

# Appendix A-2

Capex Estimate for 1.5 mbpd



PAGE	REF	DESCRIPTION	QTY	UNIT	TOTAL (\$000,000)
		<b>TRACK</b>			
	A1	Mainline Track			
	A1a	Ballast 12" (300mm) deep below sleepers; 2.5" minus aggregate	3,135,080	m3	\$ 245
	A1b	Derails	52	nr	\$ 10
	A1c	Destressing	5,161,600	m	\$ 25
	A1d	Flash Butt Welding	5,161,600	m	\$ 100
	A1e	Grinding	5,161,600	m	\$ 50
	A1f	Sleepers (concrete) including clips and plates (material supply only)	4,987,317	nr	\$ 555
	A1g	Level Crossings and Hi-Rail Take-Offs	52	nr	\$ 7
	A1h	Rail - Flatbottomed rail, welded joints (Rail material supply only)	5,161,600	m	\$ 375
	A1i	Signs	1,000	nr	\$ 5
	A1j	Tracklaying excluding materials (including laying, ballasting, regulation, tamping)	2,580,800	m	\$ 385
	A1k	Turnouts - Tangential 1:10	126	nr	\$ 20
	A1l	Turnouts - Tangential 1:12	9	nr	\$ 2
	A1m	Turnouts - Tangential 1:20	45	nr	\$ 10
	A1n	Turnouts - Tangential 1:8	-	nr	
	A1o	Installation of plastic pipe through tunnel for drainage	-	m	
	A1p	Wheel stops - Buffer stops to arrest wagons	10	nr	
	A2	Siding Track & Backtrack			
	A2a	Ballast 228mm deep 40mm aggregate;	314,869	m3	
	A2b	Derails	-	nr	
	A2c	Destressing	518,400	m	\$ 2
	A2d	Flash Butt Welding	518,400	nr	\$ 10
	A2e	Grinding	518,400	m	\$ 5
	A2f	Sleepers including clips and plates (material supply only)	500,896	nr	\$ 55
	A2g	Level Crossings and Hi-Rail Take-Offs	-	nr	
	A2h	Rail - Flatbottomed rail, welded joints (Rail material supply only)	518,400	m	\$ 40
	A2i	Signs	158	nr	\$ 1
	A2j	Tracklaying excluding materials	259,200	m	\$ 40
	A2k	Turnouts - Tangential 1:10	-	nr	
	A2l	Turnouts - Tangential 1:12	108	nr	\$ 20
	A2m	Turnouts - Tangential 1:20	108	nr	\$ 20
	A2n	Turnouts - Tangential 1:8	-	nr	
	A2o	Installation of plastic pipe through tunnel for drainage	-	m	
	A2p	Wheel stops - Buffer stops to arrest wagons	10	nr	
		<b>TOTAL TO SUMMARY \$</b>			<b>\$ 1,982</b>



