

1R - 428-59

REPORTS

DATE:

11-1-12

Hansen, Edward J., EMNRD

From: Hansen, Edward J., EMNRD
Sent: Thursday, November 29, 2012 11:24 AM
To: 'Katie Jones'
Cc: Leking, Geoffrey R, EMNRD; Hack Conder; L Peter Galusky; Laura Pena
Subject: RE: Hobbs A-6 vent (1R428-59) Multimed - DRAFT
Attachments: Hobbs A-6 vent (1R428-59) MultiMed BTEX 11.1.12 ejh.inp; Hobbs A-6 vent (1R428-59) MultiMed Chloride 11.1.12 ejh.inp

Dear Ms. Jones:

The New Mexico Oil Conservation Division (OCD) has reviewed the MULTIMED files submitted for the above-referenced site. The files should be edited to exclude the "Recharge Rate" (i.e., set to 0.0). Also, I have attached MULTIMED input files for both BTEX and Chloride that reflect conditions at 1 meter from the source and more conservative concentrations at the source. Output files for these conditions should be submitted with a termination request (in addition to the edited files referenced above).

If you have any questions regarding this matter, please contact me at 505-476-3489.

Edward J. Hansen
Hydrologist
Environmental Bureau

From: Katie Jones [<mailto:kjones@riceswd.com>]
Sent: Thursday, November 01, 2012 3:18 PM
To: Hansen, Edward J., EMNRD
Cc: Hack Conder; L Peter Galusky; Laura Pena
Subject: Hobbs A-6 vent (1R428-59) Multimed - DRAFT

Mr. Hansen,

Attached are draft multimed files for the Hobbs A-6 vent (1R428-59) site, along with soil data and a plat of the site. Please let us know if you have any questions.

Thank you.

Katie

MULTIMED V1.01 DATE OF CALCULATIONS: 1-NOV-2012 TIME: 11:39:29

U. S. ENVIRONMENTAL PROTECTION AGENCY

EXPOSURE ASSESSMENT

MULTIMEDIA MODEL

MULTIMED (Version 1.50, 2005)

1

Run options

--- -----

Chemical simulated is BTEX

Option Chosen Saturated and unsaturated zone models
Run was DETERMIN
Infiltration Specified By User: 3.048E-02 m/yr
Run was transient
Well Times: Entered Explicitly
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	3.35	1

DATA FOR MATERIAL 1

VADOSE ZONE MATERIAL VARIABLES

LIMITS		VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS	
MIN	MAX				MEAN	STD DEV
-999.	-999.	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	3.35	0.000
0.000	0.000					

DATA FOR MATERIAL 1

VADOSE ZONE FUNCTION VARIABLES

LIMITS		VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS	
MIN	MAX				MEAN	STD DEV
-999.	Residual water content	--	CONSTANT	0.116	-999.	
-999.	Brook and Corey exponent, EN	--	CONSTANT	-999.	-999.	
-999.	ALFA coefficient	1/cm	CONSTANT	0.500E-02	-999.	
-999.	Van Genuchten exponent, ENN	--	CONSTANT	1.09	-999.	

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	
MIN	MAX				MEAN	STD DEV
-999.	-999.	Thickness of layer	m	CONSTANT	3.35	-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.

