1R - 426-28

WORKPLANS

Date:

5-7-12

Rice Environmental Consulting & Safety
P.O. Box 5630 Hobbs, NM 88241
Phone 575.393.4411 Fax 575.393.0293

CERTIFIED MAIL
RETURN RECEIPT NO. 7008 1140 0001 3070 5788

May 7th, 2012

Mr. Edward Hansen
New Mexico Energy, Minerals, & Natural Resources
Oil Conservation Division, Environmental Bureau
1220 S. St. Francis Drive
Santa Fe, New Mexico 87505

RE: **ICP Report and Corrective Action Plan (CAP)**
Rice Operating Company – BD SWD System
BD B-16 (1R426-28): UL/B sec. 16 T22S R37E

Mr. Hansen:

RICE Operating Company (ROC) has retained Rice Environmental Consulting and Safety (RECS) to address potential environmental concerns at the above-referenced site in the BD Salt Water Disposal (SWD) system. ROC is the service provider (agent) for the BD SWD System and has no ownership of any portion of the pipeline, well, or facility. The system is owned by a consortium of oil producers, System Parties, who provide all operating capital on a percentage ownership/usage basis.

Background and Previous Work

The site is located approximately 2.5 miles south of Eunice, New Mexico at UL/B, Sec. 16, T22S, R37E as shown on the Site Location Map (Figure 1). Groundwater at this site is located approximately 78 +/- feet below ground surface (bgs).

In 2002, ROC initiated work on the former BD B-16 junction box prior to it being replaced by a new, watertight junction box at the site. The site was delineated using a backhoe and soil samples were screened at regular intervals for both hydrocarbons and chlorides. The excavation reached dimensions of 20 x 20 x 17 feet bgs where composite samples were collected for laboratory verification. Laboratory tests of the site showed chloride readings of 144 mg/kg for the remediated backfill, 3,200 mg/kg in the sidewall composite and 4,200 mg/kg on the bottom composite. Gasoline range organics (GRO) showed non-detect in the remediated backfill and bottom composite and 36.3 mg/kg in the sidewall composite. Diesel range organics (DRO) measured 18.2 mg/kg in the remediated backfill, 869 mg/kg in the sidewall composite, and 434 mg/kg in the bottom composite. At 17 feet bgs, a 1 ft thick clay layer was installed to inhibit further chloride migration. The soils were blended on site and the remediated soil was returned to the excavation and contoured to the surrounding landscape. NMOCD was notified of potential groundwater impact on January 31st,

2003, and a junction box disclosure report was submitted to NMOCD with all the 2002 junction box closures and disclosures. An Investigation and Characterization Plan (ICP) was submitted to the NMOCD on July 7th, 2010 and approved on July 15th, 2010. The plan proposed additional investigation of the soils surrounding the former junction box and the installation of monitoring well(s) to delineate groundwater quality.

ICP Investigative Results

As per the ICP, six soil bores were advanced through the former junction box site on July 28th, 2010 (Figure 2). ROC personnel field tested the soil for chlorides and screened in the field with a photo-ionization detector (PID) for hydrocarbons. Representative samples from the bore were taken to a commercial laboratory for confirmation of chloride and hydrocarbon field numbers (Appendix A). Laboratory chloride readings showed that in each soil bore, the chloride values decreased with depth with the peak chloride readings between 40 and 60 ft bgs in all soil bores. SB-1 decreased from 4,560 mg/kg at 60 ft to 256 mg/kg at 80 ft bgs, SB-2 decreased from 4,120 mg/kg at 60 ft to 688 mg/kg at 75 ft bgs, SB-3 decreased from 1,960 mg/kg at 60 ft to 448 mg/kg at 75 ft bgs, SB-4 decreased from 6,640 mg/kg at 40 ft to 1,490 mg/kg at 75 ft bgs, SB-5 decreased from 4,320 mg/kg at 40 ft to 64 mg/kg at 75 ft bgs and SB-6 decreased from 2,960 mg/kg at 15 ft to 384 mg/kg at 75 ft bgs. All samples had GRO and DRO readings of non-detect.

On October 26th, 2010, two monitor wells were installed at the site to a depth of 90 ft (Figure 2). MW-1, the near-source monitor well, and MW-2, the up gradient monitor well, were field tested for chlorides and screened in the field with a photo-ionization detector (PID) for hydrocarbons. Two samples from MW-1 were taken to a commercial laboratory for confirmation of field numbers and returned laboratory chloride readings of 880 mg/kg at 20 ft bgs and 16 mg/kg at 75 ft bgs. Both samples had GRO and DRO readings of non-detect (Appendix B).

The monitor wells have been sampled quarterly since their installation (Figure 3). The most recent (January 27th, 2012) groundwater samples tested 260 mg/L in the near-source well (MW-1) and 220 mg/L in the up-gradient well (MW-2). Both monitor wells had BTEX levels of non-detect (Appendix C).

On January 28th, 2011, due to time restraints and resource management, a trench was installed 10 ft north of SB-6 (Figure 2). Representative samples from the trench were taken to a commercial laboratory for confirmation of chloride and hydrocarbon field numbers. Laboratory readings showed chloride numbers of 1,070 mg/kg at 3 ft bgs and 592 mg/kg at 5 ft bgs. Laboratory readings for GRO and DRO showed non-detect (Appendix A).

Five additional soil bores were installed at the site on March 22nd and 23rd, 2011 (Figure 2). Representative samples from SB-7 and SB-11 were taken to a commercial laboratory for confirmation of chloride and hydrocarbon field numbers. Laboratory readings in SB-7 showed chloride numbers of 1,180 mg/kg at 5 ft bgs, 608 mg/kg at 40 ft bgs and 160 mg/kg at 55 ft bgs. Laboratory readings in SB-11 showed chloride readings of 576 mg/kg at 5 ft bgs and 96 mg/kg at 25 ft bgs. Laboratory readings for GRO and DRO showed non-detect in both soil bores (Appendix A).

Recommendations

RECS submits the following as a Corrective Action Plan.

- Six quarters of monitoring well sampling shows no impact to groundwater. The two monitor wells evidence laboratory chloride values near or below WQCC standards with the near-source well showing a chloride reading of 260 mg/L and the up gradient monitor well showing a chloride reading of 220 mg/L. Since the site shows no groundwater impact, ROC proposes to plug and abandon both monitor wells with a 1-3% bentonite/concrete slurry with a 3 ft cement cap. A letter from Arc Environmental is included as Appendix D, and gives a description of the aquifer located beneath this site.

- The site has an existing clay liner measuring 20 ft x 20 ft at 17 ft bgs. ROC proposes to install a 20-mil, reinforced poly liner at 4-5 ft bgs measuring 77 ft x 76 ft (Figure 4). The extended liner will cover all the soil bore points, the north trench, and the existing liner installed at 17 ft bgs. The liner will provide a barrier that will inhibit the downward migration of chlorides to groundwater. The soils placed above the liner will have a laboratory chloride reading no greater than 500 mg/kg and a field PID measurement below 100 ppm. Excavated soil will be evaluated for use as backfill, and any soil requiring disposal will be properly disposed of at a NMOCD approved facility.

- The surface soils over and surrounding the site will be prepared with soil amendments, as needed, and then seeded with a native vegetative mix. Vegetation above the liner will also provide a natural infiltration barrier for the site since plants capture water through their roots thereby reducing the volume of water moving through the vadose zone to groundwater.

Upon completion of the CAP work elements, we anticipate ROC will submit a written report which will include a request for "remediation termination" and the closure of the regulation file.

ROC appreciates the opportunity to work with you on this project. Please call Hack Conder at (575) 393-9174 or me if you have any questions or wish to discuss the site.

Sincerely,

Lara Weinheimer
Project Scientist
RECS
(575) 441-0431

Attachments:

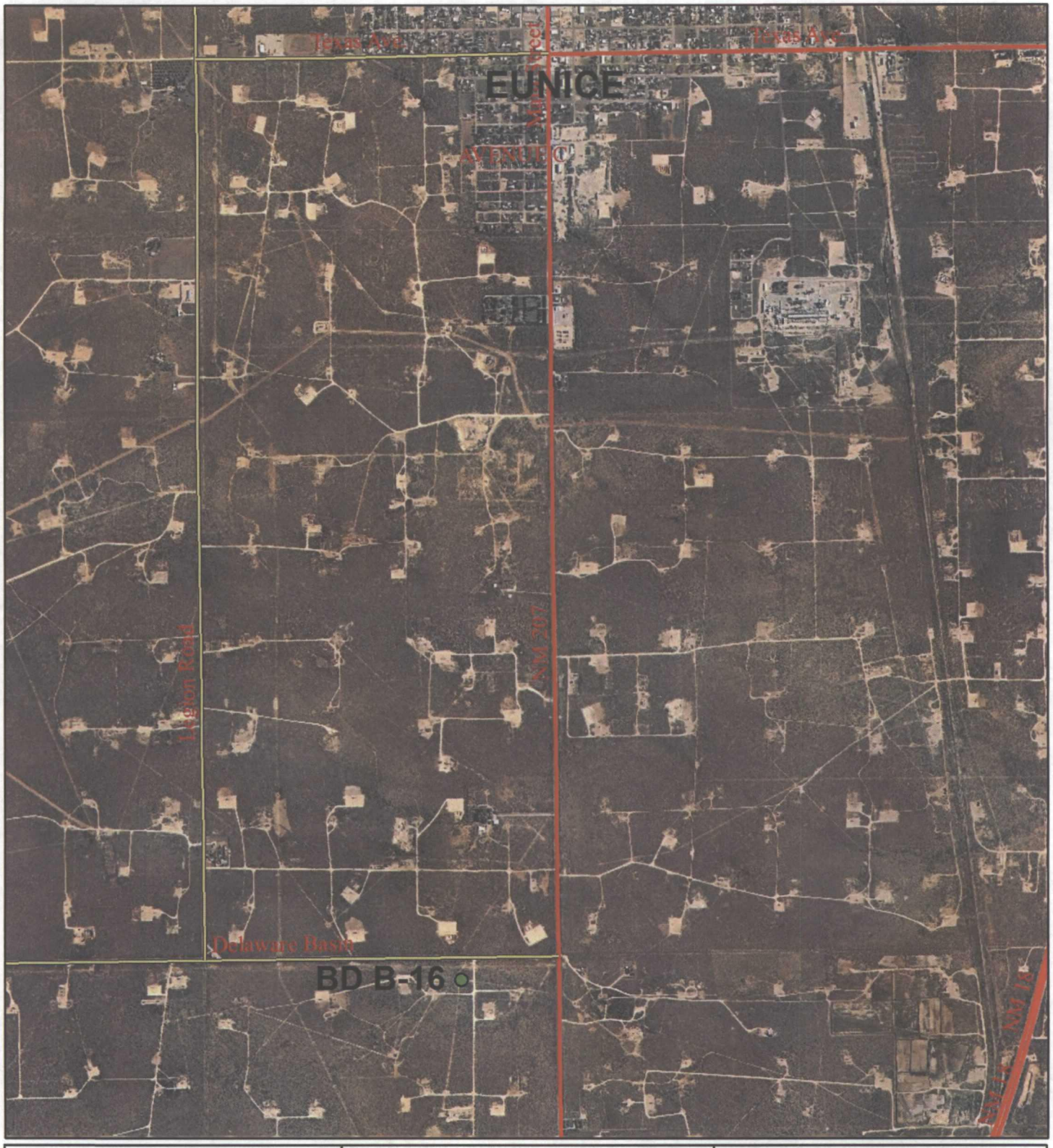
Figure 1 – Site Location map
Figure 2 – Soil Bore and Monitor Well Data plat
Figure 3 – Monitor well sampling plat

Figure 4 – Proposed liner plat
Appendix A – Soil bore installation and laboratory analysis
Appendix B – Monitor well installation
Appendix C – Monitor well sampling laboratory analysis
Appendix D – Aquifer description

Figures

RICE Environmental Consulting and Safety (RECS)
P.O. Box 5630 Hobbs, NM 88241
Phone 575.393.4411 Fax 575.393.0293

Site Location



RICE ENVIRONMENTAL RECS CONSULTING & SAFETY, LLC

BD B-16

NMOCD Case #: 1R426-28

Legals: UL/B sec. 16
T22S R37E

Figure 1

N
W E
S

0 0.15 0.3 0.6
Miles

Drawing date: 11-15-11
Drafted by: L. Weinheimer

Soil Bore and Monitor Well Data

MW-1

Depth	Cl-	PID	LAB Cl-	GRO	DRO
5	535	0			
10	525	0			
15	659	0			
20	900	0.1	880	<10	<10
25	762	0			
30	353	0			
35	200	0.6			
40	371	0.6			
45	222	0.8			
50	238	0.9			
55	139	1			
60	148	0.6			
65	174	0			
70	178	0			
75	173	0	16	<10	<10

