AVALON RARE METALS INC.

TECHNICAL REPORT ON THE THOR LAKE PROJECT, NORTHWEST TERRITORIES, CANADA

NI 43-101 Report

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August 25, 2011

ROSCOE POSTLE ASSOCIATES INC.

RPA

Report Control Form

Document Title	Technical Report on the Thor Lake Project, Northwest Territories, Canada
Client Name & Address	Avalon Rare Metals Inc. Suite 1901 - 130 Adelaide Street West Toronto, Ontario M5H 3P5

Document Reference	Project #1714	***Status & Issue No.***	Final	Rev. 0
Issue Date	August 25, 2011			

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Report Distribution

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1 SUMMARY

EXECUTIVE SUMMARY

Roscoe Postle Associates Inc. (RPA) was retained by Avalon Rare Metals Inc. (Avalon) to prepare an independent Technical Report on the Thor Lake Project in the Northwest Territories (NWT), Canada, located approximately 100 km southeast of Yellowknife. This report was prepared for disclosure of the results of the updated Pre-feasibility Study (UPFS) completed by RPA. This Technical Report conforms to NI 43-101 Standards of Disclosure for Mineral Projects. RPA visited the property from April 25 to 27, 2011.

Avalon is a Canadian mineral exploration and development company with a primary focus on rare metals and minerals, headquartered in Toronto, Ontario, Canada. Avalon trades on the Toronto Stock Exchange (TSX) under the symbol AVL, on the NYSE Amex in the United States and also trades on the Frankfurt Stock Exchange in Germany.

Starting in 1976, the Thor Lake Property (TLP) has been explored by a number of companies for Rare Earth Elements (REEs), niobium and tantalum. In May 2005, Avalon purchased from Beta Minerals Inc. a 100% interest and full title, subject to royalties, to the Thor Lake property. Wardrop completed a Preliminary Assessment of the Project in 2006. A Pre-feasibility Study (PFS) commenced in 2009, led by RPA (formerly Scott Wilson RPA), with results disclosed in a Technical Report dated July 29, 2011.

The Project comprises:

- An undeveloped Rare Earths deposit
- An exploration camp, with facilities suitable for summer and winter diamond drill programs
- 14.5 million tonnes of Mineral Reserves of REEs, Zirconium, Niobium and Tantalum
- Potential development of an underground mining operation with a 20 year mine life at 730,000 tonnes per year
- Significant additional Mineral Resources extending laterally within and beyond the Mineral Reserves

For the UPFS, RPA reviewed an update to the PFS carried out by Avalon technical personnel. Principal changes include:

- An updated Mineral Resource estimate
- A new mine design and Mineral Reserve estimate
- Updated product pricing, reflecting increases in prices for rare earths
- Elimination of the first four years at 365,000 tonnes per year – instead, ramping-up to full production as quickly as possible.

Most other aspects of the UPFS remain similar to the original PFS, including the assumption that the ore will be concentrated at Thor Lake and barged across Great Slave Lake (GSL) to Pine Point for hydrometallurgical processing.

CONCLUSIONS

In the opinion of RPA, the UPFS indicates positive economic results can be obtained for the Thor Lake Project, in a scenario that includes underground mining, preparation of a bulk concentrate at Thor Lake, and hydrometallurgical processing at a plant to be constructed at Pine Point. The final products will be a mixed rare earth oxide concentrate, a zirconium oxide concentrate, a niobium oxide concentrate, and a tantalum oxide concentrate.

RPA is of the opinion that the current drill hole database is sufficient for generating a resource model for use in resource and reserve estimation and that the recovery and cost estimates are based upon sufficient data and engineering to support a reserve statement. Economic analysis using these estimates generates a positive cash flow, which supports a reserve statement.

Specific conclusions by area of the UPFS are as follows.

GEOLOGY AND MINERAL RESOURCES

- Mineral Resources in the Upper and Basal Zones are estimated to consist of Indicated Resources of 88.5 Mt with grades of 1.53% total rare earth oxides (TREO), 2.68% ZrO_2, 0.37% Nb_2O_5, and 0.032% Ta_2O_5 and Inferred Resources of 223.2 Mt with grades of 1.31% TREO, 2.59% ZrO_2, 0.36% Nb_2O_5, and 0.027% Ta_2O_5.

- Mineral Resources are estimated at a cut-off Net Metal Return (NMR) value of $260 per tonne. This value was calculated using PFS price inputs.

- RPA reclassified a small quantity (330,000 tonnes, or 2% of Mineral Reserves) of Inferred Resources to Indicated.

MINERAL RESERVES

- Probable Mineral Reserves are estimated to be 14.5 million tonnes with grades of 1.53% TREO, including 0.40% heavy rare earth oxides (HREO), 2.90% ZrO_2, 0.38% Nb_2O_5, and 0.040% Ta_2O_5. Mineral Reserves were estimated at a cut-off value based on an NMR value of C$300 per tonne. Mineral Reserves are based on a 20-year underground mine design and stope schedule. RPA notes that the defined Mineral Resources extend considerably beyond the designed underground mine.

- RPA is of the opinion that the Mineral Reserve estimates have been compiled in a manner consistent with the CIM Guidelines and in accordance with NI 43-101. RPA considers the mining plan to be relatively simple and the mining conditions are expected to be good.

- There is potential to define additional Mineral Reserves within the current Indicated Resources. The areas not included in Mineral Reserves need only a mine design, schedule, and economic analysis.

MINING

- The deposit is relatively flat-lying, and will be mined with a combination of long hole stoping and drift & fill stoping. The minimum thickness used in the development of the Mineral Reserve estimate was five metres.

- Mining of the secondary stopes is dependent upon the use of a suitable backfill, assumed to be paste fill with 4% cement added as a binder. Initial testwork to demonstrate that a suitable paste fill can be generated has been undertaken.

PROCESSING – CONCENTRATOR

- Mineral processing testwork indicates that the TREO, ZrO_2, Nb_2O_5 and Ta_2O_5 can be recovered in a flotation circuit after crushing and grinding to 80% minus 38 µ with recoveries of 80% of the TREO, 90% of the zirconium oxide, 69% of the niobium oxide and 63% of the tantalum oxide to a flotation concentrate. The processing circuit also includes magnetic and gravity separation stages. The design basis for the PFS was to take 18% of the feed to the concentrate.

- The concentrate will be stored in covered containers at Thor Lake and shipped to the hydrometallurgical facility at Pine Point each summer using barges to cross Great Slave Lake.

- Tailings from the flotation plant will be stored in a Tailings Management Facility (TMF) located north-east of the mill site.

PROCESSING – HYDROMETALLURGICAL PLANT

- Metallurgical process testwork for the extraction of TREO, zirconium oxide, niobium oxide and tantalum oxide from the flotation concentrate was carried out and recoveries of 96% of the TREO, 93% of the zirconium oxide, 82% of the niobium oxide and 60% of the tantalum oxide were demonstrated in the laboratory.

- The hydrometallurgical plant will consist of a concentrate “cracking” process, using a combination of acid baking, caustic cracking, and leaching using sulphuric acid and sodium hydroxide as the primary reagents.

- The hydrometallurgical process plant will consume a significant quantity of reagents, which are brought to site by rail to Hay River and then by truck to the plant. A stand-alone sulphuric acid plant is included to provide acid for the process.

- The products from the hydrometallurgical plant will be a mixed rare earth oxides concentrate, and separate zirconium oxide, niobium oxide and tantalum oxide concentrates.

- The products will be shipped in one tonne capacity plastic sacks on pallets (or steel drums for the tantalum oxide) and will be taken by truck to the rail head at Hay River and then by rail to Vancouver or to a central location in the USA.

- Pine Point was selected as a reasonable location within the NWT for the hydrometallurgical facility, due to the existing disturbance at the brown-field site, reasonable logistics for concentrate and reagent transportation, and access to infrastructure. Both Avalon’s aboriginal partners and the Government of the NWT have expressed a preference for keeping the hydrometallurgical plant in the north. In RPA’s opinion, however, the cost of transporting the required reagents outweighs the cost of transporting the concentrate further south, and the Project is incurring an economic disadvantage by assuming a northern location for the hydrometallurgical plant.

- Tailings from the hydrometallurgical process will be stored in a TMF to be constructed within a historic open pit. Overflow water from the TMF will be stored in an adjacent historic open pit.

INFRASTRUCTURE – THOR LAKE

- The Thor Lake site is isolated and access will be limited to year-round aircraft, and summer barges. Winter ice roads on Great Slave Lake are also feasible, but are not included as an integral part of the PFS.

- A temporary barge dock and a materials storage area will be constructed on the shore of Great Slave Lake.

- A camp, offices, shops, yards, diesel tank farm, propane storage facility, and access roads to the TMF and the barge dock on Great Slave Lake will be developed.

- The initial site power will be provided by an 8.4 MW capacity diesel generating station. The diesel plant design is based upon having two spare units at any given time.

INFRASTRUCTURE – PINE POINT

- The Pine Point site is accessible by all-weather roads and highways.
- A temporary barge dock and yard at the shore of Great Slave Lake will be developed for the movement of concentrate and supplies.
- Offices, shops, yards, and access roads to the TMF and the temporary barge dock on Great Slave Lake will be developed.
- Power will be taken from the southern NWT power grid, with hydroelectricity taken from the Taltson Dam hydroelectric facility.
- The use of diesel generators to supplement the grid power is planned for times when hydroelectric power availability is limited at the expanded production rate.

ENVIRONMENT

- Baseline studies have been completed for the Project locations.
- Avalon has prepared and submitted a project description report, completed preliminary screening and commenced the Environmental Assessment process necessary for the permit application process in the NWT.
- Rock characterization studies indicate that the rock is not an acid producer.
- Mineralization in the Nechalacho deposit has uranium levels that are higher than average in naturally occurring granite, but below levels typically experienced in other rare earth deposits. The thorium levels in the Nechalacho deposit are anomalous, but given the lower radioactivity equivalency of thorium relative to uranium, the overall effect of typical Nechalacho mineralization as a rock mass is predicted to be very low. The rare earth concentration process planned at the Flotation Plant will concentrate the rare earths, including the low levels of thorium in the rock minerals. The overall radiation level in the concentrate is expected to be below Canadian TDGR (transportation of dangerous goods regulations), and will not require special handling as Dangerous Goods.
- In RPA's opinion, environmental considerations are typical of underground mining and processing facilities and are being addressed in a manner that is reasonable and appropriate for the stage of the Project.

