

RECEIVED

By JKeyes at 9:52 am, Oct 08, 2015



Stipulations:

1. Provide discrete site samples taken from overspray area.
2. Delineate to 250 ppm around sample points 1 through 5, with confirmation sample for last sample.
3. Pond needs to be tested for contamination.

CONOCOPHILLIPS

P.O. Box 2197

Houston, TX 77252-2197

Phone 281.293.1000

EVGSAU 3366-001

1RP-3440

Corrective Action Plan

API No. 30-025-32063

Release Date: December 1st, 2014

Unit Letter E, Section 33, Township 17S, Range 35E



PO Box 2948 | Hobbs, NM 88241 | Phone 575.393.2967

October 6, 2015

Kellie Jones

Environmental Specialist – New Mexico Oil Conservation Division
Energy, Minerals and Natural Resources Department
1625 N. French Dr.
Hobbs, NM 88240

**RE: Corrective Action Plan
ConocoPhillips EVGSAU 3366-001 (1RP-3440)
UL/E sec. 33 T17S R35E
API No. 30-025-32063**

Ms. Jones:

ConocoPhillips (CoP) has retained Basin Environmental Service Technologies (Basin) to address potential environmental concerns at the above-referenced site.

Background and Previous Work

The site is located approximately 2.3 miles southeast of Buckeye, New Mexico at UL/E sec. 33 T17S R35E. NM OSE and BLM installed monitor well records indicate that groundwater will likely be encountered at a depth of approximately 73 +/- feet.

On December 1st, 2014, CoP discovered that a stuffing box had leaked, releasing 3 barrels of oil and 79 barrels of produced water over 21,149 sq ft of caliche pad and pasture with an overspray of 480,881 sq ft of pasture. A total of 2 barrels of oil and 48 barrels of produced water were recovered. NMOCD was notified of the release on December 2nd, 2014, and an initial C-141 was submitted to NMOCD for approval. NMOCD approved the C-141 on December 9th, 2014 (Appendix A).

Basin personnel were on site to visually assess the release on December 2nd, 2014. The release was mapped and photographed (Figure 1). An 8 Point Composite was taken from the overspray area and sent to a commercial laboratory for analysis. Laboratory analysis of the 8 Point Overspray Composite returned a chloride value of 224 mg/kg, a Gasoline Range Organics (GRO) value of non-detect and a Diesel Range Organics (DRO) value of 16.8 mg/kg (Appendix B). On December 4th, 2014, the first application of Micro Blaze, a total of 30 gallons mixed with 1,500 gallons of fresh water, was applied evenly over the overspray area. On December 8th, 2014, the second application of Micro Blaze, a total of 45 gallons mixed with 2,250 gallons of fresh water was applied evenly over the overspray area.

On August 8th, 2015, 6 sample points were taken from the release area at the surface and with depth and representative samples were sent to a commercial laboratory for analysis. At the surface, Point 1 returned a chloride value of 592 mg/kg, a Gasoline Range Organics (GRO) value of non-detect and a Diesel Range Organics (DRO) value of 192 mg/kg. At 1 ft, Point 1 returned a chloride value of 304 mg/kg and a GRO and DRO values of non-detect. At the surface, Point 2 returned a chloride value of 5,060 mg/kg, a GRO value of non-detect and a DRO value of 22.8 mg/kg. At 3.5 ft, Point 2 returned a chloride value of 848 mg/kg, a GRO value of non-detect and a DRO value of 12.3 mg/kg. At the surface, Point 3 returned a chloride value of 2,840 mg/kg, a GRO value of non-detect and a DRO value of 205 mg/kg. At 7 ft, Point 3 returned a chloride value of 512 mg/kg and GRO and DRO values of non-detect. At the surface, Point 4 returned a chloride value of 6,800 mg/kg, a GRO value of non-detect and a DRO value of 46.3 mg/kg. At 3 ft, Point 4 returned a chloride value of 288 mg/kg, a GRO value of non-detect and a DRO value of 18.3 mg/kg. At the surface, Point 5 returned a chloride value of 2,560 mg/kg, a GRO value of non-detect and a DRO value of 6,370 mg/kg. At 6 in, Point 5 returned a chloride value of 464 mg/kg and GRO and DRO values of non-detect. At the surface, Point 6 returned a chloride value of 192 mg/kg and GRO and DRO values of non-detect. At 6 in, Point 6 returned a chloride value of 224 mg/kg and GRO and DRO values of non-detect.

To determine if the residual chlorides in the lease pad's vadose zone pose a threat to groundwater quality, Basin ran the U.S. Environmental Protection Agency Exposure Assessment Multimedia Model (MULTIMED Version 1.5, 2005). Model outputs and the graph are included in Appendix C. With the impact area of 160 ft x 60 ft, the model output concludes that the peak concentration of chlorides in groundwater contributed by the vadose zone soils would be approximately 195 mg/L in 175 years. Since the estimated increase in chloride concentrations in groundwater from residual chloride migration is below the WQCC standard of 250 mg/L, no action is warranted for the groundwater at this site.

