1R- 480

REPORTS

DATE:

9-15-11

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

CERTIFIED MAIL
RETURN RECIEPT NO. 7008 1140 0001 3070 5870

September 15th, 2011

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: **TERMINATION REQUEST**
Rice Operating Company – EME SWD System
EME B-8 leak (1R0480): UL/B sec. 8 T20S 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 EME Salt Water Disposal (SWD) system. ROC is the service provider (agent) for the EME 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/usage basis.

Background and Previous Work
The site is located approximately 2 miles south-west of Monument, New Mexico at UL/B sec. 8 T20S R37E as shown on the Site Location Map (Figure 1). Groundwater monitoring at the site shows groundwater at a depth of +/- 30 ft bgs.

On November 11, 2009, six soil borings (SB-1 through SB-6) were conducted using a Geoprobe direct push sampling rig equipped with percussion capability to delineate the chlorides in the vadose zone at the site. Four of the soil borings (SB-1 through SB-4) were spaced at representative intervals along the length of the release in areas where greatest impact had been reported during previous investigations. Two soil borings were advanced to the south (SB-5) and north (SB-6) of the release to determine background conditions. Samples were collected at two-foot intervals and field titrated to analyze for chloride content. Duplicate samples from the intervals with the highest field chloride result and the bottom of the each boring were submitted to Cardinal Laboratories for comparison with field values.

On March 3rd, 2009, a monitor well was installed at the site. Since its installation, the monitor well has been sampled quarterly for chlorides, TDS, sulfate, and BTEX.

As part of the Corrective Action Plan submitted to NMOCD on December 17th, 2009 and approved April 21st, 2010, ROC calculated the chloride mass in the vadose zone and determined that the mass contributed by the release was 10,725 kg. ROC proposed to extract that chloride mass from the groundwater by utilizing the groundwater recovery system at EME K-6 and utilize the removed groundwater for pipeline maintenance.

Groundwater recovery began on April 28th, 2010 at EME K-6. On November 18th, 2010, NMOCD approved a request to remove the chloride mass from both recovery systems located at EME K-6 and EME L-6. On April 8, 2011, groundwater recovery began at both recovery systems. As of September 2nd, 2011, a total of 3,791 barrels of groundwater had been extracted from EME K-6. With a final chloride concentration of 11,200 mg/L, 6,750 kg of chloride were removed. A total of 2,463 barrels of groundwater were extracted from the recovery system located at EME L-6. With a chloride concentration of 11,800 mg/L, 4,621 kg of chlorides were removed. The total combined chloride mass removed from each site is 11,371 kg. ROC has met the requirements in the Corrective Action Plan by recovering the necessary 10,725 kg of chlorides introduced by the discharge at EME B-8.

The site is located on a right of way (R-O-W), and the vegetation surrounding the R-O-W has recovered (Appendix B). Because ROC has removed the required chloride mass for the site and the vegetation has recovered, RECS requests "remediation termination" status of the regulatory file.

Upon approval of the termination of the regulatory file, ROC will plug and abandon the monitoring well (MW-1) located at the site per NMOCD guidelines using a 1 – 3 % bentonite slurry and a 3 foot concrete cap. NMOCD will be notified in writing of the plugging activities when they are completed.