ECONOMICS

- RPA notes that the rare earths prices used in the UPFS, while on average more than double those used in the PFS, have been outstripped by current price movements, which have increased by an order of magnitude. The prices are based on independent, third-party forecasts for 2015, based on supply and demand projections from 2011 to 2015. In RPA's opinion, these long-term price forecasts are a reasonable basis for estimation of Mineral Reserves, and are considerably more conservative than prices used by other rare earths companies whose projects are at an earlier stage of development.

- Given the extent of the Nechalacho deposit Mineral Resources, a significantly higher production rate would be reasonable, absent any market constraints. RPA expects that significant improvements in Project economics could be realized in a higher production rate scenario.

- Income taxes and NWT mining royalties on the Project are dependent on the selected method of depreciation of capital, and may also be reduced by application of credits accumulated by Avalon. In RPA's opinion, there is potential to improve the after-tax economic results, as the Project is advanced. RPA recommends that Avalon advance the Thor Lake Project to the Feasibility Study stage and continue the NWT permitting process. Specific recommendations by area are as follows.

RECOMMENDATIONS

GEOLOGY AND MINERAL RESOURCES

- NMR values in the block model should be updated to use UPFS price inputs. Cut-off NMR value should be updated to equal UPFS operating cost. RPA expects that the effect would be to add lower-grade mineralization to the resource total.

MINING

- Review of the stoping sequence and stoping plans to determine whether further increases in the feed grades in the early years are obtainable.

- Carry out additional paste fill design and testwork to determine the suitability of the tailings and to estimate the quantity of paste fill which can be generated from the tailings stream.

- Incorporate additional Indicated Resources into the mine plan as they become available.

- Investigate higher production rate scenarios.

PROCESSING – CONCENTRATOR

- Optimization of mass pull (affecting concentrate handling costs) vs. recovery (affecting revenue) for the concentrator should be carried out at the Feasibility stage.

- Perform a pilot plant demonstration of the flotation process.

PROCESSING – HYDROMETALLURGICAL PLANT

- Continue testwork to optimize the mineral cracking process, to fully define the process for the recovery of values from the flotation concentrate and run a pilot plant demonstration of the process.

- Conduct a trade-off study for site location of the hydrometallurgical plant.

INFRASTRUCTURE

- Review availability of grid power for both site locations as the Project is advanced.

ENVIRONMENT

- Continue the permitting process for the Project.

ECONOMICS

- Review the marketing considerations as they apply to the Project, with particular attention to the currently volatile rare earths prices

Avalon provided a budget (Table 1-1) for the completion of a Feasibility Study, environmental assessment and permitting, aboriginal engagement, metallurgical pilot tests and securing customer contracts as of July 2011. In the opinion of RPA, this budget is reasonable and appropriate for advancing the Project.

TABLE 1-1 PROJECT ADVANCEMENT BUDGET
Avalon Rare Metals Inc. – Thor Lake Project

Item	Cost (C$ millions)
Exploration/Upgrade Drilling & Geology	10.0
Metallurgical Testwork	11.2
Technical Studies & Support	4.5
Environmental Work	0.8
Sales & Marketing	1.5
Administration	5.5
Total	**33.5**

ECONOMIC ANALYSIS

A Cash Flow Projection has been generated from the LOM production schedule, capital and operating cost estimates and product price assumptions, and is summarized in Table 1-2. A summary of the key criteria is provided below.

ECONOMIC CRITERIA

PRODUCTION

- Mineral Reserves of 14.5 Mt at an average grade of 1.53% TREO, 0.38% Nb_2O_5, 2.90%$ ZrO_2 and 0.040% Ta_2O_5
- Underground mining using a combination of cut and fill, and long hole stoping
- Two years of construction followed by 20 years of production at 2,000 tpd of ore

- Production of a bulk flotation concentrate containing REO, ZrO_2, Ta_2O_5 and Nb_2O_5 at Thor Lake
- Barging 130,000 tonnes of concentrate across the Great Slave Lake to Pine Point annually in the summer
- Hydrometallurgical extraction of TREO, ZrO_2, Ta_2O_5 and Nb_2O_5 at Pine Point

REVENUE

- Concentration and Hydrometallurgical recoveries as indicated by testwork
- Metal price:
  - Independent, third-party forecasts for 2015, based on supply and demand projections from 2011 to 2015
  - No inflation after 2015 (assumed commencement of production)
  - Average price per kg of REE is US$46.31
- Revenue is 69% from TREO, 15% from Nb_2O_5, 12% from ZrO_2 and 4% from Ta_2O_5.
- An exchange rate of C$0.95/US$
- Revenue is recognized at the time of production at the hydrometallurgical plant.

COSTS

- Pre-production capital of C$840 million
- Life of mine capital of C$902 million
- Average life of mine operating cost of C$269/t (mine, mill and hydrometallurgical plant)

TAXES AND ROYALTIES

- NWT mining royalty on value of minerals extracted
- Federal tax rate of 15% and a territorial tax rate of 11.5%

TABLE 1-2 CASH FLOW SUMMARY
Avalon Rare Metals Inc. – Thor Lake Project

		Total	Year -2	Year -1	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21
MINING																									
Operating Days					365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	
Plant Throughput	tpd				1,833	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	
Ore Mined	000 tonnes	14,539			669	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	
TREO	ppm	15,337			18,949	19,209	18,318	18,540	16,211	16,332	15,217	14,031	14,314	13,570	13,290	14,608	13,555	14,683	13,877	14,392	14,714	13,665	13,905	15,667	
Nb_2O_5	ppm	3,780			4,542	4,646	4,434	4,391	3,830	3,930	3,567	3,466	3,589	3,382	3,357	3,629	3,512	3,652	3,491	3,796	3,880	3,405	3,299	3,872	
Ta_2O_5	ppm	414			536	539	519	506	412	439	382	368	387	361	340	401	383	376	356	396	414	367	375	430	
ZrO_2	ppm	28,998			35,406	36,383	33,438	34,106	28,620	29,644	26,353	25,320	26,937	24,525	22,568	28,525	26,421	28,399	24,481	30,087	32,294	27,225	27,753	32,003	
CONCENTRATION – THOR LAKE																									
Ore Milled	000 tonnes	14,539			669	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	730	
TREO	ppm	15,337			18,949	19,209	18,318	18,540	16,211	16,332	15,217	14,031	14,314	13,570	13,290	14,608	13,555	14,683	13,877	14,392	14,714	13,665	13,905	15,667	
Nb_2O_5	ppm	3,780			4,542	4,646	4,434	4,391	3,830	3,930	3,567	3,466	3,589	3,382	3,357	3,629	3,512	3,652	3,491	3,796	3,880	3,405	3,299	3,872	
Ta_2O_5	ppm	414			536	539	519	506	412	439	382	368	387	361	340	401	383	376	356	396	414	367	375	430	
ZrO_2	ppm	28,998			35,406	36,383	33,438	34,106	28,620	29,644	26,353	25,320	26,937	24,525	22,568	28,525	26,421	28,399	24,481	30,087	32,294	27,225	27,753	32,003	
Concentrator Mass Pull	%	18%			18%	18%	18%	18%	18%	18%	18%	18%	18%	18%	18%	18%	18%	18%	18%	18%	18%	18%	18%	18%	
Flotation Concentrate	000 dmt	2,617			120	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	
Moisture Content in Conc.	%	10%			10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	
Wet Weight of Flotation Conc.	000 wmt	2,879			132	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	
Flotation Recovery																									
TREO	%	79.5%			79.5%	79.5%	79.5%	79.5%	79.5%	79.5%	79.5%	79.5%	79.5%	79.5%	79.5%	79.5%	79.5%	79.5%	79.5%	79.5%	79.5%	79.5%	79.5%	79.5%	
Nb_2O_5	%	68.9%			68.9%	68.9%	68.9%	68.9%	68.9%	68.9%	68.9%	68.9%	68.9%	68.9%	68.9%	68.9%	68.9%	68.9%	68.9%	68.9%	68.9%	68.9%	68.9%	68.9%	
Ta_2O_5	%	63.0%			63.0%	63.0%	63.0%	63.0%	63.0%	63.0%	63.0%	63.0%	63.0%	63.0%	63.0%	63.0%	63.0%	63.0%	63.0%	63.0%	63.0%	63.0%	63.0%	63.0%	
ZrO_2	%	89.7%			89.7%	89.7%	89.7%	89.7%	89.7%	89.7%	89.7%	89.7%	89.7%	89.7%	89.7%	89.7%	89.7%	89.7%	89.7%	89.7%	89.7%	89.7%	89.7%	89.7%	
HYDROMETALLURGY – PINE POINT																									
Plant Feed	000 tonnes	2,617			60	126	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	66
TREO Recovery	%	93.0%			93.0%	93.0%	93.0%	93.0%	93.0%	93.0%	93.0%	93.0%	93.0%	93.0%	93.0%	93.0%	93.0%	93.0%	93.0%	93.0%	93.0%	93.0%	93.0%	93.0%	93.0%
Nb_2O_5 Recovery	%	80.0%			80.0%	80.0%	80.0%	80.0%	80.0%	80.0%	80.0%	80.0%	80.0%	80.0%	80.0%	80.0%	80.0%	80.0%	80.0%	80.0%	80.0%	80.0%	80.0%	80.0%	80.0%
Ta_2O_5 Recovery	%	50.0%			50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
ZrO_2 Recovery	%	90.0%			90.0%	90.0%	90.0%	90.0%	90.0%	90.0%	90.0%	90.0%	90.0%	90.0%	90.0%	90.0%	90.0%	90.0%	90.0%	90.0%	90.0%	90.0%	90.0%	90.0%	90.0%
Production																									
TREO	tonnes	164,869			4,687	9,871	10,127	9,947	9,378	8,782	8,514	7,893	7,649	7,525	7,249	7,529	7,600	7,620	7,707	7,629	7,855	7,658	7,440	7,980	4,228
Nb_2O_5	tonnes	30,296			838	1,772	1,827	1,775	1,654	1,561	1,508	1,415	1,420	1,403	1,356	1,405	1,437	1,441	1,437	1,466	1,544	1,466	1,349	1,443	779
Ta_2O_5	tonnes	1,895			56	118	122	118	105	98	94	86	87	86	81	85	90	87	84	86	93	90	85	93	49
ZrO_2	tonnes	340,360			9,564	20,284	20,574	19,903	18,483	17,168	16,500	15,226	15,398	15,164	13,877	15,055	16,191	16,154	15,582	16,079	18,382	17,538	16,200	17,608	9,430
Total Tonnage Sold	tonnes	537,420			15,145	32,046	32,649	31,743	29,621	27,610	26,617	24,621	24,554	24,177	22,562	24,075	25,317	25,302	24,810	25,261	27,874	26,752	25,074	27,124	14,487
REVENUE																									
Prices																									
TREO	US$/kg	46.31			47.52	47.54	46.96	47.38	47.08	45.95	45.60	45.79	46.81	46.15	45.07	45.87	45.92	45.19	45.45	45.74	45.80	46.20	46.66	46.76	46.92
Nb_2O_5	US$/kg	55.86			55.86	55.86	55.86	55.86	55.86	55.86	55.86	55.86	55.86	55.86	55.86	55.86	55.86	55.86	55.86	55.86	55.86	55.86	55.86	55.86	55.86
Ta_2O_5	US$/kg	255.63			255.63	255.63	255.63	255.63	255.63	255.63	255.63	255.63	255.63	255.63	255.63	255.63	255.63	255.63	255.63	255.63	255.63	255.63	255.63	255.63	255.63
ZrO_2	US$/kg	3.77			3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77	3.77
Revenue																									
TREO	US$ Millions	7,636			222.75	469.28	475.57	471.27	441.52	403.54	388.23	361.42	358.06	347.27	326.69	345.34	349.00	344.37	350.30	348.94	359.74	353.82	347.16	373.16	198.37
Nb_2O_5	US$ Millions	1,692			46.79	99.00	102.04	99.18	92.39	87.21	84.26	79.05	79.29	78.35	75.74	78.51	80.24	80.51	80.29	81.90	86.27	81.87	75.34	80.60	43.52
Ta_2O_5	US$ Millions	484			14.43	30.26	31.08	30.12	26.97	25.01	24.14	22.04	22.17	21.98	20.60	21.76	23.02	22.30	21.52	22.10	23.81	22.98	21.82	23.66	12.64
ZrO_2	US$ Millions	1,283			36.05	76.47	77.56	75.03	69.68	64.72	62.21	57.40	58.05	57.17	52.32	56.76	61.04	60.90	58.74	60.62	69.30	66.12	61.07	66.38	35.55
Gross revenue	US$ Millions	11,096			320.02	675.02	686.25	675.60	630.56	580.49	558.84	519.90	517.58	504.77	475.34	502.36	513.31	508.08	510.85	513.56	539.12	524.79	505.39	543.80	290.08
Exchange Rate	C$/US$	1.053			1.053	1.053	1.053	1.053	1.053	1.053	1.053	1.053	1.053	1.053	1.053	1.053	1.053	1.053	1.053	1.053	1.053	1.053	1.053	1.053	1.053
Losses in Handling	%	0.03%			0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%
Net revenue	US$ Millions	11,092			319.93	674.81	686.05	675.39	630.37	580.31	558.68	519.75	517.42	504.62	475.20	502.21	513.15	507.93	510.70	513.41	538.96	524.63	505.24	543.64	290.00
Net revenue	C$ Millions	11,676			336.77	710.33	722.15	710.94	663.55	610.85	588.08	547.10	544.65	531.18	500.21	528.64	540.16	534.66	537.57	540.43	567.32	552.24	531.83	572.25	305.26
Net Revenue Per Tonne Milled	C$/t milled	803			1,007	1,062	989	974	909	837	806	749	746	728	685,220	724,169	739,944	732,411	736,403	740,310	777,156	756,496	728,535	783,907	418,165
Net Revenue Per kg of Product Sold	US$/kg	20.64																							

