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40-8905

# QUIVIRA MINING COMPANY

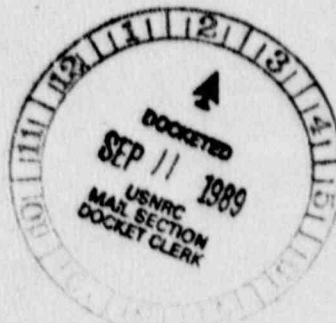
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RETURN ORIGINAL TO PDR, HQ.

August 29, 1989

Certified Mail  
Return Receipt Requested

Mr. Pete Garcia  
U.S. Nuclear Regulatory Commission  
Uranium Recovery Field Office  
Region IV  
P.O. 25325  
Denver, Colorado 80225



Re: Semiannual Effluent Monitoring Report  
License SUA-1473  
Docket 40-8905

Dear Mr. Garcia:

Attached is the effluent monitoring report for the 1st half of 1989 in accordance with the Nuclear Regulatory Commission's regulation 10 CFR 40.65 and license condition #19 for the above referenced license.

This report presents the results of the effluent and environmental sampling for the period January 1 to June 30, 1989 and includes monitoring results for gaseous, particulate, direct radiation, soils, sediments, vegetation, and water. This report is in the standard form as required by license condition #19 with the exception of the groundwater results which are in a format as required by the State of New Mexico discharge plans and agreed to by your office.

If you have any questions or need further information please call me at (505) 287-8851, extension 246.

Sincerely,

QUIVIRA MINING COMPANY

*Bill Ferdinand*

Bill Ferdinand  
Manager, Radiation Safety and  
Environmental Affairs

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PDR ADOCK 04008905  
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xc: M. Freeman  
J. Ma  
H. Whitacre

DESIGNATED ORIGINAL

Certified By Mary C. Hard

89-0961

QUIVIRA MINING COMPANY  
Ambrosia Lake, New Mexico  
License No. SUA-1473

EFFLUENT MONITORING REPORT

Stack Sampling - 1989

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Operations at the Ambrosia Lake facility were in stand by mode during the 1st and 2nd quarter periods. During this time period, there were no dried yellowcake production. Thus, there were no discharge of effluents during the 1st or 2nd quarters of 1989.

QUIVIRA MINING COMPANY  
 Ambrosia Lake, New Mexico  
 License No. SUA-1473

EFFLUENT MONITORING REPORT

High Volume Air Samples - 1st Half of 1989

1st Quarter <-----Substation -----> 2nd Quarter

Nuclide	Conc. (uCi/ml)	Error (uCi/ml)	LLD (uCi/ml)	MPC %	Nuclide	Conc. (uCi/ml)	Error (uCi/ml)	LLD (uCi/ml)	%MPC
U nat	3.9E-16	2.3E-17	1.4E-19	< 0.1	U nat	5.1E-16	1.0E-17	4.0E-19	< 0.1
Th-230	2.2E-16	2.2E-18	2.2E-18	0.3	Th-230	1.3E-15	1.3E-16	4.1E-18	1.6
Ra-226	1.9E-16	1.9E-18	1.8E-18	< 0.1	Ra-226	1.2E-15	9.6E-17	3.4E-18	< 0.1
Pb-210	2.9E-14	2.6E-16	4.5E-18	0.7	Pb-210	2.2E-14	4.2E-16	9.8E-18	0.5

1st Quarter <-----Berryhill -----> 2nd Quarter

Nuclide	Conc. (uCi/ml)	Error (uCi/ml)	LLD (uCi/ml)	MPC %	Nuclide	Conc. (uCi/ml)	Error (uCi/ml)	LLD (uCi/ml)	%MPC
U nat	2.9E-16	1.7E-17	1.8E-19	< 0.1	U nat	1.2E-15	2.4E-17	2.6E-19	< 0.1
Th-230	1.5E-16	1.5E-18	2.8E-18	0.2	Th-230	1.4E-15	1.4E-16	2.7E-18	1.8
Ra-226	1.3E-16	1.3E-18	2.4E-18	< 0.1	Ra-226	1.2E-15	9.6E-17	2.2E-18	< 0.1
Pb-210	1.7E-14	1.5E-16	5.7E-18	0.4	Pb-210	1.4E-14	2.6E-16	6.4E-18	0.3

