M3-PN150019 Effective Date: June 8, 2015 Issue Date: July 13, 2015



# Moss Gold-Silver Project



# NI 43-101 Technical Report Feasibility Study Mohave County, Arizona

Prepared For:



Qualified Persons:

David Stone, P.E. Thomas L. Drielick, P.E. Daniel K. Roth, P.E. Eugene Muller, P.E. Scott A. Britton, CEng. MMMM (CP)



#### DATE AND SIGNATURES PAGE

The effective date of this report is 8 June 2015. The effective date of the Moss Mineral Resource Estimate is October 31, 2014. The effective date of the Moss Mineral Reserve Estimate is May 31, 2015. See Appendix A, Feasibility Study Contributors and Professional Qualifications, for certificates of qualified persons.

(Signed) "David Stone" David Stone, P.E.

(Signed) "Thomas L. Drielick" Thomas L. Drielick, P.E.

<u>(Signed) "Daniel K. Roth</u> Daniel K. Roth, P.E.

<u>(Signed) "Eug*ene Muller*"</u> Eugene Muller, P.E.

(Signed) "Scott A. Britton" Scott A. Britton, CEng. MMMM (CP) <u>July 13, 2015</u> Date



#### MOSS GOLD-SILVER PROJECT FORM 43-101F1 TECHNICAL REPORT

# TABLE OF CONTENTS

SECTION		PAGE
DATE AND SIG	NATURES PAGE	I
TABLE OF COM	NTENTS	II
LIST OF FIGUR	ES AND ILLUSTRATIONS	Х
LIST OF TABLE	ΞS	XIII
1 SUMM	ARY	1
1.1	ISSUER	1
1.2	Moss Mine Project	1
1.3	THIS TECHNICAL REPORT	1
1.4	GEOLOGY	2
1.5	GEOTECHNICAL	2
1.6	WATER SUPPLY	2
1.7	2014 MINERAL RESOURCES	3
1.8	MINERAL RESERVES	3
1.9	METALLURGY	
1.10	MINING	4
1.11	Processing	
1.12	INFRASTRUCTURE AND SERVICES	5
1.13	CAPITAL COSTS	5
1.14	OPERATING COSTS	6
1.15	FINANCIAL ANALYSIS	7
1.16	QUALIFIED PERSONS OPINION	7
2 INTRO	DUCTION	
2.1	Sources of Information	8
2.2	QUALIFIED PERSONS	9
2.3	TERMS AND DEFINITIONS	10
3 RELIA	NCE ON OTHER EXPERTS	12
4 PROPI	ERTY DESCRIPTION AND LOCATION	13
4.1	PROPERTY DESCRIPTION AND LOCATION	13
4.2	PROPERTY LOCATION	14
4.3	Mineral Tenure	14



	4.3.1 4.3.2 4.3.3	Patented Claims Unpatented Lode Claims Claim and Permit Overlaps	15
4.4		NINTENANCE FEES, AND RENT	
	4.4.1 4.4.2 4.4.3	Patented Lode Claims Unpatented Lode Claims Arizona State Exploration Permit	
4.5	Principal	AGREEMENTS	
	4.5.1 4.5.2 4.5.3	MinQuest Agreement Patriot Gold Agreement La Cuesta Agreement	
4.6	ROYALTIES	5	
	4.6.1 4.6.2 4.6.3 4.6.4 4.6.5	MinQuest, Inc Greenwood Agreement Finders Agreement La Cuesta International, Inc Property Access Agreement	37 37 38
4.7	Environm	ENTAL LIABILITIES	39
	4.7.1 4.7.2	Historical Liabilities Phase I Liabilities	
4.8	Permit His	STORY/BACKGROUND	
	4.8.1	Compliance History	40
4.9	FACTORS A	and Risks (Qualified Person's Opinion)	40
	4.9.1 4.9.2	Jurisdictional Washes Property Access	
ACCE	ssibility, c	LIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY	
5.1	TOPOGRAF	PHY, ELEVATION AND VEGETATION	42
5.2	Populatio	ON CENTERS AND TRANSPORTATION	42
5.3	SITE ACCE	SS	
5.4	CLIMATE A	ND OPERATING SEASON	45
5.5	SURFACE	RIGHTS, POWER, WATER AND PERSONNEL	45
	5.5.1 5.5.2 5.5.3 5.5.4	Surface Rights Power and Water Personnel Project Facilities	45 46
HISTO	RY		47
6.1	Property	HISTORY	47
	6.1.1 6.1.2	Discovery and Early Mining (1863 to 1935) Previous Exploration and Development (1982 to 2009)	47 48



5

6

		6.1.3	Historical Production		
	6.2	PHASE I PF	ROJECT DESCRIPTION		
7	GEOL	OGICAL SET	ITING AND MINERALIZATION		
	7.1	GENERAL .			
	7.2	HOST ROC	KS		
		7.2.1	Mineralization		
		7.2.2 7.2.3	Vein Mineralogy Gold-Silver Mineralization		
	7.3		E		
	7.4		 I		
	7.5		AL GEOLOGY		
	110	7.5.1	Faults		
		7.5.2	Dykes		
8	DEPO	SIT TYPES			
9	EXPLO	ORATION		59	
	9.1	Previous Owners and Operators (1982 to 2009)			
	9.2 THE COMPANY (2011 THROUGH 2015)				
		9.2.1	2011 Exploration Program	59	
		9.2.2	2012 Exploration Program		
		9.2.3 9.2.4	2013/2014 Exploration Program 2015 Exploration Program		
10	DRILL	ING			
	10.1	Previous	Owners and Operators (1982 to 2009)	65	
	10.2		ANY (2011 THROUGH 2013)		
11	SAMP		ATION, ANALYSES AND SECURITY		
12	DATA	VERIFICATI	ON	70	
13	MINE	RAL PROCES	SSING AND METALLURGICAL TESTING		
	13.1	Metallurgy Overview			
	13.2	2015 WES <sup>-</sup>	T EXTENSION BOTTLE ROLL TESTING	72	
		13.2.1	Head Screen Analysis	73	
		13.2.2	Bottle Roll Tests	74	
		13.2.3 13.2.4	Tail Screen Analysis		
	13.3		EAP RECONCILIATION		
	13.3	13.3.1	Total Metal Recovery		
		13.3.1	Metal Recovery from P <sub>99</sub> 6.35 mm (¼") Material		
	13.4	DELETERIOUS ELEMENTS			



	13.5	Amenability to Cyanidation		
	13.6	PREDICTED R	ECOVERY	82
		13.6.1	Recommended Recovery Rates	83
	13.7	QUALIFIED PE	RSONS OPINION	83
		13.7.1 13.7.2	Results' Repeatability Metallurgical Test Coverage	
14	MINER	AL RESOURC	E ESTIMATES	92
	14.1	2014 Minera	L RESOURCE	92
	14.2	FACTORS THA	AT MAY AFFECT THE MINERAL RESOURCE ESTIMATE	93
	14.3	QUALIFIED PE	RSON'S OPINION	93
15	MINER	AL RESERVE	ESTIMATES	95
	15.1	MINERAL RES	ERVE CLASSIFICATION	95
	15.2	PIT OPTIMIZAT	TION METHODOLOGY	95
	15.3	GEOTECHNICA	AL PARAMETERS FOR PIT DESIGN	97
	15.4	ULTIMATE PIT	DESIGN	97
	15.5	COMPLIANCE WITH THE PIT OPTIMIZATION LIMITS		
	15.6	CUT-OFF GRADE CALCULATION		
	15.7	MINERAL RESERVES		
		15.7.1	Comparison with In-situ Mineral Resources	
		15.7.2 15.7.3	Low Grade Ore Additional ROM remaining from the Moss Phase 1 operations	
		15.7.4	Adjustment for Mining Losses and Dilution	
	15.8	MINERAL RESERVE STATEMENT		101
	15.9	FACTORS THAT MAY AFFECT THE MINERAL RESERVE ESTIMATE		
	15.10	QUALIFIED PE	RSON'S OPINION	102
16	MINING METHODS			
	16.1	Overview		
	16.2	GEOTECHNICA	AL ANALYSIS	103
		16.2.1	Available Data	
		16.2.2 16.2.3	Groundwater Rock Mass Characterization	
		16.2.4	Pit Domains	
		16.2.5	Kinematic Analysis	
		16.2.6	Summary	110
	16.3	Open Pit Design		
	16.4	BENCH HEIGHT AND MINING DIRECTION		
	16.5	Haul Road Design		



		16.5.1 16.5.2	Haul Road Gradient Haul Road Width	
	16.6	PUSHBACK	DESIGN	111
	16.7	LIFE-OF-MINE PRODUCTION SCHEDULE		
		16.7.1	Crushing/Agglomeration Circuit Production Schedule	116
	16.8	WASTE ROO	CK STORAGE	118
		16.8.1 16.8.2 16.8.3	Geotechnical Conditions Facilities Layout Waste Rock Storage Design Criteria	118
	16.9	MINING LAY	/OUT	120
	16.10	OPERATION	IAL ISSUES	
		16.10.1 16.10.2 16.10.3 16.10.4	Controlled Blasting Ground Support Grade Control Operational/Dispatch Control	124 124
	16.11	CONTRACT	Mining	125
17	<b>RECO</b>	/ERY METHO	ODS	126
	17.1	PROCESS DESCRIPTION		126
		17.1.1 17.1.2 17.1.3 17.1.4 17.1.5	Primary Crushing & Fine Crushing Agglomeration and Ore Stacking Heap Leach Pad & Solution Ponds Merrill Crowe Refinery	
	17.2	PROCESS D	DESIGN CRITERIA	133
18	PROJE	CT INFRAST	TRUCTURE	135
	18.1	WATER SUPPLY		
	18.2	Alternate Water Sources		
	18.3	ELECTRIC P	136	
	18.4	FUEL STOR	137	
	18.5	WAREHOUS	137	
	18.6	Workshop		
	18.7	CAMP/ACCO		
	18.8	COMMUNIC	137	
	18.9	HEALTH AN	137	
	18.10	SECURITY		138
	18.11	Administra	ATION BUILDING	138
	18.12	LABORATO	RY	138



	18.13	Sewage	
	18.14	TRANSPORTATION	
19	MARKI	ET STUDIES AND CONTRACTS	
20		CONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY	
20			
	20.1	Environmental	
		20.1.1 Water Quality	
		20.1.2 Air Quality	
		20.1.3 Noise	
		20.1.4 Surface Water Management	
		20.1.5Acid Base Accounting20.1.6Environmental Monitoring	
		5	
		<ul><li>20.1.7 Project HAZOP and Visual Impacts</li><li>20.1.8 Reclamation and Closure</li></ul>	
	20.2	Permitting	
		20.2.1 Permit History/Background	
		20.2.2 Compliance History	
		20.2.3 Description of Applicable Permits, Permit Amendme	
		20.2.4 Additional Permits during Mine Operations	
		20.2.5 Permit Submittals and Approvals	
		20.2.6 Estimated Costs for Permits, Permit Amendments, a	and Approvals 147
	20.3	Social and Community Issues	
21	CAPIT	AL AND OPERATING COSTS	
	21.1	CAPITAL COST ESTIMATE	
		21.1.1 Introduction	150
		21.1.2 Assumptions	
		21.1.3 Estimate Accuracy	
		21.1.4 Contingency	
		21.1.5 Reference Documents	
		21.1.6 Leach Pad and Ponds – Earthwork and Lining	
	21.2	OPERATING AND MAINTENANCE COSTS	
		21.2.1 Introduction	
		21.2.2 Contract Mining	
		21.2.3 Process Plant Operating Cost	
		21.2.4 Process Plant Labor & Fringes	
		21.2.5 Power	
		21.2.6 Reagents	
		21.2.7 Maintenance Wear Parts and Consumables	
		21.2.8 Process Supplies & Services	
		21.2.9 General and Administration (G&A)	
		21.2.10 Labor Rates Analysis	
22	ECONO	OMIC ANALYSIS	
	22.1	INTRODUCTION	



	22.2	MINE PRODU	CTION STATISTICS	
	22.3	PLANT PROD	UCTION STATISTICS	157
	22.4	MARKETING	Terms	157
	22.5	CAPITAL EXP	PENDITURES	
		22.5.1 22.5.2 22.5.3 22.5.4	Initial Capital Sustaining Capital Working Capital Salvage Value	158 158
	22.6	REVENUE	~	
	22.7	OPERATING COSTS		
	22.8	Other Cash Costs		
	22.9	TAXATION		
		22.9.1 22.9.2 22.9.3	Income Taxes Depreciation Depletion	
	22.10	<b>PROJECT FIN</b>	IANCIAL INDICATORS	
	22.11	SENSITIVITY A	Analysis	
	22.12	FINANCIAL M	ODEL	
23	ADJAC	ENT PROPER	RTIES	170
24	OTHER	R RELEVANT I	DATA AND INFORMATION	171
	24.1	Hydrogeological Conditions		
		24.1.1 24.1.2	Available Groundwater Resources Open Pit Dewatering	
	24.2	PROJECT SCI	HEDULE	174
25	INTERI	PRETATION A	ND CONCLUSIONS	175
	25.1	Opportunit	IES	175
		25.1.1 25.1.2 25.1.3 25.1.4 25.1.5 25.1.6	Leasing versus Purchase Long Term Supply Contracts Contractor Bids Direct Purchase of Supplies and Materials Used Equipment Skilled Labor	
	25.2	RISKS		
		25.2.1 25.2.2 25.2.3 25.2.4 25.2.5 25.2.6	Groundwater Geotechnical Risks Permitting Risks Capital Risks Recovery Risks Operational Risks	



	25.2.7	Site Access	
26	RECOMMENDATION	S	
27	REFERENCES		
APPEN	idix A: Feasibility s <sup>-</sup>	TUDY CONTRIBUTORS AND PROFESSIONAL QUALIFICATIONS	



#### LIST OF FIGURES AND ILLUSTRATIONS

FIGURE	DESCRIPTION P	PAGE
Figure 4-1: Gene	ral Location of the Moss Gold-Silver Project	13
Figure 4-2: Locat	ion Plan for the 15 Patented Lode Claims	15
Figure 4-3: A Vu	Ilcan <sup>®</sup> Snapshot of the General Moss Mine Project Area Showing the Boundary of the Pate Claims and the Outcrops of the Moss Vein and West Extension	
Figure 4-4: A Co	blour-Coded General Claim Block Reference Plan for the Moss Mine Project Claims and Art State Exploration Permit	
Figure 4-5: A loca	ation Plan for the Moss 1 to Moss 148 (highlighted in GREEN) and Moss 201 to Moss 209 (Lab in RED) of Unpatented Lode Claims, Moss Mine Project Area	
Figure 4-6: A Lo	ocation Plan for the Company's Block of Unpatented Lode Claims (GVC Series, Highlighter PURPLE), Northwest Sector, Moss Mine Project Area	
Figure 4-7: A Lo	ocation Plant for the Company's Block of Unpatented Lode Claims (GVC Series, Highlight Purple), Southwest Sector, Moss Mine Project Area	
Figure 4-8: A Loo	cation Plan for the Company's Unpatented Lode Claims (GVC Series, Highlighted in PURPLE Silver Creek (SC) Series, Highlighted in BLUE) and Arizona State Exploration Permit (highlighted in RED) Southeast and Central East Sectors, Moss Mine Project Area	Area
Figure 4-9: A Loc	ation Plan for the Company's Moss 210 and 211 Unpatented Lode Claims, Moss Mine Project A	Area28
Figure 4-10: A L	Location Plan for the Company's Optioned Unpatented Lode Claims (Silver Creek [SC] So highlighted in BLUE), Northeast Area, Moss Mine Project Area	
Figure 4-11: A C	olor-Coded, General Claim Block Reference Plan for the Moss Mine Claims Showing the Externation of Influence Defined in the Patriot Gold Agreement	
Figure 4-12: A Co	olour-Coded, General Claim Block Reference Plan for the Moss Mine Claims Showing the Externation of Influence Defined in the MinQuest Agreement	
Figure 5-1: Gene	ral View of Moss Gold-Silver Project Area	42
Figure 5-2: Locat	ion of the Moss Mine Project Area Showing the Major Roads Linking Bullhead City and Las Vec	jas44
Figure 5-3: Month	nly Average Temperatures and Rainfall for Bullhead City, Arizona	45
Figure 6-1: Histor	rical Photograph of the Allen Shaft at Moss Mine, 1920-1921	48
Figure 7-1: Vein N	Vineralization Diagram	51
Figure 7-2: Quart	z Vein Texture of Bladed Quartz, Moss Mine Project Area	53
Figure 7-3: Brecc	iated Quartz Vein with Clasts of Wallrock, Moss Mine Project Area	53
Figure 7-4: An E	Example of Quartz Vein with Black Argentite Cutting Monzonite Porphyry and Showing Ty Limonite Staining (oxidation) along a Joint Plane (drillhole AR-69C, 70.41 m)	
Figure 7-5: An Ex	xample Quartz Vein Material with Bladed Texture from Calcite Replacement and Showing Lim Staining (oxidation) along a Joint Plane (drillhole AR-69C, 80.77 m)	
Figure 7-6: An Ol	blique Snapshot View (looking approximately northwest) of the Mapped Surface Geology, Drape the Surface Topography, Highlighting the Positions and Trends of the 27 Mapped Faults	
Figure 7-7: Lithol	ogy Color Coding	57



Figure 9-1: Location Plan for the Company's 2012 Underground Channel Samples, 60 Level Historical Mir Workings, Moss Mine Project	
Figure 9-2: Overall Claim Area, Locations of Known Historical Workings, Magnetic Intensity and Related Structures	52
Figure 9-3: 2014 Rock and Chip Sampling	54
Figure 10-1: A Color-Coded Plan of Collar Locations of Drillholes Completed by Previous Owners for Known Coll Coordinates	
Figure 10-2: A Color-Coded Plan of the Locations of the Collars of the Drillholes Completed by the Company Durin its Three-Phase (2011 to 2013) Drilling Program, Moss Mine Project	
Figure 13-1: A Vulcan <sup>®</sup> Snapshot (looking north) of the Moss Deposit Showing the Positions of the Composites McClelland Laboratories 2015 Test Program, Moss Mine Project	
Figure 13-2: Bottle Roll Test Metallurgical Recovery Curves for P99 6.35 mm (¼") West Vein and Stockwork Materia McClelland Laboratories' 2015 Test Program, Moss Mine Project	
Figure 13-3: A Scatter Plot of Particle Size vs. Gold Recovery, McClelland Laboratories' 2015 Test Program, Mo Mine Project	
Figure 13-4: A Scatter Plot of Particle Size Distributions for 6.35 mm (¼") Composites Tested During Variou Metallurgical Programs, Moss Mine Project	
Figure 13-5: Gold Recovery Curve for P99 6.35 mm (¼") Material Comprising Mineralization from the Moss Vein ar Its Associated Stockwork, Moss Mine Project	
Figure 13-6: Gold Recovery by Cyanide Leaching from Prepared Moss Vein + Stockwork Composites, with Best-I Upper, Average and Lower Recovery Trendlines	
Figure 13-7: Silver Recovery by Cyanide Leaching from Prepared Moss Vein + Stockwork Composites, with Best-I Upper, Average and Lower Recovery Trendlines	
Figure 13-8: A Scatter Plot of Gold Recoveries by Test Type, Moss Mine Project Metallurgical Programs	34
Figure 13-9: A Scatter Plot of Gold Recoveries by Test Type, Moss Mine Project Metallurgical Programs	35
Figure 13-10: A Scatter Plot of the Calculated Gold Head Grades of the Samples and Composites Used f Metallurgical Testing, by Test Type, Moss Mine Project	
Figure 13-11: A Scatter Plot of the Calculated Silver Head Grades of the Samples and Composites Used f Metallurgical Testing, by Test Type, Moss Mine Project	
Figure 13-12: A Long-Section Vulcan <sup>®</sup> Snapshot View (looking north) of the Moss Vein and West Vein Showing the Distribution of Metallurgical Test Samples (that are colour-coded by test program)	
Figure 13-13: A Long-Section Vulcan <sup>®</sup> Snapshot View (looking north) of the Hangingwall Stockworks of the Mos Vein and West Vein Showing the Distribution of Metallurgical Test Samples	
Figure 13-14: A Long-Section Vulcan <sup>®</sup> Snapshot View (looking north) of the Footwall Stockworks of the Moss Ve and West Vein Showing the Distribution of Metallurgical Test Samples (that are colour-coded l test program)	by
Figure 15-1: Plan view of the Moss Pit Design	97
Figure 16-1: Mining Overview10	)3
Figure 16-2: Core photographs from AR-18110	)5
Figure 16-3: Core photographs from AR-18410	)6



#### Moss Gold-Silver Project Form 43-101F1 Technical Report

Figure 16-4: Steeply dipping joint sets in the Phase I pit wall that parallel regional fault structures	80
Figure 16-5: Existing Phase I pit wall showing footwall trace of Moss Vein1	80
Figure 16-6: Pushback A1	13
Figure 16-7: Pushback B1	13
Figure 16-8: Pushback C1	14
Figure 16-9: Pushback D1	14
Figure 16-10: Pushback E1	15
Figure 16-11: Pushback F1	15
Figure 16-12: Mine Waste Rock Storage1	19
Figure 16-13: Mining Layout - Year 11	20
Figure 16-14: Mining Layout - Year 21	21
Figure 16-15: Mining Layout - Year 31	21
Figure 16-16: Mining Layout - Year 41	22
Figure 16-17: Mining Layout - Year 51	22
Figure 16-18: Stable pit wall angles achieved with controlled blasting (IOC - Humphrey pit on left, Lac des lles pit right)1	
Figure 17-1: Summary Process Flow Diagram1	27
Figure 17-2: General Arrangement Site Plan1	28
Figure 18-1: Required Make-up Water1	35
Figure 19-1: Five year gold price (source: Kitco.com)1	39
Figure 24-1: Pumping Wells Plan with Pit Outline (in red)1	72
Figure 24-2: Moss Vein outline (black) with pit shell trace (red) and drill traces (blue) showing water encountered airlift holes (green bars)1	
Figure 24-3: High-Level Mine Development Schedule1	74



# LIST OF TABLES

TABLE	DESCRIPTION	PAGE
Table 1-1: N	Moss Mine Project Mineral Resource Estimate by David Thomas, P.Geo.	3
Table 1-2:	Total Mineral Reserves, Effective Date May 2015	3
Table 1-3: [	Direct and Indirect Capital Cost Estimate Summary	6
Table 1-4: l	Life of Mine Operating Cost by Area	6
Table 1-5: F	Project Economics	7
Table 2-1: [	Dates of Site Visits and Areas of Responsibilities	10
Table 2-2:	Terms and Definitions	11
Table 4-1: L	List of Patented Claims	15
Table 4-2: A	A Summary of MinQuest's Block of Unpatented Lode Claims (Moss Series), Moss Mine Proj	ect Area 19
Table 4-3: A	A summary of the Golden Vertex Block of Unpatented Lode Claims (GVC Series)	22
Table 4-4: /	A Summary of the Company's Unpatented Lode Claims (Moss 201 to Moss 211 Series) of Project Area	
Table 4-5: A	A Summary of the Company's Silver Creek Series of Unpatented Lode Claims,	29
Table 4-6: A	A Summary of the Estimated Claim and Permit Overlaps, Moss Mine Project	33
Table 5-1: N	Most Direct Route from Las Vegas to Project Property	43
Table 6-1:	Summary of Exploration and Development Work Carried Out by Previous Owners and Op Moss Mine Property (the 15 patented lode claims) to 2009	erators on the 48
Table 7-1:	A Summary of Microscopic Gold Particle Size Analysis, Moss Vein Material	54
Table 9-1: S	Significant Intersections, the Company's 2012 Underground Channel Sampling Program	60
Table 9-2: I	Key Assay Results	63
Table 10-1:	: Holes Drilled by Previous Owners for Known Collar Positions	65
Table 13-1:	: A Summary of Metallurgical Testwork Programs on Samples of Mineralized Material from t Moss Mine Project	
Table 13-2	2: A Summary of the West Extension Composites, McClelland Laboratories' 2015 Test P Mine Project	
Table 13-3:	: A Summary of Head Screen Analysis Results, West Vein Material, McClelland Laborator Program, Moss Mine Project	
Table 13-4:	: A Summary of Head Screen Analysis Results, Hangingwall Stockwork Material, McClelland 2015 Test Program, Moss Mine Project	
Table 13-5:	: A Summary of Bottle Roll Test Results, McClelland Laboratories' 2015 Test Program	75
Table 13-6:	: A Summary of the Head, Recovered and Tail Assays by Size Fraction, McClelland Labor Test Program, Moss Mine Project	
Table 13-7:	: A Summary of Test Results for 6.35 mm (¼") Feed from the Moss Vein and West Vein, In Associated Stockworks, Moss Mine Project	



Table 13-8: Quantities and Assay Grades of Materials Exposed to Cyanidation on the Phase I Heap	79
Table 13-9: Recovered Ounces and Related Recovery Rates, Overall Phase I Heap Leach	79
Table 13-10: Recovered Gold Ounces and Gold Recovery Rates for the 109,289 t of P99 6.35 mm Material O         Phase I Heap Leach Operation	
Table 13-11: A Summary of Metal Recovery Rates by Test Type and Head Feed Particle Size, Moss Mine Projec	:t .86
Table 13-12: A Summary of the Metallurgical Drillhole Samples that Intersect the Moss Vein, Moss Mine Project .	89
Table 13-13: A Summary of the Metallurgical Drillhole Samples that Intersect the Hangingwall Stockwork of the N Vein, Moss Mine Project	
Table 13-14: A Summary of the Metallurgical Drillhole Samples that Intersect the Footwall Stockworks of the N           Vein, Moss Mine Project	
Table 14-1: Moss Mine Project Mineral Resource Estimate by David Thomas, P. Geo	92
Table 15-1: Pit Optimization Parameters	96
Table 15-2: Moss Pit Design Parameters	97
Table 15-3: Comparison Between Ultimate Pit Design and Optimal Pit Shell	98
Table 15-4: Cut-off Grade Calculation Parameters	99
Table 15-5: Comparison of Mineral Resources against Mineral Reserves	99
Table 15-6: Low Grade Ore Within the Ultimate Pit	. 100
Table 15-7: Moss Phase 1 Stockpiles	. 100
Table 15-8: Total Mineral Reserves, Effective Date May 2015	.101
Table 16-1: Pit Domains	. 106
Table 16-2: Principal Structural Trends	. 107
Table 16-3: Wedge Analysis	. 109
Table 16-4: Pushback Quantities	.112
Table 16-5: Mine Production Schedule	.116
Table 16-6: Stock Adjusted Plant Production Schedule	.117
Table 16-7: Short-Term Production Schedule (Year 1)	.118
Table 16-8: Mine Waste Rock Storage Capacities	. 119
Table 16-9: Waste Rock Storage Parameters	.120
Table 16-10: Contract Mining Fleet	.125
Table 17-1: Head Grades and Recoveries Used for Mass Balance Simulation	.134
Table 18-1: Expected Power Demand	.136
Table 19-1: Marketing Terms	.139
Table 20-1: Wet Chemistry Test Results	.140
Table 20-2: Metal Content Chemistry Test Results	.140
Table 20-3: Sulfur and CaCO <sub>3</sub> Neutralizing (Tonnes of CaCO <sub>3</sub> /kT rock) Content in Samples	.142



#### Moss Gold-Silver Project Form 43-101F1 Technical Report

4
18
18
50
52
52
53
53
54
54
55
6
56
57
57
57
58
58
59
0
0
51
51
62



# LIST OF APPENDICES

# APPENDIX DESCRIPTION

- A Feasibility Study Contributors and Professional Qualifications
  - Certificate of Qualified Person ("QP")



#### 1 SUMMARY

#### 1.1 ISSUER

This technical report has been prepared at the request of the issuer, Northern Vertex Mining Corporation (the "Company") that is incorporated in British Columbia, Canada ("B.C."). The Company has its offices at Vancouver, B.C., and it is listed on the TSX-V (trading symbol: NEE) and on the OTCQX (trading symbol: NHVCF). The Company's focus is on the reactivation of the Moss Mine Gold-Silver Project in Mohave County, northwest Arizona, USA (the "Moss Mine Project"), which is the only project or property that the Company has an interest in. The Company has the right to earn-in a 70% property interest in that portion of the Moss Mine Project that is subject to a joint venture agreement with Patriot Gold Corporation, a Nevada, USA, domiciled corporation.

#### 1.2 Moss Mine Project

The Moss Mine Project area is located approximately 22 km by road to the east of Bullhead City, in the historically significant Oatman Mining District of Mohave County, Arizona. It comprises a total area of approximately 4,030.8 hectares, centered on Latitude 35° 6′ 00″ North, Longitude 114° 26′ 52″ West, which was the approximate location of an historical headframe associated with (limited) historical underground mine workings that exploited the Moss Vein. The Company's activities have thus far mainly focused on the exploitation of the Moss Vein, West Extension and their associated stockworks that contain the gold-silver mineralization of interest. The target mineralization outlined is contained within a central area of 15 patented lode claims (102.8 hectares).

After signing the Exploration and Option to Enter Joint Venture Agreement, Moss Mine Project (the "Earn-in Agreement" or "Patriot Gold Agreement") with Patriot Gold in March 2011, the Company undertook a three-phase exploration drilling program that was completed in 2013. During 2013 the Company's main focus was on its Phase I Pilot Plant activities ("Phase I") that comprised open pit mining, on-site heap leaching and processing of a bulk sample of Moss Vein mineralized material, with off-site carbon stripping and doré production. All Phase I activities were completed during Q4 2014.

The second phase, or Phase II as it referred to in Company literature, is the subject of this feasibility document and involves the mining and processing of ores wholly contained within the patented land boundaries.

A third phase, or mine life extension is to be evaluated at a later date. This phase will evaluate the gold and silver resources available on the unpatented ground and the economics for development of a standalone operation, or extended mine life beyond Phase II.

A Preliminary Economic Assessment ("PEA") was compiled in 2013. The results are reported in a 2013 Technical Report. The resource parameters assumed within the scope of the PEA are no longer applicable so the results of the PEA are no longer relevant.

An updated Mineral Resource Estimate (MRE) was issued in December 2014 in a Technical Report entitled "Technical Report on the 2014 Mineral Resource Update – Moss Mine Gold-Silver Project" filed on SEDAR. The MRE in the 2014 Technical Report forms the basis for the Mineral Reserves reported herein using the geological model and the same block model.

#### 1.3 This Technical Report

This Technical Report is focused on the results of a Feasibility analysis of a standalone mining operation constrained to the privately owned lands that are the patented claims at the Moss Mine. This document provides an overview of the proposed development plan, the metallurgical response to cyanidation, the processing plant, heap leach pad and associated ancillary facilities, along with the capital and operating costs.



#### 1.4 GEOLOGY

The host rock for the Moss deposit is the Moss porphyry, a uniform monzonite to quartz monzonite porphyry intrusion. It is coarse grained with 4 mm to 10 mm diameter plagioclase phenocrysts with biotite and lesser hornblende. There is also a fine grained quartz monzonite porphyry, with 1 mm to 2 mm diameter plagioclase phenocrysts with minor biotite and minor magnetite, which is a later phase intrusive that cross-cuts the coarse porphyry and forms an intrusive breccia matrix in places.

The gold-silver mineralization is contained within three main veins and their associated stockworks: the dominant Moss Vein; a western extension of the Moss Vein (the "West Vein"); and the Ruth Vein to the south of the Moss Vein. Moss Mine Project drillhole logs and assay database indicate a potential for other mineralized veins that are both similar to and sub-parallel to the Ruth Vein. For purposes of geological domaining they have been termed Vein No. 4.

The Moss ores are unique in comparison to many other epithermal ores subject to heap leaching because, within the depths being exploited for mine operations, as they do not exhibit the traditional oxide-transition-sulphide boundaries. The sulphide zone is well below the depth the maximum depth of mining. The primary mineralization consists of free gold in quartz and calcite veins.

#### 1.5 GEOTECHNICAL

The leach pad and waste rock foundations were assessed by geological mapping, and can be characterized as having a shallow cover of sandy soil overlying competent bedrock. Within the leach pad area a total of 15 test pits were used to assess the depth of rippable rock, and to collect samples for geotechnical testing. The test pits revealed that the rippable depth was less than 1m over most of the leach pad foundation footprint which, in turn is indicative of the competency of the rock in this area. No particular geotechnical concerns are evident or need to be designed for.

The open pit has been assessed geotechnically to determine the optimum slope angles for mining. The analyses reveal the hangingwall rocks are typically competent below 20m depth, and the footwall is typically very competent. Structural mapping revealed two principal structural trends consisting of a near vertical north-south fracture set parallel the regional fault trends, and an east-west fracture set parallel the Moss Vein. Subsequent kinematic analyses did not reveal any joints sets or joint set combinations that would control wall angles in the Moss Pit.

The final recommended pit slope angles consist of 82 degree bench face angles, and 65 degree inter-ramp wall angles with 3m catch benches.

#### 1.6 WATER SUPPLY

The principal source of water for the Phase II operations will be groundwater from wells. The Company commissioned a hydrogeological investigation during the feasibility study, to investigate the sources and quantities of water that may be available on the patented claims. Based on this evaluation the best sources of water were identified as: groundwater in the dry washes which are thought to demark faults or fracture zones; a local wet region in the central region of the open pit where a number of exploration holes encountered water; and dewatering of the open pit. The study concluded that groundwater wells on the patented claims could yield 130 gpm. Another 130 gpm is expected be available on the unpatented ground and the feasibility budget includes an allowance for an expanded hydrogeological investigation on the unpatented ground.



#### 1.7 2014 MINERAL RESOURCES

The Mineral Resources that are the subject of this technical report (Table 1-1) were classified under the 2014 CIM Definition Standards for Mineral Resources and Mineral Reserves, by application of a cut-off grade that incorporated mining and metallurgical recovery parameters. The estimated Mineral Resources are constrained to a pit shell based on commodity prices, metallurgical recoveries and operating costs. Long-term metal prices of US\$1,250/oz Au and US\$20.0/oz Ag were applied along with metallurgical recovery rates of 82% for gold and 65% for silver. The stated Mineral Resources have an Effective Date of October 31, 2014.

Category (0.25 g/t Au Cut-Off)	Tonnes	Au (g/t)	Ag (g/t)	Au (oz)	Ag (oz)	AuEq (g/t)	AuEq (oz)
Measured	4,860,000	0.97	10.4	152,000	1,630,000	1.10	172,000
Indicated	10,620,000	0.66	8.7	225,000	2,980,000	0.77	263,000
Measured + Indicated	15,480,000	0.76	9.3	377,000	4,610,000	0.87	435,000
Inferred	2,180,000	0.55	5.6	38,000	390,000	0.62	43,000

 Table 1-1: Moss Mine Project Mineral Resource Estimate by David Thomas, P.Geo.

 (undiluted, pit constrained, 100% in-pit recovery, Effective Date October 31, 2014)

\* Refer to the footnotes on Table 14-1.

#### 1.8 MINERAL RESERVES

Mineral Reserves were developed using in-situ available mineral resources which were defined inside an estimate economic envelope at 0.25 g/t Au cut-off grade. The mineral reserves were developed by applying the relevant economic and design criteria to the resource model in order to define the economically extractable portions of the resource. The final reserve pit shells were constrained by the available space within the patented land boundaries.

The Mineral reserves have been classified in accordance with the 2014 CIM Definition Standards for Mineral Resources and Mineral Reserves. Measured Resources (converted to Proven Reserves) are based on a drill grid with a minimum spacing of 25m x 25m. Indicated Resources (converted to Probable Reserves) are based on a drill grid with a minimum spacing of 50m x 50m.

The reserves were constrained to a Lerchs-Grossman pit shell using long term metal prices of US\$1250 for gold and US\$18.50 for silver. Table 1-2 defines the total tonnes and grades within the ultimate pit design when the in-situ quantities are adjusted for mining losses and dilution.

Material	Category	ROM (kT)	Diluted Au (g/t)	Diluted Ag (g/t)	Contained Au (oz)	Contained Ag (oz)	Diluted AuEq (g/t)	Contained AuEq (oz)
Primary Ore	Proven	4,208	0.948	9.990	128,260	1,351,550	1.064	143,950
(COG – 0.25	Probable	3,304	0.754	9.22	80,090	979,400	0.861	91,460
g/t)	Combined	7,512	0.863	9.65	208,350	2,330,950	0.975	235,410
Low Grade	Proven	251	0.215	2.98	1,740	24,050	0.25	2,020
Ore (COG -	Probable	210	0.216	3.55	1,460	23,970	0.257	1,740
0.20 g/t)	Combined	461	0.216	3.24	3,200	48,020	0.254	3,760
Stockpiles	Proven	62	0.777	8.84	1,550	17,620	0.880	1,750
ALL	Combined	8,035	0.825	9.28	213,100	2,396,590	0.933	240,920

#### Table 1-2: Total Mineral Reserves, Effective Date May 2015

\* Refer to the footnotes on Table 15-8.



It can be seen that the reserves outlined above are approximately 50% of the resources outlined in Section 1.7. This is a direct consequence of limiting the project development to be constrained within the patented land boundaries. The reserve pit is therefore not defined by mine economics. The majority of mineral resources defined within the measured category have been converted to mineral reserves and the remaining resources are still available and could be analyzed as part of any mine life extension studies.

#### 1.9 METALLURGY

Since 1990 a total of nine metallurgical test programs have been carried out on mineralized material from the Moss deposit. Cyanidation test results for the first program are not available, however, detailed information covering a total of eight cyanide shake tests, 65 bottle roll tests and 14 column leach tests is available, along with various head and tail analyses and head and tail screen analyses.

The Moss Mine project metallurgical database, as well as the results of the Phase I Pilot Plant operation, demonstrate that mineralized material from the Moss deposit is amenable to cyanidation, especially gold recovery that is consistently rapid and comprehensive in fine grained and pulverized feeds. The predicted recoveries include 82% for gold, and 65% for silver. The Moss ores do not contain any deleterious elements such as mercury or arsenic.

The available test data shows that the Moss vein is metallurgically straightforward. It is not necessary to differentiate metallurgical responses by geographic position across the Moss deposit, including the West Extension. The Moss vein is not an oxide-transition-sulphide deposit so it is not necessary to differentiate between mineralized material located above and below the present water table. The economic minerals of interest are native gold and electrum, which are not susceptible to surface weathering effects, as well as minor acanthite (a silver sulphide).

#### 1.10 MINING

Exploitation of the mineral reserves in the Moss vein and adjacent stockworks on the patented lands will be by open pit mining methods with a conventional drill-blast-load-haul mining fleet. All of the mining will be carried out by a contract miner for the full 5 years of the mine life.

Controlled drilling and blasting techniques will be needed to minimize blast damage to the final pit walls. The slope designs presented in this report are predicated the use of angled drilling and controlled blasting in order to achieve stable final walls. An allowance has been made in the mining budget for the use of controlled perimeter blasting with an airtrack drill.

Grade control will be a critical item to ensure the success of the Moss project as excessive dilution will reduce the head grade of material placed on the leach pad, and the additional tonnes created by dilution add to the operating cost. For Phase II operations a robust grade control program will be established based on experience at other western US heap leach operations. The program will be a collaborative effort between the Company and the mining contractor.

# 1.11 PROCESSING

Metallurgical testwork to date, along with the completion of the pilot plant operations, validate that the Moss Mine orebody is amenable to gold and silver recovery via cyanidation. The most economically effective process has been identified as one that consists of heap leaching of crushed and agglomerated ore, followed by a Merrill Crowe metal recovery plant and refinery to produce gold and silver doré bars on site.

The plant incorporates three stage crushing as was used in the pilot plant. The design is based on 350 days of operation per calendar year. The nominal crushing and ore stacking tonnage will be 2,500 tonnes per day (tpd) for



the first six months of operation. The tonnage will increase to 3,500 tpd in month seven, followed by a tonnage increase to 5,000 tpd in month thirteen through the end of the mine life.

The ore heap consists of a completed pad area of 242,500 m<sup>2</sup> to be constructed in 3 stages. The majority of the leach pad has been designed to Arizona BADCT standards and consists of an LLDPE liner over a GCL, with an interliner leak detection drainage layer. The steep backslope areas of the leach pad incorporate double LLDPE liners with an inter-liner drainage layer. This portion of the pad does not meet the prescriptive design guidelines and will require ADEQ review and approval.

A 450m<sup>3</sup>/hr Merrill Crowe recovery plant will process the pregnant solutions to produce doré bars.

#### 1.12 INFRASTRUCTURE AND SERVICES

The Moss Mine site is not connected to the main electrical grid that serves Mohave County, hence the Feasibility Study assumes diesel power generation using five 750kW generators. Three of the generators will be located at the crusher, and two will be located at the Merrill Crowe plant.

The primary water source for the heap leaching operations will be groundwater wells and dewatering of the open-pit. It is anticipated that a regional groundwater assessment program will prove the availability of the heap leach make-up water requirements which are estimated to be 190 gpm on average and 260 gpm on a peak demand basis. The divergence between these numbers is directly linked to seasonal climatic variations which will allow for the effective management of water resources in and around the operations. The Feasibility Study budget includes an allowance for regional groundwater exploration in areas of known water occurrence.

In the event the project has a water deficit from available groundwater resources, two options are available. The first is to temporarily reduce the daily throughput to reduce the make-up water demand, and the second is to construct a water line from Bullhead City. The City has offered to sell water to the Project should it be needed.

Site infrastructure, due to the proximity of Bullhead City and other major mining equipment supply centers (e.g. Phoenix) will be limited to operational support facilities (e.g. trailer offices, warehouses, workshops etc).

#### 1.13 CAPITAL COSTS

The Feasibility Study capital estimate (Table 1-3) is based on vendor quotes for all the major capital items including conveyors, crushers, the Merrill Crowe facility, heap leach pad construction (earthworks and liners), and other ancillary works.

Total initial capital costs are estimated at US\$33.0 M comprising US\$24.8 M in direct costs, US\$4.3 M in indirect costs, a 7.5% contingency on the direct and indirect costs and US\$1.65 M in owner costs.



•	
Description	Cost
Direct Costs	
Site General	\$895,619
Mining Fleet	\$0
Primary Crushing	\$1,914,626
Fine Crushing	\$4,311,434
Crushed Ore Transfer	\$1,479,804
Leach Pad – Stacking	\$1,482,549
Leach Pad & Ponds – Earthworks &	\$5,251,058
Lining	
Ponds – Pump & Pipe	\$1,202,534
Merrill Crowe	\$4,410,729
Refinery	\$1,726,463
Water Systems	\$1,062,094
Power Generation	\$838,330
Reagents	\$195,297
Ancillaries	\$68,348
Subtotal Direct Cost	\$24,838,885
Indirect Costs	
Contingency	\$2,180,434
Other Indirects Including EPCM,	\$4,339,641
Leach Pad Lining QA, Mobilization,	
Spares and Commissioning	
Owner's Costs	\$1,650,000
Arizona Tax	\$0
TOTAL	\$33,008,960

#### Table 1-3: Direct and Indirect Capital Cost Estimate Summary

#### 1.14 OPERATING COSTS

Operating costs were calculated in three areas – Mining, Process and G&A. Mining costs were derived directly from mining contractor bids. As contemplated in the Company's Preliminary Economic Assessment, the Company invited several industry experienced mining contractors to submit bids for the mining component of the Feasibility Study. The Company selected the lowest bid to form the basis for mining costs in this study. Process and G&A operating costs were estimated largely from first principles and from quotes for some of the major consumables including cyanide, cement, and fuel. The life of mine operating cost estimate is shown in Table 1-4 below:

Mining	\$5.96
Process Plant	\$6.65
General Administration	\$0.95
Refining/Transportation	\$0.10
Total	\$13.66

Table 1-4: Life of Mine O	perating Cost by	/ Area
---------------------------	------------------	--------

The project is expected to employ a full-time staff of 83 at the 5,000 tpd production rate. The staffing includes 18 for the contract miner, 49 in the process plant, and 16 general and administrative staff.



#### 1.15 FINANCIAL ANALYSIS

The economic analysis was carried out using standard discounted cash flow modelling techniques. The production and cost estimates derived for the Feasibility Study were estimated on a monthly basis for all pre-production costs and for the first twelve months of production. Quarterly estimates were used for the remaining forty-eight months of production.

Applicable royalties were applied – the BHL, Greenwood and MinQuest royalties – current Federal and Arizona State taxes were incorporated into the cash flow model and the "unit of production" depreciation method was used to calculate net taxable income. The economic analysis was carried out on a 100% project basis. Given the location and relatively uncomplicated nature of the project, the Base Case uses a 5% discount factor in arriving at the project Net Present Value ("NPV"). Standard payback calculation methodology was also utilized.

The project is estimated to have a Pre-Tax NPV (5%) of \$75.3 million and an After-Tax NPV (5%) of \$55.3 million. The After-Tax Internal Rate of Return (IRR) is estimated at 44.3% with a payback of 2.4 years.

	Pre-Tax	After-Tax
NPV@ 5%	US\$75.3 M	US\$55.3 M
IRR%	54.6%	44.3%
Payback (yrs)	2.3	2.4

Table 1-5: Project Economics

#### 1.16 QUALIFIED PERSONS OPINION

Based on the analysis herein, it is the opinion of the authors that the proposed heap leach mining operation on the Moss Project patented lands, as assessed in this report, is technically and economically feasible and should provide a robust return on the investment needed to build the mine. We are also of the view that the permitting of such a mine, subject to applicable legal requirements in the ordinary course, may be reasonably assumed to be likely. This Feasibility Study was prepared in accordance with standard mining industry practices and in particular the recommendations for feasibility study analysis published by both the Canadian Institute of Mining and Metallurgy ("CIM") and the Society of Mining, Metallurgy and Exploration (SME). This report supports a positive production decision by the project owners.



### 2 INTRODUCTION

This document presents the results of a Feasibility Study analysis of the Moss Gold-Silver Project located in Mohave County, Arizona. This document was prepared exclusively for Northern Vertex Mining Corp. (the "Company") (TSX.V: NEE, OTCQX: NHVCF) and its 100% owned subsidiary Golden Vertex Mining Corp. ("Golden Vertex").

The Feasibility Study was prepared in accordance with standard industry practices and in accordance with Canadian Securities Administrators NI 43-101 (Standards of Disclosure for Mineral Projects).

A substantially identical version of this Feasibility Study has been tendered to Patriot Gold Corp. as the "Bankable Feasibility Study" ("BFS") required by the Company's 2011 Exploration and Option to Enter Joint Venture Agreement, Moss Mine Project with Patriot Gold Corp. (the "Earn-in Agreement" or "Patriot Gold Agreement"). Under the Earn-in Agreement, Northern Vertex will earn 70% of the Project with the BFS being the final material requirement of the earn-in. "Bankable Feasibility Study" is not a NI 43-101 compliant term however that was the term that was used in the Earn-in Agreement which was originally entered into by Patriot and the original US based counterparty which later assigned its rights to the Earn-in Agreement to Northern Vertex's subsidiary. The analyses and conclusions of this technical report meet both Canadian Institute of Mining and Metallurgy ("CIM") and the United States Society for Mining, Metallurgy and Exploration ("SME") standards for feasibility studies.

The Moss Gold-Silver Project encompasses 15 patented lode claims covering 102.8 hectares and 468 unpatented lode claims for a total of 4,030.8 hectares. The focus of the Feasibility Study is the gold-silver mineralization associated with the Moss Vein, the West Extension and adjacent stockworks on the patented claims. All of the project facilities, including the open-pit, heap leach pad, waste dumps and other ancillary works are designed to be constrained wholly within the patented claims.

This Feasibility Study envisions an open-pit mining operation with crushing, agglomeration and stacking of ore onto a conventional heap leach pad. Gold and silver recovery will be achieved by a Merrill Crowe process to produce doré bars at the project site. The Project has been designed to have a 5 year mine life at a projected mining rate of 5,000 tonnes per day (tpd). All dollars are in US dollars.

This document should be read along with the recently filed Mineral Resource Technical Report dated December 30, 2014, filed on SEDAR. The December 2014 Technical Report contains additional details on Moss Project, including the Mineral Resource estimate calculations that form the basis of the Mineral Reserves reported herein, as well as a detailed analysis of historical metallurgical testwork. *The reader is advised that this document will take precedence in the event of any discrepancies with information provided in the December 2014 Technical Report.* 

#### 2.1 SOURCES OF INFORMATION

The information contained in this Technical Report was compiled from various published and internal Company documents, news releases, and reports by contributing consultants and the Qualified Persons (authors) of this Technical Report, as well as documents sourced by means of web searches and observations made during the Qualified Persons' site visits. The various reports, documents and files are cited, where appropriate. The key documents referenced herein include:

- Various news releases by the Company, sourced from its website (www.northernvertex.com);
- United States Bureau of Land Management status reports for the patented and unpatented lode claims that comprise the Moss Mine project area;
- Consultancy reports to the Company by Stephen Godden, Independent Mining Consultant:
- Entitled 'Moss Mine Gold-Silver Project, Mineralogical and Metallurgical Review' and dated April 18, 2015.



