



**2017 Closure & Reclamation Plan
Cost Estimate (RECLAIM 7.0)**

Kuulu Project

Kivalliq Region, Nunavut

May 2017

PLAIN LANGUAGE SUMMARY

This cost estimate was prepared using RECLAIM version 7.0. The tables of each component are summarized in Appendix A. Costs were calculated based on the scope of the upcoming Kuulu summer field program.

SUMMARY OF FINANCIAL SECURITY COST ESTIMATE (Full Details in Appendix A)

SUMMARY OF COSTS

CAPITAL COSTS	COMPONENT NAME	COST	LAND LIABILITY	WATER LIABILITY
BUILDINGS AND EQUIPMENT	Kuulu Exploration Camp	\$9,435	\$9,435	\$0
CHEMICALS AND CONTAMINATED SOIL MANAGEMEN		\$2,917	\$0	\$2,917
SURFACE AND GROUNDWATER MANAGEMENT		\$258	-	\$258
	SUBTOTAL: Capital Costs	\$12,610	\$9,435	\$3,175
	PERCENT OF SUBTOTAL		75%	25%

INDIRECT COSTS		COST	LAND LIABILITY	WATER LIABILITY
MOBILIZATION/DEMOBILIZATION		\$85,554	\$64,013	\$21,541
ENGINEERING	5%	\$630	\$472	\$159
PROJECT MANAGEMENT	5%	\$630	\$472	\$159
HEALTH AND SAFETY PLANS/MONITORING & QA/QC	1%	\$126	\$94	\$32
BONDING/INSURANCE	1%	\$126	\$94	\$32
CONTINGENCY	20%	\$2,522	\$1,887	\$635
MARKET PRICE FACTOR ADJUSTMENT	0%	\$0	\$0	\$0
	SUBTOTAL: Indirect Costs	\$89,589	\$67,032	\$22,557

TOTAL COSTS		\$102,199	\$76,467	\$25,732
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REVISION HISTORY

Revision #	Date	Section	Summary of Changes	Author	Approver
1	April 2017	-	New document	B. Sutherland	C. McFadden
2	May 2017	Summary	Updated summary table	B. Sutherland	C. McFadden

APPENDIX A: COST ESTIMATE (RECLAIM 7.0)

SUMMARY OF LAND LIABILITY COSTS

CAPITAL COSTS			COMPONENT NAME	LAND LIABILITY
BUILDINGS AND EQUIPMENT			Kuulu Exploration Camp	\$9,435
CHEMICALS AND CONTAMINATED SOIL MANAGEMENT				\$0
SURFACE AND GROUNDWATER MANAGEMENT				-
			SUBTOTAL: Capital Costs	\$9,435
			PERCENT OF SUBTOTAL	75%

INDIRECT COSTS			LAND LIABILITY	
MOBILIZATION/DEMOBILIZATION			\$64,013	
ENGINEERING			5% \$472	
PROJECT MANAGEMENT			5% \$472	
HEALTH AND SAFETY PLANS/MONITORING & QA/QC			1% \$94	
BONDING/INSURANCE			1% \$94	
CONTINGENCY			20% \$1,887	
MARKET PRICE FACTOR ADJUSTMENT			0% \$0	
			SUBTOTAL: Indirect Costs	\$67,032

TOTAL COSTS			\$76,467
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1	Building / Equip Name: Kuulu Exploration Camp		Bldg / Equip #: 1						
ACTIVITY/MATERIAL		Notes	Units	Quantity	Cost Code	Unit Cost	% Cost Land	Land Cost	Water Cost
REMOVE BUILDINGS - see note below									
Accomodation Complex			m2	147	BRW	\$27.50	\$4,043 100%	\$4,043	\$0
Kitchen			m2	42	BRW	\$27.50	\$1,155 100%	\$1,155	\$0
Offices & Core Shacks			m2	63	BRW	\$27.50	\$1,733 100%	\$1,733	\$0
Dry Facilities			m2	42	BRW	\$27.50	\$1,155 100%	\$1,155	\$0
Generator Shed			m2	10	BRW	\$27.50	\$275 100%	\$275	\$0
SPECIALIZED ITEMS									
Dispose of misc. debris and laydown area refuse			ha	0.25	SCFY	\$4,300.00	\$1,075 100%	\$1,075	\$0
Total							\$9,435	\$9,435	\$0
% of Total								100%	0%

1 Chemicals/Soil Area Name:

Note: The procedures, equipment and packaging for clean up and removal of chemicals or contaminated soils are highly dependent on the nature of the chemicals and their existing state of containment. Government guidelines should be consulted on an individual chemical basis. Any estimate made here should be considered very rough unless specific evaluations have been conducted.

ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	% Cost Land Land Cost Water Cost		
BUILDING DECONTAMINATION & CONSOLIDATION OF HAZARDOUS MATERIALS								
Decontaminate: oil, fuel		man hours	36	LAB-US	\$29.17	\$1,050	\$0	\$1,050
HAZARDOUS MATERIALS REMOVAL								
Waste oils		litre	50	ORL	\$0.43	\$22	\$0	\$22
Fuel (10% of Storage)		litre	4000	ORL	\$0.43	\$1,720	\$0	\$1,720
Glycol		litre	50	PCRH	\$2.50	\$125	\$0	\$125
Total						\$2,917	\$0	\$2,917
% of Total							0%	100%

1 Capital Expenditures and Short Term Water Treatment identified in 'Instructions' worksheet

ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost
DECOMISSION FRESH WATER SUPPLY						
Remove pump		allow	1	#N/A	\$200.00	\$200
Remove pipeline		man hours	2	LAB-US	\$29.17	\$58
Total						\$258