QUIVIRA MINING COMPANY  
Ambrosia Lake, New Mexico  
License No. SUA-1473

EFFLUENT MONITORING REPORT

High Volume Air Samples - 1st Half of 1989

1st Quarter <-----Section 30W VH6 -----> 2nd Quarter

Nuclide	Conc. (uCi/ml)	Error (uCi/ml)	LLD (uCi/ml)	MPC %		Nuclide	Conc. (uCi/ml)	Error (uCi/ml)	LLD (uCi/ml)	MPC %
U nat	1.9E-15	1.1E-16	1.3E-19	< 0.1	:	U nat	9.0E-15	1.8E-16	2.6E-19	9.2
Th-230	8.7E-16	8.7E-18	1.9E-18	1.1	:	Th-230	1.8E-15	1.8E-16	2.6E-19	2.3
Ra-226	6.7E-16	6.7E-18	1.6E-18	< 0.1	:	Ra-226	2.3E-15	1.8E-16	2.2E-18	< 0.1
Pb-210	5.3E-14	4.8E-16	3.9E-18	1.3	:	Pb-210	3.5E-14	6.6E-16	6.2E-18	0.9

1st Quarter <-----North Fence -----> 2nd Quarter

Nuclide	Conc. (uCi/ml)	Error (uCi/ml)	LLD (uCi/ml)	MPC %		Nuclide	Conc. (uCi/ml)	Error (uCi/ml)	LLD (uCi/ml)	MPC %
U nat	8.0E-16	4.7E-17	1.3E-19	< 0.1	:	U nat	1.7E-15	3.4E-17	1.3E-19	< 0.1
Th-230	2.1E-15	2.1E-17	1.9E-18	2.6	:	Th-230	5.4E-15	5.4E-16	2.1E-18	6.8
Ra-226	3.7E-15	3.7E-17	1.6E-18	0.1	:	Ra-226	1.1E-14	8.5E-16	1.6E-18	0.4
Pb-210	5.1E-14	4.6E-16	3.9E-18	1.3	:	Pb-210	4.3E-14	8.2E-16	4.6E-18	1.1



QUIVIRA MINING COMPANY  
 Ambrosia Lake, New Mexico  
 License No. SOA-1473

EFFLUENT MONITORING REPORT

High Volume Air Samples - 1st Half of 1989

1st Quarter <----- Mill Diversion -----> 2nd Quarter

Nuclide	Conc. (uCi/ml)	Error (uCi/ml)	LLD (uCi/ml)	MPC %	Nuclide	Conc. (uCi/ml)	Error (uCi/ml)	LLD (uCi/ml)	MPC %
U nat	2.6E-15	1.5E-16	1.3E-19	< 0.1	U nat	2.6E-15	5.2E-17	1.4E-18	< 0.1
Th-230	2.2E-14	2.2E-16	2.0E-18	27.8	Th-230	3.0E-14	3.0E-15	2.3E-17	38.0
Ra-226	1.9E-14	1.9E-16	1.7E-18	0.6	Ra-226	2.6E-14	2.1E-15	1.8E-17	0.9
Pb-210	7.9E-14	7.1E-16	4.2E-18	2.0	Pb-210	4.3E-14	8.2E-16	5.0E-17	1.1

QUIVIRA MINING COMPANY  
 Ambrosia Lake, New Mexico  
 License No. SUA-1473

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Surface Water

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Date: 1st Half 1989  
 Location: B-3 NPDES Discharge

Location	Flow MGD	U nat uCi/ml	MPC %	Ra-226(s) uCi/ml	MPC %	Ra-226(i) uCi/ml	MPC %	Pb-210 uCi/ml	MPC %	Po-210 uCi/ml	MPC %
January	1.12	9.3E-07	3.1	7.0E-10	2.3	2.5E-09	< 0.1				
February	1.51	9.1E-07	3.0	3.0E-10	1.0	1.5E-09	< 0.1	6.0E-10	< 0.1	5.0E-10	< 0.1
March	1.66	5.9E-07	2.0	5.0E-10	1.7	2.5E-09	< 0.1				
April	1.70	6.0E-07	2.0	5.0E-10	1.7	3.0E-09	< 0.1	5.0E-10	< 0.1	4.3E-09	< 0.1
May	1.84	6.1E-07	2.0	6.0E-10	2.0	7.0E-10	< 0.1				
June	1.08	5.3E-07	1.8	7.0E-10	2.3	7.0E-10	< 0.1				