MW-2

Depth	Cl-	PID
5	138	0
10	391	0
15	183	0.5
20	168	0.5
25	236	0.6
30	147	0
35	182	0
40	180	0
45	180	0
50	176	0
55	179	0
60	179	0
65	175	0
70	168	0
75	181	0

SB-1

Depth	Cl-	PID	LAB Cl-	GRO	DRO
20	614	3.9			
25	943	8.2			
30	880	3.6			
35	692	4.8			
40	2506	8.3			
45	1776	3			
50	1897	3.2			
55	2314	2.1			
60	3285	2.4	4560	<10	<10
65	1155	3.2			
70	675	4.3			
75	274	4.2			
80	273	5.4	256	<10	<10

SB-2

Depth	Cl-	PID	LAB Cl-	GRO	DRO
5	1509	0.5			
10	1949	0.1			
15	1930	0.6			
20	400	0.9			
25	616	0.7			
30	1214	0.9			
35	524	0.4			
40	2331	0.6			
45	1573	0.5			
50	2249	0.8			
55	2674	0.8			
60	3452	0.9	4120	<10	<10
65	1297	0.6			
70	1554	0.3			
75	681	0.5	688	<10	<10

N trench

Depth	Cl-	PID	LAB Cl-	GRO	DRO
1	145	12			
2	175	4.1			
3	864	1.9	1070	<10	<10
4	445	3.5			
5	578	1.6	592	<10	<10

SB-3

Depth	Cl-	PID	LAB Cl-	GRO	DRO
5	1607	0.2			
10	1411	0.1			
15	1358	0.1			
20	724	0.1			
25	745	0.4			
30	726	0.3			
35	649	0.1			
40	1520	0.2			
45	1429	0.3			
50	1505	0.1			
55	1778	0.2			
60	1801	0.1	1960	<10	<10
65	540	0.2			
70	554	0.2			
75	456	0.1	448	<10	<10

SB-4

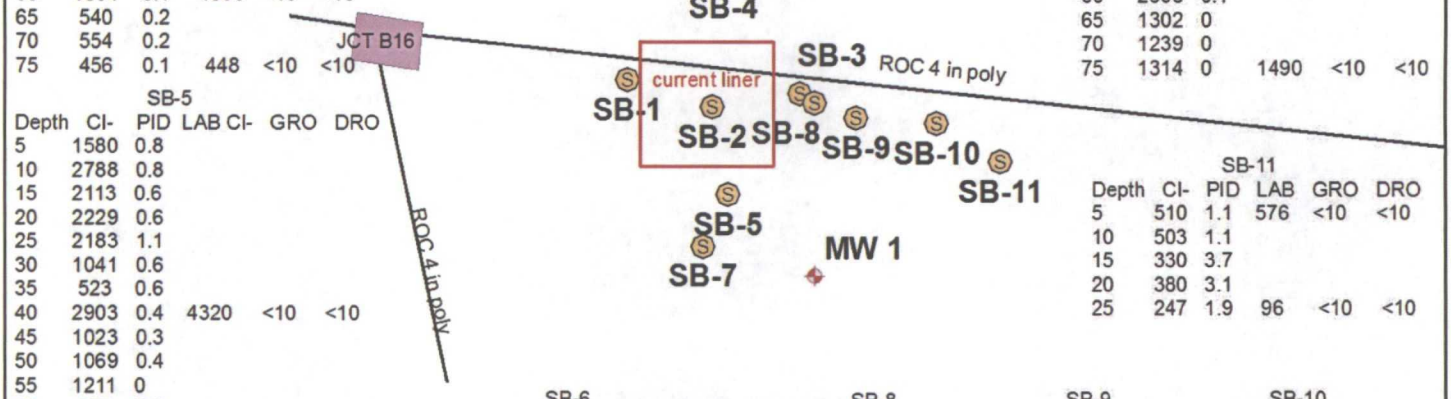
Depth	Cl-	PID	LAB Cl-	GRO	DRO
5	1575	0.6			
10	3174	0.5			
15	3340	0.5			
20	2914	0.2			
25	1924	0.4			
30	1203	0.3			
35	834	0.4			
40	5699	0.3	6640	<10	<10
45	2046	0.3			
50	1410	0.2			
55	2498	0.1			
60	2508	0.1			
65	1302	0			
70	1239	0			
75	1314	0	1490	<10	<10

SB-5

Depth	Cl-	PID	LAB Cl-	GRO	DRO
5	1580	0.8			
10	2788	0.8			
15	2113	0.6			
20	2229	0.6			
25	2183	1.1			
30	1041	0.6			
35	523	0.6			
40	2903	0.4	4320	<10	<10
45	1023	0.3			
50	1069	0.4			
55	1211	0			
60	953	0.2			
65	389	0.2			
70	211	0.1			
75	273	0.1	64	<10	<10

SB-7

Depth	Cl-	PID	LAB Cl-	GRO	DRO
5	1043	3.6	1180	<10	<10
10	821	3.6			
15	881	10.1			
20	704	0.9			
25	666	15.5			
30	602	12.1			
35	541	6.7			
40	622	2.7	608	<10	<10
45	1016	6.6			
50	456	4.3			
55	208	4.7	160	<10	<10



SB-11

Depth	Cl-	PID	LAB	GRO	DRO
5	510	1.1	576	<10	<10
10	503	1.1			
15	330	3.7			
20	380	3.1			
25	247	1.9	96	<10	<10

SB-6

Depth	Cl-	PID	LAB Cl-	GRO	DRO
5	805	0.3			
10	2104	0.3			
15	2567	0.2	2960	<10	<10
20	1781	0.2			
25	666	0.2			
30	399	0.4			
35	292	0.3			
40	1114	0.3			
45	1641	0.1			
50	502	0.1			
55	1565	0.4			
60	1269	0.4			
65	1022	0.3			
70	513	0.3			
75	450	0.2	384	<10	<10

SB-8

Depth	Cl-	PID
5	1320	1.2
10	1372	1.1
15	1082	1.1
20	938	1.1
25	586	1.2
30	776	1.6
35	674	1.7
40	642	1.1
45	1895	1
50	1068	0.9
55	1315	1
60	1924	1
65	834	1
70	581	1
75	457	1

SB-9

Depth	Cl-	PID
5	1360	3.3
10	781	2.6
15	885	2.2
20	769	1.5
25	1398	1.1
30	1173	1
35	370	1
40	1616	0.8

SB-10

Depth	Cl-	PID
5	626	3.5
10	494	3.6
15	987	3
20	688	3
25	628	3.7
30	548	2.5
35	502	2
40	1905	1.7
45	1261	2.1
50	1247	1.7
55	1047	1.1
60	1081	1.4

DGW = 78 ft

clay layer is 20' x 20' @ 17' bgs

RICE ENVIRONMENTAL CONSULTING & SAFETY, LLC — RECS

BD B-16

Legals: UL/B sec. 16
T22S R37E
NMOCD Case #: 1R426-28

Figure 2

N W E S

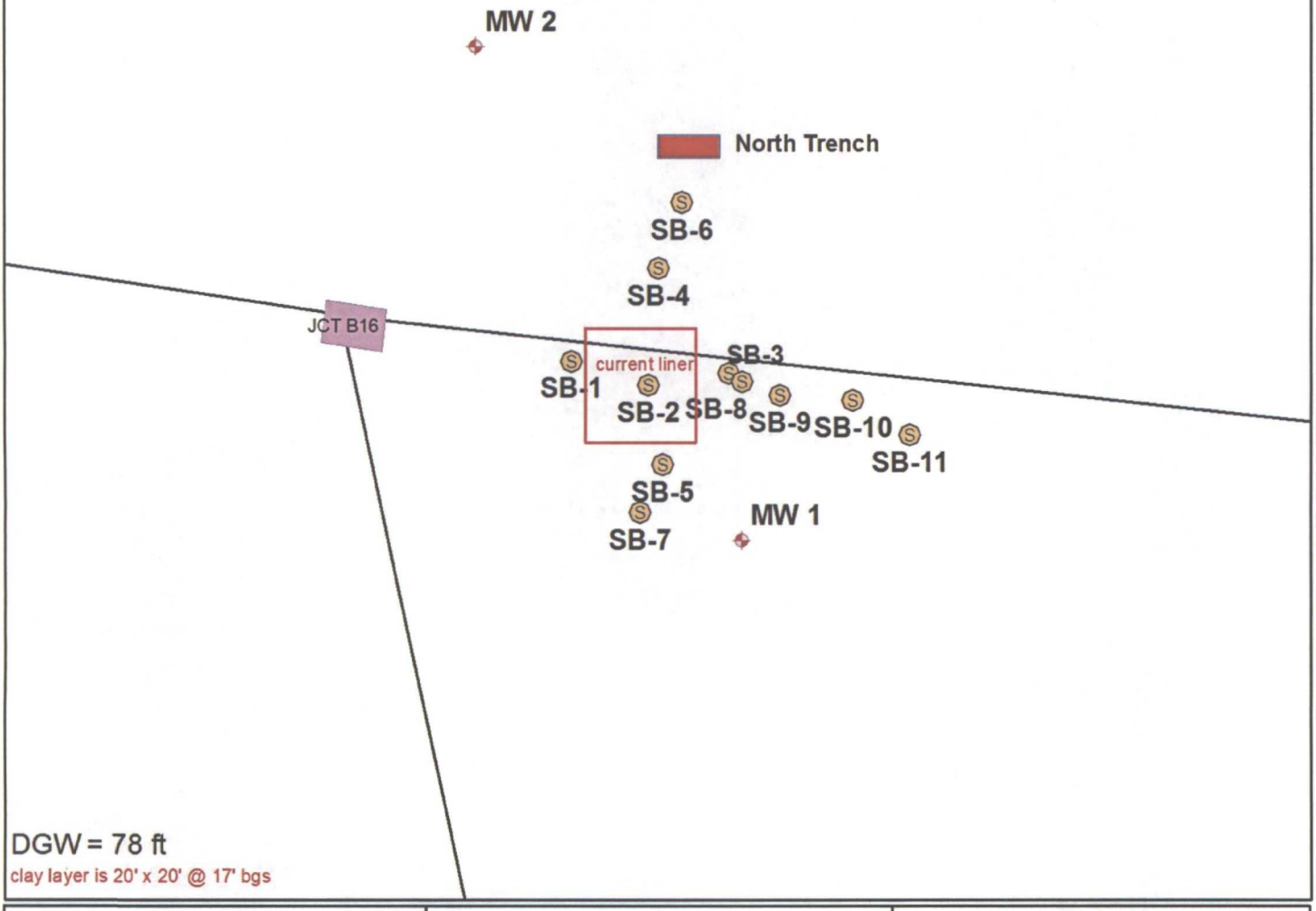
0 15 30 60 Feet

Drawing date: 11-15-11
Drafted by: L. Weinheimer

Monitor well sampling

MW	Depth to Water	Total Depth	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate
MW-1	78.23	91.84	11/10/2010	264	1100	<0.001	<0.001	<0.001	<0.003	295
	78.23	91.86	1/21/2011	284	1110	<0.001	<0.001	<0.001	<0.003	247
	78.19	91.86	4/20/2011	248	1070	<0.001	<0.001	<0.001	<0.003	249
	78.24	91.86	7/27/2011	256	1070	<0.001	<0.001	<0.001	<0.003	226
	78.28	91.86	10/21/2011	260	1080	<0.001	<0.001	<0.001	<0.003	431
	78.16	91.86	1/27/2012	260	1080	<0.001	<0.001	<0.001	<0.003	242

MW	Depth to Water	Total Depth	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate
MW-2	79.22	92.08	11/10/2010	200	987	<0.001	<0.001	<0.001	<0.003	314
	79.21	92.1	1/21/2011	212	997	<0.001	<0.001	<0.001	<0.003	272
	78.18	92.1	4/20/2011	208	1020	<0.001	<0.001	<0.001	<0.003	265
	78.25	92.1	7/27/2011	212	976	<0.001	<0.001	<0.001	<0.003	267
	78.33	92.1	10/21/2011	216	1010	<0.001	<0.001	<0.001	<0.003	510
	78.11	92.1	1/27/2012	220	1040	<0.001	<0.001	<0.001	<0.003	281



RICE ENVIRONMENTAL RECS CONSULTING & SAFETY, LLC

BD B-16

NMOCD Case #: 1R426-28

Legals: UL/B sec. 16
T22S R37E

Figure 3

N W E S

0 15 30 60 Feet

Drawing date: 5-3-12
Drafted by: L. Weinheimer

Proposed liner

MW-1

Depth	Cl-	PID	LAB Cl-	GRO	DRO
5	535	0			
10	525	0			
15	659	0			
20	900	0.1	880	<10	<10
25	762	0			
30	353	0			
35	200	0.6			
40	371	0.6			
45	222	0.8			
50	238	0.9			
55	139	1			
60	148	0.6			
65	174	0			
70	178	0			
75	173	0	16	<10	<10