1 Mobilization/Demobilization:

ACTIVITY/MATERIAL	Notes	Units	Quantity	Cost Code	Unit Cost	Cost
MOBILIZE MISC. EQUIPMENT						
CAT Challenger		allow	1	#N/A	5000	\$5,000
MOBILIZE WORKERS						
Reclamation activities - transport		each	3	MW	3500	\$10,500
Reclamation activities - travel time		manhours	36	LAB-S	37.5	\$1,350
Monitoring Airfare		each	3	#N/A	1500	\$4,500
WORKER ACCOMODATIONS						
Reclamation activities		days	5	ACCML	100	\$500
MOBILIZE FUEL						
Fuel freight - reclamation activities		litre	4000	FCM	0.42	\$1,680
DEMOBILIZE CAMP						
Barge to/from Rankin Inlet		allow	1	#N/A	50000	\$50,000
DEMOBILIZE WORKERS						
crew travel time		manhours	36	LAB-S	37.5	\$1,350
crew transportation		each	3	MW	3500	\$10,500
WINTER ROAD						
Limited winter use		kmtonne	600	WRU	0.29	\$174
Total						\$85,554

Unit Cost Table

		Filter by unit						
ITEM	Detail	COST CODE	UNITS	LOW \$	HIGH \$	SPECIFIED \$	NxGold Specific\$	COMMENTS
Accomodation								
		ACCM	manday	100.00	175.00		100.00	
Buildings - Remove								
	Wood	BRW	m2	27.50	41.00		27.50	Unit costs are based on 3m high, single storey building. Scale areas accordingly.
Fuel and Electricity								
	Fuel cost - gas	FCG	litre	1.05	1.40		1.05	
	Fuel cost - diesel	FCD	litre	0.99	1.39		0.99	
	Fuel mobilization	FCM	litre	0.22	0.42		0.42	High: winter road usage
	Electricity	FCE	kW-h	0.17	0.19	0.49		Low and High:Yellowknife; Specified:diesel generator
Geo-Synthetics								
	geotextile	GST	m2	3.44				Supply and install
	geogrid	GSG	m2	5.75				
	liner, HDPE	GSHDPE	m2	7.95				Supply and install; large quantity
	liner, ES3	GSES3	m2	20.20				FOB Yellowknife
	geosynthetic installation	GSI	m2	3.16	14.00			Low:geotextile; High:ES3 or HDPE
	bentonite soil ammendment	GSBA	tonne	308.30	348.50			FOB Edmonton, add shipping & mixing
Labour & Equipment Rates								
	Site manager	sman	\$/hr	125.00	152.00		41.25	
	Supervisor	super	\$/hr	52.00	91.84			
	Registered engineer	eng	\$/hr	95.00	220.00			
	Environmental coordinator	envco	\$/hr	74.16	130.00			
	Evironmental technologist	envtech	\$/hr	36.00				
	Electrician	elec	\$/hr	74.00	95.00			
	Journeyman - various	journey	\$/hr	44.00	71.79			
	Labour - skilled	lab-s	\$/hr	41.00	49.60		37.50	
	Labour - unskilled	lab-us	\$/hr	31.00	43.98		29.17	
	Equipment operator	oper	\$/hr	41.00	65.00			
	Heavy duty mechanic	mech	\$/hr	49.00	72.85			
	Water treatment plant operator	oper-wt	\$/hr	41.00	59.86			
	Security / first aid	safety	\$/hr	36.00	66.97			
	Administrative staff	admin	\$/hr	38.00	57.89			
	Equipment rates include operator and fuel							
	Loader - 4 cu.yd (3.06m3)	load-s	\$/hr	175.00				
	Loader - 7 cu.yd (5.35m3)	load-l	\$/hr	315.00				
	Excavator - 26.76-30.84 tonnes	exc-s	\$/hr	190.00				
	Excavator - 68.95+tonnes	exc-l	\$/hr	420.00				
	Grader	grad	\$/hr	190.00				
	Dump truck off hwy 30-50 tonnes	truck-s	\$/hr	225.00				
	Dump truck off hwy 55-75 tonnes	truck-l	\$/hr	300.00				
	dozer, small	dozers	\$/hr	205.00	260.00			
	dozer, large	dozerl	\$/hr	490.00	565.00			
	smooth drum compactor	comp	\$/hr	155.00				
	scooptram, 6 yd3 bucket	scoop	\$/hr	170.00				
	flat bed truck with hiab	hiab	\$/hr	155.00				
	fuel truck	ftruck	\$/hr	150.00				
	water truck	wtruck	\$/hr	58.00	150.00			
Mobilize Heavy Equipment								
	Road access	MHER	kmtonne	3.40	10.25			
	Air access	MHEA	kmtonne	12.00				cargo rate>500lb
Mobilize Camp								
	Road access	MCR	each	50000.00				refurbish existing camp
Mobilize Workers								
	flight	MW	each	4500.00	9100.00		3500.00	Low:e.g. 8 passenger; High: Dash 7; NxGold - Domestic Flight to Rankin, transport to site
Oil Removal								
	oil removal	OR	litre	0.43	1.20		0.43	Low:waste oil heater; High: ship offsite
Vegetation								
	Hydroseed, Flat	VHF	ha	4000.00				
	Hydroseed, Sloped	VHS	ha	4500.00				
	Veg. blanket/erosion mat	VB	ha	13000.00				
	Tree planting	VT	ha	2600.00	6000.00			
	Wetland species	VW	ha			47.72		Specified= /m3, Wetland Growth Media Substrate mixed and installed (sand, biochar and fertilizer, woodchips)
Winter Road								
	Construction	WRC	km	2000.00	11500.00			
	Usage	WRU	kmtonne	0.29			0.29	