Based on the assessment, the road and lease pad will be scraped down 6 inches bgs (Figure 2). Once the scrape is completed, discreet samples from the bottom of the road scrape will be taken and field tested for chlorides and organic vapors. If the field data indicates that the discreet samples will not achieve chloride, Gasoline Range Organics (GRO) and Diesel Range Organics (DRO) readings below regulatory standards, the scrape will be deepened until field testing indicates that all constituents from the discreet samples will return values below regulatory standards. The discreet samples will then be taken to a commercial laboratory to confirm that chloride, GRO and DRO readings are below regulatory standards.

All excavated soils will be taken to a NMOCD approved facility for disposal. Clean caliche will be imported to the site to use as backfill. A sample of the imported caliche will be taken to a commercial laboratory to confirm that the chloride reading is below regulatory standards. The scrape will be backfilled with the clean, imported caliche and contoured to the surrounding location. The lease pad, the release area around Points 1, 2 and 3, will be remediated upon site abandonment.

Photo documentation of these activities may be found in Appendix D.

Once these activities have been completed, a report will be sent to NMOCD requesting 'remediation termination' and site closure.

Basin appreciates the opportunity to work with you on this project. Please contact me if you have any questions or wish to discuss the site.

Sincerely,

A handwritten signature in cursive script that reads "Kyle Norman" followed by a horizontal line.

Kyle Norman
Project Lead
Basin Environmental Service Technologies
(575) 942-8542

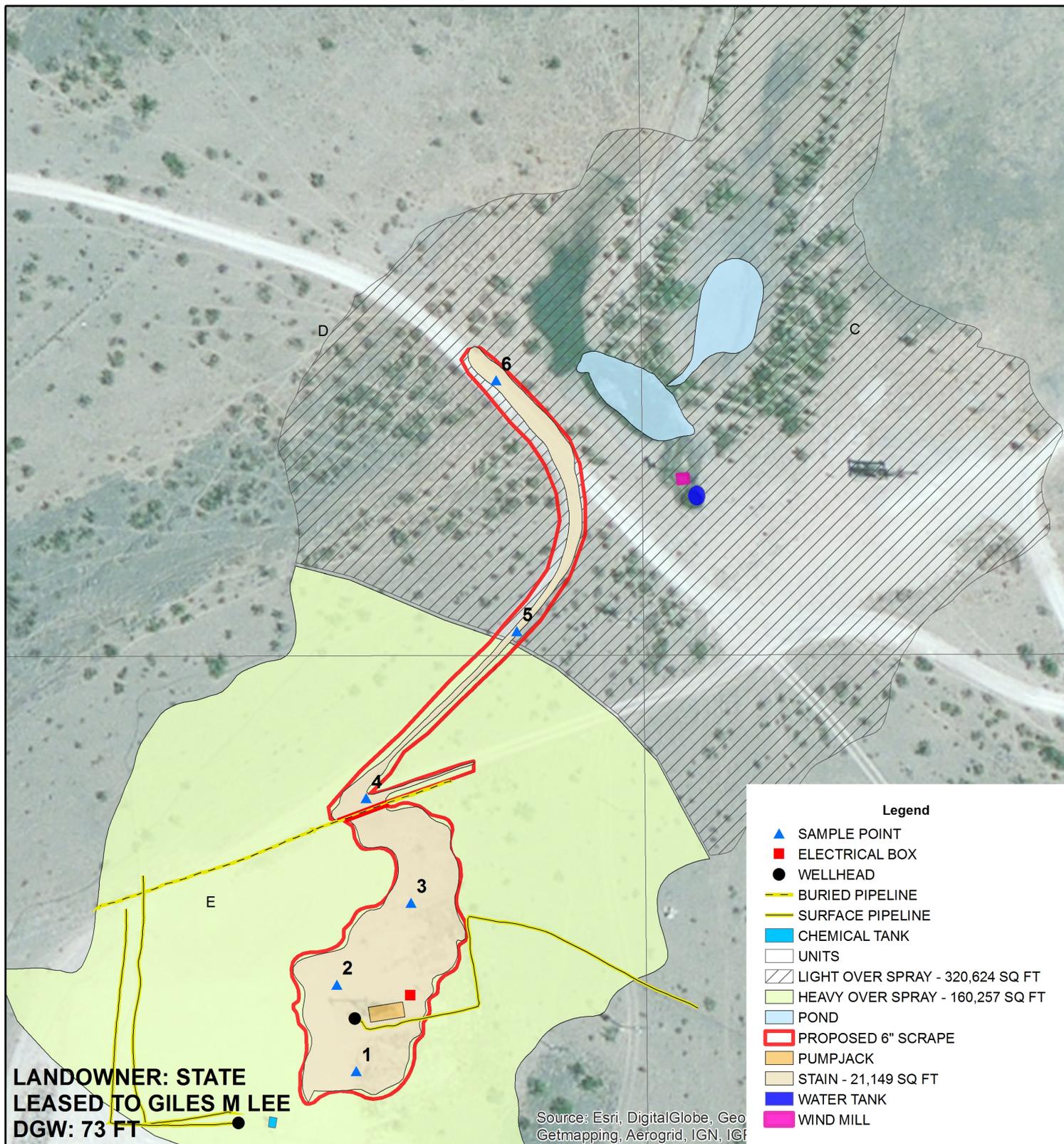
Attachments:

- Figure 1 – Initial Sampling
- Figure 2 – Proposed Scrape
- Appendix A – Initial C-141
- Appendix B – Laboratory Analysis
- Appendix C – Multimed Model
- Appendix D – Photo Documentation

Figures

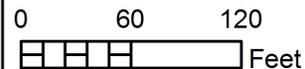
Basin Environmental Service Technologies, LLC
P.O. Box 2948, Hobbs, NM 88241
Phone 575.393.2967

Proposed Scrape



CONOCOPHILLIPS
EVGSAU 3366-001
 1RP-3440
 UL C, D, E & F SECTION 33
 T-17-S R-35-E
 LEA COUNTY, NM

Figure 2



GPS date: 12/2/14 KS, 8/27/15 KN W
 Drawing date: 8/27/15
 Drafted by: T. Grieco



Appendix A

Intial C-141

Basin Environmental Service Technologies, LLC
P.O. Box 2948 Hobbs, NM 88241
Phone 575.393.2967

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

HOBBS OCD
State of New Mexico
Energy Minerals and Natural Resources
DEC 09 2014
Oil Conservation Division
1220 South St. Francis Dr.
RECEIVED
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: ConocoPhillips	Contact: Jay Garcia
Address: 29 Vacuum Lane	Telephone No. 575-391-3180
Facility Name: EVGSAU 3366-001	Facility Type: Oil Well

Surface Owner: State	Mineral Owner: State	API No 3002532063
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LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
E	33	17S	35E	1560	North	1080	West	LEA

Latitude 32.7944120519521 Longitude 103.467737546431

NATURE OF RELEASE

Type of Release: Spill	Volume of Release: 82 BBLs	Volume Recovered: 50 BBLs
Source of Release: Pressure switch	Date and Hour of Occurrence 12/1/2014 1:00 pm	Date and Hour of Discovery SAME
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Tomas Oberding	
By Whom? Jay Garcia	Date and Hour: 12/2/2014 3:00 pm	
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.*
N/A

Describe Cause of Problem and Remedial Action Taken.* MSO responded to a stuffing box leak on the 3366-001 resulting in the release of 3 BO and 79 BPW. MSO notified supervisor and HSE. After further observation, it was decided to call in Projects to assist. Due to time of day, the decision was made to let well bleed CO2 overnight. A reverse unit was moved in and hooked up and well was bled down to reverse pit. 50 bbls of mud and 30 BBLs Brine water was pumped and well was killed. Rams on stuffing box closed, packing changed and well isolated. Spill area was 600 Ft X 200 Ft X 1/8" and 100FT X 100 FT X 2" with 2BO and 48 BPW recovered and will be remediated according to NMOCD guidelines.

Describe Area Affected and Cleanup Action Taken.*
. Spill area was 600 Ft X 200 Ft X 1/8" and 100FT X 100 FT X 2" with 2BO and 48 BPW recovered and will be remediated according to NMOCD guidelines.

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>Jay Garcia</i>		OIL CONSERVATION DIVISION	
Printed Name: Jay Garcia		Approved by Environmental Specialist:	
Title: LEAD HSE		Approval Date: <i>12-9-15</i>	Expiration Date: <i>2-9-15</i>
E-mail Address: jay.c.garcia@conocophillips.com		Conditions of Approval: <i>Site Spill report. Revised 8/1/15 per NMOCD guid. Subir filed C-141 by 2-9-15</i>	
Date: 1/2/2014	Phone: 575-391-3180	Attached <input type="checkbox"/> <i>IRP-3440</i>	

* Attach Additional Sheets If Necessary

217812
N7014 34 346107
P7014 34 346671
DEC 11 2014

Appendix B

Laboratory Analysis

Basin Environmental Service Technologies, LLC
P.O. Box 2948 Hobbs, NM 88241
Phone 575.393.2967



December 11, 2014

KYLE NORMAN
RICE ENVIRONMENTAL CONSULTING & SAFETY LLC
419 W. CAIN
HOBBS, NM 88240

RE: EVGSAU 3366-001

Enclosed are the results of analyses for samples received by the laboratory on 12/08/14 16:10.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

Celey D. Keene
Lab Director/Quality Manager

Analytical Results For:

 RICE ENVIRONMENTAL CONSULTING & SAFETY
 KYLE NORMAN
 419 W. CAIN
 HOBBS NM, 88240
 Fax To: (575) 397-1471

Received:	12/08/2014	Sampling Date:	12/08/2014
Reported:	12/11/2014	Sampling Type:	Soil
Project Name:	EVGSAU 3366-001	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: 8 PT COMP OVERSPRAY @ SURFACE (H403741-01)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	224	16.0	12/09/2014	ND	400	100	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	12/10/2014	ND	188	93.9	200	0.211	
DRO >C10-C28	16.8	10.0	12/10/2014	ND	201	100	200	0.909	

Surrogate: 1-Chlorooctane 91.8 % 47.2-157

Surrogate: 1-Chlorooctadecane 88.6 % 52.1-176

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



Celey D. Keene, Lab Director/Quality Manager

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: <u>RECS</u>		BILL TO				ANALYSIS REQUEST																			
Project Manager: <u>Laura Flores, Kyle Schmidt</u>		P.O. #:																							
Address:		Company:																							
City:	State:	Zip:	Attn:																						
Phone #:	Fax #:		Address:																						
Project #:	Project Owner:		City:																						
Project Name:		State:														Zip:									
Project Location: <u>EUGSAU 3366-001</u>		Phone #:																							
Sampler Name: <u>Kyle Schmidt</u>		Fax #:																							
FOR LAB USE ONLY																									
Lab I.D.	Sample I.D.	(GRAB OR C/COMP. # CONTAINERS)	MATRIX													PRESERV.	SAMPLING		<div style="font-size: 2em; font-family: cursive;">CI</div> <div style="font-size: 2em; font-family: cursive;">TPH</div>						
<u>H403741</u>			GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME												
	<u>8 point composite sampling @ surface</u>	<u>C 1</u>			<u>X</u>					<u>X</u>		<u>12-8-14</u>	<u>10:35</u>												

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or 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 services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: <u>Kyle Schmidt</u>	Date: <u>12-8-14</u>	Received By: <u>Jodi Henson</u>	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
Relinquished By:	Time: <u>4:10</u>	Received By:	Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #:
Delivered By: (Circle One)	Date:	Sample Condition	CHECKED BY: (Initials)	
Sampler - UPS - Bus - Other:	Time:	Cool <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<u>JH</u>	
REMARKS:				

† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326

September 14, 2015

KYLE NORMAN

BASIN ENVIRONMENTAL - HOBBS

419 W. CAIN

HOBBS, NM 88240

RE: EVGSAU 3366-001

Enclosed are the results of analyses for samples received by the laboratory on 09/08/15 15:10.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. 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:

 BASIN ENVIRONMENTAL - HOBBS
 KYLE NORMAN
 419 W. CAIN
 HOBBS NM, 88240
 Fax To: (575) 393-0293

Received:	09/08/2015	Sampling Date:	08/27/2015
Reported:	09/14/2015	Sampling Type:	Soil
Project Name:	EVGSAU 3366-001	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Judy Garcia
Project Location:	NOT GIVEN		

Sample ID: POINT 1 SURFACE (H502364-01)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	592	16.0	09/11/2015	ND	432	108	400	0.00	
TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	09/09/2015	ND	178	88.9	200	0.999	
DRO >C10-C28	192	10.0	09/09/2015	ND	198	99.1	200	0.360	
<i>Surrogate: 1-Chlorooctane</i>	<i>62.5 %</i>	<i>47.2-157</i>							
<i>Surrogate: 1-Chlorooctadecane</i>	<i>73.0 %</i>	<i>52.1-176</i>							

Sample ID: POINT 1 @ 1' (H502364-02)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	304	16.0	09/14/2015	ND	432	108	400	0.00	
TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	09/09/2015	ND	178	88.9	200	0.999	
DRO >C10-C28	<10.0	10.0	09/09/2015	ND	198	99.1	200	0.360	
<i>Surrogate: 1-Chlorooctane</i>	<i>71.8 %</i>	<i>47.2-157</i>							
<i>Surrogate: 1-Chlorooctadecane</i>	<i>81.1 %</i>	<i>52.1-176</i>							

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 BASIN ENVIRONMENTAL - HOBBS
 KYLE NORMAN
 419 W. CAIN
 HOBBS NM, 88240
 Fax To: (575) 393-0293

 Received: 09/08/2015
 Reported: 09/14/2015
 Project Name: EVGSAU 3366-001
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 08/27/2015
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Judy Garcia

Sample ID: POINT 2 SURFACE (H502364-03)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	5060	16.0	09/14/2015	ND	432	108	400	0.00	
TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	09/09/2015	ND	178	88.9	200	0.999	
DRO >C10-C28	22.8	10.0	09/09/2015	ND	198	99.1	200	0.360	