SB-1

Depth	Cl-	PID	LAB Cl-	GRO	DRO
20	614	3.9			
25	943	8.2			
30	880	3.6			
35	692	4.8			
40	2506	8.3			
45	1776	3			
50	1897	3.2			
55	2314	2.1			
60	3285	2.4	4560	<10	<10
65	1155	3.2			
70	675	4.3			
75	274	4.2			
80	273	5.4	256	<10	<10

SB-2

Depth	Cl-	PID	LAB Cl-	GRO	DRO
5	1509	0.5			
10	1949	0.1			
15	1930	0.6			
20	400	0.9			
25	616	0.7			
30	1214	0.9			
35	524	0.4			
40	2331	0.6			
45	1573	0.5			
50	2249	0.8			
55	2674	0.8			
60	3452	0.9	4120	<10	<10
65	1297	0.6			
70	1554	0.3			
75	681	0.5	688	<10	<10

MW-2

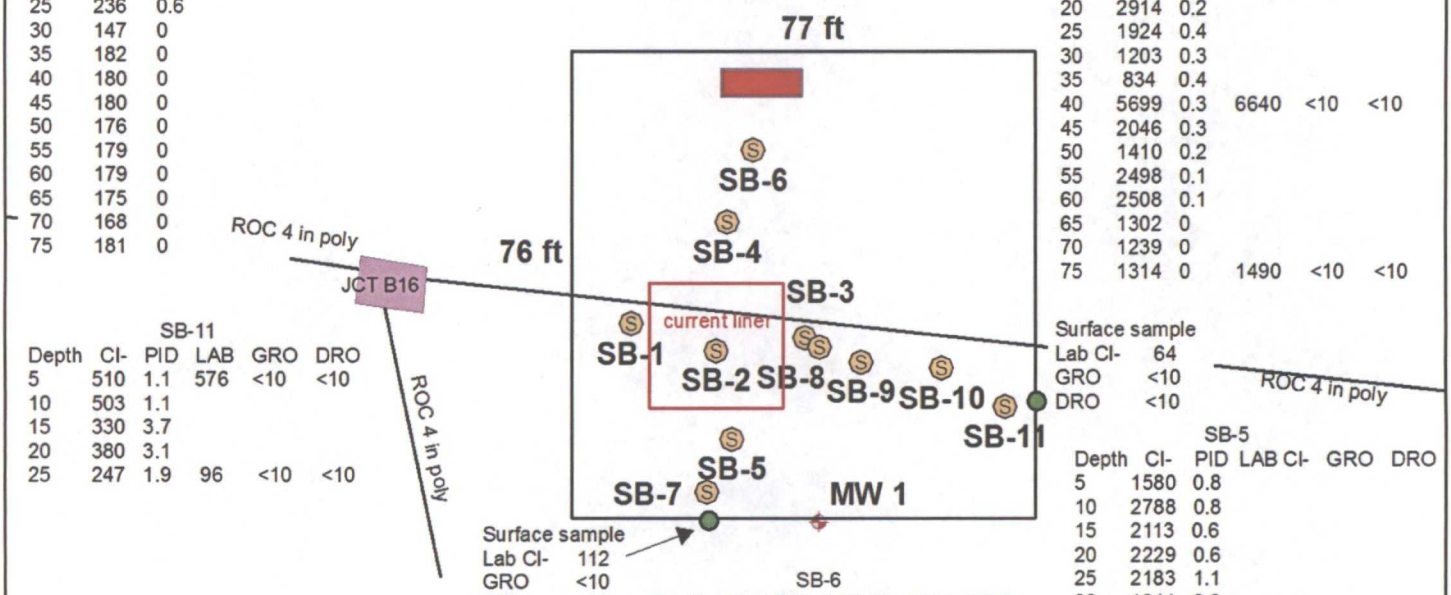
Depth	Cl-	PID
5	138	0
10	391	0
15	183	0.5
20	168	0.5
25	236	0.6
30	147	0
35	182	0
40	180	0
45	180	0
50	176	0
55	179	0
60	179	0
65	175	0
70	168	0
75	181	0

N trench

Depth	Cl-	PID	LAB Cl-	GRO	DRO
1	145	12			
2	175	4.1			
3	864	1.9	1070	<10	<10
4	445	3.5			
5	578	1.6	592	<10	<10

SB-4

Depth	Cl-	PID	LAB Cl-	GRO	DRO
5	1575	0.6			
10	3174	0.5			
15	3340	0.5			
20	2914	0.2			
25	1924	0.4			
30	1203	0.3			
35	834	0.4			
40	5699	0.3	6640	<10	<10
45	2046	0.3			
50	1410	0.2			
55	2498	0.1			
60	2508	0.1			
65	1302	0			
70	1239	0			
75	1314	0	1490	<10	<10



SB-11

Depth	Cl-	PID	LAB	GRO	DRO
5	510	1.1	576	<10	<10
10	503	1.1			
15	330	3.7			
20	380	3.1			
25	247	1.9	96	<10	<10

SB-5

Depth	Cl-	PID	LAB Cl-	GRO	DRO
5	1580	0.8			
10	2788	0.8			
15	2113	0.6			
20	2229	0.6			
25	2183	1.1			
30	1041	0.6			
35	523	0.6			
40	2903	0.4	4320	<10	<10
45	1023	0.3			
50	1069	0.4			
55	1211	0			
60	953	0.2			
65	389	0.2			
70	211	0.1			
75	273	0.1	64	<10	<10

SB-10

Depth	Cl-	PID
5	626	3.5
10	494	3.6
15	987	3
20	688	3
25	628	3.7
30	548	2.5
35	502	2
40	1905	1.7
45	1261	2.1
50	1247	1
55	1047	1.1
60	1081	1.4

SB-7

Depth	Cl-	PID	LAB Cl-	GRO	DRO
5	1043	3.6	1180	<10	<10
10	821	3.6			
15	881	10.1			
20	704	0.9			
25	666	15.5			
30	602	12.1			
35	541	6.7			
40	622	2.7	608	<10	<10
45	1016	6.6			
50	456	4.3			
55	208	4.7	160	<10	<10

SB-6

Depth	Cl-	PID	LAB Cl-	GRO	DRO
5	805	0.3			
10	2104	0.3			
15	2567	0.2	2960	<10	<10
20	1781	0.2			
25	666	0.2			
30	399	0.4			
35	292	0.3			
40	1114	0.3			
45	1641	0.1			
50	502	0.1			
55	1565	0.4			
60	1269	0.4			
65	1022	0.3			
70	513	0.3			
75	450	0.2	384	<10	<10

DGW = 78 ft

Surface samples

Proposed 20-mil reinforced liner at 4-5' bgs

clay layer is 20' x 20' @ 17' bgs

RICE ENVIRONMENTAL RECS CONSULTING & SAFETY, LLC

BD B-16

Legals: UL/B sec. 16
T22S R37E

NMOCD Case #: 1R426-28

Figure 4

N W E S

0 15 30 60 Feet

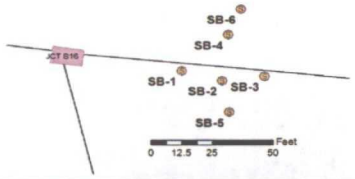
Drawing date: 5-11-11
Drafted by: L. Weinheimer

Appendix A

Soil bore installation and laboratory analysis

RICE Environmental Consulting and Safety (RECS)
P.O. Box 5630 Hobbs, NM 88241
Phone 575.393.4411 Fax 575.393.0293

Logger:	Lara Weinheimer
Driller:	Harrison & Cooper
Consultant:	RECS
Drilling Method	Air Rotary
Start Date:	7/28/2010
End Date:	7/28/2010



RICE ENVIRONMENTAL CONSULTING & SAFETY, LLC

Project Name: BD B-16 **Well ID:** SB-1

Location: UL/B sec. 16 T22S R37E

Lat: N32°23'53.071" **County:** Lea

Long: W 103°9'51.177" **State:** NM

Comments: All samples from cuttings. Located 15' west of the former junction box site.

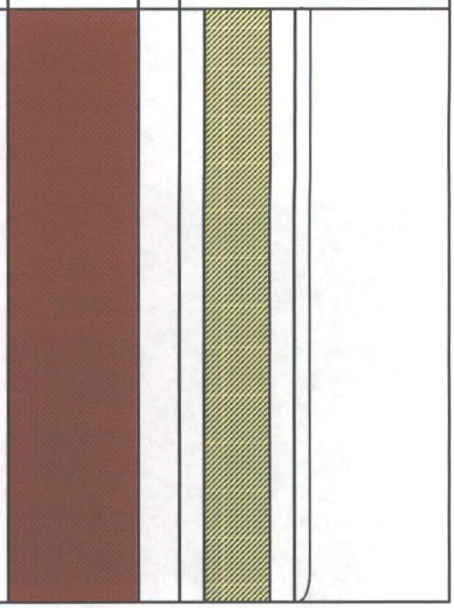
Drafted by: Lara Weinheimer

TD = 80 ft DGW = 78 ft

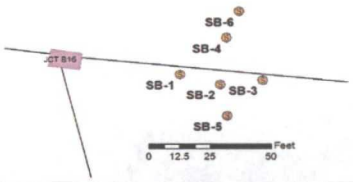
Depth (feet)	chloride field tests	LAB	PID	Description
				Light orangey brown very fine sand with sandstone. Dry. No odor.
20 ft	614		3.9	
25 ft	943		8.2	
				Orangey brown very fine sand with sandstone. Slightly moist. No odor.
30 ft	880		3.6	
35 ft	692		4.8	
				Light orangey brown very fine sand with substantial caliche. Dry. No odor.
40 ft	2506		8.3	
				Light brown very fine sand with sandstone. Slightly moist. No odor.
45 ft	1776		3	
				Orangey brown very fine sand. Slightly moist. No odor.
50 ft	1897		3.2	
55 ft	2314		2.1	
60 ft	3285	Cl- 4560	2.4	
		GRO <10		
		DRO <10		

Lithology

Well Construction: bentonite seal

Depth (feet)	chloride field tests	LAB	PID	Description	Lithology	Well Construction
65 ft	1155		3.2			
70 ft	675		4.3			
75 ft	274		4.2			
80 ft	273	Cl- 256	5.4			
		GRO <10				
		DRO <10				

Logger:	Lara Weinheimer
Driller:	Harrison & Cooper
Consultant:	RECS
Drilling Method	Air Rotary
Start Date:	7/28/2010
End Date:	7/28/2010



RICE ENVIRONMENTAL RECS CONSULTING & SAFETY, LLC

Project Name: BD B-16 **Well ID:** SB-2

Location: UL/B sec. 16 T22S R37E
Lat: N32°23'53.027" **County:** Lea
Long: W 103°9'51.012" **State:** NM

Comments: All samples from cuttings. Located at source of the former junction box site.

Drafted by: Lara Weinheimer

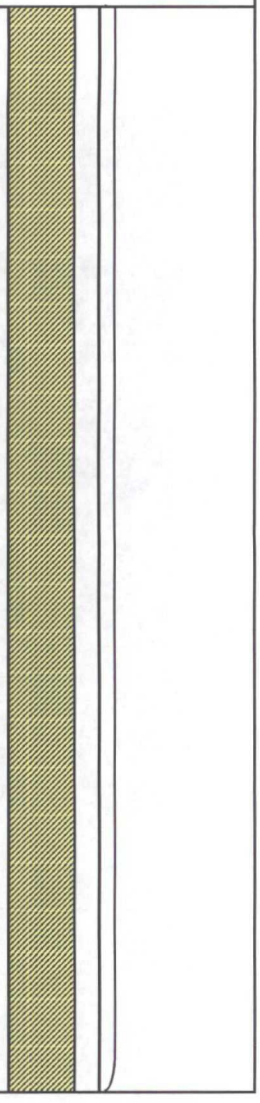
TD = 75 ft DGW = 78 ft

Depth (feet)	chloride field tests	LAB	PID	Description
				Brown very fine sand with caliche. Dry. No odor.
5 ft	1509		0.5	
10 ft	1949		0.1	
15 ft	1930		0.6	
				Light orangey brown very fine sand with sandstone. Slightly moist. No odor.
20 ft	400		0.9	
25 ft	616		0.7	
				Orangey brown very fine sand with sandstone. Slightly moist. No odor.
30 ft	1214		0.9	
35 ft	524		0.4	
				Light orangey brown very fine sand with sandstone. Dry. No odor.
40 ft	2331		0.6	
45 ft	1573		0.5	

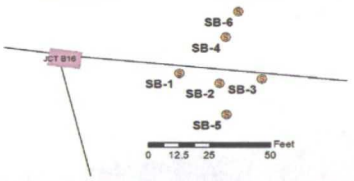
Lithology

Well Construction

bentonite seal

Depth (feet)	chloride field tests	LAB	PID	Description	Lithology	Well Construction
				Orangey brown very fine sand with sandstone. Slightly moist. No odor.		
50 ft	2249		0.8			
55 ft	2674		0.8			
60 ft	3452	CI-4120	0.9			
		GRO <10		Orangey brown very fine sand. Slightly moist. No odor.		
		DRO <10				
65 ft	1297		0.6			
70 ft	1554		0.3			
75 ft	681	CI-688	0.5			
		GRO <10				
		DRO <10				