Date: 1st Half 1989  
 Location: Section 35-36 Ion Exchange Discharge

Location	Flow MGD	U nat uCi/ml	MPC %	Ra-226(s) uCi/ml	MPC %	Ra-226(i) uCi/ml	MPC %	Pb-210 uCi/ml	MPC %	Po-210 uCi/ml	MPC %
January	1.65	6.0E-07	2.0	7.0E-10	2.3	6.0E-10	< 0.1				
February	1.65	7.9E-07	2.6	9.0E-10	3.0	0.0E+00	< 0.1				
March	1.65	6.8E-07	2.3	1.4E-09	4.7	1.5E-08	< 0.1				
April	1.65	5.4E-07	1.8	1.1E-09	3.7	7.2E-09	< 0.1	1.5E-09	< 0.1	7.4E-09	< 0.1
May	1.65	9.1E-07	3.0	1.5E-09	5.0	2.4E-09	< 0.1				
June	1.65	9.4E-07	3.1	8.0E-10	2.7	1.6E-09	< 0.1				

QUIVIRA MINING COMPANY  
 Ambrosia Lake, New Mexico  
 License No. SUA-1473

Surface Water

Location: 1st Quarter 1989  
 Date: Puertocito Creek

Location	U nat (uCi/ml)	MPC %	Ra-226(s) (uCi/ml)	MPC %	Ra-226(i) (uCi/ml)	MPC %
P-8	5.8E-07	1.9	1.0E-09	3.3	4.0E-09	0.0
P-10	6.0E-07	2.0	1.3E-09	4.3	2.5E-09	0.0
P-12	5.9E-07	2.0	6.0E-10	2.0	5.0E-10	0.0
P-14	7.8E-07	2.6	3.4E-08	11.3	1.2E-09	0.0
P-16	Dry	Dry	Dry	Dry	Dry	Dry
P-18	Dry	Dry	Dry	Dry	Dry	Dry

Location: 2nd Quarter 1989  
 Date: Puertocito Creek

Location	U nat (uCi/ml)	MPC %	Ra-226(s) (uCi/ml)	MPC %	Ra-226(i) (uCi/ml)	MPC %
P-8	5.3E-07	1.8	4.0E-10	1.3	7.0E-10	0.0
P-10	5.2E-07	1.7	5.0E-10	1.7	6.0E-10	0.0
P-12	5.2E-07	1.7	4.0E-10	1.3	2.0E-10	0.0
P-14	6.3E-07	2.1	2.1E-09	7.0	9.0E-10	0.0
P-16	Dry	Dry	Dry	Dry	Dry	Dry
P-18	Dry	Dry	Dry	Dry	Dry	Dry

