

RECEIVED

By Kellie Jones at 8:25 am, Oct 21, 2015

APPROVED CONDITIONAL

By Kellie Jones at 8:25 am, Oct 21, 2015



1. For V1 go down to 2 feet.
2. For V2 go down to 3.5 feet.
3. For V3 go down to 1 foot.
4. Ensure BLM approval/concurrence.

CONOCOPHILLIPS

P.O. Box 2197
Houston, TX 77252-2197
Phone 281.293.1000

Wyatt #13
1RP-3481

Corrective Action Plan

API No. 30-025-01363

Release Date: December 14th, 2014

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



PO Box 2948 | Hobbs, NM 88241 | Phone 575.393.2967

October 20, 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 Wyatt #13 (1RP-3461)
UL/E sec. 33 T17S R33E
API No. 30-025-01363**

Ms. Jones:

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

Background and Previous Work

The site is located approximately 6.6 miles southeast of Maljamar, 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 82 +/- feet.

On December 14th, 2014, CoP discovered that a stuffing box had leaked, releasing 8.05 barrels of oil and 8.05 barrels produced water over 850 sq ft of caliche pad. A total of 8 barrels of oil and 7 barrels of produced water were recovered. NMOCD was notified of the release December 16th, 2014, and an initial C-141 was submitted to NMOCD for approval. NMOCD approved the C-141 December 18th, 2014 (Appendix A).

Basin personnel were on site to assess the release on August 11th, 2015. The release was mapped and photographed. Three samples were collected at the surface and with depth, and representative samples were sent to a commercial laboratory for analysis (Appendix B). Laboratory analysis of Point 1 at the surface returned a chloride value of 432 mg/kg, a Gasoline Range Organics (GRO) value of non-detect, a Diesel Range Organics (DRO) value of 461 mg/kg, a Benzene and Toluene value of non-detect, an Ethylbenzene value of 1.14 mg/kg and a Total Xylene value of 4.35 mg/kg. At 6 inches bgs, Point 1 returned a chloride value of 496 mg/kg, a GRO value of 427 mg/kg, a DRO value of 16,500 mg/kg, a Benzene value of non-detect, a Toluene value of 13.5 mg/kg, an Ethylbenzene value of 3.23 mg/kg, a Total Xylene value of 5.93 mg/kg. Laboratory analysis of Point 2 at the surface returned a chloride value of 688 mg/kg, a GRO value of 259 mg/kg, a DRO value of 19,900 mg/kg and BTEX values were non-detect. At 6 inches, Point 2 returned a chloride value of 1,200 mg/kg, GRO returned a value of 332 mg/kg, a DRO value of 5,850 mg/kg, a Benzene value of non-detect, a Toluene value of

14.6 mg/kg, an Ethylbenzene value of 7.7 mg/kg, a Total Xylene value of 16.4 mg/kg. Laboratory analysis of Point 3 at the surface returned a chloride value of 128 mg/kg, a GRO value of non-detect, a DRO value of 37, 600 mg/kg and BTEX values of non-detect. At 6 inches, Point 3 returned a chloride value of 96 mg/kg, a GRO value of non-detect, a DRO value of 1,240 mg/kg and BTEX values of non-detect.

To determine if the residual chlorides in the 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 42 ft x 20 ft, the model output concludes that the peak concentration of chlorides in groundwater contributed by the vadose zone soils would be approximately 138 mg/L in 200 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.

On September 15th, 2015, Basin personnel collected additional samples at Points 1 and 2 and sent representative samples to a commercial lab for analysis. At 2 ft bgs, Point 1 returned a chloride value of 1,090 mg/kg, a GRO value of non-detect, a DRO of 2,350 mg/kg, and BTEX values of non-detect. At 6 ft bgs, Point 1 returned a chloride value of 160 mg/kg, a GRO value of non-detect, a DRO value of 10.3 mg/kg and BTEX values of non-detect. At 3.5 ft bgs, Point 2 returned a chloride value of 1,570 mg/kg and GRO, DRO and BTEX values of non-detect. At 11 ft bgs, Point 2 returned a chloride value of 176 mg/kg, a GRO value of non-detect, a DRO value of 20.8 and BTEX values of non-detect.

Photo Documentation may be found in Appendix D.

