



P.O. Box 1708 • Artesia, NM 88211  
[www.hrlcomp.com](http://www.hrlcomp.com)

April 26, 2018

Oliva Yu  
 Oil conservation Division  
 District I  
 1625 N French Drive  
 Hobbs, NM 88240

State Land Office  
 Ryan Mann  
 District Resource Specialist  
 2827 N Dal Paso Suite 117  
 Hobbs, NM 88240

SUBJECT: FINAL CLOSURE REPORT FOR INCIDENT 1-RP-4695 Nacho Nacho State #001H

Ms. Yu:

On behalf of COG Operating, LLC, HRL Compliance Solutions, Inc (HRL) is pleased to submit the attached final closure report summarizing the findings and closure actions located on the Macho Nacho State #001H. The purpose of the report is to obtain approval from the New Mexico Oil Conservation Division (NMOCD) for the remediation and closure of the release that occurred on May 9, 2017. Table 1 below, summarizes information regarding the release.

**Table 1: Release Information and Site Ranking**

Name	Macho Nacho State #001H
Company	COG Operating, LLC
RP Number	1RP-4695
API Number	30-025-39882
Location	32.2384529, -103.6039429
Estimated Date of Release	5/9/2017
Date Reported to NMOCD	5/10/2017
Land Owner	State
Reported to	OCD
Source of Release	Flare
Released Material	Oil and Produced Water
Released Volume	8 bbls oil
Recovered Volume	4 bbls oil
Net Release Volume	4 bbl oil
Nearest Waterway	1.7 miles to Bell Lake
Depth to Groundwater	>100 feet bgs
Nearest Domestic Water Source	< 1 mile
NMOCD Ranking	0
Response Date	3/29/2018

**INNOVATIVE SOLUTIONS DELIVERED**



## 1.0 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. A work plan was submitted to the OCD and accepted by the OCD on February 20, 2018.

## 2.0 Site Ranking and Land Jurisdiction

The release site is located approximately 25.5 miles northwest of Jal, with an elevation of approximately 36361 feet above sea level. A search of the New Mexico State Engineer's Office (NMOSE) online water well database for groundwater wells in the vicinity of the release identified no groundwater wells located within a three-mile radius of the site. After evaluation of the site using aerial photography and topographic maps, depth to groundwater is estimated to be greater than 100 feet below ground surface (bgs).

Recommended Remediation Action Levels (RRALs) are determined by the site ranking according to the NMOCD *Guidelines for Remediation of Leaks, Spills, and Releases* (1993). Table 2 presents the remediation standards and the site ranking for this location. Justification for this site ranking is found in Appendix B.

**Table 2: Remediation Standards**

Soil Remediation Standards	0 to 9	10 to 19	>19
Benzene	10 PPM	10 PPM	10 PPM
BTEX	50 PPM	50 PPM	50 PPM
TPH	5000 PPM	1000 PPM	100 PPM

Depth to Groundwater	NMOCD Numeric Rank
< 50 BGS = 20	
50' to 99' = 10	
>100' = 0	0
Distance to Nearest Surface Water	NMOCD Numeric Rank
< 200' = 20	
200' - 1000' = 10	
>1000' = 0	0
Well Head Protection	NMOCD Numeric Rank
<1000' (or <200' domestic) = 20	
> 1000' = 0	0
<b>Total Site Ranking</b>	<b>0</b>



### 3.0 Assessment

On March 29, 2018, after receiving 811 clearance, HRL field personnel supervised the excavation of the area according to the work plan. All samples were collected and analyzed at a Nationally Environmental Laboratory Accreditation Program (NELAP) laboratory and in accordance with NMOCD soil sampling procedures. The samples were submitted to Hall Environmental Laboratories for analyses including chlorides by Method 300.0, volatile organics (BTEX) by Method 8021B, and MRO, DRO, and GRO by EPA Method 8015M. Sample locations and excavations are depicted in Figure 1. A supplemental request dated 2/22/2018 by COD requested the following additions to the work plan:

Request	Response
For the area represented by T1, confirmation samples of the 4 sidewalls and bottoms of the proposed 3 ft. excavation.	Confirmation samples were taken from the west side wall, north side wall, east side wall and south side wall. Bottom confirmation samples were taken on the west bottom and the east bottom.
For the area represented by T2, confirmation samples at the edges of the proposed 6 inch excavation, at the borders with T1 and T3/T5 areas, and at the bottom of the 6" removal. Sample locations must be <= 50 ft. apart.	T2 samples along the T2 area as depicted no more than 50' apart.
If permissible levels for TPH and BTEX are exceeded in the bottom samples, proceed to excavate to the next foot.	N/A
A scaled map with the confirmation sample locations marked and depth of excavation annotated.	See Figure 1.

### 4.0 Conclusion

The analytical results for this site are at or below the action levels for constituents of concern. A summary of laboratory analytical results is included in Table 3. Laboratory analytic reports are included in Appendix B. The area has been back filled with appropriate material from a licensed caliche and sand pit. No further remedial activities are recommended.

### 5.0 Revegetation Plan

The surface will be left in a rough condition to approximate natural surface deviations. The site will be mechanically seeded with an appropriate seed mixture. The site will be periodically monitored for revegetation and the development of noxious weeds. Should the site fail to re-vegetate or noxious weeds develop COG will contact NMSLO for mitigation strategy.



## 6.0 Scope and Limitations

The scope of our services consisted of the performance of a spill assessment and delineation, verification of release stabilization, regulatory liaison, sampling for closure, and preparation of this Final Closure Report. All work has been performed in accordance with generally accepted professional environmental consulting practices for oil and gas releases in the Permian Basin in New Mexico.

If there are any questions regarding this report, please contact Jennifer Knowlton at 505-238-3588.

