PATHFINDER

June 2, 2005

Mr. Gary Janosko, Branch Chief
Fuel Cycle Facilities Branch
Division of Fuel Cycle Safety and Safeguards
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
11545 Rockville Pike
Rockville, Maryland 20852

Reference: Docket No. 40-2259, Source Material License No. SUA-672
Request for License Condition Amendment for the Lucky Mc Site

Dear Mr. Janosko:

Pathfinder Mines requests an amendment to the above referenced license (Condition 60A) to remove wells AL-8 and AL-9 from the ground water monitoring program at the Lucky Mc site. These two wells are located at distances of 3600 and 5500 feet north of POE well AL-6 and are well beyond the planned Long Term Surveillance Boundary. Figure 1 shows the location of the Lucky Mc monitoring wells while Table 1 presents an updated tabulation of the monitoring data.

The concentrations upgradient of wells AL-8 and AL-9 at POE well AL-6 have been gradually decreasing in recent years. Figure 2 shows the uranium concentrations versus time for POE well AL-6, and the declining trend in concentration from 2001 to early 2005 is consistent. Concentrations are also gradually declining in well AL-1, which is located upgradient of well AL-6. Figure 2 also shows the uranium concentrations for wells AL-8 and AL-9, which have been low and steady over the period of record. The maximum POE concentration of 1.17 mg/l for well AL-6 from the Alternate Concentration Limits (ACL) application is also shown on these two figures. Concentrations of TDS, sulfate and chloride have also been gradually declining for wells AL-6 and AL-1 over the last few years with the general magnitude of the trends similar to that of uranium (see semi-annual monitoring report for these time plots).

Selenium is also a constituent of concern. The selenium concentrations in well AL-6 have also exhibited a gradual declining trend. Figure 3 presents the selenium concentrations in well AL-6 and in upgradient well AL-1; both wells have exhibited similar declining trends. The selenium concentrations in wells AL-8 and AL-9 have remained low throughout the period of record.

Wells AL-8 and AL-9 are located far downgradient of POE well AL-6, and concentrations at AL-6 have declined significantly below the ACL application POE concentrations. Therefore, continued monitoring of the wells downgradient of the POE well AL-6 is not necessary. The combination of present concentrations and trends and the predicted concentrations from the ACL

PATHFINDER Mines Corporation
935 Pendell Blvd., P.O. Box 730, Mills, WY 82644 - Tel. : (307) 234-5019 - Fax : (307) 473-7306

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simulations indicate that it is extremely unlikely that the Wyoming Class III livestock standards will be exceeded at AL-8 or AL-9. Therefore, monitoring of wells AL-8 and AL-9 in the future is not necessary or informative, and Pathfinder requests the removal of these wells from the monitoring program. Approval of this request will allow the abandonment of wells AL-8 and AL-9.

Sincerely,

Tom Hardgrove

T.W. Hardgrove
Manager, Reclamation Operations

cc: J. Whitten, U.S. NRC, Region IV
J. Lusher, U.S. NRC
D.L. Wichers
Hydro-Engineering, LLC

