+ Forms     TRRP Lavel IV     CF:(0-6: -0.2°C)		TU Turnareund Time ( Bushness days) Data Defiverable Information Notes:		-	1-5	771 - 4	4 77 - 3 1 1 1 1 1 1 X X X 1 1 1 1	3 TI - 2' 2 1 1 1 1 1 XXX 1 1 1	7/25/n 9:30M	Pred ID / Point of Collection Fred ID / Point of Collection Sample Time Maintox bottles HCI NaioH/Zn Addition TPH // EXT BTEX Chiloride		Project Centact: Aaton Lieb PO Number:	Email: Phone No: 575-742-1663 Invoice To: COG Operating LLC Biteb Rconcho.com maskel/geoncho.com Attr: Robert Mcneil 600 W Illinois	Company Address:     PECDS Avenue       2407 PECDS Avenue     Artistia NM SU210       Macho Alacho State	COG Operating LLC Matho Nacho State #1H	Project Name/Numb	Client / Reporting Information Project Information	Analytical Information	Uditas (271-2022-0300)         Inicianity, rease (227-00000)         Kence Quole 8         Kence Jeb 8         55905	(0) 068	LABORATORIES CHAIN OF CUSIOUX
		°C)	IR ID:R-8									Field Comments	A = Air		SW = Sunace warm SL = Sunace warm OW =Ocean/Sea Water	DW = Drinking Water P = Product	GW =Ground Water	W = Water		Matrix Codes	E4043		

b custody Seel # Preserved where applicable on the Cooler Temp. Thermo. Corr. Factor B custody Seel # Preserved where applicable on the Cooler Temp. Thermo. Corr. Factor Notice. Notice. Signaure of this document and manpaishment of samples constituties a valid parchase order from client company to Xerco. Its antibates and subcontractors. It assigns standard turns and consistions of serves. Xerco will be liable only to list to of samples and shall not analyzed will be involved in Socie and the list of samples and shall not analyzed will be involved in Socie and the list of samples and shall not analyzed will be involved in Socie at Socie at the list of samples and shall not analyzed will be involved at Socie at the listing of \$15 will be applied to each project. Xenco's itability will be instead to the cost of samples. Any samples received by Xenco that not analyzed will be involved at Socie at the learns and the learns and constant and the samples and shall not analyzed will be involved at Socie at the learns and the samples are shall be and the cost of samples. Any samples received by Xenco that not analyzed will be involved at Socie at the learns and constant and analyzed by Xenco that not analyzed will be involved at Socie at the learns and the samples are shall be and the samples are shall be analyzed and the involved at Socie at the learns and the samples are shall be analyzed and the involved at Socie at the learns are shall be analyzed and the involved at Socie at the learns and the samples are shall be analyzed at the learns are shall be analyzed at the involved at the samples are shall be analyzed a

CHAIN OF CUSTODY

Setting the Standard since 1990 Stafford, Texas (281-240-4200) Dailas Texas (214-902-0300)	San Antonio, T Midland, Texas	CHAIN OF CUSTODY Page & of 3 San Antonio, Texas (210-509-3334) Midland, Texas (432-704-5251)	CUSTODY	/ Phoenix, Arizona (480-355-0900)
(Dalfas Texas (214-902-0300)	Midland, Texas	(432-704-6251) WWW.AMISO.COM	×	Xenco Quote B
Pliant / Busidian Information		Phan Fauré Endonemo aŭtore		Analytical Information
Corporty Name / Breach: COG Operating LLC	Project Name/Number: Macho Nacho State #1H	tale #1H		
Company Address: 2407 PECOS Avenue Ariesia NM 88210	Project Location:			
Email: Phone No: 675-74 Bitb@concho.com rhaskel@concho.com	s-1553 Invoice To:	COG Operating LLC Attn: Robert Mcneill		
Project Contact: Aaron Lieb	Brit Manufact	Midland TX 79701		ED
Samplers's Name-Aaron Lieb	a Contractioners			ND
	Collection	Num	Number of preserved bottles	
No Field ID / Point of Collection	Sample Depth Date Te	Time Matter Bot HCI NBOHZA	HNO3 H2504 NaOH NaHSO4 MEOH NONE	TPH/E BTEX Chiorid
1 Ta- SurFAce	N LUSSIL	5		XXX
2 72-1				XXX
3 - LO - LO	4			XXX
* Ta- 3'	3			XXX
5 T2 - 51	רי די			XXX
B TJ- SURFACE	101 Jav2	10:ISAM		XXX
7 73-1	-			XXXX
8 2 1 2	4	1		XXX
aH3 - 3'	3			XXX
10 73- 4"	4 1 1	1 1		XXX
Turnaround Time (Business days)		Deta Deliverable Information	mattern	
Same Day TAT		Level It Std QC	Level IV (Full Data Pkg /raw data)	raw data)
Heat Day EMERGENCY	4	Level III Std QC+ Forms	TRRP Lavel IV	
2 Day EMERGENCY Contract TAT	#TAT	Level 3 (CLP Forms)	UST / RG -411	
3 Day EMERGENCY		TRRP Checklist		
TAT Starts Pay received by Lab, if received by 5:00 pm	1 by 5:00 pm			FED-EX / UPS: Triviling #
	OCUMENTED	LOW EACH TIME BAMPLES CHANGE	POSSESSION, WICLUOING COURIE	-
Railinguised by Eximplex	Date Time: Res	raid By the 112	17 Rollinguituged By:	Date Time: 1-K-17 3:05
Reskiquished by:		celved By:	Relinquished By:	Date Time:
Relinquished by:	Date Time: Rec	Received By:	Custody Seal #	Preserved where spplicable