Submitted by:  
HRL Compliance Solutions, Inc

Jennifer Knowlton  
Regional Manager - Permian

### Attachments:

Figure 1: Site and Sample Location Map

Table 3: Summary of Sample Results

Appendix A: Form C141

Appendix B: Site Photos

Appendix C: Laboratory Analytical Reports



**Figure 1:**  
**Site and Sample Location Map**



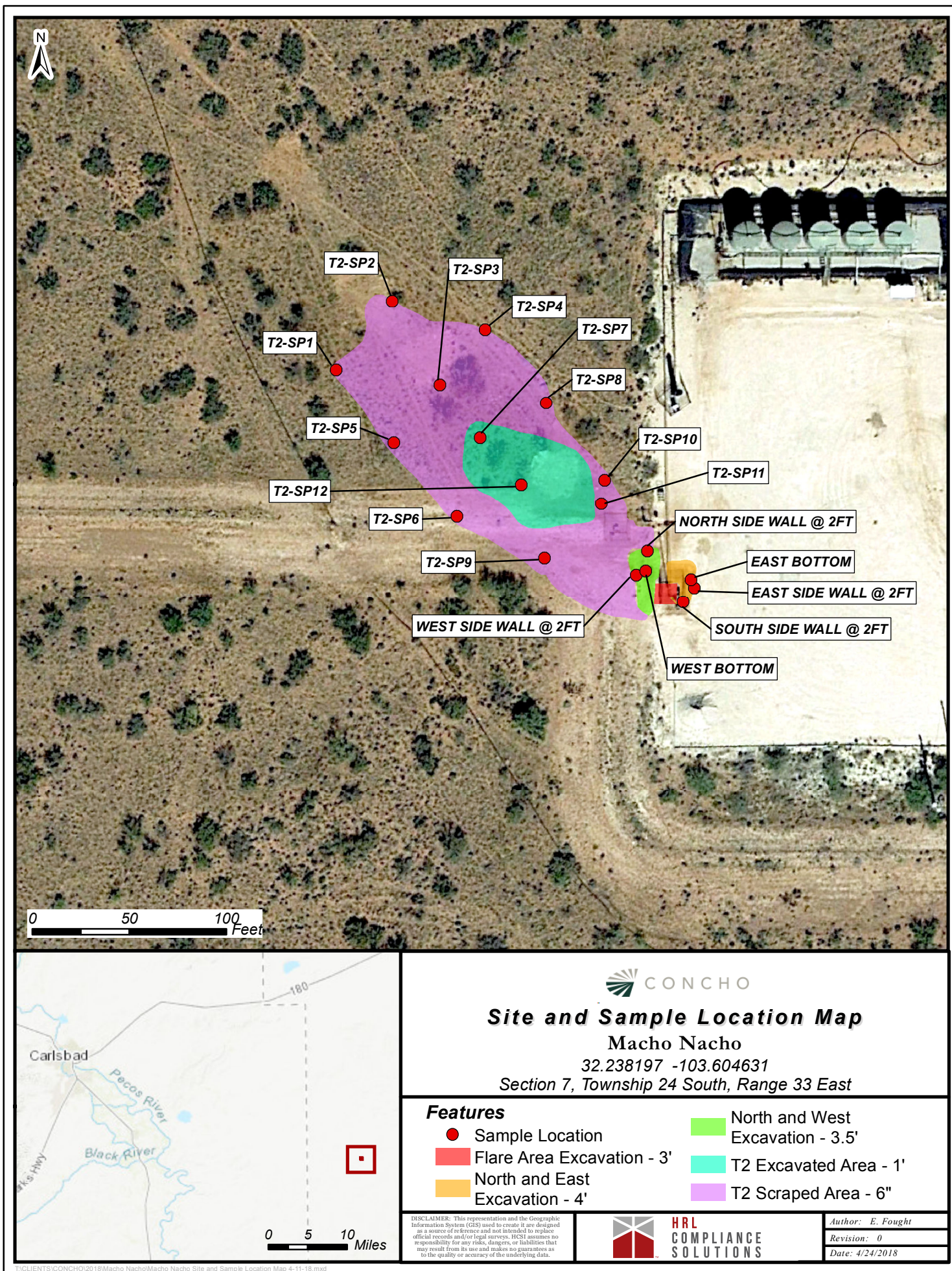






Table 3: Analytical Results Summary

SAMPLE LOCATION	SAMPLE DEPTH (bgs)	SAMPLE DATE	SOIL STATUS	8021B					8015M			300.0
				BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYLBENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)	TOTAL BTEX (mg/Kg)	GRO (mg/Kg)	DRO (mg/Kg)	Total TPH (mg/Kg)	CHLORIDE (mg/Kg)
NMOCD - Guidelines for Remediation of Leaks, Spills and Releases				10	NE	NE	NE	50	NE	NE	5,000	600
Vertical Delineation Sampling												
T2-SP1	Surface	3/29/2018	In-Situ	ND	ND	ND	ND	ND	ND	ND	ND	ND
T2-SP2	Surface	3/29/2018	In-Situ	ND	ND	ND	ND	ND	ND	280	550	ND
T2-SP3	Surface	3/29/2018	In-Situ	ND	ND	ND	ND	ND	ND	920	1640	ND
T2-SP4	Surface	3/29/2018	In-Situ	ND	ND	ND	ND	ND	ND	13	76	ND
T2-SP5	Surface	3/29/2018	In-Situ	ND	ND	ND	ND	ND	ND	260	550	ND
T2-SP6	Surface	3/29/2018	In-Situ	ND	ND	ND	ND	ND	ND	36	120	ND
T2-SP7	Surface	3/29/2018	In-Situ	ND	ND	ND	ND	ND	ND	1800	3100	ND
T2-SP8	Surface	3/29/2018	In-Situ	ND	ND	ND	ND	ND	ND	300	900	ND
T2-SP9	Surface	3/29/2018	In-Situ	ND	ND	ND	ND	ND	ND	1900	3400	ND
T2-SP10	Surface	3/29/2018	In-Situ	ND	ND	ND	ND	ND	ND	1400	3200	ND

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SAMPLE LOCATION	SAMPLE DEPTH (bgs)	SAMPLE DATE	SOIL STATUS	8021B					8015M			300.0
				BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYLBENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)	TOTAL BTEX (mg/Kg)	GRO (mg/Kg)	DRO (mg/Kg)	Total TPH (mg/Kg)	CHLORIDE (mg/Kg)
NMOCD - Guidelines for Remediation of Leaks, Spills and Releases				10	NE	NE	NE	50	NE	NE	5,000	600
Vertical Delineation Sampling												
T2-SP11	Surface	3/29/2018	In-Situ	ND	ND	ND	ND	ND	ND	95	184	ND
T2-SP12	Surface	3/29/2018	In-Situ	ND	ND	ND	ND	ND	ND	130	290	ND
East Side Wall	2'	3/29/2018	In-Situ	ND	ND	ND	ND	ND	ND	ND	ND	ND
West Side Wall	2'	3/29/2018	In-Situ	ND	ND	ND	ND	ND	ND	ND	ND	ND
West Bottom	4'	3/29/2018	In-Situ	ND	ND	ND	ND	ND	ND	ND	ND	73
East Bottom	4.5'	3/29/2018	In-Situ	ND	ND	ND	ND	ND	ND	220	340	ND
North Side Wall	2'	3/29/2018	In-Situ	ND	ND	ND	ND	ND	ND	ND	ND	ND
South Wall	2'	3/29/2018	In-Situ	ND	ND	ND	ND	ND	ND	ND	ND	30
East Bottom	4.5'	3/29/2018	In-Situ	ND	ND	ND	ND	ND	ND	220	340	ND

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## **Appendix A: Form C141 Final**

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

State of New Mexico  
Energy Minerals and Natural Resources  
Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-141  
Revised April 3, 2017  
Submit 1 Copy to appropriate District Office in  
accordance with 19.15.29 NMAC.