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

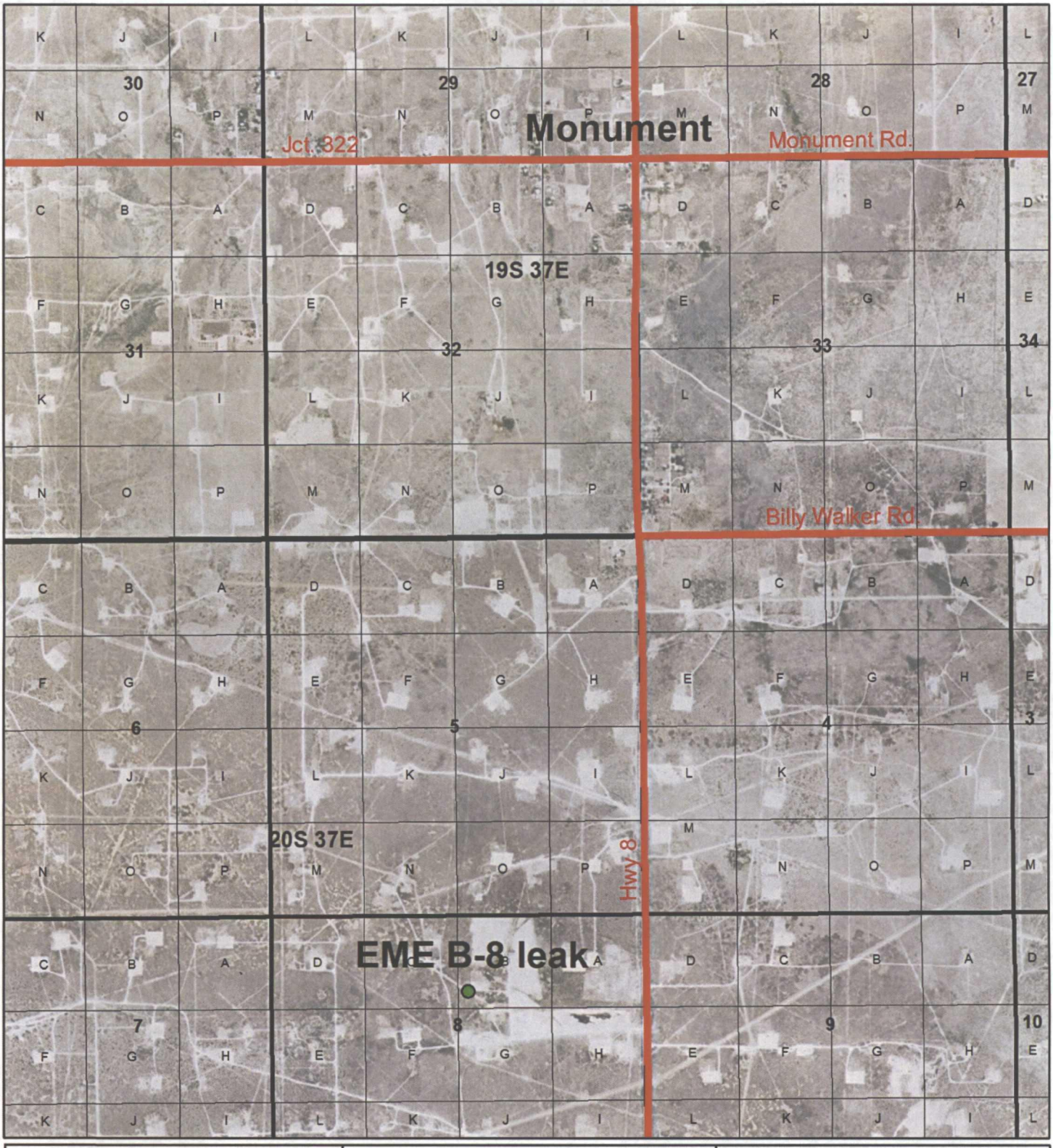
Attachments:

Figure 1 – Site location map
Appendix A – EME K-6 and L-6 groundwater sampling laboratory confirmation
Appendix B – Site photos

Figures

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

Site Map



RICE ENVIRONMENTAL RECS CONSULTING & SAFETY, LLC

EME B-8 leak

Legals: UL/B sec. 8
T20S R37E

Case #: 1R0480

Figure 1

N W E S

0 0.15 0.3 0.6 Miles

Drawing date: 9-2-11
Drafted by: L. Weinheimer

Appendix A

EME K-6 and L-6 groundwater sampling laboratory confirmation

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

July 19, 2011

Hack Conder

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: EME K-6

Enclosed are the results of analyses for samples received by the laboratory on 07/15/11 16:40.

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:	07/15/2011	Sampling Date:	07/15/2011
Reported:	07/19/2011	Sampling Type:	Water
Project Name:	EME K-6	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EME K-6		

Sample ID: WATER FROM RW-1 (H101477-01)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**11200**	4.00	07/18/2011	ND	112	112	100	3.64	

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
Project Manager:	Hack Conder
Address:	122 West Taylor
City:	Hobbs State: NM Zip: 88240
Phone #:	575-393-9174 Fax #: 575-397-1471
Project #:	Project Owner:
Project Name:	EME K-6
Project Location:	EME K-6
Sampler Name:	Jordan Woodfin

BILL TO

P.O. #:	
Company:	
Attn:	
Address:	
City:	
State:	Zip:
Phone #:	
Fax #:	

ANALYSIS REQUEST

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE	ICE / COOL	OTHER :	SAMPLING: DATE	TIME	Chlorides	TPH 8015 M	BTEX	Texas TPH	Complete Cations/Anions	TPH 8015 M Extended Thru C40
H101477-1	Water from RW-1		1	✓									7/15/11	10 30	X					

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: 7/15/11	Received By:	Phone Result: ☐ Yes ☑ No Add'l Phone #:
Jordan Woodfin	Time: 4:40	Jodi Henson	Fax Result: ☐ Yes ☑ No Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS: email results
	Time:		Hconder@riceswd.com; jwoodfin@rice-ecs.com; Lweinheimer@rice-ecs.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

NEED SAMPLES BACK, PLEASE

CARDINAL Laboratories

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

August 24, 2011

Hack Conder

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: EME L-6 BOOT

Enclosed are the results of analyses for samples received by the laboratory on 08/22/11 8:09.