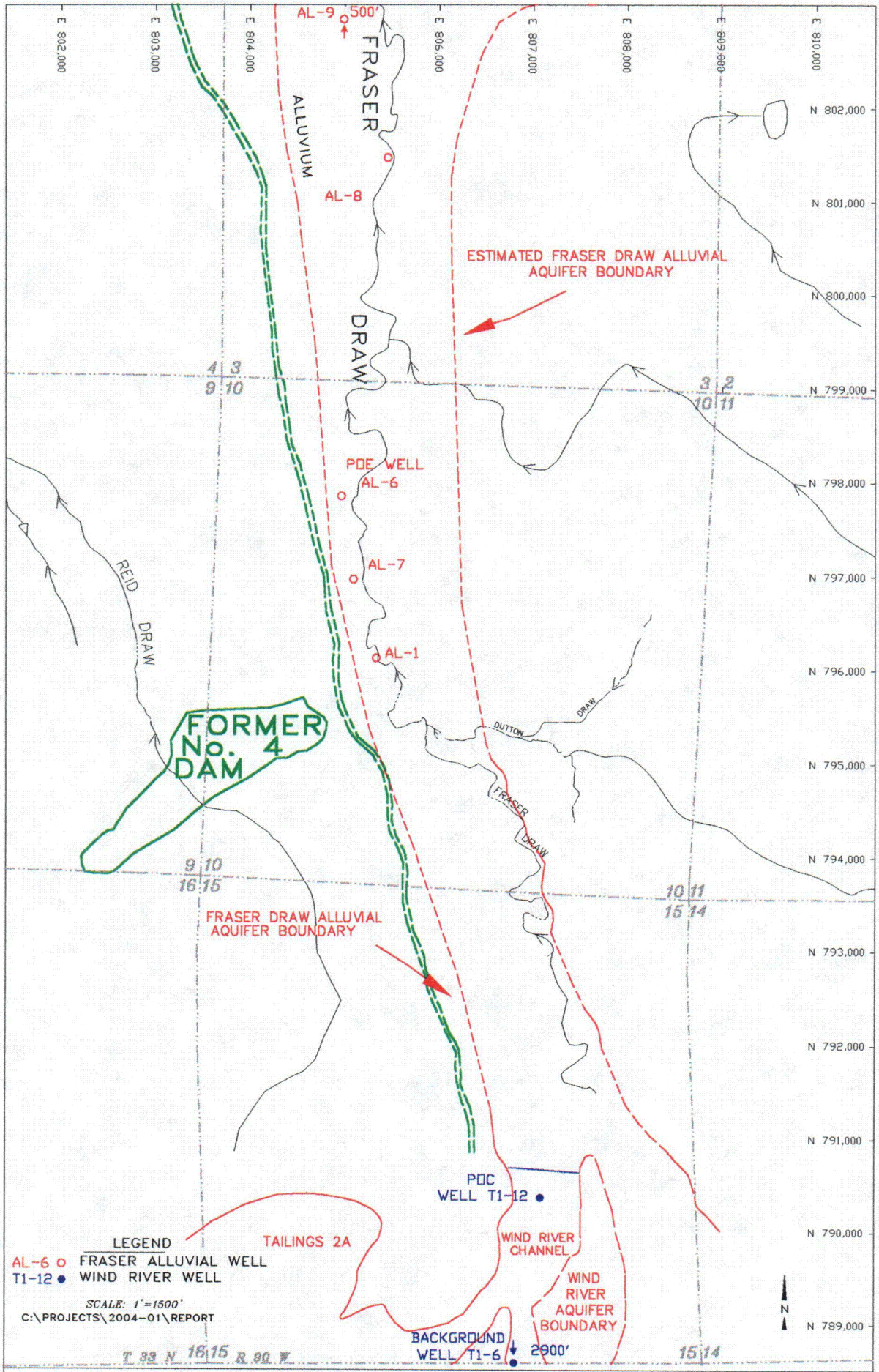

FIGURE 1. LOCATIONS OF MONITORING WELLS AT LUCKY MC