Corrective Action Plan

Based on the assessment (BTEX laboratory analyses and PID field tests), the release area around Point 1 will be excavated down to 1 ft bgs, the release area around Point 2 will be excavated down to 3 ft bgs and the release area around Point 3 will be scraped to 6 in bgs (Figure 1). The excavation of the soils at these depths will remove all of the BTEX contaminated soils and the elevated TPH contaminated soils. All excavated soils will be taken to a NMOCD approved facility for disposal. Clean soil will be imported to the site to use as backfill. A sample of the imported soil 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 site will be further remediated upon site abandonment.

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 black ink that reads "Kyle Norman" followed by a horizontal line.

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

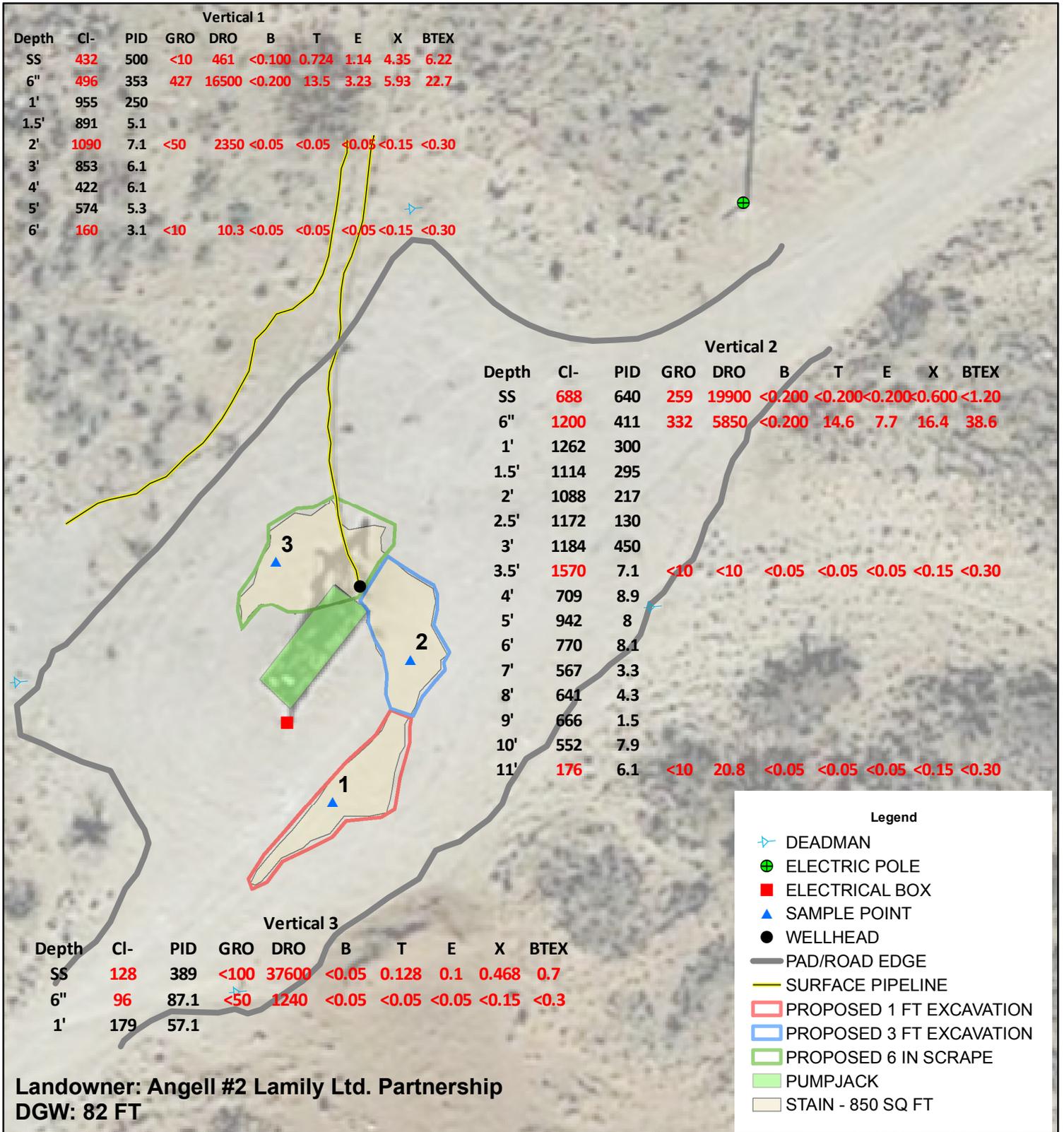
Attachments:

- Figure 1 – Proposed Work
- 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

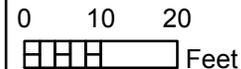
Proposed Work



CONOCOPHILLIPS WYATT #13

UL E SECTION 33
 T-17-S R-33-E
 LEA COUNTY, NM

Figure 1



GPS date: 8/11/15 JK
 Drawing date: 8/11/15
 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

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.

DEC 16 2014

Release Notification and Corrective Action

RECEIVED

OPERATOR

Initial Report Final Report

Name of Company: ConocoPhillips	Contact: Jay Garcia
Address: 29 Vacuum Complex Lane	Telephone No. 575-704-2455
Facility Name: Wyatt #13	Facility Type: Well

Surface Owner: BLM	Mineral Owner: NMOCD	API No. 30-025-01363
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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	33E	1980	North	660	West	LEA

Latitude 32.7928604322935 Longitude 103.674562565072

NATURE OF RELEASE

Type of Release: Spill	Volume of Release: 16.10 BBLs	Volume Recovered: 15 BBLs
Source of Release: Stuffing Box	Date and Hour of Occurrence 12/14/2014 2:25 pm	Date and Hour of Discovery 12/14/2014 2:25 pm
Was Immediate Notice Given? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Tomas Oberding	
By Whom? Jay Garcia	Date and Hour: 12/16/2014 7:30 am	
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 Sunday December 14th, 2014 @ 1425 Hrs. MST, A discharge occurred at the Wyatt #13. MSO found a leak originating from a stuffing box. The leak resulted in 8.05 BO and 8.05 BPW being released. MSO immediately shut in well. Supervisor and HSE lead were notified. Affected area was 44 foot x 26 foot x 1 inch deep with 8.0 BO and 7.0 BPW were recovered. The affected area will be remediated according to NMOCD and COPC guidelines, this is not a PSE.

Describe Area Affected and Cleanup Action Taken.*

The leak resulted in 8.05 BO and 8.05 BPW being released. MSO immediately shut in well. Supervisor and HSE lead were notified. Affected area was 44 foot x 26 foot x 1 inch deep with 8.0 BO and 7.0 BPW were recovered. The affected area will be remediated according to NMOCD and COPC 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>12-18-14</i>	Expiration Date: <i>2-18-15</i>
E-mail Address: jay.c.garcia@conocophillips.com		Conditions of Approval: <i>Site Supervisor signed. Debit & credit now on file NMOCD guide - Submit final C-141 by 2-18-15</i>	Attached <input type="checkbox"/>
Date: 12/16/2014	Phone: 575-704-2455		<i>217917</i> IRP-3761

DEC 18 2014

217917
701435040877
701435040867

Appendix B

Laboratory Analysis

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



August 18, 2015

KYLE NORMAN

BASIN ENVIRONMENTAL - HOBBS

419 W. CAIN

HOBBS, NM 88240

RE: WYATT #13

Enclosed are the results of analyses for samples received by the laboratory on 08/12/15 13:20.

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". The signature is written in a cursive, flowing style.

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:	08/12/2015	Sampling Date:	08/11/2015
Reported:	08/18/2015	Sampling Type:	Soil
Project Name:	WYATT #13	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: PT. 1 @ SURFACE (H502100-01)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.100	0.100	08/15/2015	ND	2.23	112	2.00	1.51	
Toluene*	0.724	0.100	08/15/2015	ND	2.12	106	2.00	2.75	
Ethylbenzene*	1.14	0.100	08/15/2015	ND	2.33	116	2.00	2.48	
Total Xylenes*	4.35	0.300	08/15/2015	ND	6.49	108	6.00	2.28	
Total BTEX	6.22	0.600	08/15/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.3 % 85.6-137

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	432	16.0	08/13/2015	ND	416	104	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	08/13/2015	ND	182	91.2	200	0.0636	
DRO >C10-C28	461	10.0	08/13/2015	ND	194	97.2	200	0.823	