- Entitled 'Moss Mine Gold-Silver Project Phase I Pilot Plant Heap Leach Metal Recovery Reconciliation' dated January 21, 2015.
- Consultancy reports to the Company by MineFill Services, Inc.: entitled 'Moss Gold-Silver Project Geotechnical Design of the Phase II Pit' dated June 30, 2015.
- Consultancy reports to the Company by Smith Water Management Services, Inc.: entitled 'Moss Project Hydrogeological Study' dated June 22, 2015.
- Consultancy reports to the Company by Scott A Britton Mining Consultants: entitled 'Moss Mine Gold-Silver Project Mineral Reserve Estimate, Pit Design, and Production Scheduling Studies' dated May 31, 2015.
- Consultancy reports to the Company by Golder Associates: entitled 'Heap Leach Facility Description' including drawings and dated June 12, 2015.
- Consultancy memos to the company by CDM Smith regarding project permitting.
- Consultancy reports to the Company by M3 Engineering & Technology Corp. on Process and Infrastructure Design.

The authors have relied almost entirely on information derived from work completed by the authors of published data sources, Company staff members and Company consultants. Although the authors have reviewed much of the available data and the principal author of this Technical Report has visited the Project area, these tasks only validate a portion of the entire dataset. The authors have made judgements about the general reliability of the underlying data that is assumed to be both accurate and valid, based on the professional status of the reports' authors and the nature of their reports.

Much of the background information on the Moss Mine Project, such as the history, past exploration, exploration drilling, sampling and assaying, has been reported in previous Technical Reports by others. This past information has been updated only when it was relevant to do so and/or when it was clear that additional information was required.

# 2.2 QUALIFIED PERSONS

The Qualified Persons for this Technical Report are as follows:

**Dr. David Stone**, **P.E.** – Mining Consultant and President of MineFill Services, Inc. of Bothell, Washington. Dr. Stone is the principal author of this Technical Report. He is responsible for all sections of this Technical Report. He has reviewed prior Technical Reports relating to the Moss Mine Project, and is a co-author and QP for the December 2014 Technical Report. He has made numerous trips to the project site since his first visit on November 15, 2014.

**Mr. Thomas L. Drielick, P.E.** – Senior Vice President of M3 Engineering & Technology Corp. of Tucson, Arizona. Tom is responsible for Section 17 (Recovery methods) and Section 21.2.3 Thru Section 21.2.8 (Process Plant Operating and Maintenance Costs).

**Mr. Daniel K. Roth, P.E.**- Project Manager of M3 Engineering & Technology Corp. of Tucson, Arizona. Daniel is responsible for Section 21.1 (Capital Cost Estimate).

**Mr. Eugene Muller**, **P.E.** - Arizona Registered Professional Engineer and Golder Associates Inc. Senior Consultant with 25 years of experience in mining related geotechnical engineering and mine waste management projects. Typical project responsibilities include site investigation, geotechnical and geochemical site characterization, engineering design and project management for projects in the western US and Central America.

Mr. Scott Allan Britton, CEng MIMMM (CP) – Mining Specialist and Director of SAB Mining Consultants Ltd of Hamilton, United Kingdom. Scott is a contributing author for this report and is responsible for Section 15: *Mineral* 



*Reserve Estimates.* Scott provided mine engineering support during the Moss Phase 1 Operations and reviewed prior Technical Reports relating to the Moss Mine Project. He visited the project site on September 22<sup>nd</sup> / 23<sup>rd</sup>, 2014.

QP Name	ame Site Visit Date Area of Responsibility		
David Stone	15 November 2014	All Sections except those listed below	
Thomas L. Drielick	NA	Sections 17, 21.2.3 to 21.2.8	
Daniel K. Roth	20 February 2015	Section 21.1	
Eugene Muller	20 February 2015	Sections 17.1.3, 21.1.6, 25.2.4	
Scott A. Britton	22 September 2014	Sections 15, 16, 25.2.6	

# Table 2-1: Dates of Site Visits and Areas of Responsibilities

# 2.3 TERMS AND DEFINITIONS

Important terms used in this report are presented in Table 2-2. These are not all of the terms presented in the Technical Report, but include major terms that may not have been defined elsewhere.



Г

Abbreviation	Unit or Description
AA	Atomic Absorption
AAC	Arizona Administrative Code
AAS	atomic adsorption spectrophotometry
ADEQ	Arizona Department of Environmental Quality
Ag	silver
APP	aquifer protection program
ASLD	Arizona State Land Department
Au	gold
AWQS	aquifer water quality standards
BADCT	best available demonstrated control technology
B.C.	British Columbia, Canada
BDV	block dispersion variance
BHL	Hartmut W. Baitis, Robert B. Hawkins & Larry L. Lackey
BLM	Bureau of Land Management
cm	centimetre
CSRM	certified standard reference materials
Cu	copper
CV	coefficient of variation
EqAu	equivalent gold (ounces or grade)
FAAS	flame atomic absorption spectrophotometric
FLPMA	Federal Land Policy and Management Act of 1976
ft	feet
g	gram
g/t	grams per tonne
ha	hectare
Нд	mercury
ICAP-OES	inductively coupled argon plasma – optical emission spectrophotometer

# Table 2-2: Terms and Definitions

Abbreviation	Unit or Description			
ICP-AES	inductively coupled plasma atomic			
	emission spectrometer			
ISGC	Idaho State Gold Company, LLC			
kg	kilogram			
kg/t	kilogram per tonne			
km	kilometre			
L	litre			
m	metre			
Μ	million			
m <sup>2</sup>	metre squared			
MCF	mine call factor			
M+I	Measured plus Indicated (categories of			
IVI+I	Mineral Resource)			
ml	milli-litre			
mm	millimetre			
MRE	Mineral Resource estimate			
MRM	Mineral Resource model			
MSGP	multi-sector general permit			
Mt	million tonnes			
NaCN	sodium cyanide			
0Z	troy ounce (31.10346 g)			
oz/t	troy ounce per short ton			
P80 (or any other	% of material (indicated by the number)			
subscript number)	passing a specified mesh size			
PEA	Preliminary Economic Assessment			
RSE	relative standard error of a kriged			
-	estimate			
SA:V	surface area to volume ratio			
SD	standard deviation (statistical function)			
SMU	selective mining unit			
SWPPP	stormwater pollution prevention plan			
t	metric ton (or tonne)			

Unless otherwise stated, all dollar figures are in United States dollars (US\$). The metric system is employed; for the sake of clarity equivalent US Customary units are sometimes stated in parentheses.



# 3 RELIANCE ON OTHER EXPERTS

The authors have not relied upon any other experts.

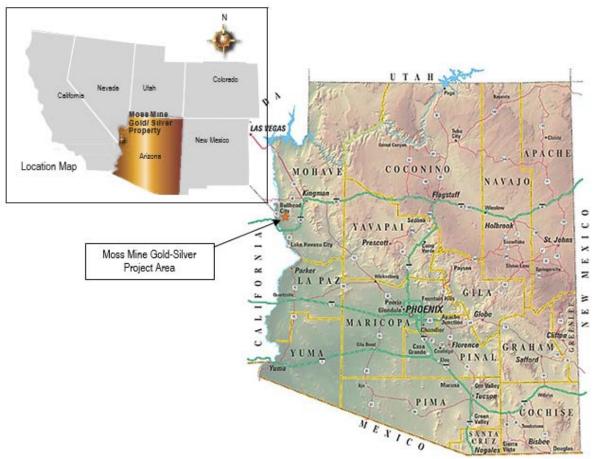


### 4 PROPERTY DESCRIPTION AND LOCATION

#### 4.1 PROPERTY DESCRIPTION AND LOCATION

The Company is focused on the reactivation of the Moss Mine Gold-Silver Project in Mohave County, northwest Arizona, USA (the "Moss Mine Project", Figure 4-1), where the Company has the right to earn-in a 70% property interest through joint venture with Patriot Gold Corporation ("Patriot Gold"). The project is being developed in 3 Phases:

- The first phase, Phase I (or pilot heap) consisted of roughly 122,000 tonnes of ore mined, crushed, agglomerated, and placed on a heap leach pad to recover roughly 4,150 ounces of gold. The intent of the pilot heap was to confirm the leach kinetics, metal recovery rates and recovery schedule for commercial operations.
- The second phase, or Phase II as it referred to in Company literature, is the subject of this feasibility document and involves the mining and processing of ores wholly contained within the patented land boundaries.
- The third phase, or mine life extension is to be evaluated at a later date. This phase will evaluate the gold and silver resources available on the unpatented ground and the economics for development of a standalone operation, or extended mine life beyond Phase II.



(Source: www.northernvertex.com) Figure 4-1: General Location of the Moss Gold-Silver Project



#### 4.2 PROPERTY LOCATION

The Moss Mine Project area (the "Project area") is centered on Latitude 35° 6′ 00" North, Longitude 114° 26′ 52" West (the "Property center"), which was the approximate location of the historical headframe associated with historical underground mine workings, at the western end of the Moss Vein outcrop. The headframe was relocated to Bullhead City in 2013. Bullhead City is approximately 10 km to the west and northwest of the Property center. See Figure 4-1.

The total Project area comprises approximately 4,030.8 hectares ("ha"), including:

- 102.8 ha in the 15 patented lode claims detailed above;
- approximately 3,827.1 ha in 468 unpatented lode claims to which various agreements and royalties apply; and
- one Arizona State exploration permit covering an area of 259 ha (640 acres or one section); but
- approximately 158.2 ha of overlap for a net area of approximately 4,030.8 ha.

The total area of the unpatented lode claims and total area of overlap are estimates only. They should not be considered definitive or absolute values; they are stated for information purposes only. This is emphasized because only the patented lode claim boundaries have been surveyed by a registered land surveyor. The areas of the unpatented claims and overlaps were estimated from AutoCad® claims files supplied by the Company.

#### 4.3 MINERAL TENURE

#### 4.3.1 Patented Claims

The Moss Mine Project encompasses 15 patented claims covering 102.83 ha. The patented claims are owned by Patriot Gold Corporation ("Patriot") of Suite D165, 3651 Lindell Road, Las Vegas, Nevada 89103, USA (OTC trading symbol: PGOL). The Company has the right to earn-in a 70% property interest in that portion of the Moss Mine Project that is subject to a joint venture agreement with Patriot. The Company is the joint venture operator and all site activities are wholly managed by the Company through its USA subsidiary (Golden Vertex).

A list of the patented claims is provided in Table 4-1 below. The claim boundaries have been surveyed and a certified record of the survey was recorded by Eric L. Stephan (Registered Land Surveyor #29274) of Cornerstone Land Surveying, Inc., located at Bullhead City, Arizona 86439, which is dated 29 February 2012. A map of the patented claims is shown on Figure 4-2 and Figure 4-3.



#### Moss Gold-Silver Project Form 43-101F1 Technical Report

Claim Name	Mineral Survey	Township/ Range	Section	Date of Location	Date of Amended Location	Date of Mineral Survey	Claim Area (ha)
Key No. 1 Key No. 2	MS4484 MS4484	20 N / 20 W 20 N / 20 W	19 19	Unknown Unknown	Not Applicable Not Applicable	April 1959 April 1959	7.79 8.32
California Moss Lot 37 (Greenwood)	MS182	20 N / 20 W	19, 30	Unknown	Not Applicable	Before October 1888	8.20
California Moss Lot 38 (Gintoff)	MS796	20 N / 20 W	19, 20, 29, 30	Feb. 02, 1882	Not Applicable	Before October 1888	8.25
Moss Millsite	MS4484	20 N / 20 W	19	Unknown	Not Applicable	April 1959	5.51
Divide	MS4484	20 N / 20 W	19	Unknown	Not Applicable	April 1959	1.91
Keystone Wedge	MS4484	20 N / 20 W	19, 30	Unknown	Not Applicable	April 1959	4.05
Ruth Extension	MS4485	20 N / 20 W	29, 30	July 02, 1929	June 27, 1958	April 1959	7.78
Omega	MS4484	20 N / 20 W	19, 30	Unknown	Not Applicable	April 1959	8.29
Ruth	MS2213	20 N / 20 W	30	Oct. 15, 1888	Not Applicable	February 1906	7.33
Rattan Extension	MS4485	20 N / 20 W	30	July 02, 1929	June 27, 1958	April 1959	8.36
Rattan	MS857	20 N / 20 W	30	July 19, 1886	Not Applicable	October 1888	8.38
Partnership	MS4485	20 N / 20 W	30	June 27, 1958	June 27, 1958	April 1959	2.38
Mascot	MS4485	20 N / 20 W	30	June 27, 1958	June 27, 1958	April 1959	8.36
Empire	MS4485	20 N / 20 W	30	June 27, 1958	June 27, 1958	April 1959	7.91
•	•	•	•	-	•	Total	102.82

#### Table 4-1: List of Patented Claims

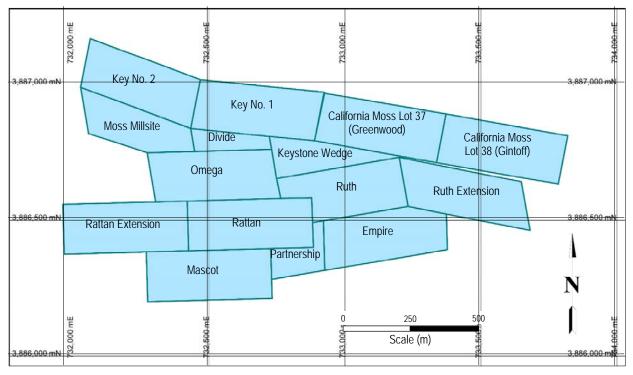


Figure 4-2: Location Plan for the 15 Patented Lode Claims

# 4.3.2 Unpatented Lode Claims

Figure 4-4 is a general reference, colour-coded location plan for the 468 unpatented lode claims that, with the 15 patented lode claims and the Arizona State exploration permit, comprise the overall Moss Mine Project area. Claim plans covering all of the Moss Mine Project-related unpatented lode claims are provided as part of each following sub-section relating to the various claim blocks. The total of 468 unpatented lode claims includes:



- 104 unpatented claims in the name of MinQuest, Inc. (of Reno, Nevada "MinQuest", a corporation that carries out geological consulting, contracting and exploration services), which are subject to MinQuest Agreement (Sub-Section 4.5.1) and the Patriot Gold Agreement (Section 4.5.2), the former inclusive of a royalty –
  - 63 of the claims were staked by MinQuest on April 26, 27 and 28, 2004 (Moss 11 to Moss 33, Moss 33F, Moss 34 to Moss 39, Moss 39F, Moss 40 to Moss 47, Moss 47B and Moss 48 to Moss 70),
  - 41 of the claims were staked by MinQuest on October 19, 2009 (Moss 1 to Moss 10 and Moss 118 to Moss 148);
- 170 unpatented lode claims staked by Golden Vertex on April 12 to 17 and May 01 to 04, 2011 (GVC 1 to GVC 31, GVC 33 to GVC 65, GVC 67 to GVC 139, GVC 146 to GVC 150, GVC 162, GVC 164 to GVC 168 and GVC 172 to GVC 193)
  - not all the claims fall within the area of influence of the Patriot Gold Agreement and MinQuest Agreement, in some cases only portions of some the claims are subject to the terms of those agreements,
  - the total of 170 GVC claims does not include eight claims of the GVC series that were rendered invalid for the reasons described in Sub-Section 4.3.2.2;
- 11 unpatented lode claims (Moss 201 to 211) staked by Golden Vertex on June 27, 2012 and September 05, 2012, to fill-in gaps in the block of patented lode claims and along the southern boundary of the Moss 1 to Moss 148 block of claims
  - o all eleven claims fall within the areas of influence of the MinQuest Agreement and the Patriot Gold Agreement and are subject to the terms of those agreements (Section 4.5); and
- 183 unpatented lode claims (Silver Creek 1 to Silver Creek 22, Silver Creek 31 to Silver Creek 54, Silver Creek 63 to Silver Creek 97 and Silver Creek 108 to Silver Creek 209) staked by La Cuesta International, Inc. (of Kingman, Arizona "La Cuesta")
  - the Company has a 100% option agreement over all 183 claims (pursuant to the La Cuesta Agreement, which includes a royalty payment see Sub-Sections 4.5.3 and 4.6.4), and
  - not all the claims fall within the area of influence of the Patriot Gold Agreement and MinQuest Agreement, in some cases only portions of some the claims are subject to the terms of those agreements.



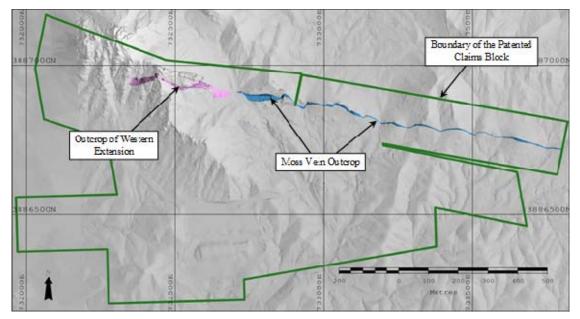


Figure 4-3: A Vulcan<sup>®</sup> Snapshot of the General Moss Mine Project Area Showing the Boundary of the Patented Claims and the Outcrops of the Moss Vein and West Extension

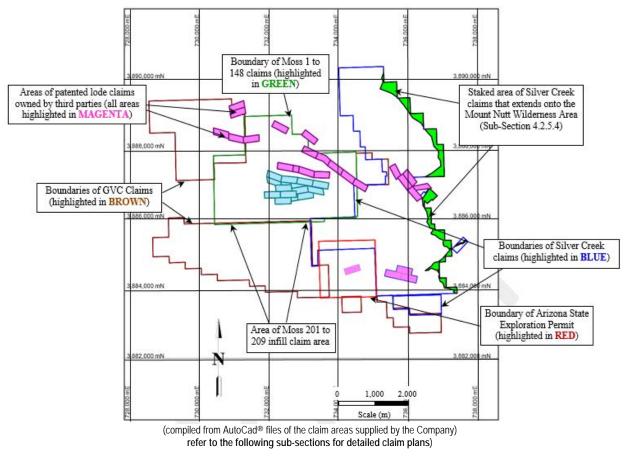


Figure 4-4: A Colour-Coded General Claim Block Reference Plan for the Moss Mine Project Claims and Arizona State Exploration Permit



The maximum allowable size of unpatented lode claims in Arizona is 1,500 ft by 600 ft, which dimensions represent a regular unpatented lode claim. The equivalent area of such claims is 9,000 square feet or 8.361 ha. The vast majority of the various unpatented lode claims considered here have areas of 8.361 ha. The areas of individual claims with non-standard dimensions were from scrutiny of AutoCad<sup>®</sup> claims files supplied by the Company.

The same AutoCad<sup>®</sup> files were used to estimate the portions of individual claims that overlap pre-existing claims and the portions of individual claims that fall within the areas of influence of the MinQuest Agreement and the Patriot Gold Agreement. The results are stated on Table 4-2 to Table 4-5, inclusive. It is emphasized that the results are estimates only, that the estimates are stated for information purposes only and they should not be considered as definitive or absolute values.

#### 4.3.2.1 Moss 1 to Moss 148 Series

Table 4-2 (in three parts due to its length) and Figure 4-5 summarize the details and locations of the Moss 1 to Moss 148 series of 104 unpatented lode claims that form a single block that surrounds the block of 15 patented lode claims. The total staked area of the Moss 1 to Moss 148 series of claims is estimated at 869.54 ha. However, Moss 23 to Moss 28, Moss 33F, Moss 34, Moss 39F, Moss 40, Moss 46, Moss 47, Moss 47B, Moss 55 and Moss 56 overlap the block of patented lode claims described in Section 4.3.1. Patented lode claims take precedence over unpatented lode claims. The active areas of the overlapping Moss claims are stated in Sub-Section 4.3.3 in which the total estimated claim overlap area is defined.

Some of the listed claims occur in two sections (for example Moss 43). Each section of such claims are stated on Table 4-2; some details of individual claims are therefore repeated. The multi-section claims are indicated by the term 'ditto' in the Claim Name, BLM Serial Number and Lead File columns.

Patented lode claims, other than the 15 listed on Table 4-1, exist in the area covered by the Moss 1 to Moss 148 claim series. They are owned by third parties that are independent of the Company and Patriot Gold; their positions are indicated on Figure 4-5. As earlier outlined, patented lode claims have precedence over unpatented lode claims - unless through mutual agreement, activity on unpatented lode claims that overlap patented lode claims cannot take place.



# Table 4-2: A Summary of MinQuest's Block of Unpatented Lode Claims (Moss Series), Moss Mine Project

Area

(compiled from information from various sources, including Company documents and BLM Claim Reports)

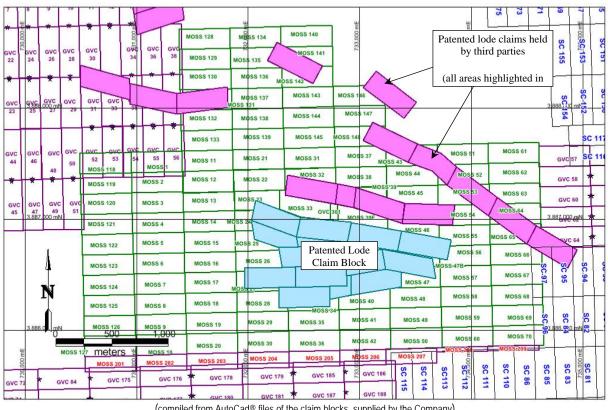
Claim	BLM Serial	Meridian, Township,		Date of	Staked	% Subject to Agreement	
Name	Number	Range, Sector & Quadrant	Lead File	Location	Area (ha)	MinQuest	Patriot
Moss 1	AMC398978	14 0200N 0210W 024 NE, NW, SW, SE	AMC398978	Oct. 19, 2009	8.361	100%	100%
Moss 2	AMC398979	14 0200N 0210W 024 SW, SE	AMC398978	Oct. 19, 2009	8.361	100%	100%
Moss 3	AMC398980	14 0200N 0210W 024 SW, SE	AMC398978	Oct. 19, 2009	8.361	100%	100%
Moss 4	AMC398981	14 0200N 0210W 024 SW, SE	AMC398978	Oct. 19, 2009	8.361	100%	100%
Moss 5	AMC398982	14 0200N 0210W 024 SW, SE	AMC398978	Oct. 19, 2009	8.361	100%	100%
Moss 6	AMC398983	14 0200N 0210W 025 NE, NW	AMC398978	Oct. 19, 2009	8.361	100%	100%
Moss 7	AMC398984	14 0200N 0210W 025 NE, NW	AMC398978	Oct. 19, 2009	8.361	100%	100%
Moss 8	AMC398985	14 0200N 0210W 025 NE, NW	AMC398978	Oct. 19, 2009	8.361	100%	100%
Moss 9	AMC398986	14 0200N 0210W 025 NE, NW	AMC398978	Oct. 19, 2009	8.361	100%	100%
Moss 10	AMC398987	14 0200N 0210W 025 NE, NW, SW, SE	AMC398978	Oct. 19, 2009	8.361	100%	100%
Moss 11	AMC361998	14 0200N 0210W 024 NE, SE	AMC361998	26-Apr-04	8.361	100%	100%
Moss 12	AMC361999	14 0200N 0210W 024 SE	AMC361998	26-Apr-04	8.361	100%	100%
Moss 13	AMC362000	14 0200N 0210W 024 SE	AMC361998	26-Apr-04	8.361	100%	100%
Moss 14	AMC362001	14 0200N 0210W 024 SE	AMC361998	26-Apr-04	8.361	100%	100%
Moss 15	AMC362002	14 0200N 0210W 024 SE	AMC361998	26-Apr-04	8.361	100%	100%
Moss 16	AMC362003	14 0200N 0210W 025 NE	AMC361998	26-Apr-04	8.361	100%	100%
Moss 17	AMC362004	14 0200N 0210W 025 NE	AMC361998	26-Apr-04	8.361	100%	100%
Moss 18	AMC362005	14 0200N 0210W 025 NE	AMC361998	26-Apr-04	8.361	100%	100%
Moss 19	AMC362006	14 0200N 0210W 025 NE	AMC361998	26-Apr-04	8.361	100%	100%
Moss 20	AMC362007	14 0200N 0210W 025 NE, SE	AMC361998	26-Apr-04	8.361	100%	100%
Moss 21	AMC362008	14 0200N 0200W 019 NW, SW	AMC361998	26-Apr-04	8.361	100%	100%
Moss 22	AMC362009	14 0200N 0200W 019 SW	AMC361998	26-Apr-04	8.361	100%	100%
Moss 23	AMC362010	14 0200N 0200W 019 SW	AMC361998	26-Apr-04	6.090	100%	100%
Moss 24	AMC362011	14 0200N 0200W 019 SW	AMC361998	26-Apr-04	8.361	100%	100%
Moss 25	AMC362012	14 0200N 0200W 019 SW	AMC361998	26-Apr-04	8.361	100%	100%
Moss 26	AMC362013	14 0200N 0200W 030 NW	AMC361998	26-Apr-04	8.361	100%	100%
Moss 27	AMC362014	14 0200N 0200W 030 NW	AMC361998	26-Apr-04	8.361	100%	100%
Moss 28	AMC362015	14 0200N 0200W 030 NW	AMC361998	26-Apr-04	8.361	100%	100%
Moss 29	AMC362016	14 0200N 0200W 030 NW	AMC361998	26-Apr-04	8.361	100%	100%
Moss 30	AMC362017	14 0200N 0200W 030 NW, SW	AMC361998	26-Apr-04	8.361	100%	100%
Moss 31	AMC362018	14 0200N 0200W 019 NE, NW, SW, SE	AMC361998	27-Apr-04	8.361	100%	100%
Moss 32	AMC362019	14 0200N 0200W 019 SW, SE	AMC361998	27-Apr-04	8.361	100%	100%
Moss 33	AMC362020	14 0200N 0200W 019 SW, SE	AMC361998	27-Apr-04	7.444	100%	100%
Moss 34	AMC362022	14 0200N 0200W 030 NE, NW	AMC361998	26-Apr-04	8.361	100%	100%
Moss 35	AMC362023	14 0200N 0200W 030 NE, NW	AMC361998	26-Apr-04	8.361	100%	100%
Moss 36	AMC362024	14 0200N 0200W 030 NE, NW, SW, SE	AMC361998	26-Apr-04	8.361	100%	100%
Moss 37	AMC362025	14 0200N 0200W 019 NE, SE	AMC361998	27-Apr-04	8.361	100%	100%
Moss 38	AMC362026	14 0200N 0200W 019 SE	AMC361998	27-Apr-04	8.361	100%	100%
Moss 39	AMC362027	14 0200N 0200W 019 SE	AMC361998	27-Apr-04	8.361	100%	100%
Moss 39F Moss 40	AMC362028 AMC362029	14 0200N 0200W 019 SE	AMC361998 AMC361998	27-Apr-04 26-Apr-04	5.576 8.361	100% 100%	100% 100%
Moss 40 Moss 41	AMC362029	14 0200N 0200W 030 NE 14 0200N 0200W 030 NE	AMC361998	26-Apr-04	8.361	100%	100%
Moss 41 Moss 42	AMC362030	14 0200N 0200W 030 NE, SE	AMC361998	26-Apr-04	8.361	100%	100%
Moss 42 Moss 43	AMC362031	14 0200N 0200W 030 NE, SE	AMC361998	27-Apr-04	8.361	100%	100%
ditto	ditto	14 0200N 0200W 019 NE, SE 14 0200N 0200W 020 NW, SW	ditto	27-Apr-04	0.301	100%	100%
Moss 44	AMC362033	14 0200N 0200W 020 NW, SW	AMC361998	27-Apr-04	8.361	100%	100%
ditto	ditto	14 0200N 0200W 019 SE 14 0200N 0200W 020 SW	ditto	27-Apr-04 27-Apr-04	-	100%	100%
Moss 45	AMC362034	14 0200N 0200W 020 SW	AMC361998	27-Apr-04	8.361	100%	100%
ditto	ditto	14 0200N 0200W 020 SW	ditto	27-Apr-04	-	100%	100%
Moss 46	AMC362035	14 0200N 0200W 019 SE	AMC361998	28-Apr-04	4.240	100%	100%
ditto	ditto	14 0200N 0200W 020 SW	ditto	28-Apr-04		100%	100%
Moss 47	AMC362036	14 0200N 0210W 029 NW	AMC361998	26-Apr-04	8.361	100%	100%
ditto	ditto	14 0200N 0210W 030 NE	ditto	26-Apr-04	-	100%	100%
Moss 47B	AMC362037	14 0200N 0200W 029 NW	AMC361998	28-Apr-04	8.361	100%	100%
Moss 48	AMC362038	14 0200N 0210W 029 NW	AMC361998	26-Apr-04	8.361	100%	100%
ditto	ditto	14 0200N 0210W 030 NE	ditto	26-Apr-04	-	100%	100%
Moss 49	AMC362039	14 0200N 0210W 029 NW	AMC361998	26-Apr-04	8.361	100%	100%
ditto	ditto	14 0200N 0210W 030 NE	ditto	26-Apr-04	-	100%	100%
Moss 50	AMC362040	14 0200N 0210W 029 NW, SW	AMC361998	26-Apr-04	8.361	100%	100%
ditto	ditto	14 0200N 0210W 030 NE, SE	ditto	26-Apr-04		100%	100%
Moss 51	AMC362041	14 0200N 0200W 020 NW, SW	AMC361998	27-Apr-04	8.361	100%	100%
Moss 52	AMC362042	14 0200N 0200W 020 SW	AMC361998	27-Apr-04	8.361	100%	100%
Moss 53	AMC362043	14 0200N 0200W 020 SW	AMC361998	27-Apr-04	8.361	100%	100%
Moss 54	AMC362044	14 0200N 0200W 020 SW	AMC361998	27-Apr-04	8.361	100%	100%
Moss 55	AMC362045	14 0200N 0200W 020 SW	AMC361998	26-Apr-04	8.361	100%	100%
Moss 56	AMC362046	14 0200N 0200W 020 SW	AMC361998	26-Apr-04	8.361	100%	100%
ditto	ditto	14 0200N 0200W 029 NW	ditto	26-Apr-04	-	100%	100%
Moss 57	AMC362047	14 0200N 0200W 029 NW	AMC361998	26-Apr-04	8.361	100%	100%
Moss 58	AMC362048	14 0200N 0200W 029 NW	AMC361998	26-Apr-04	8.361	100%	100%
Moss 59	AMC362049	14 0200N 0200W 029 NW	AMC361998	26-Apr-04	8.361	100%	100%



Claim	BLM Serial	Meridian, Township,		Date of	Staked	% Subject to	Agreement
Name	Number	Range, Sector & Quadrant	Lead File	Location	Area (ha)	MinQuest	Patriot
Moss 60	AMC362050	14 0200N 0200W 029 NW, SW	AMC361998	26-Apr-04	8.361	100%	100%
Moss 61	AMC362051	14 0200N 0200W 020 NE, NW, SW, SE	AMC361998	27-Apr-04	8.361	100%	100%
Moss 62	AMC362052	14 0200N 0200W 020 SW, SE	AMC361998	27-Apr-04	8.361	100%	100%
Moss 63	AMC362053	14 0200N 0200W 020 SW, SE	AMC361998	27-Apr-04	8.361	100%	100%
Moss 64	AMC362054	14 0200N 0200W 020 SW, SE	AMC361998	27-Apr-04	8.361	100%	100%
Moss 65	AMC362055	14 0200N 0200W 020 SW, SE	AMC361998	26-Apr-04	8.361	100%	100%
Moss 66	AMC362056	14 0200N 0200W 020 SW, SE	AMC361998	26-Apr-04	8.361	100%	100%
ditto	ditto	14 0200N 0200W 029 NE, NW	ditto	26-Apr-04	-	100%	100%
Moss 67	AMC362057	14 0200N 0200W 029 NE, NW	AMC361998	26-Apr-04	8.361	100%	100%
Moss 68	AMC362058	14 0200N 0200W 029 NE, NW	AMC361998	26-Apr-04	8.361	100%	100%
Moss 69	AMC362059	14 0200N 0200W 029 NE, NW	AMC361998	26-Apr-04	8.361	100%	100%
Moss 70	AMC362060	14 0200N 0200W 029 NE, NW, SW, SE	AMC361998	26-Apr-04	8.361	100%	100%
Moss 118	AMC398988	14 0200N 0210W 024 NW, SW	AMC398978	Oct. 19, 2009	8.361	100%	100%
Moss 119	AMC398989	14 0200N 0210W 024 SW	AMC398978	Oct. 19, 2009	8.361	100%	100%
Moss 120	AMC398990	14 0200N 0210W 024 SW	AMC398978	Oct. 19, 2009	8.361	100%	100%
Moss 121	AMC398991	14 0200N 0210W 024 SW	AMC398978	Oct. 19, 2009	8.361	100%	100%
Moss 122	AMC398992	14 0200N 0210W 024 SW	AMC398978	Oct. 19, 2009	8.361	100%	100%
Moss 123	AMC398993	14 0200N 0210W 025 NW	AMC398978	Oct. 19, 2009	8.361	100%	100%
Moss 124	AMC398994	14 0200N 0210W 025 NW	AMC398978	Oct. 19, 2009	8.361	100%	100%
Moss 125	AMC398995	14 0200N 0210W 025 NW	AMC398978	Oct. 19, 2009	8.361	100%	100%
Moss 126	AMC398996	14 0200N 0210W 025 NW	AMC398978	Oct. 19, 2009	8.361	100%	100%
Moss 127	AMC398997	14 0200N 0210W 025 NW, SW	AMC398978	Oct. 19, 2009	8.361	100%	100%
Moss 128	AMC398998	14 0200N 0210W 013 SE	AMC398978	Oct. 19, 2009	8.361	100%	100%
Moss 129	AMC398999	14 0200N 0210W 013 SE	AMC398978	Oct. 19, 2009	8.361	100%	100%
Moss 130	AMC399000	14 0200N 0210W 013 SE	AMC398978	Oct. 19, 2009	8.361	100%	100%
ditto	ditto	14 0200N 0210W 024 NE	ditto	Oct. 19, 2009	-	100%	100%
Moss 131	AMC399001	14 0200N 0210W 024 NE	AMC398978	Oct. 19, 2009	8.361	100%	100%
Moss 132	AMC399002	14 0200N 0210W 024 NE	AMC398978	Oct. 19, 2009	8.361	100%	100%
Moss 133	AMC399003	14 0200N 0210W 024 NE	AMC398978	Oct. 19, 2009	8.361	100%	100%
Moss 134	AMC399004	14 0200N 0200W 018 SW	AMC398978	Oct. 19, 2009	8.361	100%	100%
Moss 135	AMC399005	14 0200N 0200W 018 SW	AMC398978	Oct. 19, 2009	8.361	100%	100%
Moss 136	AMC399006	14 0200N 0200W 018 SW	AMC398978	Oct. 19, 2009	8.361	100%	100%
ditto	ditto	14 0200N 0200W 019 NW	ditto	Oct. 19, 2009	-	100%	100%
Moss 137	AMC399007	14 0200N 0200W 019 NW	AMC398978	Oct. 19, 2009	8.361	100%	100%
Moss 138	AMC399008	14 0200N 0200W 019 NW	AMC398978	Oct. 19, 2009	8.361	100%	100%
Moss 139	AMC399009	14 0200N 0200W 019 NW	AMC398978	Oct. 19, 2009	8.361	100%	100%
Moss 140	AMC399010	14 0200N 0200W 018 SW, SE	AMC398978	Oct. 19, 2009	8.361	100%	100%
Moss 141	AMC399011	14 0200N 0200W 018 SW, SE	AMC398978	Oct. 19, 2009	8.361	100%	100%
Moss 142	AMC399012	14 0200N 0200W 018 SW, SE	AMC398978	Oct. 19, 2009	8.361	100%	100%
ditto	ditto	14 0200N 0200W 019 NE, NW	ditto	Oct. 19, 2009	-	100%	100%
Moss 143	AMC399013	14 0200N 0200W 019 NE, NW	AMC398978	Oct. 19, 2009	8.361	100%	100%
Moss 144	AMC399014	14 0200N 0200W 019 NE, NW	AMC398978	Oct. 19, 2009	8.361	100%	100%
Moss 145	AMC399015	14 0200N 0200W 019 NE, NW	AMC398978	Oct. 19, 2009	8.361	100%	100%
Moss 146	AMC399016	14 0200N 0200W 019 NE	AMC398978	Oct. 19, 2009	8.361	100%	100%
Moss 147	AMC399017	14 0200N 0200W 019 NE	AMC398978	Oct. 19, 2009	8.361	100%	100%
Moss 148	AMC399018	14 0200N 0200W 019 NE	AMC398978	Oct. 19, 2009	8.361	100%	100%
	-	5	•	Total Area	851.09		

Note: Reader is advised that the claim Moss 33F is erroneously reported in the December 2014 Technical Report as a valid claim and has been removed herein.





<sup>(</sup>compiled from AutoCad® files of the claim blocks, supplied by the Company) Note: This map has been updated to correct an error in the December 2014 Technical Report

# Figure 4-5: A location Plan for the Moss 1 to Moss 148 (highlighted in GREEN) and Moss 201 to Moss 209 (Labelled in RED) of Unpatented Lode Claims, Moss Mine Project Area

## 4.3.2.2 GVC Claim Series

Table 4-3 (that is in four parts due to its length) summarizes the details of the GVC series of 170 unpatented lode claims that have an estimated total staked area of 1,421.37 ha. The listed series of staked claims does not include GVC 158 to 161, GVC 163 and GVC 169 to 171 that were found to be invalid: they over-staked an area of already existing, active unpatented lode claims held by a third party. When the third party claims became invalid, the area they covered was staked as part of the Silver Creek series of unpatented lode claims described in Section 4.3.2.4.

Each of the 170 GVC claims has the dimensions hence area of a regular unpatented lode claim (8.361 ha). However, GVC 38, GVC 39 and GVC50 to GVC 56 overlap portions of the Moss 1 to Moss 148 series of claims described in Section 4.3.2.1. The Moss 1 to Moss 148 series of unpatented lode claims takes precedence as they were staked before the GVC series of unpatented claims. The estimated active areas of the overlapping GVC claims are stated in Section 4.3.3 in which the estimated total overlap area is defined.

Some of the listed GVC claims occur in two or even four sections (for example GVC 24 and GVC 26). Each section of such claims is stated on Table 4-3 so some details of individual claims are repeated. The multi-section claims are indicated by the term 'ditto' in the Claim Name, BLM Serial Number and Lead File columns.

The percent areas of each claim that are subject to the MinQuest Agreement and to the Patriot Agreement were estimated by consideration of the position of the one mile areas-of-interest around the blocks of unpatented lode claims subject to the agreements (see Sub-Sections 4.5.1 and 4.5.2 for details). The positions of the one mile areas-



of-interest lines from the Moss claim block boundary were drawn and the areas of each GVC series claim it intersected were estimated using the AutoCad<sup>®</sup> claims files supplied by the Company. The percentages of each claim were then estimated by dividing the area of any claim located wholly or partially within the one mile line by the total area of the same claim.

To facilitate legibility, the locations of the GVC series of unpatented claims are presented on three plans (Figure 4-6 to Figure 4-8, inclusive). The plans include the blocks of third party patented lode claims that exist on the ground covered by the GVC claims. The position of each illustrated block of GVC series claims, relative to the 15 patented lode claims and the Moss 1 to Moss 148 series of unpatented lode claims, can be determined by reference to Figure 4-4.

Claim	BLM Serial	Meridian, Township,		Date of	Staked	% Subject to	Agreement
Name	Number	Range, Sector & Quadrant	Lead File	Location	Area (ha)	MinQuest	Patriot
GVC 1	AMC408939	14 0200N 0210W 014 NW, SW	AMC408939	12-Apr-11	8.361	0	0
GVC 2	AMC408940	14 0200N 0210W 014 NW, SW	AMC408939	12-Apr-11	8.361	0	0
GVC 3	AMC408941	14 0200N 0210W 014 NW, SW	AMC408939	12-Apr-11	8.361	0	0
GVC 4	AMC408942	14 0200N 0210W 014 NW, SW	AMC408939	12-Apr-11	8.361	0	4.04
GVC 5	AMC408943	14 0200N 0210W 014 NW, NE, SW, SE	AMC408939	12-Apr-11	8.361	0	34.64
GVC 6	AMC408944	14 0200N 0210W 014 NE, SE	AMC408939	12-Apr-11	8.361	0	59.23
GVC 7	AMC408945	14 0200N 0210W 014 NE, SE	AMC408939	12-Apr-11	8.361	0	94.15
GVC 8	AMC408946	14 0200N 0210W 014 NE, SE	AMC408939	13-Apr-11	8.361	0	100
GVC 9	AMC408947	14 0200N 0210W 014 NE, SE	AMC408939	13-Apr-11	8.361	2.56	100
ditto	ditto	14 0200N 0210W 013 NW, SW	ditto	13-Apr-11	-	2.56	100
GVC 10	AMC408948	14 0200N 0210W 013 NW, SW	AMC408939	13-Apr-11	8.361	54.89	100
GVC 11	AMC408949	14 0200N 0210W 013 NW, SW	AMC408939	13-Apr-11	8.361	75.18	100
GVC 12	AMC408950	14 0200N 0210W 013 NW, SW	AMC408939	13-Apr-11	8.361	86.64	100
GVC 13	AMC408951	14 0200N 0210W 013 NW, SW	AMC408939	13-Apr-11	8.361	100	100
GVC 13	AMC408952	14 0200N 0210W 013 1W, SW	AMC408939	12-Apr-11	8.361	0	0
ditto	ditto	14 0200N 0210W 014 SW	ditto	12-Apr-11	-	0	0
GVC 15	AMC408953	14 0200N 0210W 023 NW	AMC408939	12-Apr-11	8.361	0	1.47
ditto	ditto	14 0200N 0210W 023 NW	ditto	12-Apr-11	0.301	0	1.47
GVC 16	AMC408954	14 0200N 0210W 023 NW	AMC408939	12-Apr-11	8.361	0	47.22
ditto	ditto	14 0200N 0210W 014 SW	ditto	12-Apr-11	0.301	0	47.22
GVC 17	AMC408955	14 0200N 0210W 023 NW	AMC408939	12-Apr-11	8.361	0	92.85
ditto	ditto	14 0200N 0210W 014 SW	ditto	12-Apr-11	0.301	0	92.85
GVC 18	AMC408956	14 0200N 0210W 023 NW	AMC408939	13-Apr-11	8.361	0	100
ditto	ditto	14 0200N 0210W 014 3W, 3E	ditto	13-Apr-11	0.301	0	100
GVC 19	AMC408957	14 0200N 0210W 023 NW, NE	AMC408939	13-Apr-11	8.361	0	100
GVC 19 GVC 20	AMC408958	14 0200N 0210W 023 NW, NE	AMC408939	13-Apr-11	8.361	0	100
ditto	ditto	14 0200N 0210W 014 3E	ditto	13-Apr-11	0.301	0	100
GVC 21	AMC408959	14 0200N 0210W 023 NE	AMC408939	13-Apr-11	8.361	0	100
GVC 21 GVC 22	AMC408959 AMC408960	14 0200N 0210W 023 NE	AMC408939	13-Apr-11	8.361	1.54	100
ditto	ditto	14 0200N 0210W 014 SE	ditto	13-Apr-11	0.301	1.54	100
GVC 23	AMC408961	14 0200N 0210W 023 NE	AMC408939	13-Apr-11	8.361	64.57	100
GVC 23 GVC 24	AMC408961 AMC408962	14 0200N 0210W 023 NE	AMC408939	17-Apr-11	8.361	45.31	100
ditto	ditto	14 0200N 0210W 014 SE		17-Apr-11	0.301	45.31	100
GVC 25	AMC408963	14 0200N 0210W 023 NE	ditto AMC408939	17-Apr-11	8.361	100	100
GVC 25 GVC 26	AMC408963	14 0200N 0210W 023 NE	AMC408939	17-Apr-11	8.361	92.08	100
ditto	ditto	14 0200N 0210W 013 SE	ditto	17-Apr-11	0.301	92.08	100
ditto	ditto	14 0200N 0210W 014 SW	ditto	17-Apr-11	-	92.08	100
ditto	ditto	14 0200N 0210W 024 NW	ditto	17-Apr-11	-	92.08	100
GVC 27	AMC408965	14 0200N 0210W 023 SW	AMC408939	17-Apr-11	8.361	100	100
ditto	ditto	14 0200N 0210W 023 NE	ditto	17-Apr-11	0.301	100	100
GVC 28	AMC408966	14 0200N 0210W 024 NW 14 0200N 0210W 013 SW	AMC408939	17-Apr-11 17-Apr-11	8.361	100	100
ditto	ditto	14 0200N 0210W 013 SW	ditto	17-Apr-11	0.301	100	100
GVC 29	AMC408967	14 0200N 0210W 024 NW	AMC408939	17-Apr-11	8.361	100	100
GVC 29 GVC 30	AMC408967 AMC408968	14 0200N 0210W 024 NW	AMC408939	17-Apr-11	8.361	100	100
GVC 30 GVC 31	AMC408968 AMC408969	14 0200N 0210W 024 NW 14 0200N 0210W 024 NW	AMC408939 AMC408939	17-Apr-11 17-Apr-11	8.361	100	100
GVC 31 GVC 33	AMC408969 AMC408971	14 0200N 0210W 024 NW 14 0200N 0210W 024 NW	AMC408939 AMC408939	17-Apr-11	8.361	100	100
GVC 33 GVC 34	AMC408971 AMC408972	14 0200N 0210W 024 NW 14 0200N 0210W 024 NW	AMC408939 AMC408939	17-Apr-11 17-Apr-11	8.361	100	100
ditto	ditto	14 0200N 0210W 024 NW 14 0200N 0210W 013 SW	ditto	17-Apr-11	0.301	100	100
GVC 35	AMC408973	14 0200N 0210W 013 SW 14 0200N 0210W 024 NW	AMC408939	17-Apr-11	8.361	100	100
GVC 35 GVC 36	AMC408973 AMC408974	14 0200N 0210W 024 NW, NE	AMC408939	17-Apr-11	8.361	100	100
ditto	ditto	14 0200N 0210W 024 NW, NE 14 0200N 0210W 013 SW, SE	ditto	17-Apr-11 17-Apr-11	0.301	100	100
GVC 37	AMC408975	14 0200N 0210W 013 SW, SE 14 0200N 0210W 024 NW, NE	AMC408939		8.361	100	100
GVC 37 GVC 38	AMC408975 AMC408976	14 0200N 0210W 024 NW, NE 14 0200N 0210W 013 SE	AMC408939 AMC408939	17-Apr-11 17-Apr-11	8.361	100	100
GVC 38 ditto					0.30 I	100	100
GVC 39	ditto AMC408977	14 0200N 0210W 024 NE	ditto AMC408939	17-Apr-11	- 0.241	100	100
GAC 3A	AIVIC408977	14 0200N 0210W 024 NE	AIVIC408939	17-Apr-11	8.361	100	100

#### Table 4-3: A summary of the Golden Vertex Block of Unpatented Lode Claims (GVC Series) (compiled from information from various sources, including Company Documents and BLM Claim Reports)



