



Gary Janosko, Deputy Director,
Fuel Facility Licensing Directorate
Division of Fuel Cycle Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington D.C. 20555

Subject:
Groundwater Monitoring Results; First Half 2008
Docket No. 40-8102
License No. SUA-1139
Highland Reclamation Project

Dear Mr. Janosko:

Pursuant to the semiannual reporting requirements of Materials License No. SUA-1139, Conditions 22 and 33, attached are the semiannual environmental monitoring results covering the Highland Reclamation Project for the period January 1, 2008 to June 30, 2008.

This report was prepared on behalf of ExxonMobil by ARCADIS.

A summary of the groundwater elevation data is found in Attachment 1. Summaries of the water quality data are found in Attachment 2. Monitoring locations are shown on the map in Figure 1. Sampling of environmental media other than groundwater is not required by the Materials License and was not performed as part of this report.

Static groundwater levels (Attachment 1) show no significant changes in groundwater elevations over the course of the first half of the calendar year 2008, with one exception. Groundwater levels in well TDM VII (112) dropped approximately 30 feet from the second half of 2007 to the first half of 2008.

Groundwater quality data (Attachment 2) shows no significant changes in concentrations of monitored parameters over the course of the first half of the calendar year 2008, with two exceptions. The chloride concentrations in well TDM XLI (175) changed from 16.2 mg/L in first quarter to 300 mg/L in second quarter. However, 16.2 mg/L is a lower chloride concentration than historically observed in this groundwater well (compared to data from 1988 through 2003, which ranges from approximately 250 to 380 mg/L). The total dissolved solids in well TDM XLVIII (182)

Imagine the result

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ARCADIS

Mr. Janosko
August 2008

increased from 421 mg/L in first quarter to 1,090 mg/L in second quarter. In both instances, the wells will continue to be monitored to assess any long term changes in concentrations.

Monitored parameters in the Tailings Dam Sandstone (TDSS) groundwater compliance wells were within groundwater protection standards during the first half of 2008. The groundwater protection standards are defined by Condition 33 of the Materials License which was modified in 2006, via license amendment 58.

Please feel free to contact Ms. Rebecca Lindeman with ARCADIS at 303.231.9115 ext 123 or Mahesh Vidyasagar with ExxonMobil at 281.654.8458 if you have any questions regarding this submittal.

Sincerely,

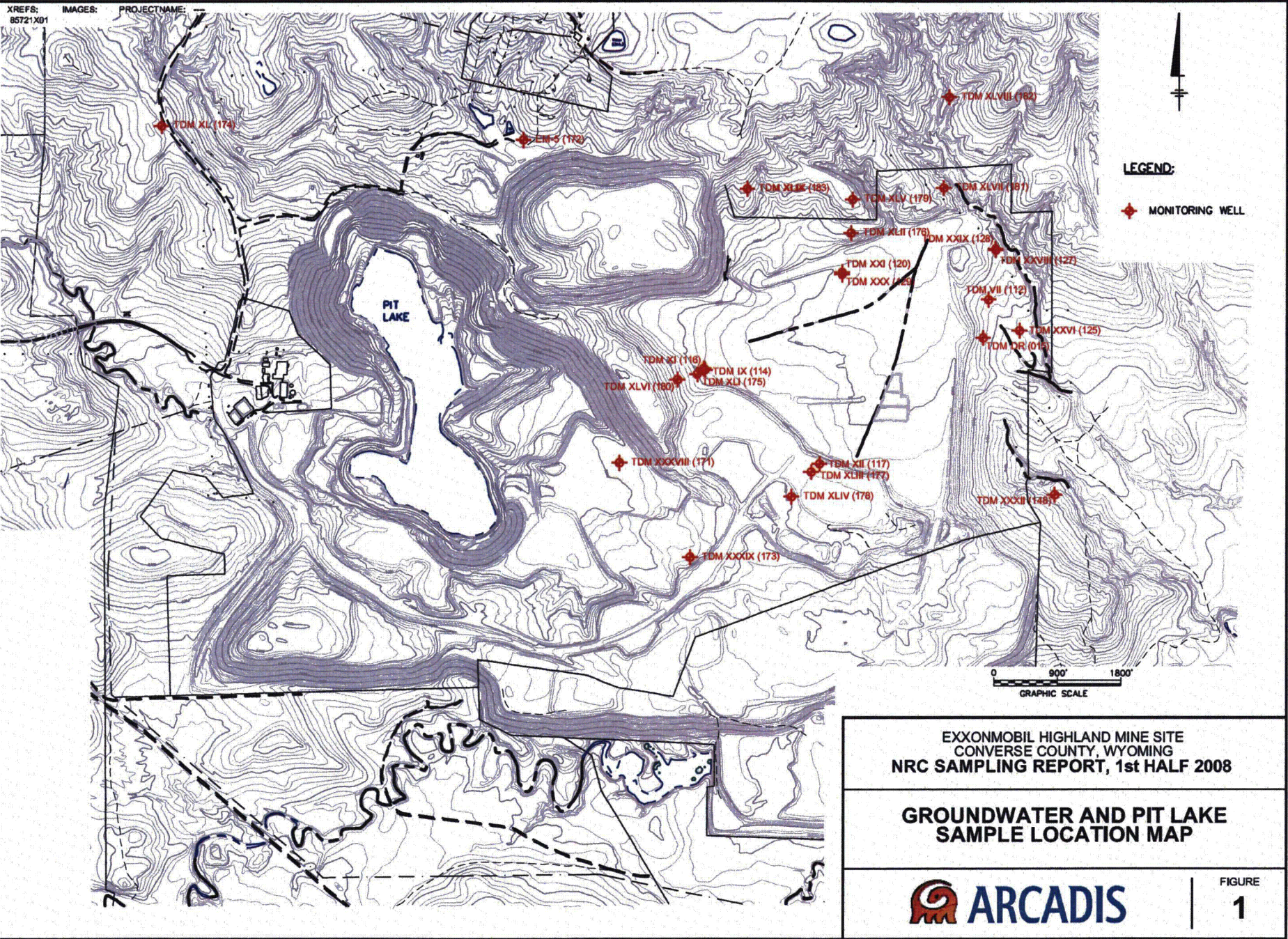
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Rebecca Lindeman, P.E.
Principal Civil Engineer