## Release Notification and Corrective Action

### OPERATOR

☐ Initial Report ☒ Final Report

Name of Company: COG Operating, LLC	Contact: Robert McNeill
Address: 600 West Illinois Avenue, Midland TX 79701	Telephone No. 432-683-7443
Facility Name: Macho Nacho State #001H	Facility Type: Tank Battery
Surface Owner: State	Mineral Owner State
API No. 30-025-39882	

### LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
A	07	24S	33E	380	north	330	East	Lea

Latitude 32.2384529 Longitude -103.639429 NAD83

### NATURE OF RELEASE

Type of Release: Oil	Volume of Release: 8 bbls	Volume Recovered: 4 bbls
Source of Release: Flare	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? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\*

On May 8, 2017 the well and compressor was shut in and the heater treater was isolated for maintenance activities. The casing and choke were not shut in and the compressor came back on line and sent fluid out the top of the flare.

Describe Area Affected and Cleanup Action Taken.\*

The release was on location and within the adjacent pasture. A vacuum truck was dispatched to remove all freestanding fluids. Concho delineated the site and prepared a work plan. Upon approval of that work plan, a contractor executed the work plan. The analytical results are at or below the recommended action levels for this location.

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

Signature: <i>Sheldon Hitchcock</i>		OIL CONSERVATION DIVISION	
Printed Name: Sheldon Hitchcock		Approved by Environmental Specialist: <i>Brian Hall</i>	
Title: HSE Coordinator	Approval Date: 11/21/2022	Expiration Date: N/A	
E-mail Address: slhitchcock@concho.com	Conditions of Approval:		Attached <input type="checkbox"/>
Date: 4/26/2018	Phone: 575-746-2010	none	

\* Attach Additional Sheets If Necessary



## **Appendix B: Site Photos**



T2 Area



North and West Excavation



North and East Excavation



Flare area



T2 Area



## **Appendix B: Laboratory Analytical Reports**





Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

April 11, 2018

Jennifer Knowlton

Concho

600 W Illinois Ave

Midland, TX 79701

TEL: (505) 238-3588

FAX

RE: Macho Nacho 1H

OrderNo.: 1804002

Dear Jennifer Knowlton:

Hall Environmental Analysis Laboratory received 18 sample(s) on 3/31/2018 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

## Analytical Report

Lab Order 1804002

Date Reported: 4/11/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Concho

Client Sample ID: T2-SP1

Project: Macho Nacho 1H

Collection Date: 3/29/2018 3:10:00 PM

Lab ID: 1804002-001

Matrix: SOIL

Received Date: 3/31/2018 10:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	ND	30		mg/Kg	20	4/9/2018 3:19:26 PM	37490
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	4/3/2018 1:15:47 PM	37370
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/3/2018 1:15:47 PM	37370
Surr: DNOP	90.6	70-130		%Rec	1	4/3/2018 1:15:47 PM	37370
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>DJF</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/3/2018 9:45:05 AM	37363
Surr: BFB	95.4	15-316		%Rec	1	4/3/2018 9:45:05 AM	37363
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>DJF</b>
Benzene	ND	0.023		mg/Kg	1	4/3/2018 9:45:05 AM	37363
Toluene	ND	0.047		mg/Kg	1	4/3/2018 9:45:05 AM	37363
Ethylbenzene	ND	0.047		mg/Kg	1	4/3/2018 9:45:05 AM	37363
Xylenes, Total	ND	0.093		mg/Kg	1	4/3/2018 9:45:05 AM	37363
Surr: 4-Bromofluorobenzene	87.0	80-120		%Rec	1	4/3/2018 9:45:05 AM	37363

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

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## Analytical Report

Lab Order 1804002

Date Reported: 4/11/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Concho

Client Sample ID: T2-SP2

Project: Macho Nacho 1H

Collection Date: 3/29/2018 3:10:00 PM

Lab ID: 1804002-002

Matrix: SOIL

Received Date: 3/31/2018 10:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	ND	30		mg/Kg	20	4/9/2018 3:31:51 PM	37490
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	280	9.3		mg/Kg	1	4/3/2018 2:22:02 PM	37370
Motor Oil Range Organics (MRO)	270	46		mg/Kg	1	4/3/2018 2:22:02 PM	37370
Surr: DNOP	100	70-130		%Rec	1	4/3/2018 2:22:02 PM	37370
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>DJF</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	4/3/2018 10:55:34 AM	37363
Surr: BFB	93.1	15-316		%Rec	1	4/3/2018 10:55:34 AM	37363
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>DJF</b>
Benzene	ND	0.023		mg/Kg	1	4/3/2018 10:55:34 AM	37363
Toluene	ND	0.046		mg/Kg	1	4/3/2018 10:55:34 AM	37363
Ethylbenzene	ND	0.046		mg/Kg	1	4/3/2018 10:55:34 AM	37363
Xylenes, Total	ND	0.092		mg/Kg	1	4/3/2018 10:55:34 AM	37363
Surr: 4-Bromofluorobenzene	85.3	80-120		%Rec	1	4/3/2018 10:55:34 AM	37363

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

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## Analytical Report

Lab Order 1804002

Date Reported: 4/11/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Concho

Client Sample ID: T2-SP3

Project: Macho Nacho 1H

Collection Date: 3/29/2018 3:10:00 PM

Lab ID: 1804002-003

Matrix: SOIL

Received Date: 3/31/2018 10:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	ND	30		mg/Kg	20	4/9/2018 3:44:15 PM	37490
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	920	9.4		mg/Kg	1	4/3/2018 3:06:09 PM	37370
Motor Oil Range Organics (MRO)	720	47		mg/Kg	1	4/3/2018 3:06:09 PM	37370
Surr: DNOP	120	70-130		%Rec	1	4/3/2018 3:06:09 PM	37370
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>DJF</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/3/2018 12:05:58 PM	37363
Surr: BFB	92.6	15-316		%Rec	1	4/3/2018 12:05:58 PM	37363
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>DJF</b>
Benzene	ND	0.024		mg/Kg	1	4/3/2018 12:05:58 PM	37363
Toluene	ND	0.048		mg/Kg	1	4/3/2018 12:05:58 PM	37363
Ethylbenzene	ND	0.048		mg/Kg	1	4/3/2018 12:05:58 PM	37363
Xylenes, Total	ND	0.097		mg/Kg	1	4/3/2018 12:05:58 PM	37363
Surr: 4-Bromofluorobenzene	85.4	80-120		%Rec	1	4/3/2018 12:05:58 PM	37363