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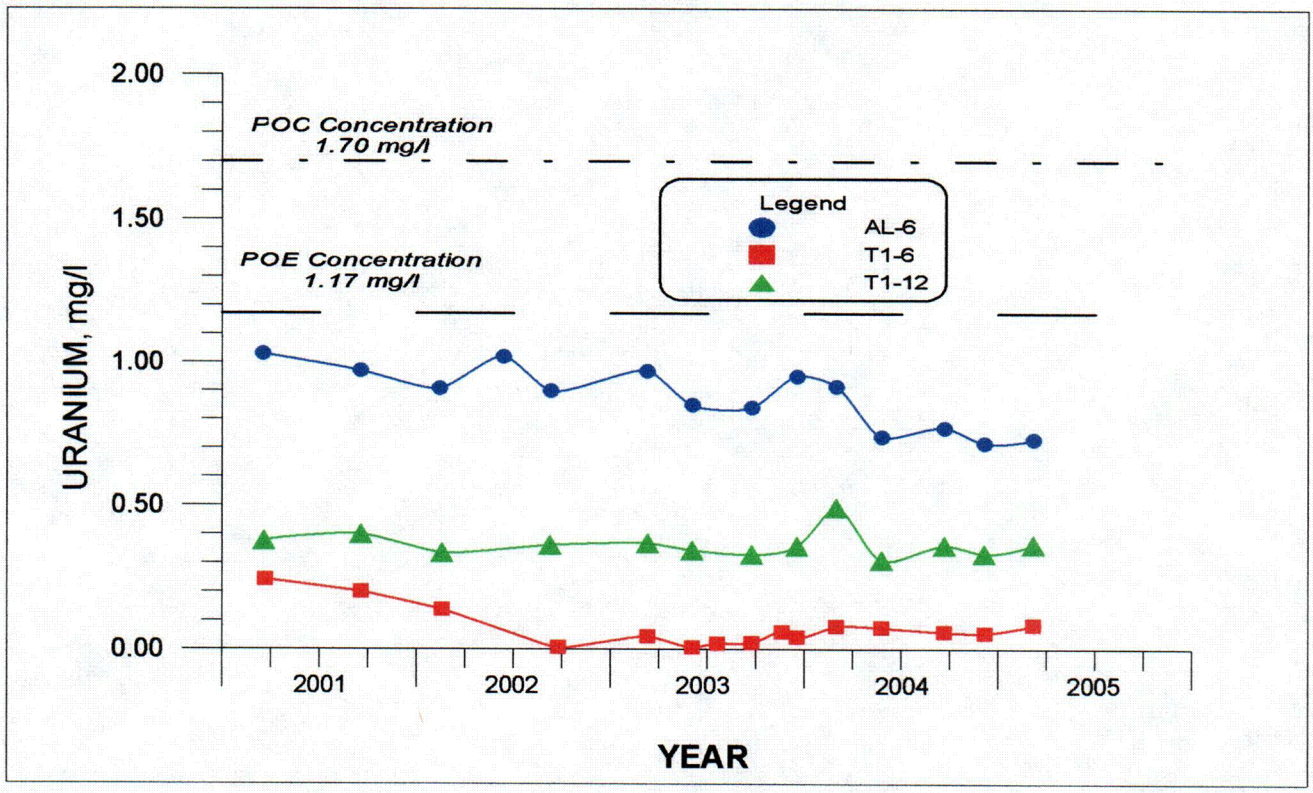