TABLE 1-2 CASH FLOW SUMMARY
Avalon Rare Metals Inc. – Thor Lake Project

		Total	Year -2	Year -1	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21
OPERATING COSTS																									
Thor Lake																									
Mining	C$ Millions	560		12.98	27.37	27.37	27.37	27.37	27.37	27.37	27.37	27.37	27.37	27.37	27.37	27.37	27.37	27.37	27.37	27.37	27.37	27.37	27.37	27.37	
Processing	C$ Millions	385		9.40	18.80	18.80	18.80	18.80	18.80	18.80	18.80	18.80	18.80	18.80	18.80	18.80	18.80	18.80	18.80	18.80	18.80	18.80	18.80	18.80	
Surface Services	C$ Millions	95		2.32	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	
Administration	C$ Millions	167		4.08	8.15	8.15	8.15	8.15	8.15	8.15	8.15	8.15	8.15	8.15	8.15	8.15	8.15	8.15	8.15	8.15	8.15	8.15	8.15	8.15	
Power	C$ Millions	435		10.54	21.07	21.31	21.07	21.37	21.39	21.41	21.31	21.33	21.40	21.55	21.17	21.47	21.07	21.07	21.07	21.07	21.07	21.07	21.07	21.07	
Summer Freight	C$ Millions	156			7.43	7.43	7.43	7.43	7.43	7.43	7.43	7.43	7.43	7.43	7.43	7.43	7.43	7.43	7.43	7.43	7.43	7.43	7.43	7.43	7.43
Pine Point																									
Processing	C$ Millions	1,895			47.36	94.73	94.73	94.73	94.73	94.73	94.73	94.73	94.73	94.73	94.73	94.73	94.73	94.73	94.73	94.73	94.73	94.73	94.73	94.73	47.36
Surface Services	C$ Millions	26			0.62	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
Administration	C$ Millions	29			0.70	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.41
Sales & Marketing	C$ Millions	164			3.99	7.99	7.99	7.99	7.99	7.99	7.99	7.99	7.99	7.99	7.99	7.99	7.99	7.99	7.99	7.99	7.99	7.99	7.99	7.99	8.19
Total Operating Costs	C$ Millions	3,912		39.31	140.15	193.08	192.84	193.14	193.16	193.18	193.08	193.10	193.17	193.32	192.94	193.24	192.84	192.84	192.84	192.84	192.84	192.84	192.84	192.84	65.64
Cost Per Tonne Milled	C$/t milled	269			$ 209	$ 264	$ 264	$ 265	$ 265	$ 265	$ 264	$ 265	$ 265	$ 265	$ 264	$ 265	$ 264	$ 264	$ 264	$ 264	$ 264	$ 264	$ 264	$ 264	$ -
Cost Per kg of Final Product	US$/kg	6.92			8.79	5.72	5.61	5.78	6.20	6.65	6.89	7.45	7.47	7.60	8.12	7.63	7.24	7.24	7.38	7.25	6.57	6.85	7.31	6.75	4.30
OPERATING CASHFLOW	C$ Millions	7,764		(39.31)	196.61	517.25	529.32	517.80	470.39	417.68	395.00	354.00	351.49	337.86	307.27	335.40	347.32	341.82	344.74	347.59	374.49	359.40	338.99	379.41	239.62
NWT Royalty																									
NWT Mining Royalty	C$ Millions	783			-	-	42.98	60.92	54.74	48.10	45.11	39.74	39.37	37.55	33.54	36.04	37.47	37.76	38.09	38.42	41.88	39.88	38.51	45.43	27.30
EBITDA	C$ Millions	6,981		(39.31)	196.61	517.25	486.34	456.88	415.65	369.58	349.89	314.27	312.12	300.31	273.74	299.37	309.85	304.07	306.64	309.16	332.61	319.53	300.48	333.98	212.33
CAPITAL COSTS																									
Mine	C$ Millions	123.06	47.81	46.90	11.30	1.00	1.00	3.11	2.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00 -	6.00	-	-
Concentrator	C$ Millions	211.17	69.74	113.02	23.38	-	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	5.00	5.00	2.00	2.00	2.00	- -	16.48 -	16.48
Hydrometallurgical Facility	C$ Millions	343.63	54.49	147.11	98.38	2.66	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	6.00	6.00	2.00	2.00	2.00	1.00	-	-
Indirect Costs	C$ Millions	80.66	44.88	35.78	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sustaining Capital	C$ Millions	-																							
Reclamation	C$ Millions	-	-	1.00	3.00	4.00	1.00	2.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(11)
Royalty Buy Out	C$ Millions	1.44	-	-	1.44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Contingency	C$ Millions	141.96	42.59	99.37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Capital Costs	C$ Millions	901.91	259.49	443.17	137.51	7.66	6.00	9.11	6.94	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	13.00	13.00	5.00	5.00	5.00 -	5.00 -	16.48 -	27.48
PRE-TAX CASH FLOW																									
Net Cash Flow	C$ Millions	6,079	(259)	(482)	59	510	480	448	409	365	345	309	307	295	269	294	305	291	294	304	328	315	305	350	240
Cumulative Cash Flow	C$ Millions		(259)	(742)	(683)	(173)	307	755	1,164	1,528	1,873	2,182	2,489	2,785	3,053	3,348	3,653	3,944	4,237	4,542	4,869	5,184	5,489	5,840	6,079
Pre-Tax IRR		39%																							
Pre-Tax NPV	Discount Rate	C$ millions																							
	0.0%	6,079																							
	5.0%	3,171																							
	8.0%	2,222																							
	10.0%	1,772																							
TAXATION																									
Federal Tax	C$ (000)	$ 907	-	-	-	-	42.32	67.44	61.29	54.68	51.73	46.39	46.06	44.29	40.31	42.95	44.53	44.86	45.25	45.62	49.14	47.18	45.82	52.57	34.32
NWT Tax	C$ (000)	$ 696	-	-	-	-	32.78	51.71	46.99	41.92	39.66	35.56	35.32	33.96	30.90	32.93	34.14	34.39	34.69	34.98	37.68	36.17	35.13	40.30	26.31
Total Tax	C$ (000)	$ 1,602	-	-	-	-	75.10	119.15	108.28	96.59	91.38	81.95	81.38	78.25	71.21	75.89	78.66	79.25	79.93	80.60	86.82	83.35	80.95	92.87	60.63
AFTER-TAX CASH FLOW																									
Net Cash Flow	C$ Millions	4,477	(259)	(482)	59	510	405	329	300	268	254	227	226	217	198	218	226	212	214	224	241	231	225	258	179
Cumulative Cash Flow	C$ Millions		(259)	(742)	(683)	(173)	232	561	861	1,129	1,383	1,610	1,836	2,053	2,250	2,469	2,695	2,907	3,120	3,344	3,585	3,816	4,040	4,298	4,477
After-Tax IRR		34%																							
After-Tax NPV	Discount Rate	C$ millions																							
	0.0%	4,477																							
	5.0%	2,315																							
	8.0%	1,607																							
	10.0%	1,271																							

CASH FLOW ANALYSIS

The cash flow analysis in this report is based on the extraction of the Probable Mineral Reserves in a production plan which extends to the end of Year 20.