Surrogate: 1-Chlorooctane 84.0 % 47.2-157

Surrogate: 1-Chlorooctadecane 87.7 % 52.1-176

Cardinal Laboratories

* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

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

Received:	08/12/2015	Sampling Date:	08/11/2015
Reported:	08/18/2015	Sampling Type:	Soil
Project Name:	WYATT #13	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: PT. 1 @ 6" (H502100-02)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	08/15/2015	ND	2.23	112	2.00	1.51	
Toluene*	13.5	0.200	08/15/2015	ND	2.12	106	2.00	2.75	
Ethylbenzene*	3.23	0.200	08/15/2015	ND	2.33	116	2.00	2.48	
Total Xylenes*	5.93	0.600	08/15/2015	ND	6.49	108	6.00	2.28	
Total BTEX	22.7	1.20	08/15/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 112 % 85.6-137

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	496	16.0	08/13/2015	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS						S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	427	100	08/13/2015	ND	182	91.2	200	0.0636		
DRO >C10-C28	16500	100	08/13/2015	ND	194	97.2	200	0.823		

Surrogate: 1-Chlorooctane 130 % 47.2-157

Surrogate: 1-Chlorooctadecane 439 % 52.1-176

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*=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:	08/12/2015	Sampling Date:	08/11/2015
Reported:	08/18/2015	Sampling Type:	Soil
Project Name:	WYATT #13	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: PT. 2 @ SURFACE (H502100-03)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	08/15/2015	ND	2.23	112	2.00	1.51	
Toluene*	<0.200	0.200	08/15/2015	ND	2.12	106	2.00	2.75	
Ethylbenzene*	<0.200	0.200	08/15/2015	ND	2.33	116	2.00	2.48	
Total Xylenes*	<0.600	0.600	08/15/2015	ND	6.49	108	6.00	2.28	
Total BTEX	<1.20	1.20	08/15/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 85.6-137

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	688	16.0	08/13/2015	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS						S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	259	100	08/13/2015	ND	182	91.2	200	0.0636		
DRO >C10-C28	19900	100	08/13/2015	ND	194	97.2	200	0.823		

Surrogate: 1-Chlorooctane 101 % 47.2-157

Surrogate: 1-Chlorooctadecane 537 % 52.1-176

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*=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:	08/12/2015	Sampling Date:	08/11/2015
Reported:	08/18/2015	Sampling Type:	Soil
Project Name:	WYATT #13	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: PT. 2 @ 6" (H502100-04)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	08/15/2015	ND	2.23	112	2.00	1.51	
Toluene*	14.6	0.200	08/15/2015	ND	2.12	106	2.00	2.75	
Ethylbenzene*	7.70	0.200	08/15/2015	ND	2.33	116	2.00	2.48	
Total Xylenes*	16.4	0.600	08/15/2015	ND	6.49	108	6.00	2.28	
Total BTEX	38.6	1.20	08/15/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 124 % 85.6-137

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1200	16.0	08/13/2015	ND	416	104	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	332	100	08/13/2015	ND	182	91.2	200	0.0636	
DRO >C10-C28	5850	100	08/13/2015	ND	194	97.2	200	0.823	

Surrogate: 1-Chlorooctane 102 % 47.2-157

Surrogate: 1-Chlorooctadecane 153 % 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:	08/12/2015	Sampling Date:	08/11/2015
Reported:	08/18/2015	Sampling Type:	Soil
Project Name:	WYATT #13	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: PT. 3 @ SURFACE (H502100-05)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/15/2015	ND	2.23	112	2.00	1.51	
Toluene*	0.128	0.050	08/15/2015	ND	2.12	106	2.00	2.75	
Ethylbenzene*	0.102	0.050	08/15/2015	ND	2.33	116	2.00	2.48	
Total Xylenes*	0.468	0.150	08/15/2015	ND	6.49	108	6.00	2.28	
Total BTEX	0.698	0.300	08/15/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 108 % 85.6-137

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	08/13/2015	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS						S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<100	100	08/13/2015	ND	182	91.0	200	0.523		
DRO >C10-C28	37600	100	08/13/2015	ND	191	95.7	200	0.645		