Claim	BLM Serial	Meridian, Township,		Date of	Staked	% Subject to	o Agreement
Name	Number	Range, Sector & Quadrant	Lead File	Location	Area (ha)	MinQuest	Patriot
GVC 40	AMC408978	14 0200N 0210W 023 NW, NE, SW, SE	AMC408939	12-Apr-11	8.361	0	100
GVC 41	AMC408979	14 0200N 0210W 023 SW, SE	AMC408939	12-Apr-11	8.361	Ő	100
GVC 42	AMC408980	14 0200N 0210W 023 NE, SE	AMC408939	12-Apr-11	8.361	5.72	100
GVC 43	AMC408981	14 0200N 0210W 023 SE	AMC408939	12-Apr-11	8.361	9.2	100
GVC 44 GVC 45	AMC408982 AMC408983	14 0200N 0210W 023 NE, SE 14 0200N 0210W 023 SE	AMC408939 AMC408939	12-Apr-11 12-Apr-11	8.361 8.361	100 100	100 100
GVC 45 GVC 46	AMC408984	14 0200N 0210W 023 SE	AMC408939	12-Apr-11	8.361	100	100
GVC 47	AMC408985	14 0200N 0210W 023 NE, SE	AMC408939	12-Apr-11	8.361	100	100
GVC 48	AMC408986	14 0200N 0210W 023 NE, SE	AMC408939	12-Apr-11	8.361	100	100
ditto	ditto	14 0200N 0210W 024 NW, SW	ditto	12-Apr-11	-	100	100
GVC 49 ditto	AMC408987 ditto	14 0200N 0210W 023 SE 14 0200N 0210W 024 SW	AMC408939 ditto	12-Apr-11 12-Apr-11	8.361	100 100	100 100
GVC 50	AMC408988	14 0200N 0210W 024 SW 14 0200N 0210W 024 NW, SW	AMC408939	12-Apr-11	8.361	100	100
GVC 51	AMC408989	14 0200N 0210W 024 SW	AMC408939	12-Apr-11	8.361	100	100
GVC 52	AMC408990	14 0200N 0210W 024 NW, SW	AMC408939	17-Apr-11	8.361	100	100
GVC 53	AMC408991	14 0200N 0210W 024 NW, SW	AMC408939	17-Apr-11	8.361	100	100
GVC 54	AMC408992 AMC408993	14 0200N 0210W 024 NW, SW	AMC408939 AMC408939	17-Apr-11	8.361	100 100	100
GVC 55 GVC 56	AMC408993 AMC408994	14 0200N 0210W 024 NW, NE, SW, SE 14 0200N 0210W 024 NE, SE	AMC408939 AMC408939	17-Apr-11 17-Apr-11	8.361 8.361	100	100 100
GVC 57	AMC408995	14 0200N 0200W 020 NE, SE	AMC408939	16-Apr-11	8.361	100	100
GVC 58	AMC408996	14 0200N 0200W 020 SE	AMC408939	16-Apr-11	8.361	100	100
GVC 59	AMC408997	14 0200N 0200W 020 SE	AMC408939	16-Apr-11	8.361	100	100
ditto	ditto	14 0200N 0200W 021 SW	ditto	16-Apr-11	-	100	100
GVC 60 GVC 61	AMC408998 AMC408999	14 0200N 0200W 020 SE 14 0200N 0200W 020 SE	AMC408939 AMC408939	16-Apr-11 16-Apr-11	8.361 8.361	100 100	100 100
ditto	ditto	14 0200N 0200W 020 SE 14 0200N 0200W 021 SW	ditto	16-Apr-11 16-Apr-11	8.361	100	100
GVC 62	AMC409000	14 0200N 0200W 021 SW	AMC408939	16-Apr-11	8.361	100	100
GVC 63	AMC409001	14 0200N 0200W 020 SE	AMC408939	16-Apr-11	8.361	100	100
ditto	ditto	14 0200N 0200W 021 SW	ditto	16-Apr-11	-	100	100
GVC 64	AMC409002	14 0200N 0200W 020 SE	AMC408939	16-Apr-11	8.361	100	100
ditto GVC 65	ditto AMC409003	14 0200N 0200W 029 NE 14 0200N 0200W 020 SE	ditto AMC408939	16-Apr-11 16-Apr-11	- 8.361	100 100	100 100
ditto	ditto	14 0200N 0200W 020 SE 14 0200N 0200W 021 SW	ditto	16-Apr-11	-	100	100
ditto	ditto	14 0200N 0200W 028 NW	ditto	16-Apr-11	-	100	100
ditto	ditto	14 0200N 0200W 029 NE	ditto	16-Apr-11	-	100	100
GVC 67	AMC409004	14 0200N 0210W 026 SW	AMC408939	14-Apr-11	8.361	0	38.67
GVC 68 ditto	AMC409005 ditto	14 0200N 0210W 026 SW 14 0200N 0210W 035 NW	AMC408939 ditto	14-Apr-11 14-Apr-11	8.361	0	20.58 20.58
GVC 69	AMC409006	14 0200N 0210W 035 NW	AMC408939	14-Apr-11	8.361	0	1.3
GVC 70	AMC409007	14 0200N 0210W 026 SW, SE	AMC408939	14-Apr-11	8.361	Ő	100
GVC 71	AMC409008	14 0200N 0210W 026 SW, SE	AMC408939	14-Apr-11	8.361	0	100
GVC 72	AMC409009	14 0200N 0210W 026 SE	AMC408939	14-Apr-11	8.361	66.94	100
GVC 73 GVC 74	AMC409010 AMC409011	14 0200N 0210W 026 SW, SE 14 0200N 0210W 026 SE	AMC408939 AMC408939	14-Apr-11 14-Apr-11	8.361 8.361	0 59.28	100 100
GVC 74 GVC 75	AMC409011 AMC409012	14 0200N 0210W 026 SE 14 0200N 0210W 026 SW, SE	AMC408939 AMC408939	14-Apr-11	8.361	0	100
GVC 76	AMC409013	14 0200N 0210W 026 SE	AMC408939	14-Apr-11	8.361	45.82	100
GVC 77	AMC409014	14 0200N 0210W 026 SW, SE	AMC408939	14-Apr-11	8.361	0	100
ditto	ditto	14 0200N 0210W 035 NW, NE	ditto	14-Apr-11	-	0	100
GVC 78	AMC409015	14 0200N 0210W 026 SE	AMC408939	14-Apr-11	8.361	27.58	100
ditto GVC 79	ditto AMC409016	14 0200N 0210W 035 NE 14 0200N 0210W 035 NW, NE	ditto AMC408939	14-Apr-11 14-Apr-11	- 8.361	27.58 0	100 94.22
GVC 79 GVC 80	AMC409010 AMC409017	14 0200N 0210W 035 NE	AMC408939	14-Apr-11	8.361	5.71	100
GVC 81	AMC409018	14 0200N 0210W 035 NW, NE	AMC408939	14-Apr-11	8.361	0	66.15
GVC 82	AMC409019	14 0200N 0210W 035 NE	AMC408939	14-Apr-11	8.361	0	100
GVC 83	AMC409020	14 0200N 0210W 035 NE	AMC408939 AMC408939	14-Apr-11	8.361	0	100
GVC 84 ditto	AMC409021 ditto	14 0200N 0210W 025 SW 14 0200N 0210W 026 SE	ditto	14-Apr-11 14-Apr-11	8.361	100 100	100 100
GVC 85	AMC409022	14 0200N 0210W 020 SE	AMC408939	14-Apr-11	8.361	100	100
ditto	ditto	14 0200N 0210W 026 SE	ditto	14-Apr-11	-	100	100
GVC 86	AMC409023	14 0200N 0210W 025 SW	AMC408939	14-Apr-11	8.361	100	100
GVC 87	AMC409024	14 0200N 0210W 025 SW	AMC408939	14-Apr-11	8.361	100	100
ditto GVC 88	ditto AMC409025	14 0200N 0210W 026 SE 14 0200N 0210W 025 SW	ditto AMC408939	14-Apr-11 14-Apr-11	- 8.361	100 100	100 100
GVC 88 GVC 89	AMC409025 AMC409026	14 0200N 0210W 025 SW 14 0200N 0210W 025 SW	AMC408939 AMC408939	14-Apr-11	8.361	100	100
ditto	ditto	14 0200N 0210W 026 SE	ditto	14-Apr-11	-	100	100
ditto	ditto	14 0200N 0210W 035 NE	ditto	14-Apr-11	-	100	100
ditto	ditto	14 0200N 0210W 036 NW	ditto AMC408939	14-Apr-11	-	100	100
GVC 90	AMC409027	14 0200N 0210W 025 SW	ditto	14-Apr-11	8.361	100	100
ditto GVC 91	ditto AMC409028	14 0200N 0210W 036 NW 14 0200N 0210W 035 NE	AMC408939 ditto	14-Apr-11 15-Apr-11	- 8.361	100 98.64	100 100
ditto	ditto	14 0200N 0210W 035 NE	AMC408939	15-Apr-11	-	98.64 98.64	100
GVC 92	AMC409029	14 0200N 0210W 036 NW	AMC408939	15-Apr-11	8.361	100	100
GVC 93	AMC409030	14 0200N 0210W 035 NE	ditto	15-Apr-11	8.361	70.23	100
ditto	ditto	14 0200N 0210W 036 NW	AMC408939	15-Apr-11	-	70.23	100
GVC 94	AMC409031	14 0200N 0210W 036 NW	AMC408939	15-Apr-11	8.361	100	100



Claim	BLM Serial	Meridian, Township,	Load Filo	Date of	Staked	% Subject to	o Agreement
Name	Number	Range, Sector & Quadrant	Lead File	Location	Area (ha)	MinQuest	Patriot
GVC 95	AMC409032	14 0200N 0210W 035 NE	ditto	15-Apr-11	8.361	23.59	100
ditto	ditto	14 0200N 0210W 036 NW	AMC408939	15-Apr-11	-	23.59	100
GVC 96	AMC409033	14 0200N 0210W 036 NW	AMC408939	15-Apr-11	8.361	99.83	100
GVC 97	AMC409034	14 0200N 0210W 035 NE, SE	ditto	15-Apr-11	8.361	0	99.69
ditto GVC 98	ditto AMC409035	14 0200N 0210W 036 NW, SW 14 0200N 0210W 036 NW	AMC408939 AMC408939	15-Apr-11 15-Apr-11	- 8.361	0 51.81	99.69 100
GVC 99	AMC409035 AMC409036	14 0200N 0210W 036 NW	AMC408939	15-Apr-11	8.361	22.63	22.63
GVC 100	AMC409037	14 0200N 0210W 025 SW, SE	AMC408939	15-Apr-11	8.361	100	100
GVC 101	AMC409038	14 0200N 0210W 025 SW, SE	ditto	15-Apr-11	8.361	100	100
ditto	ditto	14 0200N 0210W 036 NW, NE	AMC408939	15-Apr-11	-	100	100
GVC 102	AMC409039	14 0200N 0200W 030 SW	ditto	15-Apr-11	8.361	100	100
ditto	ditto ditto	14 0200N 0200W 031 NW	ditto ditto	15-Apr-11 15-Apr-11	-	100 100	100 100
ditto ditto	ditto	14 0200N 0210W 025 SE 14 0200N 0210W 036 NE	AMC408939	15-Apr-11	-	100	100
GVC 103	AMC409040	14 0200N 0210W 036 NW, NE	AMC408939	15-Apr-11	8.361	100	100
GVC 104	AMC409041	14 0200N 0200W 031 NW	ditto	15-Apr-11	8.361	100	100
ditto	ditto	14 0200N 0210W 036 NE	AMC408939	15-Apr-11	-	100	100
GVC 105	AMC409042	14 0200N 0210W 036 NW, NE	AMC408939	15-Apr-11	8.361	100	100
GVC 106	AMC409043	14 0200N 0200W 031 NW	ditto	15-Apr-11	8.361	100	100
ditto GVC 107	ditto AMC409044	14 0200N 0210W 036 NE 14 0200N 0210W 036 NW, NE	AMC408939 AMC408939	15-Apr-11 15-Apr-11	- 8.361	100 100	100 100
GVC 107	AMC409044 AMC409045	14 0200N 0210W 030 NW, NE 14 0200N 0200W 031 NW	ditto	15-Apr-11	8.361	100	100
ditto	ditto	14 0200N 0200W 031 NW	AMC408939	15-Apr-11	-	100	100
GVC 109	AMC409046	14 0200N 0210W 036 NW, NE, SW, SE	AMC408939	16-Apr-11	8.361	99.62	100
GVC 110	AMC409047	14 0200N 0200W 031 NW, SW	ditto	16-Apr-11	8.361	100	100
ditto	ditto	14 0200N 0210W 036 NE, SE	AMC408939	16-Apr-11	-	100	100
GVC 111	AMC409048	14 0200N 0210W 036 SW, SE	AMC408939	16-Apr-11	8.361	15.76	22.63
GVC 112 ditto	AMC409049 ditto	14 0200N 0200W 031 SW 14 0200N 0210W 036 SE	ditto AMC408939	16-Apr-11 16-Apr-11	8.361	22.63 22.63	22.63 22.63
GVC 113	AMC409050	14 0200N 0210W 030 SE	ditto	16-Apr-11	8.361	0	0
ditto	ditto	14 0200N 0210W 036 SE	AMC408939	16-Apr-11	-	0	0
GVC 114	AMC409051	14 0200N 0200W 031 NW	AMC408939	15-Apr-11	8.361	100	100
GVC 115	AMC409052	14 0200N 0200W 031 NW, NE	AMC408939	15-Apr-11	8.361	100	100
GVC 116	AMC409053	14 0200N 0200W 031 NW	AMC408939	15-Apr-11	8.361	100	100
GVC 117	AMC409054	14 0200N 0200W 031 NW, NE	AMC408939	15-Apr-11	8.361	100	100
GVC 118 GVC 119	AMC409055 AMC409056	14 0200N 0200W 031 NW 14 0200N 0200W 031 NW, NE	AMC408939 AMC408939	15-Apr-11 15-Apr-11	8.361 8.361	100 100	100 100
GVC 119	AMC409050 AMC409057	14 0200N 0200W 031 NW, NE	AMC408939	15-Apr-11	8.361	100	100
GVC 121	AMC409058	14 0200N 0200W 031 NW, NE, SW, SE	AMC408939	15-Apr-11	8.361	100	100
GVC 122	AMC409059	14 0200N 0200W 031 SW	AMC408939	15-Apr-11	8.361	22.63	22.63
GVC 123	AMC409060	14 0200N 0200W 031 SW, SE	AMC408939	15-Apr-11	8.361	22.63	22.63
GVC 124	AMC409061	14 0200N 0200W 031 SW	AMC408939	15-Apr-11	8.361	0	0
GVC 125 GVC 126	AMC409062 AMC409063	14 0200N 0200W 031 SW, SE 14 0200N 0200W 031 SW	AMC408939 AMC408939	15-Apr-11 15-Apr-11	8.361 8.361	0	0
GVC 128 GVC 127	AMC409063 AMC409064	14 0200N 0200W 031 SW 14 0200N 0200W 031 SW, SE	AMC408939 AMC408939	15-Apr-11	8.361	0	0
GVC 128	AMC409065	14 0200N 0200W 031 NE	AMC408939	16-Apr-11	8.361	100	100
GVC 129	AMC409066	14 0200N 0200W 031 NE	AMC408939	16-Apr-11	8.361	100	100
GVC 130	AMC409067	14 0200N 0200W 031 NE, SE	AMC408939	16-Apr-11	8.361	100	100
GVC 131	AMC409068	14 0200N 0200W 031 NE, SE	ditto	16-Apr-11	8.361	100	100
ditto GVC 132	ditto	14 0200N 0200W 032 NW, SW	AMC408939 AMC408939	16-Apr-11	0 241	100	100
GVC 132 GVC 133	AMC409069 AMC409070	14 0200N 0200W 031 SE 14 0200N 0200W 031 SE	ditto	16-Apr-11 16-Apr-11	8.361 8.361	22.63 22.63	22.63 22.63
ditto	ditto	14 0200N 0200W 031 3L	AMC408939	16-Apr-11	-	22.63	22.63
GVC 134	AMC409071	14 0200N 0200W 031 SE	AMC408939	16-Apr-11	8.361	0	0
GVC 135	AMC409072	14 0200N 0200W 031 SE	ditto	16-Apr-11	8.361	0	0
ditto	ditto	14 0200N 0200W 032 SW	AMC408939	16-Apr-11	-	0	0
GVC 136	AMC409073	14 0200N 0200W 031 SE	AMC408939	16-Apr-11	8.361	0	0
GVC 137	AMC409074	14 0200N 0200W 031 SE	ditto	16-Apr-11	8.361	0	0
ditto	ditto	14 0200N 0200W 032 SW		16-Apr-11	-	0	0
GVC 138	AMC409075	14 0200N 0200W 031 SE	AMC408939	16-Apr-11	8.361	0	0
GVC 139	AMC409076	14 0200N 0200W 031 SE	AMC408939	16-Apr-11	8.361	0	0
ditto GVC 146	ditto AMC409082	14 0200N 0200W 032 SW 14 0190N 0200W 005 NW	ditto AMC408939	16-Apr-11 3-May-11	- 8.361	0 0	0 0
ditto	ditto	14 0200N 0200W 003 NW	ditto	3-May-11	-	0	0
GVC 147	AMC409083	14 0190N 0200W 005 NW, NE	AMC408939	3-May-11	8.361	0	0
ditto	ditto	14 0200N 0200W 032 SW, SE	ditto	3-May-11	-	0	0
GVC 148	AMC409084	14 0190N 0200W 005 NE	AMC408939	3-May-11	8.361	0	0
ditto	ditto	14 0200N 0200W 032 SE	ditto	3-May-11	-	0	0
GVC 149 ditto	AMC409085 ditto	14 0190N 0200W 004 NW 14 0200N 0200W 033 SW	AMC408939 ditto	3-May-11	8.361	0	0 0
GVC 150	AMC409086	14 0200N 0200W 033 SW 14 0190N 0200W 004 NW	AMC408939	3-May-11 3-May-11	8.361	0	0
GVC 150 GVC 162	AMC409080	14 0190N 0200W 004 NW, NE	AMC408939	3-May-11	8.361	0	0
GVC 162	AMC409093	14 0190N 0200W 004 NW, NE	AMC408939	3-May-11	8.361	0	0
GVC 165	AMC409094 AMC409095	14 0190N 0200W 004 NE	AMC408939	3-May-11	8.361	0 0	0



Claim	BLM Serial	Meridian, Township,	Lead File	Date of	Staked	% Subject to	Agreemer
Name	Number	Range, Sector & Quadrant	Lead File	Location	Area (ha)	MinQuest	Patrio
GVC 167	AMC409096	14 0190N 0200W 004 NE, SE	AMC408939	3-May-11	8.361	0	0
GVC 168	AMC409097	14 0190N 0200W 004 SE	AMC408939	4-May-11	8.361	0	0
GVC 172	AMC409101	14 0190N 0200W 003 NW	AMC408939	4-May-11	8.361	0	0
ditto	ditto	14 0190N 0200W 004 NE	ditto	4-May-11	-	0	0
GVC 173	AMC409102	14 0190N 0200W 003 SW	AMC408939	4-May-11	8.361	0	0
ditto	ditto	14 0190N 0200W 004 SE	ditto	4-May-11	-	0	0
GVC 174	AMC409103	14 0190N 0200W 003 SW	AMC408939	4-May-11	8.361	0	0
ditto	ditto	14 0190N 0200W 004 SE	ditto	4-May-11	-	0	0
GVC 175	AMC409104	14 0200N 0210W 025 SW	AMC408939	2-May-11	8.361	100	100
GVC 176	AMC409105	14 0200N 0210W 025 SW, SE	AMC408939	2-May-11	8.361	100	100
GVC 177	AMC409106	14 0200N 0210W 025 SW, SE	AMC408939	2-May-11	8.361	100	100
GVC 178	AMC409107	14 0200N 0200W 030 SW	AMC408939	2-May-11	8.361	100	100
ditto	ditto	14 0200N 0210W 025 SE	ditto	2-May-11	-	100	100
GVC 179	AMC409108	14 0200N 0200W 030 SW	AMC408939	2-May-11	8.361	100	100
GVC 180	AMC409109	14 0200N 0200W 030 SW	AMC408939	2-May-11	8.361	100	100
ditto	ditto	14 0200N 0210W 025 SE	ditto	2-May-11	-	100	100
GVC 181	AMC409110	14 0200N 0200W 030 SW	AMC408939	2-May-11	8.361	100	100
GVC 182	AMC409111	14 0200N 0200W 030 SW	AMC408939	2-May-11	8.361	100	100
ditto	ditto	14 0200N 0210W 025 SE	ditto	2-May-11	-	100	100
GVC 183	AMC409112	14 0200N 0200W 030 SW	AMC408939	1-May-11	8.361	100	100
GVC 184	AMC409113	14 0200N 0200W 030 SW	AMC408939	1-May-11	8.361	100	100
ditto	ditto	14 0200N 0200W 031 NW	ditto	1-May-11	-	100	100
GVC 185	AMC409114	14 0200N 0200W 030 SW, SE	AMC408939	1-May-11	8.361	100	100
GVC 186	AMC409115	14 0200N 0200W 030 SW	AMC408939	1-May-11	8.361	100	100
GVC 187	AMC409116	14 0200N 0200W 030 SW, SE	AMC408939	1-May-11	8.361	100	100
GVC 188	AMC409117	14 0200N 0200W 030 SW	AMC408939	1-May-11	8.361	100	100
GVC 189	AMC409118	14 0200N 0200W 030 SW, SE	AMC408939	1-May-11	8.361	100	100
GVC 190	AMC409119	14 0200N 0200W 030 SW	AMC408939	1-May-11	8.361	100	100
GVC 191	AMC409120	14 0200N 0200W 030 SW, SE	AMC408939	1-May-11	8.361	100	100
ditto	ditto	14 0200N 0200W 031 NW, NE	ditto	1-May-11	-	100	100
GVC 192	AMC409121	14 0200N 0200W 030 SE	AMC408939	1-May-11	8.361	100	100
ditto	ditto	14 0200N 0200W 031 NE	ditto	1-May-11	-	100	100
GVC 193	AMC409122	14 0200N 0200W 031 NE	AMC408939	1-May-11	8.361	100	100
GVC 301	AMC432054	14 0200N 0200W 019 SE	AMC432054	24-Apr-15	0.960	100	100
				Total Area	1,422.33		

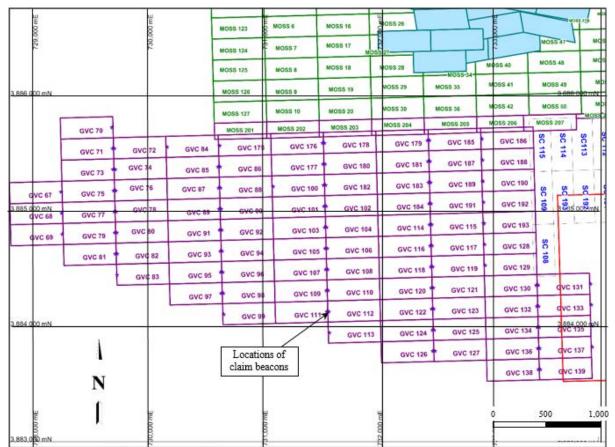
Note: The claim GVC 301 was ommitted in the December 2014 Technical Report.



(compiled from AutoCad® files of the claim blocks, supplied by the Company, refer to Figure 4-4 to determine the position of the illustrated claims within the Moss Mine Project Area)

# Figure 4-6: A Location Plan for the Company's Block of Unpatented Lode Claims (GVC Series, Highlighted in PURPLE), Northwest Sector, Moss Mine Project Area





(compiled from AutoCad<sup>®</sup> files of the claim blocks, supplied by the Company, refer to Figure 4-4 to determine the position of the illustrated claims within the overall Moss Mine Project Area)

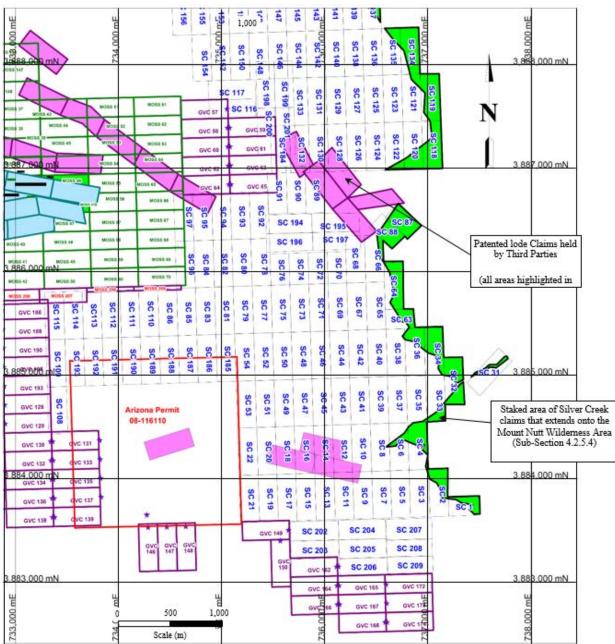
## Figure 4-7: A Location Plant for the Company's Block of Unpatented Lode Claims (GVC Series, Highlighted in Purple), Southwest Sector, Moss Mine Project Area

## 4.3.2.3 Moss 201 to Moss 211 Claim Series

Table 4-4 summarizes the details of the Moss 201 to Moss 211 series of 11 unpatented lode claims. Moss 201 to Moss 209 form a single strip along the southern boundary of the main block of Moss claims, to infill the otherwise open ground. Moss 210 and Moss 211 infill gaps between the surveyed boundaries of the 15 patented lode claims described in Sub-Section 4.3.1.

The claim areas stated on Table 4-4 are the staked areas of each listed claim, estimated using the AutoCad<sup>®</sup> claims files supplied by the Company. However, Moss 201 to Moss 207 overlap one or more claim of the GVC series to the south. The affected GVC claims take precedence over the overlapping Moss claims. The active areas of the overlapping Moss 201 to Moss 207 claims are stated in Section 4.3.3 in which the total overlap area of the claims comprising Moss Mine Project area is defined. The locations of the Moss 201 to Moss 209 claims are detailed on Figure 4-5. The locations of the Moss 210 and Moss 211 claims are detailed on Figure 4-9.





(compiled from AutoCad® files of the claim blocks, supplied by the Company, refer to Figure 4-4 to determine the position of the illustrated claims within the overall Moss Mine Project Area)

Figure 4-8: A Location Plan for the Company's Unpatented Lode Claims (GVC Series, Highlighted in PURPLE, and Silver Creek (SC) Series, Highlighted in BLUE) and Arizona State Exploration Permit Area (highlighted in RED) Southeast and Central East Sectors, Moss Mine Project Area



	(compiled from information from various sources, including Company Documents and BLM Claim Reports)										
Claim	BLM Serial	Meridian, Township,	Lead File	Date of	Staked	% Subject to	Agreement				
Name	Number	Range, Sector & Quadrant	Leau File	Location	Area (ha)	MinQuest	Patriot				
Moss 201	AMC416914	14 0200N 0210W 025 SW	AMC416914	June 27, 2012	6.45	100%	100%				
Moss 202	AMC416915	14 0200N 0210W 025 SW, SE	AMC416914	June 27, 2012	6.45	100%	100%				
Moss 203	AMC416916	14 0200N 0210W 025 SE	AMC416914	June 27, 2012	6.45	100%	100%				
Moss 204	AMC416917	14 0200N 0200W 030 SW	AMC416914	June 27, 2012	6.45	100%	100%				
Moss 205	AMC416918	14 0200N 0200W 030 SW, SE	AMC416914	June 27, 2012	6.45	100%	100%				
Moss 206	AMC416919	14 0200N 0200W 030 SE	AMC416914	June 27, 2012	5.67	100%	100%				
Moss 207	AMC416920	14 0200N 0200W 029 SW	AMC416914	June 27, 2012	6.45	100%	100%				
ditto	ditto	14 0200N 0200W 030 SE	ditto	June 27, 2012	-	100%	100%				
Moss 208	AMC416921	14 0200N 0200W 029 SW	AMC416914	June 27, 2012	1.85	100%	100%				
Moss 209	AMC416922	14 0200N 0200W 029 SW, SE	AMC416914	June 27, 2012	1.85	100%	100%				
Moss 210	AMC420117	14 0200N 0200W 029 NW	AMC420117	Sept. 05, 2012	0.34	100%	100%				
ditto	ditto	14 0200N 0200W 030 NE	ditto	Sept. 05, 2012	-	100%	100%				
Moss 211	AMC420118	14 0200N 0200W 019 SE	AMC420117	Sept. 05, 2012	0.02	100%	100%				
				Total Area	48.43						

Table 4-4: A Summary of the Company's Unpatented Lode Claims (Moss 201 to Moss 211 Series) of the Moss Mine Project Area

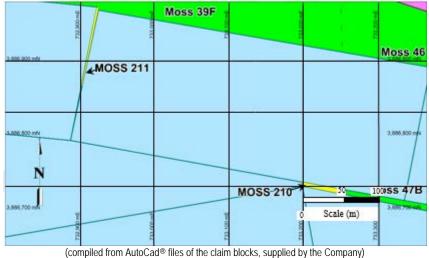


Figure 4-9: A Location Plan for the Company's Moss 210 and 211 Unpatented Lode Claims, Moss Mine Project Area

4.3.2.4 Silver Creek Claims

Table 4-5 (that is in three parts due to its length) summarizes the details of the Silver Creek series of 170 unpatented lode claims (1,487.77 ha). The locations of the claims in the southeast and central east sectors are included on Figure 4-8. Figure 4-10 is a location plan for the Silver Creek claims located in the northeast sector. Each of the plans includes the positions of active patented lode claims that are held by third parties.

Figure 4-8 and Figure 4-10 include the local boundary of the Mount Nutt Wilderness area to the east of the Moss Mine Project Area and highlight the staked areas of the Silver Creek claims that encroach onto the wilderness area. The wilderness area is not open to mineral location and no exploration or related activities are allowed. Pursuant to the La Cuesta Agreement (Sub-Section 4.5.3), the Silver Creek claims listed on Table 4-5 assert rights to only those portions of the claims that are located outside the wilderness preserve.



## Table 4-5: A Summary of the Company's Silver Creek Series of Unpatented Lode Claims, (compiled from information from various sources, including Company Documents and BLM Claim Reports)

(compiled from information from various sources, including Company Documents and BLM Claim Reports)								
		Mohave				Staked	% Subject to	Agreement
Claim Name	BLM Serial	County	Section	Township	Range	Area (ha)	MinQuest	
	Number	Record	Number	rownsnip	Range			Patriot
		Number						
Silver Creek 1	AMC 407863	2011024735	34	20N	20W	8.361	0.00	0.00
Silver Creek 2	AMC 407864	2011024736	34	20N	20W	8.361	0.00	0.00
Silver Creek 3	AMC 407865	2011024737	34	20N	20W	8.361	0.00	0.00
Silver Creek 4	AMC 407866	2011024738	34	20N	20W	8.361	0.00	0.00
Silver Creek 5	AMC 407867 AMC 407868	2011024739	34, 33 34, 33	20N 20N	20W	8.361	0.00 0.00	0.00 0.00
Silver Creek 6 Silver Creek 7	AMC 407868 AMC 407869	2011024740 2011024741	34, 33 33	20N	20W 20W	8.361 8.361	0.00	0.00
Silver Creek 8	AMC 407809 AMC 407870	2011024742	33	20N	20W	8.361	0.00	0.00
Silver Creek 9	AMC 407871	2011024743	33	20N	20W	7.763	0.00	0.00
Silver Creek 10	AMC 407872	2011024744	33	20N	20W	7.944	0.00	0.00
Silver Creek 11	AMC 407873	2011024745	33	20N	20W	6.919	0.00	0.00
Silver Creek 12	AMC 407874	2011024746	33	20N	20W	4.069	0.00	0.00
Silver Creek 13	AMC 407875	2011024747	33	20N	20W	8.017	0.00	0.00
Silver Creek 14	AMC 407876	2011024748	33	20N	20W	2.025	0.00	0.00
Silver Creek 15	AMC 407877	2011024749	33	20N	20W	8.333	0.00	0.00
Silver Creek 16	AMC 407878	2011024750	33	20N	20W	2.423	0.00	0.00
Silver Creek 17	AMC 407879	2011024751	33	20N	20W	8.253	0.00	0.00
Silver Creek 18	AMC 407880	2011024752	33	20N	20W	3.732	0.00	0.00
Silver Creek 19	AMC 407881	2011024753	33	20N	20W	8.312	0.00	0.00
Silver Creek 20	AMC 407882	2011024754	33	20N	20W	6.858	8.23	8.23
Silver Creek 21	AMC 407883 AMC 407884	2011024755	33 33	20N 20N	20W	8.361	0.00	0.00 26.70
Silver Creek 22		2011024756	33 34, 27	20N 20N	20W	8.361	26.70	28.70
Silver Creek 31	AMC 407893 AMC 407894	2011024765	34, 27 34	20N 20N	20W	8.361	0.00	0.00
Silver Creek 32 Silver Creek 33	AMC 407895	2011024766 2011024767	34	20N	20W 20W	8.361 8.361	0.00 0.00	0.00
Silver Creek 33	AMC 407895	2011024768	34, 27	20N	20W	8.361	0.00	0.00
Silver Creek 35	AMC 407890 AMC 407897	2011024769	34	20N	20W	8.361	0.00	0.00
Silver Creek 36	AMC 407898	2011024770	34, 27	20N	20W	8.361	0.00	0.00
Silver Creek 37	AMC 407899	2011024771	33, 34	20N	20W	8.361	0.00	0.00
Silver Creek 38	AMC 407900	2011024772	33, 28, 34, 27	20N	20W	8.361	0.00	0.00
Silver Creek 39	AMC 407901	2011024773	33	20N	20W	8.361	0.00	0.00
Silver Creek 40	AMC 407902	2011024774	33, 28	20N	20W	8.361	0.00	0.00
Silver Creek 41	AMC 407903	2011024775	33	20N	20W	8.361	0.00	0.00
Silver Creek 42	AMC 407904	2011024776	33, 28	20N	20W	8.361	0.00	0.00
Silver Creek 43	AMC 407905	2011024777	33	20N	20W	8.361	0.00	0.00
Silver Creek 44	AMC 407906	2011024778	28, 33	20N	20W	8.361	35.73	35.73
Silver Creek 45	AMC 407907	2011024779	33	20N	20W	8.361	10.28	10.28
Silver Creek 46	AMC 407908	2011024780	33, 28	20N	20W	8.361	97.25	97.25
Silver Creek 47	AMC 407909	2011024781	33	20N	20W	8.361	50.71	50.71
Silver Creek 48	AMC 407910	2011024782	33, 28	20N	20W	8.361	100.00	100.00
Silver Creek 49	AMC 407911	2011024783	33	20N 20N	20W	8.361	85.35	85.35 100.00
Silver Creek 50 Silver Creek 51	AMC 407912 AMC 407913	2011024784 2011024785	33, 28 33	20N 20N	20W 20W	8.361 8.361	100.00 100.00	100.00
Silver Creek 51	AMC 407913 AMC 407914	2011024786	33, 28	20N	20W	8.361	100.00	100.00
Silver Creek 52	AMC 407914 AMC 407915	2011024787	33	20N	20W	8.361	100.00	100.00
Silver Creek 55	AMC 407916	2011024788	33, 28	20N	20W	8.361	100.00	100.00
Silver Creek 63	AMC 407925	2011024797	28, 27	20N	20W	8.361	0.00	0.00
Silver Creek 64	AMC 407926	2011024798	28, 27	20N	20W	8.361	0.00	0.00
Silver Creek 65	AMC 407927	2011024799	28	20N	20W	8.361	0.00	0.00
Silver Creek 66	AMC 407928	2011024800	28	20N	20W	8.361	0.00	0.00
Silver Creek 67	AMC 407929	2011024801	28	20N	20W	8.361	14.46	14.46
Silver Creek 68	AMC 407930	2011024802	28	20N	20W	8.361	30.12	30.12
Silver Creek 69	AMC 407931	2011024803	28	20N	20W	8.361	97.51	97.51
Silver Creek 70	AMC 407932	2011024804	28	20N	20W	5.485	100.00	100.00
Silver Creek 71	AMC 407933	2011024805	28	20N	20W	8.361	100.00	100.00
Silver Creek 72	AMC 407934	2011024806	28	20N	20W	5.632	100.00	100.00
Silver Creek 73	AMC 407935	2011024807	28	20N	20W	8.361	100.00	100.00
Silver Creek 74	AMC 407936	2011024808 2011024809	28 28	20N 20N	20W	5.663	100.00	100.00 100.00
Silver Creek 75 Silver Creek 76	AMC 407937 AMC 407938	2011024809 2011024810	28 28	20N 20N	20W 20W	8.361 5.563	100.00 100.00	100.00
Silver Creek 76	AMC 407938 AMC 407939	2011024810	28	20N	20W	5.563 8.361	100.00	100.00
Silver Creek 78	AMC 407939 AMC 407940	2011024811	28	20N	20W	8.361	100.00	100.00
Silver Creek 78	AMC 407940 AMC 407941	2011024812	28	20N	20W	8.361	100.00	100.00
Silver Creek 80	AMC 407942	2011024814	28	20N	20W	8.361	100.00	100.00
	AMC 407943	2011024815	28, 29	20N	20W	8.361	100.00	100.00
Silver Creek 81				20N	20W	8.361	100.00	100.00
	AMC 407944	2011024816	28, 29	2014				
Silver Creek 81	AMC 407944 AMC 407945	2011024816 2011024817	29	20N	20W	8.361	100.00	100.00
Silver Creek 81 Silver Creek 82	AMC 407945 AMC 407946	2011024817 2011024818	29 29	20N 20N			100.00 100.00	
Silver Creek 81 Silver Creek 82 Silver Creek 83	AMC 407945	2011024817	29	20N	20W	8.361	100.00	100.00



		Mohave				Staked	% Subject to	Agreement
Claim Name	BLM Serial Number	County Record	Section Number	Township	Range	Area (ha)	MinQuest	Patriot
Silver Creek 87	AMC 407949	Number 2011024821	28, 27	20N	20W	5.545	0.00	0.00
Silver Creek 88	AMC 407950	2011024822	28, 27	20N	20W	5.569	0.00	0.00
Silver Creek 89	AMC 407951	2011024823	28, 21	20N	20W	8.361	100.00	100.00
Silver Creek 90	AMC 407952	2011024824	28, 21	20N	20W	8.361	100.00	100.00
Silver Creek 91	AMC 407953	2011024825	28, 21	20N	20W	8.361	100.00	100.00
Silver Creek 91	AMC 407953 AMC 407954	2011024825	28	20N	20W	8.361	100.00	100.00
Silver Creek 93	AMC 407955	2011024827	28	20N	20W	8.361	100.00	100.00
Silver Creek 94	AMC 407956	2011024828	29, 28	20N	20W	8.361	100.00	100.00
Silver Creek 95	AMC 407957	2011024829	29	20N	20W	8.464	100.00	100.00
Silver Creek 96	AMC 407958	2011024830	29	20N	20W	8.361	100.00	100.00
Silver Creek 97	AMC 407959	2011024831	29	20N	20W	8.361	100.00	100.00
Silver Creek 108	AMC 407970	2011024842	31	20N	20W	8.361	100.00	100.00
Silver Creek 109	AMC 407971	2011024843	31, 30	20N	20W	8.361	100.00	100.00
Silver Creek 110	AMC 407972	2011024844	29	20N	20W	8.361	100.00	100.00
Silver Creek 111	AMC 407973	2011024845	29	20N	20W	8.361	100.00	100.00
Silver Creek 112	AMC 407974	2011024846	29	20N	20W	8.361	100.00	100.00
Silver Creek 113	AMC 407975	2011024847	29 29, 30	20N 20N	20W	8.361	100.00	100.00
Silver Creek 114 Silver Creek 115	AMC 407976	2011024848	29, 30	20N 20N	20W	8.361	100.00	100.00 100.00
Silver Creek 115 Silver Creek 116	AMC 407977 AMC 410214	2011024849 2011044461	21, 20	20N 20N	20W 20W	8.361 8.361	100.00 100.00	100.00
Silver Creek 117	AMC 410214 AMC 410215	2011044461	21, 20	20N	20W	8.361	100.00	100.00
Silver Creek 117	AMC 410215 AMC 410216	2011044463	22	20N	20W	8.361	0.00	0.00
Silver Creek 119	AMC 410217	2011044464	22	20N	20W	8.361	0.00	0.00
Silver Creek 120	AMC 410218	2011044465	22	20N	20W	8.361	0.00	0.00
Silver Creek 121	AMC 410219	2011044466	22	20N	20W	8.361	0.00	0.00
Silver Creek 122	AMC 410220	2011044467	21, 22	20N	20W	8.361	0.00	0.00
Silver Creek 123	AMC 410221	2011044468	21, 22	20N	20W	8.361	0.00	0.00
Silver Creek 124	AMC 410222	2011044469	21	20N	20W	8.361	0.00	0.00
Silver Creek 125	AMC 410223 AMC 410224	2011044470	21	20N	20W	8.361	0.00	0.00
Silver Creek 126 Silver Creek 127	AMC 410224 AMC 410225	2011044471 2011044472	21 21	20N 20N	20W 20W	8.361 8.361	12.51 15.37	12.51 15.37
Silver Creek 127	AMC 410225 AMC 410226	2011044472	21	20N	20W	8.361	100.00	100.00
Silver Creek 120	AMC 410220	2011044474	21	20N	20W	8.361	100.00	100.00
Silver Creek 130	AMC 410228	2011044475	21	20N	20W	8.361	100.00	100.00
Silver Creek 131	AMC 410229	2011044476	21	20N	20W	8.361	100.00	100.00
Silver Creek 132	AMC 410230	2011044477	21	20N	20W	8.361	100.00	100.00
Silver Creek 133	AMC 410231	2011044478	21	20N	20W	8.361	100.00	100.00
Silver Creek 134	AMC 410232	2011044479	22	20N	20W	8.361	0.00	0.00
Silver Creek 135	AMC 410233	2011044480	21, 22	20N	20W	8.361	0.00	0.00
Silver Creek 136	AMC 410234	2011044481	21	20N	20W	8.361	0.00	0.00
Silver Creek 137	AMC 410235	2011044482	21, 16 21	20N 20N	20W	8.361	0.00	0.00
Silver Creek 138 Silver Creek 139	AMC 410236 AMC 410237	2011044483 2011044484	21, 16	20N 20N	20W 20W	8.361 8.361	4.37 0.00	4.37 0.00
Silver Creek 139	AMC 410237	2011044485	21,10	20N	20W	8.361	87.73	87.73
Silver Creek 140	AMC 410239	2011044486	21, 16	20N	20W	8.361	14.64	14.64
Silver Creek 142	AMC 410240	2011044487	21	20N	20W	8.361	100.00	100.00
Silver Creek 143	AMC 410241	2011044488	21, 16	20N	20W	8.361	25.31	25.31
Silver Creek 144	AMC 410242	2011044489	21	20N	20W	8.361	100.00	100.00
Silver Creek 145	AMC 410243	2011044490	21, 16	20N	20W	8.361	100.00	100.00
Silver Creek 146	AMC 410244	2011044491	21	20N	20W	8.361	100.00	100.00
Silver Creek 147	AMC 410245	2011044492	21, 16	20N	20W	8.361	100.00	100.00
Silver Creek 148	AMC 410246	2011044493	21 21, 16	20N 20N	20W	8.361	100.00	100.00
Silver Creek 149 Silver Creek 150	AMC 410247 AMC 410248	2011044494 2011044495	21, 10	20N 20N	20W 20W	8.361 8.361	100.00 100.00	100.00 100.00
Silver Creek 150 Silver Creek 151	AMC 410248 AMC 410249	2011044495 2011044496	21, 16	20N 20N	20W	8.361	100.00	100.00
Silver Creek 151	AMC 410249 AMC 410250	2011044490	20, 21	20N	20W	8.361	100.00	100.00
Silver Creek 152	AMC 410250	2011044498	20, 17, 21, 16	20N	20W	8.361	100.00	100.00
Silver Creek 154	AMC 410252	2011044499	20	20N	20W	8.361	100.00	100.00
Silver Creek 155	AMC 410253	2011044500	20, 17	20N	20W	8.361	100.00	100.00
Silver Creek 156	AMC 410254	2011044501	20, 17	20N	20W	8.361	100.00	100.00
Silver Creek 157	AMC 410255	2011044502	16	20N	20W	8.361	0.00	0.00
Silver Creek 158	AMC 410256	2011044503	16	20N	20W	8.361	0.00	0.00
Silver Creek 159	AMC 410257	2011044504	16	20N	20W	8.361	20.81	20.81
Silver Creek 160	AMC 410258	2011044505	16	20N	20W	8.361	0.00	0.00
Silver Creek 161 Silver Creek 162	AMC 410259	2011044506 2011044507	16 16	20N 20N	20W	8.361	53.18 0.00	53.18
Silver Creek 162 Silver Creek 163	AMC 410260 AMC 410261	2011044507 2011044508	16	20N 20N	20W 20W	8.361 8.361	80.82	0.00 80.82
SINCI CIEEK 103	AMC 410261 AMC 410262	2011044508	16	20N	20W	8.361	0.00	0.00
Silver Creek 16/	TIMO TIUZUZ			20N	20W	8.361	97.51	97.51
Silver Creek 164 Silver Creek 165	AMC 410263	2011044510	10					
Silver Creek 164 Silver Creek 165 Silver Creek 166	AMC 410263 AMC 410264	2011044510 2011044511	16 16	20N	20W	8.361	1.16	1.16
Silver Creek 165								
Silver Creek 165 Silver Creek 166	AMC 410264	2011044511	16	20N	20W	8.361	1.16	1.16

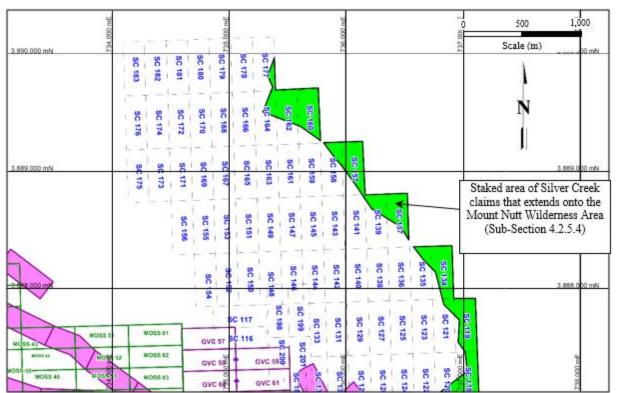


Claim Name	<b>B 1 1 1 1</b>										Staked		Agreement
	BLM Serial Number	County Record Number	Section Number	Township	Range	Area (ha)	MinQuest	Patriot					
Silver Creek 170	AMC 410268	2011044515	17	20N	20W	8.361	17.03	17.68					
Silver Creek 171	AMC 410269	2011044516	17	20N	20W	8.361	100.00	100.00					
Silver Creek 172	AMC 410270	2011044517	17	20N	20W	8.361	19.75	27.87					
Silver Creek 173	AMC 410271	2011044518	17	20N	20W	8.361	100.00	100.00					
Silver Creek 174	AMC 410272	2011044519	17	20N	20W	8.361	20.79	50.84					
Silver Creek 175	AMC 410273	2011044520	17	20N	20W	8.361	100.00	100.00					
Silver Creek 176	AMC 410274	2011044521	17	20N	20W	8.361	20.03	76.40					
Silver Creek 177	AMC 410275	2011044522	16, 9	20N	20W	8.361	0.00	0.00					
Silver Creek 178	AMC 410276	2011044523	16, 9	20N	20W	8.361	0.00	0.00					
Silver Creek 179	AMC 410277	2011044524	17, 8, 16, 9	20N	20W	8.361	0.00	0.00					
Silver Creek 180	AMC 410278	2011044525	17, 8	20N	20W	8.361	0.00	0.00					
Silver Creek 181	AMC 410279	2011044526	17, 8	20N	20W	8.361	0.00	0.00					
Silver Creek 182	AMC 410280	2011044527	17, 8	20N	20W	8.361	0.00	0.00					
Silver Creek 183	AMC 410281	2011044528	17, 8	20N	20W	8.361	0.00	0.00					
Silver Creek 184	AMC 410282	2011044529	21	20N	20W	8.361	100.00	100.00					
Silver Creek 185	AMC 413137	2012000017	32, 33, 29, 28	20N	20W	8.361	100.00	100.00					
Silver Creek 186	AMC 413138	2012000018	32, 29	20N	20W	8.361	100.00	100.00					
Silver Creek 187	AMC 413139	2012000019	32, 29	20N	20W	8.361	100.00	100.00					
Silver Creek 188	AMC 413140	2012000020	32, 29	20N	20W	8.361	100.00	100.00					
Silver Creek 189	AMC 413141	2012000021	32, 29	20N	20W	8.361	100.00	100.00					
Silver Creek 190	AMC 413142	2012000022	32, 29	20N	20W	8.361	100.00	100.00					
Silver Creek 191	AMC 413143	2012000023	32, 29	20N	20W	8.361	100.00	100.00					
Silver Creek 192	AMC 413144	2012000024	32, 29	20N	20W	8.361	100.00	100.00					
Silver Creek 193	AMC 413145	2012000025	32, 29, 31, 30	20N	20W	8.361	100.00	100.00					
Silver Creek 194	AMC 427718	2014014495	28	20N	20W	8.361	100.00	100.00					
Silver Creek 195	AMC 427719	2014014496	28	20N	20W	8.361	77.50	77.50					
Silver Creek 196	AMC 427720	2014014497	28	20N	20W	8.361	100.00	100.00					
Silver Creek 197	AMC 427721	2014014498	28	20N	20W	8.361	77.50	77.50					
Silver Creek 198	AMC 427722	2014014499	21	20N	20W	8.361	100.00	100.00					
Silver Creek 199	AMC 427723	2014014500	21	20N	20W	8.361	100.00	100.00					
Silver Creek 200	AMC 427724	2014014500	21	20N	20W	8.361	100.00	100.00					
Silver Creek 200	AMC 427724	2014014502	21	20N	20W	8.361	100.00	100.00					
Silver Creek 201	AMC 427723	2014014302	4	19N	20W	8.361	0.00	0.00					
Silver Creek 202	AMC 428270 AMC 428271	2014021863	4	19N	20W	8.361	0.00	0.00					
Silver Creek 203	AMC 428271 AMC 428272	2014021864 2014021865	4	19N	20W	8.361	0.00	0.00					
Silver Creek 204	AMC 428272 AMC 428273	2014021865	4	19N	20W	8.361	0.00	0.00					
Silver Creek 205	AMC 428273 AMC 428274	2014021866 2014021867	4	19N	20W	8.361	0.00	0.00					
			4	19N	20W	8.361	0.00						
Silver Creek 207	AMC 428275	2014021868		19N	20W	8.361		0.00					
Silver Creek 208	AMC 428276	2014021869	4	19N	20W		0.00	0.00 0.00					
Silver Creek 209	AMC 428277	2014021870	4	191/	ZOW Total Area	8.361 1,487.773	0.00	0.00					

## 4.3.2.5 Arizona State Exploration Permit

The area covered by the Arizona State exploration permit (#08-116110, 259 ha) is identified on Figure 4-8. As can be seen, it overlaps both GVC and Silver Creek series claims. The 'active' area of the exploration permit area is estimated, by scrutiny of the AutoCad<sup>®</sup> claims files provided by the Company, to equal approximately 186.8 ha.





