



PHONE (575) 397-6388 • FAX (575) 397- 0397 • 1324 W. MARLAND • P.O. BOX 805 • HOBBS, NM 88241-0805
E-MAIL: cbrunson@bbcinternational.com

DELINEATION WORKPLAN

COG – SPRUCE GOOSE FED COM #2H & #3H (Leak Date: 1/16/17)

RP # 1RP-4565

APPROVED

By Olivia Yu at 1:56 pm, Apr 12, 2017

This delineation workplan and remediation proposal addresses the release associated with RP # 1 RP-4565.

The following information includes:

1. Scaled digital site map with spill area demarcated and leak point identified along with sample point locations and areas of remediation at appropriate depths.
2. GPS information for sample points and sample methodology
3. Depth to groundwater information (i.e., pdf of OSE search results and/or copy of Chevron groundwater trend map).
4. Laboratory analysis results summary table and original laboratory analysis reports
5. A copy of the initial C-141
6. Potentially other pertinent information as necessary for site specific purposes.

Based on the information included in this package and the NMOCD guidelines, the following remediation is proposed:

COG will excavate the spill area as depicted on the following site diagram. The entire leak area will be excavated to a depth of 6 inches.

The entire site will then be backfilled with clean soil and revegetated (if warranted) to the standards of the appropriate regulatory agency or private surface owner.

All excavated materials will be disposed of at an NMOCD-approved disposal facility.

COG, Spruce Goose Fed Com #2H & #3H

Leak Date: 01/16/2017

Lea County, NM

API# 30-025-43169

RP# 1RP-4565

Legend

-  East Sample
-  Leak Point
-  North Sample
-  Sample Points, Hand Auger
-  South Sample
-  Spill Area
-  Spill Area, 6 In Excavation
-  West Sample