QUIVIRA MINING COMPANY  
 Ambrosia Lake, New Mexico  
 License No. SUA-1473

EFFLUENT MONITORING REPORT  
 Groundwater Monitoring Report - 1st Quarter 1989

Well #	pH	TDS (mg/l)	SO4 (mg/l)	NO3 (mg/l)	Cl (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Na (mg/l)	Fe (mg/l)	Mn (mg/l)	Ca (mg/l)	K (mg/l)	Mg (mg/l)	Cations (mg/l)	Anions (mg/l)	Depth To Water (feet)
5-03	7.7	3140	1580	< 0.1	531	56		304	0.07	0.31	166	4.40	289.0	45.4	49.0	13.18
32-51	7.7	5640	3530	45.0	187	186	< 1	668	0.10	0.22	395	2.90	302.0	73.7	85.5	23.28
32-58	6.3	6970	2130	1.1	1780	404	< 1	559	0.11	0.03	665	0.70	432.0	93.1	102.0	9.10
32-59	6.9	3540	1730	< 0.1	466	246	< 1	313	0.07	0.04	429	1.20	181.0	49.9	54.1	11.40
32-60	6.1	12300	5410	13.3	2270	952	< 1	1710	0.14	2.86	416	20.50	874.0	176.0	197.0	19.42
31-61	6.0	11200	5280	< 0.1	1720	1040	< 1	1540	0.11	1.93	390	22.50	868.0	159.0	179.0	21.81
31-63	3.7	25000	13000	0.5	4020	< 1	< 1	2460	261.00	134.00	441	36.90	1870.0	284.0	384.0	21.41
31-64	6.6	3730	1870	2.9	492	304	< 1	487	0.10	0.05	356	6.50	178.0	53.8	59.1	10.49
31-65	6.0	12100	4840	< 0.1	2330	1020	< 1	1560	0.14	1.38	442	29.20	990.0	172.0	187.0	18.75
31-62trb	6.3	4770	2340	< 0.1	531	294	< 1	247	0.11	0.30	575	9.10	291.0	63.6	69.6	22.36
36-02trb	6.9	13600	5630	< 0.1	2530	649	< 1	1000	0.16	1.48	231	16.60	1560.0	184.0	201.0	38.00
31-02trb	6.5	5180	2630	13.4	609	330	< 1	627	0.10	0.11	481	16.60	244.0	71.8	79.5	36.60
33-01tra	7.2	2810	1800	0.2	31	162	< 1	454	0.06	0.31	239	7.90	78.0	38.3	42.1	172.95
31-01tra	7.3	1630	995	0.3	11.5	108	< 1	124	0.04	0.01	195	6.70	81.0	22.0	25.2	204.70
36-04kd	6.6	11600	5090	< 0.1	2370	525	< 1	1690	0.12	2.42	295	53.80	842.0	160.0	183.0	307.00
30-48kd	6.8	6030	2880	< 0.1	764	427	< 1	481	0.11	1.27	451	18.00	458.0	81.6	90.0	336.10
31-03kd	7.0	1710	935	1.1	23.2	251	< 1	271	0.04	-0.01	164	11.20	43.7	23.9	25.2	336.90



QUIVIRA MINING COMPANY  
 Ambrosia Lake, New Mexico  
 License No. SUA-1473

EFFLUENT MONITORING REPORT  
 Groundwater Monitoring Report - 2nd Quarter 1989

Well #	pH	TDS (mg/l)	SD4 (mg/l)	NO3 (mg/l)	Cl (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Na (mg/l)	Fe (mg/l)	Mn (mg/l)	Ca (mg/l)	K (mg/l)	Mg (mg/l)	Cations (mg/l)	Anions (mg/l)	Depth To
																Water (feet)
5-03	6.9	3630	1820	0.1	534.0	149	< 1	293	0.12	0.02	283	3.8	311.0	53.6	55.9	12.67
32-51	7.3	5840	3790	52.2	174.0	181	< 1	676	0.15	0.03	436	2.9	349.0	80.3	91.2	22.96
32-58	6.3	7680	2290	1.3	1800.0	738	< 1	580	0.17	0.03	800	0.4	534.0	109.0	113.0	8.93
32-59	6.8	3670	1920	0.3	453.0	378	< 1	376	0.13	0.02	531	2.3	229.0	61.8	60.4	10.97
32-60	6.3	11300	5520	27.5	1710.0	1210	< 1	1490	0.18	0.03	555	17.4	927.0	174.0	189.0	19.25
31-61	6.3	11100	5430	12.1	1550.0	1490	< 1	1470	0.15	0.02	617	23.2	939.0	178.0	187.0	21.86
31-63	3.9	25000	14400	0.5	3730.0	< 1	< 1	2390	188.00	0.58	470	28.8	1950.0	328.0	405.0	21.42
31-64	6.5	3790	1950	0.5	447.0	421	< 1	386	0.13	0.03	446	6.2	184.0	54.5	61.7	9.53
31-65	6.1	5610	5610	8.2	2180.0	1810	< 1	1510	0.16	0.03	628	30.6	1100.0	190.0	216.0	18.50
31-62trb	6.3	5050	2540	< 0.1	516.0	606	< 1	266	0.16	0.03	801	10.6	357.0	83.6	79.6	22.39
36-02trb	6.7	14000	6390	0.1	2520.0	820	< 1	949	0.19	0.03	357	14.8	1700.0	204.0	221.0	38.48
31-02trb	6.5	5180	2760	9.9	609.0	454	< 1	395	0.15	0.04	575	13.7	203.0	63.9	84.4	36.60
33-01tra	7.0	2810	1940	0.4	50.9	184	< 1	296	0.10	0.03	307	7.5	71.1	35.7	45.5	175.20
31-01tra	7.0	1620	1080	0.3	14.4	113	< 1	77.3	0.10	0.02	218	4.7	64.2	19.7	25.2	204.58
36-04kd	6.9	11700	5390	< 0.1	2400.0	448	< 1	1610	0.18	3.31	476	36.2	907.0	184.0	189.0	307.00
30-48kd	6.7	6320	3260	< 0.1	809.0	787	< 1	388	0.15	0.69	564	15.5	469.0	95.8	106.0	336.20
31-03kd	7.0	1660	1030	0.4	23.5	268	< 1	284	0.06	< 0.01	178	11.7	49.7	26.1	27.5	336.80