Copies:

Mahesh Vidyasagar – ExxonMobil



EXXONMOBIL HIGHLAND MINE SITE
CONVERSE COUNTY, WYOMING
NRC SAMPLING REPORT, 1st HALF 2008

GROUNDWATER AND PIT LAKE
SAMPLE LOCATION MAP



FIGURE
1

**Attachment 1
First Half of 2008 Water Level Data**

**ExxonMobil
Highland Mine Site**

Well Number	Well Name	Top of Casing Elevation (ft)	1st Quarter Water Level Elevation (ft)	2nd Quarter Water Level Elevation (ft)
015	TDM DR	NA	DRY	DRY
112	TDM VII	5188.8	5086.81	5080.30
114	TDM IX	5243.53	5097.31	5100.20
116	TDM XI	5243.41	5057.01	5056.91
117	TDM XII	5265.35	5119.65	5120.85
120	TDM XXI	5224.82	5112.67	5111.85
125	TDM XXVI	5171.3	NA	5121.89
127	TDM XXVIII	5203.6	DRY	DRY
128	TDM XXIX	5203.8	5069.68	5069.20
129	TDM XXX	5226.36	5062.62	5062.66
134	RM-4	5158.7	5124.45	5125.00
148	TDM XXXII	5112.9	DRY	DRY
171	XXXVIII	5205.3	5041.90	5049.49
172	EM-5	5272.09	5080.69	5080.29
173	TDM XXXIX	5241.09	5065.24	5065.21
174	TDM XL	5380.39	5083.39	5080.17
175	TDM XLI	5259.6	5106.16	5105.92
176	TDM XLII	5452.5	5310.39	5310.28
177	TDM XLIII	5264.19	DRY	5155.19
178	TDM XLIV	5277.14	5114.26	5113.44
179	TDM XLV	5295.7	5112.78	5112.90
180	TDM XLVI	5324.39	DRY	DRY
181	TDM XLVII	5237.7	5116.33	5116.20
182	TDM XLVIII	5240.4	5112.80	5112.63
183	TDM XLIX	5301.4	5104.70	5104.76

Notes:

NA = Not applicable.