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:	08/22/2011	Sampling Date:	08/19/2011
Reported:	08/24/2011	Sampling Type:	Water
Project Name:	EME L-6 BOOT	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	T20S-R37E-SEC6 L-LEA CTY., NM		

Sample ID: MW - 2R (H101769-01)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**11800**	4.00	08/23/2011	ND	108	108	100	0.00	

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	BILL TO	
Project Manager:	HACK CONDER	P.O. #:	
Address:	122 W TAYLOR	Company:	
City:	HOBBS State: NM Zip: 88240	Attn:	
Phone #:	575 393 9174 Fax #:	Address:	
Project #:	Project Owner:	City:	
Project Name:	EME L-6 Load	State: Zip:	
Project Location:		Phone #:	
Sampler Name:	Tony Ortiz	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					
H10169 -1	MW-2R		1	✓									8/12/11	10:00	✓										

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:	Date: 8/12/11 (10-22-10)	Received By:	Phone Result: ☐ Yes ☑ No Add'l Phone #:
	Time: 8:09		Fax Result: ☐ Yes ☑ No Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS: email results KJONES@riceswd.com Zconder@rice-ecs.com; Bbaker@rice-ecs.com; hconder@rice-ecs.com; Lweinheimer@rice-ecs.com
	Time:		

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

Sample Condition: Cool ☐ Yes ☐ No Intact ☑ Yes ☐ No

CHECKED BY: (Initials) CM

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

#20

Appendix B

Site Photos

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

Site photo, facing north 5/11/11

Site photo, facing southwest 5/11/11

Site photo, facing southeast 5/11/11

Site photo, facing west northwest 5/11/11

EME B-8 leak (1R0480)

pumping from EME K-6

Date		Fluid Hauled (bbls)			Lab Chloride Conc (ppm)	
4/28/2010		55				
5/3/2010					10,600	RW-1
5/3/2010		80				
5/5/2010		60				
5/10/2010		45				
5/12/2010		55				
5/17/2010		60				
5/19/2010		55				
5/24/2010		85				
5/26/2010		50				
5/31/2010		80				
	Total for project	625	bbls			
		26250	gallons			
6/2/2010		80				
6/8/2010					11500	RW-1
6/9/2010		100				
6/14/2010		50				
6/16/2010		57				
6/21/2010		50				
6/30/2010		58				
	Total for June	395	bbls			
		16590	gallons			
	Total for project	1020	bbls	Cl- average	11050	Cl removed = 1791kg
		42840	gallons			

7/6/2010				10400	
7/7/2010		48			
7/12/2010		36			
7/14/2010		33			
7/19/2010		47			
7/21/2010		22			
7/26/2010		50			
7/28/2010		22			
	Total for July	258	bbls		
		10836	gallons	Total Cl- removed	1993
	Total for project	1278	bbls		
		53676	gallons		
8/2/2010				11200	
8/4/2010		82			
8/9/2010		57			
8/11/2010		30			
8/16/2010		57			
8/18/2010		30			
8/23/2010		64			
8/27/2010		34			
8/31/2010		30			
	Total for Aug	384	bbls		
		16128	gals		
	Total for project	1662	bbls		
		69804	gals		

9/6/2010		72		
9/8/2010		22		
9/9/2010				11000
9/13/2010		43		
9/15/2010		20		
9/17/2010		22		
9/20/2010		22		
9/24/2010		23		
9/27/2010		30		
	Total for Sept.	254	bbls	
		10668	gals	
	Total for project	1916	bbls	
		80472		
10/1/2010		57		
10/4/2010		22		
10/8/2010		50		
10/11/2010		36		
10/18/2010		65		10400
10/20/2010		46		
10/25/2010		22		
10/29/2010		43		
	Total for Oct.	341	bbls	
		14322	gals	
	Total for project	2257	bbls	
		94794	gals	
11/1/2010		22		
11/5/2010		40		
11/8/2010				9800 RW-1
11/8/2010		22		
11/16/2010		65		
11/19/2010		36		

11/22/2010		30					
11/26/2010		29					
	Total for Nov.	244	bbls	Cl- Removed	3896.746801	kg	
		10248	gals				
	Total for project	2501	bbls				
		105042	gals				

From EME K-6

4/11/2011	K-6		107	
4/15/2011	K-6		35	
4/18/2011	K-6		35	
4/20/2011	K-6	10700		RW-1
4/22/2011	K-6		40	
4/25/2011	K-6		42	
4/29/2011	K-6		50	
	Total for April		309	bbls
			12978	gals
	Project Total		2810	bbls
			118020	gals
Total Cl- Removed		4780.270997	kg	