1

CHEMICAL SPECIFIC VARIABLES

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

MIN	MAX			MEAN	STD DEV
-999.	Solid phase decay coefficient	1/yr	CONSTANT	0.200	-999.
-999.	-999.				
-999.	Dissolved phase decay coefficient	1/yr	CONSTANT	0.200	-999.
-999.	-999.				
-999.	Overall chemical decay coefficient	1/yr	CONSTANT	0.000	-999.
-999.	-999.				
-999.	Acid catalyzed hydrolysis rate	1/M-yr	CONSTANT	0.000	-999.
-999.	-999.				
-999.	Neutral hydrolysis rate constant	1/yr	CONSTANT	0.000	-999.
-999.	-999.				
-999.	Base catalyzed hydrolysis rate	1/M-yr	CONSTANT	0.000	-999.
-999.	-999.				
-999.	Reference temperature	C	CONSTANT	25.0	-999.
-999.	-999.				
-999.	Normalized distribution coefficient	ml/g	CONSTANT	0.000	-999.
-999.	-999.				
-999.	Distribution coefficient	--	DERIVED	-999.	-999.
-999.	-999.				
-999.	Biodegradation coefficient (sat. zone)	1/yr	CONSTANT	0.000	-999.
-999.	-999.				
-999.	Air diffusion coefficient	cm2/s	CONSTANT	-999.	-999.
-999.	-999.				
-999.	Reference temperature for air diffusion	C	CONSTANT	-999.	-999.
-999.	-999.				
-999.	Molecular weight	g/M	CONSTANT	-999.	-999.
-999.	-999.				
-999.	Mole fraction of solute	--	CONSTANT	-999.	-999.
-999.	-999.				
-999.	Vapor pressure of solute	mm Hg	CONSTANT	-999.	-999.
-999.	-999.				
-999.	Henry's law constant	atm-m ³ /M	CONSTANT	-999.	-999.
-999.	-999.				
0.000	Overall 1st order decay sat. zone	1/yr	DERIVED	0.000	0.000
	1.00				

0.000	Not currently used	CONSTANT	0.000	0.000
0.000	0.000			
0.000	Not currently used	CONSTANT	0.000	0.000
0.000	0.000			
1				

SOURCE SPECIFIC VARIABLES

LIMITS		VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS	
MIN	MAX				MEAN	STD DEV
-999.	-999.	Infiltration rate	m/yr	CONSTANT	0.305E-01	-999.
-999.	-999.	Area of waste disposal unit	m^2	CONSTANT	25.0	-999.
-999.	-999.	Duration of pulse	yr	DERIVED	10.0	-999.
-999.	-999.	Spread of contaminant source	m	DERIVED	-999.	-999.
-999.	-999.	Recharge rate	m/yr	CONSTANT	0.305E-01	-999.
0.000	0.000	Source decay constant	1/yr	CONSTANT	0.250E-01	0.000
-999.	-999.	Initial concentration at landfill	mg/l	CONSTANT	42.0	-999.
-999.	-999.	Length scale of facility	m	DERIVED	1.00	-999.
-999.	-999.	Width scale of facility	m	DERIVED	1.00	-999.
0.000	1.00	Near field dilution		DERIVED	1.00	0.000
1						

AQUIFER SPECIFIC VARIABLES

LIMITS		VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS	
MIN	MAX				MEAN	STD DEV
-999.	-999.	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	3.00	-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.	Organic carbon content (fraction)		CONSTANT	0.000	-999.
-999.	-999.				
-999.	Well distance from site	m	CONSTANT	26.1	-999.
-999.	-999.				
-999.	Angle off center	degree	CONSTANT	0.000	-999.
-999.	-999.				
-999.	Well vertical distance	m	CONSTANT	0.000	-999.
-999.	-999.				

1

TIME	CONCENTRATION
----	-----
0.100E+02	0.91418E-19
0.200E+02	0.24207E-03
0.300E+02	0.31618E-02
0.400E+02	0.38013E-02
0.500E+02	0.30681E-02
0.600E+02	0.23389E-02
0.700E+02	0.18279E-02
0.800E+02	0.14355E-02
0.900E+02	0.11311E-02
0.100E+03	0.88983E-03
0.110E+03	0.69517E-03
0.120E+03	0.54199E-03
0.130E+03	0.42165E-03
0.140E+03	0.32733E-03
0.150E+03	0.25364E-03
0.160E+03	0.19624E-03
0.170E+03	0.15172E-03
0.180E+03	0.11730E-03
0.190E+03	0.90806E-04
0.200E+03	0.70452E-04
0.210E+03	0.54828E-04
0.220E+03	0.42822E-04
0.230E+03	0.33570E-04
0.240E+03	0.26407E-04
0.250E+03	0.20821E-04

