

APPENDIX 1

Estimate of Capital cost include both Direct and Indirect costs

2Mtpa plant capacity capital cost estimate

Area	A\$ Million
Direct cost	
Crushing	13.8
Beneficiation	2.3
Leaching and CCD	32.5
Metal extraction and purification	24.1
Vanadium precipitation, drying and packing	12.3
Acid regeneration and precipitation of iron oxide	131.2
Reagent and utilities	26.9
Direct cost sub-total	243.0
Indirect cost	
Field indirects	29.2
EPCM	36.4
Vendor reps	1.8
Capital spares	6.0
Commissioning spares	1.8
Insurance	3.7
Indirect cost sub-total	79.0
Total cost	
Contingency	48.3
Grand total	370.3

5Mtpa plant capacity capital cost estimate (includes existing 2Mt, ie upgrade is \$307.5M)

Area	A\$ Million
Direct cost	
Crushing	25.2
Beneficiation	4.2
Leaching and CCD	59.4
Metal extraction and purification	44.2
Vanadium precipitation, drying and packing	22.5
Acid regeneration and precipitation of iron oxide	240.1
Reagent and utilities	49.2
Direct cost sub-total	444.8
Indirect cost	
Field indirects	53.4
EPCM	66.7
Vendor reps	3.3
Capital spares	11.2
Commissioning spares	3.3
Insurance	6.7
Indirect cost sub-total	144.6
Total cost	
Contingency	88.4
Grand total	677.8