Surrogate: 1-Chlorooctane 92.7 % 47.2-157

Surrogate: 1-Chlorooctadecane 1070 % 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: 08/12/2015
 Reported: 08/18/2015
 Project Name: WYATT #13
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 08/11/2015
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: PT. 3 @ 6" (H502100-06)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/15/2015	ND	2.23	112	2.00	1.51	
Toluene*	<0.050	0.050	08/15/2015	ND	2.12	106	2.00	2.75	
Ethylbenzene*	<0.050	0.050	08/15/2015	ND	2.33	116	2.00	2.48	
Total Xylenes*	<0.150	0.150	08/15/2015	ND	6.49	108	6.00	2.28	
Total BTEX	<0.300	0.300	08/15/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 85.6-137

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	08/17/2015	ND	416	104	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	<50.0	50.0	08/14/2015	ND	182	91.0	200	0.523	
DRO >C10-C28	1240	50.0	08/14/2015	ND	191	95.7	200	0.645	

Surrogate: 1-Chlorooctane 87.6 % 47.2-157

Surrogate: 1-Chlorooctadecane 97.4 % 52.1-176

Cardinal Laboratories

* = 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



October 01, 2015

KYLE NORMAN

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: WYATT #13

Enclosed are the results of analyses for samples received by the laboratory on 09/25/15 16:45.

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:

 Basin Environmental Service
 KYLE NORMAN
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

 Received: 09/25/2015
 Reported: 10/01/2015
 Project Name: WYATT #13
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 09/15/2015
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: PT. 1 @ 2' (H502562-01)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/29/2015	ND	2.01	100	2.00	1.66	
Toluene*	<0.050	0.050	09/29/2015	ND	1.72	86.0	2.00	1.99	
Ethylbenzene*	<0.050	0.050	09/29/2015	ND	1.67	83.3	2.00	2.07	
Total Xylenes*	<0.150	0.150	09/29/2015	ND	5.21	86.9	6.00	2.16	
Total BTEX	<0.300	0.300	09/29/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 108 % 85.6-137

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1090	16.0	09/30/2015	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	<50.0	50.0	09/29/2015	ND	167	83.4	200	1.12	
DRO >C10-C28	2350	50.0	09/29/2015	ND	184	92.0	200	0.108	

Surrogate: 1-Chlorooctane 57.2 % 47.2-157
Surrogate: 1-Chlorooctadecane 149 % 52.1-176

Cardinal Laboratories

* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 Basin Environmental Service
 KYLE NORMAN
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

 Received: 09/25/2015
 Reported: 10/01/2015
 Project Name: WYATT #13
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 09/15/2015
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: PT. 1 @ 6' (H502562-02)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/29/2015	ND	2.01	100	2.00	1.66		
Toluene*	<0.050	0.050	09/29/2015	ND	1.72	86.0	2.00	1.99		
Ethylbenzene*	<0.050	0.050	09/29/2015	ND	1.67	83.3	2.00	2.07		
Total Xylenes*	<0.150	0.150	09/29/2015	ND	5.21	86.9	6.00	2.16		
Total BTEX	<0.300	0.300	09/29/2015	ND						

Surrogate: 4-Bromofluorobenzene (PID) 107 % 85.6-137

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	160	16.0	09/30/2015	ND	416	104	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	09/29/2015	ND	167	83.4	200	1.12		
DRO >C10-C28	10.3	10.0	09/29/2015	ND	184	92.0	200	0.108		

Surrogate: 1-Chlorooctane 69.1 % 47.2-157

Surrogate: 1-Chlorooctadecane 78.3 % 52.1-176

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 Basin Environmental Service
 KYLE NORMAN
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

 Received: 09/25/2015
 Reported: 10/01/2015
 Project Name: WYATT #13
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 09/15/2015
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: PT. 2 @ 3.5' (H502562-03)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/29/2015	ND	2.01	100	2.00	1.66	
Toluene*	<0.050	0.050	09/29/2015	ND	1.72	86.0	2.00	1.99	
Ethylbenzene*	<0.050	0.050	09/29/2015	ND	1.67	83.3	2.00	2.07	
Total Xylenes*	<0.150	0.150	09/29/2015	ND	5.21	86.9	6.00	2.16	
Total BTEX	<0.300	0.300	09/29/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 107 % 85.6-137