<u>Parameter</u>	<u>Value</u>	<u>Unit</u>	<u>Notes</u>
Average Chloride Concentration	294.0	mg/kg	Taken from all measured samples.
Area	25.0	m ²	Conservatively encompasses affected area.
Average SB Depth to Cl- conc <= 250 mg/kg	12.8	ft	This represents the thickness of the chloride-affected unsaturated zone.
Average SB Depth minus Depth to GW (ft)	38.2	ft	This value represents the transport zone thickness for <u>chlorides</u> in MultiMed.
"	11.6	m	"
Average BTEX Concentration	41.6	mg/kg	Taken from SB-1.
Area	25.0	m ²	Conservatively encompasses affected area.
SB Depth to bottom of BTEX affected zone	40.0	ft	Taken from SB-1, and represents the thickness of the BTEX-affected unsaturated zone.
BTEX SB Depth minus Depth to GW (ft)	11.0	ft	This value represents the transport zone thickness for <u>BTEX</u> in MultiMed.
"	3.35	m	"

MULTIMED V1.01 DATE OF CALCULATIONS: 1-NOV-2012 TIME: 11:45:53

U. S. ENVIRONMENTAL PROTECTION AGENCY

EXPOSURE ASSESSMENT

MULTIMEDIA MODEL

MULTIMED (Version 1.50, 2005)

1

Run options

--- -----

Chemical simulated is Chloride

Option Chosen Saturated and unsaturated zone models

Run was DETERMIN

Infiltration Specified By User: 3.048E-02 m/yr

Run was transient

Well Times: Entered Explicitly

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	11.60	1

DATA FOR MATERIAL 1

VADOSE ZONE MATERIAL VARIABLES

VARIABLE NAME		UNITS	DISTRIBUTION	PARAMETERS	
LIMITS				MEAN	STD DEV
MIN	MAX				
-999.	Saturated hydraulic conductivity	cm/hr	CONSTANT	3.60	-999.
-999.	Unsaturated zone porosity	--	CONSTANT	0.250	-999.
-999.	Air entry pressure head	m	CONSTANT	0.700	-999.
-999.	Depth of the unsaturated zone	m	CONSTANT	11.6	0.000
0.000					

DATA FOR MATERIAL 1

VADOSE ZONE FUNCTION VARIABLES

LIMITS		VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS	
MIN	MAX				MEAN	STD DEV
-999.	-999.	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.

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

VARIABLE NAME		UNITS	DISTRIBUTION	PARAMETERS	
LIMITS				MEAN	STD DEV
MIN	MAX				
-999.	Thickness of layer	m	CONSTANT	11.6	-999.
-999.	-999.				
-999.	Longitudinal dispersivity of layer	m	DERIVED	-999.	-999.
-999.	-999.				
-999.	Percent organic matter	--	CONSTANT	0.000	-999.
-999.	-999.				
-999.	Bulk density of soil for layer	g/cc	CONSTANT	1.99	-999.
-999.	-999.				
-999.	Biological decay coefficient	1/yr	CONSTANT	0.000	-999.
-999.	-999.				

1

CHEMICAL SPECIFIC VARIABLES

VARIABLE NAME		UNITS	DISTRIBUTION	PARAMETERS
LIMITS				

MIN	MAX			MEAN	STD DEV

-999.	Solid phase decay coefficient	1/yr	CONSTANT	0.000	-999.
-999.	-999.				
-999.	Dissolved phase decay coefficient	1/yr	CONSTANT	0.000	-999.
-999.	-999.				
-999.	Overall chemical decay coefficient	1/yr	CONSTANT	0.000	-999.
-999.	-999.				
-999.	Acid catalyzed hydrolysis rate	1/M-yr	CONSTANT	0.000	-999.
-999.	-999.				
-999.	Neutral hydrolysis rate constant	1/yr	CONSTANT	0.000	-999.
-999.	-999.				
-999.	Base catalyzed hydrolysis rate	1/M-yr	CONSTANT	0.000	-999.
-999.	-999.				
-999.	Reference temperature	C	CONSTANT	25.0	-999.
-999.	-999.				
-999.	Normalized distribution coefficient	ml/g	CONSTANT	0.000	-999.
-999.	-999.				
-999.	Distribution coefficient	--	DERIVED	-999.	-999.
-999.	-999.				
-999.	Biodegradation coefficient (sat. zone)	1/yr	CONSTANT	0.000	-999.
-999.	-999.				
-999.	Air diffusion coefficient	cm2/s	CONSTANT	-999.	-999.
-999.	-999.				
-999.	Reference temperature for air diffusion	C	CONSTANT	-999.	-999.
-999.	-999.				
-999.	Molecular weight	g/M	CONSTANT	-999.	-999.
-999.	-999.				
-999.	Mole fraction of solute	--	CONSTANT	-999.	-999.
-999.	-999.				
-999.	Vapor pressure of solute	mm Hg	CONSTANT	-999.	-999.
-999.	-999.				
-999.	Henry's law constant	atm-m ³ /M	CONSTANT	-999.	-999.
-999.	-999.				
0.000	Overall 1st order decay sat. zone	1/yr	DERIVED	0.000	0.000
	1.00				