Surrogate: 1-Chlorooctane 64.6 % 47.2-157

Surrogate: 1-Chlorooctadecane 71.2 % 52.1-176

Sample ID: POINT 2 @ 3.5' (H502364-04)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	848	16.0	09/14/2015	ND	432	108	400	0.00	
TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	09/09/2015	ND	178	88.9	200	0.999	
DRO >C10-C28	12.3	10.0	09/09/2015	ND	198	99.1	200	0.360	

Surrogate: 1-Chlorooctane 64.3 % 47.2-157

Surrogate: 1-Chlorooctadecane 76.9 % 52.1-176

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 BASIN ENVIRONMENTAL - HOBBS
 KYLE NORMAN
 419 W. CAIN
 HOBBS NM, 88240
 Fax To: (575) 393-0293

 Received: 09/08/2015
 Reported: 09/14/2015
 Project Name: EVGSAU 3366-001
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 08/27/2015
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Judy Garcia

Sample ID: POINT 3 SURFACE (H502364-05)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2840	16.0	09/14/2015	ND	432	108	400	0.00	
TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	09/09/2015	ND	178	88.9	200	0.999	
DRO >C10-C28	205	10.0	09/09/2015	ND	198	99.1	200	0.360	

Surrogate: 1-Chlorooctane 82.6 % 47.2-157

Surrogate: 1-Chlorooctadecane 88.4 % 52.1-176

Sample ID: POINT 3 @ 7' (H502364-06)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	512	16.0	09/14/2015	ND	432	108	400	0.00	
TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	09/09/2015	ND	178	88.9	200	0.999	
DRO >C10-C28	<10.0	10.0	09/09/2015	ND	198	99.1	200	0.360	

Surrogate: 1-Chlorooctane 63.1 % 47.2-157

Surrogate: 1-Chlorooctadecane 76.8 % 52.1-176

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 BASIN ENVIRONMENTAL - HOBBS
 KYLE NORMAN
 419 W. CAIN
 HOBBS NM, 88240
 Fax To: (575) 393-0293

Received:	09/08/2015	Sampling Date:	08/27/2015
Reported:	09/14/2015	Sampling Type:	Soil
Project Name:	EVGSAU 3366-001	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Judy Garcia
Project Location:	NOT GIVEN		

Sample ID: POINT 4 SURFACE (H502364-07)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	6800	16.0	09/14/2015	ND	432	108	400	0.00	
TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	09/09/2015	ND	178	88.9	200	0.999	
DRO >C10-C28	46.3	10.0	09/09/2015	ND	198	99.1	200	0.360	
<i>Surrogate: 1-Chlorooctane</i>	<i>70.7 %</i>	<i>47.2-157</i>							
<i>Surrogate: 1-Chlorooctadecane</i>	<i>81.7 %</i>	<i>52.1-176</i>							

Sample ID: POINT 4 @ 3' (H502364-08)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	288	16.0	09/14/2015	ND	432	108	400	0.00	
TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	09/09/2015	ND	178	88.9	200	0.999	
DRO >C10-C28	18.3	10.0	09/09/2015	ND	198	99.1	200	0.360	
<i>Surrogate: 1-Chlorooctane</i>	<i>70.8 %</i>	<i>47.2-157</i>							
<i>Surrogate: 1-Chlorooctadecane</i>	<i>81.0 %</i>	<i>52.1-176</i>							

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 BASIN ENVIRONMENTAL - HOBBS
 KYLE NORMAN
 419 W. CAIN
 HOBBS NM, 88240
 Fax To: (575) 393-0293

 Received: 09/08/2015
 Reported: 09/14/2015
 Project Name: EVGSAU 3366-001
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 08/27/2015
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Judy Garcia

Sample ID: POINT 5 SURFACE (H502364-09)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2560	16.0	09/14/2015	ND	432	108	400	0.00		
TPH 8015M		mg/kg		Analyzed By: CK						S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<50.0	50.0	09/09/2015	ND	178	88.9	200	0.999		
DRO >C10-C28	6370	50.0	09/09/2015	ND	198	99.1	200	0.360		
<i>Surrogate: 1-Chlorooctane</i>	<i>81.3 %</i>	<i>47.2-157</i>								
<i>Surrogate: 1-Chlorooctadecane</i>	<i>189 %</i>	<i>52.1-176</i>								

Sample ID: POINT 5 @ 6" (H502364-10)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	464	16.0	09/14/2015	ND	432	108	400	0.00	
TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	09/09/2015	ND	178	88.9	200	0.999	
DRO >C10-C28	<10.0	10.0	09/09/2015	ND	198	99.1	200	0.360	
<i>Surrogate: 1-Chlorooctane</i>	<i>71.6 %</i>	<i>47.2-157</i>							
<i>Surrogate: 1-Chlorooctadecane</i>	<i>86.6 %</i>	<i>52.1-176</i>							

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 BASIN ENVIRONMENTAL - HOBBS
 KYLE NORMAN
 419 W. CAIN
 HOBBS NM, 88240
 Fax To: (575) 393-0293