DUIVIRA MINING COMPANY

Ambrosia Lake, N. M.

License No. SUA-1473

EFFLUENT MONITORING REPORT

Groundwater Monitoring Report - Semiannual Parameters

1st Half 1989

Location	U-nat	Ra-226		Th-230		As	Se	Mo
	mg/l	pCi/l	+/-	pCi/l	+/-	mg/l	mg/l	mg/l
05-03	0.0077	1.7	0.5	7.9	1.7	0.007	0.02	< 0.01
32-51	0.0499	2.4	0.5	14.0	2.0	0.006	0.07	< 0.01
32-58	0.3370	1.5	0.7	5.7	1.5	0.009	0.02	< 0.01
32-59	0.4150	4.6	1.1	14.0	2.0	0.006	0.02	< 0.01
32-60	0.6820	3.1	0.9	430.0	20.0	0.007	0.03	< 0.01
31-61	0.6480	1.8	0.7	55.0	9.0	0.008	0.03	< 0.01
31-63	2.6900	2.0	0.8	9.6	2.4	0.201	0.26	< 0.01
31-62Trb	0.0011	6.8	1.2	22.0	4.0	0.008	0.02	0.04
36-02Trb	0.0024	3.7	1.0	25.0	4.0	0.007	0.03	0.05
31-02Trb	2.4700	9.4	1.5	64.0	5.0	0.005	0.03	0.17
33-01Tra	0.0047	32.0	3.0	32.0	3.0	0.004	0.01	0.16
31-01Tra	0.0107	2.0	0.6	4.6	1.2	0.003	0.01	0.17
36-04Kd	0.0018	2.2	0.5	4.0	1.6	0.006	0.03	0.16
30-48Kd	0.0129	2.0	0.5	4.1	1.3	0.008	0.03	0.12
31-03Kd	0.0109	14.0	2.0	28.0	4.0	0.003	0.00	0.02

QUIVIRA MINING COMPANY  
 Ambrosia Lake, N.M.  
 License No. SUA-1473

Venthole and Shaft Locations  
 Annual Samples - 1989

Location	pH	TDS mg/l	SO4 mg/l	NO3(N) mg/l	Cl mg/l	HCO3 mg/l	CO3 mg/l	Na mg/l	Fe mg/l	Mn mg/l
19-2 Trb	7.59	4200	2660	22.2	45.6	285	< 1	595	0.13	0.13
19-2 Kd	7.76	2930	1880	5.8	28.4	248	< 1	363	0.12	0.12
19-5 Trb	7.71	2580	1630	0.1	37.5	268	< 1	432	0.04	0.09
19-5 Kd	7.17	3520	2100	< 0.1	123	282	< 1	285	0.11	0.11
30-10 Trb	7.52	5090	2690	12.6	712	15	15	579	0.20	0.20
30-12 Kd	7.76	3770	2070	< 0.1	421	130	< 1	376	0.10	0.10
30W Shaft KD	7.23	4490	2070	0.2	207	254	< 1	290	0.13	0.13
30W Water Rings	7.58	4140	2530	< 0.1	402	349	< 1	284	0.14	0.14