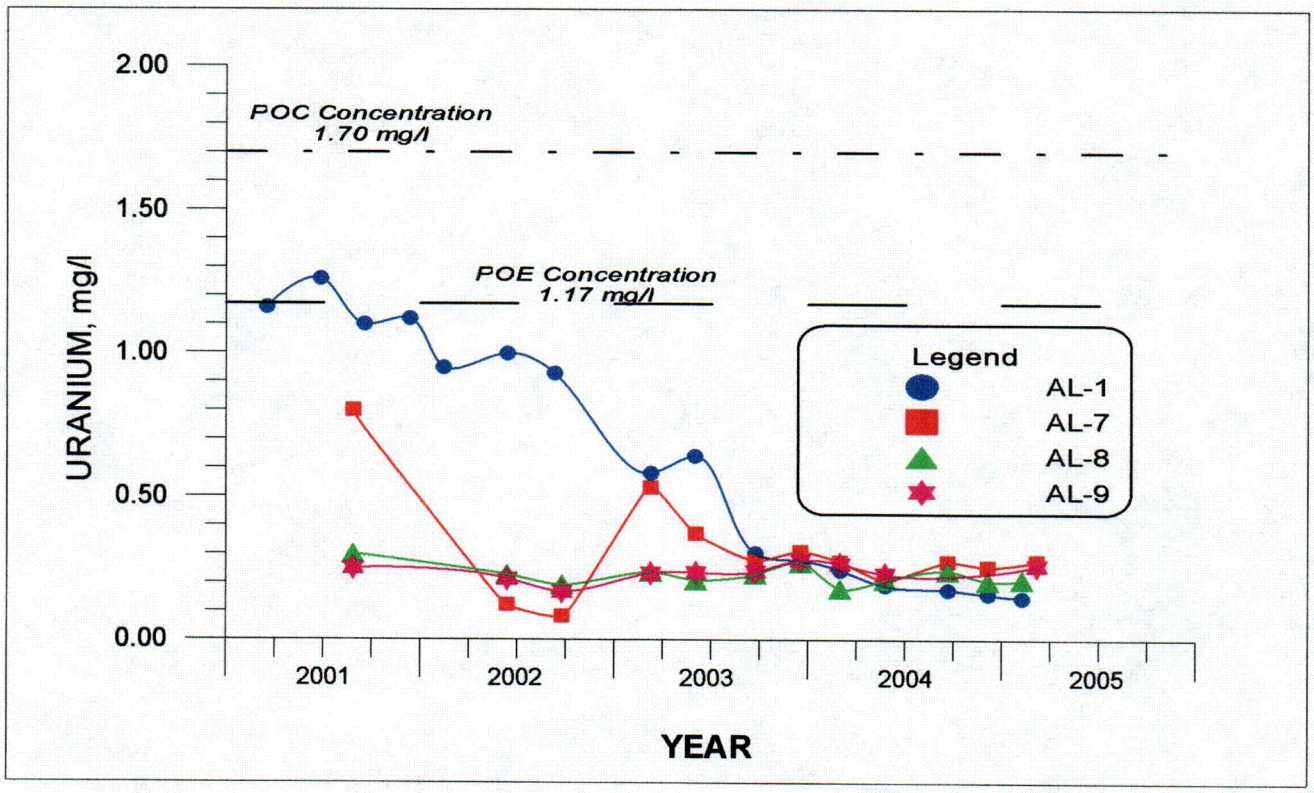

FIGURE 2. URANIUM CONCENTRATIONS VERSUS TIME FOR WELLS T1-6, T1-12, AL-1, AL-6, AL-7, AL-8 AND AL-9.

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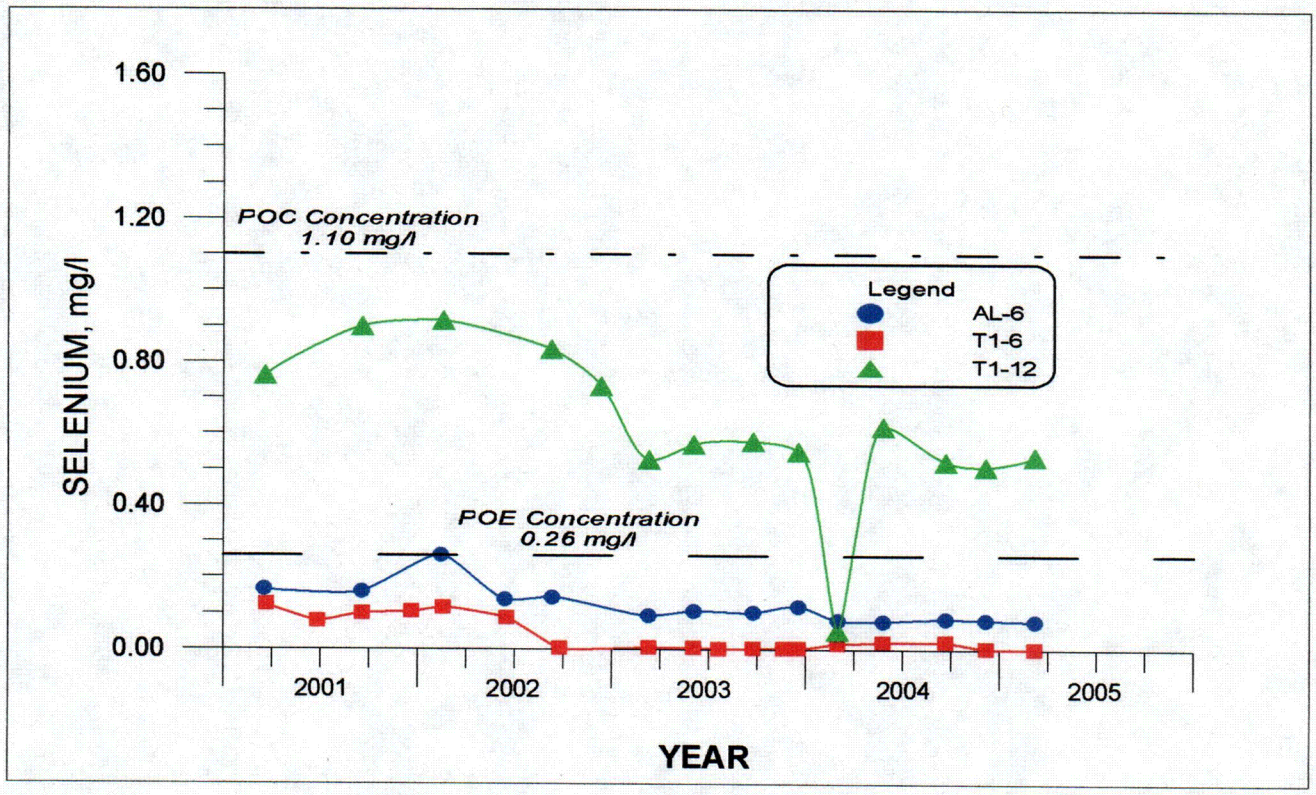