PAGE	REF	DESCRIPTION	QTY	UNIT	TOTAL (\$000,000)
		<b>EARTHWORKS</b>			
	B1	Clearing and grubbing			
	B1a	General clearance; light vegetation	1,627	ha	\$ 5
	B1b	General clearance; medium vegetation	1,627	ha	\$ 10
	B1c	General clearance; dense vegetation	1,627	ha	\$ 20
	B1d	Site clearance; fell trees; light density	542	ha	\$ 5
	B1e	Site clearance; fell trees; medium density	542	ha	\$ 10
	B1f	Site clearance; fell trees; heavy density	542	ha	\$ 15
	B1g	Site clearance; remove trees; light density	263,643	m3	\$ 5
	B1h	Site clearance; remove trees; medium density	657,777	m3	\$ 5
	B1i	Site clearance; remove trees; heavy density	926,746	m3	\$ 5
	B1j	Stockpile existing track	-	m	
	B2	Earthworks - Cut (earth)			
	B2a	Excavation of common material from cuttings and other areas of cut	244,140,000	m3	\$ 1,600
	B2b	Excavation of common material from borrow pits	10,000,000	m3	\$ 100
	B2c	Excavation of wet common material	-	m3	
	B2d	Excavation of common material in 'completion' areas	-	m3	
	B2e	Excavation of common material in 'rehab' areas	-	m3	
	B2f	Excavation of unacceptable material in ditch clearance	40,683	m	\$ 4
	B2g	Rehabilitate areas of existing formation; acceptable material	-	m3	
	B3	Earthworks - Cut (rock)			
	B3a	Excavation of hard material from cuttings and other areas of cut; including blasting	99,126,000	m3	\$ 4,386
	B3b	Rehabilitate areas of existing formation; rock material surface	-	m3	
	B4	Earthworks - Fill in embankments			
	B4a	Deposition in embankments and other areas of fill	244,140,000	m3	\$ 600
	B4b	Deposition of hard material in embankments and other areas of fill	17,437,000	m3	\$ 125
	B4c	Stockpile hard material	-	m3	
	B5	Earthworks - Disposal of excess material from cuttings			
	B5a	Disposal of common material	-	m3	
	B5b	Disposal of hard material	81,689,000	m3	\$ 450
	B5	Earthworks - Permafrost Measures	-	m3	\$ 15
	B6	Not used			
	B7	Subballast			
	B7a	Imported fill material; subballast	3,096,960	m3	\$ 200
	B7b	Rehabilitate existing sub-grade	-	m3	
	B8	Borrow Pits			
	B8a	Establishment of borrow pits	5,000,000	m3	\$ 20
	B8b	Reinstatement of borrow pits	5,000,000	m3	\$ 20
	B9	Haul Roads			
	B9a	Haul roads; excavation for installation	732,300	m3	\$ 5
	B9b	Haul roads; excavation for reinstatement	732,300	m3	\$ 5
	B9c	Haul roads; imported material for maintenance	255,100	m3	\$ 15
	B10	Topsoiling (incl seeding)			
	B10a	Deposition of topsoil to slopes in cuttings and embankments	3,661,500	m3	\$ 15
	B11	Surface Preparation			
	B11a	Preparation of surfaces prior to receiving fill	73,230,000	m2	\$ 125
	B12	Temporary bridges			
	B12a	Allowance for purchase of temporary bridges	60	sum	\$ 5
	B12b	Allowance for installation (part reuse of temp bridges)	244	sum	\$ 15
	B13	Slope/grade stabilisation areas	5	ea	\$ 5
	B14	Siding grading preparation	-	ea	incl
		<b>TOTAL TO SUMMARY \$</b>			<b>\$ 7,790</b>



PAGE	REF	DESCRIPTION	QTY	UNIT	TOTAL (\$000,000)
		<b><u>BRIDGES AND STRUCTURES</u></b>			
	C1	Bridges (new construction)			
		1056+737 DUNKIRK RIVER	44	m	\$ 2
		1077+884 CHIPEWYAN RIVER	54	m	\$ 2
		1125+136 LIEGE RIVER	54	m	\$ 2
		1197+653 PANNY RIVER	130	m	\$ 5
		1243+942 MIKKWA RIVER	94	m	\$ 7
		1284+626 MIKKWA RIVER	100	m	\$ 4
		1311+488 WABASCA RIVER	240	m	\$ 10
		2005+810 BEAR RIVER	70	m	\$ 3
		2031+274 PEACE RIVER	650	m	\$ 32
		2036+262 CARIBOU RIVER	44	m	\$ 2
		2066+169 PONTON RIVER	70	m	\$ 5
		2103+164 BUSHE RIVER	20	m	\$ 1
		2144+128 FOOTNER LAKE	100	m	\$ 4
		2182+794 CHINCHAGA RIVER	130	m	\$ 5
		2193+840 SOUSA CREEK RIVER	48	m	\$ 2
		2199+170 SOUSA RIVER	30	m	\$ 1
		2278+979 FIRE CREEK RIVER	20	m	\$ 1
		2307+971 HAY RIVER	60	m	\$ 3
		2338+838 KYKLO CREEK	36	m	\$ 2
		3005+880 HOFFARD CREEK	60	m	\$ 5
		3047+226 SAHTANEH RIVER	880	m	\$ 85
		3056+700 SHUSH CREEK	90	m	\$ 6
		3109+924 KIWIGANA RIVER	340	m	\$ 15
		3134+078 CAPOL-BLANC CREEK	800	m	\$ 35
		3166 + 400 LIARD RIVER	2,400	m	\$ 265
		3193+676 BEAVER RIVER	2,560	m	\$ 285
		3257+200 INFLUANT CROW RIVER	1,680	m	\$ 185
		3278+504 CROW RIVER	3,040	m	\$ 335
		3294+407 CROW RIVER	910	m	\$ 50
		3348 + 921 SMITH RIVER	810	m	\$ 75
		3395+951 COAL RIVER	840	m	\$ 85
		3415+928 LIARD RIVER	1,030	m	\$ 110
		3467+923 LIARD RIVER	560	m	\$ 15
		3475+891 HAYLAND RIVER	230	m	\$ 10
		4016+743 WATSON CREEK	30	m	\$ 2
		4025+483 TOM CREEK	30	m	\$ 2
		4057+000 FRANCES RIVER	320	m	\$ 30
		4110+637 TUCHITUA RIVER	70	m	\$ 3
		4174+136 MONEY CREEK	164	m	\$ 12
		4268+351 BIG CAMPBELL CREEK	520	m	\$ 45
		4304+175 HOOLE RIVER	520	m	\$ 30
		4338+046 KETZA RIVER	900	m	\$ 55
		4357+724 LAPIE RIVER	1,180	m	\$ 130
		4426+100 MAGTANDY RIVER	600	m	\$ 35
		4464+399 MAGUNDY RIVER	70	m	\$ 3
		4468+227 DRURY CREEK	260	m	\$ 25
		4506+161 BEARFEED CREEK	20	m	\$ 1
		4542+394 FRENCHMAN LAKE DISCHARGE	300	m	\$ 15
		4585+365 TATCHUN RIVER	540	m	\$ 50
		5039+000 YUKON RIVER	420	m	\$ 12
		5046+690 BIG CREEK	130	m	\$ 4
		5066+445 WOLVERINE CREEK	54	m	\$ 3
		5124+896 SELWYN RIVER	70	m	\$ 5
		5173+900 COFEE CREEK	70	m	\$ 5