COG, Spruce Goose Fed Com #2H & #3H

Samples, Hand Auger

SP1, GPS point: N 32.67706° W-103.81337°

SP2, GPS point: N 32.67712° W-103.81347°

SP3, GPS point: N 32.67729° W-103.81341°

SP4, GPS point: N 32.67730° W-103.81359°

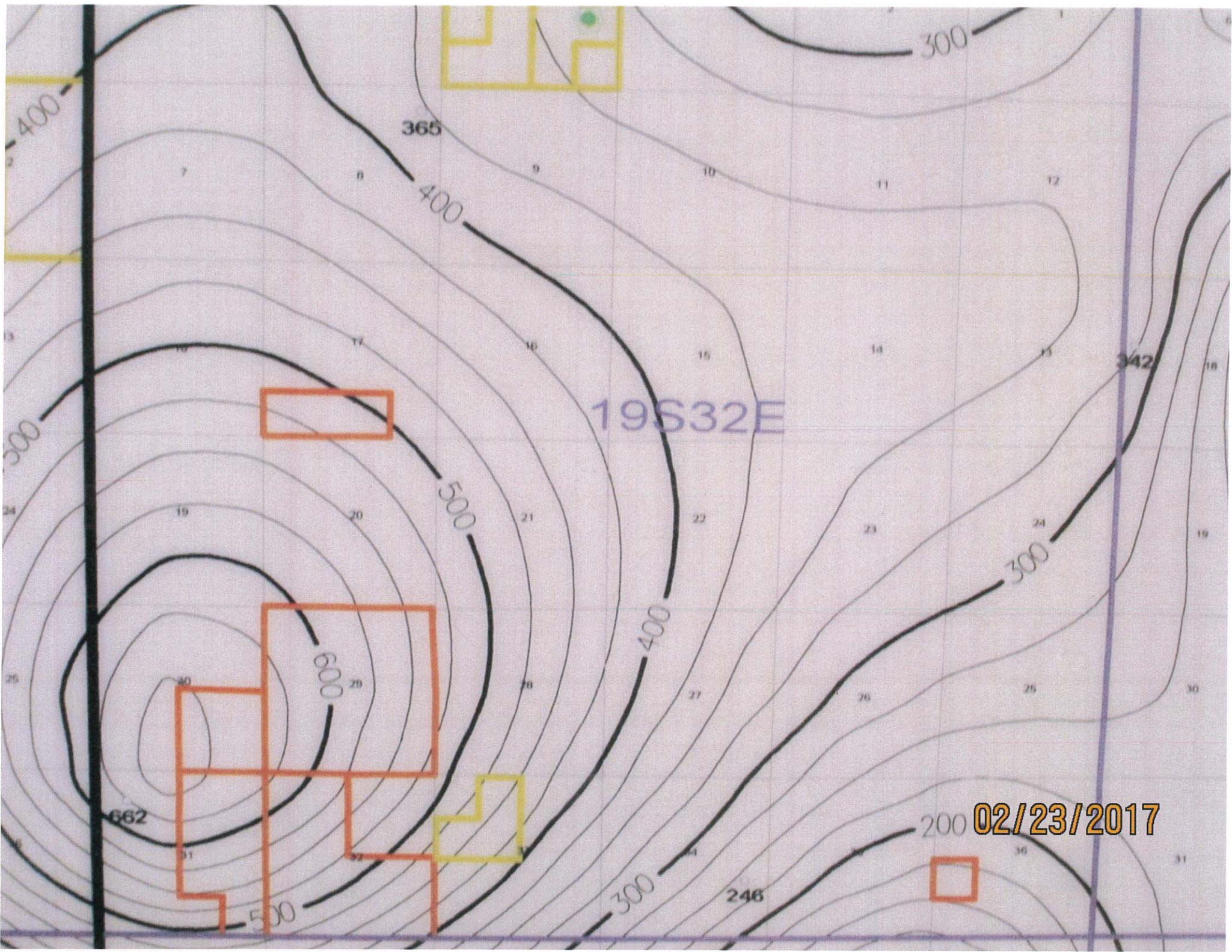
Samples, Hand Auger

North Sample, GPS point: N 32.67734° W-103.81356°

South Sample, GPS point: N 32.67702° W-103.81341°

East Sample, GPS point: N 32.67728° W-103.81328°

West Sample, GPS point: N 32.67730° W-103.81369°



19S32E

02/23/2017



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

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

No records found.

PLSS Search:

Q16: SW

Q4: NW

Section(s): 7

Township: 19S

Range: 32E

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

2/23/17 1:18 PM

WATER COLUMN/ AVERAGE
DEPTH TO WATER



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

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

No records found.

UTMNA83 Radius Search (in meters):