Location	Ca mg/l	K mg/l	Mg mg/l	As mg/l	Se mg/l	Mo mg/l	U-Nat mg/l	Ra-226 mg/l	+/-	Th-230 mg/l	+/-
19-2 Trb	339	10.40	183	0.025	0.019	0.02	0.0155	0.9	0.3	0.0	0.4
19-2 Kd	297	9.20	117	0.016	0.016	0.24	0.0060	2.0	0.5	0.0	0.7
19-5 Trb	191	7.70	101	0.028	0.014	0.01	< 0.0003	2.0	0.5	0.4	0.6
19-5 Kd	455	10.40	179	0.018	0.017	0.13	0.0057	2.0	0.5	0.0	0.4
30-10 Trb	539	7.60	303	0.011	0.072	0.02	15	15	15	15	15
30-12 Kd	545	10.70	168	0.041	0.015	0.15	0.0062	13.0	1.0	2.9	1.3
30W Shaft KD	565	7.70	258	0.011	0.021	0.02	0.0487	12.0	1.0	42.0	5.0
30W Water Rings	599	12.90	304	0.013	0.014	0.15	0.0460	3.3	0.6	0.4	0.7

15 - Insufficient Sample Quantity

QUIVIRA MINING COMPANY  
 Ambrosia Lake, N. M.  
 License No. SUA-1473

Section 4 Evaporation Ponds - Monitor Wells  
 1st Quarter 1989

Location	pH	TDS mg/l	SO4 mg/l	NO3(N) mg/l	Cl mg/l	Ca mg/l	F mg/l	Cond.	Depth To Water (feet)
MW-14	6.8	3690	2300	< 0.1	71.7	515	1.63	2525	43.7
MW-16	7.3	4000	2420	< 0.1	128	418	1.19	2800	37.7
MW-18	6.7	4290	2180	112.0	84.6	643	0.34	2670	45.9
MW-19	6.7	3260	1940	< 0.1	35.8	462	0.40	2310	46.8
MW-20	6.9	4950	2890	11.8	186.0	570	0.47	3200	48.5
MW-21	7.0	3860	2170	40.2	87.1	557	0.28	2600	47.6
MW-22	7.2	3750	2430	0.4	55.1	472	0.64	2500	24.9
MW-23	7.2	5550	3110	130.0	71.7	483	0.55	3800	33.8
MW-24	7.1	4060	2330	57.4	82.0	508	0.49	2825	43.5
MW-27	7.0	4280	2730	0.1	91.0	502	0.71	2800	17.0
MW-29	7.2	3300	1920	10.0	230.0	414	0.81	2475	25.0
MW-30	7.1	3910	2450	1.2	55.1	460	0.50	2650	30.0
MW-31	6.9	3600	2220	8.2	67.9	457	0.53	2500	40.8

Section 4 Evaporation Ponds - Monitor Wells  
 2nd Quarter 1989

Location	pH	TDS mg/l	SO4 mg/l	NO3(N) mg/l	Cl mg/l	Ca mg/l	F mg/l	Cond.	Depth To Water (feet)
MW-14	6.9	3920	2480	3.1	69	533	1.65	2975	44.05
MW-18	6.6	4270	2250	149	85.7	640	0.32	3400	46.16
MW-19	6.9	3280	1990	< 0.1	35.4	495	0.38	2750	46.76
MW-20	7	5020	2990	16.3	191	572	0.47	3880	48.16
MW-21	7.1	3820	2210	74.3	87.1	555	0.28	3100	47.98
MW-22	7.1	3730	2430	1	56.4	531	0.63	3000	24.1
MW-23	7.1	5490	3200	133	78.7	615	0.54	4500	33.14
MW-24	7.2	3840	2220	54	77.3	655	0.52	3200	42.54
MW-27	7.3	4540	2870	1.2	191	655	0.35	3650	11.48
MW-29	7.1	3320	1940	14.9	226	519	0.77	2925	25.15
MW-30	7.2	3930	2540	1.7	59.2	606	0.53	3100	29.95
MW-31	7.2	3560	2180	11.2	70.4	642	0.52	2950	40.85

Note - Monitor Wells MW-1 through 13, 15, 17, 25, 26, 28 Were Dry 1st Quarter.