PAGE	REF	DESCRIPTION	QTY	UNIT	TOTAL (\$000,000)
		5263+577 WHITE RIVER CANAL	130	m	\$ 6
		5265+000 WHITE RIVER	1,200	m	\$ 35
		5266+294 WHITE RIVER CANAL	300	m	\$ 15
		5303+400 MCA RTHUR CREEK	54	m	\$ 3
		5340+777 SOUTH FORK LADUE RIVER	860	m	\$ 45
		5364+457 LADUE RIVER	610	m	\$ 30
		5375+056 LADUE RIVER	102	m	\$ 5
		5409+286 TANANA RIVER	300	m	\$ 15
		5416+649 TOK RIVER	60	m	\$ 3
		5456+220 YERRICK CREEK	150	m	\$ 5
		5478+453 ROBERTSON RIVER	870	m	\$ 85
		5494+960 BEER CREEK	30	m	\$ 2
		5532+070 JOHNSON RIVER	380	m	\$ 15
		5544+982 LITLE GERSTLE RIVER	44	m	\$ 2
		5552+000 GERSTLE RIVER	480	m	\$ 15
		5570+050 SAWMILL CREEK	60	m	\$ 3
			<b>Carried forward</b>		<b>\$ \$ 2,405.00</b>
			<b>Brought forward</b>		<b>\$ \$ 2,405.00</b>
	C2	Culverts (large, structural)			
		0.8m dia		m	
		0.9m dia	61,908	m	\$ 150
		1.0m dia		m	
		1.2m dia	41,091	m	\$ 100
		1.4m dia		m	
		1.5m dia	30,750	m	\$ 100
		1.6m dia		m	
		1.8m dia	19,321	m	\$ 50
		2.0m dia		m	
		2.1m dia	9,524	m	\$ 25
		2.2m dia		m	
		2.4m dia	4,354	m	\$ 15
		2.7m dia	4,082	m	\$ 15
		3.0m dia	2,993	m	\$ 15
		3.6m dia MP	11,701	m	\$ 100
		3.6m x 3.0m box		m	
		<b>TOTAL TO SUMMARY</b>			<b>\$ 2,975.00</b>



PAGE	REF	DESCRIPTION	QTY	UNIT	TOTAL (\$000,000)
		<b><u>TUNNELS</u></b>			
	D1	Tunnels	10.00	km	
	D1a	Mobilisation	2.00	sum	\$ 2
	D1b	Demobilisation	2.00	sum	\$ 1
	D1c	Tunnelling (drill and blast)	10.00	km	\$ 153
	D1d	Anticipated delay adjustment (rock quality and faults)	10.00	km	\$ 22
	D1e	Portal work	4.00	ea	\$ 2
	D2	Tunnels Ventilation	10.00	km	
	D2a	Supply and installation of ventilation fans	10.00	km	\$ 4
	D2b	Remaining electrical work including cable routes	10.00	km	\$ 48
	D2c	Electrical power generation	2.00	sum	\$ 9
		<b>TOTAL TO SUMMARY \$</b>			<b>\$ 241</b>