Attachment 2
First Half of 2008 Water Quality Data

ExxonMobil
Highland Mine Site

Analytes		As (mg/L)	Cd (mg/L)	Cl (mg/L)	Cr (mg/L)	Grs Alpha pCi/L	Na (mg/L)	Ni (mg/L)	NO2+ NO3 (mg/L)	Pb (mg/L)	pH-field std	Ra226 (pCi/L)	Ra 226+228 (pCi/L)	Ra 228 (pCi/L)	Se (mg/L)	SO4 (mg/L)	TDS (mg/L)	Th230 (pCi/L)	U-Nat (mg/L)	
Groundwater Protection Standards		0.05	0.01	-	0.1	15	-	0.1*	-	0.5	-	-	5*	-	0.05	-	-	0.55	0.03*	
Backfill Monitor																				
171	TDM	3/6/2008	<0.00070	<0.000099	34.6	<0.00042	0.0011	97.7	0.0035	<0.04	<0.000047	7.3	<0.2	<2.0+/-0.6	1.8+/-0.6	0.00099 J	588	850	<0.2	0.0011
	XXXVIII	5/8/2008	NS	NS	37.1	NS	NS	99.8	NS	<0.04	NS	7.3	NS	NS	NS	NS	532	853	NS	NS
173	TDM XXXIX	3/26/2008	0.0011 J	<0.000099	98.5	<0.00042	1.6+/-0.4	87.9	0.00057 J	<0.04	<0.000047	7.5	0.6+/-0.2	1.8+/-0.7	1.2+/-0.5	<0.0050	432	892	<0.2	0.0028
		5/8/2008	NS	NS	106	NS	NS	89.1	NS	<0.04	NS	7.8	NS	NS	NS	NS	472	862	NS	NS
180	TDM XLVI	DRY																		
OSS MONITOR																				
116	TDM XI	2/29/2008	<0.00070	<0.000099	68.6	<0.00042	2.9+/-0.5	104	0.0058 J	<0.04	0.00033J	7.4	1.7+/-0.3	5.1+/-1.0	3.4+/-0.7	<0.0050	697	1390	<0.2	0.0134
		5/1/2008	NS	NS	67.3	NS	NS	98	NS	<0.04	NS	7.4	NS	NS	NS	NS	766	1370	NS	NS
128	TDM XXIX	3/13/2008	<0.00070	<0.000099	11.9	<0.00042	0.9+/-0.3	92.6	0.0046	<0.04	0.00098 J	7.7	0.2	<1.2	<1.0	<0.0050	165	486	0.2	0.005
		5/8/2008	NS	NS	10.8	NS	NS	103	NS	<0.04	NS	7.6	NS	NS	NS	NS	172	503	NS	NS
129	TDM XXX	2/29/2008	<0.00070	<0.000099	53.7	<0.00042	1.0+/-0.3	170	0.0085 J	0.1	<0.000047	7.8	0.2	<1.2	<1.0	0.0194 J	533	1090	<0.2	0.0012
		5/8/2008	NS	NS	54.6	NS	NS	151	NS	<0.04	NS	7.7	NS	NS	NS	NS	427	870	NS	NS
148	TDM XXXII	DRY																		
TDSS Background																				
134	RM-4	3/8/2008	<0.00070	<0.000099	44.5	<0.00042	1.4+/-0.4	99.5	0.009	<0.04	<0.000047	7.6	<0.2	2.4+/-0.6	2.2+/-0.6	0.0026	630	1070	0.2	0.001
		5/1/2008	NS	NS	19.2	NS	NS	206	NS	<0.04	NS	7.6	NS	NS	NS	NS	629	1090	NS	NS
172	EM-5	3/6/2008	<0.00070	<0.000099	12.2	<0.00042	1.9+/-0.4	120	<0.00050	<0.04	<0.000047	7.9	1.2+/-0.3	3.4+/-0.8	2.2+/-0.5	0.0012 J	330	624	<0.2	0.0003
		5/8/2008	NS	NS	10.4	NS	NS	134	NS	<0.04	NS	8.0	NS	NS	NS	NS	371	612	NS	NS
174	TDM XL	3/6/2008	<0.00070	<0.000099	5.4	<0.00042	0.8+/-0.3	65.6	<0.00050	<0.04	<0.000047	8	0.2	1.7+/-0.5	1.5+/-0.5	<0.0050	198	404	<0.2	<0.0003
		5/8/2008	NS	NS	5.9	NS	NS	67.6	NS	<0.04	NS	8	NS	NS	NS	NS	115	311	NS	NS
182	TDM XLVIII	4/10/2008	<0.00070	<0.000099	12.5	<0.00042	1.3+/-0.5	122	<0.00050	<0.04	0.000074 J	8.1	0.3+/-0.1	<1.3+/-0.1	<1.0	0.00055J	185	421	<0.2	<0.0003
		5/1/2008	NS	NS	11.4	NS	NS	110	NS	<0.04	NS	8.2	NS	NS	NS	NS	202	1090	NS	NS
TDSS Compliance Monitor Well																				