Relinquished by: Date Time: Received By: Custody Seal # Preserved where applicable On ice Cooler Temp. Thermo. Corr. Factor	2 Antoenhammen sår	5. T	4	TAT Starts Div received by	3 Day EMERGENCY	2 Day EMERGENCY	Next Day EMERGENCY	Same Day TAT	Turnaround Time   Business days	10 15-4	1	1	1	B 75- SuptAce	1	4 74 - 3	2 74 1	2 44- 1	1 TH- SURFACC		No. Field ID / Point of Callection	Samplers's Name-Aaron Lieb		Email: Phone No: 515-74 Antoholoconcho.com dneel2@eoneho.com rhasAst@concho.com antoholoconcho.com liah	2407 PECOS Avenue Artesia NM 84210	Company Address:	COG Operating LLC	<b>Client / Reporting Information</b>			Dallas Texas (214-902-0300)	Setting are standerd since test Stafford,Texas (281-240-4200)	XENCO
0			SAMPLE CUSTODY MUST BE DOCUMENTED RELOW EACH TIME SAMPLES CHANGE POISSESSION, MICLUDING COUNTER DELIVERY	Lab, if received by 5:00 pm		Contract TAT	7 Day TAT	5 Day TAT																Phone No: 575-748-1553 ro.com rhaskell@conche.com	10								Ű
Date Time:	Date (Inne:	L1-1-8	AUST BE DO	pm						F	2	N	-	SURT	T	S	N	-	SURF 7	Depth			2		E	2	Z P				z	60	
		Link	CUMENTED						-	-				1		-		-	125	Date		Collection	PO Number:	Invoice To:	Macho Nacho State	roject Locati	Project Name/Number: Macho Nacho State #1H				Midland, Texas (432-704-5251)	San Antonio, Texas (210-509-3334)	
Received By:	Received	Acid by	BELOW EA		INIT	Law	-	Luv	-	-			t	10:45m	-			E	10 SAM	Time			MIDIAND IX /9/UT	COG Operating LLC Attr: Robert Moneill 600 W. Illinois	State	OINC	Number: No State #1	Proje			xas (432-	o, Texas (	CH
By:	By:	butte	NON TIME &		TRRP Checkles	Lavel 3 (CLP Forms)	Lavel III Std QC+ Forms	Lavel II Std QC	Data	-			-	-	-	-	-	-	5	Matrix bo	_	-	INJA/ Y	rating LLC India			Ī	Project Information		Tank I	704-6251)	210-509-3	AIN
		8	NUMES CH		E	(Suus)	C+ Forms		Deliverable	-	-	-	-	-					-	bottles &	_	T	1					tion		WWW.Jenco.com		1334)	
		011-17	MHOR POS				п		Data Deliverable Information											Ace	OH/Zn etate	Number of								B			
Cuslody Seal #	Relinqu		SESSION, D				TRRP	_ Lavel P	3	-					-				F	2	\$04 OH	of preserv											HAIN OF CUSTODY
/ Seal #	ished By:	2 Acd Bul	ICLUDING C		1	UST / RG -411	TRRP Lavel IV	Level IV (Full Data Ptg /nw da	1 AL	-	-				-	-		-		-	H5:04	ud boitles	l										IOI
		12	OUNTRO					a Pkg /raw	1	X	×	×	X	X	X	×	X	×	X	+	ME PH/ EX	TEN		)	-		-	_	15	Xenco Q	1	Pho	YC
Presen		200						r data)	1	×	X	X	X	XXX	XV	XX	XX	X	XX	-	TEX hloride		_			_	_			o Quala 3		enix, Ariz	
red where	ate Time:	Date Time:								×		×	×								nionae		-	-					Analytica			ona (480-	
Preserved where applicable		306		FED-EX / UPS: Tracking #		5	2	ç	Te	-						-			-		-		-	-	_		-		Analytical Information			Phoentx, Artzona (480-355-0900)	
	- And	2 Y		JPS: Track		Currected Temp: 29	(6-23	CF:(0-6: -0.2°C)	Temp: J	-	-	-		1	_					-	_	-	-	_		_	_		š	Xenco Job #			
	ved By:	and		ing #		Temp	(6-23: +0.2°C)	0.2°C	-													_	_	-	-		_	-		R			
Caol		An				¢.	0			-		-			-		-		-			-				-	_			D			
Cooler Temp.		104				0		10.H-8	זכו											Fie										14			
Thermo		0	1					η-α	2	1										Field Comments		WW=W	O = OI	SW = Surfaci SL = Sludge OW =Ocean/	DW = Drinkie P = Product	GW =Gn	W = Water		Matrix Codes	4			
Thermo, Corr. Factor		é.							- Aller											ents		aste Wale	9	SW = Surface water SL = Sludge OW =Ocean/Sea Water	DW = Drinking Water P = Product	GW =Ground Water	W = Water S = Soll/Sed/Solid		Codes				
clor		T	201												age							Ĩ		Final	_		-						



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



Client: COG Operating LLC	Acceptable Temperature Range: 0 - 6 degC
Date/ Time Received: 08/01/2017 03:06:00 PM	Air and Metal samples Acceptable Range: Ambient
Work Order #: 559042	Temperature Measuring device used : R8
Sample Rece	Pipt Checklist Comments
#1 *Temperature of cooler(s)?	2.9
#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 completed by: Jessica Kramer

Date: 08/02/2017

Checklist reviewed by: Mms Hoah Kelsey Brooks

Date: 08/02/2017

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Macho Nacho State

Project Location:

# Certificate of Analysis Summary 559040 COG Operating LLC, Artesia, NM Project Name: Macho Nacho State #1H



Date Received in Lab: Tue Aug-01-17 03:06 pm Report Date: 09-AUG-17 Project Manager: Kelsey Brooks

	Lab Id:	559040-001	559040-002	559040-003	559040-004	559040-005	559040-006
Analysis Reanested	Field Id:	North- Surf	North- 1*	South-Surf	South- 1*	West-Surf	West- 1'
a access of the target of the second access	Depth:		I- N		1- A		1- A
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Jul-25-17 11:00	Jul-25-17 11:00	Jul-25-17 11:15	Jul-25-17 11:15	Jut-25-17 11:30	Jut-25-17 11:35
BTEX by EPA 8021B	Extracted:	Aug-03-17 07:30	Aug-04-17 15:45	Aug-03-17 07:30	Aug-03-17 07:30	Aug-04-17 15:45	Aug-03-17 07:30
	Analyzed:	Aug-03-17 14:32	Aug-05-17 02:20	Aug-03-17 15:08	Aug-03-17 15:27	Aug-05-17 02:39	Aug-03-17 12:35
	Units/RL:	mg/kg RL					
Benzene		<0.00202 0.00202	<0.00360 0.00360	<0.00200 0.00200	<0.00202 0.00202	<0.00351 0.00351	<0.00199 0.00199
Tolucne		<0.00202 0.00202	<0.00360 0.00360	0.00247 0.00200	<0.00202 0.00202	15£00.0 15£00.0>	<0.00199 0.00199
Ethylbenzene		<0.00202 0.00202	<0.00360 0 00360	<0.00200 0.00200	<0.00202 0.00202	<0.00351 0.00351	66100 0 66100.0>
m,p-Xylencs		<0.00403 0.00403	<0.00719 0.00719	<0.00400 0.00400	<0:00404 0.00404	<0.00702 0.00702	<0.00398 0.00398
o-Xylene		<0.00202 0.00202	<0.00360 0.00360	0.00200 0.00200	<0.00202 0.00202	<0.00351 0.00351	<0.00199 0.00199
Total Xylcncs		<0.00202 0.00202	<0.00360 0.00360	0.00200 0.00200	<0.00202 0.00202	<0.00351 0.00351	66100.0 66100.0>
Total BTEX		<0.00202 0.00202	<0.00360 0.00360	0.00447 0.00200	<0.00202 0.00202	<0.00351 0.00351	<0.00199
Inorganic Anions by EPA 300/300.1	Extracted:	Aug-04-17 12:00					
	Analyzed:	Aug-04-17 13:09	Aug-04-17 13:32	Aug-04-17 13:40	Aug-04-17 13:47	Aug-04-17 13:55	Aug-04-17 14:18
	Units/RL:	mg/kg RL					
Chloride	-	<4.97 4.97	<4.96 4.96	<4.95 4.95	<4.96 4.96	<4.99 4.99	<4.98 4.98
TPH By SW8015 Mod	Extracted:	Aug-03-17 10:00					
	Analyzed:	Aug-03-17 17:13	Aug-03-17 17:33	Aug-03-17 18:33	Aug-03-17 18:53	Aug-03-17 19:14	Aug-03-17 19:35
	Units/RL:	mg/kg RL					
Gasoline Runge Hydrocarbons (GRO)		<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Dicscl Range Organics (DRO)		<14.9 14.9	<15.0 15.0	21.5 15.0	<15.0 15.0	<15.0 15.0	20.7 15.0
Oil Range Hydrocarbans (ORO)		<14.9 14.9	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<14.9 14.9	Sel 5.0 15.0	21.5 15.0	<15,0 15,0	<15.0 15.0	20.7 15.0

