Atlantic Richfield Company

wood.

Appendix 4A

OU-4b Previous Data

Appendix 4A, Table 4A-1
Summary of Analytical Results - Metals and Radionuclides in Soil
2010 Characterization of Potential Cover Materials
Anaconda Copper Mine Site
Lyon County, Nevada

Location ID	Depth (ft bgs)	Sample Date	Aluminum (mg/kg)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Boron (mg/kg)	Cadmium (mg/kg)	Calcium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Iron (mg/kg)	Lead (mg/kg)	Magnesium (mg/kg)	Manganese (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Potassium (mg/kg)	Selenium (mg/kg)	Sodium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Thorium (mg/kg)	Uranium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)	Radium-226 (pCi/g)	Radium-228 (pCi/g)
2010 OU-4b Sulfide Tailings Area[1]																															
CM-SUL-01	4-8	10/1/2010	5900	0.5 J	3.4	36 J	< 0.25	2.5 J	< 0.25	4100	3.6 J	4.7	820	12000	3.1	5300	54	0.0601	1.7 J	7.1	1200 J	< 1.2	78	< 0.25	< 0.5	7.86	1.82	18	< 23 UJ	1.45 +/-0.21	1.31 +/-0.21
CM-SUL-02	1.5-6.58	10/1/2010	6500	2.4	3.5	49	< 0.25	3.8 J	< 0.25	5000	7.8	6.5	760	15000	2.1 J	5700	90	0.19	7.3	12	1700	< 1.2	120	< 0.25	< 0.5	6.01	4.03	21	34 J	1.42 +/-0.19	0.991 +/-0.16 J
CM-SUL-03	1.5-7	10/1/2010	4700	0.74 J	2.6	30	< 0.25	2.5 J	< 0.25	4000	5.2	4.3	1300	10000	1.7 J	5000	53	0.0633	2.5 J	7.5	1100	1.3 J	47 J	< 0.25	< 0.5	5.8	1.72	16	24 J	1.15 +/-0.16	1.12 +/-0.2

Note(s)
1 - ARC, 2011. Revised Data Summary Report for the Characterization of Potential Cover Materials, Yerington Mine Site, Lyon County, Nevada. June.

Abbreviation(s)
< = less than
ID = identification
ft bgs = feet below ground surface
J = estimated value
mg/kg = milligram per kilogram
pCi/g = picocurie per gram
UJ = estimated detection limit

Appendix 4A, Table 4A-2
Summary of Analytical Results - MWMP Metals in Soil
2010 Characterization of Potential Cover Materials
Anaconda Copper Mine Site
Lyon County, Nevada

Location ID	Depth (ft bgs)	Sample Date	MWMP Aluminum (mg/L)	MWMP Antimony (mg/L)	MWMP Arsenic (mg/L)	MWMP Barium (mg/L)	MWMP Beryllium (mg/L)	MWMP Boron (mg/L)	MWMP Cadmium (mg/L)	MWMP Calcium (mg/L)	MWMP Chromium (mg/L)	MWMP Cobalt (mg/L)	MWMP Copper (mg/L)	MWMP Iron (mg/L)	MWMP Lead (mg/L)	MWMP Magnesium (mg/L)	MWMP Manganese (mg/L)	MWMP Mercury (mg/L)	MWMP Molybdenum (mg/L)	MWMP Nickel (mg/L)	MWMP Potassium (mg/L)	MWMP Selenium (mg/L)	MWMP Silver (mg/L)	MWMP Sodium (mg/L)	MWMP Thallium (mg/L)	MWMP Uranium (mg/L)	MWMP Vanadium (mg/L)	MWMP Zinc (mg/L)
2010 OU-4b Sulfide Tailings Area[1]																												
CM-SUL-01	0-8	10/13/2010	47	< 0.0015	< 0.0045	0.028	0.017	< 0.4	0.0095	450	< 0.0045	1.9	200	< 0.3	< 0.001	140	14	< 0.0001	0.003 J	0.94	22 J	0.056	< 0.0005	27 J	< 0.001	0.2	< 0.004	1.2
CM-SUL-02	0-6.58	10/13/2010	1.7	0.00038 J	0.0014	0.03	0.0039	< 0.094 UJ	0.011	500	0.0031	1.4	5	0.063 J	< 0.0002	370	34	< 0.0001	0.0076	1.1	50 J	0.065	< 0.0001	43 J	0.0004 J	0.04	0.0024	0.9
CM-SUL-03	0-7	10/13/2010	< 0.04	0.0031	< 0.0009	0.015	< 0.0001	< 0.021 UJ	0.00018 J	200	< 0.0009	0.002	0.069	< 0.015	< 0.0002	25	0.094	< 0.0001	0.089	0.0016 J	13 J	0.011	< 0.0001	10 J	< 0.0002	0.0057	< 0.0008	< 0.004