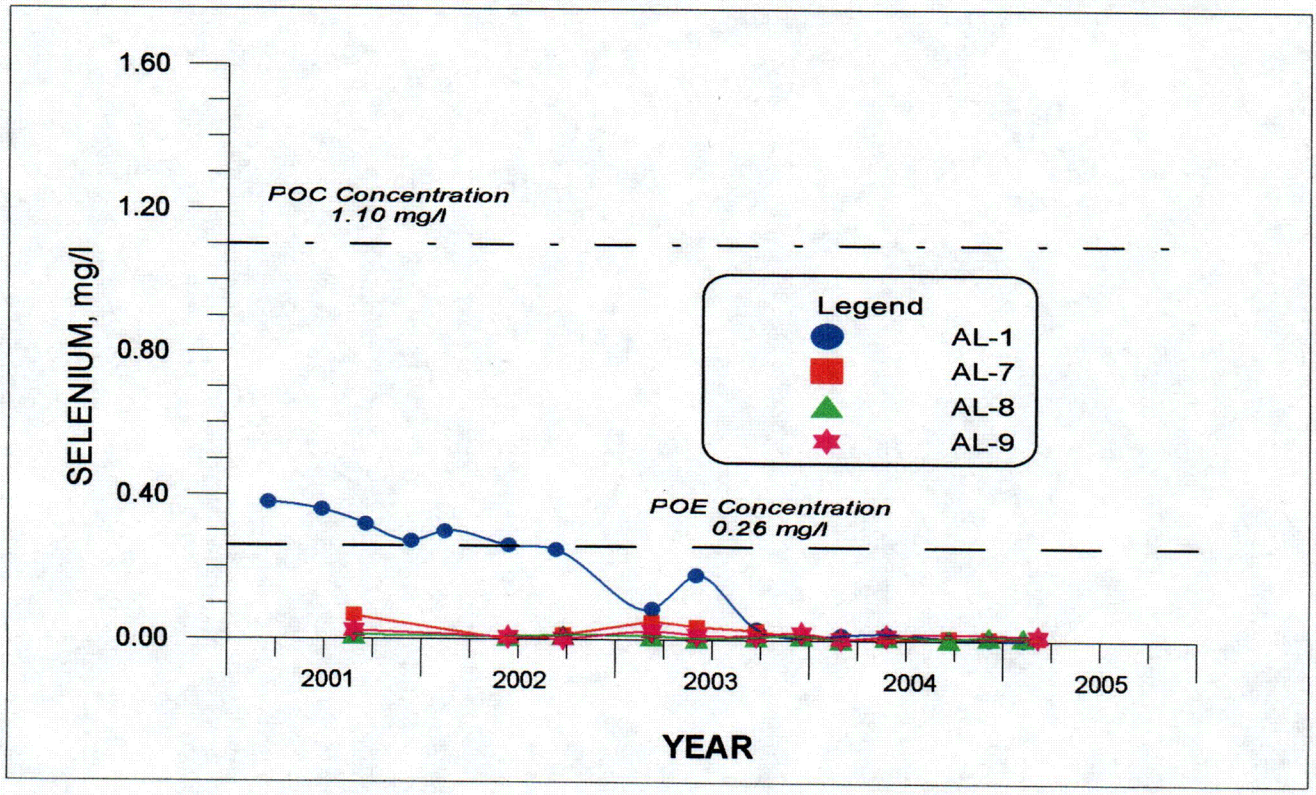

FIGURE 3. SELENIUM CONCENTRATIONS VERSUS TIME FOR WELLS T1-6, T1-12, AL-1, AL-6, AL-7, AL-8 AND AL-9.