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

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Mund Moa

Kelsey Brooks Project Manager



Macho Nacho State

**Project Location:** 

# Certificate of Analysis Summary 559040 COG Operating LLC, Artesia, NM Project Name: Macho Nacho State #1H



Date Received in Lab: Tuc Aug-01-17 03:06 pm Report Date: 09-AUG-17 Project Manager: Kelsey Brooks

	Lab Id:	559040-007	559040-008	
A walneis Donnochad	Field Id:	East- Surf	East- 1*	
naicanhari ciclimite	Depth:		1- A	
	Matrix:	SOIL	SOIL	
	Sampled:	Jul-25-17 11 45	Jul-25-17 11:45	
BTEX by EPA 8021B	Extracted:	Aug-03-17 07:30	Aug-03-17 07:30	
	Analyzed:	Aug-03-17 16:03	Aug-03-17 17:27	
	Units/RL:	mg/kg RL	mg/kg RL	
Benzene		86100.0 86100.0>	<0.00200 0.00200	
Tolucne		<0.00198 0.00198	<0.00200 0.00200	
Ethylbenzene		<0.00198 0.00198	<0.00200 0.00200	
m,p-Xylencs		96E00.0 96E00.0>	<0.00399 0.00399	
o-Xylene		<0.00198 0.00198	<0.00200 0.00200	
Total Xylcnes		86100.0 86100.0>	<0.00200 0.00200	
Total BTEX		86100'0 86100'0>	<0.00200 0.00200	
Inorganic Anions by EPA 300/300.1	Extracted:	Aug-04-17 12:00	Aug-04-17 12:00	
	Analyzed:	Aug-04-17 14:26	Aug-04-17 14:33	
	Units/RL:	mg/kg RL	mg/kg RL	
Chloride		14.3 4.98	<4.91 4.91	
TPH By SW8015 Mod	Extracted:	Aug-03-17 10:00	Aug-03-17 10:00	
	Analyzed:	Aug-03-17 19:55	Aug-03-17 20:15	
	Units/RL:	mg/kg RL	mg/kg RL	
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	
Diesel Range Organics (DRO)	-	<15.0 15.0	<15.0 15.0	
Oil Range Hydrocarbons (ORO)		<15.0 15.0	<15.0 15.0	
Total TPH		<15.0 15.0	\$15.0 15.0	

This analytical report, and the entire data package it represents, has been made for your caclusive and confidential use. The interpretations and results capressed throughout this analytical report represent the best judgment of XENCD 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 invoteed for this work order unless otherwise agreed to in writing.

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Murs Moah

Kelsey Brooks Project Manager

# Analytical Report 559040

for COG Operating LLC

Project Manager: Aaron Lieb Macho Nacho State #1H

### 09-AUG-17

Collected By: Client





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

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

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295) Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400) Xenco-San Antonio: Texas (T104704534) Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757) Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

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09-AUG-17

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

Reference: XENCO Report No(s): 559040 Macho Nacho State #1H Project Address: Macho Nacho State

### 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) 559040. 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. 559040 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,

Kusko

Kelsey Brooks 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

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### Sample Id

North- Surf
North-1'
South-Surf
South- 1'
West-Surf
West-1'
East- Surf
East-1'

# Sample Cross Reference 559040



### COG Operating LLC, Artesia, NM

Macho Nacho State #1H

Matrix	<b>Date Collected</b>	Sample Depth	Lab Sample Id
S	07-25-17 11:00		559040-001
S	07-25-17 11:00	1 ft	559040-002
S	07-25-17 11:15		559040-003
S	07-25-17 11:15	I ft	559040-004
S	07-25-17 11:30		559040-005
S	07-25-17 11:35	1 ft	559040-006
S	07-25-17 11:45		559040-007
S	07-25-17 11:45	1 ft	559040-008



### CASE NARRATIVE

Client Name: COG Operating LLC Project Name: Macho Nacho State #1H

Project ID: Work Order Number(s): 559040 Report Date: 09-AUG-17 Date Received: 08/01/2017

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments: Batch: LBA-3024005 BTEX by EPA 8021B Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3024179 BTEX by EPA 8021B Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Final 1,000





### COG Operating LLC, Artesia, NM

Macho Nacho State #1H

Sample Id: North-Surf Lab Sample Id: 559040-001		Matrix: Date Collec	Soil cted: 07.25.17 11.00		Date Received:08.	01.17 15.0	6
Analytical Method: Inorganic An Tech: MGO Analyst: MGO Seq Number: 3024184	nions by EPA 300/300.1	Date Prep:	08.04.17 12.00		Prep Method: E30 % Moisture: Basis: We	00P t Weight	
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.97	4.97	mg/kg	08.04.17 13.09	U	1
Analytical Method: TPH By SW	8015 Mod				Pren Method: TX	10050	

Tech: ARM	15 100					6 Moisture:	CIOOJP	
Analyst: ARM		Date Pre	p: 08.03	17 10.00			et Weight	
Seq Number: 3024053			•				Ŭ	
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	< 4.9	14.9		mg/kg	08.03.17 17.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9		mg/kg	08.03.17 17.13	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9		mg/kg	08.03.17 17.13	U	1
Total TPH	PHC635	<14.9	14.9		mg/kg	08.03.17 17.13	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		LI 1-85-3	127	%	70-135	08.03.17 17.13		
o-Terphenyl		84-15-1	92	%	70-135	08.03.17 17.13		





# COG Operating LLC, Artesia, NM

Macho Nacho State #1H

Sample Id: North-Surf Lab Sample Id: 559040-001		Matrix: Date Co	Soil llected: 07.25	.17 11.00	1	Date Received:08.	01,17 15,0	б
Analytical Method: BTEX by El Tech: ALJ Analyst: ALJ Seq Number: 3024005	PA 8021B	Date Pro	p: 08.03	.17 07.30	6	Prep Method: SW % Moisture: Basis: We	5030B t Weight	
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202		mg/kg	08.03.17 14.32	U	1
Tolucne	108-88-3	< 0.00202	0,00202		mg/kg	08.03.17 14.32	U	I.
Ethylbenzene	100-41-4	< 0.00202	0.00202		mg/kg	08.03.17 14.32	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403		mg/kg	08.03.17 14.32	U	1
o-Xylene	95-47-6	< 0.00202	0,00202		mg/kg	08.03.17 14.32	U	1
Total Xylenes	1330-20-7	< 0.00202	0.00202		mg/kg	08.03.17 14.32	U	1
Total BTEX		< 0.00202	0.00202		mg/kg	08.03.17 14.32	U	I.
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	5	540-36-3	99	%	80-120	08.03.17 14.32		
4-Bromofluorobenzene	4	160-00-4	92	%	80-120	08.03,17 14.32		