Logger:	Lara Weinheimer
Driller:	Harrison & Cooper
Consultant:	RECS
Drilling Method	Air Rotary
Start Date:	7/28/2010
End Date:	7/28/2010



RICE ENVIRONMENTAL CONSULTING & SAFETY, LLC — RECS

Project Name: BD B-16 **Well ID:** SB-3

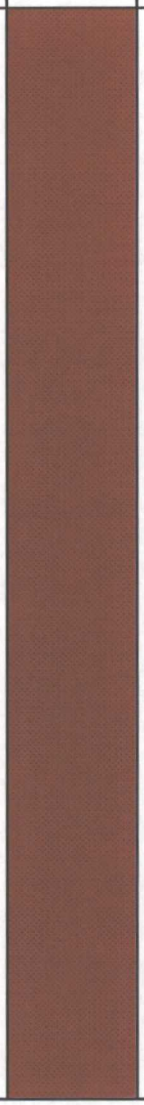
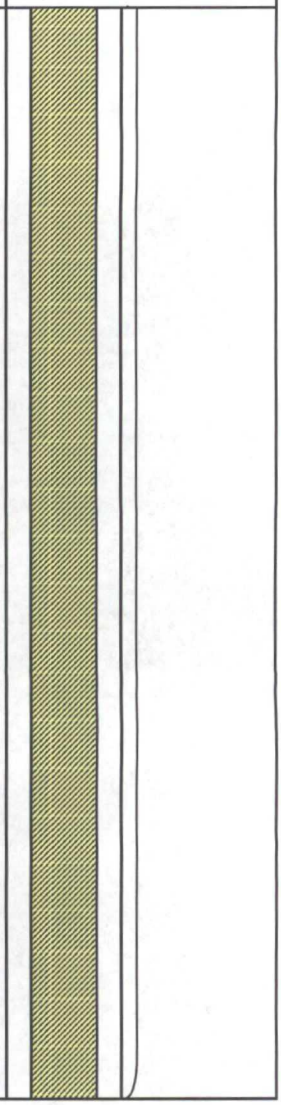
Location: UL/B sec. 16 T22S R37E
Lat: N32°23'53.051" **County:** Lea
Long: W 103°9'50.844" **State:** NM

Comments: All samples from cuttings. Located 14 ft east of the former junction box site.
Drafted by: Lara Weinheimer
TD = 75 ft DGW = 78 ft

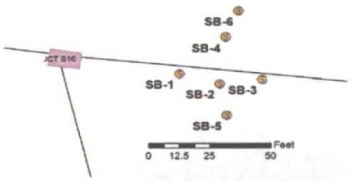
Depth (feet)	chloride field tests	LAB	PID	Description
				Brown very fine sand with caliche. Dry. No odor.
5 ft	1,607		0.2	
10 ft	1,411		0.1	
15 ft	1,358		0.1	
				Light orangey brown very fine sand with sandstone. Dry. No odor.
20 ft	724		0.1	
				Light orangey brown very fine sand with sandstone particles. Dry. No odor.
25 ft	745		0.4	
				Orangey brown very fine sand with sandstone. Slightly moist. No odor.
30 ft	726		0.3	
35 ft	649		0.1	
				Light orangey brown very fine sand with sandstone particles. Dry. No odor.
40 ft	1,520		0.2	
				Light brown very fine sand. Slightly moist. No odor.
45 ft	1,429		0.3	

Lithology

Well Construction: bentonite seal

Depth (feet)	chloride field tests	LAB	PID	Description	Lithology	Well Construction
				Orangey brown very fine sand. Slightly moist. No odor.		
50 ft	1,505		0.1			
55 ft	1,778		0.2			
60 ft	1,801	CI-1960	0.1			
		GRO <10				
		DRO <10				
65 ft	540		0.2			
70 ft	554		0.2			
75 ft	456	CI-448	0.1			
		GRO <10				
		DRO <10				

Logger:	Lara Weinheimer
Driller:	Harrison & Cooper
Consultant:	RECS
Drilling Method	Air Rotary
Start Date:	7/28/2010
End Date:	7/28/2010



RICE ENVIRONMENTAL RECS CONSULTING & SAFETY, LLC

Project Name: BD B-16 **Well ID:** SB-4

Location: UL/B sec. 16 T22S R37E
Lat: N32°23'53.233" **County:** Lea
Long: W 103°9'50.989" **State:** NM

Comments: All samples from cuttings. Located 20 ft north of the former junction box site.

Drafted by: Lara Weinheimer

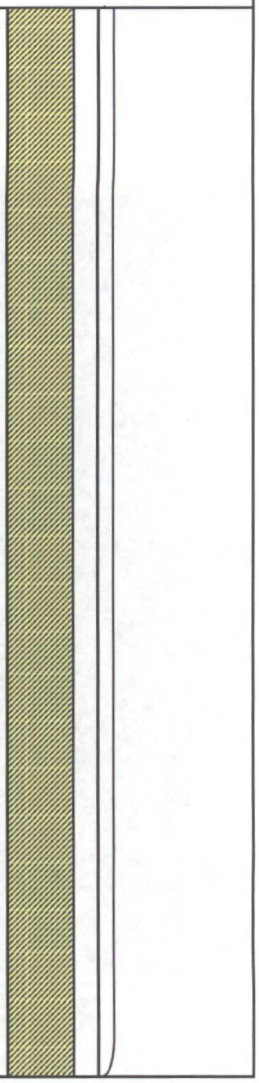
TD = 75 ft DGW = 78 ft

Depth (feet)	chloride field tests	LAB	PID	Description
				Light orangey brown very fine sand with caliche. Dry. No odor.
5 ft	1575		0.6	
10 ft	3174		0.5	
15 ft	3340		0.5	
20 ft	2914		0.2	
				Orangey brown very fine sand with sandstone. Slightly moist. No odor.
25 ft	1924		0.4	
30 ft	1203		0.3	
35 ft	834		0.4	
				Light orangey brown very fine sand with sandstone particles. Dry. No odor.
40 ft	5699	Cl- 6640	0.3	
		GRO <10		Light brown very fine sand. Slightly moist. No odor.
		DRO <10		
45 ft	2046		0.3	

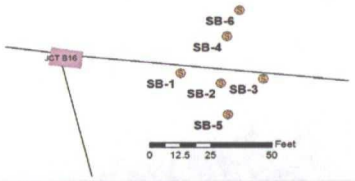
Lithology

Well Construction

bentonite seal

Depth (feet)	chloride field tests	LAB	PID	Description	Lithology	Well Construction
				Orangey brown very fine sand. Slightly moist. No odor.		
50 ft	1410		0.2			
55 ft	2498		0.1			
60 ft	2508		0.1			
65 ft	1302		0			
70 ft	1239		0			
75 ft	1314	Cl- 1490	0			
		GRO <10				
		DRO <10				

Logger:	Lara Weinheimer
Driller:	Harrison & Cooper
Consultant:	RECS
Drilling Method	Air Rotary
Start Date:	7/28/2010
End Date:	7/28/2010



RICE ENVIRONMENTAL RECS CONSULTING & SAFETY, LLC

Project Name: BD B-16 **Well ID:** SB-5

Location: UL/B sec. 16 T22S R37E
Lat: N32°23'52.886" **County:** Lea
Long: W 103°9'50.985" **State:** NM

Comments: All samples from cuttings. Located 15 ft south of the former junction box site.

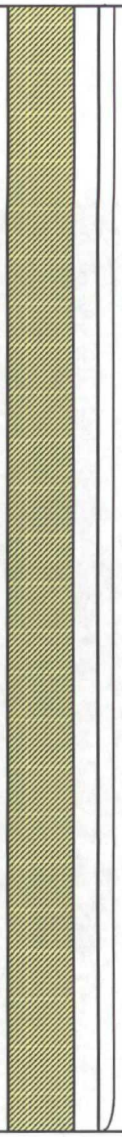
Drafted by: Lara Weinheimer

TD = 75 ft DGW = 78 ft

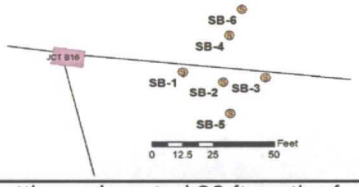
Depth (feet)	chloride field tests	LAB	PID	Description
				Light orangey brown very fine sand with caliche. Dry. No odor.
5 ft	1580		0.8	
10 ft	2788		0.8	
15 ft	2113		0.6	
20 ft	2229		0.6	
25 ft	2183		1.1	
				Orangey brown very fine sand with sandstone. Dry. No odor.
30 ft	1041		0.6	
35 ft	523		0.6	
				Light orangey brown very fine sand with sandstone. Dry. No odor.
40 ft	2903	Cl- 4320	0.4	
		GRO <10		
		DRO <10		

Lithology

Well Construction: bentonite seal

Depth (feet)	chloride field tests	LAB	PID	Description	Lithology	Well Construction
45 ft	1023		0.3	Orangey brown very fine sand. Slightly moist. No odor.		
50 ft	1069		0.4			
55 ft	1211		0			
60 ft	953		0.2			
65 ft	389		0.2			
70 ft	211		0.1			
75 ft	273	Cl-64	0.1			
		GRO <10				
		DRO <10				

Logger:	Lara Weinheimer
Driller:	Harrison & Cooper
Consultant:	RECS
Drilling Method	Air Rotary
Start Date:	7/28/2010
End Date:	7/28/2010



RICE ENVIRONMENTAL RECS CONSULTING & SAFETY, LLC

Project Name: BD B-16 **Well ID:** SB-6

Location: UL/B sec. 16 T22S R37E
Lat: N32°23'53.357" **County:** Lea
Long: W 103°9'50.935" **State:** NM

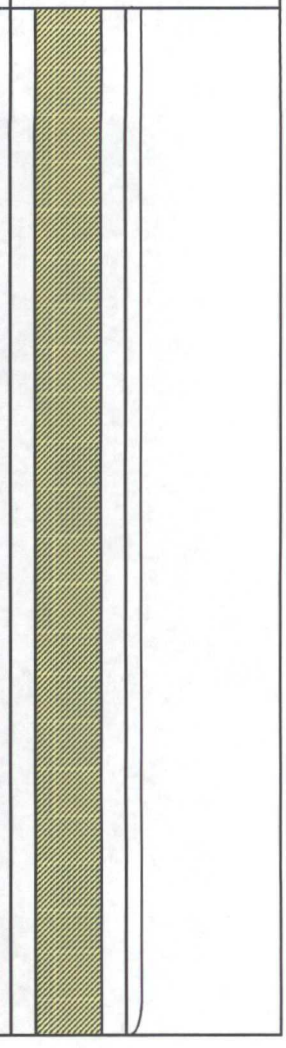
Comments: All samples from cuttings. Located 32 ft north of the former junction box site.
Drafted by: Lara Weinheimer
TD = 75 ft DGW = 78 ft

Depth (feet)	chloride field tests	LAB	PID	Description
				Light orangey brown very fine sand with caliche particles. Dry. No odor.
5 ft	805		0.3	
10 ft	2104		0.3	
				Light orangey tan very fine sand with caliche. Dry. No odor.
15 ft	2567	Cl- 2960	0.2	
		GRO <10		Light orangey brown very fine sand with caliche particles. Dry. No odor.
		DRO <10		
20 ft	1781		0.2	
25 ft	666		0.2	
				Orangey brown very fine sand with sandstone. Dry. No odor.
30 ft	399		0.4	
35 ft	292		0.3	
40 ft	1114		0.3	
				Light brown very fine sand with sandstone. Dry. No odor.
45 ft	1641		0.1	

Lithology

Well Construction

bentonite seal

Depth (feet)	chloride field tests	LAB	PID	Description	Lithology	Well Construction
				Orangey brown very fine sand. Slightly moist. No odor.		
50 ft	502		0.1			
55 ft	1565		0.4			
60 ft	1269		0.4			
65 ft	1022		0.3			
70 ft	513		0.3			
75 ft	450	Cl-384	0.2			
		GRO <10				
		DRO <10				

CARDINAL LABORATORIES

PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

August 4, 2010

Hack Conder
Rice Operating Company
112 West Taylor
Hobbs, NM 88240

Re: BD Jct. B-16

Enclosed are the results of analyses for sample number H20448, received by the laboratory on 07/28/10 at 4:55 pm.

Cardinal Laboratories is accredited through Texas NELAP for:

Method SW-846 8021	Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method SW-846 8260	Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method TX 1005	Total Petroleum Hydrocarbons

Certificate number T104704398-08-TX. Accreditation applies to solid and chemical materials and non-potable water matrices.