PAGE	REF	DESCRIPTION	QTY	UNIT	TOTAL (\$000,000 )
		<b><u>SIGNALS AND COMMUNICATIONS</u></b>			
	E1	Communications System			
		Communications Towers - new	86	ea	\$ 40
		Controls	354	ea	\$ 5
	E2	Signalling			
		Signals - Ends of Siding	414	ea	\$225
		Signals - Intermediate (Approach)	108	ea	\$ 35
		Signals - Intermediate (Back to Back)	108	ea	\$ 35
		Signal Repeater sites	384	ea	\$ 25
		Balise	508	ea	\$ 25
		Fibre cable	2,466,000	m	\$ 2
		Fibre drops	302	ea	\$ 50
		Wayside bungalows	268	ea	\$ 5
		Gensets for signals & Comms	170	ea	\$ 20
		Computer controls	1	sum	
		Asset Protection	-	ea	\$ 30
		Hot Bearing Detection	84	ea	
		Dragging Equipment Detection	-	ea	
		Hot Wheel Detection	-	ea	\$ 5
		Wheel Impact Load Detection	3	ea	\$ 5
		Comms associated with detection	84	ea	\$ 5
		Rock Fall Detectors	10	ea	\$ 5
		Stream Flow Detectors	-	ea	
		<b>TOTAL TO SUMMARY \$</b>			<b>\$ 472</b>



PAGE	REF	DESCRIPTION	QTY	UNIT	TOTAL (\$000,000)
		<b><u>ROLLING STOCK &amp; EQUIPMENT</u></b>			
	F1	Locomotives (incl 5% spares)	309	ea	\$ 925
	F2	Tank Cars (incl 2% spares)	9,205	ea	\$ 1,325
	F3	Maintenance Equipment	15	ea	\$ 57
		<b>TOTAL TO SUMMARY \$</b>			<b>\$ 2,307.00</b>





PAGE	REF	DESCRIPTION	QTY	UNIT	TOTAL (\$000,000)
		<b><u>FACILITIES</u></b>			
	G1	Yard 1 - Fort McMurray			
		Rolling Stock Maintenance Facility (Locos and Tanks)	13,400	m2	\$ 40
		Trip Servicing	2,400	m2	\$ 7
		MOW	2,000	m2	\$ 5
		Administration Building	3,000	m2	\$ 6
		Train Road Crew & Train Crew Reporting Centre	250	m2	\$ 1
		Total Yard Area	21,050	m2	
		Yard 2 - Delta Junction			
		MOW	2,000	m2	\$ 5
		Trip Servicing (2 @ 2,000 m2 each)	4,000	m2	\$ 12
		Train Crew & MOW Crew Bunkhouse	250	m2	\$ 1
		Flash Butt Welding Facility	20,000	m2	\$ 8
		Yard Office	150	m2	\$ 1
		Total Yard Area	26,400	m2	
		Yard 3 - Liard River			
		MOW	2,000	m2	\$ 6
		Train Crew & MOW Crew Bunkhouse	250	m2	\$ 1
		Total Yard Area	2,250	m2	
		Location 4			
		Satelite MOW		m2	
		Train Road Crew Home Base Office	250	m2	\$ 1
		Total Yard Area	250	m2	
		Location 5			
		Train Road Crew Bunkhouse	250	m2	\$ 1
		Total Yard Area	250	m2	
		Total Facilities Area	50,200	m2	
	G2	Yard Facilities		Ha	
		100mm Dia Hd PVC Conduit	1,685	m	
		150mm Dia Hd PVC Conduit	1,078	m	
		32mm Dia Hd PVC Conduit	25	m	
		50mm Dia Hd PVC Conduit	104	m	
		80mm Dia Hd PVC Conduit	1,444	m	
		Access gate for wire fence - 2.4m double	8	ea	
		Access gate for wire fence - 2.4m single	6	ea	
		Bitumen Emulsion - 2 layers of Grade K1-70 Applied 1.4L/SM	333,157	m2	\$ 2
		Bituminous Asphalt binder course 75mm thick	66,013	m2	\$ 2
		Bituminous Spray, BS 434 K1-40 Tack Coat	333,157	m2	\$ 1
		Bollards	134	ea	
		Bollards - heavy vehicle	72	ea	
		Boom gate - 4.8m	2	ea	
		Camp Potable Water Transfer Pumps	4	ea	
		Camp Raw Water Transfer Pumps	2	ea	
		Camp Sewerage Booster Pumps	19	ea	
		Chain wire fence - 2.4m high	8,148	m	\$ 1
		Cut to fill to rough grading levels & compact - Suitable for excavator	4,952,000	m3	\$ 50
		Excavate rock	817,000	m3	\$ 35
		Grey Water Storage Tanks	1	ea	
		<b>Carried forward</b>			<b>\$ \$ 186</b>