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TABLE 1. WATER-LEVEL AND WATER-QUALITY DATA.

Lucky MC Mine - Pathfinder Mines Corp.

Sample Point Name	Date	WL (feet)	WL_ELEV (ft-msl)	pH(f) (std. units)	Cond(f) (µmhos)	TDS (mg/l)	SO4 (mg/l)	Cl (mg/l)	NO3+NO2 (mg/l)	Unat (mg/l)
AL-1	3/2/2004	29.15	6235.5	—	3380.0	2770.0	1660.0	61.2	2.9	0.245
	5/26/2004	29.93	6234.7	7.2	3080.0	2630.0	1660.0	50.1	1.6	0.190
	9/22/2004	30.96	6233.6	7.5	2830.0	2710.0	1710.0	46.0	0.3	0.175
	12/6/2004	30.54	6234.1	7.0	2910.0	2770.0	1540.0	44.0	0.1	0.159
	2/9/2005	29.73	6234.9	7.2	1885.0	2650.0	1570.0	44.0	< 0.1	0.147
AL-6	3/2/2004	23.18	6213.6	7.0	3970.0	3740.0	1940.0	121.0	41.5	0.916
	5/26/2004	23.14	6213.7	7.0	3820.0	3650.0	2030.0	118.0	40.3	0.740
	9/22/2004	23.31	6213.5	7.3	3500.0	3580.0	1960.0	111.0	69.1	0.772
	12/6/2004	23.77	6213.0	6.9	3490.0	3530.0	1850.0	120.0	41.7	0.718
	3/8/2005	23.45	6213.4	6.9	3730.0	3420.0	1850.0	114.0	37.2	0.731
AL-7	3/2/2004	28.12	6223.9	6.9	2710.0	2380.0	1300.0	62.5	3.6	0.274
	3/8/2004	28.71	6223.3	7.1	2550.0	—	—	—	—	—
	5/26/2004	28.04	6224.0	7.2	2580.0	2270.0	1330.0	56.3	0.4	0.210
	9/22/2004	28.33	6223.7	7.4	2360.0	2330.0	1380.0	59.0	1.9	0.272
	12/6/2004	28.79	6223.2	7.4	2400.0	2400.0	1300.0	60.0	2.3	0.255
	3/8/2005	28.71	6223.3	7.1	2550.0	2320.0	1330.0	65.0	0.6	0.276
AL-8	3/2/2004	29.85	6165.2	7.2	4910.0	3800.0	2250.0	69.5	< 0.1	0.180
	5/26/2004	29.53	6165.5	7.1	4310.0	3800.0	2340.0	65.1	< 0.1	0.210
	9/22/2004	29.89	6165.1	7.5	3950.0	3740.0	2360.0	64.0	0.2	0.242
	12/6/2004	29.91	6165.1	7.1	3960.0	3740.0	2190.0	65.0	< 0.1	0.206
	2/9/2005	30.02	6165.0	7.3	3160.0	3470.0	2180.0	66.0	0.3	0.210
AL-9	3/2/2004	35.38	6138.6	7.3	4290.0	3760.0	2250.0	68.8	0.6	0.266
	5/26/2004	35.53	6138.5	6.9	4020.0	3640.0	2240.0	64.5	< 0.1	0.230
	9/22/2004	50.30	6123.7	—	—	—	—	—	—	—
	12/6/2004	> 50.30	6123.7	—	—	—	—	—	—	—
	3/8/2005	38.34	6135.7	6.7	3850.0	3540.0	2140.0	64.0	< 0.1	0.261
T1-6	3/2/2004	36.18	6392.0	7.6	4090.0	3100.0	1820.0	72.3	0.5	0.080
	5/26/2004	35.00	6393.2	6.8	3400.0	3010.0	1850.0	60.7	0.2	0.075
	9/22/2004	35.25	6393.0	7.8	3230.0	2870.0	1810.0	58.0	0.3	0.059
	12/7/2004	33.72	6394.5	7.5	2900.0	2750.0	1560.0	51.0	0.3	0.056
	3/8/2005	33.28	6394.9	7.5	3270.0	2860.0	1770.0	67.0	< 0.1	0.083
T1-12	3/2/2004	11.26	6329.5	6.7	7060.0	6750.0	2230.0	205.0	310.0	0.493
	5/26/2004	11.40	6329.4	6.3	7240.0	6970.0	2310.0	205.0	340.0	0.310
	9/22/2004	11.95	6328.9	6.6	6550.0	7030.0	2540.0	208.0	550.0	0.361
	12/6/2004	12.17	6328.6	6.7	6450.0	6870.0	2250.0	203.0	321.0	0.333
	3/8/2005	12.87	6327.9	6.7	6840.0	6800.0	2310.0	226.0	298.0	0.364