Note - Monitor Wells MW-1 through 13, 15, 16, 17, 25, 26, 28 Were Dry 2nd Quarter.



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Section 4 Evaporation Ponds - Annual Sample

Pond #	pH	Ca mg/l	Cl mg/l	F mg/l	NO3(N) mg/l	SO4 mg/l	TDS mg/l
Pond 11	< 0.1	180	51000	605	149.0	269000	458000
Pond 12	1.0	640	14300	145	35.7	71300	121000
Pond 13	0.7	550	18900	229	64.7	119000	193000
Pond 14	1.0	667	13600	187	37.3	65700	108000
Pond 15	Drv						
Pond 16	3.1	263	2580	34	1.0	8890	16200
Pond 17	Drv						
Pond 18	1.3	643	17200	150	37.3	90400	154000
Pond 19	Drv						
Pond 20	Drv						
Pond 21	Drv						

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Vegetation

Location: Substation  
 Date: Apr 1989  
 Type: Grass

Nuclide	Conc. (uCi/kg-wet)	Error (uCi/kg)	LLD (uCi/kg)
U nat	1.6E-04	4.6E-06	2.0E-07
Th-230	7.8E-04	3.1E-05	2.0E-07
Ra-226	5.8E-04	5.8E-06	5.0E-08
Pb-210	2.5E-03	1.2E-04	1.0E-06
Po-210	1.8E-03	1.6E-05	1.0E-06

Location: Mill Diversion  
 Date: Apr 1989  
 Type: Grass

Nuclide	Conc. (uCi/kg-wet)	Error (uCi/kg)	LLD (uCi/kg)
U nat	1.4E-04	4.1E-06	2.0E-07
Th-230	1.0E-03	4.0E-05	2.0E-07
Ra-226	1.6E-03	1.6E-05	5.0E-08
Pb-210	2.0E-03	9.4E-05	1.0E-06
Po-210	1.9E-03	1.7E-05	1.0E-06

Location: Section 30W VH6  
 Date: Apr 1989  
 Type: Grass

Nuclide	Conc. (uCi/kg-wet)	Error (uCi/kg)	LLD (uCi/kg)
U nat	3.4E-05	9.9E-07	2.0E-07
Th-230	4.5E-03	1.8E-04	2.0E-07
Ra-226	2.5E-05	2.5E-07	5.0E-08
Pb-210	6.8E-03	3.2E-04	1.0E-06
Po-210	4.8E-03	4.3E-05	1.0E-06

Location: North Fence  
 Date: Apr 1989  
 Type: Grass

Nuclide	Conc. (uCi/kg-wet)	Error (uCi/kg)	LLD (uCi/kg)
U nat	3.6E-04	1.0E-05	2.0E-07
Th-230	1.9E-03	7.6E-05	2.0E-07
Ra-226	8.6E-01	8.6E-03	5.0E-08
Pb-210	3.8E-03	1.8E-04	1.0E-06
Po-210	3.5E-03	3.2E-05	1.0E-06

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Vegetation

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Location: Berryhill  
Date: April 1989  
Type: Grass

Nuclide	Conc. (uCi/kg-wet)	Error (uCi/kg)	LLD (uCi/kg)
U nat	2.7E-04	7.83E-06	2.00E-07
Th-230	3.6E-04	1.44E-05	2.00E-07
Ra-226	2.1E-04	2.10E-06	5.00E-08
Pb-210	1.3E-03	6.11E-05	1.00E-06
Po-210	9.4E-04	8.46E-06	1.00E-06

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Soil

Location: Substation  
 Date: June 1989  
 Type: Surface Soil

Nuclide	Conc. (uCi/g)	Error (uCi/g)	LLD (uCi/g)
U nat	1.8E-06	1.6E-07	2.0E-07
Th-230	1.9E-06	1.4E-07	2.0E-07
Ra-226	1.5E-06	1.2E-07	2.0E-07
Pb-210	1.6E-06	1.4E-08	2.0E-07