(compiled from AutoCad<sup>®</sup> files of the claim blocks, supplied by the Company, refer to Figure 4-4 to determine the position of the illustrated claims within the overall Moss Mine Project Area)

## Figure 4-10: A Location Plan for the Company's Optioned Unpatented Lode Claims (Silver Creek [SC] Series, highlighted in BLUE), Northeast Area, Moss Mine Project Area

## 4.3.3 Claim and Permit Overlaps

Table 4-6 summarizes the various overlaps between the various claims and between the Arizona State exploration permit and claims. The active areas of each listed claim were estimated from scrutiny of the AutoCad<sup>®</sup> claims files supplied by the Company. The total overlap area (estimated at 158.16 ha) was deducted from the total estimated area of all the Moss Mine Project patented lode claims, unpatented lode claims and one Arizona State exploration licence (rounded to 4,188.94 ha) to arrive at the estimated total Moss Mine Project area of 4,030.78 ha.

It is emphasized that, for the reasons stated in Section 4.3.2, the areas stated on Table 4-6 are estimates only: none of the unpatented lode claims have been surveyed by a licensed land surveyor; and the stated values are estimates based on scrutiny of AutoCad<sup>®</sup> claims files supplied by the Company.



	(complied	Area (ha)		les supplied by the Company)		
Claim/Permit Name	Total	Active	Overlap	Over-Lapping		
Moss 23	8.361	6.090	2.271			
Moss 24	8.361	2.936	5.425			
Moss 25	8.361	4.715	3.646			
Moss 26	8.361	6.488	1.873			
Moss 27	8.361	2.267	6.094			
Moss 28	8.361	7.312	1.049			
Moss 33	8.361	7.444	0.917			
Moss 34	8.361	1.96	6.401	Portions of the 15 Patented claims		
Moss 39F	8.361	5.576	2.785			
Moss 40	8.361	6.489	1.872			
Moss 46	8.361	4.240	4.121			
Moss 47	8.361	4.091	4.27			
Moss 47B	8.361	0.908	7.453			
Moss 55	8.361	7.835	0.526			
Moss 56	8.361	7.379	0.982			
GVC 39	8.361	7.799	0.562			
GVC 40	8.361	7.433	0.928			
GVC 50	8.361	7.972	0.389			
GVC 51	8.361	7.316	1.045			
GVC 52	8.361	4.263	4.098	Moss Claims (portions of the original 104 claims of the Moss 1 to Moss 148 series)		
GVC 53	8.361	4.385	3.976	10 IVIOSS 140 SELIES)		
GVC 54	8.361	4.385	3.976			
GVC 55	8.361	4.385	3.976			
GVC 56	8.361	3.752	4.609			
Moss 201	6.45	4.814	1.636			
Moss 202	6.45	4.664	1.786			
Moss 203	6.45	4.793	1.657			
Moss 204	6.45	4.825	1.625	Portions of the GVC series of claims		
Moss 205	6.45	4.676	1.774			
Moss 206	5.67	4.294	1.376			
Moss 207	6.45	6.033	0.417			
Arizona State Exploration Permit	259	186.9	72.1	Portions of the GVC and Silver Creek series of claims		
Totals	504.034	348.419	155.615			

Table 4-6: A Summary of the Estimated Claim and Permit Overlaps, Moss Mine Project
(compiled from scrutiny of the AutoCad® claims files supplied by the Company)

## 4.4 TAXES, MAINTENANCE FEES, AND RENT

## 4.4.1 Patented Lode Claims

Taxes are levied by the State in respect of patented lode claims, for payment to the local county (Mohave County in the case of the Moss Mine Project). The value of a property comprising patented lode claims is assessed by the Property Tax Division of the State's Department of Revenue. The State then applies an assessment ratio to the assessed value to arrive at an assessed full cash value for the patented ground. Primary and secondary tax rates (for 2015, 8.142% and 1.5184%, respectively) are then levied on the assessed full cash value to determine the tax due for the stated patented lode claim or claims. If the tax liability is greater than US\$100, 50% of the tax due is payable on or before October 01 of the assessed tax year, with the balance due on or before the first of the following March. If the tax liability is less than US\$100, payment is due on or before December 01 of the assessed tax year.

The Company estimates that the tax liability for 2015 is approximately US\$36,000.



#### 4.4.2 Unpatented Lode Claims

To maintain unpatented lode claims as active, hence in good standing, an annual maintenance fee is payable to BLM before September 01 of each year, in respect of the following 12 months. At the time of writing (December 2014) the maintenance fee for 2015 was US\$155 per unpatented lode claim (up from US\$140 in 2014), plus a filing fee for each block of US\$480.

### 4.4.3 Arizona State Exploration Permit

Rental totaling US\$2.00 per acre for the first year of an Arizona State exploration permit is payable to ASLD, which includes Year Two, reducing to US\$1.00 per acre through Year Five and the end of the exploration permit. A bond is established based on the proposed exploration activities (typically US\$3,000.00 for a single permit). A blanket bond of US\$15,000.00 can be paid for five or more permits held by an individual or company.

#### 4.5 PRINCIPAL AGREEMENTS

#### 4.5.1 MinQuest Agreement

The MinQuest Agreement is a mining lease/purchase agreement between MinQuest and Patriot Gold. It was entered into on March 04, 2004. Pursuant to its terms Patriot Gold purchased the Moss Property that is defined in the MinQuest Agreement as:

- seven patented lode claims (Key No. 1, Key No. 2, Moss Millsite, Divide, Keystone Wedge, California Moss Lot 37 [Greenwood] and California Moss Lot 38 [Gintoff]); and
- 63 unpatented lode claims (Moss 11 to Moss 33, Moss 33F, Moss 34 to Moss 39, Moss 39F, Moss 40 to Moss 47, Moss 47F and Moss 48 to Moss 70).

Pursuant to the MinQuest Agreement, a payment of US\$50,000 was made by Patriot Gold on signing the MinQuest Agreement, plus reimbursement of filing fees of US\$150 per patented and unpatented claim. The agreement is valid for 20 years from the date of signing (March 04, 2004) with automatic extensions 'so long as Patriot Gold holds all or portions of the Property'. Royalties are payable in respect of the MinQuest Agreement, which are detailed in Section 4.6.1.

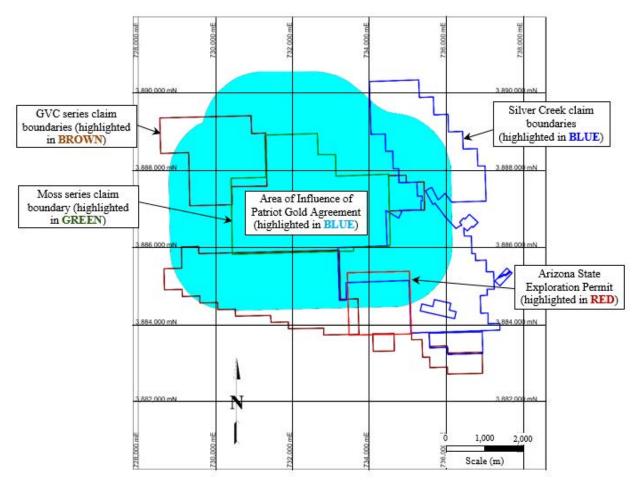
#### 4.5.2 Patriot Gold Agreement

The Patriot Gold Agreement covers all of the 15 patented lode claims listed in Sub-Section 4.3.1 and all of the 104 unpatented lode claims of the Moss 1 to Moss 148 series described in Sub-Section 4.3.2.1. The agreement is an Exploration and Option to Enter Joint Venture Agreement for the Moss Mine Project made between Patriot Gold and Idaho State Gold Company, LLC ("ISGC"), a company registered in Idaho, dated February 28, 2011. The terms of the agreement are for ISGC to earn a 70% interest in the claims by spending US\$8.0 million on work on the claims in five years, prepare a bankable feasibility study and make a cash payment of US\$0.5 million on signing the agreement.

After signing the Patriot Agreement, ISGC decided not to move forward with the Patriot Gold Agreement and instead assigned it to the Company by means of an Assignment and Assumption Agreement dated March 4, 2011. The Company assumed ISGC's obligations in the Patriot Gold Agreement and the Company made the initial cash payment of US\$ 0.5 million to Patriot Gold. ISGC is independent of the Company, and ISGC received no payment in respect of the Assignment and Assumption Agreement.



There is a one mile area of influence around the exterior boundary of the claim block detailed in the Patriot Gold Agreement. Pursuant to the agreement, any additional claims staked within this area, either by Patriot Gold or the Company, will the subject to the Patriot Gold Agreement. Figure 4-11 identifies the area of influence defined by the one mile criterion. Table 4-2 through Table 4-5 identify the extent to which each unpatented lode claim is subject to the Patriot Agreement.



(compiled using the AutoCad® claims files supplied by the Company, refer to Tables 4-2 through Table 4-5 for details of the extent to which each unpatented lode claim is subject to the terms of the Patriot Gold Agreement)

## Figure 4-11: A Color-Coded, General Claim Block Reference Plan for the Moss Mine Claims Showing the Extent of the One Mile Zone of Influence Defined in the Patriot Gold Agreement

At the time of writing, the Company had spent a total in excess of US\$8.0 million on developing the Moss Mine Project. On completion of a 'bankable feasibility study' (defined in the Patriot Gold Agreement as meaning '....an industry accepted report that can be submitted to a bank or other funding group which defines the scope, magnitude, capital costs, rate of return and any and all other items needed to evaluate the viability of a mining operation within the confines of the Property and the surrounding Area of Interest') the Company will earn its right to form a 70:30 joint venture (70% the Company, 30% Patriot Gold) with pro-rata contribution to all future development costs. In the case of non-contribution, either party will be diluted and if their interest falls below 10% it will convert to a 3.0% NSR royalty.



#### 4.5.3 La Cuesta Agreement

The La Cuesta Agreement covers all of the 183 Silver Creek claims from #1 through #209, as well as the Arizona State exploration permit, that are held in the name of La Cuesta. The agreement is a Mineral Lease and Option Agreement made between the Company and La Cuesta, dated May 07, 2014. Pursuant to the terms of the agreement, full rights to the Silver Creek unpatented lode claims and to the Arizona State exploration permit are transferred to the Company. The primary period of the agreement is 35 years, with extensions allowed up to a maximum of 50 years (although the exploration permit will expire in 2016).

Pursuant to the terms of the agreement, the Company has provided La Cuesta with 100,000 Company shares and has to pay La Cuesta a total of US\$85,000 in six month installments over the first 42 months after the date of the agreement, and then US\$25,000 every six months thereafter. The payments are credited against future production royalties. Once the production royalty described in Section 4.5.3 starts, no further pre-production payments have to be made.

In addition to the payments outlined, the Company has to spend a minimum of US\$15,000 on 'work commitments' on the leases in Year 1 from the date of the agreement, rising to US\$20,000 in Year 2 and US\$200,000 in Year 3. No minimum work commitments are required thereafter.

#### 4.6 ROYALTIES

The following royalty agreements apply to the patented and unpatented claims:

#### 4.6.1 MinQuest, Inc.

Pursuant to the MinQuest Agreement, MinQuest will receive:

- a 3% net smelter return (NSR) royalty in respect of any and all production from the 63 unpatented lode claims listed in the MinQuest Agreement and on public lands within one mile of the outer perimeter of the present claim boundary<sup>1</sup>.;
- a 1.0% NSR royalty on any and all production from the seven patented lode claims to which no other royalties apply; and
- an over-riding 0.5% NSR royalty on any and all production from those patented lode claims with other royalty interests (limited to the California Moss Lot 37 [Greenwood] lode claim, under the terms of the Greenwood Agreement [Sub-Section 4.6.2]).

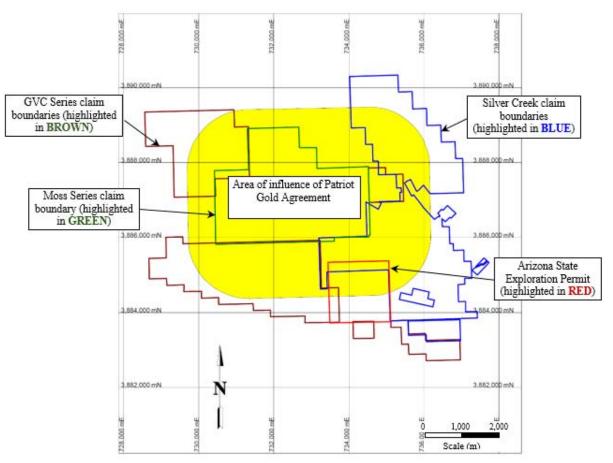
The position of the one mile boundary line from the claim block boundary that is the subject of the MinQuest Agreement was drawn and the areas of each claim it intersected were estimated using the AutoCad<sup>®</sup> claims files supplied by the Company. The percentages of each claim were determined by dividing the estimated area of any claim located wholly or partially within the one mile line by the total estimated area of the same claim.

Figure 4-12 shows the area of influence of MinQuest's one mile boundary line, in respect of the various unpatented lode claim blocks that surround the claim block boundary that is the subject of the MinQuest Agreement (note that the area is smaller than that defined by the Patriot Gold Agreement, per Figure 4-11, because the total block of claims that is subject to the MinQuest Agreement is smaller than the block of claims subject to the Patriot Gold Agreement). Details of the estimated percentages of each unpatented lode claim that is subject to the MinQuest Agreement (hence royalty) are presented on Table 4-2 through Table 4-5. The percentages are estimates for the reasons

<sup>1</sup> Reader is advised that Table 4.7 in the December 2014 Technical Report contains an error and reports this royalty to apply to the patented claims, which it does not.



previously outlined: none of the unpatented lode claims have been surveyed by a licensed land surveyor and the fractions of individual claims subject to the MinQuest Agreement were estimated from scrutiny of AutoCad® claims files supplied by the Company.



(compiled using the AutoCad® claims files supplied by the Company, refer to Tables 4-2 through 4-6 for details of the extent to which each unpatented lode claim is subject to the terms of the MinQuest Agreement)

## Figure 4-12: A Colour-Coded, General Claim Block Reference Plan for the Moss Mine Claims Showing the Extent of the One Mile Zone of Influence Defined in the MinQuest Agreement

## 4.6.2 Greenwood Agreement

The California Moss Lot 37 (Greenwood) claim is subject to a Purchase Agreement between Patriot Gold and various parties referred to as the Greenwood Agreement that is dated March 2004. The purchase price of US\$150,000.00 was paid by Patriot Gold, in addition to which a 3% NSR royalty is payable to the original owners, on gold and silver produced from the claim. In addition and as defined above, a royalty of 0.5% is payable to MinQuest in respect of the California Moss Lot 37 (Greenwood) claim and all other patented claims in which the original vendors have a royalty interest.

## 4.6.3 Finders Agreement

Pursuant to a Finders Agreement between the Company and BHL, the Company paid a Finder's Fee to BHL in respect of '*certain data, information and consulting services to Northern Vertex concerning the business opportunity and the mineral prospect known as the Moss Mine....*' (extracted from the Finders Agreement). An initial payment of



US\$15,000.00 (equal to 3% of the initial payment under the Patriot Agreement) was made to BHL. Subsequent payments equal to 3% of all Exploration and Drilling Work Expenditures incurred by the Company until the start of commercial production, as defined in the Patriot Agreement, have and will be made as quarterly installments, as required by the Finders Agreement.

On commercial production from the Moss Mine, as described in the Patriot Agreement, the Company will pay BHL, on or before 30 days after the end of each calendar quarter, an amount for each troy ounce of gold and silver produced, according to the following schedule:

- for a quarterly average gold price of less than US\$700 per troy ounce, US\$5.00 per troy ounce of gold produced;
- for a quarterly average gold price equal or greater than US\$700 per troy ounce but less than US\$1,000 per troy ounce, US\$10.00 per troy ounce of gold produced;
- for a quarterly average gold price of greater than US\$1,000 per troy ounce, US\$15.00 per troy ounce of gold produced;
- for a quarterly average silver price of less than US\$15.00 per troy ounce, US\$0.10 per troy ounce of silver produced;
- for a quarterly average silver price equal or greater than US\$15.00 per troy ounce but less than US\$25.00 per troy ounce, US\$0.20 per troy ounce of silver produced;
- for a quarterly average silver price of greater than US\$25.00 per troy ounce, US\$0.35 per troy ounce of silver produced.

The total amount of the payable fee is capped at US\$21.00 million and can be purchased by the Company for US\$2.40 million, in cash and/or shares, upon mutual agreement and within 90 days of the start of commercial production.

## 4.6.4 La Cuesta International, Inc.

Pursuant to the terms of the La Cuesta Agreement, the Company will pay La Cuesta a 1.5% NSR royalty on any gold or silver production from the area covered by the Silver Creek claims listed in Sub-Section 4.3.2.4, plus an additional 0.5% NSR royalty on any third-party claims.

## 4.6.5 Property Access Agreement

The Moss Mine patented claims are surrounded by federal lands administered by the Bureau of Land Management ("BLM") on which unpatented lode claims are located. These claims are accessed by means of an unimproved dirt road that extends north from a county-maintained road called the Silver Creek Road, a distance of approximately 2.0 kilometers. The unimproved road is identified as #7717 by the BLM, and is designated as open to motor vehicle use in the BLM Kingman Resource Area Resource Management Plan (1993). This road is believed to have been used for over a century for access to the Moss Mine and neighboring mining claims.

The Company used this road system for exploration drilling and for access the Moss Mine patented claims during Phase I of the project, and intends to continue to use this road system in accordance with applicable federal, state and local requirements. The Company will develop and implement an appropriate transportation plan to minimize road impacts and avoid the need to upgrade and widen road #7717 during this project phase.



#### 4.7 Environmental Liabilities

The Qualified Person for this section of the Technical Report is Dr. David Stone, P.E.

#### 4.7.1 Historical Liabilities

The Moss project site has been disturbed by previous "historical" mining activities dating back to the late 1800's. These activities are separate from the Phase I activities by the Company in 2013 and 2014.

However there are no known environmental liabilities at the site from the historical activities. The Moss ores do not contain measurable quantities of sulphides hence there are no acid drainage issues. The previous activities have not resulting in the stockpiling of disposal of any hazardous substances.

There was a gold stamp mill on site in the early 1900's and the ruins of the mill can be seen today. The historical milling included the use of mercury amalgam and a small stockpile of tailings is thought to contain measureable amounts of mercury. The Company intends to collect and dispose of this material off-site at a commercial hazardous waste disposal facility.

#### 4.7.2 Phase I Liabilities

The Phase I heap and associated works, such as the barren and pregnant ponds, will be re-purposed as part of the Phase II development. The Phase II heap footprint will cover the Phase I heap, and the Phase I ponds will be decommissioned, liners removed, and the ponds will be reconfigured with new liners.

The Phase I heap has undergone cyanide detoxification with hydrogen peroxide and the residual cyanide values in the discharge are reportedly below Arizona drinking water standards. The heap is currently being rinsed with water to remove all residual solutions.

The feasibility assumes the spent ore on the Phase I heap can be used as an inter-liner drainage media. This requires a certification from ADEQ that the material is inert. During the pre-construction phase of the project, the Phase I heap material will be sampled at 11 locations and submitted to a chemical laboratory for acid base accounting (ABA) and synthetic precipitation leaching procedure (SPLP). If the material is found to contain excess residual cyanide values then it will be used as an under-liner grading material for the Phase II leach pad. In either event, the re-purposing of the Phase I spent ore will result in capital savings for the project.

The remainder of the Phase I facilities (the carbon columns, tanks and solution piping) will either be sold or repurposed in the Phase II facilities.

#### 4.8 PERMIT HISTORY/BACKGROUND

The Qualified Person for this section of the Technical Report is Dr. David Stone, P.E.

The Company obtained permits and approvals for the Moss Mine pilot operation (Phase I) to produce gold in 2013. The approved operations included a 122,000 tonne cyanide heap leach, a lined pregnant pond, a lined barren pond, and a waste rock facility containing overburden and very low grade ore. The operation was authorized through permits and approvals that were issued by Arizona State agencies. Access to the site by use of the #7717 road was authorized by the local Kingman field office of the BLM.

Because the ore crushing operations generated fugitive emissions that were below a specific threshold value of tons per year, the State of Arizona Department of Environmental Quality (ADEQ) issued a Letter of Non-Determination. As long as the Company operated at emissions levels below that threshold, there was no need to secure an individual



emissions permit under the state authorized Clean Air Act permitting program. However, the letter did require the Company to report the actual tons of ore processed to demonstrate conformance to the threshold requirement.

The cyanide heap leach, pregnant solution pond, and barren solution pond are considered discharging facilities (i.e. facilities with the potential to discharge to groundwater) under the Arizona Aquifer Protection Program. An Arizona Aquifer Protection Program (APP) permit was required in order for the Company to operate the mine. The permit application was submitted on December 5<sup>th</sup>, 2012 and was formally accepted the same day. The permit was issued on July 19<sup>th</sup>, 2013. In conjunction with the permit, the Company had to post a \$510,700 bond to cover the costs of closure for the permitted facilities.

The open pit and waste rock facility were authorized under a Reclamation Plan approval that was issued by the Arizona State Mine Inspector's office on May 20<sup>th</sup>, 2013. The Reclamation Plan specifies the plan for reduction of pit slopes and for grading and stabilizing the waste rock facility when mining operations cease. The reclamation plan authorization required the posting of a bond in the amount of \$205,807 to cover the costs for post mining reclamation of the pit and waste facility, as well as for reclamation of roads, structure demolition, and site grading and stabilization.

The Company also filed a Notice of Intent (NOI) for coverage under the Arizona Multi Sector General Storm Water Permit (MSGP, Clean Water Act) for storm water discharges during operation of the Moss Mine during Phase 1. A Storm Water Pollution Prevention Plan (SWPPP) was also prepared to define best management practices (BMPs) for control of storm water discharges from the site.

The pilot phase of the operation (Phase I) was completed in late 2014 and the cyanide heap leach was flushed and rinsed in the spring of 2015. Approximately 4,150 ounces of gold were produced by the pilot operation.

## 4.8.1 Compliance History

The permits and approvals that were granted for the Phase 1 operations at the Moss Mine specified certain requirements that needed to be met. With respect to the APP permit, this included an ongoing obligation to monitor and report groundwater quality in down gradient wells (called points of compliance), and a few items for future submittal that were contained in a compliance schedule. The Reclamation Plan approval requires the submittal of an annual report on the anniversary date of the approval.

The Company has an excellent history of permit compliance and fulfilled all the obligations for data collection, monitoring and reporting. This includes ground water monitoring in accordance with the requirements of the APP permit. There was only one instance where one of the permit limits, an alert level, was exceeded during the monitoring for nitrate; however, subsequent monitoring resulted in a non-detect for nitrate.

There were also requirements for the characterization of discharge during leaching activities, submittal of construction completion drawings and reports, and calculation of alert levels and aquifer quality limits for aquifer water quality parameters as part of the compliance schedule. All of these requirements have been satisfied.

#### 4.9 FACTORS AND RISKS (QUALIFIED PERSON'S OPINION)

Based on its assessment of the standing, access and legal ownership of the land encompassed by the 15 patented lode claims detailed in Section 4.4.1, coupled with the Company's intention to restrict Phase II operations to the patented ground only, the authors are aware of only two factors that might materially affect the Company's ability to perform work on the property:

• a risk that the Corps of Engineers might deem several drainage washes on the patented ground to be jurisdictional washes



• the BLM may, at some future point, impose restrictions on the use, by Moss Mine traffic, of an unimproved road (Road #7717) from the Silver Creek Road which extends over federal land and the use of which is required to access the Moss Mine Property

These two risks are described in detail in the following sections.

### 4.9.1 Jurisdictional Washes

The project site is cut by several drainages that may be deemed to be jurisdictional washes which would trigger the need for a 404 Dredge and Fill Permit before any Phase II-related activities could impact those washes. Assuming a successful conclusion to the permitting process, a lead time of up to approximately 18 months would be required. Preliminary analysis of Phase II options suggests that the majority of the required lead time could be accommodated within the scope of mine planning and production scheduling.

### 4.9.2 Property Access

To the best of the authors' knowledge, under the existing Mining Law and applicable BLM regulations, the Company has the legal right to make reasonable road #7717 for legitimate mining-related purposes. To the best of the authors' knowledge, no issues concerning the use of Silver Creek Road were raised by the BLM during Phase I. However, the continued use of Silver Creek Road may require authorization from the BLM.



#### 5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

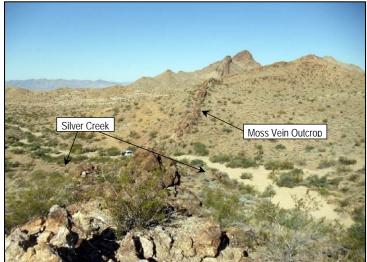
The Qualified Person for this section of the Technical Report is Dr. David Stone, P.E.

The Moss Mine Project area is located on the Davis Dam 1:100,000 scale topographic map (30 x 60 minute quadrangle) of the United States Geological Survey, BLM's surface management status and desert access guide maps and the Kingman, Arizona 1 x 2 degree, 1:250,000 topographical map (USGS).

### 5.1 TOPOGRAPHY, ELEVATION AND VEGETATION

The Moss Mine Project area is located in the Black Mountain Range in the southern part of the basin-and-range topographic province. Elevations in the general area vary from 200 m (at Davis Dam, on the Colorado River) to 1,543 m (the peak of Mount Nutt). Elevations across the Project area vary from an average low of approximately 658 m to a local maximum of approximately 820 m at the western end of the Property (see Figure 5-1 for a general view of the project area). The Moss vein forms a prominent east-west ridge across the northern portion of the block of 15 patented lode claims described in Section 4.3 It is the Moss Vein that is the principal target for mining in Phase II.

The local Project area is drained by Silver Creek at the eastern end of the block of 15 patented lode claims (Figure 4-2), which is dry for most of the year and which drains southwest and then west into Colorado River. Vegetation is in general sparse; it comprises bunch grass, sagebrush and cacti. The Fort Mojave Indian Tribe and other private companies have created an agricultural community that covers several square miles in the fertile fields of Mohave Valley and Fort Mohave, to the immediate south of Bullhead City. The main crops are cotton and alfalfa.



Looking approximately west, from the eastern boundary of the block of patented lode claims with the Local Topographic High in the Background (Source: Northern Vertex) Figure 5-1: General View of Moss Gold-Silver Project Area

## 5.2 POPULATION CENTERS AND TRANSPORTATION

The nearest cities to the Moss Mine property are Bullhead City in Arizona (10 km west) and Laughlin in Nevada (15 km northwest). According to the 2010 census, Bullhead City has a population of approximately 39,500 people with approximately 100,000 people living in the Bullhead City-Laughlin area, including adjacent communities.

The nearest town to the Project area is Oatman, Arizona, which is approximately 10 km to the south-southeast of the Property center. According to the 2010 census it had a population of 135 people; during the Oatman gold mining



boom it was a mining town with a population estimated at 10,000. Oatman is a historical gold mining town that hosted 3 underground gold mines at the turn of the century producing over 2 million ounces of gold.

The nearest major city to the Moss Mine Property is Las Vegas, Nevada, which is approximately 130 km northwest of the Property center (Figure 4-1 and Figure 5-2). According to the 2010 census, Las Vegas has a population of some 1.95 million people in the metropolitan area, including 0.58 million people in the city proper. Good quality paved roads (Highways 93 and 95 leading to Highways 68 and 163, respectively) link Las Vegas and Bullhead City, which is approximately 22 km by road and to the west of the Property center. Interstate Highway 40 is approximately 40 km to the south of the Property center. There is an international airport at Las Vegas from where chartered flights can be secured to the Laughlin/Bullhead City International Airport located on the Arizona side of Colorado River, which forms the local boundary between the two states. The nearest railway station is at Needles, Nevada, approximately 32 km to the southwest of the Moss Mine Property center.

Kingman, Arizona, approximately 37 km due east of the Moss Mine Property center, is the Mohave County seat. According to the official city of Kingman's website, Kingman and the surrounding area have a population of approximately 45,000. The airport, formerly known as Kingman Army Airfield, is city owned for public use and is located about 15 km northeast of the central business district of Kingman. The city is approximately 59 km or 42 minutes from Bullhead City and 3 hours from Phoenix, Arizona.

Phoenix is the Arizona state capital, which is approximately 290 km to the southeast of the Moss Mine Property center. It is in Maricopa County in central Arizona where other cities make up what is known as the "Greater Phoenix" area. Access to supplies and equipment will most likely be found there if the surrounding towns and cities around the Moss Mine Property do not have the required items. This includes the potential need for quick access to contractors, laborers, and tools. The 2013 census estimates a population of 1.5 million not including neighboring areas such as Chandler, Tempe, Mesa, Gilbert, Scottsdale, Glendale, Cave Creek, Surprise, Peoria, and Avondale.

#### 5.3 SITE ACCESS

Road access from Las Vegas to Bullhead City is straightforward: the approximately 155 km journey takes approximately 1.5 hours on improved U.S. Highways (see Table 5-1). From Bullhead City, the Moss Mine Property is reached by traveling south on the U.S. Highway 95 Bypass (also called Bullhead Parkway) to Silver Creek Road, an unimproved road maintained by Mohave County. Turning left (east) onto Silver Creek Road, travel approximately 9.0 km to an unimproved road that is called #7717. Turning left (north) onto this road, travel approximately 2.5 km to the Moss Mine Property. There are currently no physical restrictions that would prevent the use of this road system for transporting equipment and supplies to the property. All materials and supplies have been and will continue to be transported in accordance with applicable federal and state transportation requirements.

From	То	Road	Distance (km)
Downtown Las Vegas	US Highway 95 turning	Great Basin Highway (US Highways 93/95)	36.0
US Highway 95 turning (right)	Laughlin Highway via Searchlight and Cal-Nev-Ari	US Highway 95	88.5
Laughlin Highway turning (left)	Laughlin	Nevada State Highway 163	31.0
Laughlin	Silver Creek Road via Bullhead City	Arizona State Highway 95 By-pass (Bullhead City Parkway)	8.2
Silver Creek Road (left)	Moss Mine turn-off	Silver Creek Road (graded dirt road)	9.0
Turn north (left)	Moss Mine	Local dirt road	2.5
		Total Distance	175.2

Table 5-1: Most Direct Route from Las Vegas to Project Property





Figure 5-2: Location of the Moss Mine Project Area Showing the Major Roads Linking Bullhead City and Las Vegas



#### 5.4 CLIMATE AND OPERATING SEASON

The climate in the general Project area is classified as desert (Koppen climate classification BWh). In the Holdridge Life Classification zone it is in a warm temperate latitudinal region, pre-montane to lower montane altitudinal zone and a desert humidity province. There are no climatic constraints on the operating season, although daytime temperatures can exceed 40°C (104°F) during June, July and August (Figure 5-3). Heatwaves with temperatures in excess of 50°C (122 °F) are not uncommon. The average annual rainfall at Bullhead City is 154 mm (6.06 inches, data ex. www.usclimatedata.com). No rain can fall for months and occasional heavy downpours occur.

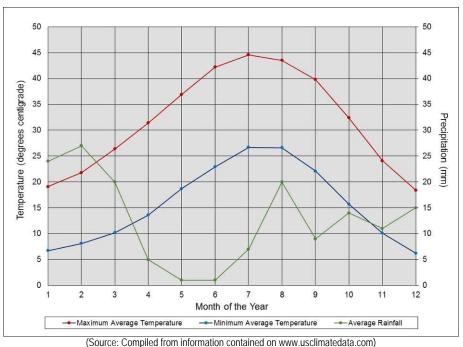


Figure 5-3: Monthly Average Temperatures and Rainfall for Bullhead City, Arizona

## 5.5 SURFACE RIGHTS, POWER, WATER AND PERSONNEL

## 5.5.1 Surface Rights

Activities during the Phase I were limited to the 15 patented lode claims described in Sub-Section 4.2.4. Phase II will also be limited to the same 15 patented lode claims. It is established in Sub-Section 4.2.4 that:

- a patented lode claim is one for which the Federal Government has passed title to the claim holder, thereby making it private land; and
- the patent gives the owner full and exclusive title to the surface area of these claims.

## 5.5.2 Power and Water

Colorado River is approximately 12 km to the west of the Property center. It flows from north to south and divides the state of Arizona from Nevada and California. Hydroelectric power is generated at Davis Dam on Lake Mohave (approximately 8 km north of Bullhead City) and at Hoover Dam on Lake Mead (approximately 100 km north-northeast of Bullhead City). A major powerline passes some 6.0 km to the west of the Moss Mine Property centre.



The project site is remote from the local power grid and the cost of extending grid power to the project is considered prohibitive hence diesel generated power will be used for the proposed Phase II operations.

The principal water source for the Phase II operations will be groundwater sourced from wells on the patented ground.

### 5.5.3 Personnel

Abundant accommodation, supplies, services and related recreational and light industry facilities are available in the Bullhead City-Laughlin area. The casinos and ancillary services at Laughlin provide much of the local employment, but there is a long history of mining in the area from where a potential workforce for the Moss Mine could be found. Technical and management roles will continue to be filled by suitable professionals, who would be housed in the Bullhead City-Laughlin area.

### 5.5.4 Project Facilities

As has been noted, all of the project facilities for the Phase II operations will be constrained to the privately owned lands associated with the patented claims. Development plans confirm there is adequate space for the processing facilities, the heap leach pad, waste dumps, and open pit.



#### 6 HISTORY

This section has been extracted from the December 2014 Technical Report filed on SEDAR.

#### 6.1 PROPERTY HISTORY

#### 6.1.1 Discovery and Early Mining (1863 to 1935)

The Moss Mine Project was discovered in 1863 by John Moss (1839-1880). At the time it was reported to be the first major gold discovery in Mohave County. The larger San Francisco Mining District of Mohave County was established in 1864 (Malach, 1977).

The available records show that John Moss was made aware of the Moss Mine area by stories about soldiers from nearby Fort Mojave prospecting for and finding gold. A popular, alternative account of the Moss Vein discovery is that Chief Irataba of the Mojave Tribe led Moss to what became known as the Moss Vein outcrop. Whatever the case, John Moss' name appeared on the first recorded mining claim called the Moss Lode, under the ownership of the San Francisco Gold and Silver Company. It was reported that a 'shoot containing more than \$200,000 in gold' was mined in a 3 m wide and 3 m deep glory hole on the claim, to the east of the later site of Allen Shaft (Figure 6-1).

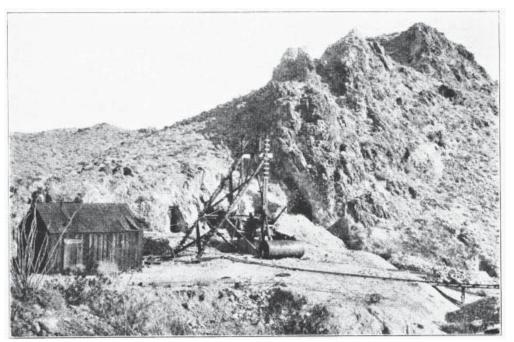
The available records show that Moss sold the Moss Lode to Dahrean Black and that it was later sold to the Gold Giant Mining and Milling Company of Los Angeles. The area around the glory hole was explored by numerous holes and tunnels, but no other substantial quantities of gold are reported to have been found. The Ruth Vein was subsequently discovered and a 70 m (230 ft) shaft was sunk and 'hundreds of feet of tunnels' were developed (Malach, 1977). The Moss Mine is reported to have produced approximately 12,000 ounces of gold until it was closed in 1866 due to 'unfriendly Indians' (Durning & Buchanan, 1984).

Following its abandonment in 1866, there was little mining activity in the district until the opening of the Tom Reed mine in 1901 and the discovery of the regionally famous Gold Road Vein in 1902. The town of Vivian was founded in that year; its name was changed to Oatman in 1908. In 1906, the Tip Top and Ben Harrison mineralized shoots were discovered. In 1915 and 1916 the Big Jim, Aztec and United Eastern mineralized bodies were discovered on the Tom Reed Vein. Mining activity increased and the population of Oatman grew to a reported 10,000 (today referred to as the Oatman gold mining boom, 1915 to 1917). By the mid-1920s the population of Oatman had fallen to a few hundred. In 1933, an increase in the gold price from US\$20 to US\$35 per ounce resulted in a brief flurry of activity, but all the local mines were closed by 1942 (Ransome, 1923; Sherman & Sherman, 1969; Varney, 1994).

Historical underground mine plans of the Moss Mine in the Company's database are dated May 10, 1915 by Goldroad Mines Co. of Goldroad, Arizona, and September 25, 1920 by the Moss Mines Co. of Gold Road, Arizona. These show the Allen Shaft and levels at 60 ft (18.3 m), 75 feet (22.9 m), 125 feet (38.1 m) and 220 feet (67 m). The plans show that Moss Mine was operating between 1915 and 1920.

The available records show that the Ruth Mine was accessed by a 60° degree incline shaft to drifts on 100-, 200- and 300-ft Levels. Activity appears to have continued through to mid- 1935, by which time approximately 183 m (600 ft) of drifting is reported to have been completed.





(Looking approximately east-northeast, copied from Ransome [1923], Plate IX-B Figure 6-1: Historical Photograph of the Allen Shaft at Moss Mine, 1920-1921

## 6.1.2 Previous Exploration and Development (1982 to 2009)

Table 6-1 summarizes the work carried out on the Moss Mine Property by previous owners and operators, up to and including Patriot Gold's last exploration program in 2009. The comments contained in the following sub-sections apply.

Company	Date	Work Completed	Comments
Moss Mine	1860 to 1920	Surface holes and underground mining	12,000 oz of gold reported to have been extracted
Ruth Mine	1900? to 1935	Underground mining	Approx. 24,400 t of mineralized material extracted
BF Minerals	1982	54 rotary air trac holes, four reverse circulation ("RC") holes for a total of approximately 1,885 m (6,190 ft)	Only assayed Moss Vein material.
Harrison Minerals	1987 to 1988 (exact dates unknown)	Rehabilitated Allen Shaft and deepened it to 91.4 m (300 ft)	Constructed headframe in 1987, reportedly left broken mineralized material in stopes, 3,000 to 5,000 short tons trucked to Tyrol mill.
Billiton Minerals	1990	21 RC holes for a total of 2,190.4 m (6,925 ft)	Preliminary analysis of gold and silver deportment, preliminary metallurgical tests.
Magma Copper Company	1991	21 RC holes for a total of 3,012.5 m (9,890 ft)	Developed local geological maps. Metallurgical testwork carried out by McClelland Laboratories.
Reynolds Metals Explorations, Inc.	1991	11 drillholes for m (4,865 ft), plus two RC holes (152.3 m, 500 ft)	Collar co-ordinates not available.
Golconda Resources	1993	19 RC holes for a total of 931.5 m (3,058 ft)	-
Addwest Minerals International Ltd.	1996 to 1997	30 RC holes for a total of 2,502.8 m (8,217 ft) plus six diamond drillholes for a total of 507.8 m (1,667 ft)	Developed a new geological model.
Patriot Gold Corporation	2004 to 2009	43 RC holes for a total of 3,596.4 m (11,807 ft) plus 12 diamond drillholes for a total of 2,085.3 m (6,846 ft)	Consolidated land position, carried out geological studies and surveys. Contracted Metcon Research to carry out metallurgical testwork.

Table 6-1: Summary of Exploration and Development Work Carried Out by Previous Owners and Operators					
on the Moss Mine Property (the 15 patented lode claims) to 2009					



#### 6.1.3 Historical Production

Production details for the historical Moss mine are limited. A total of some 12,000 oz of gold is estimated to have been produced prior to 1920, and in 1988 a total of between 3,000 and 5,000 short tons were extracted and hauled to Tyro Mill in Mohave County.

The available records for Ruth mine suggest that prior to 1907, 'several hundred tons' of mineralized material had been extracted, for processing at Hardyville. During the Oatman boom the mine was extended and, according to Ross Barkley, mine superintendent in the 1930s, approximately 22,680 t (reported as 25,000 short tons) were mined on 100 Level. Mining ceased when a geological fault was encountered.

In 1933 Ross Barkley and two partners obtained a bond and lease on the Ruth Mine, found mineralized material on the other side of the intersecting geological fault and, during 1933 and 1934, 'shipped US\$25,000 worth' of mineralized material (reported to be worth US\$14.70 per short ton, thereby yielding an output of some 1,543 tonnes or 1,700 short tons of mineralized material) to the Tom Reed mill. When the mine changed hands in 1935 shipments totaling 500 short tons at US\$9.45/short ton were made in February, along with 900 short tons at US\$13.00/short ton in March and 1,200 short tons at US\$14.00/short ton in April. For the gold price prevailing at the time (US\$35/oz Au), the production records outlined suggest grades of between approximately 9.0 g/t and 14.0 g/t Au for the extracted material, hence selective high-grading along what were known as pay shoots (i.e. high-grade zones of mineralized material).

#### 6.2 PHASE I PROJECT DESCRIPTION

The Phase I pilot heap operations were carried out in 2013 and 2014 to test the metallurgical parameters for commercial operations. The Phase I facilities included an open pit, heap leach pad, barren and pregnant solution ponds, a carbon recovery plant, and ancillary facilities such as an onsite laboratory, onsite diesel power, a medical/safety office and a general office trailer.

During Phase I, some 175,000 tonnes of material was mined from the Phase I open pit using conventional drill and blast mining methods. Roughly 125,000 tonnes was crushed to minus 6 mm, agglomerated with cement, and placed on the heap leach pad with a radial stacker. The material was placed in one 10 m lift.

The mining, crushing, agglomeration and stacking was carried out by a Contractor using mobile equipment. The operation was overseen and managed by Golden Vertex personnel.

The heap leach stage of the operation was carried out from August 2013 to September 2014. During this period a weak cyanide solution was applied to the top of the heap using a combination of conventional wobbler style sprinklers and drip irrigation. Solutions were recovered to a pregnant solution pond and then circulated through conventional carbon-in-pulp (CIP) carbon columns. The pregnant carbon was then shipped offsite to a stripping facility to recover the precious metals. The stripped carbon was then returned to the Moss project site for re-use.

Approximately 4,150 ounces of gold were recovered during the pilot heap operations representing 84% recovery to solution and 82% recovery to doré bar.



### 7 GEOLOGICAL SETTING AND MINERALIZATION

The Qualified Person for this section of the Technical Report is Dr. David Stone, P.E.

The following sub-sections are summarized from information provided in the December 2014 Technical Report ("Technical Report on the 2014 Mineral Resource Update – Moss Mine Gold-Silver Project") filed on SEDAR. The reader is referred to the December 2014 Technical Report for additional details on the local and regional geology.

#### 7.1 GENERAL

The geology of the local Moss Mine Project area defined by the 15 patented lode claims was mapped by Cuffney (2013). The geology and mineralization of the same area is described in consultancy reports by Baum and Lherbier (1990), Hudson (2011), Cuffney (2013) and Brownlee (2014).

#### 7.2 HOST ROCKS

The host rocks of the Moss deposit is the Moss porphyry, a uniform monzonite to quartz monzonite porphyry intrusion. It is coarse grained with 4 mm to 10 mm diameter plagioclase phenocrysts with biotite and lesser hornblende. There is also a fine grained quartz monzonite porphyry, with 1 mm to 2 mm diameter plagioclase phenocrysts with minor biotite and minor magnetite, which is a later phase intrusive that cross-cuts the coarse porphyry and forms an intrusive breccia matrix in places. There is also an equi-granular quartz monzonite with abundant quartz and feldspar, and a quartz latite porphyry.

#### 7.2.1 Mineralization

The gold-silver mineralization is contained within three main veins and their associated stockworks: the dominant Moss Vein; a western extension of the Moss Vein (the "West Vein"); and the Ruth Vein to the south of the Moss Vein. Moss Mine Project drillhole logs and assay database indicate a potential for other mineralized veins that are both similar to and sub-parallel to the Ruth Vein. For purposes of geological domaining they have been termed Vein No. 4. See Figure 7-1.



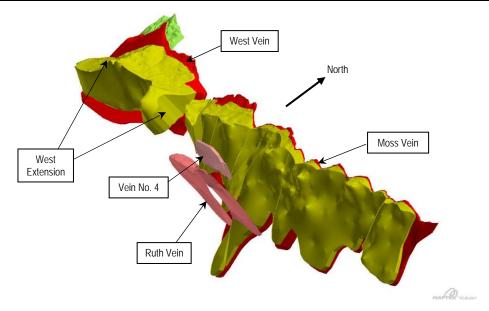


Figure 7-1: Vein Mineralization Diagram

Inferred Mineral Resources have been identified on the Ruth Vein which, along with Vein No. 4, remains an exploration target. The focus of the feasibility development plans are the Moss Vein and associated stockworks and West Extension (the West Vein and its associated stockworks). The Ruth Vein resources are not considered in this study.

### 7.2.1.1 Moss Vein

The dominant Moss Vein strikes 276° (right-hand rule) and dips at approximately 70° to the south. Associated with the Moss Vein are stockwork veins and veinlets that are mainly concentrated on the vein's hangingwall side. The footwall contact is a well-defined shear structure.

The Moss Vein's footwall and hangingwall contacts are consistent along its developed length: the footwall contact is marked by a well-developed and persistent shear; and the hangingwall contact is defined in part by vein content and by grade. In contrast, the position of the hangingwall contact of the hangingwall stockwork is more interpretive (it is defined predominantly by gold grade). Minor stockwork veins and veinlets also exist on the Moss Vein's footwall side, at two locations defined by drilling that may be associated with potential flexure dilation zones.

#### 7.2.1.2 West Vein

The West Vein appears to be an extension of the Moss Vein, to the west of the Canyon fault: local field mapping suggests that there is little apparent displacement across the fault structure; the West Vein has the same orientation and dip as the Moss Vein; but the West Vein's footwall and hangingwall contacts are not as distinct; and its gold-silver mineralization persistently reports lower grades than the Moss Vein. The stockwork associated with the West Vein (the "West Extension stockwork") is more extensive and better developed than that on the hangingwall side of the Moss Vein. The West Extension stockwork is also contiguous to a stockwork developed to the immediate west of the Canyon fault. These characteristics suggest the West Extension might represent a different vein assemblage that has been fault-displaced to its current position that could be a geological coincidence only.



### 7.2.2 Vein Mineralogy

Cuffney (2013) describes the Moss vein as '....not a simple planar fissure-fill vein. The main vein is best described as a "breccia vein" (as opposed to a brecciated vein). The vein ranges from nearly solid white quartz and/or calcite through quartz-calcite with small floating clasts of wallrock, to brecciated wallrock veined and cemented by quartz-calcite. The hangingwall of the vein contains scattered thin quartz-calcite veins and breccia veins over many ten's (sic) of feet. Quartz-calcite veining may occur either as thin planar veins (often quartz veins with calcite cores), irregular veins with sinuous borders, or highly irregular breccia infillings.'

### 7.2.3 Gold-Silver Mineralization

#### 7.2.3.1 Mineralogy

The gold-silver mineralization of interest contains the following notable features:

- Associated with the quartz-calcite veins and stockworks described above;
- Extends from surface to at least 370 m below surface (highest outcrop to lowest drill intersection), within a boiling zone defined by the bladed textures in quartz pseudomorphs after calcite (the upper levels of the paleo-hydrothermal system have been removed by erosion); and
- Predominantly in the form of native gold and silver-rich native gold (or electrum, a naturally occurring alloy of gold and silver with Au:Ag ratios varying between approximately 80:20 and 20:80); although
- Very fine grained, minor and grey to black sulphides (probably acanthite, a silver sulphide) may be present in very thin grey bands, known as ginguro banding, in unoxidized or weakly oxidized parts.

Preliminary petrography identified native gold and acanthite in four out of six sections studied (Hudson, 2011), although the identification of acanthite was tentative due to the very small grain size (three to 100 microns, or 0.003 mm to 0.1 mm). In addition, microscopic analysis showed that:

- Minor pyrite replacing mafic phenocrysts is developed in the Moss porphyry, which replacement is related to early and weak chlorite-clay-(calcite-pyrite) alteration (see below);
- Minor pyrite also occurs in early-stage grey quartz veins that are not related to the gold-silver mineralized Moss Vein and West Vein and their associated stockworks; and
- Sparse sulphides only are contained within the Moss Vein and West Vein and their associated stockworks, the minor pyrite fraction of which is developed separately from the gold-silver mineralization of interest and which is typically oxidized to jarosite or goethite pseudomorphs.





(copied from a project report by Bob Cuffney entitled 'Moss Mine Project Logging Guide' and dated February 2013) Figure 7-2: Quartz Vein Texture of Bladed Quartz, Moss Mine Project Area

In summary, it should be emphasized that acanthites and sulphides, including pyrites, are present in only minor amounts in the Moss ores that rarely exceed 1 percent.