PRE-TAX

Considering the full Project on a stand-alone basis, the undiscounted pre-tax cash flow totals C$6,079 million over the mine life and simple payback occurs 2.4 years after the start of production. The pre-tax IRR is 39% and the pre-tax net present value (NPV) is as follows:

- C$3,171 million at a 5% discount rate
- C$2,222 million at an 8% discount rate
- C$1,772 million at a 10% discount rate

AFTER-TAX

Considering the full project on a stand-alone basis, the undiscounted after-tax cash flow totals C$4,477 million over the mine life and simple payback occurs 2.4 years after the start of production. The after tax IRR is 34% and the after tax net present value (NPV) is as follows:

- C$2,315 million at a 5% discount rate
- C$1,607 million at an 8% discount rate
- C$1,271 million at a 10% discount rate

The net revenue per kilogram of product is US$20.64, and the cost per kilogram of product (all products) is US$6.92. The average annual product production is 26,700 tonnes of products (8,200 tonnes of rare earth oxides).

SENSITIVITY ANALYSIS

Project risks can be identified in both economic and non-economic terms. Key economic risks were examined by running cash flow sensitivities:

- Product Prices
- Exchange Rate
- Operating costs
- Capital costs
- TREO price
- ZrO_2 price

The sensitivity of the base case after-tax 8% NPV has been calculated for -20% to +20% variations in the above noted parameters. The project NPV is most sensitive to metal price and recovery followed by foreign exchange rate, operating costs, capital costs and individual product constituent prices.

The sensitivities are shown in Figure 1-1 and Table 1-3. The sensitivities to metallurgical recovery and head grade are identical to that of price (for all constituents combined) and are therefore plotted on the same line.

FIGURE 1-1 SENSITIVITY ANALYSIS

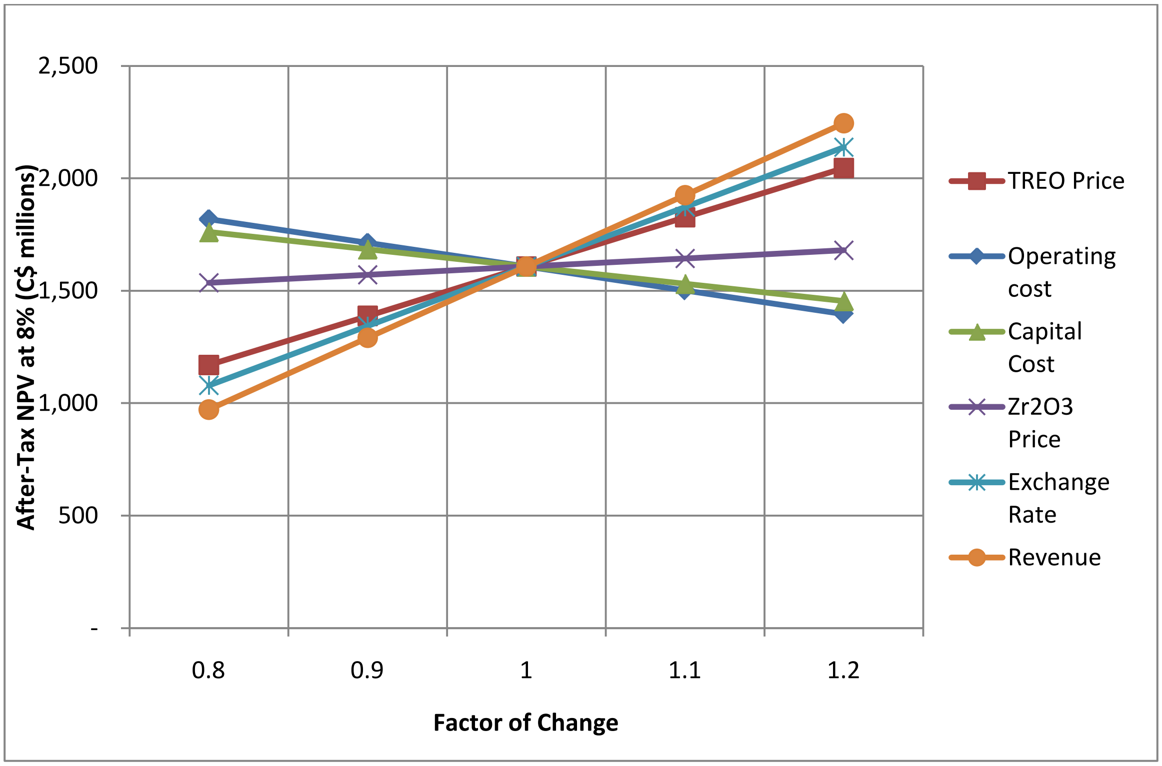

TABLE 1-3 SENSITIVITY ANALYSIS
Avalon Rare Metals Inc. – Thor Lake Project

Parameter Variables	Units	-20%	-10%	Base Case	+10%	+20%
ZrO_2 Price	US$/kg	3.02	3.39	3.77	4.15	4.52
TREO Price	US$/kg	37.05	41.68	46.31	50.95	55.58
Exchange Rate	C$/US$	0.84	0.95	1.05	1.16	1.26
Revenue	C$ billions	9.3	10.5	11.7	12.8	14.0
Operating Cost	C$/tonne	215	242	269	296	323
Capital Cost	C$ millions	722	812	902	992	1,082

NPV @ 8%	Units	-20%	-10%	Base Case	+10%	+20%
ZrO_2 Price	C$ millions	1,535	1,571	1,607	1,644	1,680
TREO Price	C$ millions	1,170	1,388	1,607	1,827	2,046
Exchange Rate	C$ millions	1,079	1,343	1,607	1,872	2,138
Revenue	C$ millions	972	1,290	1,607	1,925	2,245
Operating Cost	C$ millions	1,818	1,713	1,607	1,502	1,396
Capital Cost	C$ millions	1,761	1,684	1,607	1,531	1,454

TECHNICAL SUMMARY

PROPERTY DESCRIPTION AND LOCATION

The Thor Lake property is located in Canada's Northwest Territories, 100 km southeast of the capital city of Yellowknife and five kilometres north of the Hearne Channel on the East Arm of Great Slave Lake (GSL). The property is within the Mackenzie Mining District of the Northwest Territories and Thor Lake is shown on National Topographic System (NTS) map sheet 85I/02 at approximately 62°06'30''N and 112°35'30''W (6,886,500N, 417,000E – NAD83).

The Pine Point property is located 90 km east of Hay River in the Northwest Territories. It is located roughly 8 km south of the south shore of the Great Slave Lake and is accessible by Highway 5, which is an all season highway. It is a former Cominco mine and is the proposed location of the hydrometallurgical facilities of the Project.

LAND TENURE

The Thor Lake property consists of five contiguous mineral leases (totalling 4,249 ha, or 10,449 acres) and three claims (totalling 1,869 ha, or 4,597 acres). The claims were staked in 2009 to cover favourable geology to the west of the mining leases. Pertinent data for the mining leases are shown in Table 1-4 while the mineral claims data are shown in Table 1-5. The Thor Lake mineral leases have been legally surveyed and are recorded on a Plan of Survey.

TABLE 1-4 MINERAL LEASE SUMMARY
Avalon Rare Metals Inc. – Thor Lake Project

Lease Number	Area (ha)	Legal Description	Effective Date	Expiration Date
3178	1,053	Lot 1001, 85 I/2	05/22/1985	05/22/2027
3179	939	Lot 1000, 85 I/2	05/22/1985	05/22/2027
3265	367	Lot 1005, 85 I/2	03/02/1987	03/02/2029
3266	850	Lot 1007, 85 I/2	03/02/1987	03/02/2029
3267	1,040	Lot 1006, 85 I/2	03/02/1987	03/02/2029
Total	**4,249**			

TABLE 1-5 MINERAL CLAIMS SUMMARY
Avalon Rare Metals Inc. – Thor Lake Project

Mineral Claim Number	Mineral Claim Name	Claim Sheet Number	Mining District
K12405	Angela 1	85I2	Mackenzie
K12406	Angela 2	85I2	Mackenzie
K12407	Angela 3	85I2	Mackenzie

The mining leases have a 21-year life and each lease is renewable in 21-year increments. Annual payments of $2.47/ha ($1.00 per acre) are required to keep the leases in good standing. Avalon owns 100% of all of the leases subject to various legal agreements described below.

LEGAL AGREEMENTS, UNDERLYING ROYALTY INTERESTS

Two underlying royalty agreements exist on the Thor Lake property: the Murphy Royalty Agreement and the Calabras/Lutoda Royalty Agreement. The Murphy Royalty

Agreement is a 2.5% Net Smelter Return (NSR) royalty that applies to the entire Thor Lake property and has a provision for Avalon to buy out the royalty at the commencement for production. The Calabras/Lutoda Royalty Agreement totals 3% NSR.