PAGE	REF	DESCRIPTION	QTY	UNIT	TOTAL (\$000,000)
			<b>Brought forward</b>	<b>\$ \$</b>	<b>186</b>
		Guardrail	3,094	m	\$ 1
		Kerb and channel	1,258	m	
		Oily Water Separator, (CS) 6m3/hr	19	ea	\$ 1
		Package pump well c/w precast concrete pit 1.8m dia x 2.5m deep	8	ea	
		Potable Water Float Valves	14	ea	
		Potable Water Storage Tanks 600 person tank 13.3T	5	ea	\$ 1
		Potable Water Storage Tanks 800 person tank 16.8T	2	ea	
		Precast RC drainage pits 900 x 600 x 850 mm with grated lids	516	ea	\$ 2
		Preparation of ground to receive fill by tyning, watering, compaction & trimming	820,000	m2	\$ 2
		RCP - DN1050	175	m	
		RCP - DN1200	227	m	
		RCP - DN1350	124	m	
		RCP - DN1500	349	m	
		RCP - DN600	5,201	m	\$ 2
		RCP - DN675	970	m	
		RCP - DN750	1,083	m	
		RCP - DN825	237	m	
		RCP - DN900	361	m	
		RCP - DN975	165	m	
		Rip Rap, loose, 300mm thick	272	m3	
		Road base course place and compact	77,874	m3	\$ 5
		Road guide posts	516	ea	
		Road line marking	68,075	m	
		Road Signs	52	ea	
		Road subbase place and compact	99,947	m3	\$ 6
		Sewage Treatment 50 Man Unit	3	ea	
		Sewer manholes (1350 mm dia precast RCP c/w lids)	441	ea	\$ 2
		Site Lighting	93	m2	\$ 1
		Supply, place & compact imported fill - crushed rock (road base quality)	60,855	m3	
		Concrete; Pads & piers, footings - all-in incl. reinforcement, forms, HD bolts, etc	3,306	m3	\$ 6
		Concrete; Tank Ring walls - all-in incl. reinforcement, forms, HD bolts, etc	41	m3	
		Under Ground PVC Pipe, All In CrossCountry Piping inc, fittings Spec PVC, 200NB	1,151	m	
		Under Ground PVC Pipe, All In CrossCountry Piping inc, fittings Spec PVC, 250NB	2,408	m	\$ 1
		Under Ground PVC Pipe, All In CrossCountry Piping inc, fittings Spec PVC, 300NB	5,345	m	\$ 2
		Under Ground PVC Pipe, All In CrossCountry Piping inc, fittings Spec PVC, 400NB	108	m	
		Under Ground PVC Pipe, All In CrossCountry Piping inc, fittings Spec PVC, 450NB	345	m	
		Under Ground PVC Pipe, All In CrossCountry Piping inc, fittings Spec PVC, 500NB	557	m	
		Misc Track	500	m	
		Earthworks and platform preparation	3,555,000	m3	\$ 12
		Fueling facilities			
		Loading facility			
		5400gpm centrifugal pump	4.0	ea	\$ 1
		Top loading arm	24.0	ea	
		Meters	24.0	ea	\$ 1
		Overfill protection	24.0	ea	
		Stairtreads	48.0	ea	\$ 1
		16" Manifold piping	5,600.0	m	\$ 5
		Rack structure	600.0	m	\$ 2
		Storage tanks 125,000BBL	2.0	ea	\$ 8