TABLE 1. WATER-LEVEL AND WATER-QUALITY DATA. (cont.)

Lucky MC Mine - Pathfinder Mines Corp.

Sample Point Name	Date	Th230 (pCi/l)	Th230(e) (pCi/l)	Ra226 (pCi/l)	Ra226(e) (pCi/l)	Ra228 (pCi/l)	Ra228(e) (pCi/l)	Ra226+Ra228 (pCi/l)
AL-1	3/2/2004	< 0.2	—	1.8	0.4	< 1.0	—	< 2.8
	5/26/2004	< 0.2	—	< 0.2	—	< 1.0	—	< 1.2
	9/22/2004	< 0.2	—	1.3	—	3.0	—	4.3
	12/6/2004	< 0.2	—	0.9	—	< 1.0	—	< 1.9
	2/9/2005	< 0.2	—	0.6	0.4	< 1.0	—	< 1.6
AL-6	3/2/2004	< 0.2	—	3.4	0.5	3.2	1.2	6.6
	5/26/2004	< 0.2	—	2.9	0.7	< 1.0	—	< 3.9
	9/22/2004	< 0.2	—	4.0	—	< 1.0	—	< 5.0
	12/6/2004	< 0.2	—	2.5	—	< 1.0	—	< 3.5
	3/8/2005	< 0.2	—	4.1	0.7	< 1.0	—	< 5.1
AL-7	3/2/2004	< 0.2	—	2.1	0.5	< 1.0	—	< 3.1
	5/26/2004	< 0.2	—	1.0	0.5	< 1.0	—	< 2.0
	9/22/2004	< 0.2	—	1.6	—	< 1.0	—	< 2.6
	12/6/2004	< 0.2	—	0.8	—	< 1.0	—	< 1.8
	3/8/2005	< 0.2	—	1.2	0.5	< 1.0	—	< 2.2
AL-8	3/2/2004	< 0.2	—	1.1	0.4	< 1.0	—	< 2.1
	5/26/2004	< 0.2	—	0.7	0.5	< 1.0	—	< 1.7
	9/22/2004	< 0.2	—	1.8	—	< 1.0	—	< 2.8
	12/6/2004	< 0.2	—	1.5	—	< 1.0	—	< 2.5
	2/9/2005	< 0.2	—	2.8	0.5	< 1.0	—	< 3.8
AL-9	3/2/2004	0.7	0.4	1.8	0.4	< 1.0	—	< 2.8
	5/26/2004	< 0.2	—	< 0.2	—	< 1.0	—	< 1.2
	3/8/2005	< 0.2	—	3.7	0.7	< 1.0	—	< 4.7
T1-6	3/2/2004	< 0.2	—	4.5	0.6	< 1.0	—	< 5.5
	5/26/2004	< 0.2	—	2.4	0.7	< 1.0	—	< 3.4
	9/22/2004	< 0.2	—	2.8	—	< 1.0	—	< 3.8
	12/7/2004	< 0.2	—	2.3	—	< 1.0	—	< 3.3
	3/8/2005	< 0.2	—	3.0	0.6	< 1.0	—	< 4.0
T1-12	3/2/2004	< 0.2	—	6.0	0.7	< 1.0	—	< 7.0
	5/26/2004	< 0.2	—	2.9	0.7	< 1.0	—	< 3.9
	9/22/2004	< 0.2	—	2.5	—	< 1.0	—	< 3.5
	12/6/2004	< 0.2	—	1.6	—	< 1.0	—	< 2.6
	3/8/2005	< 0.2	—	3.1	0.6	< 1.0	—	< 4.1

TABLE 1. WATER-LEVEL AND WATER-QUALITY DATA. (cont.)