0.000	Not currently used	CONSTANT	0.000	0.000
0.000	0.000			
0.000	Not currently used	CONSTANT	0.000	0.000
0.000	0.000			
1				

SOURCE SPECIFIC VARIABLES

VARIABLE NAME		UNITS	DISTRIBUTION	PARAMETERS	
LIMITS				MEAN	STD DEV
MIN	MAX				
-999.	Infiltration rate	m/yr	CONSTANT	0.305E-01	-999.
-999.	-999.				
-999.	Area of waste disposal unit	m^2	CONSTANT	25.0	-999.
-999.	-999.				
-999.	Duration of pulse	yr	DERIVED	10.0	-999.
-999.	-999.				
-999.	Spread of contaminant source	m	DERIVED	-999.	-999.
-999.	-999.				
-999.	Recharge rate	m/yr	CONSTANT	0.305E-01	-999.
-999.	-999.				
0.000	Source decay constant	1/yr	CONSTANT	0.250E-01	0.000
0.000	0.000				
-999.	Initial concentration at landfill	mg/l	CONSTANT	294.	-999.
-999.	-999.				
-999.	Length scale of facility	m	DERIVED	1.00	-999.
-999.	-999.				
-999.	Width scale of facility	m	DERIVED	1.00	-999.
-999.	-999.				
0.000	Near field dilution		DERIVED	1.00	0.000
0.000	1.00				
1					

AQUIFER SPECIFIC VARIABLES

LIMITS		VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS	
MIN	MAX				MEAN	STD DEV
-999.	Particle diameter	cm	CONSTANT	-999.	-999.	
-999.	-999.					
-999.	Aquifer porosity	--	CONSTANT	0.300	-999.	
-999.	-999.					
-999.	Bulk density	g/cc	CONSTANT	1.86	-999.	
-999.	-999.					
-999.	Aquifer thickness	m	CONSTANT	6.10	-999.	
-999.	-999.					
-999.	Source thickness (mixing zone depth)	m	DERIVED	3.00	-999.	
-999.	-999.					
-999.	Conductivity (hydraulic)	m/yr	CONSTANT	315.	-999.	
-999.	-999.					
-999.	Gradient (hydraulic)		CONSTANT	0.300E-02	-999.	
-999.	-999.					
-999.	Groundwater seepage velocity	m/yr	DERIVED	-999.	-999.	
-999.	-999.					
-999.	Retardation coefficient	--	DERIVED	-999.	-999.	
-999.	-999.					
-999.	Longitudinal dispersivity	m	FUNCTION OF X	-999.	-999.	
-999.	-999.					
-999.	Transverse dispersivity	m	FUNCTION OF X	-999.	-999.	
-999.	-999.					
-999.	Vertical dispersivity	m	FUNCTION OF X	-999.	-999.	
-999.	-999.					
-999.	Temperature of aquifer	C	CONSTANT	20.0	-999.	
-999.	-999.					
-999.	pH	--	CONSTANT	7.00	-999.	
-999.	-999.					

-999.	Organic carbon content (fraction)		CONSTANT	0.000	-999.
-999.	-999.				
-999.	Well distance from site	m	CONSTANT	26.1	-999.
-999.	-999.				
-999.	Angle off center	degree	CONSTANT	0.000	-999.
-999.	-999.				
-999.	Well vertical distance	m	CONSTANT	0.000	-999.
-999.	-999.				