 Received: 09/08/2015
 Reported: 09/14/2015
 Project Name: EVGSAU 3366-001
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 08/27/2015
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Judy Garcia

Sample ID: POINT 6 SURFACE (H502364-11)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	192	16.0	09/14/2015	ND	432	108	400	0.00	
TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	09/09/2015	ND	178	88.9	200	0.999	
DRO >C10-C28	<10.0	10.0	09/09/2015	ND	198	99.1	200	0.360	
<i>Surrogate: 1-Chlorooctane</i>		<i>71.6 %</i>	<i>47.2-157</i>						
<i>Surrogate: 1-Chlorooctadecane</i>		<i>85.8 %</i>	<i>52.1-176</i>						

Sample ID: POINT 6 @ 6" (H502364-12)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	224	16.0	09/14/2015	ND	432	108	400	0.00	
TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	09/10/2015	ND	189	94.3	200	2.02	
DRO >C10-C28	<10.0	10.0	09/10/2015	ND	216	108	200	1.76	
<i>Surrogate: 1-Chlorooctane</i>		<i>80.6 %</i>	<i>47.2-157</i>						
<i>Surrogate: 1-Chlorooctadecane</i>		<i>87.6 %</i>	<i>52.1-176</i>						

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

- S-06 The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- ** Samples not received at proper temperature of 6°C or below.
- *** Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C
Samples reported on an as received basis (wet) unless otherwise noted on report



Celey D. Keene, Lab Director/Quality Manager

Appendix C

Multimed Model

Basin Environmental Service Technologies, LLC
P.O. Box 2948 Hobbs, NM 88241
Phone 575.393.2967

U. S. ENVIRONMENTAL PROTECTION AGENCY

EXPOSURE ASSESSMENT

MULTIMEDIA MODEL

MULTIMED (Version 1.50, 2005)

1
Run options

CP EVGSAU 3366-001

Chemical simulated is Chloride

Option Chosen Saturated and unsaturated zone models
Run was DETERMIN
Infiltration Specified By User: 3.050E-02 m/yr
Run was transient
Well Times: Find Maximum Concentration
Reject runs if Y coordinate outside plume
Reject runs if Z coordinate outside plume
Gaussian source used in saturated zone model

1
1
UNSATURATED ZONE FLOW MODEL PARAMETERS
(input parameter description and value)

NP	- Total number of nodal points	240
NMAT	- Number of different porous materials	1
KPROP	- Van Genuchten or Brooks and Corey	1
IMSHGN	- Spatial discretization option	1
NVFLAYR	- Number of layers in flow model	1

OPTIONS CHOSEN

Van Genuchten functional coefficients
User defined coordinate system

Layer information

LAYER NO.	LAYER THICKNESS	MATERIAL PROPERTY
1	23.00	1

DATA FOR MATERIAL 1

VADOSE ZONE MATERIAL VARIABLES

LIMITS			VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS	
DEV	MIN	MAX				MEAN	STD
---	---	---	Saturated hydraulic conductivity	cm/hr	CONSTANT	3.60	-999.

-999.	Unsaturated zone porosity	--	CONSTANT	0.250	-999.
-999.	-999.				
-999.	Air entry pressure head	m	CONSTANT	0.700	-999.
-999.	-999.				
0.000	Depth of the unsaturated zone	m	CONSTANT	23.0	0.000
0.000	0.000				

DATA FOR MATERIAL 1

VADOSE ZONE FUNCTION VARIABLES

LIMITS			VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS	
DEV	MIN	MAX				MEAN	STD

-999.			Residual water content	--	CONSTANT	0.116	-999.
-999.			-999.				
-999.			Brook and Corey exponent, EM	--	CONSTANT	-999.	-999.
-999.			-999.				
-999.			ALFA coefficient	1/cm	CONSTANT	0.500E-02	-999.
-999.			-999.				
-999.			Van Genuchten exponent, ENN	--	CONSTANT	1.09	-999.
-999.			-999.				

1

UNSATURATED ZONE TRANSPORT MODEL PARAMETERS

NLAY	- Number of different layers used		1
NTSTPS	- Number of time values concentration calc		40
DUMMY	- Not presently used		1
ISOL	- Type of scheme used in unsaturated zone		2
N	- Stehfest terms or number of increments		18
NTEL	- Points in Lagrangian interpolation		3
NGPTS	- Number of Gauss points		104
NIT	- Convolution integral segments		2
IBOUND	- Type of boundary condition		3
ITSGEN	- Time values generated or input		1
TMAX	- Max simulation time	--	0.0
WTFUN	- Weighting factor	--	1.2

OPTIONS CHOSEN

Convolution integral approach
Exponentially decaying continuous source
Computer generated times for computing concentrations

1

DATA FOR LAYER 1

VADOSE TRANSPORT VARIABLES

LIMITS			VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS	
DEV	MIN	MAX				MEAN	STD

-999.	Thickness of layer -999.	m	CONSTANT	23.0	-999.
-999.	Longitudinal dispersivity of layer -999.	m	DERIVED	-999.	-999.
-999.	Percent organic matter -999.	--	CONSTANT	0.000	-999.
-999.	Bulk density of soil for layer -999.	g/cc	CONSTANT	1.99	-999.
-999.	Biological decay coefficient -999.	1/yr	CONSTANT	0.000	-999.