PAGE	REF	DESCRIPTION	QTY	UNIT	TOTAL (\$000,000)
		Unloading - midpoint			
		5400gpm centrifugal pump	4.0	ea	\$ 1
		Bottom loading arm	24.0	ea	
		Stairtreads	48.0	ea	\$ 1
		16" Manifold piping	5,600.0	m	\$ 5
		Rack structure	600.0	m	\$ 2
		Storage tanks 125,000BBL	2.0	ea	\$ 8
		Unloading - endpoint			
		5400gpm centrifugal pump	4.0	ea	\$ 1
		Bottom loading arm	24.0	ea	
		Stairtreads	48.0	ea	\$ 1
		16" Manifold piping	5,600.0	m	\$ 5
		Rack structure	600.0	m	\$ 2
		Storage tanks 125,000BBL	2.0	ea	\$ 8
	G3	Mini Yard 1		km	
	G4	Mini Yard 2		km	
	G5	Loading Facilities			
		5400gpm centrifugal pump	16.0	ea	\$ 3
		3-4" Top loading arm	96.0	ea	\$ 2
		Meters	96.0	ea	\$ 3
		Overfill protection	96.0	ea	\$ 2
		Stairtreads	96.0	ea	\$ 2
		16" Manifold piping	22,400.0	m	\$ 18
		Rack structure	1,200.0	m	\$ 4
	G6	Unloading Facilities			
		3600gpm centrifugal pump	24.0	ea	\$ 10
		3-4" Bottom unloading arm	96.0	ea	\$ 1
		Stairtreads	96.0	ea	\$ 2
		16" Manifold piping	33,600.0	m	\$ 30
		Rack structure	1,200.0	m	\$ 4
		3-750 BHP boilers with enclosure	1.0	ea	\$ 3
		Plant piping and equipment controls	18,500.0	m	\$ 12
		Boiler Fuel Tank - 6,000 BBL	2.0	bbl	\$ 1
		Storage tanks 250,000BBL	36.0	ea	\$ 345
		<b>TOTAL TO SUMMARY \$</b>			<b>\$ 724</b>



PAGE	REF	DESCRIPTION	QTY	UNIT	TOTAL (\$000,000)
		<b><u>ENVIRONMENTAL</u></b>			
	H1	Environmental Mitigative Measures	1	Sum	\$ 105
	H2	Other (Monitoring, Studies, Permitting, Communications & Stakeholder Relations)	1	Sum	\$ 123
		<b>TOTAL TO SUMMARY \$</b>			<b>\$ 228</b>



PAGE	REF	DESCRIPTION	QTY	UNIT	TOTAL (\$000,000)
		<b><u>ENABLING WORKS</u></b>			
	I1	Construction Camps (32 months, 200 man) Set Up	24	Ea	\$ 90
		Operations of major construction camps	24	Ea	\$ 90
	I2	Construction support and logistics	1	Sum	\$ 15
	I3	Access Roads/Forestry Road	146	km	\$ 30
	I3a	Road Diversions	-	m	
	I4	Power	1	Sum	\$ 3
	I5	Utilities	1	Sum	\$ 3
	I6	Airstrip/Emergency Landing Area	1	Sum	\$ 2
		<b>TOTAL TO SUMMARY \$</b>			<b>\$ 233</b>



PAGE	REF	DESCRIPTION	QTY	UNIT	TOTAL (\$000,000)	
		<b><u>PRELIMINARIES AND INDIRECT COSTS</u></b>				
	J1	Contractors Staff	1	Sum		included in rates
	J2	Insurance of works (Contractors All Risk)	1	Sum		included in owners costs
	J3	Insurance against damage to persons and property	1	Sum		included in owners costs
	J4	Erection and subsequent removal of site accommodation, toilet, stores, messes, offices, workshops etc. for Contractor	1	Sum		included in rates
	J5	Erection and subsequent removal of site accommodation, toilets, messes, offices, etc. for Client and Project Manager's Staff	1	Sum		included in rates
	J6	Compliance with Safety Regulations and Health and Safety Plan including production of Construction Phase Health and Safety Plan	1	Sum		included in rates
	J8	Provision, erection and maintenance of site fencing and works security including all temporary signage	1	Sum		included in rates
	J9	Test pits	1	Sum		included in rates
	J10	Warranties and Bonds (calculated on 10% of cost of work)	1	Sum		included in owners costs
	J11	EPCM Services			\$ 1,600	
	J12	Owners Costs			\$ 200	
	J13	Other Contingencies			\$ 1,355	
	J14	Land costs			\$ 450	
		<b>TOTAL TO SUMMARY \$</b>			<b>\$ 3,605.00</b>	