1

TIME	CONCENTRATION
----	-----
0.100E+02	0.00000E+00
0.200E+02	0.00000E+00
0.300E+02	0.00000E+00
0.400E+02	0.73288E-05
0.500E+02	0.31350E-02
0.600E+02	0.39761E-01
0.700E+02	0.24612E+00
0.800E+02	0.69025E+00
0.900E+02	0.12584E+01
0.100E+03	0.17525E+01
0.110E+03	0.19688E+01
0.120E+03	0.19440E+01
0.130E+03	0.17487E+01
0.140E+03	0.14993E+01
0.150E+03	0.12154E+01
0.160E+03	0.97606E+00
0.170E+03	0.77330E+00
0.180E+03	0.60771E+00
0.190E+03	0.47570E+00
0.200E+03	0.37155E+00
0.210E+03	0.28983E+00
0.220E+03	0.22589E+00
0.230E+03	0.17594E+00
0.240E+03	0.13696E+00
0.250E+03	0.10656E+00

Source

[illegible]

SB-1							
Depth (ft)	Cl- (mg/kg)	PID (ppm)	LAB Cl- (mg/kg)	B	T	E	X
15	476	309					
20	1,011	159					
25	1,140	332	1,150	0.101	1.47	3.69	12.5
30	914	281					
35	1,036	231					
40	717	3,738	656	2.78	3.26	12.4	44.7
45	598	169					

SOURCE									
Depth (ft)	Cl- (mg/kg)	PID (ppm)	LAB Cl-	GRO	DRO	B	T	E	X
4	327	85.7							
5	131	989							
6	257	607							
7	280	1,099							
8	255	909							
9	576	1,091	784	1,570	4,650	<0.2	0.288	24.5	41.08
10	253	932	368	1,150	5,970	<0.2	0.264	20.1	26.26

5 FT NORTH									
Depth (ft)	Cl- (mg/kg)	PID (ppm)	LAB Cl-	GRO	DRO	B	T	E	X
1	72	9.4							
2	60	10.3	160	98.6	5,490				
3	201	56.2							
4	178	55.8							
5	88	690							
6	70	877							
7	66	987							
8	83	926							
9	161	874							
10	109	943	<16	1,150	5,270	0.4	<0.2	18	7.57

MW-1		
Depth (ft)	Cl- (mg/kg)	PID (ppm)
5	120	0.3
10-12	84	0.4
15	120	0.6
20	145	0.3
25-27	112	0.5
30-32	120	0.3
35-37	87	0.2
40-42	93	0.2
45-47	83	0.1

5 FT EAST									
Depth (ft)	Cl- (mg/kg)	PID (ppm)	LAB Cl-	GRO	DRO	B	T	E	X
1	95	489							
2	151	402							
3	177	77.3							
4	368	36.7							
5	417	630	400	679	4660	<0.2	<0.2	<0.2	0.686
6	505	754							
7	218	729							
8	279	522							
9	327	472							
10	264	917	336	503	1,660	<0.1	<0.1	<0.1	<0.3

5 FT WEST									
Depth (ft)	Cl- (mg/kg)	PID (ppm)	LAB Cl-	GRO	DRO	B	T	E	X
1	78	23.7							
2	85	7.6							
3	72	1.9							
4	140	3.6							
5	87	6.6							
6	79	12.8							
7	79	554							
8	63	1,308							
9	138	1,511							
10	401	1,355	464	1,430	4,310	<0.2	0.329	16.4	27.07

5 FTSOUTH									
Depth (ft)	Cl- (mg/kg)	PID (ppm)	LAB Cl-	GRO	DRO	B	T	E	X
1	38	2.9							
2	69	4.1							
3	73	11.8							
4	130	684							
5	158	1,035							
6	176	854							
7	199	1,031							
8	323	491							
9	391	511							
10	401	781	560	918	4,740	<0.2	0.271	2.89	15.25

Legend

- CO2 LINE
- NON-ROC TRUNK LINE
- ROC ABANDONED LINE
- + ELECTRICAL POLE
- ▲ AMOCO BENCH MARK
- CLAY MARKER
- x — x FENCE
- OVERHEAD ELECTRICAL LINE
- PAD
- TRENCHES
- PRODUCTION HEADER

HOBBS A-6 VENT

UL/A SECTION 6
T-19-S R-38-E
LEA COUNTY, NM

NMOCD CASE #: 1R428-59

DGW = 51 ft



0 25 50

Feet

GPS date: 9/27/12 TG

Drawing date: 10/24/12

Drafted by: T. Grieco, L. Weinheimer