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

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## Analytical Report

Lab Order 1804002

Date Reported: 4/11/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Concho

Client Sample ID: T2-SP4

Project: Macho Nacho 1H

Collection Date: 3/29/2018 3:10:00 PM

Lab ID: 1804002-004

Matrix: SOIL

Received Date: 3/31/2018 10:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	ND	30		mg/Kg	20	4/9/2018 3:56:40 PM	37490
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	13	9.6		mg/Kg	1	4/4/2018 5:14:00 PM	37370
Motor Oil Range Organics (MRO)	63	48		mg/Kg	1	4/4/2018 5:14:00 PM	37370
Surr: DNOP	98.4	70-130		%Rec	1	4/4/2018 5:14:00 PM	37370
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>DJF</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/3/2018 12:29:33 PM	37363
Surr: BFB	90.1	15-316		%Rec	1	4/3/2018 12:29:33 PM	37363
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>DJF</b>
Benzene	ND	0.024		mg/Kg	1	4/3/2018 12:29:33 PM	37363
Toluene	ND	0.047		mg/Kg	1	4/3/2018 12:29:33 PM	37363
Ethylbenzene	ND	0.047		mg/Kg	1	4/3/2018 12:29:33 PM	37363
Xylenes, Total	ND	0.095		mg/Kg	1	4/3/2018 12:29:33 PM	37363
Surr: 4-Bromofluorobenzene	83.5	80-120		%Rec	1	4/3/2018 12:29:33 PM	37363

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

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## Analytical Report

Lab Order 1804002

Date Reported: 4/11/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Concho

Client Sample ID: T2-SP5

Project: Macho Nacho 1H

Collection Date: 3/29/2018 3:10:00 PM

Lab ID: 1804002-005

Matrix: SOIL

Received Date: 3/31/2018 10:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	ND	30		mg/Kg	20	4/9/2018 4:58:42 PM	37490
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	260	10		mg/Kg	1	4/3/2018 3:50:14 PM	37370
Motor Oil Range Organics (MRO)	290	50		mg/Kg	1	4/3/2018 3:50:14 PM	37370
Surr: DNOP	99.9	70-130		%Rec	1	4/3/2018 3:50:14 PM	37370
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>DJF</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/3/2018 12:53:04 PM	37363
Surr: BFB	91.6	15-316		%Rec	1	4/3/2018 12:53:04 PM	37363
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>DJF</b>
Benzene	ND	0.024		mg/Kg	1	4/3/2018 12:53:04 PM	37363
Toluene	ND	0.048		mg/Kg	1	4/3/2018 12:53:04 PM	37363
Ethylbenzene	ND	0.048		mg/Kg	1	4/3/2018 12:53:04 PM	37363
Xylenes, Total	ND	0.096		mg/Kg	1	4/3/2018 12:53:04 PM	37363
Surr: 4-Bromofluorobenzene	84.1	80-120		%Rec	1	4/3/2018 12:53:04 PM	37363

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

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## Analytical Report

Lab Order 1804002

Date Reported: 4/11/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Concho

Client Sample ID: T2-SP6

Project: Macho Nacho 1H

Collection Date: 3/29/2018 3:10:00 PM

Lab ID: 1804002-006

Matrix: SOIL

Received Date: 3/31/2018 10:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	ND	30		mg/Kg	20	4/9/2018 5:11:07 PM	37490
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	36	9.7		mg/Kg	1	4/4/2018 5:36:07 PM	37370
Motor Oil Range Organics (MRO)	84	48		mg/Kg	1	4/4/2018 5:36:07 PM	37370
Surr: DNOP	91.7	70-130		%Rec	1	4/4/2018 5:36:07 PM	37370
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>DJF</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/3/2018 1:16:35 PM	37363
Surr: BFB	92.1	15-316		%Rec	1	4/3/2018 1:16:35 PM	37363
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>DJF</b>
Benzene	ND	0.024		mg/Kg	1	4/3/2018 1:16:35 PM	37363
Toluene	ND	0.048		mg/Kg	1	4/3/2018 1:16:35 PM	37363
Ethylbenzene	ND	0.048		mg/Kg	1	4/3/2018 1:16:35 PM	37363
Xylenes, Total	ND	0.096		mg/Kg	1	4/3/2018 1:16:35 PM	37363
Surr: 4-Bromofluorobenzene	85.1	80-120		%Rec	1	4/3/2018 1:16:35 PM	37363

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

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## Analytical Report

Lab Order 1804002

Date Reported: 4/11/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Concho

Client Sample ID: T2-SP7

Project: Macho Nacho 1H

Collection Date: 3/29/2018 3:10:00 PM

Lab ID: 1804002-007

Matrix: SOIL

Received Date: 3/31/2018 10:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	ND	30		mg/Kg	20	4/9/2018 5:23:31 PM	37490
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	1800	91		mg/Kg	10	4/3/2018 5:18:14 PM	37370
Motor Oil Range Organics (MRO)	1300	460		mg/Kg	10	4/3/2018 5:18:14 PM	37370
Surr: DNOP	0	70-130	S	%Rec	10	4/3/2018 5:18:14 PM	37370
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>DJF</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/3/2018 1:40:06 PM	37363
Surr: BFB	91.4	15-316		%Rec	1	4/3/2018 1:40:06 PM	37363
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>DJF</b>
Benzene	ND	0.023		mg/Kg	1	4/3/2018 1:40:06 PM	37363
Toluene	ND	0.047		mg/Kg	1	4/3/2018 1:40:06 PM	37363
Ethylbenzene	ND	0.047		mg/Kg	1	4/3/2018 1:40:06 PM	37363
Xylenes, Total	ND	0.094		mg/Kg	1	4/3/2018 1:40:06 PM	37363
Surr: 4-Bromofluorobenzene	84.9	80-120		%Rec	1	4/3/2018 1:40:06 PM	37363