Note(s)
1 - ARC, 2011. Revised Data Summary Report for the Characterization of Potential Cover Materials, Yerington Mine Site, Lyon County, Nevada. June.

Abbreviation(s)
< = less than
ID = identification
ft bgs = feet below ground surface
J = estimated value
mg/L = milligram per liter
MWMP = meteroic water mobility procedure
UJ = estimated detection limit

Appendix 4A, Table 4A-3
Summary of Analytical Results - Metals and Radionuclides in Soil
2010 Sub Area A Subsurface Characterization
Anaconda Copper Mine Site
Lyon County, Nevada

Location ID	Depth (ft bgs)	Sample Date	Aluminum (mg/kg)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Boron (mg/kg)	Cadmium (mg/kg)	Calcium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Iron (mg/kg)	Lead (mg/kg)	Magnesium (mg/kg)	Manganese (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Potassium (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Sodium (mg/kg)	Thallium (mg/kg)	Thorium (mg/kg)	Uranium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)	Radium-226 (pCi/g)	Radium-228 (pCi/g)
2010 OU-4b Sub Area A Sulfide Tailings[1]																															
ST-A	0-4	12/17/2010	12000	1.7 J	8.5	110	0.27 J	< 2.1 UJ	< 0.25	7200	11	6.6	1800	25000	6.8	8000	72	0.469	11	11	2200	5.7	0.34 J	280	< 0.49	9.8	4.53	29 J	24 J	4.13 +/-0.57	1.45 +/-0.29
ST-A	22-24.5	12/17/2010	6400	< 0.76 UJ	< 2.3	47	< 0.25	< 2.1 UJ	< 0.25	4000	7.1	4.8	860	11000	2.5 J	6400	83	0.0535	2.6 J	8	1500	< 1.3	< 0.25	140	< 0.51	6.66	3.07	24 J	23 J	0.887 +/-0.16 J	0.806 +/-0.25 J
ST-A	24.5-26.5	12/17/2010	10000	< 0.75 UJ	2.2 J	100	0.45 J	< 2.1 UJ	< 0.25	6800	13	8.7	240	18000	5.7	5000	270	0.0178	2.5 J	9	2700	< 1.2	< 0.25	330	< 0.5	9.78	2.23	47 J	32 J	1.38 +/-0.2	1.26 +/-0.24
ST-A	4-4.75	12/18/2010	12000	< 0.74 UJ	5.9	110 J	0.32 J	< 4.2 UJ	< 0.25	6300	14	13 J	560 J	45000	5.9	8200	140 J	0.170	8	13	3600	2.9 J	< 0.25	1100	< 0.49	11.7	6.67	34 J	26 J	6.23 +/-0.84	1.32 +/-0.35
ST-A	40-41.5	12/17/2010	9600	< 0.74 UJ	6.4 J	130	0.31 J	8.3 J	< 0.25	14000	13	6.1	93	15000	4.7	3900	200	0.0184	0.85 J	7.3	1700	< 1.2	< 0.25	1000	< 0.5	9.09	1.77	53 J	28 J	1.2 +/-0.19	0.838 +/-0.2 J
ST-A	7.5-10	12/17/2010	12000	< 0.76 UJ	< 2.3	55	0.78 J	< 2.2 UJ	< 0.25	6100	22	12	780	18000	2.1 J	8300	190	0.260	2.3 J	20	2300	< 1.3	< 0.25	280	< 0.51	7.97	11.6	45 J	33 J	0.769 +/-0.16 J	0.893 +/-0.22 J