Cardinal Laboratories is accredited though 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 524.2	Regulated VOCs (V2, V3)

Accreditation applies to public drinking water matrices.

Total Number of Pages of Report: 4 (includes Chain of Custody)

Sincerely,

Celey D. Keene
Laboratory Director

This report conforms with NELAP requirements.

CARDINAL LABORATORIES

PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
RICE OPERATING COMPANY
ATTN: HACK CONDER
112 W. TAYLOR
HOBBS, NM 88240

Receiving Date: 07/28/10
Reporting Date: 08/04/10
Project Number: NOT GIVEN
Project Name: BD JCT B-16
Project Location: BD JCT B-16

Sampling Date: 07/28/10
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: JH
Analyzed By: AB/HM

LAB NUMBER	SAMPLE ID	GRO (C_6-C_{10}) (mg/kg)	DRO (>C_{10}-C_{28}) (mg/kg)	Cl* (mg/kg)
ANALYSIS DATE		08/03/10	08/03/10	07/30/10
H20448-1	SB-1 @ 60'	<10.0	<10.0	4,560
H20448-2	SB-1 @ 80'	<10.0	<10.0	256
H20448-3	SB-2 @ 60'	<10.0	<10.0	4,120
H20448-4	SB-2 @ 75'	<10.0	<10.0	688
H20448-5	SB-3 @ 60'	<10.0	<10.0	1,960
H20448-6	SB-3 @ 75'	<10.0	<10.0	448
H20448-7	SB-4 @ 40'	<10.0	<10.0	6,640
H20448-8	SB-4 @ 75'	<10.0	<10.0	1,490
H20448-9	SB-5 @ 40'	<10.0	<10.0	4,320
H20448-10	SB-5 @ 75'	<10.0	<10.0	64
H20448-11	SB-6 @ 15'	<10.0	<10.0	2,960
H20448-12	SB-6 @ 75'	<10.0	<10.0	384
Quality Control		429	432	520
True Value QC		500	500	500
% Recovery		85.8	86.4	104
Relative Percent Difference		4.2	1.8	3.8

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; Cl: Std. Methods 4500-Cl B
*Analyses performed on 1:4 w:v aqueous extracts.
Reported on wet weight.

Chemist

08/04/10
Date

H20448 TCL RICE

CARDINAL LABORATORIES

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603
(505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325)673-7020

Company Name: Rice Operating Company	BILL TO
Project Manager: Hack Conder	P.O. #:
Address: 122 West Taylor	Company:
City: Hobbs State: NM Zip: 88240	Attn:
Phone #: 393-9174 Fax #: 397-1471	Address:
Project #: Project Owner:	City:
Project Name: SD jct B-16	State: Zip:
Project Location: BD jct B-16	Phone #:
Sampler Name: L. Weinheimer	Fax #:

FOR LAB USE ONLY				MATRIX						PRESERV.			SAMPLING		ANALYSIS REQUEST									
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE	ICE / COOL	OTHER:	DATE	TIME	Chlorides	TPH 8015 M	BTEX	Texas TPH	Complete Cations/Anions	TDS				
H20448-1	SB-1 @ 60'	G				✓					✓		7-28-10	8:28	✓	✓								
2	SB-1 @ 80'	G				✓					✓		"	8:46	✓	✓								
3	SB-2 @ 60'	G				✓					✓		"	9:42	✓	✓								
4	SB-2 @ 75'	G				✓					✓		"	9:51	✓	✓								
5	SB-3 @ 60'	G				✓					✓		"	10:44	✓	✓								
6	SB-3 @ 75'	G				✓					✓		"	10:52	✓	✓								
7	SB-4 @ 40'	G				✓					✓		"	12:42	✓	✓								
8	SB-4 @ 75'	G				✓					✓		"	1:00	✓	✓								
9	SB-5 @ 40'	G				✓					✓		"	2:05	✓	✓								
10	SB-5 @ 75'	G				✓					✓		"	2:25	✓	✓								

Relinquished By: L. Weinheimer	Date: 7-28-10 Time: 4:55	Received By:	Phone Result: ☐ Yes ☑ No Add'l Phone #:
Relinquished By:	Date: Time:	Received By: Jodi Henson	Fax Result: ☐ Yes ☑ No Add'l Fax #:
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition Cool: ☑ Yes ☐ No Intact: ☑ Yes ☐ No	CHECKED BY: (Initials) LH	REMARKS: email results Hconder@riceswd.com; kjones@riceswd.com Lweinheimer@rice-ecs.com

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

#26

CARDINAL LABORATORIES

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603
(505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325)673-7020

Company Name: Rice Operating Company	BILL TO
Project Manager: Hack Conder	P.O. #:
Address: 122 West Taylor	Company:
City: Hobbs State: NM Zip: 88240	Attn:
Phone #: 393-9174 Fax #: 397-1471	Address:
Project #: Project Owner:	City:
Project Name: BD jct B-16	State: Zip:
Project Location: BD jct B-16	Phone #:
Sampler Name: L. Weinheimer	Fax #:

FOR LAB USE ONLY				MATRIX						PRESERV.			SAMPLING		ANALYSIS REQUEST										
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE	ICE / COOL	OTHER:	DATE	TIME	Chlorides	TPH 8015 M	BTEX	Texas TPH	Complete Cations/Anions	TDS					
H20448-11	SD-6 @ 15'	G	1			✓					✓		7-28-10	3:10	✓	✓									
-12	SD-6 @ 75'	G	1			✓					✓		"	3:46	✓	✓									

Relinquished By: L. Weinheimer	Date: 7-28-10 Time: 4:55	Received By:	Phone Result: ☐ Yes ☑ No Add'l Phone #:
Relinquished By:	Date: Time:	Received By: Jodi Henson	Fax Result: ☐ Yes ☑ No Add'l Fax #:
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition Cool - Intact ☑ Yes ☑ Yes ☐ No ☐ No	CHECKED BY: (Initials)	REMARKS: email results Hconder@riceswd.com; kjones@riceswd.com Lweinheimer@rice-ecs.com

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

#26

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

February 02, 2011

Bruce Baker

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: BD B-16 JCT 22/37

Enclosed are the results of analyses for samples received by the laboratory on 01/31/11 8:05.

Cardinal Laboratories is accredited through Texas NELAP for:

Method SW-846 8021	Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method SW-846 8260	Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method TX 1005	Total Petroleum Hydorcarbons

Certificate number T104704398-08-TX. Accreditation applies to solid and chemical materials and non-potable water matrices.

Cardinal Laboratories is accreditated 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 (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

Celey D. Keene
Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Rice Operating Company
Bruce Baker
112 W. Taylor
Hobbs NM, 88240
Fax To: (575) 397-1471

Received:	01/31/2011	Sampling Date:	01/28/2011
Reported:	02/02/2011	Sampling Type:	Soil
Project Name:	BD B-16 JCT 22/37	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: DELINEATION TRENCH @ 3' (H100208-01)

Chloride, SM4500Cl-B mg/kg **Analyzed By: LR**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1070**	16.0	02/02/2011	ND	416	104	400	3.77	

TPH 8015M mg/kg **Analyzed By: AB**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/01/2011	ND	255	102	250	7.26	
DRO >C10-C28	<10.0	10.0	02/01/2011	ND	227	90.9	250	3.97	

Surrogate: 1-Chlorooctane	*91.2 %*	*70-130*
Surrogate: 1-Chlorooctadecane	*93.7 %*	*70-130*

Sample ID: DELINEATION TRENCH @ 5' (H100208-02)

Chloride, SM4500Cl-B mg/kg **Analyzed By: LR**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**592**	16.0	02/02/2011	ND	416	104	400	3.77	

TPH 8015M mg/kg **Analyzed By: AB**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/01/2011	ND	255	102	250	7.26	
DRO >C10-C28	<10.0	10.0	02/01/2011	ND	227	90.9	250	3.97	

Surrogate: 1-Chlorooctane	*101 %*	*70-130*
Surrogate: 1-Chlorooctadecane	*103 %*	*70-130*

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

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

CARDINAL LABORATORIES

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603
(505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325)673-7020

Company Name: Rice Operating Company		**BILL TO**	
Project Manager: Bruce Baker		**P.O. #:**	
Address: 122 West Taylor		**Company:**	
City: Hobbs	**State:** NM **Zip:** 88240	**Attn:**	
Phone #: 575-393-9174	**Fax #:** 575-397-1471	**Address:**	
Project #:	**Project Owner:**	**City:**	
Project Name: BD B-16 JCT 22.37		**State:** **Zip:**	
Project Location:		**Phone #:**	
Sampler Name: Harrison		**Fax #:**	

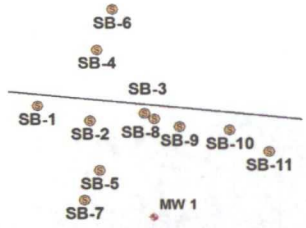
FOR LAB USE ONLY				MATRIX						PRESERV.			SAMPLING		ANALYSIS REQUEST										
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	Chlorides	TPH 8015 M	BTEX	Texas TPH	Complete Cations/Anions							
H10208-1	DELINEATION TRENCH NE 3'	G	1			✓					✓		1.28.11	2:00	✓	✓									
2	DELINEATION TRENCH @ 5'	G	1			✓					✓		1.28.11	3:25	✓	✓									

Relinquished By:	**Date:** 1.31.11	**Received By:**	**Phone Result:** ☐ Yes ☑ No	**Add'l Phone #:**
	Time: 7:35		**Fax Result:** ☐ Yes ☑ No	**Add'l Fax #:**
Relinquished By:	**Date:** 1/31/11	**Received By:** Jodi Henson	**REMARKS:** email results	
	Time: 8:05		Rharrisonr@riceswd.com; Bbaker@riceswd.com; Lweinheimer@riceswd.com kjones@riceswd.com	
Delivered By: (Circle One) Sampler - UPS - Bus - Other:		**Sample Condition** Cool: ☐ Yes ☐ No Intact: ☑ Yes ☐ No	**CHECKED BY: (Initials)**	

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

#26

NEED SAMPLES BACK, PLEASE

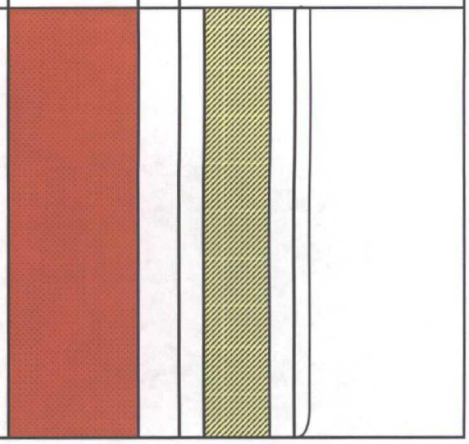
Logger:	Jordan Woodfin		RICE ENVIRONMENTAL RECS CONSULTING & SAFETY, LLC
Driller:	Harrison & Cooper, Inc.		**Project Name:** BD B-16 **Well ID:** SB-7
Drilling Method:	Air rotary		**Project Consultant:** RECS
Start Date:	3/22/2011		
End Date:	3/22/2011		
Comments: All samples are from cuttings. Located 23 ft south of the former junction box site. **DRAFTED BY: L. Weinheimer** TD = 55 ft DGW = 78 ft			**Location:** UL/B sec. 16 T22S R37E **Lat:** 32°23'52.805"N **Long:** 103°9'51.036"W **County**: LEA **State**: NM

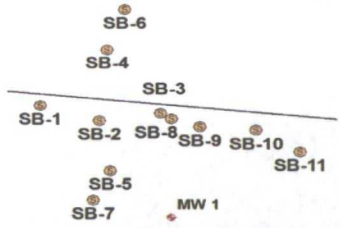
Depth (feet)	chloride field tests	LAB	PID	Description
				Brown fine sand with small caliche
5 ft	1043	Cl- 1180	3.6	
		GRO <10		Tan to brown fine sand with small caliche
		DRO <10		
10 ft	821		3.6	
15 ft	881		10.1	
20 ft	704		0.9	
				Brown medium sand with large caliche frag
25 ft	666		15.5	
				Tan to red very fine sand with small caliche fragments
30 ft	602		12.1	
35 ft	541		6.7	
40 ft	622	Cl- 608	2.7	
		GRO <10		Tan very fine sand
		DRO <10		
45 ft	1016		6.6	

Lithology

Well Construction

bentonite seal

Depth (feet)	chloride field tests	LAB	PID	Description	Lithology	Well Construction
				Light red very fine sand		
50 ft	456		4.3			
55 ft	208	Cl-160	4.7			
		GRO <10				
		DRO <10				

Logger:	Jordan Woodfin		RICE ENVIRONMENTAL RECS CONSULTING & SAFETY, LLC
Driller:	Harrison & Cooper, Inc.		**Project Name:** BD B-16 **Well ID:** SB-8
Drilling Method:	Air rotary		**Project Consultant:** RECS
Start Date:	3/22/2011		
End Date:	3/22/2011		

Comments: All samples are from cuttings. Located 17 ft east of the former junction box site. This bore was not sent to the lab.

