



August 16, 2012

Mackenzie Valley Environmental Review Board
 5102 - 50th Ave.
 Yellowknife, NT X1A 2N7

Attention: Mr. Paul Mercredi
 Environmental Assessment Officer

Subject: Day 2 Technical Session Homework items #9-11

Dear Mr. Mercredi:

Avalon is pleased to provide the following answers to Homework items #9 through 11 as a result of our technical sessions held on August 15, 2012.

Homework Item #9

Avalon to provide an update of table 1 in attachment 3 of Avalon’s May 10 submission to reflect the predicted max LC 50 concentration for years 1 through 20.

Avalon Response Item #9

Avalon is pleased to provide an updated Table 1 from attachment 2 of the May 10 submission which reflects the predicted max LC 50 concentration for years 1 through 20.

TABLE 1: COMPARISON OF PREDICTED RARE EARTH ELEMENT CONCENTRATIONS WITH AVAILABLE TOXICITY DATA – THOR LAKE				
Element	Day 5 Decant Concentration in Tailings Discharge (µg/L)	Max. Predicted Concentration Years 1-20 (µg/L)	7 Day (Chronic) LC 50 Concentration (µg/L)	Aquatic Organism Tested
Cerium (Ce)	139	12.8	32	<i>Hyalella Azteca</i> (amphipod crustacean)
Dysprosium (Dy)	2.52	0.28	162	<i>Hyalella Azteca</i>
Erbium (Er)	0.581	0.099	191	<i>Hyalella Azteca</i>
Europium (Eu)	1.09	0.15	112	<i>Hyalella Azteca</i>
Gallium (Ga)	2.86	0.20	>100	<i>Hyalella Azteca</i>
Gadolinium (Gd)	9.37	0.91	150	<i>Hyalella Azteca</i>



Holmium (Ho)	0.312	0.074	70	<i>Hyaella Azteca</i>
Lanthanum (La)	68.8	6.4	18 20	<i>Hyaella Azteca</i> <i>Oncorhynchus mykiss</i> (Rainbow trout)
Lutetium (Lu)	0.033	0.048	29	<i>Hyaella Azteca</i>
Niobium (Nb)	2.57	0.33	26	<i>Hyaella Azteca</i>
Neodymium (Nd)	61.6	5.72	143	<i>Hyaella Azteca</i>
Praseodymium (Pr)	17.3	1.64	35	<i>Hyaella Azteca</i>
Scandium (Sc)	3.39	1.13	29	<i>Hyaella Azteca</i>
Samarium (Sm)	11.0	1.06	74	<i>Hyaella Azteca</i>
Tantalum (Ta)	0.230	0.112	2	<i>Hyaella Azteca</i>
Terbium (Tb)	0.819	0.121	84	<i>Hyaella Azteca</i>
Thulium (Tm)	0.046	0.050	69	<i>Hyaella Azteca</i>
Ytterbium (Yb)	0.324	0.075	69	<i>Hyaella Azteca</i>
Zirconium (Zr)	3.29	0.39	112	<i>Hyaella Azteca</i>

Homework Item #10

Avalon to provide an update of table 6.4-2 of the DAR to include updated information of the zinc concentration and tracer concentrations.

Avalon Response Item #10

Avalon is pleased to provide an updated table 6.4-2 of the DAR as provided below.

Table 6.4.2: Average Concentration of Inert Tracer in The Thor Lake System

Year of Simulation	Plant Discharge	Tailings Pond	Polishing Pond	Drizzle Lake	Murky Lake	Thor Lake
1	1.00000	0.13000	0.03714	0.00571	0.00429	0.00143
2	1.00143	0.22857	0.10429	0.03000	0.02429	0.00143
3	1.00571	0.30714	0.17000	0.06143	0.05286	0.00571
4	1.01286	0.37143	0.23429	0.09143	0.08286	0.01286
5	1.02286	0.42714	0.29714	0.13143	0.12143	0.02286
6	1.03429	0.47286	0.34429	0.15857	0.14857	0.03429
7	1.04429	0.51429	0.38429	0.18000	0.17000	0.04429
8	1.05429	0.55143	0.41714	0.19714	0.18857	0.05429
9	1.06286	0.58286	0.44714	0.21714	0.20571	0.06286
10	1.07143	0.60429	0.47143	0.22714	0.21714	0.07143
11	1.08143	0.62429	0.48857	0.25429	0.22714	0.08143
12	1.08286	0.65000	0.50714	0.25571	0.23714	0.08286
13	1.08714	0.66571	0.52714	0.25714	0.24429	0.08714
14	1.09000	0.68143	0.54143	0.26429	0.25286	0.09000
15	1.09429	0.69286	0.55286	0.27143	0.26143	0.09429
16	1.10000	0.70286	0.56286	0.28429	0.26571	0.10000
17	1.09714	0.71429	0.56000	0.27714	0.26571	0.09714



Table 6.4.2: Average Concentration of Inert Tracer in The Thor Lake System

18	1.09571	0.71429	0.55571	0.27286	0.25143	0.09571
19	1.10000	0.72000	0.57143	0.28429	0.26571	0.10000
20	1.10143	0.72571	0.58286	0.29571	0.27286	0.10143

Homework Item #11

Avalon to provide updated higher resolution images of proposed changes to the tailings management facility.

Avalon Response Item #11

Two high resolution images of the original and proposed changes to the tailings management facility was emailed to the Review Board the evening of 15-August-2012.

Avalon appreciates the opportunity to provide this update to the MVEIRB and trust that this will meet the Board's needs.

Yours truly,

A handwritten signature in blue ink, appearing to read "David Swisher", is written over a light blue rectangular background.

David Swisher
VP Operations
Avalon Rare Metals Inc.