ACCESSIBILITY

Depending upon the season, the Thor Lake Project is accessible either by boat, winter road and/or float, ski-equipped and wheeled aircraft (generally from Yellowknife or Hay River). During the transition periods to either winter or spring access to the area is difficult and a helicopter is the easiest way into the project site. At present, the nearest road access is the Ingraham Trail, an all season highway maintained by the government of the NWT. This trail is located approximately 50 km (direct line) from the property. Thor Lake has an existing permanent airstrip, which allows for a minimum of Twin-Otter-sized aircraft service from Yellowknife throughout the year. Plans to upgrade this airstrip to accommodate a Dash 8 or Buffalo types of aircraft, are included in this report for the proposed construction and operations activities.

HISTORY

The TLP area was first mapped by J.F. Henderson and A.W. Joliffe of the Geological Survey of Canada (GSC) in 1937 and 1938. The first staking activity at Thor Lake dates from July 1970 when claims were staked for uranium. In 1971, the GSC commissioned an airborne radiometric survey over the Yellowknife region that outlined a radioactive anomaly over the Thor Lake area (GSC Open File Report 124). Simultaneously, A. Davidson of the GSC initiated mapping of the Blatchford Lake Intrusive Complex. It has subsequently become clear that this radiometric anomaly is largely due to elevated thorium levels in the T-Zone within the TLP.

Four more claims were staked in the area in 1973. In 1976, Highwood Resources Ltd., in the course of a regional uranium exploration program, discovered niobium and tantalum on the Thor Lake property. From 1976 to 1979, exploration programs included geological mapping, sampling and trenching on the Lake (Nechalacho), Fluorite, R-, S- and T-zones. Twenty-two drill holes were also completed, seven of these on the Lake Zone. This work resulted in the discovery of significant concentrations of niobium, tantalum, yttrium and REEs. Results indicated a general paucity of uranium mineralization and that the anomalous radioactivity was due to thorium. Following this, and inconclusive lake bottom radiometric and radon gas soil surveys, Calabras, a private holding company, acquired a 30% interest in the property by financing further exploration by Highwood. This was done through Lutoda Holdings, a company incorporated in Canada and owned by Calabras.

Placer Development Ltd. (Placer) optioned the property from Highwood in March 1980 to further investigate the tantalum and related mineralization. Placer conducted magnetometer, very low frequency (VLF) electro-magnetic and scintillometer surveys on the Lake Zone. Thirteen holes were initially drilled in 1980. This was followed by five more in 1981 focused around drill hole 80-05 (43 m grading 0.52% Nb_2O_5 and 0.034% Ta_2O_5). Preliminary metallurgical scoping work was also conducted, but Placer relinquished its option in April of 1982 when the mineralization did not prove amenable to conventional metallurgical extraction.

From 1983 to 1985, the majority of the work on the property was concentrated on the T-Zone and included geochemical surveys, berylometer surveys, surface mapping, significant drilling, surface and underground bulk sampling, metallurgical testing and a detailed evaluation of the property by Unocal Canada. During this period, a gravity survey was conducted to delineate the extent of the Lake Zone.

In August of 1986, the property was joint-ventured with Hecla Mining Company of Canada Ltd. (Hecla). By completing a feasibility study and arranging financing to bring the property into production, Hecla could earn a 50% interest in the property. However, in 1990, after completing considerable work on the T-Zone, Hecla withdrew from the project. In 1990, control of Highwood passed to Conwest Exploration Company Ltd. (Conwest) and the Thor Lake project remained dormant until 1996, at which time Conwest divested itself of its mineral holdings. Mountain Minerals Company Ltd. (Mountain), a private company controlled by Royal Oak Mines Ltd., acquired the 34% controlling interest of Highwood following which Highwood and Mountain were merged under the name Highwood.

In 1997, Highwood conducted an extensive re-examination of Thor Lake that included a proposal to extract a 100,000 tonne bulk sample. Applications were submitted for permits that would allow for small-scale development of the T-Zone deposit, as well as for processing over a four to five year period. In late 1999, the application was withdrawn.

In 1999 Dynatec Corporation acquired the control block of Highwood shares. In 2000, Highwood initiated metallurgical, marketing and environmental reviews by Dynatec. In 2001, Navigator Exploration Corp. (Navigator) entered into an option agreement with Highwood. Navigator's efforts were focused on conducting additional metallurgical research at Lakefield in order to define a process for producing a marketable tantalum concentrate from the Lake Zone. These efforts produced a metallurgical grade tantalum/zirconium/niobium/yttrium/REE bulk concentrate. The option, however, was dropped in 2004 due to falling tantalum prices and low tantalum contents in the bulk concentrate.

Beta Minerals Inc. (Beta) acquired Highwood’s interest in the Thor Lake property in November 2002 under a plan of arrangement with Dynatec. In May 2005 Avalon purchased from Beta a 100% interest and full title, subject to royalties, to the Thor Lake property.

In 2005, Avalon conducted extensive re-sampling of archived Lake Zone drill core to further assess the yttrium and HREE resources on the property. In 2006, Wardrop Engineering Inc. (Wardrop) was retained to conduct a Preliminary Assessment (PA) of the Thor Lake deposits (Wardrop, 2009). In 2007 and 2008 Avalon commenced further drilling of the Lake Zone. This led to a further technical report on the property (Wardrop, 2009).

GEOLOGY

The Thor Lake rare metals deposit is hosted by the peralkaline Blachford Lake intrusion, an Aphebian-age ring complex emplaced in Archean-age supracrustal rocks of the Yellowknife Supergroup. The principal rock types in the intrusion are syenites, granites and gabbros and associated pegmatitic phases hosting rare metal mineralization. The key rock units in the vicinity of the mineralization are the Grace Lake Granite, the Thor Lake Syenite and an unnamed nepheline-sodalite syenite. The Grace Lake Granite surrounds the Thor Lake Syenite with the two separated by the enigmatic "Rim Syenite". It forms a distinct semi-circular ridge, locally termed the rim syenite that can be traced for a distance of about eight kilometers and is thought to be a ring dyke. In outcrop, Thor

Lake Syenite is seen to transition to Grace Lake granite with the appearance of quartz on the solidus in an otherwise felspathic rock. Thus the Grace Lake Granite and Thor Lake Syenite are believed to be closely related intrusives. The host of the Nechalacho mineralization, the nepheline-sodalite syenite, is within and below the Thor Lake Syenite, and exposed locally in the northwest part of the Thor Lake Syenite.

Five distinct zones or deposits of rare metal mineralization have been identified as being of potential economic interest: the Nechalacho deposit and smaller North T, South T, S and R Zones. The Nechalacho deposit is the largest, containing significant yttrium, tantalum, niobium, gallium and zirconium mineralization. Nechalacho is particularly notable for its enrichment in the more valuable HREEs such as europium, terbium and dysprosium, relative to LREEs such as lanthanum and cerium.

The nepheline-sodalite syenite that hosts the Nechalacho deposit has the following key distinctive features which contrast it to the Thor Lake Syenite and Grace Lake granite:

1. It has a distinct chemical composition showing undersaturation in quartz, with nepheline and sodalite variously as rock-forming minerals.
2. It has cumulate layering.
3. It contains agpaitic zircono-silicates including eudialyte.
4. It is the host to the Nechalacho zirconium-niobium-tantalum-rare earth mineralization.

This syenite is only exposed at surface in a window through the Thor Lake Syenite in the area encompassing Long Lake to Thor Lake. It is believed to dip underneath that Thor Lake Syenite in all directions. Also, the Nechalacho deposit mineralization, which occurs in the top, or apex, of the syenite, is also present in throughout this window through the Thor Lake Syenite. This unnamed syenite is referred to in this report as the "Ore (Nechalacho) Nepheline Sodalite Syenite".

The Nechalacho deposit is a tabular hydrothermal alteration zone extending typically from surface to depths of 200 to 250 metres, characterized by alternating sub-horizontal layers of relatively high and lower grade REE mineralization. HREE are present in the Nechalacho deposit in fergusonite ($(Y,HREE)NbO_4$) and zircon ($ZrSiO_4$), whereas the LREE are present in bastnaesite, synchysite, allanite and monazite. Niobium and tantalum are hosted in columbite as well as fergusonite.

There is a gradual increase in HREE from surface to depth with the lowermost sub-horizontal layer, which is also the most laterally continuous, being referred to as the Basal Zone. Thus typical proportions of HREO relative to TREO in Upper Zone can be 7 to 10% but in the Basal Zone averaging over 20% and reaching as high as 50% in individual samples. There is also a tendency for the Basal Zone, which undulates to some extent, to increase in HREO with depth.

The ore (Nechalacho) nepheline sodalite syenite consists of a layered series of increasingly peralkaline rocks with depth. A consistent downward progression is observed from hanging wall sodalite cumulates, through coarse grained to pegmatitic nepheline aegirine syenites which are locally enriched in zirconosilicates, to foayaitic syenite with a broad zone of altered eudialyte cumulates (referred to above as the Basal Zone). This upper sequence is strongly to intensely hydrothermally altered by various Na and Fe fluids. Pre-existing zircon-silicates are completely replaced by zircon, allanite, bastnaesite, fergusonite and other minerals. Below the Basal Zone cumulates, alteration decreases relatively quickly, with relict primary mineralogy and textures increasingly preserved. Aegirine and nepheline-bearing syenites and foyaitic syenites progress downward to sodalite foyaites and naujaite. Drilling has not extended beyond this sodalite lithology to date. Minerals related to agpaitic magmatism identified from this lower unaltered sequence include eudialyte, catapleite, analcime, and possibly mosandrite.

MINERAL RESOURCES

The Mineral Resource estimate for the Nechalacho deposit used in the PFS was updated with new drilling by Avalon, as disclosed on January 27, 2011 (Table 1-6). This updated estimate was used as the basis for the UPFS.

The technical data used for the Mineral Resource estimate was compiled, validated and evaluated by Avalon. Avalon also updated the 3D solids and interpolated grade values for oxides of the REE elements, Zr, Nb, Ga, Hf, Th and Ta into the block model.

RPA validated the data set and the wireframes, and reviewed the interpolation methodology and the block model. RPA also reclassified a small quantity of Inferred Resources to Indicated Resources.