DRAFTED BY: L. Weinheimer

TD = 75 ft DGW = 78 ft

Location: UL/B sec. 16 T22S R37E

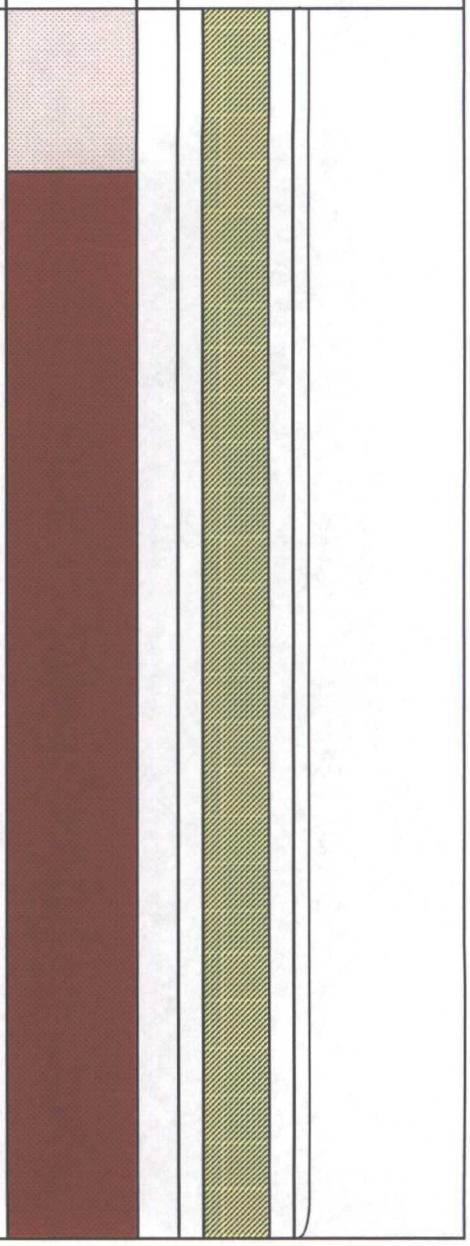
Lat: 32°23'53.027"N **County**: LEA

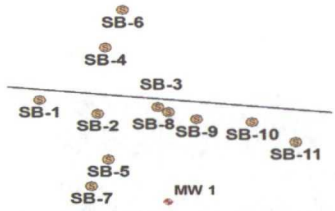
Long: 103°9'50.811"W **State**: NM

Depth (feet)	chloride field tests	LAB	PID	Description
5 ft	1320		1.2	Brown medium sand with caliche
10 ft	1372		1.1	
15 ft	1082		1.1	
20 ft	938		1.1	
				Tan very fine sand with caliche
25 ft	586		1.2	
30 ft	776		1.6	
35 ft	674		1.7	
40 ft	642		1.1	

Lithology

Well Construction: bentonite seal

Depth (feet)	chloride field tests	LAB	PID	Description	Lithology	Well Construction
				Tan very fine silty sand		
45 ft	1895		1.0			
				Red very fine silty sand		
50 ft	1068		0.9			
55 ft	1315		1.0			
60 ft	1924		1.0			
65 ft	834		1.0			
70 ft	581		1.0			
75 ft	457		1.0			

Logger:	Jordan Woodfin		RICE ENVIRONMENTAL RECS CONSULTING & SAFETY, LLC
Driller:	Harrison & Cooper, Inc.		
Drilling Method:	Air rotary		**Project Name:** BD B-16 **Well ID:** SB-9
Start Date:	3/22/2011		**Project Consultant:** RECS
End Date:	3/22/2011		

Comments: All samples are from cuttings. Located 24 ft east of the former junction box site. This bore was not sent to the lab.

DRAFTED BY: L. Weinheimer

TD = 40 ft DGW = 78 ft

Location: UL/B sec. 16 T22S R37E

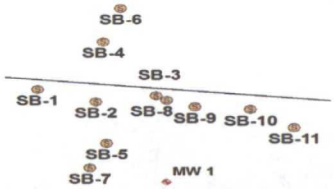
Lat: 32°23'53.001"N **Long:** 103°9'50.733"W **County**: LEA **State**: NM

Depth (feet)	chloride field tests	LAB	PID	Description
				Tan to red very fine sand
5 ft	1360		3.3	
				Tan very fine sand with caliche
10 ft	781		2.6	
15 ft	885		2.2	
20 ft	769		1.5	
25 ft	1398		1.1	
				Tan to red very fine sand
30 ft	1173		1	
35 ft	370		1	
40 ft	1616		0.8	

Lithology

Well Construction

bentonite seal

Logger:	Jordan Woodfin		**Project Name:** BD B-16 **Well ID:** SB-10
Driller:	Harrison & Cooper, Inc.		**Project Consultant:** RECS
Drilling Method:	Air rotary		
Start Date:	3/23/2011		
End Date:	3/23/2011		

Comments: All samples are from cuttings. Located 37 ft east of the former junction box site. This bore was not sent to the lab.

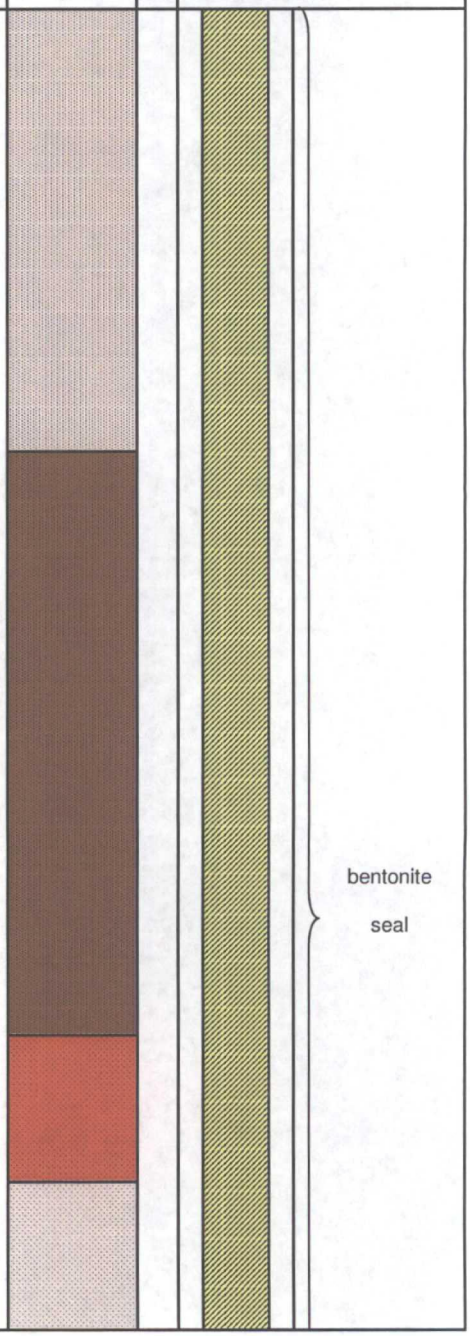
DRAFTED BY: L. Weinheimer

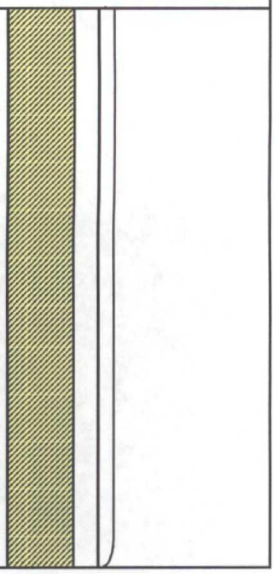
TD = 60 ft DGW = 78 ft

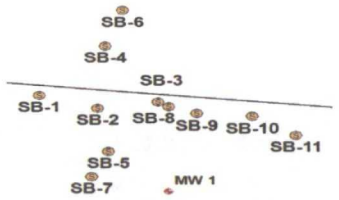
Location: UL/B sec. 16 T22S R37E

Lat: 32°23'52.996"N **Long:** 103°9'50.58"W **County**: LEA **State**: NM

Depth (feet)	chloride field tests	LAB	PID	Description
				Tan fine silty sand with small caliche fragments
5 ft	626		3.5	
10 ft	494		3.6	
15 ft	987		3	
				Light brown fine silty sand with small caliche fragments
20 ft	688		3	
25 ft	628		3.7	
30 ft	548		2.5	
35 ft	502		2	
				Light red very fine sand
40 ft	1905		1.7	
				Tan very fine sand (moist)
45 ft	1261		2.1	



Depth (feet)	chloride field tests	LAB	PID	Description	Lithology	Well Construction
				Red very fine sand (moist)		
50 ft	1247		1.7			
55 ft	1047		1.1			
60 ft	1081		1.4			

Logger:	Jordan Woodfin		RICE ENVIRONMENTAL RECS CONSULTING & SAFETY, LLC
Driller:	Harrison & Cooper, Inc.		
Drilling Method:	Air rotary		**Project Name:** BD B-16 **Well ID:** SB-11
Start Date:	3/23/2011		
End Date:	3/23/2011		**Project Consultant:** RECS

Comments: All samples are from cuttings. Located 49 ft east of the former junction box site.

DRAFTED BY: L. Weinheimer

TD = 25 ft DGW = 78 ft

Location: UL/B sec. 16 T22S R37E

Lat: 32°23'52.932"N **Long:** 103°9'50.458"W **County**: LEA **State**: NM

Depth (feet)	chloride field tests	LAB	PID	Description	Lithology	Well Construction
				Tan fine silty sand with caliche		bentonite seal
5 ft	510	Cl- 576	1.1			
		GRO <10				
		DRO <10				
10 ft	503		1.1			
15 ft	330		3.7			
20 ft	380		3.1			
25 ft	247	Cl- 96	1.9			
		GRO <10				
		DRO <10				

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

March 28, 2011

Hack Conder

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: BD JCT B-16 (SOIL)

Enclosed are the results of analyses for samples received by the laboratory on 03/23/11 8:06.

Cardinal Laboratories is accredited through Texas NELAP for:

Method SW-846 8021	Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method SW-846 8260	Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method TX 1005	Total Petroleum Hydorcarbons

Certificate number T104704398-08-TX. Accreditation applies to solid and chemical materials and non-potable water matrices.

Cardinal Laboratories is accreditated 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 (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

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Rice Operating Company
Hack Conder
112 W. Taylor
Hobbs NM, 88240
Fax To: (575) 397-1471

Received:	03/23/2011	Sampling Date:	03/22/2011
Reported:	03/28/2011	Sampling Type:	Soil
Project Name:	BD JCT B-16 (SOIL)	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	BD JCT B-16		

Sample ID: SB 7 @ 5 FT. (H100557-01)

Chloride, SM4500Cl-B mg/kg **Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1180**	16.0	03/26/2011	ND	416	104	400	0.00	

TPH 8015M mg/kg **Analyzed By: AB**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	03/26/2011	ND	209	105	200	1.25	
DRO >C10-C28	<10.0	10.0	03/26/2011	ND	206	103	200	1.28	

Surrogate: 1-Chlorooctane	*105 %*	*70-130*
Surrogate: 1-Chlorooctadecane	*102 %*	*70-130*

Sample ID: SB 7 @ 40 FT. (H100557-02)

Chloride, SM4500Cl-B mg/kg **Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**608**	16.0	03/26/2011	ND	416	104	400	0.00	

TPH 8015M mg/kg **Analyzed By: AB**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	03/26/2011	ND	209	105	200	1.25	
DRO >C10-C28	<10.0	10.0	03/26/2011	ND	206	103	200	1.28	

Surrogate: 1-Chlorooctane	*106 %*	*70-130*
Surrogate: 1-Chlorooctadecane	*103 %*	*70-130*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Rice Operating Company
Hack Conder
112 W. Taylor
Hobbs NM, 88240
Fax To: (575) 397-1471

Received:	03/23/2011	Sampling Date:	03/22/2011
Reported:	03/28/2011	Sampling Type:	Soil
Project Name:	BD JCT B-16 (SOIL)	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	BD JCT B-16		

Sample ID: SB 7 @ 55 FT. (H100557-03)

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	03/26/2011	ND	416	104	400	0.00	

TPH 8015M **mg/kg** **Analyzed By: AB**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	03/26/2011	ND	209	105	200	1.25	
DRO >C10-C28	<10.0	10.0	03/26/2011	ND	206	103	200	1.28	

Surrogate: 1-Chlorooctane	*113 %*	*70-130*
Surrogate: 1-Chlorooctadecane	*110 %*	*70-130*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Notes and Definitions

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

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL LABORATORIES

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603
(505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325)673-7020

Company Name: Rice Operating Company	BILL TO
Project Manager: Hack Conder	P.O. #:
Address: 122 West Taylor	Company:
City: Hobbs State: NM Zip: 88240	Attn:
Phone #: 575-393-9174 Fax #: 575-397-1471	Address:
Project #: Project Owner:	City:
Project Name: BD jctt B-16	State: Zip:
Project Location: BD Jct B-16	Phone #:
Sampler Name: Jordan Woodfin	Fax #:

FOR LAB USE ONLY				MATRIX						PRESERV.			SAMPLING		ANALYSIS REQUEST										
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME	Chlorides	TPH 8015 M	BTEX	Texas TPH	Complete Cations/Anions	TPH 8015 M Extended Thru C40						
H11D551-1	SB 7 @ 5ft		1			✓					✓		3/22/11	02:30	✓	✓										
2	SB 7 @ 40ft		1			✓					✓		3/22/11	02:45	✓	✓										
3	SB 7 @ 55ft		1			✓					✓		3/22/11	03:00	✓	✓										

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: Jordan Woodfin	Date: 3/23/11 Time: 1:30	Received By:	Phone Result: ☐ Yes ☑ No	Add'l Phone #:
Relinquished By:	Date: 3/23/11 Time: 2:06	Received By: Jodi Henson	Fax Result: ☐ Yes ☑ No	Add'l Fax #:
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition Cool: ☑ Yes ☐ No Intact: ☑ Yes ☐ No	CHECKED BY: (Initials)	REMARKS: email results	

Hconder@riceswd.com; jwoodfin@rice-ecs.com; Lweinheimer@rice-ecs.com kjones@riceswd.com

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

#20

NEED SAMPLES BACK, PLEASE

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

March 29, 2011

Hack Conder

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: BD JCT B-16 (SOIL)

Enclosed are the results of analyses for samples received by the laboratory on 03/24/11 8:40.