1

CHEMICAL SPECIFIC VARIABLES

LIMITS		VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS	
DEV	MIN	MAX			MEAN	STD
-999.		Solid phase decay coefficient -999.	1/yr	DERIVED	-999.	-999.
-999.		Dissolved phase decay coefficient -999.	1/yr	DERIVED	-999.	-999.
-999.		Overall chemical decay coefficient -999.	1/yr	DERIVED	-999.	-999.
-999.		Acid catalyzed hydrolysis rate -999.	1/M-yr	CONSTANT	0.000	-999.
-999.		Neutral hydrolysis rate constant -999.	1/yr	CONSTANT	0.000	-999.
-999.		Base catalyzed hydrolysis rate -999.	1/M-yr	CONSTANT	0.000	-999.
-999.		Reference temperature -999.	C	CONSTANT	25.0	-999.
-999.		Normalized distribution coefficient -999.	ml/g	CONSTANT	0.000	-999.
-999.		Distribution coefficient -999.	--	DERIVED	-999.	-999.
-999.		Biodegradation coefficient (sat. zone) -999.	1/yr	CONSTANT	0.000	-999.
-999.		Air diffusion coefficient -999.	cm ² /s	CONSTANT	-999.	-999.
-999.		Reference temperature for air diffusion -999.	C	CONSTANT	-999.	-999.
-999.		Molecular weight -999.	g/M	CONSTANT	-999.	-999.
-999.		Mole fraction of solute -999.	--	CONSTANT	-999.	-999.
-999.		Vapor pressure of solute -999.	mm Hg	CONSTANT	-999.	-999.
-999.		Henry's law constant -999.	atm-m ³ /M	CONSTANT	-999.	-999.
0.000		Overall 1st order decay sat. zone 1.00	1/yr	DERIVED	0.000	0.000
0.000		Not currently used 0.000		CONSTANT	0.000	0.000
0.000		Not currently used 0.000		CONSTANT	0.000	0.000

1

SOURCE SPECIFIC VARIABLES

LIMITS		VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS	
DEV	MIN	MAX			MEAN	STD

DEV	MIN	MAX					
-999.			Infiltration rate	m/yr	CONSTANT	0.305E-01	-999.
-999.			Area of waste disposal unit	m^2	CONSTANT	892.	-999.
-999.			Duration of pulse	yr	DERIVED	0.100E-08	-999.
-999.			Spread of contaminant source	m	DERIVED	-999.	-999.
-999.			Recharge rate	m/yr	CONSTANT	0.000	-999.
0.000	0.000		Source decay constant	1/yr	CONSTANT	0.250E-01	0.000
-999.			Initial concentration at landfill	mg/l	CONSTANT	0.102E+04	-999.
-999.			Length scale of facility	m	DERIVED	-999.	-999.
-999.			Width scale of facility	m	DERIVED	-999.	-999.
0.000	1.00		Near field dilution		DERIVED	1.00	0.000