125	TDM XXVI	3/13/2008	<0.00070	<0.000099	21	<0.00042	2.3+/-0.5	84	0.0034	<0.04	<0.000047	7.6	1.4+/-0.3	<2.3+/-0.3	<0.9	0.0013 J	480	924	0.4+/-0.3	0.0171
		5/8/2008	NS	NS	20.5	NS	NS	151	NS	<0.04	NS	7.6	NS	NS	NS	NS	427	870	NS	NS
175	TDM XLI	3/8/2008	0.00089 J	<0.000099	16.2	<0.00042	2.7+/-0.5	263	0.783	<0.04	0.00013 J	6.2	1.7+/-0.2	8.9+/-0.9	7.2+/-0.7	0.0038	3410	5020	<0.2	0.0263
		5/8/2008	NS	NS	300	NS	NS	295	NS	<0.04	NS	6.5	NS	NS	NS	NS	3520	5260	NS	NS
176	TDM XLII	3/13/2008	<0.00070	0.00094	258	<0.00042	3.0+/-0.5	209	0.0103	<0.04	<0.000047	7.1	1.3+/-0.2	4.3+/-0.8	3.0+/-0.6	0.0013 J	2320	4180	<0.2	<0.0003
		5/8/2008	NS	NS	265	NS	NS	225	NS	<0.04	NS	7.2	NS	NS	NS	NS	2450	4030	NS	NS
177	TDM XLIII	DRY																		
TDSS Monitor																				
015	TDM DR	DRY																		
112	TDM VII	2/26/2008	<0.00070	<0.000099	161	<0.00042	1.6+/-0.4	266	0.0040 J	<0.04	0.00027 J	7.2	0.5+/-0.2	2.7+/-0.8	2.2+/-0.6	<0.0050	1940	3280	0.2	0.0396
		5/1/2008	NS	NS	143	NS	NS	235	NS	<0.04	NS	7.2	NS	NS	NS	NS	2170	2960	NS	NS
114	TDM IX	2/29/2008	<0.00070	<0.000099	292	<0.00042	1.8+/-0.4	310	0.957	<0.04	<0.000047	5.9	0.7+/-0.2	5.5+/-0.9	4.8+/-0.7	<0.0050	3680	5600	<0.2	<0.0003
		5/1/2008	NS	NS	143	NS	NS	235	NS	<0.04	NS	5.8	NS	NS	NS	NS	3770	5370	NS	NS
117	TDM XII	DRY																		
120	TDM XXI	2/29/2008	<0.00070	<0.000099	426	<0.00042	1.0+/-0.3	291	0.0186 J	<0.04	<0.000047	6.9	<0.2	<1.2	<1.0	<0.0050	1940	4220	<0.2	<0.0003
		5/1/2008	NS	NS	450	NS	NS	298	NS	<0.04	NS	7.1	NS	NS	NS	NS	2010	4000	NS	NS
127	TDM XXVIII	DRY																		
178	TDM XLIV	3/13/2008	<0.00070	0.00094	308	<0.00042	1.7+/-0.4	238	0.238	1.5	0.00071 J	7.4	0.8+/-0.2	1.9+/-0.7	1.1+/-0.5	0.0020 J	2350	4200	<0.2	0.002
		5/8/2008	NS	NS	287	NS	NS	255	NS	1.6	NS	7.4	NS	NS	NS	NS	2560	4070	NS	NS
179	TDM XLV	3/13/2008	<0.00070	<0.000099	170	<0.00042	1.2+/-0.4	257	0.0057	<0.04	<0.000047	7.5	1.0+/-0.2	3.0+/-0.8	2.0+/-0.6	<0.0050	1510	2540	<0.2	<0.0003
		5/8/2008	NS	NS	168	NS	NS	271	NS	<0.04	NS	7.5	NS	NS	NS	NS	1690	2580	NS	NS
181	TDM XLVII	3/13/2008	<0.00070	<0.000099	59.6	<0.00042	1.7+/-0.4	208	0.0025	<0.04	<0.000047	7.8	0.8+/-0.2	1.6+/-0.7	0.8+/-0.5	<0.0050	680	1310	0.3	<0.0003
		5/1/2008	NS	NS	60.3	NS	NS	200	NS	<0.04	NS	7.6	NS	NS	NS	NS	705	1260	NS	NS
183	TDM XLIX	3/13/2008	<0.00070	<0.000099	132	<0.00042	1.7+/-0.4	216	0.0047	<0.04	<0.000047	7.4	0.7+/-0.2	1.9+/-0.8	1.2+/-0.6	<0.0050	1080	1960	<0.2	<0.0003
		5/8/2008	NS	NS	134	NS	NS	224	NS	<0.04	NS	7.5	NS	NS	NS	NS	1070	1970	NS	NS

Notes:

*Alternate Concentration Limits (ACL) apply:
Well 125 U-nat = 0.089 mg/L
Well 175 Ni - 1.8 mg/L and Ra226+Ra228 - 25 pCi/L
Well 177 U-nat = 0.11 mg/L

Bold = Result exceeds Groundwater Protection Standards.

J = Estimated value.

mg/L = Milligrams per liter.

NS = Not sampled.

pCi/L = Picocuries per liter.