Cardinal Laboratories is accredited through Texas NELAP for:

Method SW-846 8021	Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method SW-846 8260	Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method TX 1005	Total Petroleum Hydorcarbons

Certificate number T104704398-08-TX. Accreditation applies to solid and chemical materials and non-potable water matrices.

Cardinal Laboratories is accreditated 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 (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

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Rice Operating Company
Hack Conder
112 W. Taylor
Hobbs NM, 88240
Fax To: (575) 397-1471

Received:	03/24/2011	Sampling Date:	03/23/2011
Reported:	03/29/2011	Sampling Type:	Soil
Project Name:	BD JCT B-16 (SOIL)	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	BD JCT B-16		

Sample ID: SB 11 @ 5' (H100564-01)

Chloride, SM4500Cl-B mg/kg **Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**576**	16.0	03/29/2011	ND	416	104	400	0.00	

TPH 8015M mg/kg **Analyzed By: AB**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	03/27/2011	ND	219	110	200	2.79	
DRO >C10-C28	<10.0	10.0	03/27/2011	ND	224	112	200	1.19	

Surrogate: 1-Chlorooctane	*94.1 %*	*70-130*
Surrogate: 1-Chlorooctadecane	*85.9 %*	*70-130*

Sample ID: SB 11 @ 25' (H100564-02)

Chloride, SM4500Cl-B mg/kg **Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**96.0**	16.0	03/29/2011	ND	416	104	400	0.00	

TPH 8015M mg/kg **Analyzed By: AB**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	03/27/2011	ND	219	110	200	2.79	
DRO >C10-C28	<10.0	10.0	03/27/2011	ND	224	112	200	1.19	

Surrogate: 1-Chlorooctane	*107 %*	*70-130*
Surrogate: 1-Chlorooctadecane	*103 %*	*70-130*

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Notes and Definitions

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

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL LABORATORIES

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603
(505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325)673-7020

Company Name:	Rice Operating Company	BILL TO	
Project Manager:	Hack Conder	P.O. #:	
Address:	122 West Taylor	Company:	
City:	Hobbs	State: NM Zip: 88240	Attn:
Phone #:	575-393-9174	Fax #: 575-397-1471	Address:
Project #:		Project Owner:	City:
Project Name:	BD Jct B-16		State: Zip:
Project Location:	BD Jct B-16		Phone #:
Sampler Name:	Jordan Woodfin		Fax #:

FOR LAB USE ONLY				MATRIX						PRESERV.			SAMPLING		ANALYSIS REQUEST										
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME	Chlorides	TPH 8015 M	BTEX	Texas TPH	Complete Cations/Anions	TPH 8015 M Extended Thru C40						
H1005641-1	SB 11 @ 5'		1			✓					✓		3/23/11	09:00	✓	✓									
2	SB 11 @ 25'		1			✓					✓		3/23/11	09:30	✓	✓									

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:	Date: 3/24/11	Received By:		Phone Result:	☐ Yes ☑ No Add'l Phone #:
Jordan Woodfin	Time: 7:30			Fax Result:	☐ Yes ☑ No Add'l Fax #:
Relinquished By:	Date: 3/24/11	Received By:		REMARKS:	
	Time: 8:40			email results	
Delivered By: (Circle One)	Sample Condition		CHECKED BY:	Hconder@riceswd.com; jwoodfin@rice-ecs.com; Lweinheimer@rice-ecs.com kjones@riceswd.com	
Sampler - UPS - Bus - Other:	Cool: ☑ Yes ☐ No	Intact: ☑ Yes ☐ No	(Initials)		

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

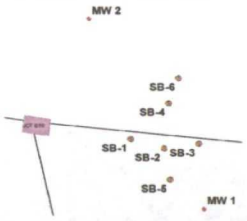
#26

NEED SAMPLES BACK, PLEASE

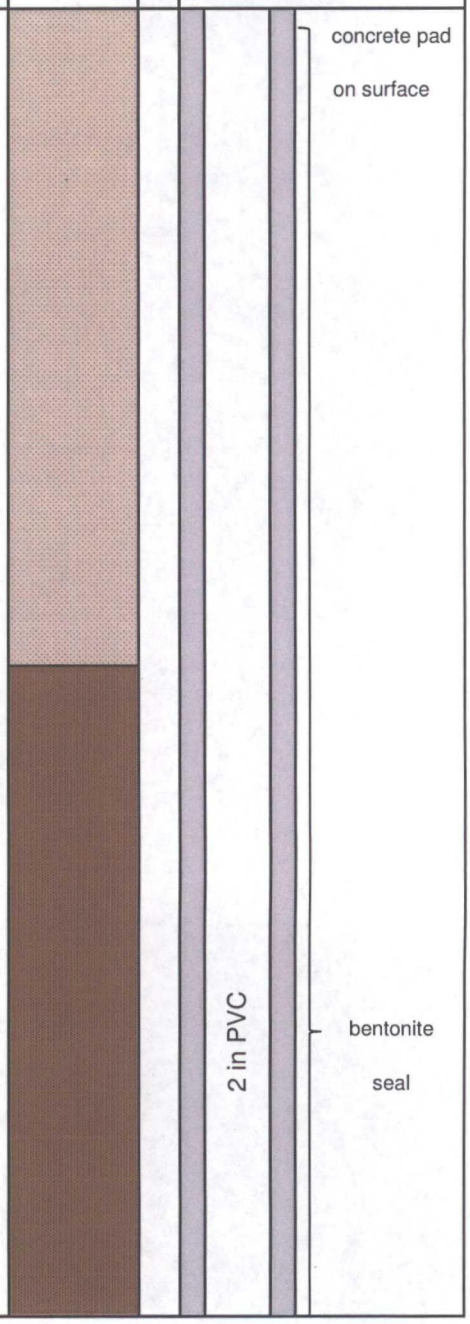
Appendix B

Monitor well installation

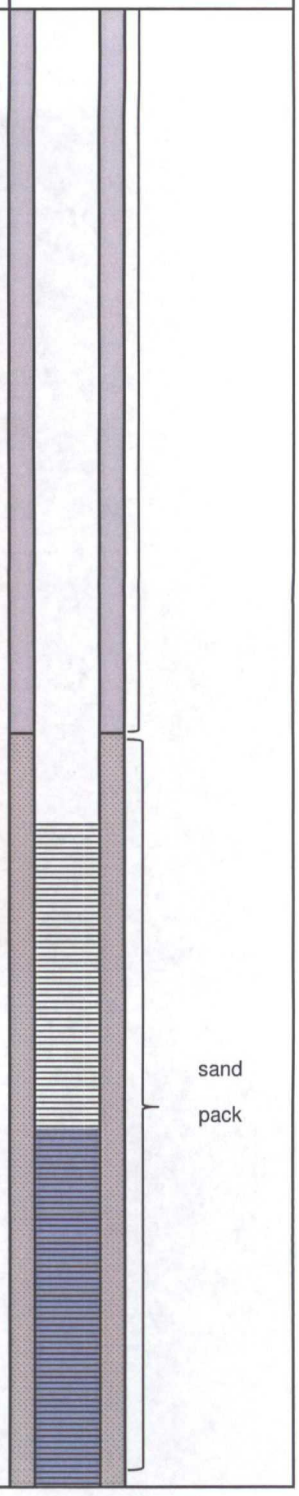
RICE Environmental Consulting and Safety (RECS)
P.O. Box 5630 Hobbs, NM 88241
Phone 575.393.4411 Fax 575.393.0293

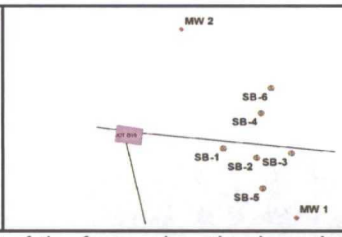
Logger:	Jordan Woodfin		RICE ENVIRONMENTAL RECS CONSULTING & SAFETY, LLC
Driller:	Harrison & Cooper, Inc.		
Drilling Method:	Air rotary		**Project Name:** BD B-16 **Well ID:** MW-1
Start Date:	10/26/2010		
End Date:	10/26/2010		**Project Consultant:** RECS
Comments: Located 36 ft south east of the former junction box site.			**Location:** UL/B sec. 16 T22S R37E
DRAFTED BY: L. Weinheimer			**Lat:** 32°23'52.76"N **County**: LEA
TD = 90 ft	DGW = 78 ft		**Long:** 103°9'50.816"W **State**: NM

Depth (feet)	chloride field tests	LAB	PID	Description
				Tan very fine sand with small calcihe fragments
5 ft	535		0.0	
10 ft	525		0.0	
15 ft	659		0.0	
20 ft	900	Cl- 880	0.1	
		GRO <10		light brown fine sand with small caliche fragments
		DRO <10		
25 ft	762		0.0	
30 ft	353		0.0	
35 ft	200		0.6	
40 ft	371		0.6	



Depth (feet)	chloride field tests	LAB	PID	Description	Lithology	Well Construction
				light brown very fine sand		
45 ft	222		0.8			
50 ft	238		0.9			
				red very fine sand		
55 ft	139		1.0			
				red very fine sand (moist)		
60 ft	148		0.6			
				red very fine sand		
65 ft	174		0.0			
70 ft	178		0.0			
75 ft	173	Cl- 16	0.0			
		GRO <10		NO SAMPLES TAKEN		
		DRO <10				
80 ft						
85 ft						
90 ft						



Logger:	Jordan Woodfin		RICE ENVIRONMENTAL RECS CONSULTING & SAFETY, LLC
Driller:	Harrison & Cooper, Inc.		
Drilling Method:	Air rotary		**Project Name:** BD B-16 **Well ID:** MW-2
Start Date:	10/26/2010		
End Date:	10/26/2010		**Project Consultant:** RECS

Comments: Located 64 ft north west of the former junction box site.