Note(s)

1 - BC, 2011a. Anaconda Evaporation Pond Removal Action (Thumb Pond and Sub-Area A), Removal Action Completion Report, Yerington Mine Site. Prepared for Atlantic Richfield Company. March 4.

Abbreviation(s)

< = less than
ID = identification
ft bgs = feet below ground surface
J = estimated value
mg/kg = milligram per kilogram
pCi/g = picocurie per gram
UJ = estimated detection limit

Appendix 4A, Table 4A-4
Summary of Analytical Results - MWMP Metals and Radionuclides
2010 Sub Area A Subsurface Characterization
Anaconda Copper Mine Site
Lyon County, Nevada

Location ID	Depth (ft bgs)	Sample Date	MWMP Aluminum (mg/L)	MWMP Antimony (mg/L)	MWMP Arsenic (mg/L)	MWMP Barium (mg/L)	MWMP Beryllium (mg/L)	MWMP Boron (mg/L)	MWMP Cadmium (mg/L)	MWMP Calcium (mg/L)	MWMP Chromium (mg/L)	MWMP Cobalt (mg/L)	MWMP Copper (mg/L)	MWMP Iron (mg/L)	MWMP Lead (mg/L)	MWMP Magnesium (mg/L)	MWMP Manganese (mg/L)	MWMP Mercury (mg/L)	MWMP Molybdenum (mg/L)	MWMP Nickel (mg/L)	MWMP Potassium (mg/L)	MWMP Selenium (mg/L)	MWMP Silver (mg/L)	MWMP Sodium (mg/L)	MWMP Thallium (mg/L)	MWMP Thorium (mg/L)	MWMP Uranium (mg/L)	MWMP Vanadium (mg/L)	MWMP Zinc (mg/L)	MWMP Radium-226 (pCi/L)	MWMP Radium-228 (pCi/L)
2010 OU-4b Sub Area A Sulfide Tailings[1]																															
ST-A	0-4	12/22/2010	87	0.0012 J	0.0069	0.025	0.011	< 0.5	0.0034	590	0.023	0.75	290	100	0.00098 J	170	6	0.0016	0.0025	0.47	< 9.2	0.023	0.0001 J	16 J	0.00045 J	< 0.000435	0.248	0.0036	0.65	0.985 +/-0.38 J	0.47 +/-0.24 J
ST-A	22-24.5	12/23/2010	0.14	0.0016 J	< 0.0009	0.042	< 0.0001	0.05 J	0.00095 J	99	0.0013 J	0.021	0.092	0.8	< 0.0002	22	0.64	0.0012	0.059	0.021	22 J	0.015	< 0.0001	38 J	< 0.0002	< 0.0000642	0.0637	< 0.0008	0.042	< 0.0127 +/-0.057	0.586 +/-0.26 J
ST-A	24.5-26.5	12/24/2010	8	0.00093 J	0.0096	0.1	0.00023 J	0.089 J	0.00015 J	28	0.0028	0.0037	0.09	5.9	0.0024	6.2	0.3	< 0.0001	0.0092	0.0038	12 J	0.001 J	< 0.0001	34 J	< 0.0002	0.00148	0.0014	0.027	0.015 J	1.37 +/-0.49	< 0.592 +/-0.33

Note(s)
1. BC, 2011b. Sub-Area A Sub-Surface Characterization Data Summary Report, Yerington Mine Site, Yerington, Nevada. November.