Easting (X): 611369

Northing (Y): 3616087

Radius: 205

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

2/23/17 1:14 PM

WATER COLUMN/ AVERAGE
DEPTH TO WATER



Groundwater Plot

COG Spruce Goose Fed Com #2H & #3H

County
Lea

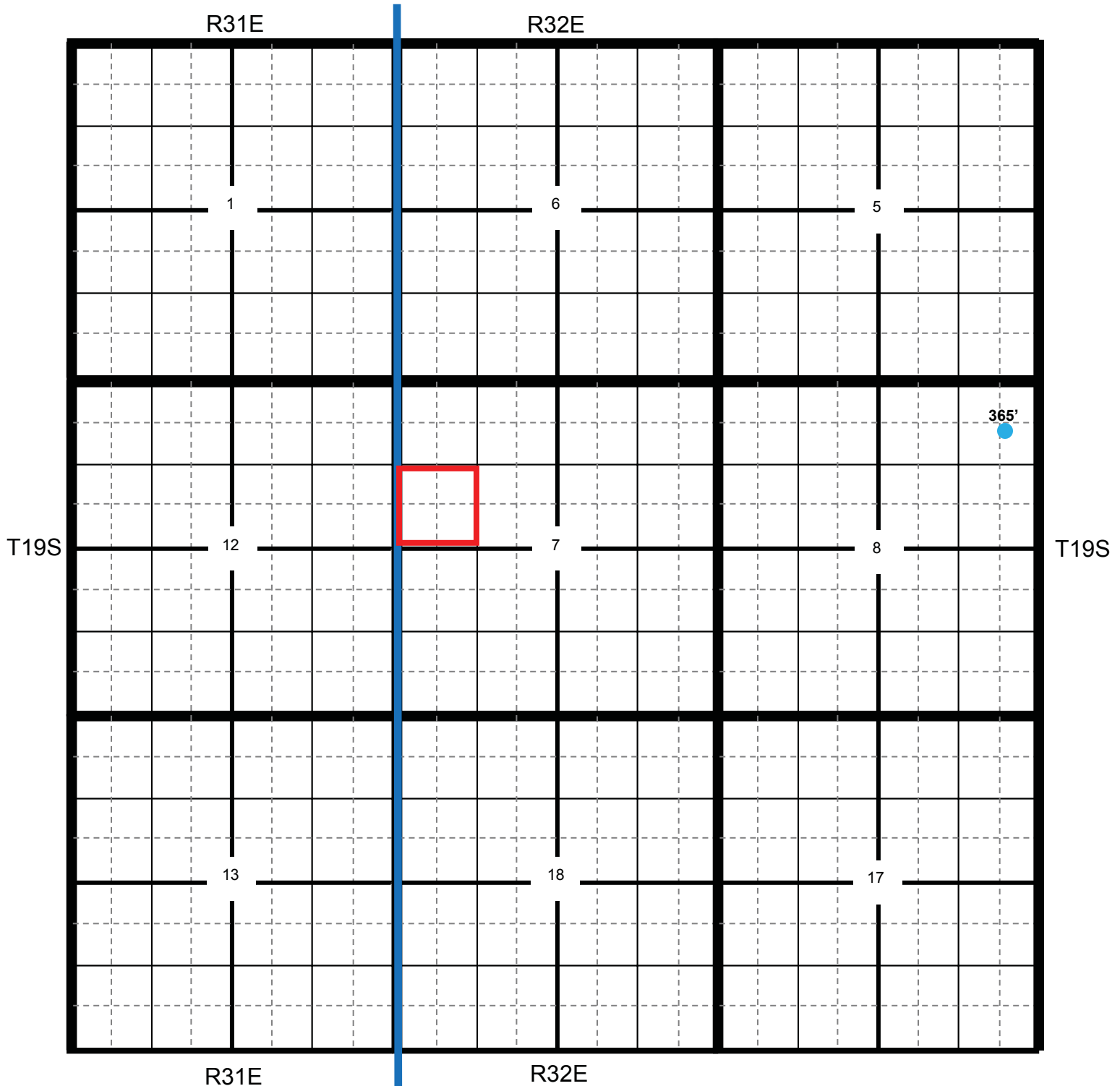
Unit Letter
E

Section
7

Township
19S

Range
32E

Trend Map 425'



★ Location

● OCD

● USGS

● SEO

● All Databases

COG Spruce Goose Federal Com #2H & #3H

County Lea Unit Letter E Section 7 Township 19S Range 32E

Trend Map 425'

1

2

NW/NW None found	NE/NW	NW/NE	NE/NE
Unit Letter D	Unit Letter C	Unit Letter B	Unit Letter A
SW/NW	SE/NW	SW/NE	SE/NE
Unit Letter E	Unit Letter F	Unit Letter G	Unit Letter H
NW/SW	NE/SW	NW/SE	NE/SE
Unit Letter L	Unit Letter K	Unit Letter J	Unit Letter I
SW/SW	SE/SW	SW/SE	SE/SE
Unit Letter M	Unit Letter N	Unit Letter O	Unit Letter P

3

4

★ Location

● OCD

● USGS

● SEO

● All Databases

**Laboratory Analytical Results Summary
Spruce Goose Fed Com #2H #3H**

		Sample	SP1 @ 1'	SP1 @ 2'	SP1 @ 3'
Analyte	Method	Date	2/3/17	2/3/17	2/3/17
			mg/Kg	mg/Kg	mg/Kg
Chloride	SM4500CI-B		480	304	<16.0

		Sample	SP2 @ 1'	SP2 @ 2'	SP2 @ 3'
Analyte	Method	Date	2/3/17	2/3/17	2/3/17
			mg/Kg	mg/Kg	mg/Kg
Chloride	SM4500CI-B		304	336	16

		Sample	SP3 @ 1'	SP3 @ 2'	SP3 @ 3'	SP3 @ 4'
Analyte	Method	Date	2/3/17	2/3/17	2/3/17	2/3/17
			mg/Kg	mg/Kg	mg/Kg	mg/Kg
Chloride	SM4500CI-B		336	32	240	16

		Sample	SP4 @ 1'	SP4 @ 2'	SP4 @ 3'	SP4 @ 4'
Analyte	Method	Date	2/3/17	2/3/17	2/3/17	2/3/17
			mg/Kg	mg/Kg	mg/Kg	mg/Kg
Chloride	SM4500CI-B		272	32	176	16

		Sample	NORTH @ SURFACE
Analyte	Method	Date	2/3/17
			mg/Kg
Chloride	SM4500CI-B		32

		Sample	SOUTH @ SURFACE
Analyte	Method	Date	2/3/17
			mg/Kg
Chloride	SM4500CI-B		<16.0

		Sample	EAST @ SURFACE
Analyte	Method	Date	2/3/17
			mg/Kg
Chloride	SM4500CI-B		80

		Sample	WEST @ SURFACE
Analyte	Method	Date	2/3/17
			mg/Kg
Chloride	SM4500CI-B		16

February 11, 2017

Cliff Brunson

BBC International, Inc.