(copied from a project report by Bob Cuffney entitled 'Moss Mine Project Logging Guide' and dated February 2013) Figure 7-3: Brecciated Quartz Vein with Clasts of Wallrock, Moss Mine Project Area

## 7.3 GRAIN SIZE

Hudson (2011) notes that grains of native gold (and presumably electrum) vary in the one to 20 micron range (0.001 mm to 0.02 mm). Hudson's finding broadly agrees with that of Baum & Lherbier (1990) who identified, from the results of microscopic gold particle size analysis on Moss Vein samples, the approximate gold/electrum grain diameters summarized on Table 7-1. This data shows that between 60% and 90% of the gold grains are less than 50 microns (or 0.05 mm) in diameter.



Grain Size		Percent of Gold Grains in Sample		
Microns	Millimeters	444-1-2	444-3	
< 5	< 0.005	60%	21%	
5 – 20	0.005 - 0.02	21%	15%	
20 – 50	0.02 - 0.05	10%	24%	
50 – 100	0.05 – 0.1	7%	22%	
>100	>0.1	2%	18%	
Total	-	100%	100%	

Table 7-1: A Summary	of Microscopic	Gold Particle Size	Analysis.	Moss Vein Material
	01 11101 0000 010	Cold I di tiolo OlEo	, and joio,	

(Compiled from information contained in Baum & Lherbier (1990)

#### 7.4 OXIDATION

Hudson (2011) states that 'the depth of oxidation can be in excess of 91 m to 152 m (300 to 500 feet)'. A similar finding is detailed in a mining report by geologist M. C. Godbe III to BF Minerals (April 26, 1982) who states that: 'The Moss Mine was developed over a vertical range from surface to the 300 level. All (of the mined mineralized material was) within the oxidized zone. The recently concluded drilling shows oxidation phenomenon well below the present water table (140 feet below the shaft collar), to at least 500 feet below the present surface.' Hudson (2011) goes on to state that 'BF Minerals deepened the Allen Shaft to the 300 foot level and trucked (mineralized material) from the 300 level to the Tyro Mill'.



(copied from a project report by Bob Cuffney entitled 'Moss Mine Project Logging Guide' and dated February 2013) Figure 7-4: An Example of Quartz Vein with Black Argentite Cutting Monzonite Porphyry and Showing Typical Limonite Staining (oxidation) along a Joint Plane (drillhole AR-69C, 70.41 m)

The Moss ores are unique in comparison to many other epithermal ores subject to heap leaching because, within the depths being exploited for mine operations, it does not exhibit the traditional oxide-transition-sulphide boundaries. The sulphide zone is well below the depth the maximum depth of mining and the primary mineralization consists of free gold encapsulated in quartz or calcite.





(coprised from the project by Bob Cuffney entitled 'Moss Mine Project Logging Guide' and dated February 2013) Figure 7-5: An Example Quartz Vein Material with Bladed Texture from Calcite Replacement and Showing Limonite Staining (oxidation) along a Joint Plane (drillhole AR-69C, 80.77 m)

The Company's Moss Mine Project Core Logging Guide (February 2013) states that: 'The REDOX zone at Moss is not a simple boundary and is not related to the present static water table' and 'It is not uncommon for the vein to be oxidized to depths in excess of 500 ft (152 m), with unoxidized and thin, partially oxidized zones in the hangingwall.' Cuffney (2013) states that 'The drillholes show that the water level is between 12.2 m and 45.7 m (40 to 150 feet) below surface. There is ample evidence of oxidized rock below the water level in several of the core holes. The fact that oxidation is deeper than the present water table is interpreted to indicate that oxidation is related to a lower water table in the past, and that the water table has risen to its present level after oxidation took place'.

#### 7.5 STRUCTURAL GEOLOGY

#### 7.5.1 Faults

The footwall contact of the Moss Vein is a readily identifiable and persistent shear that dips at an average of 70° to the south. A total of 27 faults that cut across the Moss Vein have been identified by mapping (Figure 7-6), which faults were numbered 1 to 27 from west to east. The faults' strikes and dips were defined by structural mapping. A relative chronology was compiled based on surface topology and their interactions with adjoining intersecting faults. No faults have been identified in the area of West Extension.

The Canyon fault is the most prominent structure that separates the Moss Vein area from West Extension. The Canyon fault appears to displace the Moss Vein and West Extension by a very small amount. However, regional geology plans for the general area show it to be a dominant structure and local drilling suggests that groundwater is not preferentially accumulated within the fault zone. The Canyon fault might, therefore, be a relative compression structure of the strike-slip structural type.

The regional dominance of the Canyon Fault suggests that it might have a significant lateral displacement. If this is the case, West Vein and its associated stockworks are likely to be fault-displaced features that are not directly related to the Moss Vein and its associated stockworks. In other words their closely contiguous location, leading to the interpretation that West Extension is an extension of the Moss Vein, might only be a geological coincidence (which possibility is also suggested by the dissimilarity of the mineralized grades – mineralized material from West Extension is consistently lower grade than Moss Vein mineralized material). Whatever the case, the similarity of mineralization and deposit type suggest that the Moss Vein and its associated stockworks are genetically of the same mineralization phase as West Vein and its associated stockworks.

Field data shows that 24 of the mapped faults have dips that are equal to or greater than 80° (the exceptions are Fault 3 that dips at 50°, Fault 12 that dips at 65° and Fault 24 that dips at 40°). All the faults, except the Canyon Fault



and the four faults that trend a few degrees east of north/west of south, displace the Moss Vein by small amounts in the left-lateral direction.

## 7.5.2 Dykes

Four different types of dyke have been identified by surface mapping:

- Mafic dykes (dark brown, aphganitic to finely crystalline basalt to gabbro that are weakly chloritized);
- Feldspar dykes with minor quartz (medium grained feldspar with occasional quartz in a fine grained, sugary/aplitic to aphanitic groundmass);
- Aplite dykes (thin aphyric to sparsely porphyritic with a sugary/aplitic groundmass); and
- Feldspar-biotite dykes (large feldspar and fine- to medium-grained biotite in an aphanitic groundmass).

Surface mapping shows that the dykes may have been developed along faults or that there has been subsequent offset movement along either the hangingwalls or footwalls of the dykes. They all predate the Moss Vein, as evidenced by surface mapping and the development of Moss Vein-related stockworks within each dyke mass. No dykes have been identified in the area of West Extension because the dykes predate the Moss quartz monzonite that hosts West Extension and the western portion of the Moss Vein.

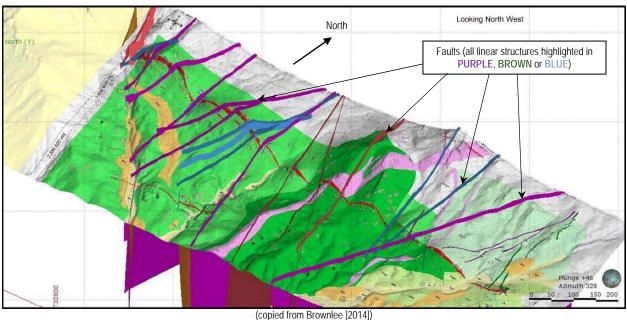


Figure 7-6: An Oblique Snapshot View (looking approximately northwest) of the Mapped Surface Geology,

Draped on the Surface Topography, Highlighting the Positions and Trends of the 27 Mapped Faults

Figure 7-7 shows the color coding for lithology used in Figure 7-6.



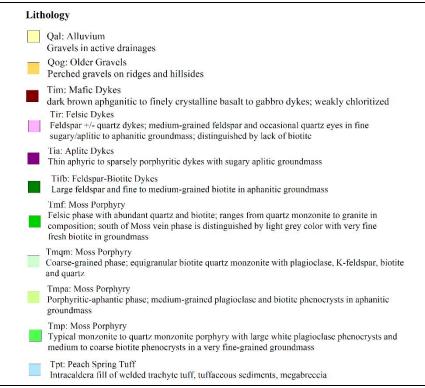


Figure 7-7: Lithology Color Coding



#### 8 DEPOSIT TYPES

The Qualified Person for this section of the Technical Report is Dr. David Stone, P.E.

The following section has been extracted from the December 2014 Technical Report ("Technical Report on the 2014 Mineral Resource Update – Moss Mine Gold-Silver Project") filed on SEDAR. The reader is referred to the December 2014 Technical Report for additional details.

The Moss deposit may be characterized as a brecciated and steeply dipping (average 70°) quartz-calcite vein and stockwork system which extends over a strike length of approximately 1,400 m. It is of the low sulphidation (adularia-sericite) epithermal vein type, which is described by Henley & Ellis (1983) and Heald et al. (1987). Epithermal gold-silver deposits form in the near-surface environment from hydrothermal systems typically within 1.5 km of the earth's surface (Taylor, 2007). They are commonly found associated with centres of magmatism and volcanism, but they can also form in shallow marine settings. Hot spring deposits and both liquid- and vapour-dominated geothermal systems are commonly associated with epithermal deposits.

Epithermal deposits comprise one of three sub-types: high sulphidation; intermediate sulphidation; and low sulphidation. Each sub-type is identified by its characteristic alteration mineral assemblages, occurrences, textures and, in some cases, characteristic suites of associated geochemical elements (for example, mercury, antimony, arsenic and thallium). Copper, lead, zinc and other sulphide minerals may also occur in addition to pyrite, native gold and electrum. In some epithermal deposits, notably those of the intermediate-sulphidation sub-type, base metal sulphides may comprise a significant proportion of the mineralization assemblage.

The quartz vein textures (massive, breccia, vuggy, bladed quartz replacing calcite, colloform banding and ginguro banding), adularia and the very low sulphide content of the Moss deposit are typical of low sulphidation epithermal veins. Gold is native and silver typically occurs as acanthite or combined with gold in electrum. Copper is present, but in very minor quantities.

The platey or bladed calcite characteristics of the Moss deposit is indicative of the boiling zone of the hydrothermal fluid, which calcite is commonly replaced by quartz. Adularia (a low temperature variety of orthoclase) is also indicative of the boiling zone in which gold is deposited out of solution. No paleosurface or shallow features, such as silica sinters, chalcedony or a steam-heated acid leach cap, are preserved in the Moss deposit. This indicates that the top of the hydrothermal system has been eroded, thereby exposing the gold depositional zone.

John (2001) described the Miocene and early Pliocene low sulphidation epithermal gold-silver deposits of northern Nevada as related to a potassium-rich, tholeiite series, bimodal basalt-rhyolite magmatic assemblage formed during continental rifting. These deposits include the Midas (Ken Snyder), Sleeper, DeLamar, Mule Canyon, Buckhorn, National, Hog Ranch, Ivanhoe and Jarbridge districts. Sillitoe (2002) described the association of low sulphidation gold-silver deposits with rifting and bimodal volcanism in northern Nevada, northern Chile, Patagonia and Japan. In contrast, low sulphidation mineralization of the Moss deposit is hosted by an alkalic to sub-alkalic shoshonitic volcanic centre.



## 9 EXPLORATION

The following section has been extracted from the December 2014 Technical Report ("Technical Report on the 2014 Mineral Resource Update – Moss Mine Gold-Silver Project") filed on SEDAR. The reader is referred to the December 2014 Technical Report for additional details.

The Qualified Person for this section of the Technical Report is Dr. David Stone, P.E.

#### 9.1 PREVIOUS OWNERS AND OPERATORS (1982 TO 2009)

Exploration work by previous owners and operators of and on the Moss Mine property is summarized in Section 6.1.2. This includes work carried out in 1982 by BF Minerals through programs by Billiton Minerals in 1990, Magma Copper, Golconda Resources, Addwest and finally by Patriot Gold whose last exploration program was in 2009. The nature and disposition of the Moss deposit is such that in each case the main focus of the exploration work was on drilling, underground channel sampling and the development of geology maps for the Moss Mine Property area.

No stream-sampling, soil-sampling or geophysical work appears to have been carried out by previous owners and operators.

## 9.2 THE COMPANY (2011 THROUGH 2015)

## 9.2.1 2011 Exploration Program

The main focus of the Company's 2011 exploration program was the Phase One infill and confirmation drilling program described in Section 10.2. A limited surface sampling program was, however, carried out to test for extensions to the Moss Vein.

#### 9.2.2 2012 Exploration Program

In 2012, the Company's 2012 exploration effort on the Moss Mine Property was again focused on drilling (the Phase Two program described in Section 10.2.5). However, the Company also carried out a channel sampling program at 1.52 m (5 ft) intervals across the backs/inverts/crowns of the accessible drifts and crosscuts of the historical underground workings in the vicinity of Allen Shaft. A total of 207, 1.52 m (5ft) long samples were taken by hammer and chisel. The sample series is numbered UG2012-01 to UG2012-207.

The channel sample data supplements that compiled by previous owners and operators of the Moss Mine Property, which earlier data totals 109 channel samples in series UG65-1 to UG65-41, UG220-01 to UG220-46, UG300-1 to UG300-3 and UG98-1 to UG98-20. All the listed channel samples were entered in the Moss Mine Project drillhole assay database, as notional short holes for use in Mineral Resource estimation.

Table 9-1 summarizes the significant intersections of the UG2012-1 to UG2012-207 series of channel samples, as reported by the Company in news releases dated June 26, July 19 and August 16, 2012. Figure 9-1 details the locations of the Company's underground channel samples that are identified only by their sample number. The full identification number for each channel sample may be defined by adding UG2012 before the stated number.



Sompling Area	Sample	Interval	Length	Assay Gr	ades (g/t)
Sampling Area	From	То	(m)	Au	Ag
Office Crosscut – 60 level	48.77	89.92	41.15	1.61	8.3
incl.	62.48	85.34	22.86	2.38	11.8
Main Drift West – 60 Level	1.52	92.96	91.44	2.26	14.9
incl.	3.05	12.19	9.14	4.48	23.3
Main Drift East – 60 Level	1.52	7.62	6.10	4.73	35.1
South Crosscut off Main Drift 30' W	1.52	7.62	6.10	1.83	6.4
North Crosscut off Main Drift 40' W	1.52	15.24	13.72	1.64	11.2
incl.	1.52	6.10	4.57	2.28	9.0
incl.	9.14	10.67	1.52	5.29	29.4
North Crosscut off Main Drift Station 60' W	1.52	9.14	7.62	0.98	12.1
North Crosscut off Main Drift Station 150' W	1.52	13.72	12.19	1.49	9.5
incl.	6.10	7.62	1.52	3.69	29.7
North Crosscut off Main Drift Station 200' W	9.14	10.67	1.52	1.88	10.3
Sub-Drift East from Office Crosscut at Station	1.52	6.10	4.57	2.40	15.5
260′ N	1.52	4.57	3.05	1.24	6.0
Sub-Drift East from Office Crosscut at Station	7.62	32.00	24.38	4.42	20.4
275′ N	13.72	22.86	9.14	9.72	44.4
1921 Hill #2 Crosscut					
incl.					

#### Table 9-1: Significant Intersections, the Company's 2012 Underground Channel Sampling Program

#### 9.2.2.1 Qualified Person's Opinion

In the opinion of the Qualified Person for this section of this Technical Report no factors, which could result in sample bias, may readily be identified in the channel sampling procedure or assay outcomes. However, other than a very minor gradient designed to facilitate water egress, the sampled historical underground excavations are horizontal and they are at various different orientations to the Moss Vein. The sample intervals stated on Table 9-1 do not, therefore, reflect in any way the true thickness of the intersected mineralization.

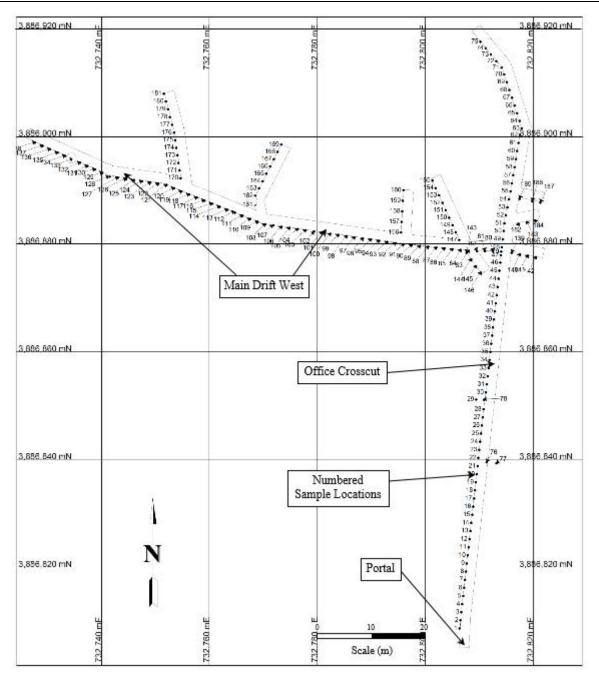
#### 9.2.3 2013/2014 Exploration Program

In addition to the Phase Three drilling program described in Section 10.2.5, the Company carried out an airborne magnetic survey described in a consultancy report to the Company by Precision GeoSurveys, Inc. of Vancouver, B.C., ("Precision GeoSurveys") that is entitled 'Moss Gold-Silver Survey Block' and dated June 2013. Figure 9-2 provides a summary of the results of the airborne magnetic survey and its interpretation, by Precision GeoSurveys.

The results show that magnetics are an effective method of identifying potential mineralized structures on the Moss Mine Project area - both magnetic highs and lows correspond with known mineralized structures:

- the Moss deposit lies along a well-defined magnetic high that suggests that is approximately three kilometers of unexplored potential on the one structure;
- including the structure related to the Moss deposit, there are a total of nine linear magnetic anomalies, totaling approximately 21 km of potential strike length, associated with either known mineral occurrences or historic workings (one such structure includes nearly six kilometers of the mapped extension of the structure hosting the regionally famous Gold Road deposit; and
- several other linear magnetic lows and highs occur across the Moss Mine Project area that require ground work to determine if they are mineralized.





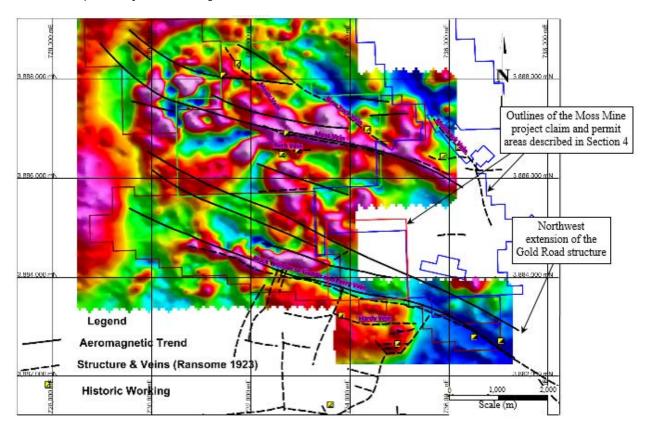
#### Figure 9-1: Location Plan for the Company's 2012 Underground Channel Samples, 60 Level Historical Mine Workings, Moss Mine Project

It was in consequence of the magnetic survey results outlined that the Company subsequently started a geological mapping and sampling program to '*identify and prioritize areas for future drilling where new resources may be discovered*. The Company's target areas include:

- 1,500 m of under-explored Moss Vein structure outside the current resource limits;
- nearly six kilometers of unexplored extension of the Gold Road structure that hosts the Gold Road mine (reported by Durning and Buchanan [1984] to have produced 484,000 oz Au);



- numerous historical workings along known but unexplored veins, including Rattan Vein to the south of the Moss Vein where the single RC hole drilled by the Company in 2012 (AR-136R) intersected 1.52 m (5 ft) of mineralized material grading 13.072 g/t Au and 67.0 g/t Ag;
- the intersection of the Gold Road and Eastern United structures (Durning and Buchanan [1984] reported that Gold Road produced 484,000 oz Au at 10 g/t Au and United Eastern 769,000 oz Au at 35.76 g/t Au); and



• five previously identified target areas of the Silver Creek claims.

#### Figure 9-2: Overall Claim Area, Locations of Known Historical Workings, Magnetic Intensity and Related Structures

## 9.2.4 2015 Exploration Program

Reconnaissance mapping of vein structures and alteration mapping on the unpatented Moss claims and Silver Creek property was carried out in September 2014. The Company's field work was augmented by previously published mapping (C. Ferguson, 2009) which was useful for assessing lithologies, veins or levels of alteration. Rock chip sampling commenced on September 13, 2014.

Mapping was focused on identification of persistent epithermal veins and stockwork zones. Several vein structures have been mapped including the "West Oatman" and "Silver Creek Spring" veins and the historic "Old Timer" vein. Alteration mapping in the "Grapevine and Florence Hill" areas of the Silver Creek claims has also been carried out.



Sampling has concentrated on the "West Oatman", "Silver Creek Spring" and "Old Timer" veins as well as some silica bodies within the "Grapevine" and other areas (Figure 9-3). A total of 681 composite and select rock-chip samples have been collected to date.

The key target areas outlined during the program to date are:

- The West Oatman Vein System This vein system is defined by a fault striking N70W mapped for a distance of 4.5 kilometers. Three separate sections of the vein have been identified -- the West Oatman Main, the West Oatman East and the West Oatman West, for a combined strike length of 1.6 kilometers. These are similar to the Moss vein system with both well-developed veins and quartz-calcite breccia stockwork zones.
- The Silver Creek Spring Vein System This vein system trends N80W for 1.2 kilometers and contains several historic shafts and surface diggings. Surface exposures are up to 5m wide.
- The Old Timer Vein System This historic vein system has a strike length of 1.0 kilometers, trending S80E. It is a series of en-echelon veins that appear to splay off the NNW-trending Canyon Fault similar to what we see at the Moss deposit.
- The Grapevine and Florence Hill Area/System The Grapevine and Florence Hill areas consist of a series of silica-capped hills underlain by strongly clay altered volcanic rocks. The silica caps are replacements of host volcanic rocks Quartz veins are rare, but some narrow veins have highly anomalous gold values. Preliminary mapping shows that NNE to NNW-trending silicified ribs cut the strongly clay altered volcanic rocks. Anomalous gold, molybdenum and fluorine values were detected in the silica ribs in previous work. Although additional work is needed preliminary indications are that surface alteration and mineralization is at a high level in the epithermal depositional system. The boiling or gold zone could be at some depth below the surface rock exposures.

The systems highlighted above were the subject of a 681 rock-chip sampling program. The samples were collected by professional prospectors with the objective of evaluating the lithology, mineralogy and structure of the identified vein systems both along and across strike. A significant number of samples showed evidence of gold mineralization with a portion having gold grades in excess of 1 gpt indicating that a number of vein exposures on the property are auriferous at surface with others showing alteration and trace elements that indicate their surface expression is above the boiling zone where gold might be found in the system.

The key assay results in Table 9-2 below. The full results can be found in a Company news release dated March 24, 2015.

Area	Sample Type	Au gpt	Ag gpt
Oatman Extension	chip	7.47	40.5
Oatman Extension	chip	6.38	44.4
Silver Creek Spring	grab	5.42	76.1
Silver Creek Spring	grab	3.57	231.6
Old Timer	grab	20.26	14.4
Old Timer	chip	9.19	48.2
Grapevine	chip	18.17	6.4
Grapevine	grab	2.4	2.1

## Table 9-2: Key Assay Results



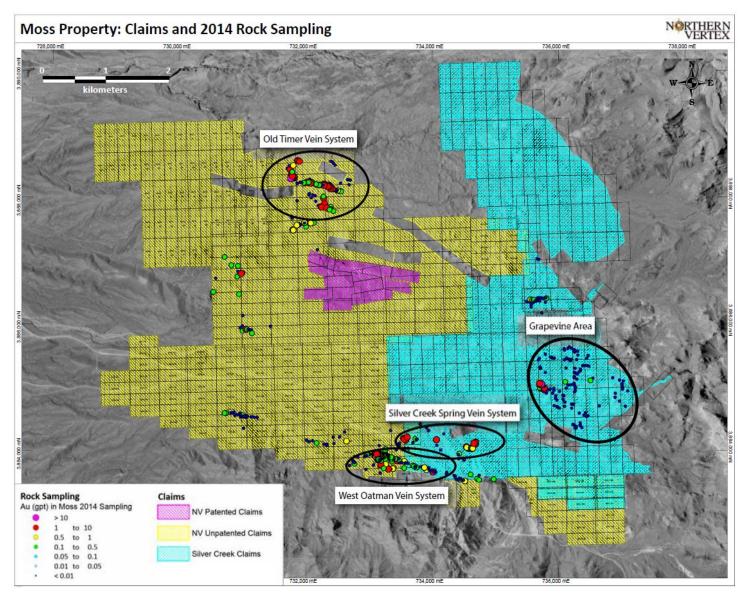


Figure 9-3: 2014 Rock and Chip Sampling



#### 10 DRILLING

The following section is a summary of the information provided in the December 2014 Technical Report ("Technical Report on the 2014 Mineral Resource Update – Moss Mine Gold-Silver Project") filed on SEDAR. The reader is referred to the December 2014 Technical Report for additional details.

The Qualified Person for this section of the Technical Report is Dr. David Stone, P.E.

It should be noted that the Company has not conducted any additional drilling on the property since the December 2014 Technical Report.

#### 10.1 PREVIOUS OWNERS AND OPERATORS (1982 TO 2009)

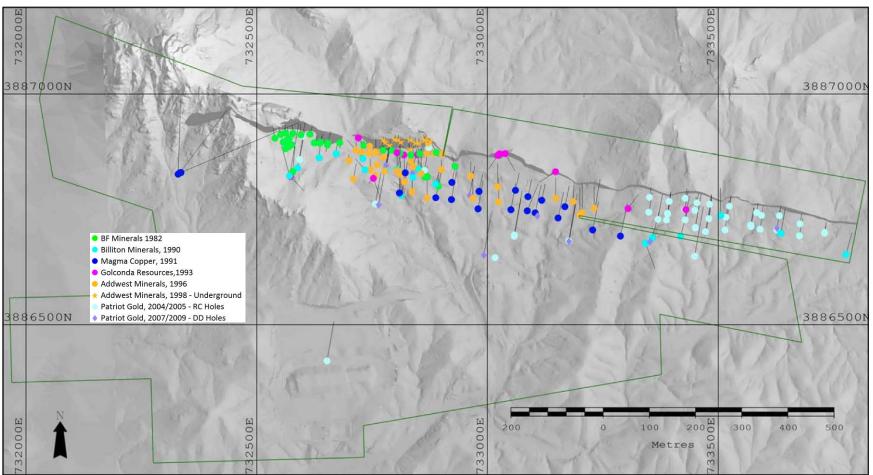
Table 10-1 summarizes the details of the 221 holes (16,706.75 m) completed by previous owners of the Moss Mine Property. The list identifies only those holes for which the collar co-ordinates are known and have been verified. The LH98-1 to LH98-15 series of holes completed by Addwest in 1998 were drilled as up-holes in the historical underground workings. In each case the holes were drilled to explore the Moss Vein, based on knowledge of its attitude and extent from field mapping and related geological field work. The collar locations of the historical drillholes are shown in Figure 10-1.

Company	Year	Tuno	Number	Total	Average	Drillho	e Series
Company	real	Туре	number	Metres	Depth (m)	From	То
BF Minerals	1982	Air Trac	54	1,438.66	26.6	M-1-30	M-25-60
DF MILIELAIS	1902	RC	3	356.62	118.9	M-27-68	M-29-60
Billiton Minerals	1990	RC	21	2,110.74	100.5	MM-1	MM-21
Magma Copper	1991	RC	21	3,014.47	143.5	MC-1	MC-21
Golconda	1993	RC	14	822.35	58.7	MR-1	MR-14
Resources	1993	RC	3	143.29	47.8	BX-4	BX-6
	1996	RC	30	2,504.54	83.5	M96-1	M96-30
Addwest Minerals	1996	Core RX	6	508.10	84.7	MC96-1	MC96-6
	1998	Longhole	14	122.53	8.8	LH98-1	LH98-15
	2004 to	RC	43	3,598.78	83.7	AR-01	AR-44R
Patriot Gold	2005	Diamond	12	2.086.66	173.9	AR-45C	AR-56C
	2007, 2009	Drillholes	12	2,000.00	175.7	711-430	AIX-30C
		Totals	221	16,706.75			

Table 10-1: Holes Drilled by Previous Owners for Known Collar Positions	
(compiled from information supplied by the Company)	



#### Moss Gold-Silver Project Form 43-101F1 Technical Report

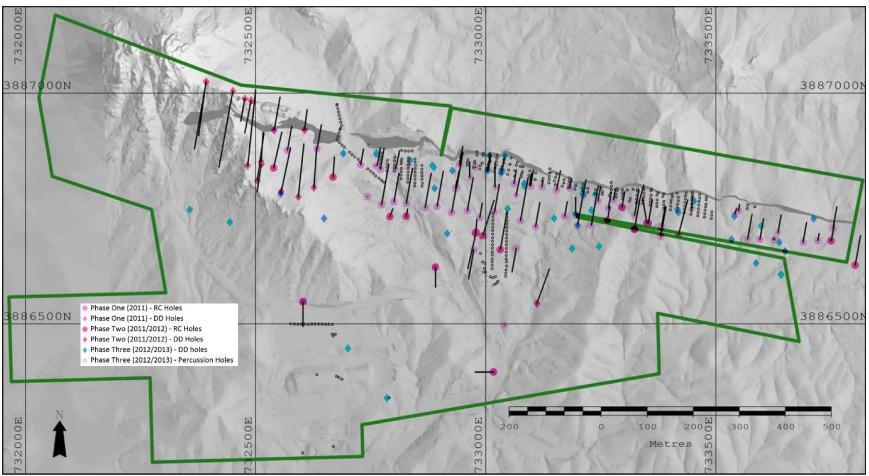


(compiled from data contained in the drillhole database supplied by the Company)

Figure 10-1: A Color-Coded Plan of Collar Locations of Drillholes Completed by Previous Owners for Known Collar Coordinates



#### Moss Gold-Silver Project Form 43-101F1 Technical Report



(compiled from data contained in the drillhole database supplied by the Company)

Figure 10-2: A Color-Coded Plan of the Locations of the Collars of the Drillholes Completed by the Company During its Three-Phase (2011 to 2013) Drilling Program, Moss Mine Project



## 10.2 THE COMPANY (2011 THROUGH 2013)

Since entering into the joint venture agreement with Patriot Gold in February 2011, the Company has carried out three drilling programs on the Moss Mine Property. The programs are termed Phase One through Phase Three; Phase Three was completed in 2013 since when no further exploration drilling has been carried out.



## 11 SAMPLE PREPARATION, ANALYSES AND SECURITY

The Qualified Person for this section of the Technical Report is Dr. David Stone, P.E.

The following section is a summary of the information provided in the December 2014 Technical Report ("Technical Report on the 2014 Mineral Resource Update – Moss Mine Gold-Silver Project") filed on SEDAR. No additional drilling or sampling has been conducted on the property since the issue of the 2014 Technical Report hence no additional sampling has been carried out.

According to the 2014 Technical Report:

- the Company's exploration drilling program, drillhole surveys, sampling, security, sample preparation and assaying procedures have been carried out in accordance with CIM Best Practice Guidelines and are suitable to support Mineral Resource estimation;
- the Company's exploration and drilling programs supply sufficient information for Mineral Resource estimation and classification; and
- the Company's sampling and assaying includes adequate quality assurance procedures.

The reader is referred to the December 2014 Technical Report for additional details on the data verification.

Based on the previous disclosures, the Qualified Person for this Technical Report is satisfied that there has been adequate sampling and assaying in accordance with industry best practices.



#### 12 DATA VERIFICATION

The Qualified Person for this section of the Technical Report is Dr. David Stone, P.E.

The following section is a summary of the information provided in the December 2014 Technical Report ("Technical Report on the 2014 Mineral Resource Update – Moss Mine Gold-Silver Project") filed on SEDAR. No additional drilling has been conducted on the property since the issue of the 2014 Technical Report hence no additional data verification has been carried out.

According to the 2014 Technical Report "All relevant, available data was utilized including reports, certificates, logs and ancillary data in digital format for all the holes drilled by previous owners and operators of the Moss Mine Property" ... "and for all the holes drilled by the Company over its three drilling programs".

"The verification focused on the available data and its format, what data was collected, back-up reference material, data consistency and the accuracy and reliability of the data. The Qualified Person was given unlimited access to all data stored on the Company's digital storage site (hosted by Egnyte) and he was not limited as regards data acquisition and analysis. The results are presented in a consultancy report to the Company that is entitled 'Verification of the Golden Vertex Corp. Moss Mine Drillhole Database' and dated December 31, 2013."

Verification of the Moss Mine drillhole database indicates that there are no errors or inconsistencies that would have any material effect on the database. In the opinion of the Qualified Person for this section of the Technical Report the database is accurate and suitable for use in Mineral Resource estimation.

The reader is referred to the December 2014 Technical Report for additional details on the data verification.



## 13 MINERAL PROCESSING AND METALLURGICAL TESTING

The following section is a summary of the information provided in the December 2014 Technical Report filed on SEDAR. As shown in Table 13-1 below, only one additional test has been conducted on the Moss mineralization since the date of the last technical report, and this consisted of 6 additional bottle roll tests on West Extension mineralized material as recommended in the December 2014 Technical Report. Results are presented in Section 13.2 below. The reader is referred to the December 2014 Technical Report for additional details on the metallurgical investigations carried out to date.

The Qualified Person for this section of the Technical Report is Dr. David Stone, P.E.

#### 13.1 METALLURGY OVERVIEW

Since 1990 a total of nine metallurgical test programs have been carried out on mineralized material from the Moss deposit. Cyanidation test results for the first program are not available, however, detailed information covering a total of eight cyanide shake tests, 65 bottle roll tests and 14 column leach tests is available, along with various head and tail analyses and head and tail screen analyses. A breakdown of the testwork undertaken on Moss ores is shown in Table 13-1.

Doport Data	Laboratory		Test	Program
Report Date	Laboratory	Bottle Roll	Column Leach	Other Tests
December 1990	Billiton Minerals	-	-	Gravity separation
May 1991	McClelland Laboratories	15	-	Head & tail analysis (Au only)
January 1992	McClelland Laboratories	2	-	Head & tail analysis (Au and Ag)
June 2008	Metcon Research	4	3	Head & tail screen analysis
				Particle size vs. recovery analysis
January 2010	Kappes, Cassiday &	2	4	Head & tail analysis
	Associates			Head screen analysis
				Cyanide shake tests
November 2012	Kappes, Cassiday &	28	4	Head analysis
	Associates			Head & tail screen analysis
				Cyanide shake tests
				Variability testing
July 2012	Kappes, Cassiday &	2	-	Head & tail analysis
	Associates			
February 2013, April	McClelland Laboratories	6	3	Head analysis
2013 and July 2014				Head & tail screen analysis
March 2015	McClelland Laboratories	6	-	Head screen & tail analysis
Totals	-	65	14	-

#### Table 13-1: A Summary of Metallurgical Testwork Programs on Samples of Mineralized Material from the Moss Vein, Moss Mine Project

The available test data shows that the Moss vein is metallurgically straightforward:

- It is not necessary to differentiate metallurgical responses by geographic position across the Moss deposit, inclusive of the West Extension (no discernible difference between the metallurgical response to cyanidation reported by the Moss Vein and its associated stockwork and by the West Vein and its associated stockwork can be identified);
- The Moss vein is not an oxide-transition-sulphide deposit type so it is not necessary to differentiate between mineralized material located above and below the present water table;



• The economic minerals of interest are native gold and electrum, which are not susceptible to surface weathering effects, as well as minor acanthite (a silver sulphide).

Apart from acanthite, the presence of sulphides is limited to minor to very minor pyrite (an iron sulphide) and very minor base metal sulphides that can thinly coat native gold and electrum grains. Downward percolating waters oxidized the minor sulphides across the Phase II depth range, with the effect that the gold and electrum grains were liberated, thereby turning otherwise refractory mineralization into leachable material. Hence:

- A single, simple cyanidation process can be used to extract both gold and silver; although
- A Merrill-Crowe type system is needed to maximize silver recovery into metal.

## 13.2 2015 WEST EXTENSION BOTTLE ROLL TESTING

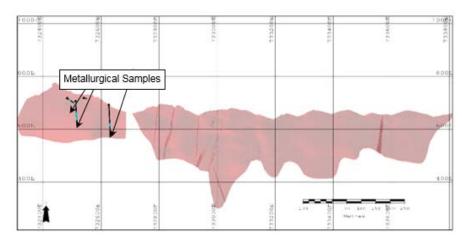
Following recommendations made in the December 2014 Technical Report, McClelland Laboratories was contracted to carry out six bottle roll tests, with head and tail screen analyses, on composites compiled from RC drillhole samples from the West Extension. The objective of the test program was to establish data for mineralized material from the West Extension to facilitate its comparison with the results for mineralized material from the Moss Vein and its associated stockwork, thereby to establish whether any material differences in their metallurgical responses could be identified. Table 13-2 summarizes the drillhole numbers and sample intervals. Figure 13-1 is a Vulcan<sup>®</sup> snapshot of the Moss deposit (looking north), on which the locations of the samples are identified.

#### Table 13-2: A Summary of the West Extension Composites, McClelland Laboratories' 2015 Test Program, Moss Mine Project

RC	Interv	al (m)	Composite #
Drillhole	From	То	Composite #
West Vein Ma	aterial		
AR-141C	87.78	97.84	MV Comp. 1
AR-142C	C 72.54 84		MV Comp. 2
AR-144C	64.92	77.42	MV Comp. 3
AR-149C	0.00	11.40	MV Comp. 4
Hangingwall .	Stockwork		
AR-142C	1.83	15.24	HWS Comp. 1
AR-142C	54.25	64.92	HWS Comp. 2

(compiled from data in McClelland Laboratories' March 2015 project report)





## Figure 13-1: A Vulcan<sup>®</sup> Snapshot (looking north) of the Moss Deposit Showing the Positions of the Composites , McClelland Laboratories 2015 Test Program, Moss Mine Project

## 13.2.1 Head Screen Analysis

Head screen analyses were carried out on each of the received samples, at the as-received crush sizes, to determine head grades and value distributions. Each sample was wet screened to obtain top size to 100 mesh (0.074 mm) size fractions. Each sieved size fraction was dried, weighed, crushed (if coarser than 10 mesh), blended and split to obtain samples for gold and silver assay. The results are summarized on Table 13-3 and Table 13-4.

#### Table 13-3: A Summary of Head Screen Analysis Results, West Vein Material, McClelland Laboratories' 2015 Test Program, Moss Mine Project

	, ,	Retained	Distrib.	Cumulative			Gold		Silver
Sample #	Passing (mm)	(mm)	(%)	Cumulative Retained	Passing	g/t	Weight %	g/t	Weight %
	(1111)	, ,			Ŭ	×			
	- 1 70	1.70	36.7 15.0	36.7 51.7	100.0	0.980	38.0	10.0 9.9	37.4
MV Comp 1	1.70	0.85 0.425		-	63.3	0.912	14.5		15.1 11.5
MV Comp. 1	0.85		10.7	62.4	48.3	0.791	9.0	10.5	
(P <sub>95</sub> 6.35 mm [¼"])	0.425 0.212	0.21 0.15	8.5 3.2	70.9 74.1	37.6 29.1	0.605 0.498	5.4 1.7	8.9 8.1	7.7 2.7
	0.212		-					8.1 9.7	
		Pan	25.9 <i>100.0</i>	100.0	25.9	1.145	31.4		25.6 100.0
	TOTALS ALL	d Averages			-	0.945	100.0	9.81	
	-	1.70	31.0	31.0	100.0	0.937	31.0	9.1	28.5
	1.70	0.85	15.6	46.6	69.0	1.040	17.3	10.4	16.4
MV Comp. 2	0.85	0.425	10.6	57.2	53.4	0.842	9.5	10.6	11.4
(P <sub>95</sub> 6.35 mm [¼"])	0.425	0.21	10.5	67.7	42.8	0.686	7.7	10.2	10.8
	0.212	0.15	3.2	70.9	32.3	0.627	2.2	10.8	3.5
	0.15	Pan	29.1	100.0	29.1	1.040	32.3	10.0	29.4
	i otais an	d Averages	100.0	-	-	0.937	100.0	9.89	100.0
	-	1.70	38.9	38.9	100.0	1.44	43.3	7.3	29.0
	1.70	0.85	14.5	53.4	61.1	1.29	14.5	8.1	12.0
MV Comp. 3	0.85	0.425	10.7	64.1	46.6	0.96	7.9	8.1	8.9
(P <sub>95</sub> 6.35 mm [¼"])	0.425	0.21	8.3	72.4	35.9	0.75	4.8	6.6	5.6
	0.212	0.15	4.0	76.4	27.6	1.23	3.8	12.7	5.2
	0.15	Pan	23.6	100.0	23.6	1.41	25.7	16.3	39.3
	Totals an	d Averages	100.0	-	-	1.294	100.0	9.78	100.0
	-	1.70	37.4	37.4	100.0	0.765	40.4	13.5	39.0
	1.70	0.85	14.9	52.3	62.6	0.658	13.8	10.7	12.3
MV Comp. 4	0.85	0.425	10.5	62.8	47.7	0.567	8.4	18.3	14.8
(P <sub>95</sub> 6.35 mm [¼"])	0.425	0.21	9.1	71.9	37.2	0.448	5.8	15.7	11.0
	0.212	0.15	3.6	75.5	28.1	0.711	3.6	14.2	4.0
	0.15	Pan	24.5	100.0	24.5	0.810	28.0	10.0	18.9
	Totals an	d Averages	100.0	-	-	0.708	100.0	12.95	100.0

(compiled from data contained in McClelland Laboratories' March 2015 project report)



#### Table 13-4: A Summary of Head Screen Analysis Results, Hangingwall Stockwork Material, McClelland Laboratories' 2015 Test Program, Moss Mine Project

Sample #	Retained Passing (mm)		Distrib. (%)	Cumulativ (%		G	Gold	Silver	
Sample #	(mm)			Retained	Passing	g/t	Weight %	g/t	Weight %
	-	1.70	29.7	29.7	100.0	1.40	32.3	24.5	29.3
HWS Comp. 1	1.70	0.85	15.9	45.6	70.3	1.42	17.5	22.9	14.6
(P <sub>95</sub> 6.35 mm	0.85	0.425	11.0	56.6	54.4	1.18	10.1	26.9	11.9
(F 95 0.35 mm [¼″])	0.425	0.21	8.9	65.5	43.4	0.86	6.0	22.2	8.0
[74])	0.212	0.15	4.7	70.2	34.5	0.75	2.7	20.1	3.8
	0.15	Pan	29.8	100.0	29.8	1.36	31.4	27.0	32.4
	Totals and	d Averages	100.0	-	-	1.289	100.0	24.84	100.0
	-	1.70	28.6	28.6	100.0	0.885	29.6	8.8	32.0
HWS Comp. 2	1.70	0.85	15.3	43.9	71.4	0.604	10.8	8.3	16.1
(P <sub>95</sub> 6.35 mm	0.85	0.425	11.6	55.5	56.1	0.675	9.2	8.3	12.2
(F 95 0.35 mm [¼″])	0.425	0.21	9.2	64.7	44.5	0.552	5.9	8.0	9.4
[74])	0.212	0.15	5.3	70.0	35.3	0.492	3.1	7.1	4.8
	0.15	Pan	30.0	100.0	30.0	1.180	41.4	6.7	25.5
	Totals and	d Averages	100.0	-	-	0.855	100.0	7.87	100.0

(compiled from data contained in McClelland Laboratories' March 2015 project report)

## 13.2.2 Bottle Roll Tests

Direct agitation cyanidation tests of 96 hour duration were carried out on splits of each of the six composite samples, at the as-received crush sizes detailed on Table 13-3. The objective was to determine precious metal recovery, recovery rates and reagent requirements. All the tests were identically carried out:

- 2 kg charges of prepared material were slurried to achieve 40% solids pulp densities;
- the pH of each slurry was measured and hydrated lime was added to adjust the measured pH to between 10.8 and 11.0;
- sodium cyanide was added to the alkaline pulps to achieve a cyanide concentration equivalent to 1.0 g/L;
- rolling was temporarily stopped at two, six, 24, 48, 72 and 96 hours to take samples of pregnant solution to test for pH and cyanide concentration, and to assay for gold and silver (pH and cyanide concentrations were adjusted, as appropriate);
- after 96 hours the slurries were filtered, washed, dried, weighed and assayed in triplicate for gold and silver.

The results are summarized on Table 13-5 and Figure 13-2, from which it can be seen that:

- there is very good repeatability between the gold recovery results, with all composites returning very similar recovery curves;
- there is very good repeatability between the silver recovery results for West Vein material, but the results for hangingwall stockwork material vary significantly;
- overall, only moderate gold and silver recovery rates were achieved but the results are very similar to those realized for bottle roll tests on P85 to P95 6.35 mm [¼"] material that were carried out during McClelland Laboratories' 2013 test program; and
- in common with all other previous tests, cyanidation was rapid with the majority of the recovered metal (gold and silver) leached into solution within 24 hours.

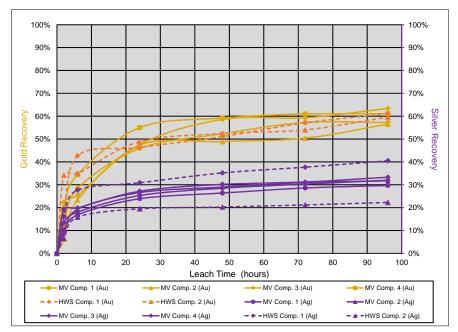


## Table 13-5: A Summary of Bottle Roll Test Results, McClelland Laboratories' 2015 Test Program

						Sam	ple						
Parameter	MV C	omp. 1	MV Co	omp. 2	MV Co	mp. 3	MV C	comp. 4	HWS C	omp. 1	HWS (	Comp. 2	
i diameter	Au	Ag	Au	Ag	Au	Ag	Au	Ag	Au	Ag	Au	Ag	
	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	
% Extracted Metal in 2 hours	11.6	10.2	6.2	9.5	22.4	19.3	19.4	13.5	16.6	16.1	34.2	6.6	
6 hours	28.4	16.9	23.4	19.3	25.5	19.9	34.5	18.1	42.7	27.7	35.0	15.9	
24 hours	45.9	23.9	47.3	26.6	47.6	27.2	55.0	25.3	46.3	30.9	48.9	19.5	
48 hours	52.3	26.4	48.9	29.0	58.6	30.2	59.2	28.5	51.1	35.2	52.4	20.3	
72 hours	57.2	28.6	50.4	31.0	59.3	31.2	61.0	30.3	57.1	37.7	54.0	21.2	
96 hours	57.2	29.7	56.5	31.7	63.4	33.3	61.1	32.0	61.1	40.5	59.6	22.3	
					Base Data								
Feed Size	P99 6.35	mm (¼″)	P99 6.35	mm (¼″)	P <sub>99</sub> 6.35 mm (¼")		P99 6.35 mm (¼")		P99 6.35 mm (¼")		P99 6.35 mm (¼")		
Tail Grade (g/t)*	0.389	7.02	0.422	8.42	0.465	10.46	0.241	11.00	0.527	14.97	0.312	4.98	
Extracted Grade (g/t)	0.520	2.97	0.549	3.91	0.806	5.22	0.379	5.17	0.827	10.14	0.460	1.43	
Calculated Head (g/t)	0.909	9.99	0.971	12.33	1.271	15.68	0.620	16.17	1.354	25.04	0.772	6.41	
Average Head Assay (g/t)	0.931	9.10	0.891	10.89	1.170	13.11	0.663	15.15	1.267	23.96	0.742	6.47	
					Chemistry								
Cyanide Consumption (kg/t)	<0	0.05	<0	.05	0.0	8	< 0.05		< 0.05		<0	<0.05	
Lime Consumption (kg/t)	1.	.20	1.	20	1.30		1.2		1.50		1.	1.40	
Final pH	1	1.2	11	.3	11.	2	1	1.0	11	.2	1'	1.2	

(compiled from data contained in McClelland Laboratories' March 2015 project report)

Note: \* - average of three assays



(compiled from data contained in McClelland Laboratories' March 2015 project report)

#### Figure 13-2: Bottle Roll Test Metallurgical Recovery Curves for P99 6.35 mm (¼") West Vein and Stockwork Material, McClelland Laboratories' 2015 Test Program, Moss Mine Project

## 13.2.3 Tail Screen Analysis

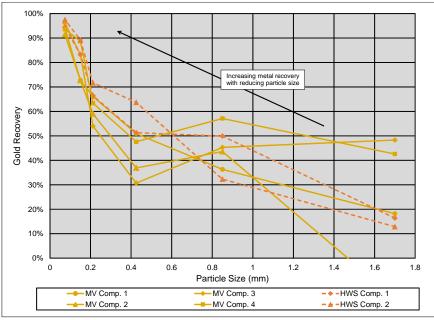
Table 13-6 summarizes the tail screen analyses for the bottle roll feeds. Figure 13-3 is a line plot of size fractions versus gold recovery. It can clearly be seen that the results reflect the same, strong relationship between particle size and recovery that repeats the results of the analyses completed by Metcon in 2008, by KCA in 2011/2012 and by McClelland Laboratories in 2013.