### COG Operating LLC, Artesia, NM

Macho Nacho State #1H

Sample Id: Lab Sample I	<b>North- 1'</b> d: 559040-002		Matrix: Date Coll	Soil lected: 07.25.17 11.00		Date Received:08. Sample Depth: 1 ft	510	6
Tech:	ethod: Inorganic Anions MGO	s by EPA 300/300,				Prep Method: E30 % Moisture:		
Analyst: Seq Number:	MGO 3024184		Date Prep	08.04.17 12.00		Basis: We	t Weight	
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dii
Chloride		16887-00-6	<4.96	4.96	mg/kg	08.04.17 13.32	U	I

Analytical Method: TPH By SW80 Tech: ARM Analyst: ARM Seq Number: 3024053	15 Mod	Date Pre	p: 08.03	.17 10.00	0	Prep Method: T Moisture: Basis: W	X1005P Vet Weight	
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	08.03.17 17.33	U	1
Diesel Range Organics (DRO)	CI0C28DRO	<15.0	15.0		mg/kg	08.03.17 17.33	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0		mg/kg	08.03.17 17,33	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	08.03.17 17.33	U	- I
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	e Flag	
1-Chlorooctane		111-85-3	128	%	70-135	08.03.17 17.33	3	
o-Terphenyl		84+15-1	93	%	70-135	08-03.17 17.33	3	





### COG Operating LLC, Artesia, NM

Macho Nacho State #1H

Sample Id: North- 1' Lab Sample Id: 559040-002		Matrix: Date Coll	Soil ected: 07.25.17 11.00	5	Date Received:08 Sample Depth: 1 f		16
Analytical Method: BTEX b Tech: ALJ Analyst: ALJ Seq Number: 3024179	by EPA 8021B	Date Prep	: 08.04.17 15.45		Prep Method: SW % Moisture: Basis: We	V5030B et Weight	
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00360	0.00360	mg/kg	08,05.17 02.20	U	1
Тојисле	108-88-3	< 0.00360	0.00360	mg/kg	08.05.17 02.20	U	1
Ethylbenzene	100-41-4	< 0.00360	0.00360	mg/kg	08.05.17 02.20	U	1
m,p-Xylenes	179601-23-1	< 0.00719	0.00719	mg/kg	08,05.17 02.20	U	l
o-Xylene	95-47-6	< 0.00360	0.00360	mg/kg	08.05.17 02.20	U	t
Total Xylenes	1330-20-7	<0.00360	0.00360	mg/kg	08.05 17 02.20	U	1
Total BTEX		<0.00360	0.00360	mø/kø	08.05.17.02.20	11	1

UNIDICA	<0.00300	0.00300		mg/ĸg	08.05.17 02.20	U	
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Fing	
4-Bromofluorobenzene	460-00-4	82	%	80-120	08.05.17 02.20		
1.4-Difluorobenzene	540-36-3	89	%	80-120	08.05.17 02.20		





### COG Operating LLC, Artesia, NM

Macho Nacho State #1H

Sample Id: South-Surf Lab Sample Id: 559040-003		Matrix: Date Colle	Soil cted: 07.25.17 11.15		Date Received:	08.01.17 15.	06
Analytical Method: Inorgan Tech: MGO Analyst: MGO Seq Number: 3024184	ic Anions by EPA 300/300.	l Date Prep:	08.04.17 12.00		Prep Method: % Moisture: Basis:	E300P Wet Weight	
Parameter	Cas Number	Result	RL	Units	Analysis Dat	e Flag	Dil
Chloride	16887-00-6	<4.95	4.95	mg/kg	08.04.17 13.4	0 U	1

Analytical Method: TPH By SW80	15 Mod				I	Prep Method: TX	(1005P	
Tech: ARM					a	6 Moisture:		
Analyst: ARM		Date Pre	p: 08.03	.17 10.00	E	Basis: W	et Weight	
Seq Number: 3024053							-	
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	08.03.17 18.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	21.5	15.0		mg/kg	08.03.17 18.33		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0		mg/kg	08.03.17 18.33	U	1
Total TPH	PHC635	21.5	15.0		mg/kg	08.03.17 18.33		L
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	128	9/0	70-135	08.03.17 18.33		
o-Terphenyl		84-15-1	93	%	70-135	08.03.17 18.33		





### COG Operating LLC, Artesia, NM

Macho Nacho State #1H

Sample Id: South-Surf Lab Sample Id: 559040-003		Matrix: Date Co	Soil llectcd: 07,25	.17 11.15	I	Date Received:08.0	01.17 15.0	6
Analytical Method: BTEX by EPA Tech: ALJ	A 8021B					Prep Method: SW 6 Moisture:	5030B	
Analyst: ALJ Seq Number: 3024005		Date Pre	p: 08.03	17 07.30	E	Basis: We	t Weight	
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200		mg/kg	08.03.17 15.08	U	1
Toluene	108-88-3	0.00247	0.00200		mg/kg	08.03.17 15.08		1
Ethylbenzene	100-41-4	<0.00200	0.00200		mg/kg	08.03.17 15.08	U	1
m.p-Xylenes	179601-23-1	<0.00400	0.00400		mg/kg	08.03.17 15.08	U	L
o-Xylene	95-47-6	0.00200	0.00200		mg/kg	08.03.17 15.08		1
Total Xylenes	1330-20-7	0.00200	0.00200		mg/kg	08.03.17 15.08		1
Total BTEX		0.00447	0.00200		mg/kg	08.03.17 15.08		1
Surrogate		Cas Number	*• Recovery	Units	Limits	Analysis Date	Flag	
I_4-Difluorobenzene		540-36-3	97	%	80-120	08.03.17 15.08		
4-Bromofluorobenzene		460-00-4	108	%	80-120	08.03.17 15.08		



Final 1,000





# COG Operating LLC, Artesia, NM

Macho Nacho State #1H

Sample Id: Lab Sample I	<b>South- 1'</b> d: 559040-004		Matrix: Date Colle	Soil cted: 07.25.17 11.15		Date Received: Sample Depth: 1		16
Analytical Me Tech:	ethod: Inorganic Anion: MGO	s by EPA 300/300.	1			Prep Method: E % Moisture:	E300P	
Analyst: Seq Number:	MGO 3024184		Date Prep:	08.04.17 12.00		Basis: \	Vet Weight	
Parameter		Cas Number	Result	RL	Units	Analysis Date	e Flag	Dil
Chloride		16887-00-6	<4.96	4.96	mg/kg	08.04.17 13.47	7 U	1