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

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## Analytical Report

Lab Order 1804002

Date Reported: 4/11/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Concho

Client Sample ID: T2-SP8

Project: Macho Nacho 1H

Collection Date: 3/29/2018 3:10:00 PM

Lab ID: 1804002-008

Matrix: SOIL

Received Date: 3/31/2018 10:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	ND	30		mg/Kg	20	4/9/2018 5:35:55 PM	37490
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	300	94		mg/Kg	10	4/3/2018 5:40:23 PM	37370
Motor Oil Range Organics (MRO)	600	470		mg/Kg	10	4/3/2018 5:40:23 PM	37370
Surr: DNOP	0	70-130	S	%Rec	10	4/3/2018 5:40:23 PM	37370
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>DJF</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/3/2018 2:03:20 PM	37363
Surr: BFB	93.4	15-316		%Rec	1	4/3/2018 2:03:20 PM	37363
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>DJF</b>
Benzene	ND	0.025		mg/Kg	1	4/3/2018 2:03:20 PM	37363
Toluene	ND	0.050		mg/Kg	1	4/3/2018 2:03:20 PM	37363
Ethylbenzene	ND	0.050		mg/Kg	1	4/3/2018 2:03:20 PM	37363
Xylenes, Total	ND	0.10		mg/Kg	1	4/3/2018 2:03:20 PM	37363
Surr: 4-Bromofluorobenzene	85.6	80-120		%Rec	1	4/3/2018 2:03:20 PM	37363

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

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## Analytical Report

Lab Order 1804002

Date Reported: 4/11/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Concho

Client Sample ID: T2-SP9

Project: Macho Nacho 1H

Collection Date: 3/29/2018 3:10:00 PM

Lab ID: 1804002-009

Matrix: SOIL

Received Date: 3/31/2018 10:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	ND	30		mg/Kg	20	4/9/2018 5:48:19 PM	37490
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	1900	93		mg/Kg	10	4/3/2018 6:02:32 PM	37370
Motor Oil Range Organics (MRO)	1500	470		mg/Kg	10	4/3/2018 6:02:32 PM	37370
Surr: DNOP	0	70-130	S	%Rec	10	4/3/2018 6:02:32 PM	37370
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>DJF</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	4/3/2018 2:26:40 PM	37363
Surr: BFB	96.0	15-316		%Rec	1	4/3/2018 2:26:40 PM	37363
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>DJF</b>
Benzene	ND	0.023		mg/Kg	1	4/3/2018 2:26:40 PM	37363
Toluene	ND	0.046		mg/Kg	1	4/3/2018 2:26:40 PM	37363
Ethylbenzene	ND	0.046		mg/Kg	1	4/3/2018 2:26:40 PM	37363
Xylenes, Total	ND	0.092		mg/Kg	1	4/3/2018 2:26:40 PM	37363
Surr: 4-Bromofluorobenzene	89.1	80-120		%Rec	1	4/3/2018 2:26:40 PM	37363

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

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## Analytical Report

Lab Order 1804002

Date Reported: 4/11/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Concho

Client Sample ID: T2-SP10

Project: Macho Nacho 1H

Collection Date: 3/29/2018 3:10:00 PM

Lab ID: 1804002-010

Matrix: SOIL

Received Date: 3/31/2018 10:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	ND	30		mg/Kg	20	4/9/2018 6:00:44 PM	37490
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	1400	98		mg/Kg	10	4/3/2018 6:24:48 PM	37370
Motor Oil Range Organics (MRO)	1800	490		mg/Kg	10	4/3/2018 6:24:48 PM	37370
Surr: DNOP	0	70-130	S	%Rec	10	4/3/2018 6:24:48 PM	37370
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>DJF</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/3/2018 2:50:06 PM	37363
Surr: BFB	90.6	15-316		%Rec	1	4/3/2018 2:50:06 PM	37363
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>DJF</b>
Benzene	ND	0.025		mg/Kg	1	4/3/2018 2:50:06 PM	37363
Toluene	ND	0.049		mg/Kg	1	4/3/2018 2:50:06 PM	37363
Ethylbenzene	ND	0.049		mg/Kg	1	4/3/2018 2:50:06 PM	37363
Xylenes, Total	ND	0.098		mg/Kg	1	4/3/2018 2:50:06 PM	37363
Surr: 4-Bromofluorobenzene	85.0	80-120		%Rec	1	4/3/2018 2:50:06 PM	37363

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

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## Analytical Report

Lab Order 1804002

Date Reported: 4/11/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Concho

Client Sample ID: T2-SP11

Project: Macho Nacho 1H

Collection Date: 3/29/2018 4:10:00 PM

Lab ID: 1804002-011

Matrix: SOIL

Received Date: 3/31/2018 10:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	ND	30		mg/Kg	20	4/9/2018 6:37:57 PM	37502
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	95	10		mg/Kg	1	4/3/2018 6:47:01 PM	37370
Motor Oil Range Organics (MRO)	89	51		mg/Kg	1	4/3/2018 6:47:01 PM	37370
Surr: DNOP	101	70-130		%Rec	1	4/3/2018 6:47:01 PM	37370
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>DJF</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/3/2018 4:46:39 PM	37363
Surr: BFB	91.5	15-316		%Rec	1	4/3/2018 4:46:39 PM	37363
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>DJF</b>
Benzene	ND	0.024		mg/Kg	1	4/3/2018 4:46:39 PM	37363
Toluene	ND	0.048		mg/Kg	1	4/3/2018 4:46:39 PM	37363
Ethylbenzene	ND	0.048		mg/Kg	1	4/3/2018 4:46:39 PM	37363
Xylenes, Total	ND	0.097		mg/Kg	1	4/3/2018 4:46:39 PM	37363
Surr: 4-Bromofluorobenzene	84.7	80-120		%Rec	1	4/3/2018 4:46:39 PM	37363

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

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## Analytical Report

Lab Order 1804002

Date Reported: 4/11/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Concho

Client Sample ID: T2-SP12

Project: Macho Nacho 1H

Collection Date: 3/29/2018 4:10:00 PM

Lab ID: 1804002-012

Matrix: SOIL

Received Date: 3/31/2018 10:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	ND	30		mg/Kg	20	4/9/2018 6:50:21 PM	37502
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	130	9.3		mg/Kg	1	4/3/2018 7:09:13 PM	37370
Motor Oil Range Organics (MRO)	160	46		mg/Kg	1	4/3/2018 7:09:13 PM	37370
Surr: DNOP	106	70-130		%Rec	1	4/3/2018 7:09:13 PM	37370
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>DJF</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/3/2018 5:09:54 PM	37363
Surr: BFB	91.8	15-316		%Rec	1	4/3/2018 5:09:54 PM	37363
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>DJF</b>
Benzene	ND	0.024		mg/Kg	1	4/3/2018 5:09:54 PM	37363
Toluene	ND	0.048		mg/Kg	1	4/3/2018 5:09:54 PM	37363
Ethylbenzene	ND	0.048		mg/Kg	1	4/3/2018 5:09:54 PM	37363
Xylenes, Total	ND	0.096		mg/Kg	1	4/3/2018 5:09:54 PM	37363
Surr: 4-Bromofluorobenzene	85.5	80-120		%Rec	1	4/3/2018 5:09:54 PM	37363