# Table 13-6: A Summary of the Head, Recovered and Tail Assays by Size Fraction, McClelland Laboratories'2015 Test Program, Moss Mine Project

Composite	Screen Fraction (mm)	Ass	Screen ays	Tail So Ass	ays	Extract Fract	ion*
		Au (g/t)	Ag (g/t)	Au (g/t)	Ag (g/t)	Au (%)	Ag (%)
	1.70	0.980	10.0	0.802	10.6	18.2	-6.0
	0.85	0.912	9.9	0.581	9.1	36.3	8.1
MV Comp. 1	0.425	0.791	10.5	0.388	8.1	50.9	22.9
(P <sub>95</sub> 6.35 mm [¼"])	0.212	0.605	8.9	0.205	6.9	66.1	22.5
	0.15	0.498	8.1	0.136	5.7	72.7	29.6
	Pan	1.145	9.7	0.068	3.2	94.1	67.0
	1.70	0.937	9.1	1.090	12.9	-16.3	-41.8
	0.85	1.040	10.4	0.586	12.3	43.6	-18.3
MV Comp. 2	0.425	0.842	10.6	0.531	11.4	36.9	-7.5
(P <sub>95</sub> 6.35 mm [¼"])	0.212	0.686	10.2	0.281	9.3	59.0	8.8
	0.15	0.627	10.8	0.171	7.5	72.7	30.6
	Pan	1.040	10.0	0.089	3.3	91.4	67.0
	1.70	1.44	7.3	0.774	14.5	48.3	n/a
	0.85	1.29	8.1	0.705	14.3	45.3	n/a
MV Comp. 3	0.425	0.96	8.1	0.665	12.5	30.7	n/a
(P <sub>95</sub> 6.35 mm [¼"])	0.212	0.75	6.6	0.345	9.7	54.0	n/a
	0.15	1.23	12.7	0.206	8.6	83.2	n/a
	Pan	1.41	16.3	0.055	4.5	96.1	n/a
	1.70	0.765	13.5	0.439	15.2	42.6	-12.6
	0.85	0.658	10.7	0.282	15.1	57.1	-41.1
MV Comp. 4	0.425	0.567	18.3	0.297	12.8	47.6	30.0
(P <sub>95</sub> 6.35 mm [¼"])	0.212	0.448	15.7	0.164	10.9	63.4	30.6
	0.15	0.711	14.2	0.080	9.7	88.7	31.7
	Pan	0.810	10.0	0.052	4.9	93.6	51.0
	1.70	1.40	24.5	1.170	27.2	16.4	-11.0
	0.85	1.42	22.9	0.711	21.1	49.9	7.9
HWS Comp. 1	0.425	1.18	26.9	0.575	17.3	51.3	35.7
(P <sub>95</sub> 6.35 mm [¼"])	0.212	0.86	22.2	0.290	12.5	66.4	43.7
	0.15	0.75	20.1	0.125	9.1	83.3	54.7
	Pan	1.36	27.0	0.075	4.2	94.5	84.4
	1.70	0.885	8.8	0.771	7.0	12.9	20.4
	0.85	0.604	8.3	0.409	6.5	32.3	21.7
HWS Comp. 2	0.425	0.675	8.3	0.245	6.0	63.7	27.7
(P <sub>95</sub> 6.35 mm [¼"])	0.212	0.552	8.0	0.156	5.7	71.7	28.8
	0.15	0.492	7.1	0.053	5.5	89.2	22.5
	Pan	1.180	6.7	0.029	2.5	97.5	62.7





(compiled from data in McClelland Laboratories' March 2015 project report)

#### Figure 13-3: A Scatter Plot of Particle Size vs. Gold Recovery, McClelland Laboratories' 2015 Test Program, Moss Mine Project

## 13.2.4 Conclusions

It may be concluded that material from the West Extension is metallurgically very similar to that from the Moss Vein and its associated stockwork. Table 13-7 further substantiates this finding: it summarizes the recovery rates, achieved over different metallurgical testwork programs, by bottle roll and column leach testing mineralized material with the same nominal particle size (6.35 mm, or ¼") but with P80 to P100 values.

## Table 13-7: A Summary of Test Results for 6.35 mm (¼") Feed from the Moss Vein and West Vein, Inclusive of their Associated Stockworks, Moss Mine Project

	Testing	Drogrom	Particle	Rec	overy by 1	Fest Type	(%)	Vari	ance
Sample	Testing Laboratory	Program Year	Size	Colum	n Leach	Bott	e Roll	(CT→BT Recovery)	
	Laboratory	real		Gold	Silver	Gold	Silver	Gold	Silver
Moss Vein and Assoc	iated Stockwork		•						
#3	Metcon Research	2008	P <sub>80</sub> 6.35 mm	66.3	42.1	-	-	-	-
1 x Thru' Rolls	McClelland Labs	2013	P <sub>85</sub> 6.35 mm	75.3	61.3	53.2	38.1	-22.1%	-23.2%
2 x Thru' Rolls #1	McClelland Labs	2013	P <sub>95</sub> 6.35 mm	84.6	76.6	59.0	44.6	-25.6%	-32.0%
2 x Thru' Rolls #2	McClelland Labs	2013	P <sub>95</sub> 6.35 mm	82.7	36.0	67.6	33.3	-15.1%	-2.7%
West Vein									
Composite MV1	McClelland Labs	2015	P100 6.35 mm	-	-	57.2	29.7	-	-
Composite MV2	McClelland Labs	2015	P <sub>100</sub> 6.35 mm	-	-	56.5	31.7	-	-
Composite MV3	McClelland Labs	2015	P <sub>100</sub> 6.35 mm	-	-	63.4	33.3	-	-
Composite MV4	McClelland Labs	2015	P100 6.35 mm	-	-	61.1	32.0	-	-
West Extension Stoci	kwork								
Composite HWS-1	McClelland Labs	2015	P100 6.35 mm	-	-	61.1	40.5	-	-
Composite HWS-2	McClelland Labs	2015	P <sub>100</sub> 6.35 mm	-	-	59.6	22.3	-	-

(compiled from data presented in earlier sections of this report)

It can be seen on Table 13-7 that gold and silver recoveries for the bottle roll tests are very similar when the results for  $P_{95}$  material from the Moss Vein and associated stockwork are compared with the results for the  $P_{100}$  material



from the West Extension. There is, however, a significant increase in the recoveries from column leach tests compared with bottle roll tests, which is often the case as the relationship, in part, depends on nominal head feed size, with coarse feed often reporting similar results for bottle roll and cyanide leach tests.

Figure 13-4 summarizes the particle size distributions for the materials tested by column leaching, per Table 13-7, and compares these with both the particle size distributions for the bottle roll tested materials from the West Extension and the column leach recoveries. It can be seen that:

- in common with all other test programs where similar data is available, there is a strong relationship between particle size distribution and metal recovery for both gold and silver;
- the maximum recovery rate from column leach tests is 84.6% for gold and 76.6% for silver, as reflected in the results for McClelland Laboratories' 2013 composite 2 x Thru' Rolls #1, which has a slightly less fine particle distribution than composite 2 x Thru' Rolls #2;
- the particle size distributions of the composites from the West Extension match closely those for McClelland Laboratories' 2013 composites 2 x Thru' Rolls #1 and 2 x Thru' Rolls #2; and
- Table 37 demonstrates that the average recovery rates from bottle roll tests for the West Extension composites (59.82% Au and 33.44% Ag) are very similar to the bottle roll tests results for composites 2 x Thru' Rolls #1 and 2 x Thru' Rolls #2 (average 63.30% Au and 38.95% Ag); therefore
- it may reasonably be expected that the recovery rates reported for the column leach tests on composites 2 x Thru' Rolls #1 and 2 x Thru' Rolls #2 would equally apply to the West Extension composites, if they were column leached.

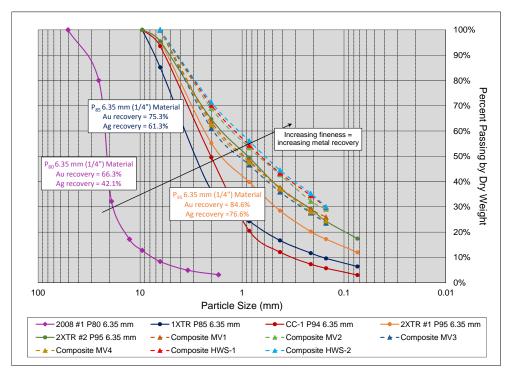


Figure 13-4: A Scatter Plot of Particle Size Distributions for 6.35 mm (¼") Composites Tested During Various Metallurgical Programs, Moss Mine Project



#### 13.3 PHASE I HEAP RECONCILIATION

In 2013 the Company mined and stacked approximately 122,000 tonnes of ore from the Moss deposit and the material was subjected to leaching with cyanide for roughly 415 days (August, 2013 to September 2014). The purpose of the pilot heap was to confirm the viability of cyanidation of the Moss ores both in terms of recovery rates as well as recovery times. The pilot heap was considered a success having achieved an overall recovery of 84% of gold to cyanide solution, and some 38% for silver.

Table 13-8 summarizes the estimated quantities and assessed average grades of the various materials that were stacked or placed and then exposed to cyanidation on the Phase I heap. The drain rock (located above the heap leach pad liner and immediately below the stacked heap leach material) was included as it is mineralized and would have been exposed to cyanide solution and would, therefore, have contributed to the total amount of metal that was recovered into pregnant solution.

Material Turne and Data	Nominal Size	Tonnes	Average	Grades	Contained	d Metal					
Material Type and Date	Nominal Size	Tonnes	Au (g/t)	Ag (g/t)	Au (oz)	Ag (oz)					
Drain Rock											
June 2013	+12.7 mm to 25.4 mm (½" to 1")	8,788.5	0.664	6.60	187.62	1,863.70					
Crushed, Screened, Agglomerated and Stacked											
July 21, 2013 to	P99 6.35 mm (-¼")	102,928.5	1.451	14.03	4,801.69	46,427.17					
November 14, 2013											
Additional Placed Material											
December 2013	Nominal 25.4 mm (1")	3,238.7	1.642	17.26	170.98	1,797.38					
March 31, 2014	P <sub>96</sub> 11.11 mm (- <sup>7</sup> / <sub>16</sub> ")	2,058.9	0.600	5.97	39.72	395.30					
May 23, 2014	P <sub>96</sub> 11.11 mm (- <sup>7</sup> / <sub>16</sub> ")	5,496.8	0.728	7.22	128.66	1,275.96					
Overall	-	122,511.4	1.353	13.14	5,328.66	51,759.51					

Table 13-8: Quantities and Assay Grades of Materials Exposed to Cyanidation on the Phase I Heap

An audit of the onsite laboratory concluded that a fire assay method with a gravimetric finish, produced accurate and repeatable gold assay results for rock samples; but over-estimated silver grades for the same samples by an average of approximately 5%.

## 13.3.1 Total Metal Recovery

Table 13-9 summarizes the reconciled amounts of gold and silver recovered from the overall Phase I heap into pregnant solution, carbon and doré, along with the assessed recovery rates (expressed as percentages of the total amount of gold and silver contained on the Phase I heap).

			Recov	veries
Source	Gold Ounces	Silver Ounces	Gold	Silver
Total Metal on Phase I Heap	5,328.66	51,759.51	-	-
Total Metal Recovered to Pregnant Solution	4,269.81	19,504.85	80.13%	37.68%
Total Metal Recovered to Carbon	4,234.88	18,138.52	79.47%	35.04%
Total Metal Recovered to Doré (incl. residual carbon)	4,153.00	19,710.81	77.94%	38.08%



Table 13-9 shows a consistency in the recovered ounces, hence overall recovery rates into pregnant solution, carbon and doré: gold recoveries vary by as little as 2.16% ( $\pm$ 1.08%) and silver recoveries by as little by 3.04% ( $\pm$ 1.52%). This repeatability suggests that the recovery rates can be relied on for predicting recovery rates in the commercial operations.

The reported ounces of gold and silver in doré are based on off-site, independent data from the refiner. The total includes an amount for gold (4.04 oz Au) and silver (14.65 oz Ag) in the form of beads recovered from the fire assays carried out at the Company's on-site laboratory. As regards the quantity of metal recovered to carbon, it should be emphasized that:

- Carbon loading in the type of non-agitated carbon columns used during Phase I is not uniform; therefore
- Accurate determinations of the average grade of bulk amounts of loaded carbon are difficult at best; and
- The estimated quantity of metal contained in loaded carbon is heavily dependent on moisture content (the wet weight of a carbon lot is reduced by moisture content to determine the dry weight of carbon to which the average assay value applies).

Despite the limitations outlined above, differences between assays outcomes should, in theory, normalize if a sufficiently large database of results is available. This appears to be the case for the 14 carbon lots transported off-site for stripping, as suggested by the repeatability of the reconciled gold recoveries to carbon (79.47%) and to doré (77.94%).

## 13.3.2 Metal Recovery from P<sub>99</sub> 6.35 mm (¼") Material

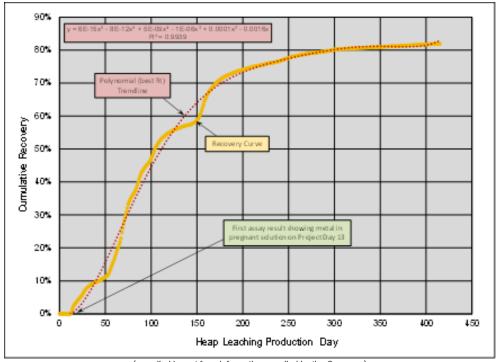
Table 13-10 summarizes the reconciled results for the P99 6.35 mm (¼") material that formed the bulk of the Phase I heap.

## Table 13-10: Recovered Gold Ounces and Gold Recovery Rates for the 109,289 t of P99 6.35 mm Material Only, Phase I Heap Leach Operation

Source	Gold	Silver	Recoveries		
Source	Ounces	Ounces	Gold	Silver	
Metal in P99 6.35 mm (¼") Material on Phase I Heap	4,801.69	46,427.17	-	-	
Predicted Metallurgical Recovery P95+ 6.35 mm (¼") Material	3,983.00	+30,177.66	82.95%	+65%	
Back-Calculated Metal Recovered to Pregnant Solution	4,052.92	-	84.40%	-	
Back-Calculated Metal Recovered to Doré	3,936.11	-	81.97%	-	

Figure 13-5 shows the gold recovery curve for  $P_{99}$  6.35 mm (¼") material comprising mineralized material from the Moss Vein and its associated stockwork, based on the Phase I heap leach results but limited to a maximum gold recovery rate of 82%. The equation that describes the best fit curve (a 6th order polynomial) is defined in the box located in the top left hand corner of Figure 13-5. This identifies that the best fit curve has a correlation coefficient (r2 = 0.9939).





(compiled in part from information supplied by the Company) Figure 13-5: Gold Recovery Curve for P<sub>99</sub> 6.35 mm (¼") Material Comprising Mineralization from the Moss Vein and Its Associated Stockwork, Moss Mine Project

## 13.4 DELETERIOUS ELEMENTS

A typical low sulphidation, epithermal deposit has strong vertical zonation of trace elements. Mercury, antimony and arsenic occur high in the system above the boiling zone where precious metals are deposited. Base metals such as copper and zinc are found at the base of the system below the boiling zone. Many of these elements, especially base metals such as copper, reduce the efficiency of cyanidation sometimes resulting in significant reductions in gold and silver recovery.

However a geological characterization of the Moss deposit through thin-section analysis, head analysis and multielement analysis show that mercury, antimony, arsenic, thallium and copper are either absent or present in trace or minor amounts. In addition, carbonaceous material has been identified in either hand samples of mineralized material or by means of thin-section analysis. Only very minor amounts of carbon have been identified by means of head analysis and multi-element analysis.

No significant amounts of clay, clay gouge or clay alteration are present in the Moss ores as evidenced in the drill cores. Only trace amounts of clay can be found on joint surfaces and this will have no impact on the leaching or permeability of heap.

It should be emphasized that no issues related to deleterious elements were identified during the Phase I Pilot Plant operation either, including clays.

#### 13.5 AMENABILITY TO CYANIDATION

The Moss Mine project metallurgical database, as well as the results of the Phase I Pilot Plant operation, demonstrate that mineralized material from the Moss deposit is amenable to cyanidation, especially gold recovery that is consistently rapid and comprehensive in fine grained and pulverized feeds.



Silver recovery is a special case as it varies with silver grade (e.g. higher grade equals lower recovery) and hence varies with the amount of acanthite present in the mineralized material. Liberation of the ancanthite would likely be variable, but moderate at best, in moderately coarse to coarse feed (e.g. a significant fraction would remain encapsulated in the gangue minerals). A cyanide solution is not likely to be able to effectively dissolve coarse grains of acanthite and suphides which are known to yield lower and slower recovery rates compared to minerals such as electrum. Given the above, the overall silver recoveries are expected to be variable.

## 13.6 PREDICTED RECOVERY

There is a very strong relationship between gold and silver recovery and both the nominal crush size of the material subjected to cyanidation and its particle size distribution. The relationship:

- Clearly demonstrates that the more 'work' that is done on the mineralized material to be leached (i.e. crushing and grinding) the greater the fines fraction, hence the greater the quantity of economic minerals that are liberated, the greater the recovery and the faster the overall recovery rate; and
- May be attributed to the fine to very fine nature of the mineral grains and their encapsulation in (mainly) weathering/oxidation resistant gangue minerals.

The following figures were compiled from consideration of the particle size-recovery relationships outlined; they detail upper, average and lower recovery curves for gold (Figure 13-6) and silver (Figure 13-7).

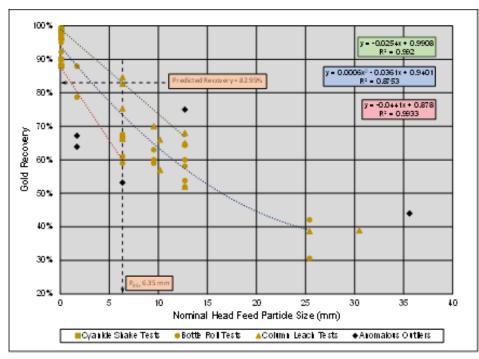


Figure 13-6: Gold Recovery by Cyanide Leaching from Prepared Moss Vein + Stockwork Composites, with Best-Fit Upper, Average and Lower Recovery Trendlines



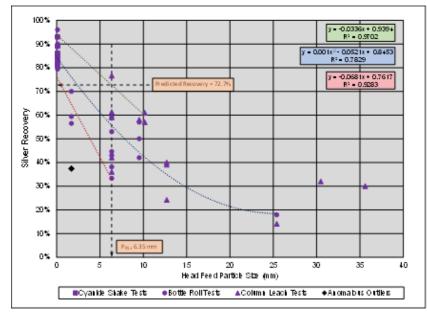


Figure 13-7: Silver Recovery by Cyanide Leaching from Prepared Moss Vein + Stockwork Composites, with Best-Fit Upper, Average and Lower Recovery Trendlines

It can be seen from Figure 13-6 and Figure 13-7 that the upper recovery curves predict recovery rates for  $P_{95+}$  6.35 mm ( $\frac{1}{4}$ ") mineralized material of 82.95% for gold and 70.23% for silver.

## **13.6.1** Recommended Recovery Rates

A gold recovery rate of 82% has been adopted for the feasibility study based on the results of metallurgical testwork and the pilot heap. The gold recovery curve in Figure 13-5 (Section 13.3.2) was used to develop the time-recovery curves in the cash flow models presented in the Financial Analyses.

A silver recovery rate of 65% has likewise been adopted for recovery to a Merrill Crowe circuit. The rate has been discounted from the predicted recovery of 70.23% due to uncertainty in the grade distribution of the material targeted for exploitation during Phase II.

## 13.7 QUALIFIED PERSONS OPINION

The Qualified Person for this section of this Technical Report is Dr. David Stone, P.E. The following interpretation of the Moss Mine Project metallurgical testwork programs represents the opinion of the Qualified Person as regards the overall scope and applicability of the overall database of metallurgical testwork results and the amenability to cyanidation of mineralized material from the Moss deposit.

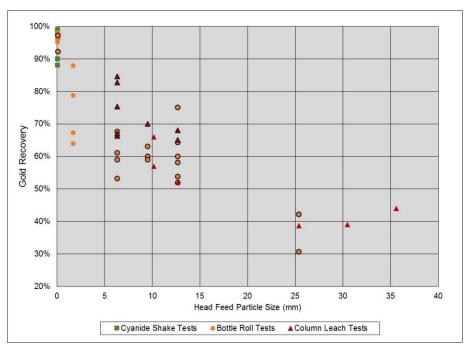
## 13.7.1 Results' Repeatability

Table 13-11 summarizes the recovery rates achieved over the eight metallurgical test programs completed to date. The results of the 18 bottle roll tests on the P100 12.7 mm (1/2") regional, grade and zone composites of KCA's 2011/2012 test program are not included since intermittent rolling (in bottle roll tests) resulted in gold recovery rates that were up to 50% lower, and approximately 30% lower on average, than the recoveries reported for similarly sized material in other test programs. This renders the results unsuitable for consideration in test repeatability. Figure 13-8 and Figure 13-9 are scatter plots of the same data for gold (Figure 13-8) and silver (Figure 13-9). All the data



points are for  $P_{80}$  material, except those with black borders that are for  $P_{85}$  to  $P_{100}$  material, as detailed on Table 13-11.

It may be seen that while there is results variability for each head feed particle size, the overall database of test results reflects a robust repeatability between test types: no test type consistently reports higher or lower results than any other test type. The results for each head feed particle size are instead mixed. In the opinion of the Qualified Person, this confirms the straightforward nature of the metallurgical response of the economic minerals of interest to cyanidation and it identifies that column leach tests are not ideally required to test the metallurgical response of mineralized material from the Moss Vein. Standard bottle roll tests may instead be used.



(compiled from data contained in the metallurgical test program reports cited above)

Figure 13-8: A Scatter Plot of Gold Recoveries by Test Type, Moss Mine Project Metallurgical Programs



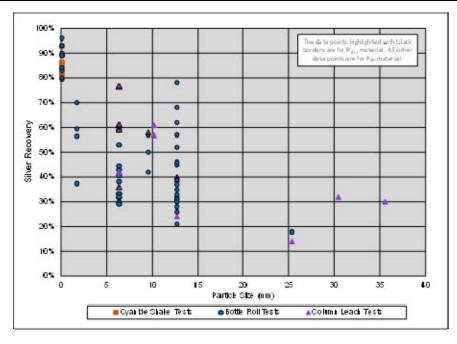


Figure 13-9: A Scatter Plot of Gold Recoveries by Test Type, Moss Mine Project Metallurgical Programs



										Sample	e Size (P <sub>8</sub>	unless o	otherwise	stated)									
Source	Test Type		6 mm .4")	30.48 (1.	3 mm 2″)	25.4 (1	mm ″)		12.7 mm (1/2")	10.16 (2/	5 mm 5″)	9.53 (3/	8″)	6.35 (1/			mm nesh)		i mm mesh)		5 mm nesh)	0.09 (200 i	
	туре	Au (%)	Ag (%)	Au (%)	Ag (%)	Au (%)	Ag (%)	Au (%)	Ag (%)	Au (%)	Ag (%)	Au (%)	Ag (%)	Au (%)	Ag (%)	Au (%)	Ag (%)	Au (%)	Ag (%)	Au (%)	Ag (%)	Au (%)	Ag (%)
McClelland Labs., 1991	BT	-	-	-	-	42.1	-	60.0 75.0 51.9 64.3 53.8 64.6 58.1	- - - - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-
McClelland Labs., 1992	BT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	87.9 78.7	70.0 59.4	-	-	-	-	-	-
Metcon Research, 2008	BT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	63.9 67.2	37.4 56.5	-	-	97.1 92.2	79.4 83.1	-	-
	CT	-	-	-	-	38.7	14.1	52.0	24.2	-	-	-	-	66.3	42.1	-	-	-	-	-	-	-	-
	ST	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	88 90 88 88	82 81 86 93
KCA, 2010	BT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	90 93	93 86
	CT	44	30	39	32	-	-	-	-	66 57	57 61	-	-	-	-	-	-	-	-	-	-	-	-
	ST	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	98 99 99 99	85 84 89 86
KCA, 2011/2012	BT	-	-	-	-	-	-	-	32, 26, 57, 78, 45, 28, 30, 68, 52, 37, 62, 21, 46, 35, 31, 31, 30, 33	-	-	63 60 59	50 57 42	61 67 67	53 59 43	-	-	-	-	-	-	95 96 96 96	89 93 93 96
	CT	-	-	-	-	-	-	65 68	40 39	-	-	70	58	67	59	-	-	-	-	-	-	-	-
KCA, 2012	BT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	96	89	98	90	-	-
McClalland Labor 2010	BT	-	-	-	-	30.6	17.9	-	-	-	-	-	-	53.2 59.0 67.6	38.1 44.6 33.3							96.5 97.3	80.0 84.2
McClelland Labs., 2013	СТ	-	-	-	-	-	-	-	-	-	-	-	-	75.3 84.6 82.7	61.3 76.6 36.0	-	-	-	-	-	-	-	-
McClelland Labs., 2015	BT	-	-	-	-	-	-	-	-	-	-	-	-	57.2 56.5 63.4 61.1 61.1 59.6	29.7 31.7 33.3 32.0 40.5 22.3	-	-	-	-	-	-	-	-

Table 13-11: A Summary of Metal Recovery Rates by Test Type and Head Feed Particle Size, Moss Mine Project

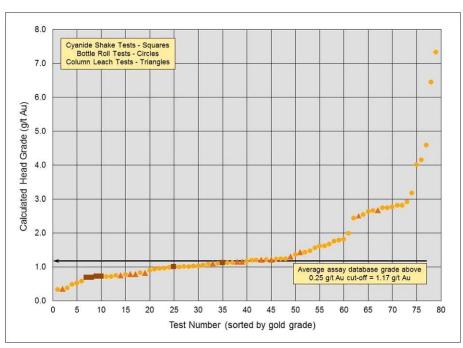
Notes: ST = cyanide shake text, BT = bottle roll test, CT = column leach test All samples  $P_{80}$ , except those highlighted in *GREEN* ( $P_{85}$ ), in *RED* ( $P_{95}$ ) or *PURPLE* ( $P_{100}$ ). The abnormally low Metcon results, highlighted in *ORANGE*, are attributed to the very low cyanide consumption realized during the tests.



## 13.7.2 Metallurgical Test Coverage

## 13.7.2.1 By Grade

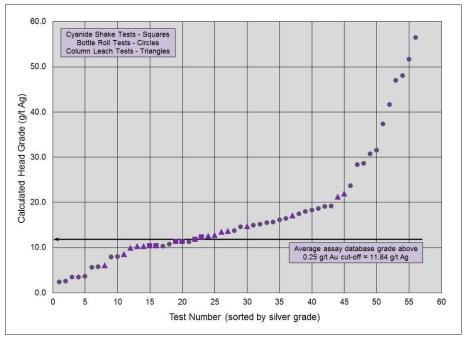
Figure 13-10 and Figure 13-11 summarize the ranges of calculated head grades for gold (Figure 13-10) and silver (Figure 13-11) by test type for each of the cyanide shake-, bottle roll- and column leach-tests carried out over the seven test programs for which data is available. It may be seen that overall, the test series comprehensively covered the range of gold and silver grades available across the Moss deposit.



(compiled and interpreted from data contained in the metallurgical test program reports cited above)

Figure 13-10: A Scatter Plot of the Calculated Gold Head Grades of the Samples and Composites Used for Metallurgical Testing, by Test Type, Moss Mine Project





(compiled and interpreted from data contained in the metallurgical test program reports cited above)

#### Figure 13-11: A Scatter Plot of the Calculated Silver Head Grades of the Samples and Composites Used for Metallurgical Testing, by Test Type, Moss Mine Project

## 13.7.2.2 By Location and Depth

Figure 13-12 is a long-section, looking north, of the Moss Vein and West Vein on which are highlighted the sample intervals used over seven metallurgical test programs that included cyanidation test results. Table 13-12 summarizes the 22 intersecting metallurgical drillhole samples that total 377.50 m in length. A very good distribution of samples is evident across the Moss Vein and within the Phase II pit area hence additional tests to cover the possibility of metallurgical variability along the strike length of the Moss Vein are not required.

The same general conclusions apply as regards the hangingwall and footwall stockworks. Figure 13-13 is a snapshot view of the Moss Vein's hangingwall stockwork on which are highlighted the 30 intersecting, metallurgical drillhole samples that total 452.10 m in length (Table 13-13). Figure 13-14 is a snapshot view of the two, minor Moss Vein footwall stockworks (as defined by the 2014 MRM, looking approximately north on which are highlighted the seven, intersecting metallurgical drillhole samples that total 26.68 m in length (Table 13-14).



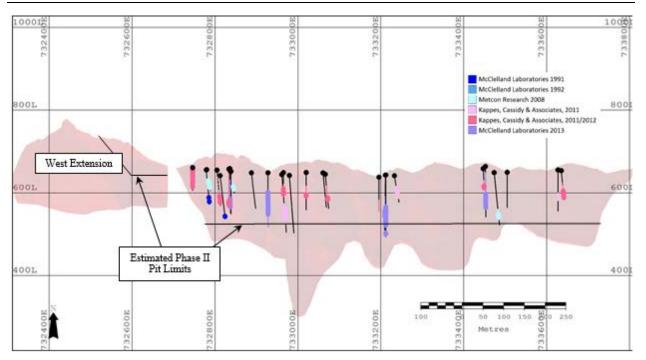


Figure 13-12: A Long-Section Vulcan<sup>®</sup> Snapshot View (looking north) of the Moss Vein and West Vein Showing the Distribution of Metallurgical Test Samples (that are colour-coded by test program)

Table 13-12: A Summary of the Metallurgical Drillhole Samples that Intersect the Moss Vein, Moss Mine Project

Drillhole	Sample Interval Sample		Loct Drogram					
Drillhole	From (m)	To (m)	Length (m)	Test Program				
MM-8	73.15	74.68	1.53					
MM-8	83.82	85.14	1.32	McClelland Laboratories, 1991				
MM-14	108.20	61.89	1.53					
AR-48C	36.26	61.89	25.63					
AR-49C	51.60	61.75	10.15	Metcon Research, 2008				
AR-50C	116.26	125.90	9.64					
AR-51C	88.61	118.74	30.13	Kappes, Cassidy & Associates, 2011				
AR-52C	44.95	56.52	11.57	Rappes, Cassidy & Associates, 2011				
AR-70C	61.57	65.96	4.39					
AR-71C	62.26	68.58	6.32					
AR-72C	78.43	85.95	7.52					
AR-73C	3.05	46.94	43.89	Kappes, Cassidy & Associates,				
AR-74C	68.58	86.56	17.98	2011/2012				
AR-75C	44.70	60.95	16.24					
AR-76C	56.62	75.83	19.21					
AR-77C	46.39	53.34	6.95					
AR-188C	73.83	92.20	18.37					
AR-189C	46.85	100.40	53.55					
AR-190C	86.58	99.97	13.39	McClelland Laboratories, 2013				
AR-191C	66.23	98.91	32.68	IVICCIEIIAITU LADUIALUITES, 2013				
AR-193C	77.19	121.92	44.73					
AR-193C	140.21	142.53	2.32					

(compiled from data contained in the metallurgical test program reports cited above)



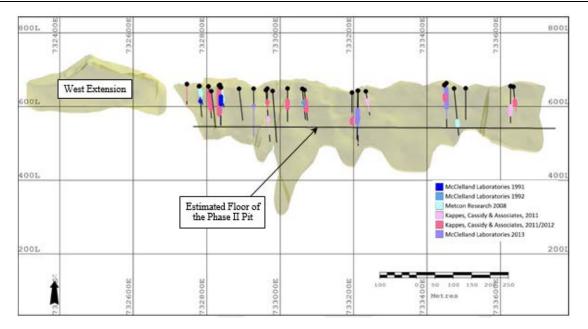


Figure 13-13: A Long-Section Vulcan<sup>®</sup> Snapshot View (looking north) of the Hangingwall Stockworks of the Moss Vein and West Vein Showing the Distribution of Metallurgical Test Samples

Table 13-13: A Summary of the Metallurgical Drillhole Samples that Intersect the Hangingwall Stockwork of
the Moss Vein, Moss Mine Project

Drillhole	Sample In	terval	Sample	Tost Program
DIIIIIOle	From (m)	To (m)	Length (m)	Test Program
MM-1	47.24	48.77	1.53	
MM-2	35.05	38.10	3.05	
MM-2	45.72	47.24	1.52	McClelland Laboratorias, 1001
MM-2	48.77	50.29	1.52	McClelland Laboratories, 1991
MM-2	53.34	56.39	3.05	
MM-8	44.20	45.72	1.52	
MM-14	41.45	42.67	1.22	McClelland Laboratories, 1992
AR-48C	9.14	34.26	25.12	
AR-49C	13.87	50.69	36.82	Metcon Research, 2008
AR-50C	102.11	116.19	14.08	
AR-51C	85.34	88.61	3.27	
AR-52C	35.05	44.81	9.76	Kappes, Cassidy & Associates, 2011
AR-53C	54.86	76.20	21.34	
AR-69C	80.77	90.83	10.06	
AR-70C	38.86	61.57	22.71	
AR-71C	30.48	62.26	31.78	
AR-72C	9.14	78.43	69.29	
AR-74C	18.29	22.86	4.57	
AR-74C	25.91	28.96	3.05	Kappes, Cassidy & Associates,
AR-74C	36.58	39.62	3.04	2011/2012
AR-74C	45.72	47.24	1.52	
AR-74C	53.34	68.58	15.24	
AR-75C	42.67	44.70	2.03	
AR-76C	44.26	56.62	12.35	
AR-77C	32.00	45.87	13.87	
AR-188C	27.13	73.83	46.70	
AR-189C	46.63	46.85	0.22	
AR-190C	51.66	86.58	34.92	McClelland Laboratories, 2013
AR-191C	15.24	66.01	50.77	
AR-193C	71.32	77.19	5.87	
		Total	452.10	



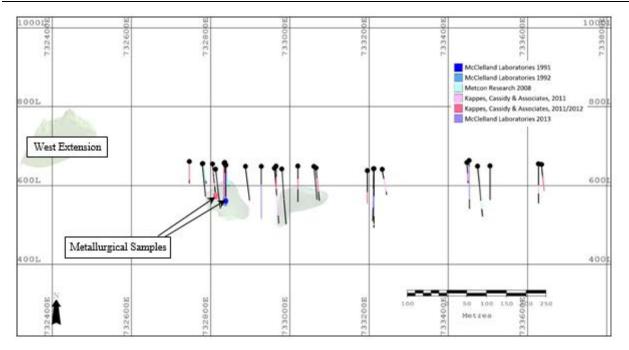


Figure 13-14: A Long-Section Vulcan<sup>®</sup> Snapshot View (looking north) of the Footwall Stockworks of the Moss Vein and West Vein Showing the Distribution of Metallurgical Test Samples (that are colour-coded by test program)

Table 13-14: A Summary of the Metallurgical Drillhole Samples that Intersect the Footwall Stockworks of the
Moss Vein, Moss Mine Project

Drillhole	Sample In	iterval	Sample	Test Program			
Difinitiole	From (m)	To (m)	Length (m)	Test Program			
MM-1	96.01	97.54	1.53	McClelland Laboratories, 1991			
AR-49C	61.75	64.01	2.26	Metcon Research, 2008			
AR-51C	118.87	124.97	6.10	Kappes, Cassidy & Associates, 2011			
AR-70C	65.96	68.58	2.62	Kappes, Cassidy & Associates, 2011/2012			
AR-74C	86.56	92.96	6.40	Rappes, Cassiuy & Associates, 2011/2012			
AR-188C	92.20	100.20	8.00	McClelland Laboratories, 2013			
AR-188C	103.20	104.97	1.77	IVICCIEIIdi la Laboratories, 2015			
		Total	28.68				



#### 14 MINERAL RESOURCE ESTIMATES

The following section is a summary of the information provided in the December 2014 Technical Report filed on SEDAR. The reader is referred to the December 2014 Technical Report for additional details on the mineral resource estimate assumptions, parameters, and methodology used to derive this estimate.

The Qualified Person for this section of the Technical Report is Dr. David Stone, P.E.

#### 14.1 2014 MINERAL RESOURCE

An updated Mineral Resource Estimate (MRE) was reported in a December 30, 2014 Technical Report filed on SEDAR. These were classified under the 2014 CIM Definition Standards for Mineral Resources and Mineral Reserves, by application of a cut-off grade that incorporated mining and metallurgical recovery parameters. The estimated Mineral Resources are constrained to a pit shell based on commodity prices, metallurgical recoveries and operating costs. Long-term metal prices of US\$1,250/oz Au and US\$20.0/oz Ag were applied along with metallurgical recovery rates of 82% for gold and 65% for silver. The 2014 MRE (Table 14-1) was prepared by David Thomas P.Geo and has an Effective Date of October 31, 2014. The reader is referred to the December 2014 Technical Report for a full description of the MRE analysis methodology and assumptions.

Category (0.25 g/t Au Cut-Off)	Tonnes	Au (g/t)	Ag (g/t)	Au (oz)	Ag (oz)	AuEq (g/t)	AuEq (oz)
Measured	4,860,000	0.97	10.4	152,000	1,630,000	1.10	172,000
Indicated	10,620,000	0.66	8.7	225,000	2,980,000	0.77	263,000
Measured + Indicated	15,480,000	0.76	9.3	377,000	4,610,000	0.87	435,000
Inferred	2,180,000	0.55	5.6	38,000	390,000	0.62	43,000

Table 14-1: Moss Mine Project Mineral Resource Estimate by David Thomas, P. Geo.

Footnotes to Mineral Resource statement:

• David Thomas, P.Geo. reviewed the Company's QA/QC programs on the Mineral Resources data. After removing samples with data quality issues, the QP concludes that the collar, survey, assay, and lithology data are adequate to support Mineral Resources estimation.

• Domains were modelled in 3D to separate mineralized rock types from surrounding waste rock. The domains were modelled based on quartz veining and gold grades.

- Raw drillhole assays were composited to 1.52 m lengths broken at domain boundaries.
- Capping of high grades was considered necessary and was completed for each domain on assays prior to compositing.
- Block grades for gold and silver were estimated from the composites using ordinary kriging interpolation into 3 m x 3 m x 3 m blocks coded by domain.

A dry bulk density of 2.51 g/cm<sup>3</sup> was used for material with a depth less than 12 m from surface. A dry bulk density of 2.58 g/cm<sup>3</sup> was used for all other material. The dry bulk densities are based on 506 specific gravity measurements.

- Blocks were classified as Measured, Indicated and Inferred in accordance with CIM Definition Standards 2014. Inferred resources are classified on the basis of blocks falling within the mineralized domain wireframes (i.e. reasonable assumption of grade/geological continuity) with a maximum distance of 100 m to the closest composite. Indicated resources are classified based on a drillhole spacing of 50 m. Measured resources are classified based on a 25 m x 12.5 m drillhole spacing.
- The Mineral Resource estimate is constrained within an optimized pit with a maximum slope angle of 65°.
- Metal prices of \$1,250/oz and \$20.0/oz were used for gold and silver, respectively.
- Metallurgical recoveries of 82% for gold and 65% for silver were applied.
- A 0.25 g/t gold cut-off was estimated based on a total process and G&A operating cost of \$6.97/t of mineralized material mined.
- The contained gold and silver figures shown are in situ. No assurance can be given that the estimated quantities will be produced. All figures have been rounded to reflect accuracy and to comply with securities regulatory requirements. Summations within the tables may not agree due to rounding.
- Mineral Resources which are not Mineral Reserves do not have demonstrated economic viability. The estimate of mineral resources may be materially
  affected by environmental, permitting, legal, title, taxation, sociopolitical, marketing, or other relevant issues.
- The quantity and grade of reported inferred resources in this estimation are conceptual in nature and there has been insufficient exploration to define these inferred resources as an indicated or measured mineral resource and it is uncertain if further exploration will result in upgrading them to an indicated or measured mineral resource category.
- The gold equivalent ("AuEq") grades and ounces stated on Table 14-1 were determined by applying the following formulae: Factor A (gold) = 1/1.10346 x metallurgical recovery (82%) x smelter recovery (99%) x refinery recovery (99%) x unit Au price (US\$1,250/oz): Factor B (silver) = 1 /1.10346 x metallurgical recovery (65%) x smelter recovery (98%) x refinery recovery (99%) x unit Ag price (US\$20.0/oz) and AuEq = Au grade + (Ag grade x [Factor B / Factor A])



## 14.2 FACTORS THAT MAY AFFECT THE MINERAL RESOURCE ESTIMATE

Areas of uncertainty that may materially impact the Mineral Resource estimate include:

- the applied, long-term commodity price and exchange rate assumptions;
- the operating cost assumptions;
- the applied metallurgical recovery rates and any changes that might result from additional metallurgical testwork;
- changes to the tonnage and grade estimates as a result of new assay and bulk density information;
- future tonnage and grade estimates may vary significantly as more drilling is completed;
- permitting of mining operations on land which is not registered as a patented lode claim; and
- any changes to the slope angle of the pit walls as a result of geotechnical information would affect the pit shell used to constrain the Mineral Resources.

## 14.3 QUALIFIED PERSON'S OPINION

The Qualified Person is of the opinion that the Mineral Resources for the Moss Mine Project have been performed to best industry practices and conform to the requirements of CIM 2014 Definition Standards for Mineral Resources and Mineral Reserves. The Mineral Resource estimate is well-constrained by three-dimensional wireframes representing geologically realistic volumes of mineralization.

Exploratory data analysis conducted on assays and composites shows that the wireframes are suitable domains for Mineral Resource estimation. Grade estimation has been performed using an interpolation plan designed to minimize bias in the average grade and to provide grade estimates with a variance approximating those predicted from the variograms models and using an SMU of 6 m x 6 m.

It is concluded as a result of validation of the Mineral Resource block model that:

- visual inspection of block grade versus composited data shows a good reproduction of the data by the model;
- checks for global bias in the grade estimates show differences generally within acceptable levels (less than 10%). Domains with larger differences between the nearest-neighbour and ordinary kriging models either have a low number of composites or are those with drilling oblique to the trend of the mineralization (the nearest-neighbour model therefore does not provide a robust reference for validation);
- checks for global bias in the grade estimates on Measured and Indicated blocks show differences within acceptable levels (less than 5%);
- checks for local bias (swath plots) indicate good agreement for all variables, except in areas where there is significant extrapolation beyond the drillholes;
- a check on grade smoothing (model selectivity) for potential open pit mining using a global change-ofsupport correction shows that the amount of smoothing is acceptable around the cut-off grades of interest and are generally less than 5%;
- the impact of capping as assessed by estimating uncapped and capped grade models generally the amounts of metal removed by capping in the models are consistent with the amounts calculated during the grade capping study on the composites;



- the Mineral Resources were classified using confidence intervals scaled to volumes of production relevant to the Moss Mine Project;
- the Mineral Resources are constrained and reported using economic and technical criteria such that the Mineral Resources have reasonable prospects of economic extraction; and
- the Mineral Resources are not highly sensitive to changes in cut-off grade and is therefore not sensitive to small to moderate changes (increases or decreases) in the gold price.



## 15 MINERAL RESERVE ESTIMATES

A mineral resource estimate was prepared in advance of the feasibility as reported in Section 14 above. The mineral resources incorporated into this study have not been changed and the reserve estimate herein is based on the same geological model and the same block model. The Qualified Person for the mineral reserve estimate is Scott Allan Britton, Mining Engineer, CEng, SAB Mining Consultants Ltd.

### 15.1 MINERAL RESERVE CLASSIFICATION

Mineral reserves are subdivided in order of increasing confidence into probable mineral reserves and proven mineral reserves. A probable mineral reserve has a lower level of confidence than a proven mineral reserve.

The reserves for the Moss Project are in both the proven and probable categories. Measured Resources (converted to Proven Reserves) are based on a drill grid with a minimum spacing of 25m x 25m. Indicated Resources (converted to Probable Reserves) are based on a drill grid with a minimum spacing of 50m x 50m

The mineral reserves for the Moss Project were developed by applying the relevant economic and design criteria to the resource model in order to define the economically extractable portions of the resource. The reserve categories herein are in accordance with Canadian Institute of Mining and Metallurgy Definition Standards dated May 2014.

### 15.2 PIT OPTIMIZATION METHODOLOGY

The open pit mine design is based on conventional Lerchs-Grossman (LG) techniques to establish guides to mineable shapes within the mineral resource block model. The block model was imported into Maptek's Vulcan<sup>™</sup> pit optimization software for final analysis. Pit optimization software is an industry standard practice used worldwide to assist in the development of open pit mine planning. The Maptek Vulcan<sup>™</sup> program uses a series of economic constraints as well as slope angle limitations and ore recoveries to establish the most economic mining envelope possible. Maptek Vulcan<sup>™</sup> optimization is an iterative process using costs developed during previous studies, refined to be as accurate as possible.

Although a detailed description of the optimization methodology is beyond the scope of this report, the following section provides a brief summary. The optimization process can be divided into two processes, as follows:

- Creation of a range of nested pit shells of increasing size achieved by varying the product price and generating a pit shell at each price point; and
- Selection of the optimal pit shell by generating various production schedules for each pit shell and calculating the NPV for each schedule, the output of this process being a series of "pit versus value" curves.



The pit optimization input parameters used for this study are detailed in Table 15-1 below.

Parameter	Unit	Value						
Base Currency		USD						
Discount Rate	(%)	8.00%						
Commodity Price (Au)								
Ounce Conversion to Grams	constant	31.10348						
Gold Price - Base Case	(USD/oz)	1250.00						
Royalty	(%)	3.00%						
Net Gold Price	(USD/oz)	1212.50						
Selling Cost	(USD/oz)	5.00						
Commodity Price (Ag)								
Ounce Conversion to Grams	constant	31.10348						
Silver Price - Base Case	(USD/oz)	18.50						
Royalty	(%)	3.00%						
Net Silver Price	(USD/oz)	17.95						
Selling Cost	(USD/oz)	0.00						
Mining Block Model Dimension	ons							
Block Model Name		moss20150318.bmf						
Origin	X(m), Y(m), Z(m)	732250, 3886560, 297						
Extent	X(m), Y(m), Z(m)	1599, 495, 510						
Block Size	X(m) * Y(m) * Z(m)	3.0 * 3.0 * 3.0						
Geotechnical Design Parame	ters							
Overall Slope Angle	(deg)	65.0						
Mining Factors								
Dilution	(%)	5.00%						
Diluent Grade	(g/t)	0.00						
Ore Loss	(%)	5.00%						
Mining Operating Cost								
Steady State Mining Cost	(USD/tonne)	2.75						
Rehabilitation Provisions	(USD/tonne mined)	0.10						
Plant Parameters								
Processing Recovery - Au	%	82.0						
Processing Recovery - Ag	%	65.0						
Recovery to Doré	%	99.0						
Refinery Recovery	%	99.0						
Plant Operating Cost	Plant Operating Cost							
Total Processing Cost	USD/t ROM ore	5.36						
General & Admin Costs (G&A)								
Mining G&A	USD/t ROM ore	1.43						
Plant G&A	USD/t ROM ore	1.12						

In addition to the optimization parameters detailed in Table 15-1 the pit optimization envelope was further confined to ensure all excavations remain within the defined patent claim boundaries. In the end the pit shell with the maximum



value was not selected due to the space constraints of the patented land boundaries. Furthermore, the mining limits for the western portion of the deposit were further constrained by the steep terrain.

# 15.3 GEOTECHNICAL PARAMETERS FOR PIT DESIGN

The geotechnical parameters incorporated into the final pit shells are discussed in Section 16.2 below.

## 15.4 ULTIMATE PIT DESIGN

The ultimate pit design is based on the optimum pit shell and the geotechnical parameters. Additionally, the pit is designed to meet the space constraints within the patented land boundaries. The combined pit design parameters are summarized in Table 15-2 below. The resulting pit design is shown in Figure 15-1 below.

-	
Description	Value
Bench Heights	6m
Bench Angles	82°
Bench Angles (weathered hangingwall rock)	50°
Berm Width	3m
Stack Height	36m
Stack Angles	65°
Stack Angles (weathered hangingwall rock)	40°
Catch Berm	6m
Haul Road Gradient	10%
Haul Road Width	10m

 Table 15-2: Moss Pit Design Parameters

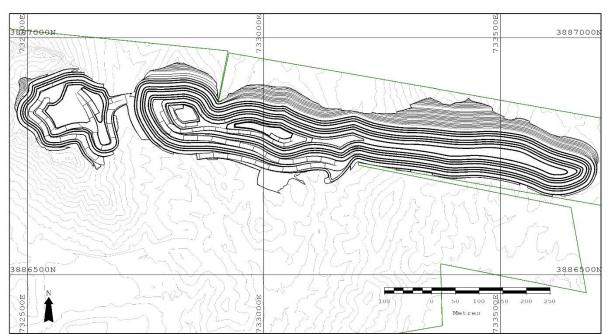


Figure 15-1: Plan view of the Moss Pit Design



### 15.5 COMPLIANCE WITH THE PIT OPTIMIZATION LIMITS

The optimal LG shell represents the mining limits which return the highest NPV based on the supplied input parameters which are assessed in conjunction with the production targets. However, the resultant mining envelope is not practical to mine as there are no access ramps or consideration for other surface constraints. When the optimal shell is converted into a practical pit, the NPV of the resultant pit is expected to be lower because of the extra waste that will have to be mined to make room for access ramps. Furthermore, additional surface constraints impact on the maximum depths achievable within the pit resulting in some ore loss. It is however important that the difference in volumes and overall value is kept at a minimum. Table 15-3 below shows a comparison between the ultimate pit design content (Measured & Indicated material above an in-situ cut-off grade of 0.25 g/t) and the optimal LG shell.