Analytical Method:TPH By SW80Tech:ARMAnalyst:ARMSeq Number:3024053	15 Mod	Date Pro	p: 08.03	.17 10.00	9	Prep Method: 7 % Moisture: Basis: N	TX1005P Wet Weight	
Parameter	Cas Number	Result	RL		Units	Analysis Dat	e Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	08:03.17 18.5	3 U	t
Diesel Range Organics (DRO)	CI0C28DRO	<15.0	15.0		mg/kg	08.03.17 18.5	3 U	t
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0		mg/kg	08.03.17 18.53	3 U	1
Fotal TPH	PHC635	<15.0	15.0		mg/kg	08.03.17 18.5	3 U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Dat	le Flag	
1-Chlorooctane		111-85-3	126	%	70-135	08.03.17 18.5	3	
o-Terphenyl		84-15-1	92	%	70-135	08.03.17 18.5	3	





### COG Operating LLC, Artesia, NM

Macho Nacho State #1H

Sample Id: South-1 Lab Sample Id: 559040-(		Matrix: Date Col	Soil lected: 07.25.17 11.15		Date Received:08. Sample Depth: 1 ft		16
Analytical Method: BTE Tech: ALJ	EX by EPA 8021B				Prep Method: SW % Moisture:	5030B	
Analyst: ALJ		Date Pre	p; 08.03.17 07.30		Basis: We	t Weight	
Seq Number: 3024005						0	
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	08.03.17 15.27	U	1
Tolucne	108-88-3	< 0.00202	0.00202	mg/kg	08.03.17 15.27	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	08.03.17 15.27	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	08.03.17 15.27	U	1
o-Xylene	95-47-6	< 0.00202	0.00202	mg/kg	08.03.17 15.27	U	E
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	08.03.17 15.27	U	Ĺ
Total BTEX		< 0.00202	0.00202	mg/kg	08.03.17 15.27	U	1

sis Date Fla	ag
7 15.27	
7 15.27	
1	vsis Date Fla 17 15.27 17 15.27

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### COG Operating LLC, Artesia, NM

Macho Nacho State #1H

Sample Id: West-Surf Lab Sample Id: 559040-005		Matrix: Date Collec	Soil cted: 07.25.17 11.30		Date Received:08	01.17 15.0	6
Analytical Method: Inorganic Anio Tech: MGO Analyst: MGO	ns by EPA 300/300.1		08.04.17 12.00		Prep Method: E3 % Moisture: Basis: We	00P et Weight	
Seq Number: 3024184		Date Prep:	00.04.17 12.00		D4515, W	a weight	
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.99	4.99	mg/kg	08.04.17 13.55	U	1
Analytical Method: TPH By SW80	15 Mod				Prep Method: TX	1005P	
Tech: ARM					% Moisture:		
Analyst: ARM		Date Prep:	08.03.17 10.00		Basis: We	t Weight	
Seq Number: 3024053		·				-	
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.03.17 19.14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.03.17 19.14	U	L
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.03.17 19.14	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.03.17 19.14	U	1

					00 00 11 19 11	0	
Surrogate	Cas Number	%	Units	Limits	A delusia Data	E1	
Surrogate	Cas Number	Recovery	Units	L/Imits	Analysis Date	Flag	
1-Chlorooctane	11-85-3	127	%	70-135	08 03 17 19 14		
o-Terphenyl	84-15-1	92	%	70-135	08.03.17 19.14		



Final 1:000





### COG Operating LLC, Artesia, NM

Macho Nacho State #1H

Sample Id: West-Surf Lab Sample Id: 559040-005		Matrix: Date Co	Soil llected: 07.25	.17 11.30	I	Date Received 08.	01,17 15.0	6
Analytical Method: BTEX by EPA Tech: ALJ Analyst: ALJ Seq Number: 3024179	8021B	Date Pre	p: 08.04	.17 15,45	C	Prep Method: SW % Moisture: Basis: We	75030B t Weight	
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00351	0.00351		mg/kg	08.05.17 02.39	U	1
Toluene	108-88-3	<0.00351	0.00351		mg/kg	08.05.17 02.39	U	1
Ethylbenzene	100-41-4	< 0.00351	0.00351		mg/kg	08.05.17 02.39	U	- I
m,p-Xylenes	179601-23-1	< 0.00702	0.00702		mg/kg	08.05.17 02.39	U	t
o-Xylene	95-47-6	< 0.00351	0.00351		mg/kg	08.05,17 02.39	U	L
Total Xylenes	1330-20-7	<0.00351	0.00351		mg/kg	08.05.17 02.39	υ	L
Total BTEX		< 0.00351	0.00351		mg/kg	08.05.17 02.39	U	1
Surrogate 4-Bromofluorobenzene		<b>Cas Number</b> 460-00-4	% Recovery 101	Units %	Limits 80-120	Analysis Date 08.05.17 02.39	Flag	
1,4-Difluorobenzene		540-36-3	98	9/0	80-120	08.05.17 02.39		

Final 1,000





### COG Operating LLC, Artesia, NM

Macho Nacho State #1H

Chloride		16887-00-6	<4.98	4.98	mg/kg	08.04.17 14	18 U	1
Parameter		Cas Number	Result	RL	Units	Analysis Da	ite Flag	Dil
Seq Number: 3	1024184							
Analyst: N	MGO		Date Prep	08.04.17 12.00		Basis:	Wet Weight	
Tech:	MGO					% Moisture:		
Analytical Meth	od: Inorganic Anions	by EPA 300/300.1				Prep Method:	E300P	
Lab Sample Id:	559040-006		Date Coll	ected: 07.25.17 11.35		Sample Depth	:1 ft	
Sample Id:	West-1'		Matrix:	Soil		Date Received	1:08.01.17 15.0	06

Analytical Method: TPH By SW80	15 Mod				I	Prep Method: T	K1005P	
Tech: ARM					e,	% Moisture:		
Analyst: ARM		Date Pre	p: 08.03	.17 10.00	I	Basis: W	et Weight	
Seq Number: 3024053			-					
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<[5.0	15.0		mg/kg	08.03.17 19.35	U	
Diesel Range Organics (DRO)	CI0C28DRO	20.7	15.0		mg/kg	08.03.17 19.35		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0		mg/kg	08.03.17 19.35	U	1
Total TPH	PHC635	20.7	15.0		mg/kg	08.03.17 19.35		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
I-Chlorooctane		111-85-3	126	%	70-135	08.03.17 19.35		
o-Terphenyl		84-15-1	100	%	70-135	08.03.17 19.35		

Final 1,000





L

# COG Operating LLC, Artesia, NM

Macho Nacho State #1H

Sample Id: West- 1'		Matrix:	Soil		Date Received:08.0	01.17 15.0	6
Lab Sample Id: 559040-006		Date Col	lected: 07.25,17 11,35		Sample Depth: 1 ft		
Analytical Method: BTEX by	/ EPA 8021B				Prep Method: SW	5030B	
Tech: ALJ					% Moisture:		
Analyst: ALJ		Date Prep	08.03.17 07.30		Basis: We	t Weight	
Seq Number: 3024005							
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
the second se							
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.03.17 12.35	U	1
Benzene Toluene	71-43-2 108-88-3	<0.00199 <0.00199	0.00199 0.00199	mg/kg mg/kg	08.03.17 12.35 08.03.17 12.35	U U	1
						-	]   
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.03.17 12.35	U	1       
Toluene Ethylbenzene	108-88-3 100-41-4	<0.00199 <0.00199	0.00199 0.00199	mg/kg mg/kg	08.03.17 12.35 08.03.17 12.35	U U	1 1 1 1