In total, 291 drill holes (out of a database of 316 drill holes) were used for the estimate of which 45 are historic and 246 are Avalon diamond drill holes (drilled and sampled from 2007 to 2010). Complete REE analyses (plus Zr, Nb, Ga, and Ta) are available for six historic holes and all 246 Avalon holes. These holes and their related assays form the basis for the creation of two domains of REE mineralization: an upper light rare earth element-enriched domain, the Upper Zone, and a lower heavy rare earth element-enriched domain, the Basal Zone.

TABLE 1-6 MINERAL RESOURCE SUMMARY – JANUARY 27, 2011
Avalon Rare Metals Inc. – Thor Lake Project

Area	Tonnes (millions)	TREO (%)	HREO (%)	ZrO_2 (%)	Nb_2O_5 (%)	Ta_2O_5
Basal Zone Indicated						
Tardiff Lake	41.72	1.61	0.34	2.99	0.41	397
West Long Lake	16.11	1.42	0.31	2.98	0.38	392
Total Indicated	**57.82**	**1.56**	**0.33**	**2.99**	**0.40**	**396**
Basal Zone Inferred						
Tardiff Lake	19.18	1.66	0.36	3.08	0.42	423
Thor Lake	79.27	1.30	0.24	2.78	0.37	338
West Long Lake	8.82	1.16	0.21	2.71	0.33	346
Total Inferred	**107.26**	**1.35**	**0.26**	**2.83**	**0.37**	**354**
Upper Zone Indicated						
Tardiff Lake	23.63	1.50	0.15	2.09	0.32	194
West Long Lake	7.02	1.40	0.13	2.14	0.27	186
Total Indicated	**30.64**	**1.48**	**0.15**	**2.10**	**0.31**	**192**
Upper Zone Inferred						
Tardiff Lake	28.66	1.34	0.12	1.96	0.32	175
Thor Lake	81.66	1.24	0.12	2.54	0.36	206
West Long Lake	5.67	1.34	0.12	1.95	0.26	170
Total Inferred	**115.98**	**1.27**	**0.12**	**2.37**	**0.34**	**196**

Area	Tonnes (millions)	TREO (%)	HREO (%)	ZrO_2 (%)	Nb_2O_5 (%)	Ta_2O_5
Total Indicated						
Upper & Basal	**88.46**	**1.53**	**0.27**	**2.68**	**0.37**	**325**
Total Inferred						
Upper & Basal	**223.24**	**1.31**	**0.19**	**2.59**	**0.36**	**272**

Notes:
1) CIM definitions were followed for Mineral Resources.
2) HREO (Heavy Rare Earth Oxides) is the total concentration of: Y_20_3, Eu_20_3, Gd_20_3, Tb_20_3, Dy_20_3, Ho_2O_3, Er_20_3, Tm_20_3, Yb_20_3 and Lu_20_3.
3) TREO (Total Rare Earth Oxides) is HREO plus: La_20_3, Ce_20_3, Pr_20_3, $Nd_20_3$and Sm_20_3.
4) Mineral Resources are estimated using price forecasts for 2014 for rare metals prepared early in 2010 for the PFS. Rare earths were valued at an average net price of US$21.94/kg, ZrO_2 at US$3.77/kg, Nb_2O_5 at US$45/kg, and Ta_2O_5 at US$130/kg.
5) A cut-off NMR value of C$260 per tonne, equal to the PFS average operating cost, was used. NMR is defined as "Net Metal Return" or the in situ value of all the payable rare metals in the ore, net of estimated metallurgical recoveries and off-site processing costs.
6) An exchange rate of 1.11 was used.
7) ZrO_2 refers to Zirconium Oxide, Nb_2O_5 refers to Niobium Oxide, Ta_2O_5 refers to Tantalum Oxide, Ga_2O_3 refers to Gallium Oxide.
8) Mineral Resources are inclusive of Mineral Reserves.

RPA recognizes that both rare metals and rare earths contribute to the total revenue of the Nechalacho deposit.

An economic model was created, using metal prices, flotation and hydrometallurgical recoveries, the effects of payable percentages, and any payable NSR Royalties. The net revenue generated by this model is termed the Net Metal Return (NMR). This resource estimate is based on the minimum NMR value being equal to an operating cost of C$260 per tonne, a break-even cut-off value.

MINERAL RESERVES

A Mineral Reserve estimate for the Basal Zone of the Thor Lake Project has been reviewed by RPA as outlined in Table 1-7. The Mineral Reserve is based upon underground mining of the Basal Zone, concentration of the REOs and other products in a flotation concentrate and hydrometallurgical processing of the concentrates. The Mineral Reserves consist of a portion of the Indicated Resources within a mine design by Avalon, with dilution and recovery factors applied. Minor amounts of Mineral Resources from the Upper Zone beyond the Basal Zone were included in the estimation of the Mineral Reserves; these are generally in areas where the tops of the stope extend past the soft boundary between the Upper Zone and the Basal Zone.

TABLE 1-7 MINERAL RESERVE SUMMARY – JULY 7, 2011
Avalon Rare Metals Inc. – Thor Lake Project

	Tonnes (millions)	% TREO	% HREO	% ZrO_2	% Nb_2O_5	% Ta_2O_5
Probable Reserves	14.54	1.53	0.40	2.90	0.38	0.040

Notes:
1. CIM definitions were followed for Mineral Reserves.
2. Mineral Reserves are estimated using price forecasts for 2015 for rare earth oxides (US$46.31/kg average), zirconium oxide (US$3.77/kg), tantalum oxide (US$255.63/kg) and niobium oxide (US$55.86/kg).
3. HREO grade is the total of Y_2O_3, Eu_2O_3, Gd_2O_3, Tb_2O_3, Dy_2O_3, Ho_2O_3, Er_2O_3, Tm_2O_3, Yb_2O_3 and Lu_2O_3 grades. TREO grade comprises HREO plus La_2O_3, Ce_2O_3, Nd_2O_3, Pr_2O_3, and Sm_2O_3 grades.
4. An exchange rate of C$0.95/US$1.00 was used.
5. Mineral Reserves are estimated using a Net Metal Return (NMR) cut-off value of C$300/t.
6. A minimum mining width of five metres was used.
7. Totals may differ from sum or weighted sum of numbers due to rounding.

CUT-OFF GRADE

NMR values for Mineral Reserves were determined using UPFS pricing (US$46.31 per kg rare earths, vs. US$21.94 per kg in the PFS). Stopes in the mine design carry NMR values greater than US$300 per tonne.

MINING

Underground mining has been chosen for the development of the Basal Zone. The mining plan and the layout of some of the mine infrastructure has been modified from the PFS design, however, the planned operation is fundamentally the same. The operation is designed on the basis of a 2,000 tpd operation with a 20 year mine life. The production plan for the Nechalacho Deposit assumes that the ore will be concentrated at Thor Lake and barged across the Great Slave Lake (GSL) to Pine Point for hydrometallurgical processing.

Access to the deposit will be through a ramp collared to the west of Long Lake. The Nechalacho deposit is planned to be mined by underground methods to access the higher grade resources at the base of the deposit and to minimize the surface disturbance. Ground conditions are expected to be good and primary stopes are expected to be stable at widths of 15 m. In light of the high value of the resources in the Basal Zone, the use of paste backfill is proposed and mining will be done with a first pass of primary stopes followed by pillar extraction after the primary stopes have been filled.

Mining will be done with rubber tired mechanized equipment to provide the maximum flexibility. Broken ore will be hauled and deposited in an ore pass leading to the underground crushing chamber. The underground crushing circuit will include primary, secondary and tertiary crushing and screening. The -15 mm fine ore will be stored in a 1,000 t fine ore bin (FOB). From the FOB the ore will be transported to the mill on surface by a conveyor system. The conveyor will be hung from the back of the main access decline.

The key design criteria set for the Thor Lake mine were:

- Mine and process plant capacity of 2,000 tpd (730,000 tpa)
- 669,000 tonnes in year one, 730,000 tpa thereafter
- 20 year mine life
- Production from Basal Zone
- Mechanized mining
- Underground crushing
- Conveyor haulage of ore to mill
- Paste backfill for maximum extraction

The mine plan was developed by Avalon and reviewed by RPA. Whereas the PFS included material from a single area of the Basal Zone and overlying upper zone, the current plan is to mine in three areas of the Basal Zone with the stoping sequence targeting the higher grade areas first.

The mining approach will be to mine a sequence of 15 m wide primary stopes followed by extraction of the intervening 16 m wide secondary stopes after the primary stopes are backfilled with a paste backfill.

Stopes have been designed with flat footwalls and oriented in each of the three areas to maximize the ore extraction and minimize dilution due to the variations in the footwall of the Basal Zone. Access to the stopes will be through a system of access ramps located outside the Indicated Resource in the Basal Zone. The access ramps would connect to a centrally located ore pass and ventilation raises to surface.

Mine ventilation will be achieved with surface fans forcing air into the mine at a central intake ventilation raise and with the airflow being regulated to ventilate the east and west areas of the mine with exhaust air up the main ramp and up a ventilation raise at the eastern edge of the planned mining area.

Recovery of the secondary stopes is planned by long hole mining with a top and bottom access. To reduce dilution, the primary stopes will be filled with paste fill and a one metre thick skin will be left on each stope wall. It is expected that half of the skin will break due to blasting, but this loss of ore is offset by the reduction in dilution due to backfill.

GEOTECHNICAL ANALYSIS

The available geotechnical information from the TLP was reviewed to provide preliminary stope sizing recommendations. Geotechnical information for the PFS design recommendations is based on geotechnical logging completed in conjunction with the Avalon 2009 exploration drill program.

The results suggest that the rock masses encountered at the TLP are generally good quality and that there is little variation with depth. General observations include the following:

- Drill core recovery was consistently close to 100% suggesting that few zones of reduced rock mass quality were encountered.
- Rock Quality Designation (RQD) values were generally in the 90% to 100% range.
- Rock Mass Rating (RMR) values were generally ranged between 60 and 80 and would be typical of a good quality rock mass.

MAIN DECLINE

The main access ramp will be driven from a location near the mill at a grade of -15%. From surface to a location below the fine ore bin the main access will be approximately 1,600 m in length. The decline design includes one transfer point for the conveyor. The decline will be driven as a 6.5 m high by 5.0 m wide to accommodate the overhead conveyor system and access for men and equipment. The conveyor is planned to be a 76.2 cm wide conveyor belt to handle 100 tph of -15 mm crushed rock.