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

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## Analytical Report

Lab Order 1804002

Date Reported: 4/11/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Concho

Client Sample ID: East Side Wall@ 2ft

Project: Macho Nacho 1H

Collection Date: 3/29/2018 11:50:00 AM

Lab ID: 1804002-013

Matrix: SOIL

Received Date: 3/31/2018 10:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	ND	30		mg/Kg	20	4/9/2018 7:27:34 PM	37502
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	4/3/2018 7:31:26 PM	37370
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	4/3/2018 7:31:26 PM	37370
Surr: DNOP	97.8	70-130		%Rec	1	4/3/2018 7:31:26 PM	37370
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>DJF</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	4/3/2018 5:33:08 PM	37363
Surr: BFB	92.6	15-316		%Rec	1	4/3/2018 5:33:08 PM	37363
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>DJF</b>
Benzene	ND	0.023		mg/Kg	1	4/3/2018 5:33:08 PM	37363
Toluene	ND	0.046		mg/Kg	1	4/3/2018 5:33:08 PM	37363
Ethylbenzene	ND	0.046		mg/Kg	1	4/3/2018 5:33:08 PM	37363
Xylenes, Total	ND	0.092		mg/Kg	1	4/3/2018 5:33:08 PM	37363
Surr: 4-Bromofluorobenzene	86.0	80-120		%Rec	1	4/3/2018 5:33:08 PM	37363

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

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## Analytical Report

Lab Order 1804002

Date Reported: 4/11/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Concho

Client Sample ID: West Side Wall@ 2ft

Project: Macho Nacho 1H

Collection Date: 3/29/2018 1:05:00 PM

Lab ID: 1804002-014

Matrix: SOIL

Received Date: 3/31/2018 10:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	ND	30		mg/Kg	20	4/9/2018 8:04:48 PM	37502
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	4/3/2018 7:53:45 PM	37370
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	4/3/2018 7:53:45 PM	37370
Surr: DNOP	93.4	70-130		%Rec	1	4/3/2018 7:53:45 PM	37370
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>DJF</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/3/2018 5:56:24 PM	37363
Surr: BFB	93.7	15-316		%Rec	1	4/3/2018 5:56:24 PM	37363
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>DJF</b>
Benzene	ND	0.024		mg/Kg	1	4/3/2018 5:56:24 PM	37363
Toluene	ND	0.048		mg/Kg	1	4/3/2018 5:56:24 PM	37363
Ethylbenzene	ND	0.048		mg/Kg	1	4/3/2018 5:56:24 PM	37363
Xylenes, Total	ND	0.097		mg/Kg	1	4/3/2018 5:56:24 PM	37363
Surr: 4-Bromofluorobenzene	86.8	80-120		%Rec	1	4/3/2018 5:56:24 PM	37363

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

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## Analytical Report

Lab Order 1804002

Date Reported: 4/11/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Concho

Client Sample ID: West bottom

Project: Macho Nacho 1H

Collection Date: 3/29/2018 1:05:00 PM

Lab ID: 1804002-015

Matrix: SOIL

Received Date: 3/31/2018 10:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	73	30		mg/Kg	20	4/9/2018 8:17:13 PM	37502
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	4/3/2018 8:15:55 PM	37370
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/3/2018 8:15:55 PM	37370
Surr: DNOP	94.8	70-130		%Rec	1	4/3/2018 8:15:55 PM	37370
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>DJF</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/3/2018 6:19:40 PM	37363
Surr: BFB	90.3	15-316		%Rec	1	4/3/2018 6:19:40 PM	37363
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>DJF</b>
Benzene	ND	0.024		mg/Kg	1	4/3/2018 6:19:40 PM	37363
Toluene	ND	0.048		mg/Kg	1	4/3/2018 6:19:40 PM	37363
Ethylbenzene	ND	0.048		mg/Kg	1	4/3/2018 6:19:40 PM	37363
Xylenes, Total	ND	0.095		mg/Kg	1	4/3/2018 6:19:40 PM	37363
Surr: 4-Bromofluorobenzene	85.5	80-120		%Rec	1	4/3/2018 6:19:40 PM	37363

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

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## Analytical Report

Lab Order 1804002

Date Reported: 4/11/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Concho

Client Sample ID: East bottom

Project: Macho Nacho 1H

Collection Date: 3/29/2018 11:50:00 AM

Lab ID: 1804002-016

Matrix: SOIL

Received Date: 3/31/2018 10:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	ND	30		mg/Kg	20	4/9/2018 8:29:37 PM	37502
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	220	9.5		mg/Kg	1	4/3/2018 8:38:03 PM	37370
Motor Oil Range Organics (MRO)	120	48		mg/Kg	1	4/3/2018 8:38:03 PM	37370
Surr: DNOP	99.5	70-130		%Rec	1	4/3/2018 8:38:03 PM	37370
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>DJF</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/3/2018 6:42:51 PM	37363
Surr: BFB	97.7	15-316		%Rec	1	4/3/2018 6:42:51 PM	37363
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>DJF</b>
Benzene	ND	0.024		mg/Kg	1	4/3/2018 6:42:51 PM	37363
Toluene	ND	0.047		mg/Kg	1	4/3/2018 6:42:51 PM	37363
Ethylbenzene	ND	0.047		mg/Kg	1	4/3/2018 6:42:51 PM	37363
Xylenes, Total	ND	0.094		mg/Kg	1	4/3/2018 6:42:51 PM	37363
Surr: 4-Bromofluorobenzene	84.4	80-120		%Rec	1	4/3/2018 6:42:51 PM	37363