P.O. Box 805

Hobbs, NM 88241

RE: SPRUCE GOOSE FED COM #2H/3H

Enclosed are the results of analyses for samples received by the laboratory on 02/06/17 16:55.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

BBC International, Inc.
Cliff Brunson
P.O. Box 805
Hobbs NM, 88241
Fax To: (575) 397-0397

Received:	02/06/2017	Sampling Date:	02/03/2017
Reported:	02/11/2017	Sampling Type:	Soil
Project Name:	SPRUCE GOOSE FED COM #2H/3H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	COG - 126		

Sample ID: SP 1 @ 1' (H700299-01)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	480	16.0	02/09/2017	ND	400	100	400	11.3	

Sample ID: SP 1 @ 2' (H700299-02)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	304	16.0	02/09/2017	ND	400	100	400	11.3	

Sample ID: SP 1 @ 3' (H700299-03)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	02/09/2017	ND	400	100	400	11.3	

Sample ID: SP 2 @ 1' (H700299-04)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	304	16.0	02/10/2017	ND	448	112	400	3.64	

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

BBC International, Inc.
Cliff Brunson
P.O. Box 805
Hobbs NM, 88241
Fax To: (575) 397-0397

Received:	02/06/2017	Sampling Date:	02/03/2017
Reported:	02/11/2017	Sampling Type:	Soil
Project Name:	SPRUCE GOOSE FED COM #2H/3H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	COG - 126		

Sample ID: SP 2 @ 2' (H700299-05)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	336	16.0	02/10/2017	ND	448	112	400	3.64	

Sample ID: SP 2 @ 3' (H700299-06)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	02/10/2017	ND	448	112	400	3.64	

Sample ID: SP 3 @ 1' (H700299-07)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	336	16.0	02/10/2017	ND	448	112	400	3.64	

Sample ID: SP 3 @ 2' (H700299-08)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	02/10/2017	ND	448	112	400	3.64	

Sample ID: SP 3 @ 3' (H700299-09)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	240	16.0	02/10/2017	ND	448	112	400	3.64	

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

BBC International, Inc.
Cliff Brunson
P.O. Box 805
Hobbs NM, 88241
Fax To: (575) 397-0397

Received:	02/06/2017	Sampling Date:	02/03/2017
Reported:	02/11/2017	Sampling Type:	Soil
Project Name:	SPRUCE GOOSE FED COM #2H/3H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	COG - 126		

Sample ID: SP 3 @ 4' (H700299-10)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	02/10/2017	ND	448	112	400	3.64		

Sample ID: SP 4 @ 1' (H700299-11)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	272	16.0	02/10/2017	ND	448	112	400	3.64	

Sample ID: SP 4 @ 2' (H700299-12)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	02/10/2017	ND	448	112	400	3.64		

Sample ID: SP 4 @ 3' (H700299-13)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	176	16.0	02/10/2017	ND	448	112	400	3.64		

Sample ID: SP 4 @ 4' (H700299-14)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	02/10/2017	ND	448	112	400	3.64		

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

BBC International, Inc.
Cliff Brunson
P.O. Box 805
Hobbs NM, 88241
Fax To: (575) 397-0397

Received:	02/06/2017	Sampling Date:	02/03/2017
Reported:	02/11/2017	Sampling Type:	Soil
Project Name:	SPRUCE GOOSE FED COM #2H/3H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	COG - 126		

Sample ID: NORTH @ SURFACE (H700299-15)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	02/10/2017	ND	448	112	400	3.64		

Sample ID: SOUTH @ SURFACE (H700299-16)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	02/10/2017	ND	448	112	400	3.64		

Sample ID: EAST @ SURFACE (H700299-17)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	02/10/2017	ND	448	112	400	3.64		

Sample ID: WEST @ SURFACE (H700299-18)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	02/10/2017	ND	448	112	400	3.64		

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager



101 East Marland, Hobbs, NM 88240
(505) 393-2326 FAX (505) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 8 of 8

+ Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476

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 August 8, 2011

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:	Spruce Goose Federal Com 2H&3H	Facility Type:	Tank Battery
Surface Owner:	Federal	Mineral Owner:	API No. 30-025-43169

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
E	07	19S	32E	1980	North	210	West	Lea

Latitude 32.67685419 Longitude -103.8136099

NATURE OF RELEASE

Type of Release:	Produced Water	Volume of Release:	23 bbls	Volume Recovered:	22 bbls
Source of Release:	Valve	Date and Hour of Occurrence:	January 16, 2017 7:00 pm	Date and Hour of Discovery:	January 16, 2017 7:00 pm
Was Immediate Notice Given?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input checked="" 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.*					
The release was caused by a third party leaving the valve partially open. The valve was shutoff.					
Describe Area Affected and Cleanup Action Taken.*					
The release was on location. A vacuum truck was dispatched to remove all freestanding fluids. Concho will have the spill area sampled subsequent to remediation by third party responsible for the release to verify remediation is complete.					
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:	OIL CONSERVATION DIVISION				
Printed Name:	Rebecca Haskell	Approved by Environmental Specialist:			
Title:	Senior HSE Coordinator	Approval Date:	Expiration Date:		
E-mail Address:	rhaskell@concho.com	Conditions of Approval:			Attached <input type="checkbox"/>
Date:	January 17, 2017	Phone:	432-683-7443		

* Attach Additional Sheets If Necessary