	Unit	Ultimate Pit Design	Optimal LG Pit Envelope	% Variance
In-situ Ore	tonnes	7,519,000	8,532,000	-13%
Au Metal Content	ounces	217,600	246,000	-13%
Au Ore Grade	g/t	0.90	0.90	+0%
Ag Metal Content	ounces	2,441,600	2,795,000	-14%
Ag Ore Grade	g/t	10.10	10.19	-1%
Total Waste	tonnes	13,439,000	11,200,000	+17%
Stripping Ratio		1.79	1.31	+27%
Total Tonnes	tonnes	20,958,000	19,732,000	+6%

### Table 15-3: Comparison Between Ultimate Pit Design and Optimal Pit Shell

As indicated above, there is a 17% increase in the total waste and a decrease of 13% in the in-situ ore tonnes at similar metal grades. This results in a net increase in stripping ratio from 1.31 to 1.79. The results also indicate a decrease in the metal contained. It is important to note that the un-mined ore within the optimization envelope lies predominantly at the base of the ultimate pit. Generally, there is a reasonable correlation between the optimal pit shell and ultimate pit design for a project of this magnitude.

### 15.6 CUT-OFF GRADE CALCULATION

The method employed for classifying material mined as ore and waste should not be confused with the method for establishing the limits of mining. If a block of material falls inside the optimized mining limits then the question is not whether to mine the block but whether to process the material. This study is based on the assumption that a block of material should be processed if the income derived from the sale of product covers at least the cost of processing. The marginal cut-off grade is therefore the grade at which the income from the sale of product is equal to or more than the cost of processing. Cut-off grades are calculated on a break-even basis and the approach assumes the cost of mining material out of the pit to the waste dump is a sunk cost as it is intrinsic to the mining process, regardless of whether the material is ore or waste. The assessment of whether material is ore or waste occurs once it has been removed from the pit. Similarly, capital is a once-off cost that is not applicable to the instantaneous evaluation of a tonne of material to determine its classification. The break-even cut-off grade determines whether a tonne of material is ore on the basis that the revenue generated has to be greater or equal to the additional cost of that tonne processed through the plant. The marginal cut-off grade is therefore the grade at which the income from the sale of product is equal to or more than the cost of processing. The marginal break-even cut-off grade for ore is calculated as follows:



Where:

$$Cut - off Grade = \frac{Total Cost of Processing ($/t)}{\{Net Price (USD/g) * Processing Recovery (\%)\}}$$

Total cost of processing includes the incremental cost of mining ore as opposed to mining waste;

Net price includes an average royalty of 3% and a selling cost of USD \$5.00/oz; and processing recovery of 82% for gold.

The cut-off grades calculated are summarized in Table 15-4 along with the relevant input parameters.

Item	Unit	Value
Processing Cost	USD/tonne	7.65
Incremental Ore Cost	USD/tonne	0.17
Total Cost of Ore	USD/tonne	7.82
Au Price	USD/oz	1250
Au Price	USD/g	40.19
Au Selling Cost	USD/oz	5.00
Au Selling Cost	USD/g	0.16
Royalty	%	3
Net Price	USD/g	38.82
Au Recovery	%	82.0
Au Cut-off Grade	g/t	0.25

Table 15-4: Cut-off Grade Calculation Parameters

# 15.7 MINERAL RESERVES

### **15.7.1** Comparison with In-situ Mineral Resources

The mineral reserves for the project were developed using in-situ available mineral resources which were defined inside an estimate economic envelope at 0.25 g/t Au cut-off grade, as detailed within the December 2014 Technical Report. In accordance with the guidelines of NI 43-101 on Standards of Disclosure for Mineral Projects, only those blocks classified as Measured and Indicated are to be considered for a feasibility level study. Inferred resource blocks are assumed to have no economic value and are defined as waste.

The progression from available mineral resources to mineable mineral reserves (i.e. from the ultimate pit design) are detailed in Table 15-5.

Category	Mineral Resource Estimate			Mineral Reserve Estimate		
(0.25 g/t Au Cut-Off)	Tonnage	Au (g/t)	Ag (g/t)	Tonnage	Au (g/t)	Ag (g/t)
Measured	4,860,000	0.97	10.4	4,217,000	1.00	10.50
Indicated	10,620,000	0.66	8.7	3,302,000	0.79	9.68
Measured + Indicated	15,480,000	0.76	9.3	7,519,000	0.91	10.14
Inferred	2,180,000	0.55	5.6			

Table 15-5: Comparison of Mineral Resources against Mineral Reserves



It can be seen that the reserves outlined above are approximately 50% of the resources outlined in Section 14. This is a direct consequence of limiting the project development to be constrained within the patented land boundaries. The reserve pit is therefore not defined by mine economics. The majority of mineral resources defined within the measured category have been converted to mineral reserves and the remaining resources are still available and could be analyzed as part of any mine life extension studies.

# 15.7.2 Low Grade Ore

In addition to the mineral reserves quantified using the in-situ 0.25g/t Au cut-off, additional low grade ore has been identified at an in-situ 0.20g/t Au cut-off. Analysis of this low grade ore has demonstrated that, at a grade above 0.2 g/t Au, this material can be processed at profit when the value of silver is considered. As a result it has been deemed viable to stockpile low grade material for use to sustain full processing capacity when insufficient ore is available within the pit towards the end of the mine life. The in-situ quantities of low grade ore within the final pit design are detailed in Table 15-6.

Category (0.20 g/t Au Cut-Off)	Tonnage	Au (g/t)	Ag (g/t)	Au (oz)	Ag (oz)	AuEq (g/t)	AuEq (oz)
Measured	252,000	0.23	3.13	1,860	25,360	0.27	2,190
Indicated	210,000	0.23	3.73	1,550	25,180	0.27	1,820
Measured + Indicated	462,000	0.23	3.4	3,420	50,500	0.27	4,010

# Table 15-6: Low Grade Ore Within the Ultimate Pit

# **15.7.3** Additional ROM remaining from the Moss Phase 1 operations

Table 15-7 details the quantities of unprocessed ore stockpiles remaining from the Moss Phase 1 Operations carried out in 2013. Information relating to the volumetric measurement, density estimation and grade sampling are detailed in an internal company report.

Existing Stockpiles	Au	Ag	Tonnes	Au (oz)	Ag (oz)	AuEq (g/t)	AuEq (oz)
High Grade Stockpile	2.126	29.99	1,922	130	1,850	2.47	150
Low Grade Stockpile	0.854	10.70	23,913	660	8,230	0.98	750
Waste Dump*	0.654	6.49	36,130	760	7,540	0.73	850
Total	0.777	8.84	61,965	1,550	17,620	0.88	1,750

### Table 15-7: Moss Phase 1 Stockpiles

It should be noted that material defined as waste during the mining of Phase 1 has an average Au grade which exceeds the Phase II cut-off. This material can therefore be considered as a viable ROM stockpile for processing during Phase II and considered to be Proven Mineral Reserves.

# 15.7.4 Adjustment for Mining Losses and Dilution

The pit design is based on conventional open pit mining methods utilizing tried and tested equipment. Drilling blast holes will be carried out by suitable open pit drill rigs. Drill chippings will be sampled for grade control purposes and smaller benches (2 m or 3 m flitches) will be designed at ore/waste interfaces to minimize dilution and ore losses as required. Based on this mining strategy an in-pit recovery of 95% has been defined for the project. Additionally, a mining dilution rate of 5% (with diluent grade assigned a value of 0 g/t) has also been identified as a reasonable assumption. This assumption is based on the typical dilution rates achieved at similar mining operations.



#### 15.8 MINERAL RESERVE STATEMENT

Table 15-8 defines the total tonnes and grades within the ultimate pit design when the in-situ quantities are adjusted for mining losses and dilution.

Material	Category	ROM (kT)	Diluted Au (g/t)	Diluted Ag (g/t)	Contained Au (oz)	Contained Ag (oz)	Diluted AuEq (g/t)	Contained AuEq (oz)
<b>D</b> .	Proven	4,208	0.948	9.990	128,260	1,351,550	1.064	143,950
Primary Ore	Probable	3,304	0.754	9.22	80,090	979,400	0.861	91,460
Ole	Combined	7,512	0.863	9.65	208,350	2,330,950	0.975	235,410
	Proven	251	0.215	2.98	1,740	24,050	0.25	2,020
Low Grade Ore	Probable	210	0.216	3.55	1,460	23,970	0.257	1,740
OIE	Combined	461	0.216	3.24	3,200	48,020	0.254	3,760
Stockpiles	Proven	62	0.777	8.84	1,550	17,620	0.880	1,750
ALL	Combined	8,035	0.825	9.28	213,100	2,396,590	0.933	240,920

Table 15-8: Total Mineral Reserves, Effective Date M	May 2015
--	----------

The Mineral Reserve estimate is constrained within a pit-constrained LG pit with maximum slope angles of 65°. Metal prices of US\$1,250/oz and US\$18.50/oz were used for gold and silver respectively. Metallurgical recoveries of 82% for gold and 65% for silver were applied.

• A variable gold cut-off was estimated based on a mining cost of US\$2.75/t mined, and a total process and G&A operating cost of US\$6.48/t of ore mined. Primary ore is based on a cut-off of 0.25 g/t Au, and low grade ore is based on a cut-off of 0.2 g/t Au.

The gold equivalent ("AuEq") formulae, applied for purposes of estimating AuEq grades and ounces, are as follows:

- Factor A (gold) = 1 / 31.10346 x metallurgical recovery (82%) x smelter recovery (99%) x refinery recovery (99%) x unit Au price (US\$1,250 / oz)
- Factor B (silver) = 1 / 31.10346 x metallurgical recovery (65%) x smelter recovery (98%) x refinery recovery (99%) x unit Ag price (US\$18.50 / oz)
- AuEq grade = Au grade + (Ag grade x [Factor B / Factor A])
- AuEq ounces = (AuEq grade x material tonnes)/31.10346
- All figures have been rounded to reflect accuracy and to comply with securities regulatory requirements. Summations within the tables may not agree due to rounding.
- The Mineral Reserves were defined in accordance with CIM Definition Standards dated May 10, 2014.
- The Measured and Indicated Resources are inclusive of those Mineral Resources modified to produce the Mineral Reserves.
- Tonnages listed (ROM) are in millions of tonnes ("MT").

### 15.9 FACTORS THAT MAY AFFECT THE MINERAL RESERVE ESTIMATE

Areas of uncertainty that may materially impact the Mineral Reserve estimate include:

- the applied, long-term commodity price and exchange rate assumptions;
- the operating cost assumptions, in particular labor costs and fuel costs;
- the applied metallurgical recovery rates and any changes that might result from additional metallurgical testwork;
- additional dilution during mining will lower the overall head grade of the leached material
- permitting of mining operations on land which is not registered as a patented lode claim; and
- any changes to the slope angle of the pit walls as a result of geotechnical information would affect the pit shell used to constrain the Mineral Reserves.



### 15.10 QUALIFIED PERSON'S OPINION

The Qualified Person is of the opinion that the Mineral Reserves for the Moss Mine Project have been performed to best industry practices and conform to the requirements of CIM 2014 Definition Standards for Mineral Resources and Mineral Reserves.



## 16 MINING METHODS

The Qualified Person for this section of the Technical Report is Dr. David Stone, P.E.

### 16.1 OVERVIEW

Exploitation of the mineral reserves in the Moss vein and adjacent stockworks on the patented lands will be by open pit mining methods with a conventional drill-blast-load-haul mining fleet. All of the mining will be carried out by a contract miner for the full 5 years of the mine life. A schematic view of the mining is shown in Figure 16-1.

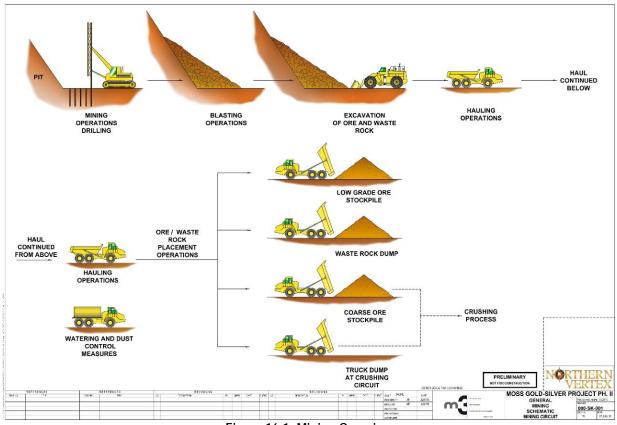


Figure 16-1: Mining Overview

### 16.2 GEOTECHNICAL ANALYSIS

# 16.2.1 Available Data

The Moss open pit was the subject of several geotechnical investigations prior to the feasibility study. These studies included:

- Geotechnical core logging by Black Eagle Consulting on 10 exploration drill holes in 2011. The geotechnical logs included a Rock Quality Designation (RQD) and Rock Mass Ratings (RMR). These holes are located mainly in the Phase I open pit and relate to rock stability evaluations for Phase I.
- Phase I Geotechnical Study by CDM Smith dated April 16, 2013. This study included additional geotechnical logging on selected sections of oriented core (holes AR-172C to AR-186C), uniaxial compression testing, direct shear testing, kinematic analyses and pit slope stability evaluations with PHASES. Again this work was focused on the Phase I pit.



- Additional geotechnical logging was carried out in 2014 on holes AR-187C, AR192C and AR-194C. This included core orientations and RQD measurements in the Phase II pit area.
- Property wide surface structural mapping of exposed bedrock. However most of this data was focused on Moss Vein and very little joint structure data was collected.
- Underground structural mapping of the adits at the Moss site which provides additional structural data in the Phase I pit area, primarily on the hangingwall.
- Groundwater measurements in standpipes in exploration holes, and water wells drilled on the property.
- Groundwater flow measurements in groundwater wells and in airlift testing in exploration drill holes.

## 16.2.2 Groundwater

Static water levels have been modelled in 3-dimensions from water levels encountered in the exploration drill holes and groundwater wells across the site. The model shows a static water level of around 625 m elevation, rising to the west as you approach the west pit, and also rising to the east as you approach the Silver Creek wash. This model infers that the upper 25 to 50 m of benches will be dry, after which pit dewatering may be required to ensure a dry pit and stable pit walls.

Based on the hydrogeological investigations conducted at the Moss site during the feasibility, the average hydraulic conductivity of the rock mass is estimated to be  $4 \times 10^{-6}$  m/s. The average inflows into the pit during the 5 year mine life are estimated to be in the order of 30 gpm. Of course these inflows are expected to vary as the pit is deepened, and with the seasonal changes in temperature and precipitation.

## 16.2.3 Rock Mass Characterization

The quartz monzonite host rocks that dominate the Moss pit have been characterized in terms of their intact rock strength, degree of fracture, and their overall rock mass rating. Based on the information available, the monzonite rock mass at the Moss Project can be characterized as being at least "fair" to "good" quality in the hangingwall, "good" quality or better in the footwall, relatively massive (RQD > 70), and strong (UCS > 100 MPa) at depth, except:

- At the contacts with the Moss Vein where it is seen to be typically shattered and in many cases sheared.
- In the upper 20 m where the monzonites are typically more weathered and highly fractured.

The following two Figures provide a visual characterization of the rock quality at Moss.



## Moss Gold-Silver Project Form 43-101F1 Technical Report



These photos show a transition to massive fresh monzonite within a few feet of the Moss Vein footwall. Figure 16-2: Core photographs from AR-181



## Moss Gold-Silver Project Form 43-101F1 Technical Report



This drill hole is entirely in the hangingwall and shows a transition to massive fresh monzonite at 49 ft. **Figure 16-3: Core photographs from AR-184** 

# 16.2.4 Pit Domains

Typically an open pit is divided into domains of similar geology and rock quality in order to develop specific recommendations tied to each domain.

In the case of the Moss pit, the geology and rock quality appears to be uniform throughout the pit shell, however the relative attitudes in the structural geology will vary from the hangingwall (south) side of the pit to the footwall (north) side of the pit. Hence two domains have been defined: the south wall, and the north wall. These two domains are also distinct for other reasons:

- The south pit wall stability is key to maintaining stability in the adjacent waste dump.
- Both the south and north walls will be mined to within a few meters of the patented boundaries.

The two end walls on the western and eastern limits of the main pit will expose the Moss Vein trace but these walls have been excluded from the recommendations herein due to their relatively small size and limited impact. The pit domains are summarized on Table 16-1.

Domain	Location	Max. Height	Geology	<b>Dip Direction</b>
	south wall	75m	monzonite	007
II	north wall	140m	monzonite	187
	west wall	140m	monzonite with Moss Vein	varies
IV	east wall	100m	monzonite with Moss Vein	varies

#### Table 16-1: Pit Domains



### **16.2.5** Kinematic Analysis

Kinematic analyses methods are used to assess structurally controlled failures in a rock mass. Three failure mechanisms are typically assessed: wedge failures, planar failures, and toppling failures. The kinematic analyses were conducted with a proprietary program called DIPS, Version 6.0.

The analyses are conducted on the datasets from mapping and core orientations. The structural database for the Moss project includes:

- Property wide structural mapping of surface outcrops 225 poles
- Underground structural mapping in the Moss adits 159 poles
- Bench face structural mapping in the Phase I open pit 51 poles
- The 2013 oriented core measurements which spanned the strike length of the Phase II Moss open pit. The oriented core measurements included logging of selected core runs in the hangingwall, footwall and Moss Vein structure 1517 poles

#### 16.2.5.1 Principal Structural Trends

The principal structural orientations in the datasets have been assessed by plotted each dataset separately onto a stereonet. These datasets include all the measurements which are a mix of the footwall, hangingwall, and Moss Vein. The results are depicted as contoured pole plots.

The results for the three datasets are similar and show 2 steeply dipping orthogonal joint sets – one being a northsouth joint set, and the other being an east-west joint set. However the relative orientation of these sets appears to be rotated when comparing the different data sources. This may either indicate a rotation in the field due to a tectonic warping of structures across the project site, or it may be due to differences in the mapping and compass settings.

The principal trends are shown in Table 16-2.

	Phase I Pit	Surface Mapping	Adit Mapping
Joint Set 1	77/272		83/93
Joint Set 2		68/194	77/182
Joint Set 3	83/113	88/101	75/118
Joint Set 4	87/55		88/31
Joint Set 5		50/357	

Table 16-2: Principal Structural Trends

The surface mapping dataset incorporates data from all over the patented claims, and some data off the patented claims. The surface mapping is more representative of the eastern part of the Moss pit due to spatial distribution of this data, whereas the Phase I pit mapping and adit data are representative of the western part of the main Moss pit.

Joint Set 1 and Joint Set 3 appear to be related (sub-parallel) and may be the same joint set even though they appear as distinct sets on the stereonets. These sets are related to, and subparallel to, the regional north-south fault structures that cross cut the pit. A photograph showing these structures is shown on Figure 16-4. From the photograph it can be seen that these joints are persistent and are closely spaced near surface. The Phase I pit wall is shown on Figure 16-5.





Figure 16-4: Steeply dipping joint sets in the Phase I pit wall that parallel regional fault structures



Figure 16-5: Existing Phase I pit wall showing footwall trace of Moss Vein



#### Moss Gold-Silver Project Form 43-101F1 Technical Report

Joint Set 2 represents an orthogonal set that is near parallel to the north and south pit walls and is likely related to the shear that is the Moss Vein. This joint set is only notable in the surface mapping and adit mapping data and appears to be absent in the Phase I pit mapping data. However as was noted in Section 3.1 above, the surface mapping was focused on the Moss Vein and associated structures and did not pick up any rock mass jointing hence the data is somewhat biased to Set 2.

Joint Set 4 appears to be a rotation of Set 2 in the Phase I pit area. This same set is visible in the adit mapping data.

Joint Set 5 is an anomalous set not visit in the other data and is likely related to the Moss Vein structure as it is parallel the Moss Vein.

#### 16.2.5.2 Wedge Analysis

The risk of multi-bench and bench scale failures has been assessed by stereographic analysis of the Phase I pit mapping data and surface mapping data. The results are summarized in Table 16-3.

Key Sets <sup>1</sup>	Occurrence <sup>2</sup>	Wedge Orient. <sup>3</sup>	Daylight Sector	Stability Impact
J1/J2	Major/major	68/194		Stable – only in Moss Vein
J1/J3	Major/major	77/272	I	Stable for inter-ramp – low volume wedges on benches
J2/J3	minor	83/93		Stable – only in Moss Vein
J1/J5	minor	50/357		Stable – steep dipping

### Table 16-3: Wedge Analysis

1. Key sets from principal structural trends

2. Occurrence refers to major joint sets, minor joint sets

3. Wedge orientation refers to trend and plunge of line of intersection

The results do not show any significant risk for wedge failures in either the north or south walls.

The vast majority of wedges are steeply dipping due to the steep orientation of the principal structural trends. The two most significant principal trends (J1+J3) are sub-parallel hence do not pose a risk for large volume wedges and would likely be contained on a single bench. The persistence and spacing of the joint sets that make up this wedge are known to decrease dramatically with depth hence it is anticipated that these wedges will only occur on the first one or two benches.

### 16.2.5.3 Planar Analysis

The planar failure analyses did not pinpoint any significant risks. In summary the data shows:

- The surface mapping shows a significant set of planar structures daylighting out of the north wall at dip angles below about 40 degrees. At this dip angle these structures are not thought to pose a risk. The Phase I pit mapping data did not identify these structures hence they may be more concentrated to the east.
- The surface mapping for the south wall likewise shows a very minor planar set that appears to be orthogonal to the set that dips out of the north wall. This set is also missing from the Phase I pit data, and appears to be very minor in occurrence.

### 16.2.5.4 Toppling Analysis

There are no adverse orientations that would create toppling style failures in the Moss pit.



### 16.2.6 Summary

In summary, the proposed 65 degree inter-ramp slopes and 82 degree bench faces are expected to be stable in the hot and dry environment at Moss. The currently proposed geotechnical (slope) profile for the Moss pit is a result of many factors including:

- The short mine life which means that the catch benches can be narrower since they do not have to be wide enough to allow equipment to clean them.
- An expected dry pit except during extreme weather events.
- The lack of a freeze/thaw environment which can lead to ice-jacking failures of rock wedges, ice buildup on the pit walls, and rockfalls during spring melt.

### 16.3 OPEN PIT DESIGN

The objective of the pit design process was to transform the pit shells obtained from the optimization into a practical pit, with the inclusion of ramps, bench and berm configurations by taking all the required inputs into account. The practical pit design forms part of a critical input for the scheduling and conversion of resources into reserves. The Maptek Vulcan<sup>™</sup> pit optimization outputs, the design criteria and geotechnical constraints were used as input parameters in order to design the practical final pit. Pushbacks were based on the interim selected pit shells and designed using the recommended geotechnical parameters and pit design criteria derived from the equipment strategy as well as current best practices. The designs were created using the Maptek Vulcan<sup>™</sup> mining software.

Two important considerations for the pit design were the pushback strategy and the positioning of the access ramps. The optimization exercise has indicated that improved value can be generated for this project through an optimum extraction sequence. The starting point of an optimum scheduling sequence is an informed decision regarding pushbacks. Several interim pit shells as well as the ultimate pit limit were used as a basis for the practical pit and pushback designs.

The pit optimization exercise resulted in a selection of six lower revenue factor shells, the combination of which provide an optimum extraction sequence, which ensures that grade to the mill is maximized in the early years and waste stripping is deferred as far as possible into the future. The selected shells provided some guidance towards the location of interim stage designs.

It should be emphasized that the Moss open pit does not require any pre-stripping as the Moss vein is exposed over the full strike length of the proposed pit shell.

### 16.4 BENCH HEIGHT AND MINING DIRECTION

The decision regarding the bench height takes into account the geometry of the ore body, the required mining rate, and equipment type and size. Under these considerations the drilling and blasting in ore and selective waste will be carried out in 6 m benches and mined selectively either in a single 6 m flitch or split into smaller flitches where necessary on ore contacts. Bulk waste benches will be blasted and loaded in 6 m benches. To reduce dilution, mining of ore and selective waste will start at the hanging wall and proceed towards the foot wall. Furthermore, ore will generally be mined during daylight hours.

### 16.5 HAUL ROAD DESIGN

The haul road design parameters were established taking into consideration the type and size of material hauling equipment that will be used during the operation.



The dimensions of the haul road were based on a typical 40 t articulated dump trucks using global standards of good practice. Many of the guidelines specify that the vehicle operating width should be multiplied by a factor of 3 for twolane traffic and 2 for single-lane traffic in order to determine the effective operating width of the haul road and to incorporate the road infrastructure such as the safety berm and drainage channel. The haul road gradient and width are discussed below.

The haul road design may need to be re-evaluated to meet the operating parameters of the contractor's truck fleet although it is not expected to have a material impact on the pit design or operations.

# 16.5.1 Haul Road Gradient

A reduction in road grade significantly increases a vehicle's attainable uphill speed. Thus, haulage cycle times, fuel consumption, and stress on mechanical components, which results in increased maintenance costs, can be minimized to some extent by limiting the severity in grades.

A haul road gradient of 1:10 (10% or 5.71°) was selected for the Moss Project. The selection of the haul road gradient was based on the world best practice for the type of trucks that will be utilized and local weather conditions.

# 16.5.2 Haul Road Width

The equipment study conducted concluded that Volvo A40D articulated dump trucks or similar will be used to haul broken rock out of the pit and therefore the road dimensions were based on this type of truck equipment, taking into consideration global standards of good practice. Designing for anything less than this dimension will create a safety hazard due to a lack of proper clearance. It is well known that narrow lanes often create an uncomfortable and unsafe operating environment, resulting in slower traffic, and therefore impeding on production. However this needs to be balanced against the additional costs associated with increasing ramp widths purely for production purposes.

Rules of thumb for determining haulage road lane dimensions vary considerably from one reference source to another. For the purpose of this report, the effective operating width of the haul road was calculated by multiplying the physical truck-operating width by a factor of 2.1 then adding additional width for the safety berm and drainage channel. This configuration will allow trucks to safely pass each other on the pit ramp but will compromise on production efficiencies. This decision was based on the relative costs to mine additional waste along with the project production requirements. The selected Volvo A40D articulated dump truck has a physical truck-operating width of 3.3 m.

The haul road width for pit haul road was calculated as follows:

- Safety berm height = 1.0 m
- Safety berm width = 2.6 m (based on a Bridgestone 29.5R25 radial tire with a diameter of 1.9 m)
- Drainage channel = 0.5 m
- Design width calculation = (2.1\*3.3) m + 2.6 m + 0.5 m = 10.03 m
- Practical design width = 10.0 m

As the last initial levels of each pushback will be open and in use for a limited period of time, extra measures shall be taken to reduce waste stripping. The lower levels will have a relatively low stripping ratio which implies less equipment movements on these levels. In some circumstances the road width is decreased to facilitate one-way traffic only.

### 16.6 PUSHBACK DESIGN

The following methodology was followed during the pushback design process:



- Use the selected optimal pit shells derived from the pit optimization as the design limit;
- Use the block model to show the ore distribution; and
- Apply the pit design criteria and geotechnical parameters as discussed above.

The available pit footprint was utilized for pushback haul roads wherever possible instead of expanding pit walls. Haul road widths were also reduced at the lower levels of the pit to minimize waste stripping as much as possible. The design work was performed in Maptek's Vulcan<sup>™</sup> mine design software program.

In total six (6) pushbacks were designed based on the selected interim pit shells and the designs were used to evaluate the tonnage and grades of the various material types for discreet mining zones which in turn were applied to the production scheduling. There are no pre-strip requirements for access to Moss ores.

The mineral reserve quantities contained within the sub-divided pushbacks are detailed in Table 16-4. Mining modifying factors have been applied.

Pushback	Waste MT	ROM MT	Strip Ratio	Au	Ag	Au (oz)	Ag (oz)	AuEq (g/t)	AuEq (oz)
(A) moss 1a	0.555	0.694	0.80	0.85	8.41	18,900	187,700	0.94	21,000
(A) moss 1b	1.292	0.427	3.03	0.92	10.93	12,700	150,100	1.05	14,400
(A) moss 1c	0.353	0.139	2.54	1.05	13.04	4,700	58,300	1.20	5,400
(B) moss 2a	1.154	0.732	1.58	0.81	7.08	19,200	166,600	0.90	21,200
(B) moss 2b	1.024	0.295	3.47	0.77	10.99	7,300	104,200	0.90	8,500
(C) moss 3a	1.347	1.349	1.00	1.07	11.27	46,300	489,000	1.20	52,000
(C) moss 3b	1.136	0.277	4.10	0.79	11.20	7,100	99,800	0.92	8,200
(D) moss 4	4.278	1.976	2.16	0.97	11.41	61,300	724,700	1.10	69,900
(E) moss 5	1.224	0.288	4.25	0.90	10.21	8,300	94,500	1.02	9,400
(F) west 1	0.072	0.470	0.15	0.47	6.37	7,000	96,300	0.54	8,200
(F) west 2	0.160	0.453	0.35	0.50	3.94	7,300	57,300	0.54	7,900
(F) west 3	0.459	0.867	0.53	0.40	5.38	11,300	150,000	0.47	13,100
Total	13.054	7.967	1.64	0.83	9.28	211,300	2,378,300	0.93	238,200

#### Table 16-4: Pushback Quantities

The total run-of mine ore tonnes contained in the ultimate pit design are 7.967 million tonnes at an average AuEq grade of 0.93 g/t, and the contained AuEq ounces sum up to 238.2 thousand ounces. The average stripping ratio for the entire pit design is 1.64 resulting in 13.054 million tonnes of waste to be stripped in order to expose the 7.967 million tonnes of ore. The life of mine is approximately 5 years assuming a plant throughput of 1.75 Mtpa, and a plant commissioning ramp-up of 1.0 Mtpa for the first year of production. All figures quoted are above a gold cut-off grade of 0.2 g/t. This cut-off incorporates both primary ore as well as the low grade material previously defined as beneficial to the project. It is anticipated that low grade material will be stockpiled and processed in years 4 and 5 in order to maintain full plant production. It should be noted that the figures have been rounded to reflect accuracy and that summations within the table may not agree due to rounding.

Figure 16-6 to Figure 16-11 show the successive mined out profiles for each of the 6 pushbacks.



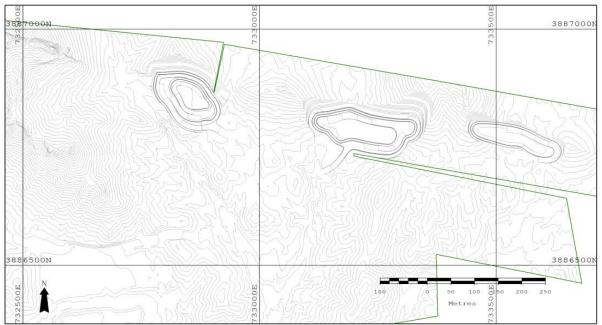


Figure 16-6: Pushback A

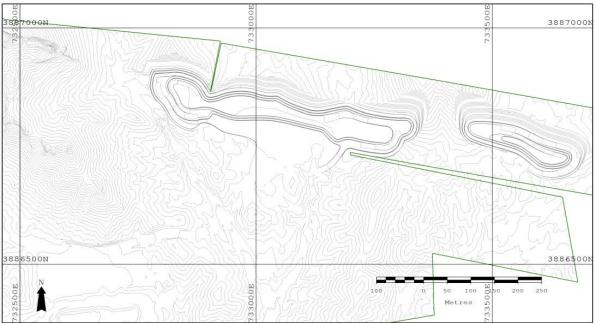


Figure 16-7: Pushback B



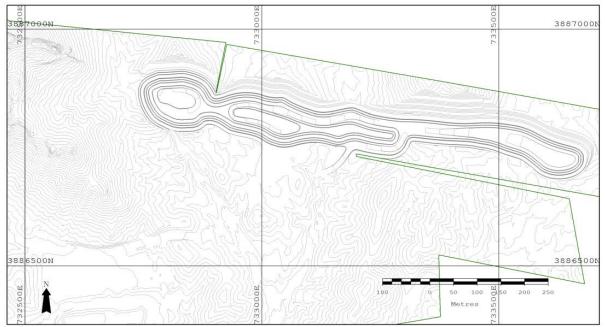


Figure 16-8: Pushback C

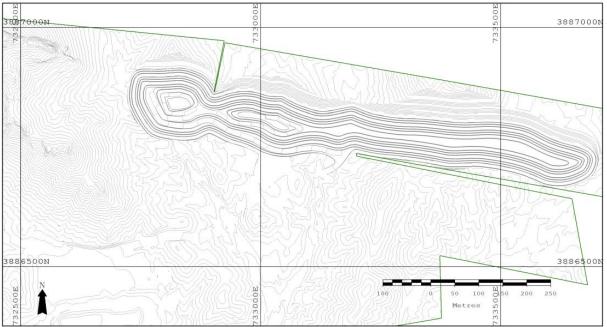


Figure 16-9: Pushback D



### Moss Gold-Silver Project Form 43-101F1 Technical Report

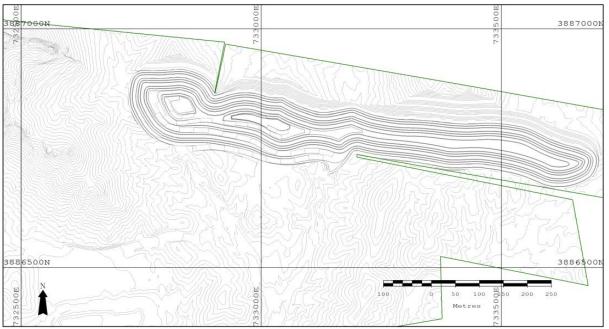


Figure 16-10: Pushback E

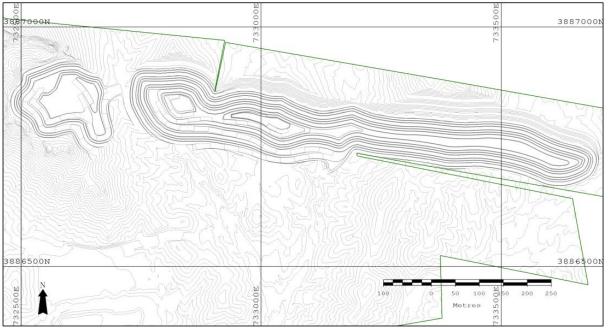


Figure 16-11: Pushback F

# 16.7 LIFE-OF-MINE PRODUCTION SCHEDULE

Due to the geological setting, combining the use of a low grade stockpile with the life-of-mine production schedule has significant impacts on the Moss Project NPV. Additionally, the total mining capacity directly affects project costs. Therefore several production scenarios were reviewed to determine the most economic and operationally sound solution.



The primary goals for the chosen production scenario were to limit capital while maintaining ROM processing at 5,000 tpd. Total excavation capacity was capped at 6 million tonnes of total mining per year.

The life-of-mine production schedule was carried out using an industry standard approach for strategic mine planning. The Maptek Chronos<sup>™</sup> production scheduling program was used to optimize the mining sequence for 6 meter benches within each pushback which were categorized as ROM, Low Grade Ore or Waste based on the grade cut-off for each 3mx3mx3m block within the geological block model used to define the Mineral Resources for the study. The life-of-mine schedule was used four production target periods for Year 1 (i.e. quarterly), three periods for Year 2, two periods for Year 3, then single annual targets for Years 4 & 5. Although this approach reduces the complexity of the scheduling process and results in grade averaging for each target period, it is necessary in order to obtain reliable results from the linear programming optimization. However, the increased emphasis on the targeting for the early years of production ensure that the results are as accurate as possible for the critical portion of the project.

The strategy to level waste stripping whilst still utilizing the value adding strategy of delaying the processing of stockpiled low grade ore were also used to achieve the project goals. This strategy resulted in pushback life being minimized with as little as possible overlap for waste stripping. The low overlapping makes the schedule more practical. Whilst the levelled production target adds the benefit of a reduced fleet requirement, especially during ramp-up, the delayed processing of low grade ore adds to the project value. The production plan is shown in Table 16-5 below. Mining modifying factors have been applied.

Category	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Excavation MT	3.5	6.0	4.3	4.3	2.9	21.0
Waste MT	2.4	4.2	2.4	2.5	1.6	13.0
Strip Ratio	2.1	2.3	1.3	1.4	1.2	1.6
Total ROM MT	1.135	1.809	1.903	1.822	1.293	7.962
Au g/t	0.86	0.84	0.82	0.59	1.11	0.82
Ag g/t	8.69	9.01	9.53	7.14	12.84	9.28
Primary ROM MT	1.079	1.688	1.781	1.690	1.262	7.500
Au g/t	0.89	0.88	0.87	0.62	1.13	0.86
Ag g/t	8.99	9.46	9.96	7.41	13.06	9.66
Low Grade ROM Tonnes	0.056	0.121	0.121	0.132	0.031	0.461
Au g/t	0.21	0.22	0.22	0.22	0.22	0.22
Ag g/t	2.85	2.81	3.26	3.67	3.70	3.24

The mining schedule confirms that sufficient quantities of primary ROM are available within the pit to fulfil the processing targets for years 1 - 3. Low Grade ROM extracted from the same benches as the Primary ROM in years 1 - 3 will be stockpiled and used to sustain production at the end of Year 4 and thorough Year 5.

# **16.7.1** Crushing/Agglomeration Circuit Production Schedule

Differences in operating hours between the pit and the processing plant in conjunction with the impacts related to unforeseen stoppages has made it a requirement to establish a stockpile of ROM material which will mitigate the effects of processing plant stoppages or ROM shortfalls during the mining operations. The existing ROM stockpile from the Moss Phase 1 operations, as detailed in Section 15.7.3, will form the basis of a ROM buffer feedstock that will ensure a continuous supply of ROM is available for processing.



### 16.7.1.1 Stock Adjusted Processing Schedule

From the mine production schedule it can be seen that there is overproduction from the pit in years 1 & 3. In addition to this, years 2 & 4 have slight production shortfalls. Production gains and shortfalls are a natural occurrence when mining pushbacks with varying strip ratios are used. The operations mine planning team will minimize fluctuations as much as possible. However, it is reasonable to assume that ROM production from the pit will on occasion differ to the processing plant requirements.

For the processing schedule it has been assumed that the some of the Moss Phase 1 stockpiles will initially be processed during the commissioning phase of the crusher. The remainder of the Phase 1 stockpiles will be processed in Year 2. Any ROM stockpile build-up from Year 1 & Year 3 will be processed in Year 4. In Years 4 and 5 all additional production shortfalls will be filled with low grade ore as discussed previously. In this scenario the maximum capacity of the ROM stockpiles will be remain at around 60 kT until the end of year 1. By the end of Year 2 all ROM stockpiles are likely to be depleted. Year 3 will see a further build-up of ROM material. This will total approximately 30 kT and will be processed in Year 4.

The stock adjusted processing schedule is summarized in Table 16-6.

Annual Totals	Au	Ag	ROM MT	Au (oz)	Ag (oz)	AuEq (g/t)	AuEq (oz)
Year 1	0.890	8.99	1.05	30,040	303,490	0.99	33,420
Year 2	0.878	9.45	1.75	49,410	531,570	0.99	55,700
Year 3	0.870	9.96	1.75	48,950	560,390	0.99	55,700
Year 4	0.629	7.48	1.75	35,380	420,930	0.72	40,510
Year 5	0.887	10.43	1.72	49,110	577,920	1.01	55,950
Total	0.825	9.28	8.02	212,890	2,394,290	0.93	239,890

#### Table 16-6: Stock Adjusted Plant Production Schedule

### 16.7.1.2 Short-term Production Scheduling

In addition to the life-of-mine production scheduling, it was decided that a more detailed production schedule was required for the first 12 months of the project. Again, the production schedule was carried out the Maptek Chronos<sup>™</sup> production scheduling program. However, the resolution and number of discreet scheduling blocks was increased. The benches from all pushbacks to be mined during Year 1 were re-assessed using 3 m bench lifts. The benches were further refined in order to facilitate partial mining of ROM, Low Grade Ore or Waste the same grade cut-offs. This further breakdown of the pit quantities for Year 1 made it possible to provide improved estimates of the production profile on a monthly basis. The detailed production plan for Year 1 is shown in Table 16-7 below. Mining modifying factors have again been applied.



	>= 0.25 g/t Au {ROM}		>= 0.20 < 0.25 g/t Au {LOW GRADE}			< 0.20 g/t Au {WASTE}			
Month	Tonnes	Au g/t	Ag g/t	Tonnes	Au g/t	Ag g/t	Tonnes	Au g/t	Ag g/t
1	74,931	1.177	10.51	0	0.00	0.00	174,679	0.00	0.00
2	74,931	0.951	8.26	2,699	0.202	3.31	174,428	0.001	0.03
3	74,931	0.833	9.00	4,545	0.208	3.25	170,059	0.001	0.03
4	74,931	0.780	7.95	3,163	0.207	3.06	171,664	0.002	0.03
5	74,931	0.845	8.61	6,379	0.209	3.00	167,968	0.004	0.07
6	74,931	0.780	7.58	6,534	0.201	2.63	166,822	0.005	0.09
7	104,903	0.940	10.74	2,928	0.204	3.89	227,388	0.004	0.10
8	104,903	0.869	9.17	6,456	0.201	2.48	222,748	0.007	0.12
9	104,903	0.900	8.90	7,383	0.202	1.88	221,255	0.006	0.09
10	104,903	0.877	7.36	6,755	0.202	2.17	221,832	0.006	0.07
11	104,903	0.876	8.56	4,076	0.203	2.30	224,271	0.009	0.11
12	104,903	0.854	10.65	5,083	0.202	2.75	221,887	0.011	0.22
Total	1,079,000	0.890	8.99	56,000	0.203	2.66	2,365,000	0.005	0.08

Table 16-7: Short-Term Production Schedule (Year 1)

### 16.8 WASTE ROCK STORAGE

## **16.8.1** Geotechnical Conditions

The waste rock footprint has been mapped geologically, and consists of quartz monzonite bedrock under a very thin surficial cover of sandy and gravelly alluvium or colluvium as was encountered in the leach pad area. Given the shallow bedrock foundation conditions, and the competent nature of the monzonite waste rock, there have been no geotechnical investigations or analyses for the waste dumps. The only exception to the shallow cover is in the dry washes where the alluvium can reach 10 meters depth.

The dumps will be formed by conventional end-dumping over a dump face. For the most part, the dump will be developed to its full height, in one lift, with no benches. The downstream slope of the dump will be at the angle of repose.

The dumping will be managed adjacent the pit wall perimeter. In this case the waste dump slopes will be benched to achieve an overall slope of no more than 2H:1V. A roll-off catchment berm will be created along the toe of the dump to catch any oversize material that rolls down the dump face before it enters the open pit. The dumping will also be managed in the footprint area where the leach pad is planned to expand over the waste. In this area the waste will be placed in lifts of 10 meters using truck traffic to achieve some compaction. Prior to the leach pad expansion the area will be graded to achieve an overall slope of 3H:1V.

# **16.8.2** Facilities Layout

The waste dump configuration is such that the main dumping area will be formed along the low wall of the ultimate pit. A 50 m standoff has been applied to satisfy geotechnical considerations. Dump formation will be carried out in a manner that will ensure that dust and noise are contained within the dumping area as reasonably practical and not become a nuisance to the general public. Where possible this will incorporate a perimeter berm construction methodology. This approach means an outer berm will first have to be created on each lift before the dumping continues to the rest of the dumping area. In addition to the main waste dump, it has been established that the pit excavation strategy facilitates the backfilling of the western pit with rock from the main pit. This approach minimizes



the amount of waste rock requiring storage above ground level. In addition to the waste dump and west pit backfilling an additional area adjacent to the pit has been identified for the bulk stockpiling of low grade ore. It is anticipated that several smaller ROM stockpiles will be necessary to balance mine production with the crushing and agglomeration processing requirements. Provisions for the storage of ROM ore have been included as part of the process plant design criteria. Table 16-8 below shows the total capacity for each of the mine waste rock storage areas.

Mine Rock Storage	In-situ Volume (m <sup>3</sup> )	Tonnes	
Main Dump	5,200,000	10,700,000	
West Pit Backfill	1,300,000	2,700,000	
Low Grade Stockpile	300,000	600,000	
Total Dump Storage	6,800,000	14,000,000	

The tonnage for each item has been estimated using the in-situ rock densities (as defined within the geological block model) in conjunction with a global swell factor of 1.25. It should be noted that the west pit backfill and low grade stockpile area has sufficient capacity to store additional material should the cut-offs be changed at a future date. Figure 16-12 below shows the waste dump configuration and progression.

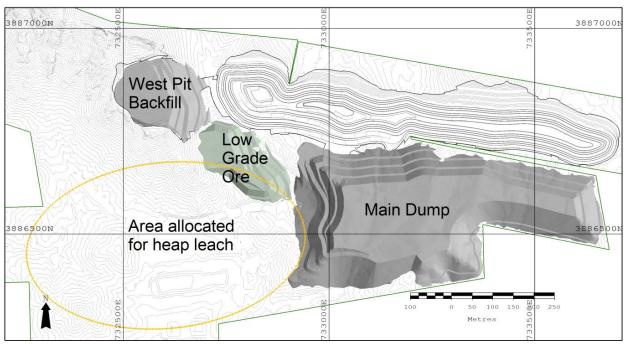


Figure 16-12: Mine Waste Rock Storage

# 16.8.3 Waste Rock Storage Design Criteria

The design criteria for the waste rock storages are indicated in Table 16-9.



Descriptions	Quantity
Face Angle (degree)	37
Bench Height (m)	12
Catch Berm Width (m)	5
Road Width (m)	10
Overall Slope Angle (degree)	31.4°
Swell Factor	1.25

#### Table 16-9: Waste Rock Storage Parameters

As the waste dump will expand from NW to SE, no catch bench will remain in the southern or eastern slopes of waste dump.

#### 16.9 MINING LAYOUT

As a part of the overall scheduling, annual pit / dump progressions maps complete with haul road access were compiled. These progression maps provide details relating to material haulage routes throughout the mine life as well as the active mining areas at the end of each year. The mine layout drawings show the approximate stacking sequence of the leach dump (in orange), as well as the indicative layout of the crushing plant (in blue). Due to space constraints the crusher must be moved in Year 3, as shown. The waste dump and West pit backfill are shown in light brown, with the low grade ore stockpile highlighted in grey.

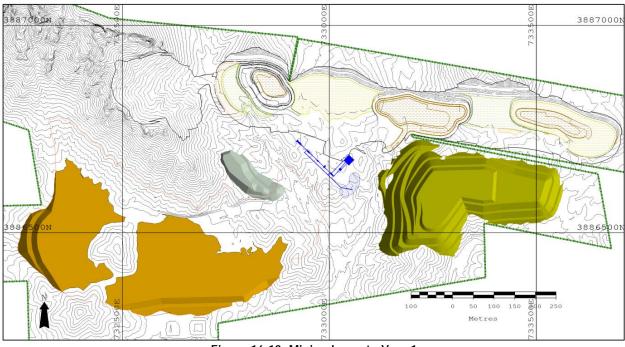


Figure 16-13: Mining Layout - Year 1



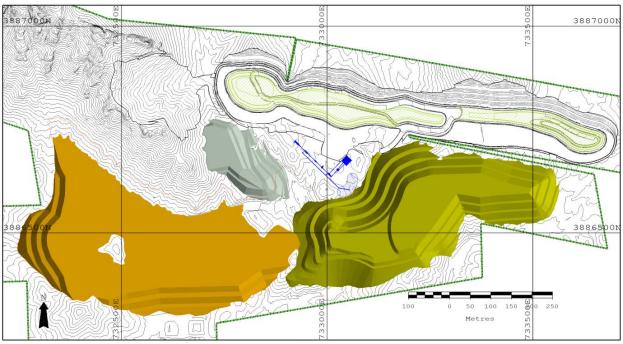


Figure 16-14: Mining Layout - Year 2

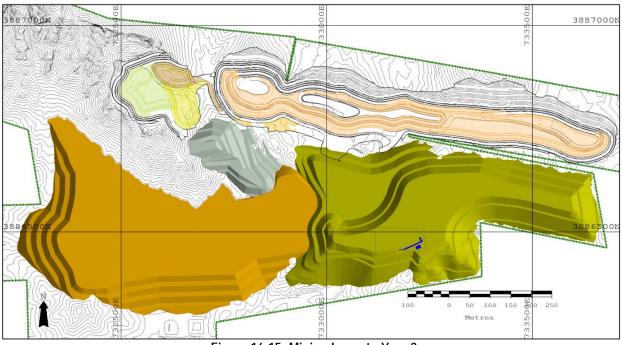


Figure 16-15: Mining Layout - Year 3



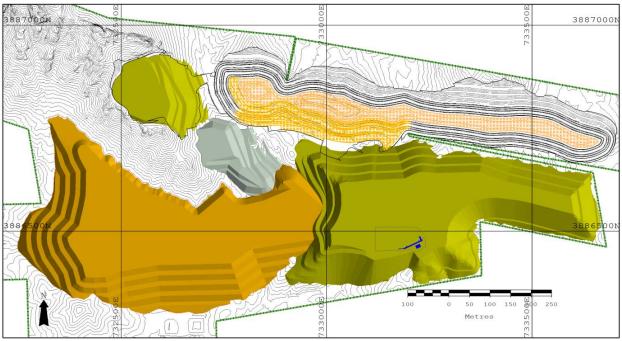


Figure 16-16: Mining Layout - Year 4

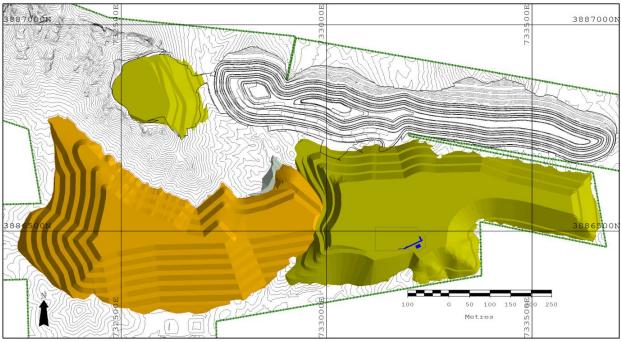


Figure 16-17: Mining Layout - Year 5



### 16.10 OPERATIONAL ISSUES

## 16.10.1 Controlled Blasting

Controlled drilling and blasting techniques will be needed to minimize blast damage to the final pit walls. Controlled blasting is commonly practiced in open pit mines and the most successful technique is known as pre-splitting. Pre-splitting involves firing a row of small diameter, closely spaced holes along the final wall thereby creating a free face that reduces the energy transmitted by the main part of a production blast.