From EME L-6

4/8/2011	L-6	121			
4/11/2011	L-6	50			
4/15/2011	L-6	57			
4/18/2011	L-6	57			
4/20/2011	L-6		11200	RW-1	
4/22/2011	L-6	60			
4/25/2011	L-6	57			
4/29/2011	L-6	71			
Total for April		473	bbls		
		19866	gals		
Total for Project		473	bbls		
		15330	gals		
Total Cl- Removed		842.2510936	kg		

5/2/2011	K-6		42	5/2/2011	L-6	64	
5/6/2011	K-6		60	5/6/2011	L-6	85	
5/9/2011	K-6		78	5/9/2011	L-6	57	
5/13/2011	K-6		78	5/12/2011	L-6	66	
5/19/2011	K-6		75	5/13/2011	L-6	30	
5/20/2011	K-6		20	5/16/2011	L-6	57	

5/25/2011	K-6	10800		RW-1	5/19/2011	L-6	107				
5/26/2011	K-6		78		5/20/2011	L-6	64				
					5/23/2011	L-6	78				
					5/25/2011	L-6			11000	RW-1	
					5/26/2011	L-6	80				
					5/27/2011	L-6	45				
					5/30/2011	L-6	71				
	Total for May		431	bbls		Total for May		804	bbls		
			18102	gals				33768	gals		
	Total For Project		3241	bbls		Total for Project		1277	bbls		
			136122	gals				53634	gals		
Total Cl- Removed		5565.000487	kg			Total Cl- Removed		2233.294532	kg		
6/2/2011	K-6		78		6/2/2011	L-6	60				
6/10/2011	K-6		85		6/3/2011	L-6	20				
6/15/2011	K-6	11100		RW-1	6/6/2011	L-6	45				
6/16/2011	K-6		80		6/10/2011	L-6	60				
6/23/2011	K-6		85		6/13/2011	L-6	45				
6/30/2011	K-6		80		6/15/2011	L-6			11600	RW-2	
					6/16/2011	L-6	50				
					6/17/2011	L-6	25				
					6/20/2011	L-6	60				
					6/24/2011	L-6	26				
					6/27/2011	L-6	50				
					6/30/2011	L-6	50				
	Total for June		408	bbls		Total for June		491	bbls		
			17136	gals				20622	gals		
	Total for Project		3649	bbls		Total for Project		1768	bbls		
			153258	gals				74256	gals		
Total Cl- Removed		6439.605495	kg			Total Cl- Removed		3260.638634	kg		

7/7/2011	K-6		78		7/4/2011	L-6	57		
7/14/2011	K-6		22		7/7/2011	L-6	38		
7/15/2011	K-6	11200		RW-1	7/15/2011	L-6		11600	RW-1
7/21/2011	K-6		42		7/15/2011	L-6	14		
7/28/2011	K-6		0		7/18/2011	L-6	60		
					7/21/2011	L-6	42		
					7/22/2011	L-6	15		
					7/25/2011	L-6	42		
					7/28/2011	L-6	42		
		Total for July	142	bbls		Total for July	310	bbls	
			5964	gals			13020	gals	
		Total for Project	3791	bbls		Total for Project	2078	bbls	
			159222	gals			87276	gals	
Total Cl- Removed		6750.473353 kg				Total Cl- Removed	3832.356947 kg		
7/15/2011	K-6	11200		RW-1	7/15/2011	L-6		11600	RW-1
					8/1/2011	L-6	57		
					8/4/2011	L-6	50		
					8/18/2011	L-6	58		
					8/19/2011	L-6	28		
					8/19/2011			11800	RW-1
					8/22/2011	L-6	42		
					8/25/2011	L-6	50		
					8/29/2011	L-6	60		
		Total for August	0	bbls		Total for August	345	bbls	
			0	gals			14490	gals	
		Total for Project	3791	bbls		Total for Project	2423	bbls	
			159222	gals			101766	gals	
Total Cl- Removed		6750.473353 kg				Total Cl- Removed	4545.669344 kg		

7/15/2011	K-6	11200	RW-1	8/19/2011			11800	RW-1
				9/1/2011	L-6	30		
				9/2/2011	L-6	10		
	Total for August	0 bbls		Total for August		40 bbls		
		0 gals				1680 gals		
	Total for Project	3791 bbls		Total for Project		2463 bbls		
		159222 gals				103446 gals		
Total Cl- Removed	6750.473353 kg			Total Cl- Removed	4620.711347 kg			

Total Cl- Removed 11371.1847 kg