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1570	16.0	09/30/2015	ND	416	104	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	09/29/2015	ND	167	83.4	200	1.12	
DRO >C10-C28	<10.0	10.0	09/29/2015	ND	184	92.0	200	0.108	

Surrogate: 1-Chlorooctane 65.1 % 47.2-157

Surrogate: 1-Chlorooctadecane 75.3 % 52.1-176

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 Basin Environmental Service
 KYLE NORMAN
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

 Received: 09/25/2015
 Reported: 10/01/2015
 Project Name: WYATT #13
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 09/15/2015
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: PT. 2 @ 11' (H502562-04)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/29/2015	ND	2.01	100	2.00	1.66		
Toluene*	<0.050	0.050	09/29/2015	ND	1.72	86.0	2.00	1.99		
Ethylbenzene*	<0.050	0.050	09/29/2015	ND	1.67	83.3	2.00	2.07		
Total Xylenes*	<0.150	0.150	09/29/2015	ND	5.21	86.9	6.00	2.16		
Total BTEX	<0.300	0.300	09/29/2015	ND						

Surrogate: 4-Bromofluorobenzene (PID) 108 % 85.6-137

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	176	16.0	09/30/2015	ND	416	104	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	09/29/2015	ND	167	83.4	200	1.12		
DRO >C10-C28	20.8	10.0	09/29/2015	ND	184	92.0	200	0.108		

Surrogate: 1-Chlorooctane 76.1 % 47.2-157

Surrogate: 1-Chlorooctadecane 84.0 % 52.1-176

Cardinal Laboratories

*=Accredited Analyte

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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

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 Wyatt #13

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

1

Layer information

LAYER NO.	LAYER THICKNESS	MATERIAL PROPERTY
1	23.00	1

DATA FOR MATERIAL 1

VADOSE ZONE MATERIAL VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Saturated hydraulic conductivity	cm/hr	CONSTANT	3.60	-999.	-999.	-999.
Unsaturated zone porosity	--	CONSTANT	0.250	-999.	-999.	-999.
Air entry pressure head	m	CONSTANT	0.700	-999.	-999.	-999.
Depth of the unsaturated zone	m	CONSTANT	23.0	0.000	0.000	0.000

DATA FOR MATERIAL 1

VADOSE ZONE FUNCTION VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Residual water content	--	CONSTANT	0.116	-999.	-999.	-999.
Brook and Corey exponent, EN	--	CONSTANT	-999.	-999.	-999.	-999.
ALFA coefficient	1/cm	CONSTANT	0.500E-02	-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

DATA FOR LAYER 1

VADOSE TRANSPORT VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Thickness of layer	m	CONSTANT	23.0	-999.	-999.	-999.
Longitudinal dispersivity of layer	m	DERIVED	-999.	-999.	-999.	-999.
Percent organic matter	--	CONSTANT	0.000	-999.	-999.	-999.
Bulk density of soil for layer	g/cc	CONSTANT	1.99	-999.	-999.	-999.
Biological decay coefficient	1/yr	CONSTANT	0.000	-999.	-999.	-999.

CHEMICAL SPECIFIC VARIABLES

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

SOURCE SPECIFIC VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS	LIMITS
---------------	-------	--------------	------------	--------

			MEAN	STD DEV	MIN	MAX
Infiltration rate	m/yr	CONSTANT	0.305E-01	-999.	-999.	-999.
Area of waste disposal unit	m^2	CONSTANT	78.0	-999.	-999.	-999.
Duration of pulse	yr	DERIVED	0.100E-08	-999.	-999.	-999.
Spread of contaminant source	m	DERIVED	-999.	-999.	-999.	-999.
Recharge rate	m/yr	CONSTANT	0.000	-999.	-999.	-999.
Source decay constant	1/yr	CONSTANT	0.250E-01	0.000	0.000	0.000
Initial concentration at landfill	mg/l	CONSTANT	766.	-999.	-999.	-999.
Length scale of facility	m	DERIVED	-999.	-999.	-999.	-999.
Width scale of facility	m	DERIVED	-999.	-999.	-999.	-999.
Near field dilution		DERIVED	1.00	0.000	0.000	1.00