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

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## Analytical Report

Lab Order 1804002

Date Reported: 4/11/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Concho

Client Sample ID: North Side Wall@ 2ft

Project: Macho Nacho 1H

Collection Date: 3/29/2018 1:05:00 PM

Lab ID: 1804002-017

Matrix: SOIL

Received Date: 3/31/2018 10:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	ND	30		mg/Kg	20	4/9/2018 8:42:02 PM	37502
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/3/2018 9:00:11 PM	37370
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/3/2018 9:00:11 PM	37370
Surr: DNOP	98.8	70-130		%Rec	1	4/3/2018 9:00:11 PM	37370
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>DJF</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/3/2018 7:06:04 PM	37363
Surr: BFB	93.2	15-316		%Rec	1	4/3/2018 7:06:04 PM	37363
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>DJF</b>
Benzene	ND	0.025		mg/Kg	1	4/3/2018 7:06:04 PM	37363
Toluene	ND	0.049		mg/Kg	1	4/3/2018 7:06:04 PM	37363
Ethylbenzene	ND	0.049		mg/Kg	1	4/3/2018 7:06:04 PM	37363
Xylenes, Total	ND	0.098		mg/Kg	1	4/3/2018 7:06:04 PM	37363
Surr: 4-Bromofluorobenzene	85.9	80-120		%Rec	1	4/3/2018 7:06:04 PM	37363

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

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## Analytical Report

Lab Order 1804002

Date Reported: 4/11/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Concho

Client Sample ID: South Wall@ 2ft

Project: Macho Nacho 1H

Collection Date: 3/29/2018 1:30:00 PM

Lab ID: 1804002-018

Matrix: SOIL

Received Date: 3/31/2018 10:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	ND	30		mg/Kg	20	4/9/2018 8:54:26 PM	37502
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	4/3/2018 9:22:23 PM	37370
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/3/2018 9:22:23 PM	37370
Surr: DNOP	98.9	70-130		%Rec	1	4/3/2018 9:22:23 PM	37370
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>DJF</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/3/2018 7:29:18 PM	37363
Surr: BFB	95.3	15-316		%Rec	1	4/3/2018 7:29:18 PM	37363
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>DJF</b>
Benzene	ND	0.025		mg/Kg	1	4/3/2018 7:29:18 PM	37363
Toluene	ND	0.049		mg/Kg	1	4/3/2018 7:29:18 PM	37363
Ethylbenzene	ND	0.049		mg/Kg	1	4/3/2018 7:29:18 PM	37363
Xylenes, Total	ND	0.098		mg/Kg	1	4/3/2018 7:29:18 PM	37363
Surr: 4-Bromofluorobenzene	88.8	80-120		%Rec	1	4/3/2018 7:29:18 PM	37363

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

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**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 1804002

11-Apr-18

**Client:** Concho**Project:** Macho Nacho 1H

Sample ID	MB-37490		SampType: mblk		TestCode: EPA Method 300.0: Anions					
Client ID:	PBS		Batch ID: 37490		RunNo: 50408					
Prep Date:	4/9/2018		Analysis Date: 4/9/2018		SeqNo: 1634764		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-37490		SampType: lcs		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSS		Batch ID: 37490		RunNo: 50408					
Prep Date:	4/9/2018		Analysis Date: 4/9/2018		SeqNo: 1634765		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.0	90	110			

Sample ID	MB-37502		SampType:	mblk		TestCode:	EPA Method 300.0: Anions				
Client ID:	PBS		Batch ID:	37502		RunNo:	50408				
Prep Date:	4/9/2018		Analysis Date:	4/9/2018		SeqNo:	1634794		Units:	mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride	ND	1.5									

Sample ID	LCS-37502		SampType:	lcs		TestCode:	EPA Method 300.0: Anions				
Client ID:	LCSS		Batch ID:	37502		RunNo:	50408				
Prep Date:	4/9/2018		Analysis Date:	4/9/2018		SeqNo:	1634795		Units:	mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride	14	1.5	15.00	0	94.0	90	110				

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

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**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 1804002

11-Apr-18

**Client:** Concho**Project:** Macho Nacho 1H

Sample ID <b>LCS-37370</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>37370</b>			RunNo: <b>50268</b>						
Prep Date: <b>4/2/2018</b>	Analysis Date: <b>4/3/2018</b>			SeqNo: <b>1628675</b>			Units: <b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	10	50.00	0	94.1	70	130			
Surr: DNOP	3.8		5.000		75.7	70	130			

Sample ID <b>MB-37370</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>PBS</b>	Batch ID: <b>37370</b>			RunNo: <b>50268</b>						
Prep Date: <b>4/2/2018</b>	Analysis Date: <b>4/3/2018</b>			SeqNo: <b>1628676</b>			Units: <b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.7		10.00		87.0	70	130			

Sample ID <b>1804002-001AMS</b>	SampType: <b>MS</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>T2-SP1</b>	Batch ID: <b>37370</b>			RunNo: <b>50268</b>						
Prep Date: <b>4/2/2018</b>	Analysis Date: <b>4/3/2018</b>			SeqNo: <b>1628777</b>			Units: <b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	55	9.6	47.89	7.683	98.7	55.8	125			
Surr: DNOP	3.8		4.789		79.2	70	130			

Sample ID <b>1804002-001AMSD</b>	SampType: <b>MSD</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>T2-SP1</b>	Batch ID: <b>37370</b>			RunNo: <b>50268</b>						
Prep Date: <b>4/2/2018</b>	Analysis Date: <b>4/3/2018</b>			SeqNo: <b>1628778</b>			Units: <b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	53	9.6	48.17	7.683	95.0	55.8	125	2.83	20	
Surr: DNOP	3.8		4.817		79.2	70	130	0	0	

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

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**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 1804002

11-Apr-18

**Client:** Concho**Project:** Macho Nacho 1H

Sample ID <b>MB-37363</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>PBS</b>	Batch ID: <b>37363</b>		RunNo: <b>50299</b>							
Prep Date: <b>4/2/2018</b>	Analysis Date: <b>4/3/2018</b>		SeqNo: <b>1629941</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	940		1000		94.4	15	316			

Sample ID <b>LCS-37363</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>37363</b>		RunNo: <b>50299</b>							
Prep Date: <b>4/2/2018</b>	Analysis Date: <b>4/3/2018</b>		SeqNo: <b>1629942</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	28	5.0	25.00	0	113	75.9	131			
Surr: BFB	1000		1000		101	15	316			

Sample ID <b>1804002-002AMS</b>	SampType: <b>MS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>T2-SP2</b>	Batch ID: <b>37363</b>		RunNo: <b>50299</b>							
Prep Date: <b>4/2/2018</b>	Analysis Date: <b>4/3/2018</b>		SeqNo: <b>1629945</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	29	4.7	23.58	0	123	77.8	128			
Surr: BFB	990		943.4		105	15	316			