UNDERGROUND LAYOUT

Stope access headings will be driven off three access ramps. The ramps are required to access the three different stoping areas. In addition there will be development required to access the individual stopes. To cover a 15 m vertical cut in three lifts with a maximum 20% grade (for the stope access) these access drifts will be 75 m long for each stope. The stopes will be accessed with a ramp to the upper cut elevation and then the floor will be slashed for each lift to terminate with a 20% decline to the lowest lift.

Raise development will include the main intake ventilation raise, the exhaust raise and ore pass. Bulk development will include the crusher excavation and fine ore bin.

STOPING

Stopes will be mined in a primary and secondary sequence. Primary stopes will be 15 m wide, while the secondary stopes will be 16 m wide to leave extra space and ensure the maintenance of good ground conditions in the secondary extraction sequence. There will be a one metre skin between primary and secondary stopes to minimize backfill dilution. For mineralized up to 18 m high the stopes will be excavated in an overhand cut and fill sequence in one lift. Each cut will be developed using a 5 m x 5 m heading followed by the slashing of walls resulting in a 15 m x 5 m cut. Adjacent primary stopes will be developed simultaneously.

Development of secondary stopes will begin once the adjacent primary stopes have been filled. The secondary stopes will be developed with a five metre to six metre wide drift down the centre of the stope and the remaining width will be slashed and remote mucked. In the secondary stopes, a one metre thick skin will be left on each side to reduce the amount of dilution from backfill. In the course of blasting, it is assumed that a portion of the skin will fail and report to the muck pile.

Ore will be hauled from the stope by LHD or by truck to the ore pass feeding the run-of-mine (ROM) bin located ahead of the crusher.

UNDERGROUND EQUIPMENT

The underground mining fleet will consist of 6 m^3 load-haul-dump trucks (LHDs), two boom jumbos, 30-tonne to 40-tonne haul trucks, and other ancillary equipment. A long hole drill rig will be required for the mining of secondary stopes.

UNDERGROUND INFRASTRUCTURE

The mine crushing and screening will take place underground in a set of chambers. The crushing plant will consist of a coarse ore bin, primary crusher, gyratory crusher, screen, secondary crusher, and a fine ore bin. Discharge conveyors from the fine ore bin will feed the main conveyor, which would feed the rod mill on surface.

VENTILATION

The ventilation plan is to isolate the eastern mining fronts from the west. Air flow into the east mining fronts will exhaust through the east exhaust raise and air flow through the west will exhaust up the ramp in addition to the regulated airflow through the crusher station. A series of regulators at the base of the intake raise on the west and the exhaust raise in the east will regulate flow with a planned 150,000 cfm air flow on the west end and 200,000 cfm air flow on the east.

In light of the sub-zero temperatures and the need to maintain the mine in an unfrozen state to prevent freezing of water lines and/or groundwater, the mine air will be heated using direct fired mine air heaters located at the mine air intake. The estimated propane consumption from late October to late April each year is approximately two million litres.

The mine is not expected to be a "wet" mine and groundwater inflows are expected to be low, with a maximum estimated 50 gpm of groundwater inflow into the mine. The estimate of groundwater inflow has been based upon the observations of the numerous core drill programs and observations from the test mine previously developed at the Thor Lake site.

The planned production rates yield a mine life of 18 years for the Basal Zone Probable Mineral Reserves. The production schedule is shown in Table 1-7.

RECOVERY METHODS

The flotation and hydrometallurgical plant process is based on metallurgical design data provided by J. R. Goode and Associates (Goode), consultant to Avalon Rare Metals Inc., which in turn were collated from testwork completed by SBM Mineral Processing and Engineering Services LTD at SGS Lakefield Research Limited in 2009. The grinding circuit design is based on test data provided by Starkey & Associates Inc. in 2009. The process design criteria developed from these data are summarized below.

PROPOSED PROCESS FACILITIES

The proposed process comprises crushing, grinding, flotation plants located at Thor Lake and a Hydrometallurgical facility near Pine Point on the south shore of Great Slave Lake. The facility will initially process mineralized material mined at a rate of approximately 1,800 tpd in the first year and will ramp up to process 2,000 tpd from the second year onwards.

The proposed process facilities at Thor Lake comprise a crushing plant, sized for the ultimate tonnage, located in the mine and designed to reduce rock from run-of-mine size to -15 mm. Crushed material is stored in a fine ore bin excavated in the rock, and conveyed up the mine access incline to a rod mill – ball mill grinding circuit. Ground ore is conditioned then de-slimed in a series of three hydrocyclones, and pumped to magnetic separation circuit. This circuit comprises a first magnetic separator, a regrind mill to process the concentrate and a cleaner magnetic separator. Non-magnetic product is pumped to a thickener.

Thickener underflow is diluted and conditioned ahead of rougher-scavenger flotation. Scavenger tails are initially sent to a tailings storage facility but will be processed for paste backfill production for the mine after the initial couple of years operation. Flotation concentrates are cleaned in four counter-current stages to produce a cleaner concentrate which is subjected to gravity separation then thickened and dewatered in a filter press. The gravity tailings are reground and returned to rougher flotation.

Dewatered concentrate is conveyed to special containers able to hold 40 t of concentrate. Filled containers are stored until concentrate transportation is scheduled at which time they are taken across Great Slave Lake to the dock at Pine Point and transported to the hydrometallurgical facility.

In the proposed operation, full concentrate containers are stored at the hydrometallurgical facility and retrieved and placed in a thaw shed as required. The concentrate is thawed and then dumped into reclaim system that conveys the material into the hydrometallurgical plant. Concentrate is “cracked” using a combination of acid baking, caustic cracking, and leaching using sulphuric acid and sodium hydroxide as the primary reagents.

The solid residue from the cracking system is combined with other waste streams and sent to the hydrometallurgical tailings storage facility. The solution arising from the cracking process is subjected to double salt precipitation, solution pre-treatment and solvent extraction processes to isolate the values. Products are precipitated as basic salts, processed and dried to yield hydrated oxides which are packaged for shipment to markets. Products are be trucked to Hay River for on-shipment by rail.

The principal design criteria selected for the PFS are tabulated below in Table 1-8.

TABLE 1-8 PRINCIPAL PROCESS DESIGN CRITERIA
Avalon Rare Metals Inc. – Thor Lake Project

General		
Processing rate	tpa	730,000
	tpd	2,000
Feed grade	% ZrO2	2.84
	% TREO	1.50
	% HREO	0.39
	% Nb2O5	0.37
	% Ta2O5	0.040
Flotation Plant		
Operating time	hr/a	8,000
Processing rate	tph	91.2
(Ball mill, flotation cells, gravity units, and filters added)		
Underground crusher product	100% passing mm	15
Grinding circuit		Rod and ball mill
Final grind	80% passing micrometres	38
Slimes-free non-magnetics	% feed	18
Final concentrate mass	% feed	18
Recovery to final concentrate	% ZrO2 in feed	89.7
	% TREO in feed	79.5
	% HREO in feed	79.5
	% Nb2O5 in feed	68.9
	% Ta2O5 in feed	63
Hydrometallurgical Plant		
Operating time	hr/a	7,582
Processing rate	tph	17.4
Acid bake temperature	°C	250
Acid addition	kg/t concentrate	700
Caustic crack temperature	°C	600
Net caustic addition	kg/t concentrate	140
Post double salt precipitation SX feed rate	m^3/h - expansion throughput	83
(All SX units sized for expansion, some driers added for expansion)		
Recovery to final products	% ZrO_2 in concentrate	90
	% TREO in concentrate	93
	% HREO in concentrate	93
	% Nb_2O_5 in concentrate	80
	% Ta_2O_5 in concentrate	50
Sulphuric Acid Plant		
Annual average capacity	tpd 100% acid	700

PROJECT INFRASTRUCTURE

The Thor Lake site is an undeveloped site with no road access and the only site facilities are those that have been established for exploration over a number of years. The proposed Pine Point site is a brownfields site with good road access to the property boundary but few remaining local services.

The surface facilities will be organized into a compact unit to reduce the need for buses and employee transportation within the site. All facilities will be connected by corridors to provide pedestrian access in all weather conditions between the mill/power house/shops/offices and accommodation units.

THOR LAKE TAILINGS MANAGEMENT FACILITY

The tailings management facility design was prepared by Knight Piésold for the PFS. The design basis and criteria for the Tailings Management Facility (TMF) are based on Canadian standards for the design of dams. In particular, all aspects of the design of the TMF have been completed in compliance with the following documents:

- Canadian Dam Association (CDA) Dam Safety Guidelines (CDA 2007)
- The Mining Association of Canada (MAC) Guide to the Management of Tailings Facilities (MAC 1998)

The principal objective of the TMF design is to ensure protection of the environment during operations and in the long-term (after closure) and achieve effective reclamation at mine closure. The pre-feasibility design of the TMF has taken into account the following requirements:

- Permanent, secure and total confinement of all tailings solids within an engineered facility
- Control, collection and removal of free draining liquids from the tailings during operations, for recycling as process water to the maximum practical extent
- The inclusion of monitoring features for all aspects of the facility to ensure performance goals are achieved and design criteria and assumptions are met

TAILINGS AND WATER MANAGEMENT

The tailings and water management strategy for the Thor Lake pre-feasibility design consists of a closed loop system to minimize impact to the natural hydrologic flows within the Thor Lake watershed area. All tailings solids and fluids as well as impacted water from the Process Plant will report to the Tailings Basin. The TMF design currently proposed includes a Polishing Pond. Excess water from the Tailings Basin will be treated (if necessary) and discharged from the Polishing Pond to Drizzle Lake. Ultimately, all water from the TMF will return to Thor Lake via Drizzle and Murky Lakes. Fresh water for operations will be drawn from Thor Lake and reclaim water will be drawn from the Tailings Basin. The pre-feasibility water balance has assumed that the process water feed to the Process Plant will consist of 50% fresh water and 50% recycled water from the Tailings Basin.