Abbreviation(s)
< = less than
ft bgs = feet below ground surface
ID = identification
J = estimated value
mg/L = milligram per liter
MWMP = meteroic water mobility procedure

Appendix 4A, Table 4A-5
Summary of Standing Rain Water Results
2013 Opportunistic Sampling Event
Anaconda Copper Mine Site
Lyon County, Nevada

2013 Standing Rain Water Sampling[1]	
Field Location	SRW-SAA-1
Sample Date	7/10/2013
Dissolved Metals	
Aluminum (mg/L)	1100
Antimony (mg/L)	< 0.003
Arsenic (mg/L)	0.024
Barium (mg/L)	0.0038 J
Beryllium (mg/L)	0.18
Boron (mg/L)	0.31 J
Cadmium (mg/L)	0.019
Calcium (mg/L)	510
Chromium (mg/L)	1.4
Cobalt (mg/L)	2.6
Copper (mg/L)	220
Iron (mg/L)	27
Lead (mg/L)	< 0.002
Lithium (mg/L)	0.52
Magnesium (mg/L)	760
Manganese (mg/L)	54
Mercury (mg/L)	< 0.0001
Molybdenum (mg/L)	0.08
Nickel (mg/L)	2.3
Phosphorus (mg/L)	31
Potassium (mg/L)	< 3.7
Selenium (mg/L)	0.044
Silica (mg/L)	17 J
Silver (mg/L)	< 0.001
Sodium (mg/L)	18 J
Strontium (mg/L)	2 J
Thallium (mg/L)	< 0.002
Tin (mg/L)	< 0.12
Titanium (mg/L)	0.033 J
Uranium (mg/L)	13
Vanadium (mg/L)	0.066
Zinc (mg/L)	4.4
Radiochemical Parameters	
Gross Alpha (pCi/L)	4430 +/-1100 J
Gross Beta (pCi/L)	3500 +/-780 J
Radium-226 (pCi/L)	20.8 +/-4.4 J
Radium-228 (pCi/L)	14.5 +/-1.8 J
Thorium-228 (pCi/L)	27.9 +/-4.4 J
Thorium-230 (pCi/L)	269 +/-39 J
Uranium-234 (pCi/L)	7780 +/-6600 J
Uranium-235 (pCi/L)	142 +/-130 J
Uranium-238 (pCi/L)	5810 +/-4900 J
General Chemical Parameters	
Alkalinity as $CaCO_3$ (mg/L)	< 4
Alkalinity, Bicarbonate as $CaCO_3$ (mg/L)	< 4
Alkalinity, Carbonate as $CaCO_3$ (mg/L)	< 4
Alkalinity, Hydroxide as $CaCO_3$ (mg/L)	< 4
Chloride (mg/L)	10
Fluoride (mg/L)	27 J
Nitrogen, Nitrate as N (mg/L)	< 1.6
Nitrogen, Nitrate&Nitrite as N (mg/L)	< 1.6
Nitrogen, Nitrite as N (mg/L)	< 0.55
pH (s.u.)	2.71 J
Sulfate (mg/L)	11000
Total Dissolved Solids (mg/L)	17000
Total Organic Carbon (mg/L)	8.4
Field Parameters	
Dissolved Oxygen Field (mg/L)	0.39
pH Field (s.u.)	3.11
Redox Potential Field (mV)	355
Specific Conductance Field (uS/cm)	9107
Temperature Field (degrees C)	24.97
Turbidity (NTU)	63.45

Note(s)
1 - Investigation details are provided in Appendix H of the FRIR (CEC, 2020)

Abbreviation(s)
< = less than
$CaCO_3$ = calcium carbonate
C = celcius
FD = Field Duplicate sample
FRIR = OU-1 Final Remedial Investigation Report
ID = Identification
J = estimated result
mg/L = milligram per liter
mV = millivolt
N = nitrogen
NTU = Nephelometric Turbidity Unit
pCi/L = picocurie per liter
uS/cm = microsiemen per centimeter