*							
Total BTEX	<0.00	0.00199		mg/kg	08.03,17 12.35	U	
Surrogate	Cas Num	% ber Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	103	%	80-120	08.03.17 12.35		
1,4-Difluorobenzene	540-36-3	110	%	80-120	08.03.17 12.35		

Page 18 of 28



o-Terphenyl

# Certificate of Analytical Results 559040



### COG Operating LLC, Artesia, NM

Macho Nacho State #1H

%

84

Sample Id: East-Surf Lab Sample Id: 559040-007		Matrix: Date Colle	Soil ected: 07.25	5.17 11.45	Date Received:08.01.17 15.0				
Analytical Method: Inorganic Anio	ons by EPA 300/300.	1			1	Prep Method: E3	00P		
Tech: MGO						% Moisture:			
Analyst: MGO		Date Prep	08.04	.17 12.00	-		et Weight		
Seq Number: 3024184		Date i tep	0000	111 12:00	•	26313. TT	or weight		
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil	
Chloride	16887-00-6	14.3	4.98		mg/kg	08.04.17 14.26		1	
Analytical Method: TPH By SW80	15 Mod					Prep Method: TX	1005P		
Analytical Method: TPH By SW80 Tech: ARM Analyst: ARM Seq Number: 3024053	15 Mod	Date Prep	08.03	.17 10.00	9	% Moisture:	1005P et Weight		
Tech: ARM Analyst: ARM Seq Number: 3024053	15 Mod Cas Number	Date Prep. Result	08.03 RL	.17 10.00	9	% Moisture:		Dil	
Tech: ARM Analyst: ARM Seq Number: 3024053 Parameter				.17 10.00	9 E	% Moisture: Basis: We	t Weight	Dil	
Tech: ARM Analyst: ARM Seq Number: 3024053 Parameter Gasoline Range Hydrocarbons (GRO)	Cas Number	Result	RL	.17 10.00	9 E Units	6 Moisture: Basis: We Analysis Date	t Weight		
Tech: ARM Analyst: ARM Seq Number: 3024053 Parameter Gasoline Range Hydrocarbons (GRO) Diesel Range Organics (DRO)	Cas Number PHC610	Result <15.0	<b>RL</b> 15.0	.17 10.00	g E Units mg/kg	6 Moisture: Basis: We Analysis Date 08.03.17 19.55	t Weight Flag U		
Tech: ARM Analyst: ARM Seq Number: 3024053 Parameter Gasoline Range Hydrocarbons (GRO) Diesel Range Organics (DRO) Dil Range Hydrocarbons (ORO)	Cas Number PHC610 C10C28DRO	Result <15.0 <15.0	<b>RL</b> 15.0 15.0	.17 10.00	y Units mg/kg mg/kg	Moisture: Basis: We Analysis Date 08.03.17 19.55 08.03.17 19.55	Flag U U		
Tech: ARM Analyst: ARM Seq Number: 3024053 Parameter Gasoline Range Hydrocarbons (GRO) Diesel Range Organics (DRO) Oil Range Hydrocarbons (ORO) Total TPH	Cas Number PHC610 C10C28DRO PHCG2835 PHC635	Result <15.0 <15.0 <15.0 <15.0	RL 15.0 15.0 15.0 15.0 *6		Units mg/kg mg/kg mg/kg mg/kg	Moisture: Basis: We Analysis Date 08.03.17 19.55 08.03.17 19.55 08.03.17 19.55 08.03.17 19.55	Flag U U U U U U	1 1 1	
Tech: ARM Analyst: ARM Seq Number: 3024053 Parameter Gasoline Range Hydrocarbons (GRO) Diesel Range Organics (DRO) Oil Range Hydrocarbons (ORO)	Cas Number PHC610 C10C28DRO PHCG2835 PHC635	Result <15.0 <15.0 <15.0 <15.0	RL 15.0 15.0 15.0	.17 10.00 	y Units mg/kg mg/kg mg/kg	Moisture: Basis: We Analysis Date 08.03.17 19.55 08.03.17 19.55 08.03.17 19.55	Flag U U U U	1 1 1	

84-15-1

Final 1:000

70-135 08.03.17 19.55





### COG Operating LLC, Artesia, NM

Macho Nacho State #1H

Sample Id: East- Surf Lab Sample Id: 559040-007		Matrix: Date Co	.17 11.45	Date Received:08.01.17 15.06						
Analytical Method: BTEX by EPA 8 Tech: ALJ Analyst: ALJ Seq Number: 3024005	3021B	Date Pre	p: 08.03	.17 07.30	1	Prep Method: SV % Moisture: Basis: W	V5030B et Weight			
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil		
Benzene	71-43-2	<0.00198	0.00198		mg/kg	08.03.17 16.03	U	1		
Toluene	108-88-3	<0.00198	0.00198		mg/kg	08.03.17 16.03	U	E		
Ethylbenzene	100-41-4	<0.00198	0.00198		mg/kg	08.03.17 16.03	U	L		
m.p-Xylenes	179601-23-1	<0.00396	0.00396		mg/kg	08.03.17 16.03	U	I		
o-Xylene	95-47-6	< 0.00198	0.00198		mg/kg	08,03,17 16,03	U	1		
Total Xylenes	1330-20-7	<0.00198	0.00198		mg/kg	08.03.17 16.03	U	1		
Total BTEX		<0.00198	0.00198		mg/kg	08.03.17 16.03	U	1		
Surrogate 1,4-Difluorobenzene		<b>Cas Number</b> 540-36-3	% Recovery 105	Units	Limits 80-120	Analysis Date 08.03.17 16.03	Flag			
4-Bromofluorobenzene		460-00-4	104	%	80-120	08.03.17 16.03				





# COG Operating LLC, Artesia, NM

Macho Nacho State #1H

Chloride		16887-00-6	<4.91	4.91	mg/kg	08.04-17 14.33	U	1
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Seq Number:	3024184							
Analyst:	MGO		Date Prep	08.04.17 12.00		Basis: We	t Weight	
Tech:	MGO					% Moisture:		
Analytical Me	ethod: Inorganic Anic	ons by EPA 300/300.	1			Prep Method: E30	00P	
Lab Sample I	d: 559040-008		Date Colle	ected: 07.25.17 11.45				
Sample Id:	East- 1'		Matrix:	Soil		Date Received 08.	01.17 15.0	6

Analytical Method: TPH By SW80 Tech: ARM Analyst: ARM Seq Number: 3024053	15 Mod	Date Pro	p: 08.03	.17 10.00	9	Prep Method: T. % Moisture: Basis: W	X1005P /et Weight	
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	08.03.17 20.15	U	- <u> </u>
Diesel Range Organics (DRO)	CI0C28DRO	<15.0	15.0		mg/kg	08.03.17 20.15	U	L
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0		mg/kg	08.03.17 20.15	U	I.
Total TPH	PHC635	<15.0	15.0		mg/kg	08.03.17 20.15	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	124	%	70-135	08.03.17 20.15		
o-Terphenyl		84-15-1	91	%	70-135	08.03.17 20.15		