PROCESS FACILITY SITE

In addition to the process facility there will be a requirement for:

- Administration Offices
- Dry and lunch room
- Warehouse
- Shops
- Assay/Metallurgical Lab
- Reagent storage, mixing tanks
- Container storage area

The hydrometallurgical plant is to be located in an old borrow pit located on the east side of the tailings facility. There is a network of roads that connect the plant site to the main access roads but it will be necessary to upgrade short sections of the road for plant access.

A temporary dock will be installed annually at the Pine Point landing site. Two barges tied end to end will serve as the dock. These barges would then be the dock for access to the barges to be loaded and unloaded.

PINE POINT TAILINGS MANAGEMENT FACILITY

For the UPFS, the tailings disposal option at Pine Point has been changed to use one of the existing open pits. The change was made based upon the cost of the lined facility atop the existing tailings and concerns related to potential impacts upon the existing tailings.

Tailings produced in the plant will be pumped to the L-37 historic pit, which will act as the Hydrometallurgical Tailings Facility (HTF) for contained disposal. Excess water from the supernatant pond will be pumped to the nearby N-42 historic pit for infiltration into the Presqu'ile aquifer.

MARKET STUDIES AND CONTRACTS

Avalon collected historical price information, supply/demand analysis, and forecasts for the future. The sources of price information include the websites of Metal-Pages™ and Asian Metal, reports by BCC Research (BCC) and Roskill, a Canadian Imperial Bank of Commerce (CIBC) March 2011 forecast, analysis by TD Newcrest, verbal communication with Kaz Machida, a metal trader in the Japanese market, and private reports to Avalon by Industrial Minerals Company of Australia Pty Ltd (IMCOA), authored by Dudley Kingsnorth.

RARE EARTH ELEMENT PRICING

The market for rare earths products is small, and public pricing information, forecasts, and refining terms are difficult to obtain. The pricing methodology used for the PFS was updated, and compared to independent third-party forecasts.

RPA believes that CIBC's forecast dated March 6, 2011 (see Table 1-9) is reasonable, or even conservative, as it pre-dates significant price movements in Q2 2011. In RPA's opinion, the CIBC prices are suitable for use in estimation of Mineral Reserves.

While the prices used in the PFS were higher than current prices at the time, RPA notes that UPFS prices for all products are lower than current. The prices are based on independent, third-party forecasts for 2014, price performance since 2009, as well as supply and demand projections and world inflation rates from 2009 to 2015. Since the Project schedules production commencing in 2015, RPA is of the opinion that these long-term price forecasts are a reasonable basis for estimation of Mineral Reserves.

TABLE 1-9 CURRENT VERSUS FORECAST PRICES FOR REO
Avalon Rare Metals Inc. – Thor Lake Project

Rare Earth Oxide	Avalon July 29, 2010 2014 Forecast FOB China (US$/kg)	Actual June 13, 2011 Inside China MP (US$/kg)	Actual June 13, 2011 FOB China MP (US$/kg)	CIBC March 6, 2011 2015 Forecast FOB China (US$/kg)
La_2O_3	4.06	23.00	148.00	17.49
Ce_2O_3	2.08	29.00	149.00	12.45
Pr_2O_3	43.87	147.00	239.00	75.20
Nd_2O_3	46.06	208.00	318.00	76.78
Sm_20_3	5.58	11.00	129.00	13.50
Eu_2O_3	1,086.10	3,332.00	2,990.00	1,392.57
Gd_2O_3	13.70	112.00	203.00	54.99
Tb_4O_7	1,166.09	2,623.00	2,910.00	1,055.70
Dy_2O_3	254.59	1,257.00	1,485.00	688.08
Ho_2O_3	66.35	485.00	-	66.35
Er_2O_3	48.92	-	295.00	48.92
Lu_2O_3	522.93	910.00	-	522.83
Y_2O_3	23.22	55.00	163.00	67.25

Sources:
1. Avalon's July 29, 2010 price forecast for 2014 is from Avalon's 43-101 Technical Report issued July 29, 2010
2. The Actual prices from June 13, 2011 Inside China are from Metal Pages with an exchange rate of 6.482RMB =1US$
3. The Actual prices from June 13, 2011 FOB China are from Metal Pages.
4. Avalon's 2015 forecast is drawn from CIBC's March 6, 2011 rare earth industry overview except for the elements Ho, Er and Lu which have been maintained from Avalon's July 29, 2010 forecast.

CONTRACTS

At this time Avalon has not entered into any long term agreements for the provision of materials, supplies or labour for the Project. Avalon has entered into a negotiation agreement with the Deninu Kue First Nation (DKFN), Yellowknives Dene First Nation (YKDFN) and subsequently signed a similar agreement with the Lutsel K'e Dene First Nation (LKDFN). This type of initial agreement (often referred to as a memorandum of understanding (MOU), is done in order to frame the negotiations toward an impacts and benefits-type agreement. Avalon has commenced negotiations on Accommodation Agreements, with LKDFN, YKDFN and DKFN, with the objective of concluding these agreements in 2011.

The construction and operations will require negotiation and execution of a number of contracts for the supply of materials, services and supplies.

ENVIRONMENTAL STUDIES, PERMITTING AND COMMUNITY IMPACT

Environmental baseline studies were completed for the Thor Lake site by Stantec Inc. in January 2010. Based on the baseline studies and the PFS project plan, EBA Engineering Consultants Ltd. provided a list of potential effects and mitigation measures. Using EBA's list, Avalon has since submitted Developers Assessment Report to the Mackenzie Valley Environmental Impact Review Board and is awaiting final conformity checks.

The construction and operation of the TLP (all components) will require a Type A Water License for all water uses, and a Type A Land Use Permit. The Mackenzie Valley Land and Water Board (MVLWB) is the regulatory body responsible for permit issuances under the authority of the Mackenzie Valley Resource Management Act, the Mackenzie Valley Land Use Regulations, and the Northwest Water Regulations.

Other environmental permits/approvals anticipated to be required for the TLP include:

- A Navigable Waters Protection Act (NWPA) approval for the seasonal docking facilities; and
- A Section 35.(2) Fisheries Authorization or Letters of Advice from the Department of Fisheries and Oceans (DFO) under the federal Fisheries Act.

Reclamation and closure of all the Nechalacho Mine and Flotation Plant facilities will be conducted in accordance with the terms and conditions of the future MVLWB Land Use Permit and Water Licence, the "Mine Site Reclamation Policy for the Northwest Territories" and the "Mine Site Reclamation Guidelines for the Northwest Territories and Nunavut" (INAC, 2007).

The initial reclamation and closure plan prepared for the Nechalacho Mine and Flotation Plant site will be a living document that will be updated throughout the Project's life to reflect changing conditions and the input of the applicable federal and territorial regulatory agencies.

The Pine Point site has been previously reclaimed by industry and government since closure of the mine in 1987. As a result, it is anticipated that closure and reclamation activities associated with the main facilities to be located at the former Pine Point Mine site (Hydrometallurgical Processing Plant and tailings containment area), will be limited to those associated with returning these areas to the previously existing brownfields condition.

CAPITAL COST ESTIMATE

The capital cost estimate relies heavily on the PFS work, with minor adjustments, described below. PFS costs were compiled from work by Melis (mill costs and hydrometallurgical plant costs) and RPA. The UPFS capital estimate summarized in Table 1-10 covers the life of the project and includes: initial capital costs, expansion capital costs, and end-of-mine-life recovery of capital invested in initial fills for reagents, fuel and cement and in spare parts.

TABLE 1-10 CAPITAL COST ESTIMATE
Avalon Rare Metals Inc. – Thor Lake Project

Area	Units	Yrs 1-3	Yrs 4-23	LOM Total
Mine & Surface	C$ Millions	96.91	17.05	113.97
Concentrator & tailing	C$ Millions	215.22	5.03	220.26
Hydrometallurgical Facility	C$ Millions	299.97	43.66	343.63
Other Costs	C$ Millions	86.10	(4.00)	82.10
Contingency	C$ Millions	141.96		141.96
Total Capital Costs	C$ Millions	840.17	61.74	901.91

Working capital costs related to the time between the shipment from the site and the receipt of payment for the products is not included in the capital estimate in Table 1-10, but is included in the Project cash flow.

CAPITAL COST EXCLUSIONS

The capital costs do not include:

- Costs to obtain permits
- Costs for feasibility study
- Project financing and interest charges
- Escalation during construction
- GST/HST
- Any additional civil, concrete work due to the adverse soil condition and location
- Import duties and custom fees
- Costs of fluctuations in currency exchanges
- Sunk costs

- Pilot Plant and other testwork
- Corporate administration costs in Delta and Toronto
- Exploration activities
- Salvage value of assets
- Severance cost for employees at the cessation of operations

OPERATING COST ESTIMATE

The operating cost estimate from the PFS was reviewed and modified for increases in labour, fuel and supplies. The PFS estimate was compiled from work by Melis (flotation plant costs), Goode (hydrometallurgical plant costs) and RPA (mining and other costs). The average LOM operating costs and the annual estimated operating costs are shown in Table 1-11. The LOM average operating cost includes mining, processing at site and at the hydrometallurgical plant, and freight of the product to a point of sale.

TABLE 1-11 OPERATING COST ESTIMATE
Avalon Rare Metals Inc. – Thor Lake Project

	Annual Operating Cost (C$ millions)	Life of Mine Average (C$/t milled)
Thor Lake		
Mining	27.4	38.54
Processing (Power Removed)	18.8	26.51
Surface Services	4.6	6.54
Administration	8.2	11.49
Power	21.3	29.91
Summer Freight	7.4	10.73
Pine Point		
Processing	94.7	130.31
Surface Services	1.3	1.99
Administration	1.4	1.76
Sales & Marketing	8.0	11.28
Total Operating Costs	**193.1**	**269.07**

Operating costs is this section, including the costs at Pine Point, when shown on a per tonne basis are per tonne of ore milled at Thor Lake.

OPERATING COST EXCLUSIONS

The operating costs do not include:

- Any provision for inflation
- Any provision for changes in exchange rates
- GST/HST

- Preproduction period expenditures
- Corporate administration and head office costs in Delta and Toronto
- Site exploration costs or infill drilling or development for conversion of additional resources to Mineral Reserves.