Sample ID <b>1804002-002AMSD</b>	SampType: <b>MSD</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>T2-SP2</b>	Batch ID: <b>37363</b>		RunNo: <b>50299</b>							
Prep Date: <b>4/2/2018</b>	Analysis Date: <b>4/3/2018</b>		SeqNo: <b>1629946</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	28	4.8	23.88	0	119	77.8	128	1.97	20	
Surr: BFB	1100		955.1		110	15	316	0	0	

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

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**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 1804002

11-Apr-18

**Client:** Concho**Project:** Macho Nacho 1H

Sample ID <b>MB-37363</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>37363</b>		RunNo: <b>50299</b>							
Prep Date: <b>4/2/2018</b>	Analysis Date: <b>4/3/2018</b>		SeqNo: <b>1629914</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.87		1.000		86.7	80	120			

Sample ID <b>LCS-37363</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>37363</b>		RunNo: <b>50299</b>							
Prep Date: <b>4/2/2018</b>	Analysis Date: <b>4/3/2018</b>		SeqNo: <b>1629915</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	102	77.3	128			
Toluene	1.0	0.050	1.000	0	99.5	79.2	125			
Ethylbenzene	0.98	0.050	1.000	0	97.9	80.7	127			
Xylenes, Total	3.0	0.10	3.000	0	100	81.6	129			
Surr: 4-Bromofluorobenzene	0.90		1.000		89.8	80	120			

Sample ID <b>1804002-001AMS</b>	SampType: <b>MS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>T2-SP1</b>	Batch ID: <b>37363</b>		RunNo: <b>50299</b>							
Prep Date: <b>4/2/2018</b>	Analysis Date: <b>4/3/2018</b>		SeqNo: <b>1629917</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.99	0.024	0.9794	0	102	68.5	133			
Toluene	1.0	0.049	0.9794	0	102	75	130			
Ethylbenzene	0.99	0.049	0.9794	0	101	79.4	128			
Xylenes, Total	3.0	0.098	2.938	0	103	77.3	131			
Surr: 4-Bromofluorobenzene	0.86		0.9794		87.7	80	120			

Sample ID <b>1804002-001AMSD</b>	SampType: <b>MSD</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>T2-SP1</b>	Batch ID: <b>37363</b>		RunNo: <b>50299</b>							
Prep Date: <b>4/2/2018</b>	Analysis Date: <b>4/3/2018</b>		SeqNo: <b>1629920</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.97	0.024	0.9699	0	99.9	68.5	133	2.57	20	
Toluene	0.97	0.048	0.9699	0	99.7	75	130	2.99	20	
Ethylbenzene	0.96	0.048	0.9699	0	99.4	79.4	128	2.48	20	
Xylenes, Total	3.0	0.097	2.910	0	101	77.3	131	2.38	20	
Surr: 4-Bromofluorobenzene	0.85		0.9699		87.4	80	120	0	0	

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

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Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: www.hallenvironmental.com

## Sample Log-In Check List

Client Name: CONCHO MIDLAND

Work Order Number: 1804002

RcptNo: 1

Received By: Isaiah Ortiz

3/31/2018 10:45:00 AM

IO

Completed By: Isaiah Ortiz

4/2/2018 7:39:18 AM

IO

Reviewed By: Size 04/02/18

LB: ENM

### Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
2. How was the sample delivered? Courier

### Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☒ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
9. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒
10. Were any sample containers received broken? Yes ☐ No ☒
11. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
13. Is it clear what analyses were requested? Yes ☒ No ☐
14. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved  
bottles checked  
for pH:

(<2 or >12 unless noted)

Adjusted?

Checked by:

ENM 4/2/18

### Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

16. Additional remarks:

### 17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.6	Good	Yes			





## Chain-of-Custody Record

Client: COG (Carche)

Mailing Address:

Phone #: 505-238-3588email or Fax#: Rhaske11@cox.net

QA/QC Package:

☒ Standard ☐ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other☐ EDD (Type)

Turn-Around Time:

☒ Standard ☐ Rush

Project Name:

Macho Nacho #1H

Project #:

Project Manager:

Jennifer Knowlton - HRL

Sampler:

On Ice: ☒ Yes ☐ NoSample Temperature: 5.6-20.0°F-36

Date Time Matrix Sample Request ID

3/29/18	1150a	soil	East Side well @ 2ft
3/29/18	105p		West Side well @ 2ft
3/29/18	105p		West bottom
3/29/18	1150a		East bottom
3/29/18	105p		North Side well @ 2ft
3/29/18	130p		South well @ 2ft
		322	
		04/02/18	

Date Time Relinquished by:

3/29/18 2:22 Jennifer Knowlton

Date Time Relinquished by:

3/29/18 1900 [Signature]

Received by:

[Signature]

Date Time

3/30/18 222

Received by:

[Signature]

Date Time

3/31/18 1045

Remarks:

100% correct3/31/18
**HALL ENVIRONMENTAL  
ANALYSIS LABORATORY**

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

## Analysis Request

Analysis Request	Analysis Request
BTEX + MTBE + TMB's (8021)	
BTEX + MTBE + TPH (Gas only)	
TPH 8015B (GRO / DRO / MRO)	X
TPH (Method 418.1)	
EDB (Method 504.1)	
PAH's (8310 or 8270 SIMS)	
RCRA 8 Metals	
Anions (F, Cl, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub> )	
8081 Pesticides / 8082 PCB's	
8260B (VOA)	
8270 (Semi-VOA)	
Chlorides 300.1	X
6Tet 8021	X
Air Bubbles (Y or N)	

**District I**  
1625 N. French Dr., Hobbs, NM 88240  
Phone:(575) 393-6161 Fax:(575) 393-0720  
**District II**  
811 S. First St., Artesia, NM 88210  
Phone:(575) 748-1283 Fax:(575) 748-9720  
**District III**  
1000 Rio Brazos Rd., Aztec, NM 87410  
Phone:(505) 334-6178 Fax:(505) 334-6170  
**District IV**  
1220 S. St Francis Dr., Santa Fe, NM 87505  
Phone:(505) 476-3470 Fax:(505) 476-3462

**State of New Mexico**  
**Energy, Minerals and Natural Resources**  
**Oil Conservation Division**  
**1220 S. St Francis Dr.**  
**Santa Fe, NM 87505**

CONDITIONS  
  
Action 160338

CONDITIONS

Operator: COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701	OGRID: 229137
	Action Number: 160338
	Action Type: [IM-SD] Incident File Support Doc (ENV) (IM-BNF)

CONDITIONS

Created By	Condition	Condition Date
bhall	None	11/21/2022