Final 1,000



4-Bromofluorobenzene

# **Certificate of Analytical Results 559040**



# COG Operating LLC, Artesia, NM

98

%

80-120

08.03.17 17.27

Macho Nacho State #1H

Sample Id: Enst- 1' Lab Sample Id: 559040-008		Matrix: Date Co	Soil llected: 07.25.	17 11.45	Date Received:08.01.17 15.06 Sample Depth: 1 ft					
Analytical Method: BTEX by EP Tech: ALJ Analyst: ALJ Seq Number: 3024005	A 8021B	Date Pre	p: 08.03.	17 07.30	3	Prep Method: SW % Moisture: Basis: We	5030B t Weight			
Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil		
Benzene	71-43-2	<0.00200	0.00200		mg/kg	08.03.17 17.27	U	1		
Tolucne	108-88-3	< 0.00200	0.00200		mg/kg	08,03.17 17.27	U	1		
Ethylbenzene	100-41-4	<0.00200	0.00200		mg/kg	08.03.17 17.27	U	t		
m,p-Xylenes	179601-23-1	<0.00399	0.00399		mg/kg	08.03.17 17.27	U	L		
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	08.03.17 17.27	U	1		
Total Xylenes	1330-20-7	<0.00200	0.00200		mg/kg	08.03.17 17.27	U	1		
Total BTEX		<0.00200	0.00200		mg/kg	08.03.17 17.27	U	1		
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag			
I,4-Difluorobenzene		540-36-3	99	%	80-120	08.03.17 17.27				

460-00-4

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

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QC Summary 559040

# COG Operating LLC

Macho Nacho State #1H

Analytical Method:	Inorganic Anions b	y EPA 300	0/300.1					Prep Method: E300P				
Seq Number:	3024184		Matrix: Solid					Date Prep: 08.04.17				
MB Sample Id:	728776-1-BLK		LCS Sample Id: 728776-1-BKS					LCSD Sample Id: 728776-1-BSD				
Parameter Chloride	MB Result <5.00	Spike Amount 250	LCS Result 259	LCS %Rec 104	LCSD Result 257	LCSD %Rec 103	Limits 90-110	%RPD	RPÐ Limit 20	Units mg/kg	Analysis Date 08.04.17 12:54	Flag

Analytical Method:	Inorganic Anions b					Рг	ep Metho	od: E30	0P			
Seq Number:	3024184			Matrix:	Soil				Date Pr	ep: 08.0	4.17	
Parent Sample Id:	559040-001		MS Sar	nple Id:	559040-00	01 S		MSI	O Sample	Id: 559	040-001 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<4.97	249	256	103	261	105	90-110	2	20	mg/kg	08.04.17 13:17	

Analytical Method:	Inorganic Anions b	organic Anions by EPA 300/300.1								Prep Method: E300P			
Seq Number:	3024184	Soil				Date Pro	p: 08.0	4.17					
Parent Sample Id:	559041-003		MS Sar	nple Id;	559041-0	03 S		MSI	O Sample	Id: 5590	041-003 SD		
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag	
Chloride	6.09	250	268	105	265	104	90-110	I	20	mg/kg	08.04.17 15:04		

Analytical Method: Seq Number: MB Sample Id:	eq Number: 3024053 Matrix:						Dute Hep. Obto Hit						
Parameter		MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocart	ions (GRO)	<15.0	1000	1010	101	979	98	70-135	3	35	mg/kg	08.03.17 13.11	
Diesel Range Organics	(DRO)	<15.0	1000	1060	106	1040	104	70-135	2	35	mg/kg	08.03.17.13.11	
Surrogate		MB %Rec	MB Flag		CS Rec	LCS Flag	LCSI %Re			mits	Units	Analysis Date	
I-Chlorooctane		132		1	27		124		70	-135	%	08.03 17 13 11	
o-Terphenyl		97		9	97		96		70	-135	%	08.03;17-13;11	



QC Summary 559040

# COG Operating LLC

Macho Nacho State #1H

Analytical Method: Seq Number: Parent Sample Id:	<b>TPH By S</b> 3024053 558952-00		lod	MS Sai	Matrix: nple Id:	Soil 558952-0	05 S			ep Meth Date Pr O Sample	ep: 08.0	005P 3.17 952-005 SD	
Parameter		Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarb	ons (GRO)	<15.0	999	968	97	975	98	70-135	L	35	mg/kg	08.03.17 14:32	
Diesel Range Organics	(DRO)	16.2	999	1060	104	1080	107	70-135	2	35	mg/kg	08.03.17 14:32	
Surrogate				-	IS Rec	MS Flag	MSD %Re			mits	Units	Analysis Date	
1-Chlorooctane				1	27		128		70	-135	%	08.03.17 14:32	
o-Terphenyl				1	91		93		70	-135	%	08.03.17 14:32	

Analytical Method:	BTEX by EPA 802	IB						Pi	ep Meth	od: SW:	5030B	
Seq Number:	3024005		]	Matrix:	Solid				Date Pr	ep: 08.0	3,17	
MB Sample Id:	728728-1-BLK		LCS San	nple Id:	728728-1	BKS		LCS	D Sample	d: 728	728-1-BSD	
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	< 0.00202	0.101	0.0894	89	0.0888	88	70-130	1	35	mg/kg	08.03.17 10.38	
Tolucne	< 0.00202	0.101	0.0916	91	0.0924	91	70-130	1	35	mg/kg	08.03.17 10:38	
Ethylbenzene	< 0.00202	0,101	0.0964	95	0.0969	96	71-129	1	35	mg/kg	08.03.17 10:38	
m.p-Xylenes	< 0.00404	0.202	0.186	92	0.187	93	70-135	1	35	mg/kg	08.03.17 10:38	
o-Xylene	<0.00202	0.101	0.0945	94	0.0955	95	71-133	t	35	mg/kg	08.03.17 10:38	
Surrogate	MB %Rec	MB Flag			LCS Flag	LCSD %Rec			mits	Units	Analysis Date	
1,4-Difluorobenzene	001		10	08		114		80	-120	%	08.03.17 10:38	
4-Bromofluorobenzene	105		1	10		113		80	-120	%	08.03.17 10 38	

Analytical Method: Seq Number: MB Sample Id:	BTEX by EPA 802 3024179 728847-1-BLK	1B	LCS Sar	Matrix; nple Id;	Solid 728847-1	-BKS			rep Meth Date Pi D Sampl	rep: 08.0	5030B 44.17 847-1-BSD	
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0_00202	0.101	0.107	106	0.117	116	70-130	9	35	mg/kg	08.04.17 20:49	
Tolucne	<0 00202	0.101	0.109	108	0,119	118	70-130	9	35	mg/kg	08.04.17 20:49	
Ethylbenzene	<0.00202	0.101	0.110	109	0.122	121	71-129	10	35	mg/kg	08.04.17 20:49	
m,p-Xylenes	<0.00403	0.202	0.215	106	0.238	118	70-135	10	35	mg/kg	08.04.17 20:49	
o-Xylene	<0.00202	0.101	0.108	107	0.119	[18	71-133	10	35	mg/kg	08.04.17 20:49	
Surrogate	MB %Rec	MB Flag		CS Rec	LCS Flag	LCSE %Rec			mits	Units	Analysis Date	
1,4-Difluorobenzene	98		9	98		103		80	-120	%	08.04.17 20:49	
4-Bromofluorobenzene	96		1	01		107		80	-120	°/0	08.04 17 20:49	