DRAFTED BY: L. Weinheimer

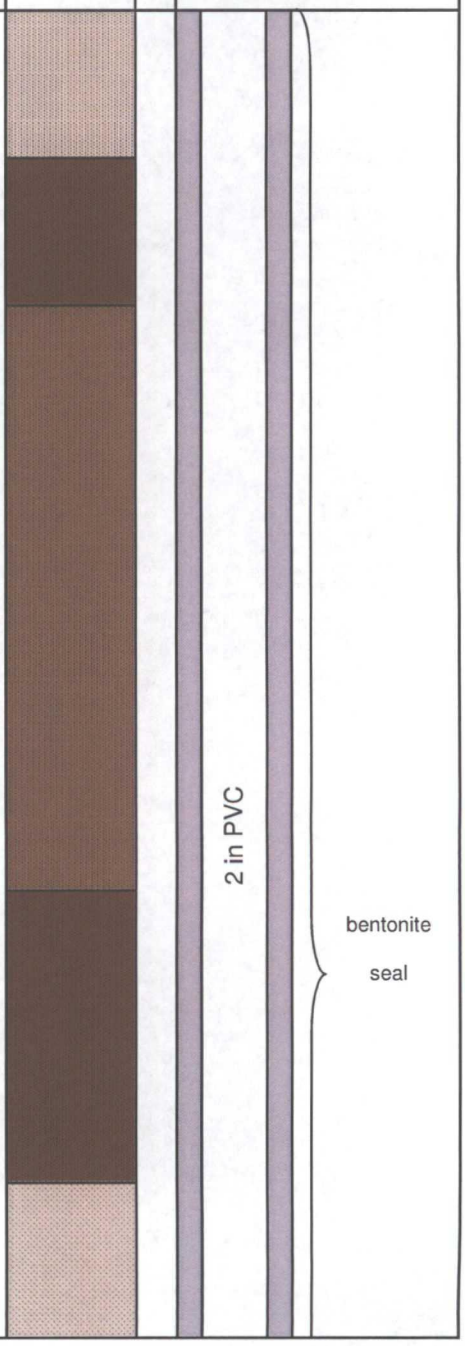
TD = 90 ft DGW = 78 ft

Location: UL/B sec. 16 T22S R37E

Lat: 32°23'53.643"N **County**: LEA

Long: 103°9'51.371"W **State**: NM

Depth (feet)	chloride field tests	LAB	PID	Description
				Tan very fine sand with small caliche fragments.
5 ft	138		0.0	
				Brown fine sand with small caliche fragments
10 ft	391		0.0	
				Light brown fine sand with small caliche fragments
15 ft	183		0.5	
20 ft	168		0.5	
25 ft	236		0.6	
30 ft	147		0.0	
				Brown fine sand with small caliche fragments
35 ft	182		0.0	
40 ft	180		0.0	
				Tan very fine sand
45 ft	180		0.0	



Depth (feet)	chloride field tests	LAB	PID	Description	Lithology	Well Construction
50 ft	176		0.0			
55 ft	179		0.0			
60 ft	179		0.0			
				Reddish brown very fine sand		
65 ft	175		0.0			
70 ft	168		0.0			
75 ft	181		0.0			
				NO SAMPLES TAKEN		
80 ft						sand pack
85 ft						
90 ft						

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

October 28, 2010

Hack Conder

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: BD JCT B-16

Enclosed are the results of analyses for samples received by the laboratory on 10/27/10 8:05.

Cardinal Laboratories is accredited through Texas NELAP for:

Method SW-846 8021	Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method SW-846 8260	Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method TX 1005	Total Petroleum Hydorcarbons

Certificate number T104704398-08-TX. Accreditation applies to solid and chemical materials and non-potable water matrices.

Cardinal Laboratories is accreditated 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 (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

Celey D. Keene
Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Rice Operating Company
Hack Conder
112 W. Taylor
Hobbs NM, 88240
Fax To: (575) 397-1471

Received:	10/27/2010	Sampling Date:	10/26/2010
Reported:	10/28/2010	Sampling Type:	Soil
Project Name:	BD JCT B-16	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	BD JCT B-16		

Sample ID: MW - 1 @ 20' (H021149-01)

Chloride, SM4500Cl-B mg/kg **Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**880**	16.0	10/27/2010	ND	416	104	400	3.92	

TPH 8015M mg/kg **Analyzed By: AB**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/27/2010	ND	168	84.1	200	2.09	
DRO >C10-C28	<10.0	10.0	10/27/2010	ND	221	111	200	0.403	

Surrogate: 1-Chlorooctane	*105 %*	*70-130*
Surrogate: 1-Chlorooctadecane	*99.9 %*	*70-130*

Sample ID: MW - 1 @ 75' (H021149-02)

Chloride, SM4500Cl-B mg/kg **Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**16.0**	16.0	10/27/2010	ND	416	104	400	3.92	

TPH 8015M mg/kg **Analyzed By: AB**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/27/2010	ND	168	84.1	200	2.09	
DRO >C10-C28	<10.0	10.0	10/27/2010	ND	221	111	200	0.403	

Surrogate: 1-Chlorooctane	*102 %*	*70-130*
Surrogate: 1-Chlorooctadecane	*96.9 %*	*70-130*

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

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

CARDINAL LABORATORIES

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603
(505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325)673-7020

Company Name: Rice Operating Company	BILL TO
Project Manager: Hack Conder	P.O. #:
Address: 122 West Taylor	Company:
City: Hobbs State: NM Zip: 88240	Attn:
Phone #: 575-393-9174 Fax #: 575-397-1471	Address:
Project #: Project Owner:	City:
Project Name: BD Jct B-16	State: Zip:
Project Location: BD Jct B-16	Phone #:
Sampler Name: Jordan Woodfin	Fax #:

FOR LAB USE ONLY				MATRIX						PRESERV.			SAMPLING		ANALYSIS REQUEST										
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME	Chlorides	TPH 8015 M	BTEX	Texas TPH	Complete Cations/Anions						
H2.1149-1	MW-1 @ 20ft		1			✓					✓		10/26/10	01:00	✓	✓									
2	MW-1 @ 75ft		1			✓					✓		10/26/10	02:00	✓	✓									

Relinquished By: Jordan Woodfin	Date: 10/27/10 Time: 8:30	Received By:	Phone Result: ☐ Yes ☑ No Add'l Phone #:
Relinquished By:	Date: 10/27/10 Time: 8:05	Received By:	Fax Result: ☐ Yes ☑ No Add'l Fax #:
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition Cool ☐ Yes ☐ No Intact ☑ Yes ☐ No	CHECKED BY: (Initials)	REMARKS: email results Hconder@riceswd.com; jwoodfin@riceswd.com; Lweinheimer@riceswd.com kjones@riceswd.com

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

NEED SAMPLES BACK, PLEASE

#26

Appendix C

Monitor well sampling laboratory analysis

RICE Environmental Consulting and Safety (RECS)
P.O. Box 5630 Hobbs, NM 88241
Phone 575.393.4411 Fax 575.393.0293

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

February 03, 2012

Hack Conder

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: BD JCT B-16

Enclosed are the results of analyses for samples received by the laboratory on 01/31/12 16:15.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. 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 accreditated 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

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Rice Operating Company
Hack Conder
112 W. Taylor
Hobbs NM, 88240
Fax To: (575) 397-1471

Received:	01/31/2012	Sampling Date:	01/27/2012
Reported:	02/03/2012	Sampling Type:	Water
Project Name:	BD JCT B-16	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	T22S R37E SEC16 B-LEA CTY., NM		

Sample ID: Monitor Well #1 (H200236-01)

BTEX 8260B mg/L **Analyzed By: CMS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	02/01/2012	ND	0.024	120	0.0200	12.2	
Toluene*	<0.001	0.001	02/01/2012	ND	0.019	96.6	0.0200	11.1	
Ethylbenzene*	<0.001	0.001	02/01/2012	ND	0.020	99.0	0.0200	10.9	
Total Xylenes*	<0.003	0.003	02/01/2012	ND	0.061	102	0.0600	11.3	

Surrogate: Dibromofluoromethane	*135 %*	*59.8-161*
Surrogate: Toluene-d8	*88.0 %*	*75.2-115*
Surrogate: 4-Bromofluorobenzene	*87.9 %*	*53.7-120*

Chloride, SM4500Cl-B mg/L **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**260**	4.00	02/01/2012	ND	112	112	100	4.57	

Sulfate 375.4 mg/L **Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	**242**	10.0	02/02/2012	ND	18.9	94.5	20.0	3.64	

TDS 160.1 mg/L **Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**1080**	5.00	02/01/2012	ND	255	106	240	0.964	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Rice Operating Company
Hack Conder
112 W. Taylor
Hobbs NM, 88240
Fax To: (575) 397-1471

Received:	01/31/2012	Sampling Date:	01/27/2012
Reported:	02/03/2012	Sampling Type:	Water
Project Name:	BD JCT B-16	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	T22S R37E SEC16 B-LEA CTY., NM		

Sample ID: Monitor Well #2 (H200236-02)

BTEX 8260B mg/L Analyzed By: CMS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	02/01/2012	ND	0.024	120	0.0200	12.2	
Toluene*	<0.001	0.001	02/01/2012	ND	0.019	96.6	0.0200	11.1	
Ethylbenzene*	<0.001	0.001	02/01/2012	ND	0.020	99.0	0.0200	10.9	
Total Xylenes*	<0.003	0.003	02/01/2012	ND	0.061	102	0.0600	11.3	

Surrogate: Dibromofluoromethane	*135 %*	*59.8-161*
Surrogate: Toluene-d8	*88.7 %*	*75.2-115*
Surrogate: 4-Bromofluorobenzene	*90.4 %*	*53.7-120*

Chloride, SM4500Cl-B mg/L Analyzed By: AP

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**220**	4.00	02/01/2012	ND	112	112	100	4.57	

Sulfate 375.4 mg/L Analyzed By: HM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	**281**	10.0	02/02/2012	ND	18.9	94.5	20.0	3.64	

TDS 160.1 mg/L Analyzed By: HM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**1040**	5.00	02/01/2012	ND	255	106	240	0.964	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Notes and Definitions

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

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

101 East Marland - Hobbs, New Mexico 88240
Tel (575) 393-2326
Fax (575) 393-2476

Cardinal Laboratories, Inc.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # _____

Company Name: RICE Operating Company	BILL TO Company: RICE Operating Company PO#
Project Manager: Hack Conder	Address: (Street, City, Zip) 122 W Taylor Street ~ Hobbs, New Mexico 88240
Address: (Street, City, Zip) 122 W Taylor Street ~ Hobbs, New Mexico 88240	Phone#: (575) 393-9174 Fax#: (575)397-1471
Phone #: (575) 393-9174	Fax #: (575) 397-1471
Project #:	Project Name: BD Junction B-16
Project Location: T22S R37E Sec16 B ~ Lea County New Mexico	Sampler Signature: Rozanne Johnson (575)631-9310 rozanne@valornet.com

LAB # (LAB USE ONLY)	FIELD CODE	(G)rab or (C)omp	# CONTAINERS	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL (2 40ml VOA)	HNO_3	$NaHSO_4$	H_2SO_4	ICE (1-1Liter HDPE)	NONE	SAMPLING: DATE (2012)	TIME
H200236-1	Monitor Well #1	G	3	X				2				1		1-27	11:00
-2	Monitor Well #2	G	3	X				2				1		1-27	9:55

ANALYSIS REQUEST
(Circle or Specify Method No.)

MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005 / TX1005 Extended (C35)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	Moisture Content	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, CO3, HCO3)	Sulfates	Total Dissolved Solids	Chlorides	Turn Around Time ~ 24 Hours
	X																	X	X	X	
	X																	X	X	X	

Relinquished by: Rozanne Johnson	Date: 1-31-2012	Time: 16:15	Received by: Jodi Henson
Relinquished by:	Date:	Time:	Received By: (Laboratory Staff)

Date: 1/31/12 Time: 16:15

Phone Results: [ ] Yes [ ] No

Fax Results: [ ] Yes [ ] No Additional Fax Number:

REMARKS:

Email Results to: hconder@riceswd.com
lweinheimer@rice-ecs.com
kjones@riceswd.com
rozanne@valornet.com

Delivered By: (Circle One)
Sampler - UPS - Bus - Other:

Sample Condition: Cool: Yes [✓] No [ ] Intact: Yes [✓] No [ ]

CHECKED BY: (Initials) JH

#26

Appendix D

Aquifer description

RICE Environmental Consulting and Safety (RECS)
P.O. Box 5630 Hobbs, NM 88241
Phone 575.393.4411 Fax 575.393.0293

Arc Environmental
P. O. Box 1772
Lovington, New Mexico 88260
(575) 631-9310
Rozanne Johnson ~ rozanne@valornet.com

April 23, 2012

NOTES

The following summarizes the field activities at the RICE BD B-16, Lea County T22S, R37E, Sec 16 Unit Letter B:

- There are two 2-inch monitor wells drilled at the site. A Solinist Water Level Meter is used during each sampling event to check the depth to water prior to pumping the wells. The meter indicated on January 27, 2012 water within monitor well 1 at a depth of 78.16 with the total depth of the well of 91.86 feet, giving 13.69 feet (2.19 gallons) of water within the well bore. Monitor well 2 was 78.11 feet to water with the total depth of the well at 92.10 feet, giving 13.99 feet (2.23 Gallons) of water within the well bore.

- The wells were pumped at 0.25 gallons per minute, with a draw down averaging 7.5 feet, until 10 gallons (which is 4.5 well volumes) of water has been purged from each well bore and the field parameters have stabilized. The wells recover to within 10 percent of the original depth in just over an hour or about 0.12 feet per minute. Following well recovery the wells are sampled with a bailer. The wells continue to produce some fine clay silt material during each sampling event.

- The site is located in the eastern Eunice Plain area of Lea County, which is underlain by a hard caliche surface and is covered by a thin layer of reddish-brown dune sand. The dominant vegetation is bear grass, mesquite and grama grass. Cattle ranchers and oil production activities currently use the area.

- In this arid region the rate of recharge is very slow due to small rainfall amounts, the porosity of the formation consisting of low permeable rock and a presence of clay, which leaves sediments that are thinly saturated or dry. There is little underground flow of water in the area, again due to the formation.

Sincerely,
Arc Environmental
Rozanne Johnson
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