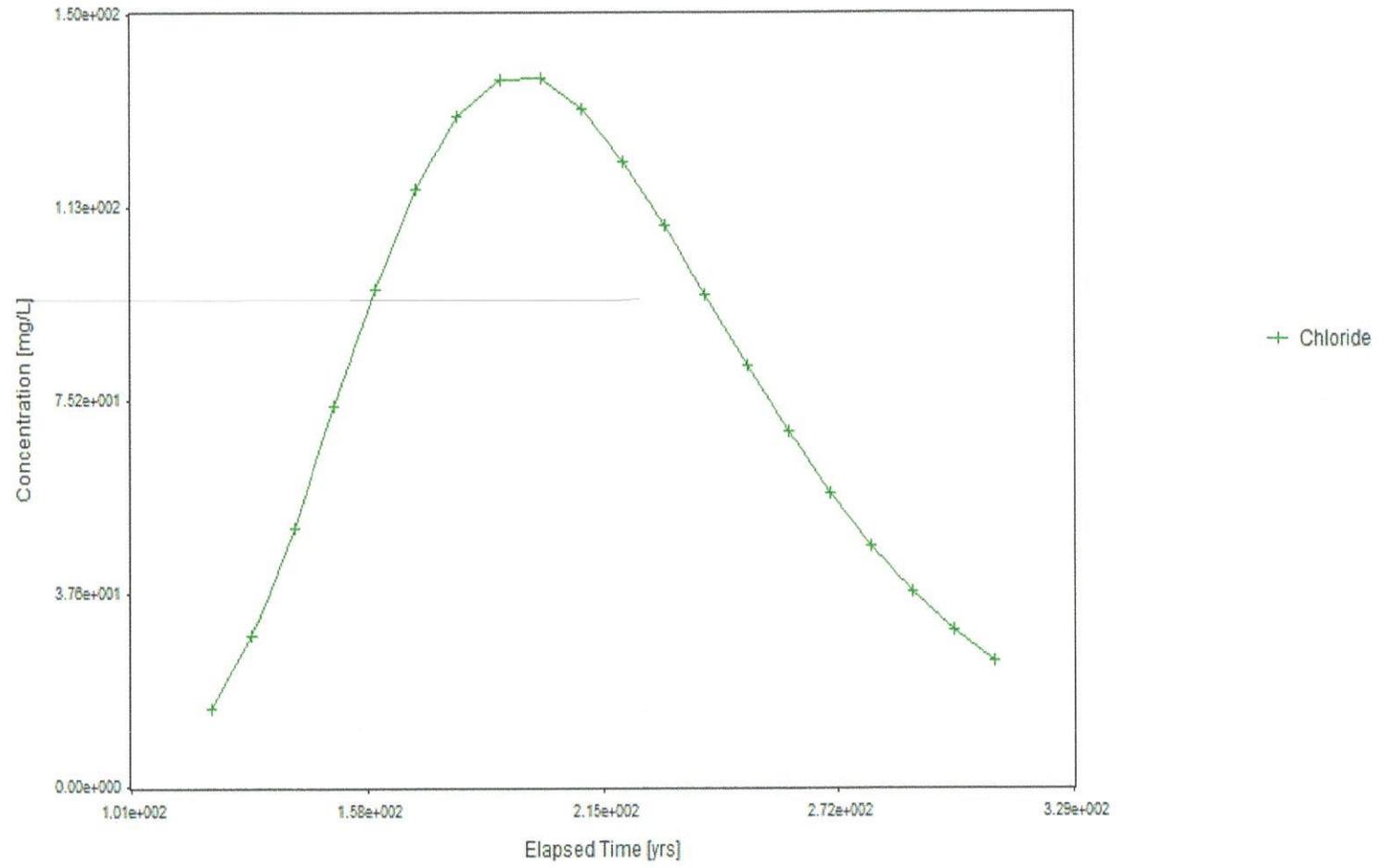
1

AQUIFER SPECIFIC VARIABLES

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

MAXIMUM WELL CONCENTRATION IS 138.1 AT 0.200E+03 YEARS

Chloride Concentration At The Receptor Well CP Wyatt #13



Appendix D

Photo Documentation

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

ConocoPhillips Wyatt #13

Unit Letter E, Section 33, T17S, R33E



Initial release area, facing west

8/10/15



Initial release area, facing southwest

8/10/15



Initial release area, facing south

8/10/15



Initial release area, facing north

8/10/15