AQUIFER SPECIFIC VARIABLES

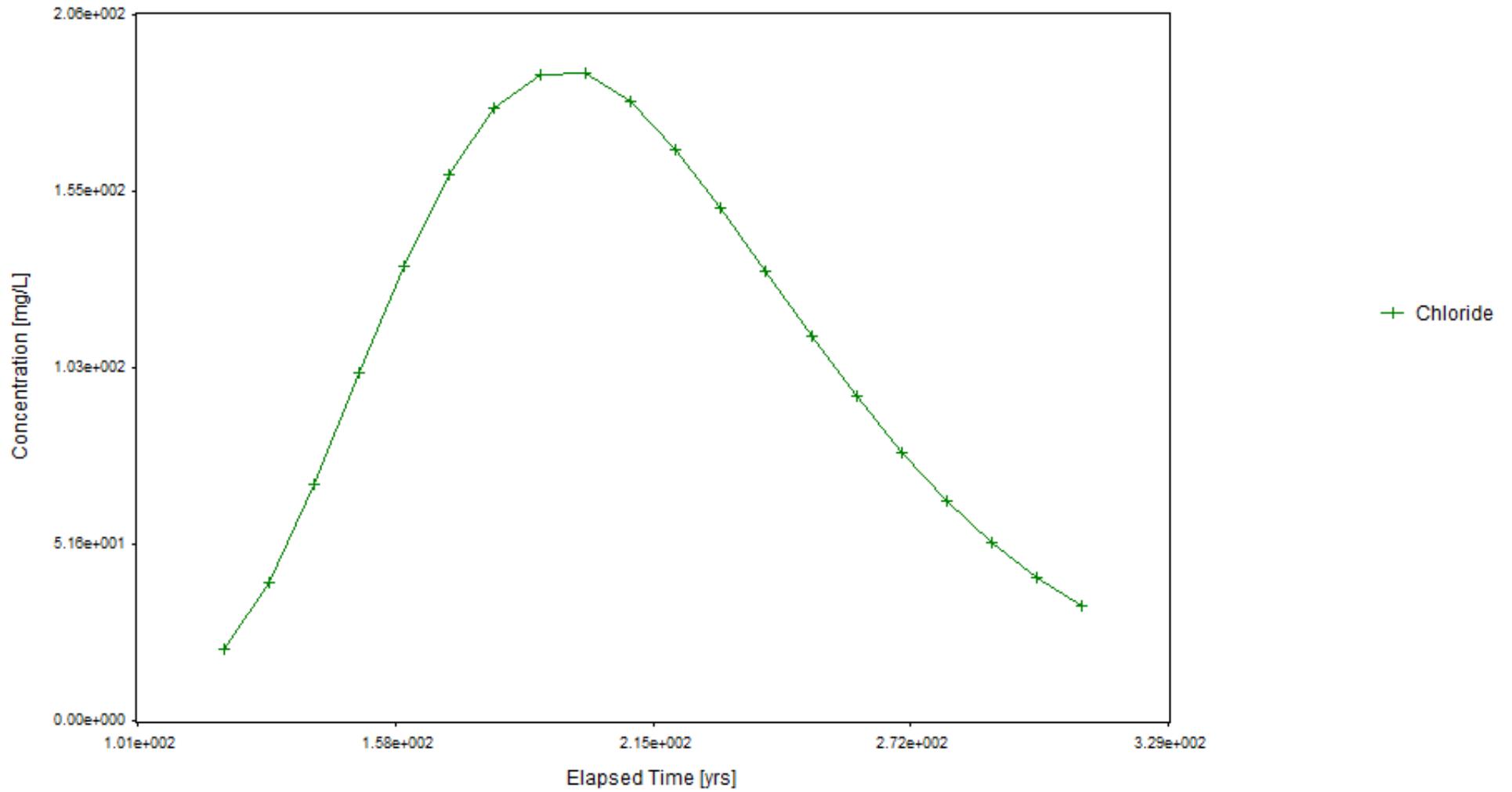
LIMITS			VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS	
DEV	MIN	MAX				MEAN	STD
-999.			Particle diameter	cm	CONSTANT	-999.	-999.
-999.			Aquifer porosity	--	CONSTANT	0.300	-999.
-999.			Bulk density	g/cc	CONSTANT	1.86	-999.
-999.			Aquifer thickness	m	CONSTANT	6.10	-999.
-999.			Source thickness (mixing zone depth)	m	DERIVED	-999.	-999.
-999.			Conductivity (hydraulic)	m/yr	CONSTANT	315.	-999.
-999.			Gradient (hydraulic)		CONSTANT	0.300E-02	-999.
-999.			Groundwater seepage velocity	m/yr	DERIVED	-999.	-999.
-999.			Retardation coefficient	--	DERIVED	-999.	-999.
-999.			Longitudinal dispersivity	m	FUNCTION OF X	-999.	-999.
-999.			Transverse dispersivity	m	FUNCTION OF X	-999.	-999.
-999.			Vertical dispersivity	m	FUNCTION OF X	-999.	-999.
-999.			Temperature of aquifer	C	CONSTANT	20.0	-999.
-999.			pH	--	CONSTANT	7.00	-999.
-999.			Organic carbon content (fraction)		CONSTANT	0.000	-999.
-999.			Well distance from site	m	CONSTANT	1.00	-999.
-999.			Angle off center	degree	CONSTANT	0.000	-999.

-999.	Well vertical distance	m	CONSTANT	0.000	-999.
	-999.				

MAXIMUM WELL CONCENTRATION IS 189.4 AT 0.200E+03 YEARS

Chloride Concentration At The Receptor Well

CP EVGSAU 3366-001



Appendix D

Photo Documentation

Basin Environmental Service Technologies, LLC
P.O. Box 2948 Hobbs, NM 88241
Phone 575.393.2967

ConocoPhillips EVGSAU 3366-001

Unit Letter E, Section 33, T17S, R35E



Initial release area, facing southwest 12/2/14



Initial release area, facing southwest 12/2/14



Initial release area, facing northeast 12/2/14



Overspray area, facing northeast 12/2/14



Micro Blazing area, facing west

12/4/14



Micro Blazing area, facing southeast

12/4/14



Installing vertical, facing east

9/3/15



Vegetation after Micro Blaze, facing West

3/9/15