QC Summary 559040

# COG Operating LLC

Macho Nacho State #1H

Analytical Method: Seq Number: Parent Sample Id:	BTEX by EPA 802 3024005 559040-006	1B		Matrix: nple Id:		06 S			rep Meth Date Pr D Sample	ep: 08.0	5030B 13.17 040-006 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	< 0.00201	0.101	0.0748	74	0.105	104	70-130	34	35	mg/kg	08.03.17 16:31	
Tolucne	< 0.00201	0.101	0.0750	74	0.0933	92	70-130	22	35	mg/kg	08.03 17 16 31	
Ethylbenzene	<0.00201	0.101	0.0816	81	0.0910	90	71-129	11	35	mg/kg	08.03 17 16 31	
m,p-Xylenes	< 0.00402	0.201	0.157	78	0.166	82	70-135	6	35	mg/kg	08.03.17 16:31	
o-Xylene	<0.00201	0.101	0.0846	84	0.0800	79	71-133	6	35	mg/kg	08.03.17 16.31	
Surrogate				tS Rec	MS Flag	MSD %Re			mits	Units	Analysis Date	
1,4-Difluorobenzene			1	03		101		80	-120	%	08.03.17 16:31	
4-Bromofluorobenzene			1	12		89		80	-120	%	08.03.17 16:31	

Analytical Method:	BTEX b	y EPA 802	18						P	rep Meth	od: SW:	5030B	
Seq Number:	3024179				Matrix:	Soil				Date Pr	ep: 08.0	4.17	
Parent Sample Id:	559258-0	001		MS Sar	nple Id:	559258-0	01 S		MS	D Sample	e Id: 559	258-001 SD	
Parameter		Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene		<0.00201	0.100	0.0851	85	0.101	101	70-130	17	35	mg/kg	08.04.17 21:26	
Toluene		<0.00201	0.100	0.0804	80	0.0965	97	70-130	18	35	mg/kg	08.04.17 21:26	
Ethylbenzene		<0.00201	0.100	0.0828	83	0.0975	98	71-129	16	35	mg/kg	08.04.17 21;26	
m,p-Xylenes		< 0.00402	0.201	0.161	80	0.188	94	70-135	15	35	mg/kg	08.04.17 21:26	
o-Xylene		< 0.00201	001.0	0.0849	85	0.0962	96	71-133	12	35	mg/kg	08.04.17 21:26	
Surrogate					tS Rec	MS Flag	MSD %Ret			imits	Units	Analysis Dote	
1,4-Difluorobenzene				1	07		103		80	-120	%	08.04.17 21:26	
4-Bromofluorobenzene				1	09		107		80	-120	°/a	08.04.17 21:26	

Setting the Standard since 1990		Page 🚽 Of	24 <u>1</u>		
Second the Standard and ever Statford, Texas (281-240-4200) Dallas Texas (214-902-0300)		San Antonio, Texas (210-509-3334) Midland Texas (417-704-6761)	Pho	Phoenix, Arizona (480-355-0900)	į
		LIEGO COUERT MANAK	Xenco Qu	Duote #	Xence Job 969040
Plant / Bassian Information				Analytical Information	Matrix Codes
Company Name / Branch: COG Operating LLC		Project Name/Number: Macho Nacho State #1H			W = Water S = Soll/Sed/Solk
Company Address: 2407 PECOS Avenue Artesia NAA 83210		Project Lecation:		_	GW =:Ground Water DW =: Drinking Water
Email: Phone No:	Phone No: 575-748-1553	Mache Rache State Invoice Te: COG Operating LLC			P = Product SW = Surface water
alleb@concho.com dreel2@concho.com rhas				_	SL = Sludge OW =Ocean/Sea Water
Project Contact: Aaron Lieb		Midland TX 79701	ED		Wi= Wipe
Samplers's Name-Aaron Lieb			IND		WW= Wasts Water
		Collection	Number of preserved bottles	8	AnAir
No. Field ID / Point of Collection	Sample	Date Time Matrix bottles El NaOH/Zn	Acereta HNO3 H2SO4 NaOH NaHSO4 MEOH MEOH TPH/ E	BTEX Chloride	Field Comments
1 North - Surface	-	11 5 46	-	XX	
1	11		XIIIII	XX	
3 South - SurFree	Super	11:15A 1	X	XX	
4 South - 1.	11	11:15 1400	XIIIIX	XX	
-	5,RF	11 4 4:11	X	XX	
west 1	1	11:35 Am 1 1	X	XX	
7 EAST - SURFAC	Supt	11:4544 1	X	XX	
- 1.	1.	11:45 mal 1		XX	
ũ					
10	-				
Turnaround Time ( Business days)		Data Deliverable Information	onnation		-
Same Day TAT S Day TAT	4	Level II Std QC	Level IV (Full Data Ptg /mw data)		
Next Day EMERGENCY		Level III Std QC+ Forms	TRRP Lavel IV		(6-23: ±0 2°C)
2 Day EMERGENCY	TAT	Lavel 3 (CLP Forms)	UST / RG -411	0	Corrected Temp: 2 Q
] 3 Day EMERGENCY		TRRP Checkligt			(
TAT Starts Day received by Lab, if received by 5:00 pm	by 5:00 pm				FED-EX / UPS: Tracking #
Relinquister by Sampler.	Date Time:	12 h fa	1-17 Relingensheed By:	Date Time: 306	1.1
Railoquidad by:	Data Time:	Received By:	Relinquist	Date Time:	Beddeved B):
Relinquished by:	Date Time:	Received By:	Custody Seel #	Preserved where applicable	le On the Cooler Temp. Thermo. Corr. Factor



### **XENCO Laboratories**

Prelogin/Nonconformance Report- Sample Log-In



Client: COG Operating LLC Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient Date/ Time Received: 08/01/2017 03:06:00 PM Temperature Measuring device used : R8 Work Order #: 559040 Sample Receipt Checklist Comments #1 \*Temperature of cooler(s)? 1.2 #2 \*Shipping container in good condition? Yes #3 \*Samples received on ice? Yes #4 \*Custody Seal present on shipping container/ cooler? N/A #5 \*Custody Seals intact on shipping container/ cooler? N/A #6 Custody Seals intact on sample bottles? 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)? #19 All samples received within hold time? #20 Subcontract of sample(s)? #21 VOC samples have zero headspace?

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

Analyst:

PH Device/Lot#:

Checklist completed by: Jessica Weamer

Date: 08/02/2017

Yes

Yes

N/A

N/A

Checklist reviewed by: Kelsev Brooks

Date: 08/02/2017