Lucky MC Mine - Pathfinder Mines Corp.

Sample Point Name	Date	As (mg/l)	Be (mg/l)	Cd (mg/l)	Cr (mg/l)	Ni (mg/l)	Se (mg/l)
AL-1	3/2/2004	0.003	< 0.010	< 0.005	< 0.050	0.04	0.015
	5/26/2004	< 0.004	< 0.010	< 0.010	< 0.050	< 0.05	0.020
	9/22/2004	< 0.001	—	< 0.010	< 0.050	< 0.05	0.007
	12/6/2004	0.002	< 0.010	< 0.010	< 0.050	< 0.05	0.003
	2/9/2005	0.002	< 0.010	< 0.010	< 0.050	< 0.05	0.002
AL-6	3/2/2004	0.007	< 0.001	< 0.005	< 0.050	0.01	0.081
	5/26/2004	0.006	< 0.010	< 0.010	< 0.050	< 0.05	0.079
	9/22/2004	0.006	—	< 0.010	< 0.050	< 0.05	0.085
	12/6/2004	0.007	< 0.010	< 0.010	< 0.050	< 0.05	0.082
	3/8/2005	< 0.006	< 0.010	< 0.010	< 0.050	< 0.05	0.078
AL-7	3/2/2004	0.001	< 0.001	< 0.005	< 0.050	0.01	0.006
	5/26/2004	0.001	< 0.010	< 0.010	< 0.050	< 0.05	0.003
	9/22/2004	0.001	—	< 0.010	< 0.050	< 0.05	0.009
	12/6/2004	0.002	< 0.010	< 0.010	< 0.050	< 0.05	0.007
	3/8/2005	0.001	< 0.010	< 0.010	< 0.050	< 0.05	0.007
AL-8	3/2/2004	0.002	< 0.001	< 0.005	< 0.050	0.01	0.004
	5/26/2004	0.002	< 0.010	< 0.010	< 0.050	< 0.05	0.012
	9/22/2004	0.004	—	< 0.010	< 0.050	< 0.05	0.006
	12/6/2004	0.005	< 0.010	< 0.010	< 0.050	< 0.05	0.013
	2/9/2005	0.005	< 0.010	< 0.010	< 0.050	< 0.05	0.011
AL-9	3/2/2004	0.002	< 0.001	< 0.005	< 0.050	0.01	0.006
	5/26/2004	0.002	< 0.010	< 0.010	< 0.050	< 0.05	0.014
	3/8/2005	0.004	< 0.010	< 0.010	< 0.050	< 0.05	0.013
T1-6	3/2/2004	0.003	< 0.001	< 0.005	< 0.050	0.06	0.016
	5/26/2004	< 0.001	< 0.010	< 0.010	< 0.050	< 0.05	0.020
	9/22/2004	< 0.001	—	< 0.010	< 0.050	< 0.05	0.021
	12/7/2004	0.001	< 0.010	< 0.010	< 0.050	< 0.05	0.003
	3/8/2005	0.001	< 0.010	< 0.010	< 0.050	< 0.05	< 0.002
T1-12	3/2/2004	< 0.001	< 0.001	< 0.005	< 0.050	0.03	0.054
	5/26/2004	< 0.004	< 0.001	< 0.001	< 0.050	0.28	0.620
	9/22/2004	< 0.002	—	< 0.010	< 0.050	0.29	0.523
	12/6/2004	< 0.002	< 0.010	< 0.010	< 0.050	0.28	0.509
	3/8/2005	0.003	< 0.010	< 0.010	< 0.050	0.30	0.536