Location: Mill Diversion  
 Date: June 1989  
 Type: Surface Soil

Nuclide	Conc. (uCi/g)	Error (uCi/g)	LLD (uCi/g)
U nat	4.3E-06	3.7E-07	2.0E-07
Th-230	2.3E-05	1.7E-06	2.0E-07
Ra-226	2.1E-05	1.7E-06	2.0E-07
Pb-210	2.0E-05	1.8E-07	2.0E-07

Location: Section 30W VH6  
 Date: June 1989  
 Type: Surface Soil

Nuclide	Conc. (uCi/g)	Error (uCi/g)	LLD (uCi/g)
U nat	6.9E-06	5.9E-07	2.0E-07
Th-230	5.1E-06	3.7E-07	2.0E-07
Ra-226	4.4E-06	3.5E-07	2.0E-07
Pb-210	3.9E-06	3.5E-08	2.0E-07

Location: Berryhill  
 Date: June 1989  
 Type: Surface Soil

Nuclide	Conc. (uCi/g)	Error (uCi/g)	LLD (uCi/g)
U nat	1.8E-06	1.6E-07	2.0E-07
Th-230	1.6E-06	1.2E-07	2.0E-07
Ra-226	1.5E-06	1.2E-07	2.0E-07
Pb-210	1.6E-06	1.4E-08	2.0E-07



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Soil

Location: North Fence  
Date: June 1989  
Type: Surface Soil

Nuclide	Conc. (uCi/g)	Error (uCi/g)	LLD (uCi/g)
U nat	2.4E-06	2.1E-07	2.0E-07
Th-230	6.3E-06	4.5E-07	2.0E-07
Ra-226	5.7E-06	4.6E-07	2.0E-07
Pb-210	5.8E-06	5.2E-08	2.0E-07

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Sediment

Location: P-0  
Date: June 1989  
Type: Sediment

Nuclide	Conc. (uCi/g)	Error (uCi/g)	LLD (uCi/g)
U nat	1.4E-04	6.4E-06	2.0E-07
Th-230	9.2E-05	2.0E-05	2.0E-07
Ra-226	1.3E-04	2.7E-05	2.0E-07
Pb-210	1.4E-03	1.3E-05	2.0E-07

Location: P-1  
Date: June 1989  
Type: Sediment

Nuclide	Conc. (uCi/g)	Error (uCi/g)	LLD (uCi/g)
U nat	4.1E-06	1.8E-07	2.0E-07
Th-230	1.0E-03	2.2E-04	2.0E-07
Ra-226	6.3E-05	1.3E-05	2.0E-07
Pb-210	2.6E-04	2.4E-06	2.0E-07

Location: P-2  
Date: June 1989  
Type: Sediment

Nuclide	Conc. (uCi/g)	Error (uCi/g)	LLD (uCi/g)
U nat	2.0E-05	9.0E-07	2.0E-07
Th-230	1.7E-04	3.7E-05	2.0E-07
Ra-226	2.0E-05	4.2E-06	2.0E-07
Pb-210	4.9E-05	4.4E-07	2.0E-07

Location: P-3  
Date: June 1989  
Type: Sediment

Nuclide	Conc. (uCi/g)	Error (uCi/g)	LLD (uCi/g)
U nat	1.4E-05	6.4E-07	2.0E-07
Th-230	3.6E-05	7.8E-06	2.0E-07
Ra-226	7.4E-05	1.6E-06	2.0E-07
Pb-210	1.1E-05	9.9E-08	2.0E-07

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Gamma  
TLD Chips (Eberline)

Date: 1st Quarter 1989  
Type: Gamma

Date: 2nd Quarter 1989  
Type: Gamma

Location	Rate mR/Qtr	Error mR/Qtr
Substation	46.6	9.9
Mill Diversion	126.8	23.3
Section 30W VH6	83.4	11.5
Berryhill	69.2	12.4
North Fence	69.4	8.1

Location	Rate mR/Qtr	Error mR/Qtr
Substation	33.7	3.1
Mill Diversion	108.0	21.6
Section 30W VH6	61.6	10.7
Berryhill	158.4	14.0
North Fence	51.0	15.0