The slope designs presented in this report are predicated the use of angled drilling and controlled blasting in order to achieve stable final walls. An allowance has been made in the mining budget for the use of controlled perimeter blasting with an airtrack drill.

A typical controlled blast design employs a pre-split line and two buffer rows. The pre-split row uses 100 mm diameter holes drilled on a 1 m spacing with a 3 m burden to the first buffer row. The buffer rows have burdens of 4 m and 5 m. The pre-split row should be fired first, singly, followed by the production holes, and finally the buffer holes.

Depending on the width of the Moss Vein, a more complex layout of blast holes may be required to minimize dilution at the margins of the vein. Concurrent bulk blasting of ore and adjacent waste could lead to increased dilution. Proper design of the blasting will be an important role for the engineering staff at the project.



Figure 16-18: Stable pit wall angles achieved with controlled blasting (IOC - Humphrey pit on left<sup>2</sup>, Lac des lles pit on right)

<sup>2</sup> Photo courtesy of Iron Ore Company of Canada. Iron Ore Company of Canada does not support or endorse the content of any study, report or other document in which this photo is used and rejects any responsibility for the conclusions reached with this photo. Iron Ore Company of Canada cautions the reader against reaching any conclusions in reliance on this photo.



### 16.10.2 Ground Support

The geotechnical designs herein are predicated on pit wall stability without the need for passive or active ground support.

If issues arise during mining, it may become necessary to install ground support in order to maintain the integrity of the pit wall, without the need for push-backs or wall flattening. At a minimum this program could involve the installation of fully grouted, single tendon, Dywidag bars to support individual wedges. At the worst it could involve pinning mesh to bench faces to prevent rockfalls in broken ground.

The decision to implement an active ground support program should be made on the basis on cost, the type and frequency of the hazard, and the risk to the operation/personnel/equipment in the absence of such support.

An allowance has been made in the mining budget for limited ground support usage.

#### 16.10.3 Grade Control

Grade control will be a critical item to ensure the success of the Moss project as excessive dilution will reduce the head grade of material placed on the leach pad, and the additional tonnes created by dilution add to the operating cost.

For Phase II operations a robust grade control program will be established based on experience at other western US heap leach operations. The program will be a collaborative effort between the Company and the mining contractor.

The first stage of the program is the production of a daily bench or dig map by the mine engineer showing the ore and waste boundaries based on the geological model and block model grades. This map is then used to layout the blast hole collars in ore and waste. The mine surveyors will then survey the blast hole collars for the mining contractor.

In summary, the grade control program consists of:

- Grade control technicians on each shift when blastholes are drilled by the Contractor
- Routine sampling of every blasthole as follows:
  - Collection of 20 kg samples of drill cuttings by means of a special pie shaped tray. The driller will pull the tray from the cuttings pile before any subdrill.
  - Splitting of the sample at the blasthole into 10 kg samples for bagging and delivery to the laboratory.
  - One in 20 blast holes are subject to duplicate sampling by the same method
- An on-site laboratory for processing of fire assay samples
  - At the laboratory the samples are reduced to -2 mm in a hammer mill and then subsequently reduced 200 mesh in ring mill
  - The pulps are then sampled to recover a 50 g fire assay/AA finish sample for analysis
  - A duplicate fire assay is run for every 10<sup>th</sup> sample
  - o Any anomalous or high values are re-run and/or checked with an external laboratory.

The results of the assaying are returned to the mine engineer and surveyor to mark out the boundaries of primary ore, low grade ore, and waste by means of colored surveyors flagging tape on top of the muck pile.



#### 16.10.4 Operational/Dispatch Control

The three types of materials will be color coded so the loader operator can direct the trucks to either the crusher, the low grade ore stockpile, or the waste dump. The dispatch operations will be carried out under the close supervision of the mine engineering and mine geology staff.

#### 16.11 CONTRACT MINING

The feasibility costing assumes that a mining contractor will perform the open pit mining for the duration of the mine life. This includes all feed to the crusher, and stockpiling of low grade ore and waste. The battery limits for the mining contractor will be the crusher ROM pile or dump hopper, and the stockpiles. The Contractor's fleet is shown in Table 16-10.

Equipment	Count
Cat 390 Excavator	1
Cat 775 Haul Truck	5
Cat D8 Dozer	1
Cat 16G Grader	1
13,000 gallon water truck	1
Air track drill	1
DM-45 Drill	1
Cat 992 Loader	1
Cat 988 Loader	1

## Table 16-10: Contract Mining Fleet

It is anticipated that the 390 excavator and three to four 70 tonne trucks will perform all mining activities in the first year during the production ramp up. Thereafter the fleet will increase to a 992 loader feeding five 70 tonne trucks for the remainder of the mine life at the 5,000 tpd production level. The DM-45 drill will perform all production drilling, and the airtrack drill will be used for haul road pioneering and pre-splitting for controlled blasting. Haul road maintenance will be performed with the 16G grader and the water truck. The 988 loader will be used to feed the crusher from a ROM pile on the weekends.

As noted in Section 16.4 above, the reserve pit haul road design is based on a Volvo 40t articulated truck which is slightly smaller than the contractors proposed Cat 775 truck. The haul road design may need to be re-evaluated to meet the operating parameters of the contractor's truck fleet although, as noted above, it is not expected to have a material impact on the pit design or operations.

The Contractors crew will consist of a superintendent, 15 operators, a fueler and a mechanic working 10 hour shifts.



## 17 RECOVERY METHODS

### 17.1 PROCESS DESCRIPTION

Metallurgical testwork to date, along with the completion of the Pilot Plant Operations - Phase I, validate that the Moss Mine orebody is amenable to gold and silver recovery via cyanidation. The most economically effective process has been identified as one that consists of heap leaching of crushed and agglomerated ore, followed by a Merrill Crowe metal recovery plant and refinery to produce gold and silver doré bars on site.

The design of the crushing circuit and the metal recovery plant is based on 350 days of operation per calendar year. The nominal crushing and ore stacking tonnage will be 2,500 tonnes per day (tpd) for the first six months of operation. The tonnage will increase to 3,500 tpd in month seven, followed by a tonnage increase to 5,000 tpd in month thirteen through the end of the mine life.

Figure 17-1 is a simplified schematic of the overall process for Moss ore processing facility. This provides the basis for the process description that follows.

Figure 17-2 is the general arrangement site plan showing the process facilities and boundaries of the pit heap leach and waste dump.



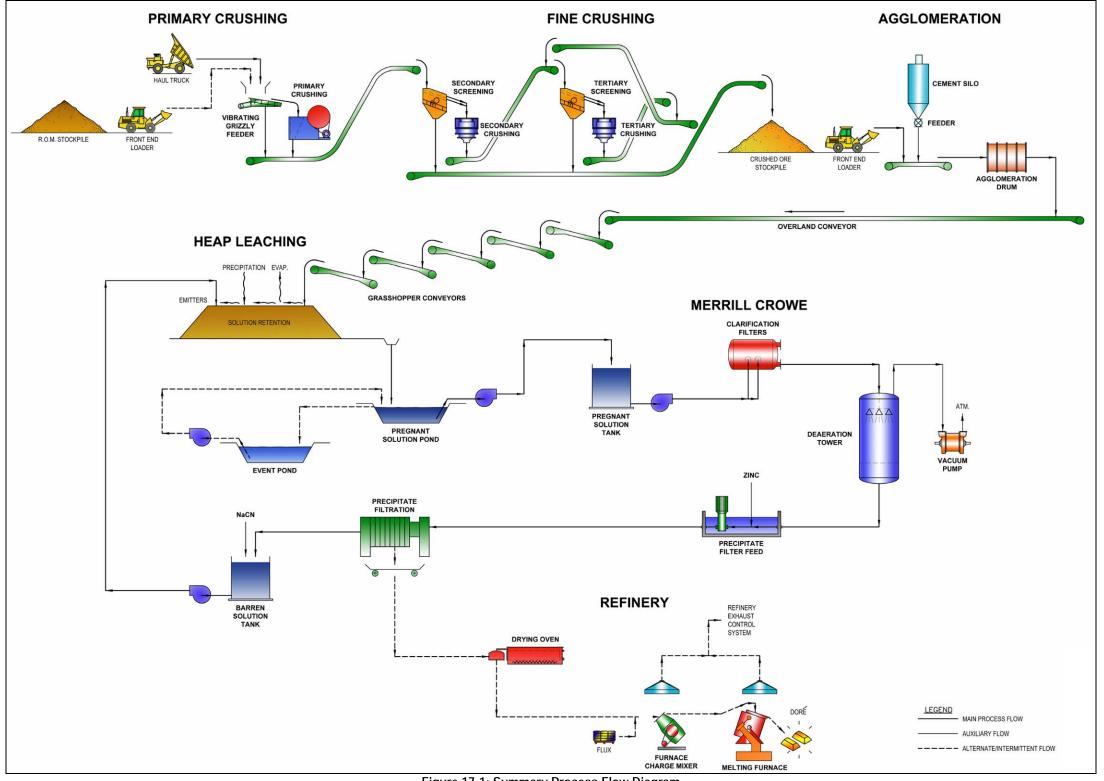


Figure 17-1: Summary Process Flow Diagram



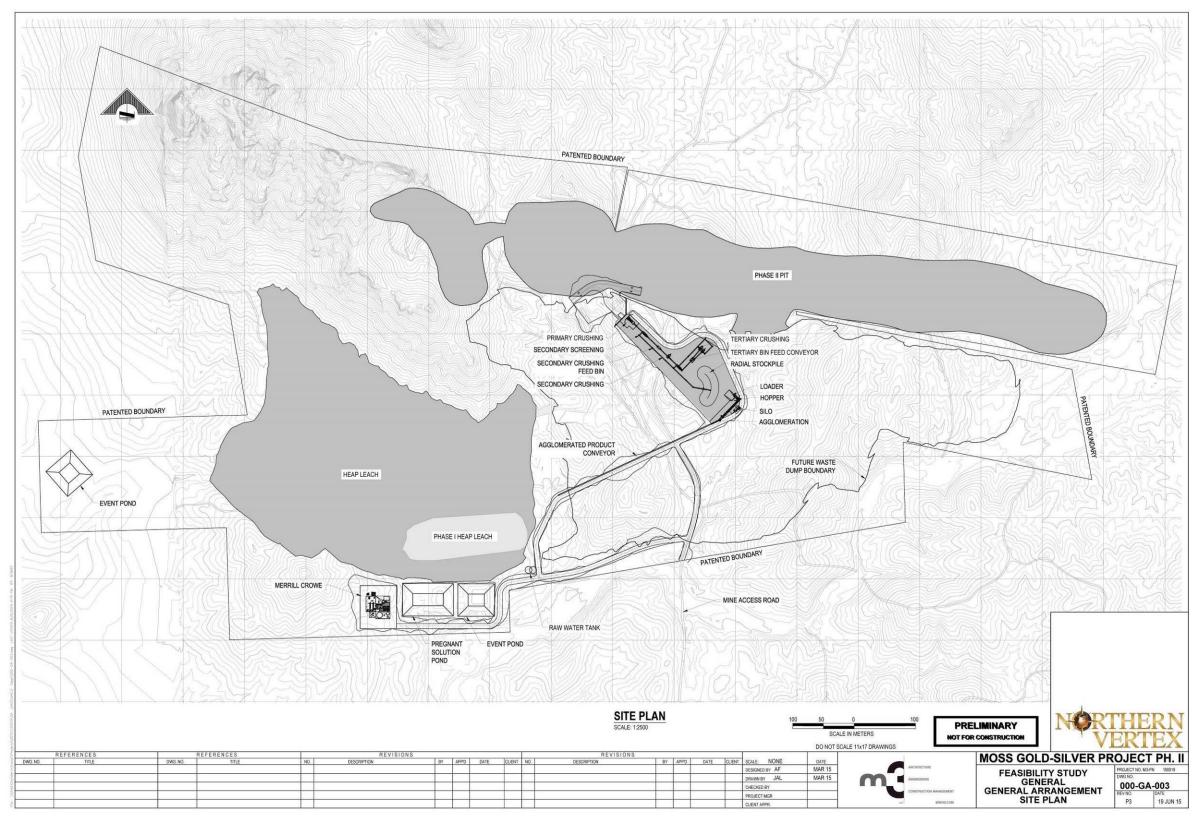


Figure 17-2: General Arrangement Site Plan



## 17.1.1 Primary Crushing & Fine Crushing

Run-of-Mine (ROM) ore will be trucked from the mine to the primary crushing circuit. The mine trucks will normally direct dump into the crusher feed hopper. Alternatively, ROM may be trucked to a stockpile close to the primary crusher and later reclaimed with a front-end loader (FEL). A stationary grizzly above the hopper will prevent oversize material from making its way into the crusher cavity. A vibrating grizzly feeder will draw ore from the crusher feed hopper, with the feeder oversize reporting to a jaw crusher, which will be equipped with an 110 kW, or equivalent, drive. The grizzly feeder undersize material will bypass the crusher and will combine with the crusher product on the crusher discharge belt conveyor.

Primary crushed ore, at approximately 80 percent passing 77 mm, will be conveyed to a vibrating, inclined, doubledeck screen. The undersize fraction from the screen will bypass the secondary and tertiary crushing circuit, and will report to the fine crushing product belt conveyor. Screen oversize will be conveyed to a 70-tonne surge bin ahead of the secondary cone crusher. A belt feeder will draw ore from the surge bin and feed the secondary cone crusher, which will be equipped with a 300 kW, or equivalent, drive.

Secondary crushed ore, at approximately 80 percent passing 20 mm, will be conveyed to a vibrating, inclined, double-deck screen. The undersize fraction from the screen is the product of the fine crushing circuit and will report to the fine crushing product belt conveyor. Screen oversize will be conveyed to a 140-tonne surge bin ahead of the tertiary cone crushers. Two belt feeders will draw ore from the surge bin and independently feed two tertiary cone crushers, which will each be equipped with a 300 kW, or equivalent, drive. The tertiary crushed ore will be conveyed back to the tertiary screen for re-classification. The product of the fine crushing circuit, at approximately 80 percent passing 5 mm, will be conveyed and stacked in a crushed ore stockpile. The stockpile capacity will be approximately 9,000 tonnes, which will allow for reasonable decoupling of the crushing circuit and the subsequent agglomeration and ore stacking circuit.

All mechanical components of the crushing circuit will be semi-mobile, which will allow for a complete circuit relocation, when it is required. Water sprays will be utilized for dust suppression at the truck dump into the crusher feed hopper and at transfer points for the screen undersize material. All other transfer points within the crushing circuit will have dust suppression consisting of baghouses or single-point, cartridge-type dust collectors.

## 17.1.2 Agglomeration and Ore Stacking

Crushed ore will be reclaimed from the stockpile with a front-end loader, which will transfer the ore to a feed hopper. A belt feeder will draw ore from the hopper and transfer the crushed ore to a belt conveyor that feeds an agglomeration drum, approximately 2.7 meters in diameter and 9.2 meters in length. Cement will be added to the agglomeration drum feed conveyor and raw water will be added in the drum for the binding process, at a moisture content of approximately seven percent by weight. The agglomerated, crushed ore will discharge from the drum onto an overland conveyor for transfer to the heap leach pad.

The overland conveyor will discharge onto a series of several mobile, grasshopper-type conveyors. Units of grasshopper-type conveyors will be added or removed as required dependent upon the stacking location on the pad. The final conveyor will be a radial-type mobile stacker that will place agglomerated ore in lifts, up to ten meters in height.



### 17.1.3 Heap Leach Pad & Solution Ponds

The Qualified Person for this section of the Technical Report is Eugene Muller, P.E.

#### 17.1.3.1 General

Previously, the Phase 1 test heap was constructed at the site and approximately 122,000 metric tons of ore was leached. The Phase 1 ore has since been detoxified and the Phase 1 heap is undergoing rinsing. The Phase II heap leach pad and associated process solution management facilities have been designed to lie entirely within the Company's patented claim block. Due to the areal constraints of the project site, the Phase 1 facilities will require demolition and incorporation into future Phase II construction. The Company proposes to mine approximately 8.0 million metric tons of ore that will be processed by conventional cyanide leaching operations on the proposed Phase II leach pad. The ore will be crushed to minus ¼ inch, agglomerated, and stacked in 10 m lifts with a mobile stacker.

#### 17.1.3.2 Geotechnical Conditions

The leach pad site can be characterized as flat lying with steep backslopes of exposed bedrock to the north, and steep slopes adjacent to the ridge the bisects the leach pad into south and west draining sections. The Moss quartz monzonite porphyry underlies most of the leach pad area. Alcyone Formation andesite flows and tuff breccia outcrop on the western portion of the future construction area. Deposits of surficial soils are thin and discontinuous. As such, the availability of native clay materials for leach pad liner and pond construction is limited.

A total of 15 test pits were excavated to investigate the leach pad and pond construction areas. The primary focus of the test pit program was to evaluate the rippability of in-place foundation materials and support stability analyses. Samples of materials excavated from test pits and spent Phase 1 leach ore were collected for geotechnical testing.

#### 17.1.3.2.1 Foundation Rippability

Test pit excavations were completed with a track mounted CAT 320C backhoe. Test pit excavation was found to be difficult, and the local bedrock is weakly weathered and locally silicified. Excavation depth in competent rock was generally on the order of 1 meter. Locally, accumulations of colluvium and regolith were removable to excavation equipment depth; however, the distribution of colluvium and weathered regolith is limited. As such, ripping to a depth greater than one meter is not expected to be possible without drilling and blasting. This conclusion is supported by observations from Phase 1 construction, where drilling and blasting on 10-foot centers was reported in the construction of the Phase 1 leach pad and crusher area.

A cut and fill isopach was developed for the leach pad and pond construction areas to enable estimation of excavation depth. Several locations will require excavation below a depth of 1 meter. Excavation to depths exceeding 1 meter has been assumed to require drilling and blasting for construction cost estimation.

#### 17.1.3.2.2 Geotechnical Testing

Rock samples obtained from test pit excavations were crushed to minus 1/4 inch and minus 3/8 inch to simulate the production of the leach pad sand drain layer fill and liner bedding fill, respectively, from locally available foundation materials and mine waste rock. Crushed foundation materials and spent ore from the Phase 1 leach pad were used in large scale direct shear testing to evaluate liner interface shear strength and support leach pad stability evaluation.

The interface shear strength tests involved placing geomembrane samples on a rigid plate and placing spent ore and crushed foundation materials in contact with the geomembrane sample. Confining loads were applied and the interface was subject to shearing. Interface friction tests included the following:



- Spent ore against 2.0 mm textured LLDPE;
- -1/4" crushed rock (sand drain fill material) against 2.0 mm textured LLDPE;
- -1/4" crushed rock (sand drain fill material) against 1.5 mm textured LLDPE; and
- -3/8 inch crushed rock (liner bedding fill) against 1.5 mm LLDPE

The peak interface friction angles ranged from 29.6 to 31.5 degrees while the residual, post displacement interface friction angles ranged from 16.4 to 20.5 degrees. It should be noted that liner interface shear strength testing conducted against a rigid plate provides conservative strength estimates because the planar interface created in the test apparatus does not reflect the irregular interface that will be developed under actual field conditions. A residual interface friction angle of 20 degrees was assumed for the leach pad area underlain by the sand drain layer liner system. The sand drain layer was incorporated in the design to enhance the stability of the leach pad.

A composite liner consisting of a geocomposite clay liner (GCL) base and LLDPE geomembrane will be used over the majority of the Phase 2 leach pad. Interface testing was not conducted on the GCL base liner because it is composed of engineered products for which an extensive test database exists.

### 17.1.3.3 Leach Pad Design

The design of Phase II facilities has been completed in accordance with the Arizona Department of Environmental Quality (ADEQ) prescriptive design guidance for heap leach facilities (referred to as BADCT – Best Available Demonstrated Control Technology), process solution ponds, and non-stormwater (contingency stormwater storage) ponds except as noted below.

As noted above, the availability of fine grained and low permeability materials typically required for the construction of leach pad and process pond soil liner bedding is limited at the Moss Project. Thus the liner systems for the leach pad and process solution ponds have been designed to accommodate the lack of available native clays for lining, and enhance the stability of the leach pad.

The Phase II leach pad will be constructed with two lining systems. The majority of the leach pad will be lined with a single 2.0 millimeter LLDPE geomembrane liner placed over a geosynthetic clay composite liner (GCL) base. The GCL will be placed on a prepared foundation of graded and compacted native foundation materials and where needed for GCL protection, locally derived crushed rock or spent ore from the Phase 1 heap. GCL is provided as a substitute for the low permeability liner bedding fill material specified in the ADEQ/BADCT prescriptive design guidance. ADEQ typically accepts GCL as meeting prescriptive design guidance.

A dual liner system consisting of an upper 2.0 mm and lower 1.5 mm LLDPE geomembrane with an intervening sand drain layer will be constructed in selected areas of the leach pad. The primary purpose of the sand drain liner system is to enhance stability as it provides greater interface friction relative to the GCL base liner system. The sand drain liner system is also intended to reduce the potential for leakage into the foundation of the leach pad by minimizing the head on the lower geomembrane, and serves as a substitute for a low permeability liner bedding layer. The sand drain serves as a leach pad leakage collection and recovery system (LCRS) and contains an internal LCRS drainage pipe network. The leakage collected in the leach pad LCRS will be routed to the new pregnant process solution pond. The sand layer liner system does not meet prescriptive design criteria and will require ADEQ review on an individual basis.

Prior to ore stacking and routing equipment traffic over the constructed leach pad liner, the leach pad will be covered with a minimum 450 mm thickness of crushed ore overliner cover. The overliner cover layer will contain an internal leach solution collection pipe network.



### 17.1.3.4 Phased Construction

The Phase II leach pad will be constructed in three stages for a total pad area of 242,500 m<sup>2</sup>. Stage IIA construction will include the central and western portions of the leach pad, the pregnant solution pond, and contingency ponds. To minimize the potential for damage to constructed Stage IIA facilities, Stage IIB rough grading will be completed as part of Stage IIA construction.

In Stage IIB, the leach pad will be extended to its northern limit. Stage IIB construction will be limited to fine grading, GCL base liner installation, anchor trenching and backfilling, overliner cover placement, and extension of the solution collection pipe network. Stage IIB construction must be completed by Year 1.5 of leaching operations.

In Stage IIC, the leach pad will be extended eastward over waste rock fill. The Stage IIC waste rock fill will be placed as part of normal waste rock disposal operations using the mine haulage fleet. The capital costs estimate includes an incremental waste disposal cost of \$0.80 per tonne for dozer spreading the waste rock in lifts of approximately 0.6 meters and routing loaded haul trucks over the fill to effect compaction. Stage IIC construction will include fine grading, GCL base liner installation, anchor trenching and backfilling, overliner cover placement, and extension of the solution collection pipe network. Stage 3 must be completed at the start of year 3 of leaching.

### 17.1.3.5 Leach Solution Management

The leach pad footprint contains a central ridge that will cause the leach pad LCRS and solution collection systems to drain to the south and west. Separate LCRS and leach solution collection systems that drain to the west and south will be required.

Risers for collection of leakage from the leach pad LCRS will be constructed on the south and west limits of the leach pad. LCRS risers will be fitted with submersible pumps to recover accumulated leakage, which will be pumped to the pregnant solution pond.

The pregnant solution pond will be located on the south leach pad boundary. Leach solution from the eastern portion of the leach pad will drain by gravity to the pregnant solution pond through the internal solution collection piping network. A steel wet well will be constructed within the ore heap to collect leach solution that drains from the western portion of the leach pad. A submersible pump will be installed in the wet well and leach solution will be pumped to the pregnant solution pond.

Additional solution storage will be provided in-heap on the west side of the leach pad within the pore space of the ore heap. A berm constructed across the west leach pad drainage develops the in heap storage capacity.

The pregnant solution pond will be constructed with upper and lower 1.5 mm high density polyethylene (HDPE) geomembranes placed on a GCL base. An HDPE drain net will be placed between the geomembranes to serve as a pregnant pond LCRS. The pregnant pond design meets ADEQ/BADCT prescriptive design criteria for a process solution pond.

### 17.1.3.6 Contingency Stormwater Storage

The pregnant solution pond has been designed to contain sufficient volume to support recovery pumping operations and additional storage for upset conditions. The pregnant pond and contingency ponds have been designed to contain 24 hours of leach pad draindown plus direct precipitation resulting from the 100-year, 24-hour design storm event of 98 mm. Contingency ponds are located west and south of the Phase II leach pad.

Flow into the south contingency pond will occur when the pregnant solution pond water surface reaches the level of the spillway to the south contingency pond. Flow into the west contingency pond will occur when the in-heap storage



and wet well pregnant solution pumping capacity are exceeded. The west contingency pond will be constructed approximately 200 meters west of the leach pad boundary. Stormwater will be routed to the west contingency pond via an HDPE geomembrane lined channel.

Contingency ponds will be constructed with a single 1.5 mm HDPE geomembrane placed over a prepared bedding layer.

## 17.1.4 Merrill Crowe

Pregnant solution from the pond will be pumped to a pregnant solution tank at the Merrill Crowe facility. The solution will be pumped to clarification filters to remove suspended solids. The filtered pregnant solution will flow to the deaeration column where dissolved oxygen will be reduced to a concentration of less than 1 ppm. The column will be operated at a near full vacuum condition.

Zinc powder will be added to the pipeline from the deaeration column to precipitate the solubilized gold and silver. An inline, vertical turbine pump will transfer the solution with the cemented gold and silver to plate and frame pressure filters. The cemented gold and silver precipitate will be filtered to approximately 40-50 percent solids by weight, prior to being transferred to the refinery. The filtrate, barren solution, will report to a storage tank, where cyanide will be added to achieve an operator defined cyanide concentration. The cyanide bearing solution will be pumped back to the heap leach pad for re-application to dissolve gold and silver from the ore placed on the pad.

## 17.1.5 Refinery

Filtered precipitate will be collected in pans. The pans will be placed in a drying oven for several hours. The temperature in the drying oven will be ramped up and held at different temperatures ranging from 200 to 600 degrees Celsius to remove the moisture in the cake, followed by a cool down period.

The dried precipitate will be mixed with fluxes and charged to a diesel fired, crucible furnace. Slag, containing fused fluxes and impurities, will be poured first into conical pots. Once slag has been removed, the melted gold and silver will be poured into molds to form Doré bars.

Bars will be cooled, cleaned, weighed, and stamped with an identification number and weight. Doré bars will be the final product of the plant. Armored, secure vehicles will be scheduled to be on site for safe and expeditious off-site transfer of the bars.

Slag will be crushed and screened to recover high-grade chips that will be returned to the melting furnace. Remaining slag will be stored for transfer or disposal. Fumes from the melting furnace will be collected through ductwork and cleaned in a bag house dust collector system, followed by a wet scrubber, before discharging to atmosphere.

## 17.2 PROCESS DESIGN CRITERIA

The design of the Moss facility is based on a nameplate capacity of 5,000 tonnes per day. The current mine plan developed for the project is based on a 350-day calendar year; therefore, the maximum yearly ore tonnage is 1.75 million tonnes.

For clarity and simplicity, the term "availability" indicated below, is defined as estimated actual run time of equipment. This would, therefore, include both "mechanical availability" and "use of mechanical availability" factors in an operating plant. For equipment design of the crushing circuit, the agglomeration circuit, and for ore stacking on the pad, an availability factor of 65% was utilized. For equipment design of the solution application and recovery circuit, as well as the Merrill Crowe plant, an availability factor of 95% was utilized. These availabilities are in concert with



equipment manufacture recommendations, as well as those commonly utilized in design of comparable plants in process complexity and throughput.

The mass balance was developed for the Moss process using MetSimTM software. The process simulation assumed overall grades and recoveries for gold and silver as indicated in Table 17-1.

Table 17-1: Head Grades ar	Recoveries Used for Mass Balance Simulation

Metal	Head Grade	Overall Recovery
Gold	1.07 grams per tonne	84 percent
Silver	11.1 grams per tonne	65 percent

The MetSim<sup>™</sup> balance forms the basis for equipment sizing, including pipes and pumps, as well as tanks, and defines the parameters used in the process design criteria.



### 18 PROJECT INFRASTRUCTURE

The Qualified Person for this section of the Technical Report is Dr. David Stone, P.E. except as noted otherwise.

### 18.1 WATER SUPPLY

The principal source for water supply at the Moss project will be groundwater. Heap leaching, by its nature, consumes vast quantities of water which is needed to pre-wet the ore prior to leaching.

The total water demand at Moss is estimated to be in the order of 225 gpm on average and 300 gpm at its peak. The water consumption has been estimated as follows:

- 50 gpm for dust control
- 35 gpm for the agglomeration circuit
- 140 gpm on average for leaching (210 gpm at the peak)

The make-up water demand at Moss is seasonal due to variations in the temperature, humidity and precipitation over the year. The wettest months are January, February and March with an average of 25 mm of precipitation, and the driest months are May and June with less than 2 mm of precipitation. The highest evaporation months are June and July.

The peak demand of 210 gpm is in June every year, and lowest water demand of 115 gpm is in either January or February. A chart showing the seasonal variations in the make-up water needed for leaching can be seen in Figure 18-1.

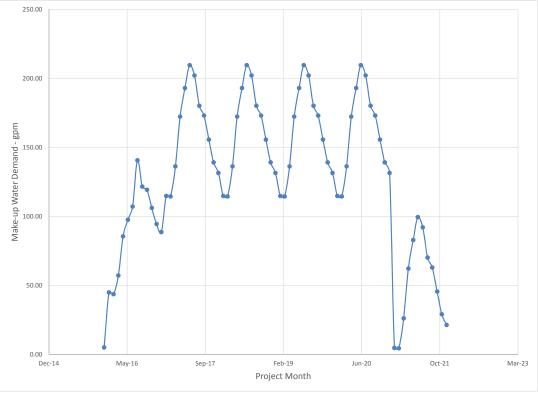


Figure 18-1: Required Make-up Water



#### 18.2 ALTERNATE WATER SOURCES

In the event there is a shortfall in the groundwater resources developed for the project, the Company has two alternatives. The first is to temporarily curtail production in order to reduce the make-up water demand to match the available water supply. Given the season variation of make-up water consumption, it is expected short term production cuts could be a viable means of maintaining operations during periods of high water demand.

However if the Company needed to maintain full production, the second alternative is the use of city water from Bullhead City. This alternative would involve the drilling of a new well somewhere near the County line along the Silver Creek Road, and the installation of a submersible pump and short duration storage tank (4 hours). From this installation the water would be pumped uphill via a 100 mm diameter steel pipe to the turnoff of the #7717 road where the pipeline would follow the road to the patented claims. The pipe would have to be buried along its entire length to prevent tampering.

The total estimated capital cost of these installations is approximately \$1 million. This includes all of the surface facilities including the tank, surface pumps and motor, the steel pipe, and burial of the pipe. It is assumed that the City will pay for drilling the well and installing the casing, and providing a submersible pump. It is also assumed that this installation will be served by grid power.

The City has provided an estimated cost of \$8,500 per acre-ft for City water. Assuming a sustained flow of 150 gpm from the groundwater wells, this amounts to 210 million gallons over the life of the project at a gross water cost of \$5.5 million (not including the additional capital or operating cost for the pumping).

However it should be noted that implementation of the City water supply may require federal permit authorization depending on the water line alignment which includes compliance with the National Environmental Policy Act provisions requiring analysis of the impacts of the Federal action.

#### 18.3 ELECTRIC POWER

The Moss project site is not connected to the main County electrical grid, and the cost of extending the grid to the minesite is considered prohibitive. As such the project has been designed to be powered by diesel powered generators. The expected power demand, based on the motor sizes, is listed in Table 18-1 below. The calculations show, that at full load, the project has about 4.2 MW of motors installed, however due to cyclic demands, the actual operating load is estimated at 2.46 MW.

	Estimated	Operating	Monthly
AREA	Load - kW	Load - Kw	Usage – kW-hr
AREA 100 — PRIMARY CRUSHING	218	152	72,555
AREA 200 — FINE CRUSHING	1398	1,088	519,198
AREA 250 — CRUSHED ORE TRANSFER	252	183	87,561
AREA 300 — LEACH PAD	440	251	119,783
AREA 350 — PONDS	216	77	53,439
AREA 400 — MERRILL CROWE	797	302	210,971
AREA 500 — REFINERY	293	189	131,609
AREA 650 — WATER SYSTEMS	388	144	100,197
AREA 655 — CITY RAW WATER	160	73	51,212
AREA 800 — REAGENTS	21	5	3,757
TOTALS	4,184	2,464	1,350,282

#### Table 18-1: Expected Power Demand



Power for the project will be supplied by five 750 kW diesel powered generators. Two generators are expected to be located at the Merrill Crowe plant, and three will be located near the crusher. The total installed power will be 3,750 kW which allows for one generator unit to be on standby for servicing and maintenance.

### 18.4 FUEL STORAGE

Very limited fuel storage will be available on site. The two principal consumers of diesel will be the mining contractor, and diesel for power generation. The mining Contractor will be responsible for their own fueling and fuel deliveries.

At the 5,000 tonne per day processing rate, the diesel generators will consume roughly 90,000 gallons of diesel per month, or 3,000 gallons per day. A typical diesel tanker can carry roughly 5,500 gallons of fuel so it is anticipated that the fuel will be delivered about every other day.

The project will allow for the storage of one week's supply of diesel, or roughly 20,000 gallons.

#### 18.5 WAREHOUSING

Due to space constraints, and the proximity to Bullhead City, no warehouse space will be made available on site. A warehouse and laydown yard will be leased in Bullhead City and materials will be delivered to site as needed. There is an abundance of suitable storage facilities available in Bullhead City.

#### 18.6 WORKSHOPS/MAINTENANCE

The project plan does not allow for any maintenance workshops or a truck shop for the mining Contractor. It is anticipated that the Company will provide a concrete pad area with a cleanup sump for vehicle fueling, and light maintenance. The Contractor will provide a fabric or other cover over this area as might be needed.

#### 18.7 CAMP/ACCOMMODATIONS

Given the proximity to Bullhead City, and the limited space, the Company will not be providing camp facilities for either construction or for operations. In lieu of a camp, it is expected that the Contractors will provide a crew bus for moving staff to and from the project site. The Company will not be providing any parking facilities on site and personal vehicles, unless authorized, will not be allowed.

Company technical staff and supervisory personnel will likely travel back and forth in company vehicles. This includes the laboratory staff, the grade control personnel, the mine geologist and mine engineer.

#### 18.8 COMMUNICATIONS

Communications at the project site will be upgraded to allow a UHF/VHF multi-channel mine radio system to be installed. Dedicated channels will be provided for the mining Contractor, construction contractors and subcontractors, security, administration and technical staff.

The upgrade may also include microwave or cellular based voice and data communications over a VOIP network which would provide an internet connection at the mine site which allow the use of mobile devices such as iPads and mobile computers.

#### 18.9 HEALTH AND SAFETY

The entire project site will be fenced to restrict access to the public, and in particular off-road recreational vehicles. The heap, ponds and other facilities containing cyanide may have secondary fencing to restrict access to these areas.



The open pit will be bunded off with an earth bund to prevent accidental entry from the adjacent un-patented ground. Warning signs will be posted at key locations to warn of the hazard of entry into the open pit.

The project plan includes a small 8-ft x 20-ft trailer which will serve as first-aid room in the event of an emergency. The project is located within the range of emergency services from Bullhead City, so an onsite ambulance will not be provided. The Company does not intend to hire paramedics to staff the first-aid room, however selected company and contractor staff will be trained in first aid, and CPR, in the event of an incident.

A helicopter landing area will designated somewhere on the project site to allow a medical evacuation in the event of a serious injury as was carried out in Phase I.

All MSHA training and certifications will be done at the main administrative offices in Bullhead City, along with all of the required MSHA documentation and record keeping.

### 18.10 SECURITY

The project will be monitored 24-hours a day by a contract security service as was the case for the Phase I operations. Access to the site from the BLM road will be gated, and site security will require visitors to sign-in and out.

#### 18.11 Administration Building

The main administration offices for the project will be located in Bullhead City. This office will include human resources, purchasing, warehousing, accounting, and a safety officer. The office will also provide workspace for the technical services staff which includes engineering, geology and survey.

A 12x44 ft site office trailer will provide temporary office facilities for the mine engineer and geologists while on site.

#### 18.12 LABORATORY

The existing assay laboratory is housed in three structures:

- A sea-container for sample preparation
- A 12x32 ft wooden shed to house the wet preparation laboratory
- A 12x32 ft wooden shed to house the fire assay laboratory

The feasibility study assumes these facilities will be re-used for the Phase II operations. The laboratory facilities have been inspected and have been judged to be capable of processing the required 150 samples per day on two shifts. Quality control will conducted by routine duplicate samples shipped to external laboratories.

#### 18.13 SEWAGE

No sewage facilities will be provided on site. The feasibility assumes that the use of portable toilet facilities serviced by a local contractor.

#### 18.14 TRANSPORTATION

Transportation to and from the Moss Project site will be carried out on a schedule to limit traffic. This includes all staff and employees, and deliveries.



### 19 MARKET STUDIES AND CONTRACTS

Gold and silver bullion sell on several international markets, the most well-known being the London Metals Exchange or LME. The LME establishes the exchange rate for metal traders in New York and other bourses. The gold price over the last 5 years has peaked at \$1901/oz and hit a low of \$1142/oz late last year.

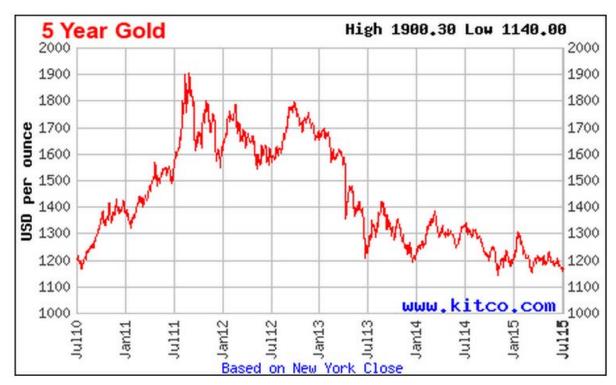


Figure 19-1: Five year gold price (source: Kitco.com)

The Company intends to sell the Moss mine raw doré bars to a precious metal refiner who will separate the gold and silver to produce refined bullion metal for sale. The refiner will pickup the doré bars from the Moss mine site in an armoured car on a pre-arranged schedule, and will provide insurance during transport to the refinery. After refining the Company is paid a settlement based on the LME daily rate on the day of out-turn in accordance with the contract payment terms.

During Phase I the Company had a refining contract with Johnson Matthey out of Salt Lake City. The Company is in receipt of a proposal from a second commercial metals refiner with industry standard terms (Table 19-1).

Payable - Au %	99.0%
Payable - Ag %	98.0%
Refinery Charge - \$/oz	\$0.22
Freight/Insurance - \$/oz	\$0.22

Table 19-1: Marketing Terms



## 20 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

### 20.1 Environmental

### 20.1.1 Water Quality

Several water quality samples were collected during the hydrogeological investigation and they serve as a benchmark for water quality at the project site. The results of this testing are show in Table 20-1 and Table 20-2.

Test	Source	Value	Unit
Alkalinity	SM2320-B	160	mg/L
Bicarbonate	SM2320-B	160	mg/L
Carbonate	SM2320-B	<4.0	mg/L
Chloride	EPA 300.0	58	mg/L
Fluoride	SM4500-F-C	2.9	mg/L
Hydroxide	Calculation	<4.0	mg/L
Nitrogen, Nitrate	EPA 300.0	0.52	mg/L
Nitrogen, Nitrite	EPA 300.0	<0.20	mg/L
рН	SM4500-H-B	7.2 H1	pH Units
Temperature	SM4500-H-B	22	°C
Phosphate, Ortho	EPA 300.0	<0.50	mg/L
Solids, Total Dissolved	SM2540-C	1,400	mg/L
Sulfate	EPA 300.0	740	mg/L

#### Table 20-1: Wet Chemistry Test Results

#### Table 20-2: Metal Content Chemistry Test Results

Analyte	Result	RL	Unit
Aluminum	<0.10	0.10	mg/L
Antimony	< 0.040	0.040	mg/L
Arsenic	<0.10	0.10	mg/L
Barium	0.022	0.010	mg/L
Beryllium	< 0.0010	0.0010	mg/L
Cadmium	< 0.0010	0.0010	mg/L
Calcium	240	2.0	mg/L
Chromium	0.014	0.010	mg/L
Cobalt	< 0.010	0.010	mg/L
Copper	< 0.010	0.010	mg/L
Iron	<0.10	0.10	mg/L
Lead	< 0.015	0.015	mg/L
Magnesium	55	2.0	mg/L
Manganese	< 0.010	0.010	mg/L
Nickel	< 0.010	0.010	mg/L
Potassium	4.8	0.50	mg/L
Selenium	<0.10	0.10	mg/L
Silver	< 0.010	0.010	mg/L
Sodium	96	0.50	mg/L
Thallium	<0.10	0.10	mg/L
Zinc	<0.50	0.050	mg/L

The water quality testing shows the water to be slightly alkaline with a pH of 7.2. No anomalous elemental values were detected and in summary the water appears to be very suitable for use as process water.



### 20.1.2 Air Quality

The major sources of degradation to air quality will be dust from the crusher, and diesel particulates from the generators. The crusher dust will be mitigated with water spray bars at the jaw crusher in order to pre-wet the ore. The diesel particulates will largely be mitigated by the prevailing persistent winds at the project site.

Dust from the mining operations will be confined to the pit floor and haul roads. This dust will be mitigated with frequent watering of the haul roads, and possibly through the application of a dust suppressant.

### 20.1.3 Noise

The major sources of noise at the project will be the crushing operations, and the mining operation. Noise emissions from the crusher will initially be mitigated by the location of the crusher behind the waste dump. However in the later years of the mine the crusher will be located on top of the waste dump. It may become necessary to surround the crusher with a noise barrier such as stockpiled waste if the noise levels are deemed excessive.

The noise from the mining operation will be confined to the bottom of the open pit and is not expected to be noticeable beyond the pit margins. The vibrations from blasting operations should not be noticeable beyond the project site given the small charges that will be used.

### 20.1.4 Surface Water Management

A series of stormwater and sediment collection ponds will be constructed to contain sediment and stormwater from disturbed areas on the mine site. Runoff from unimpacted areas will be diverted around the site where possible. Small tributary drainages located north of the pit and the Moss Claim block will be allowed to drain into the open pit.

Stormwater and sediment collection ponds have been designed to contain stormwater and sediment associated with the 10-year, 24-hour storm of 58 mm. Diversions and sediment pond spillways have been designed to pass runoff associated with the 100-year, 24-hour storm event. All surface water management facilities will be constructed within the Moss patented claim block outside of jurisdictional waters.

#### 20.1.5 Acid Base Accounting

ABA testwork was undertaken on 35 selected drill core and surface grab samples during the exploration program. The samples included:

- 8 drill core samples from AR-195C, AR-197C, AR-200C, AR-201C, AR-204C, AR-210C, AR-211C and AR-212C
- 27 grab samples from various locations along the Moss Vein.

The samples included intervals that were in ore and in waste, both from the hangingwall and the footwall of the Moss Vein.

The samples were analyzed for Sb, As, Se, Th, Be, Cd, Cr, Cu, Pb, Ni, Ag and Zn by ICP methods, and Hg by CVAA methods. The samples were also subjected to ABA testing and sulfur forms by the Modified Sobek method.

The vast majority of the samples returned values below the detection limits for all of the metals including Hg. Some of the samples returned extremely low As and Se values (less than 0.005%) that were just above the detection limit of 0.003%.



Most of the samples also returned sulphur values below the detection limit and a high acid neutralization potential (ANP) value due to the presence of  $CaCO_3$ . Ten samples returned measurable values of sulphur, but only two samples exceeded 1% and none of the samples exceeded 2% (see Table 20-3).

Sample ID	Total Sulfur	CaCO₃
219564	0.02%	19.7
219574	0.14%	5.8
216852	0.73%	33.3
217237	0.71%	22.5
217297	1.50%	-14.8
AR-195C	0.07%	83.0
AR-197C	1.94%	-30.6
AR-201C	0.50%	54.6
AR-210C	0.33%	9.6
AR-212C	0.24%	20.4

## Table 20-3: Sulfur and CaCO<sub>3</sub> Neutralizing (Tonnes of CaCO<sub>3</sub>/kT rock) Content in Samples

In summary the testing indicates the Moss ores have very low to negligible sulfur contents and both the ore and waste is considered to be non-acid generating. This is an important finding for closure as the spent heap ores will not require any long term water quality monitoring or treatment to abate metals leaching. Likewise the waste dumps are expected to be inert at the end of the mine life and no long term remediation or treatment plans will be needed. The ore and waste is also self-neutralizing due to the high  $CaCO_3$  contents throughout the deposit.

## 20.1.6 Environmental Monitoring

Environmental monitoring will be carried out during the life of the project to ensure compliance with all permit conditions and current best practices. The environmental program for Moss will include:

- Monitoring wells downstream and down-gradient from the heap leach pad and waste dumps to monitor for cyanide contamination and metals in the groundwater
- Piezometers installed on the perimeter of the open pit to monitor groundwater levels.
- Routine air quality sampling near the generators

The frequency and extent of the monitoring program will be determined during the permitting process, in particular the Aquifer Protection Permit and the Air Quality Permit.

## 20.1.7 Project HAZOP and Visual Impacts

The Company has prepared a number of draft Hazard Operations Plans (HAZOP Plans) as follows:

- A cyanide management plan to set out the procedures and protocols for cyanide transportation, storage and handling.
- A traffic management plan to set out procedures and protocols for travel to and from the project site and to minimize traffic on the #7717 road.
- A communications plan to set out procedures and protocols for effective communications at the project site to ensure everyone complies with the Health and Safety guidelines
- A biodiversity plan to ensure the protection of wildlife and plants at the project site



These plans will be updated and incorporated into the operating plans for the project site. All employees, contractors, vendors, suppliers and visitors will be expected to comply with these plans.

The Company has also prepared a draft visual analysis to illustrate the visual impacts of the project from sightlines in Bullhead City and along the Silver Creek Road. This analysis showed the project facilities are not visible from Bullhead City and are only visible at limited sections along the Silver Creek road.

## 20.1.8 Reclamation and Closure

The "Arizona Mining BADCT Guidance Manual" provides guidance on the reclamation and closure of mining projects. In summary, the BADCT requirements are:

- Rinsing and detoxification to remove the cyanide from the heap leach
- Re-grading the heap and waste dumps to prevent erosion and/or minimize surface runoff
- Establishment of vegetation on the heap and waste dumps to promote moisture removal through evapotranspiration, or the installation of a low permeability cover layer
- Elimination of the containment in the heap leach pad and removal of any stored liquids.
- Diversion of upslope runoff to prevent water ingress into the heap or waste dumps.
- Monitoring of groundwater quality to detect any leachates that may contain elevated metals or residual cyanide in the heap.

The ponds will be drained and the liners will be removed. The liner material will be disposed of on site, likely buried in the spent heap.

The Merrill Crowe plant will be disassembled and all the components and piping will be shipped offsite for sale to another user. The plant will carry a high residual value. The concrete foundations will be broken up and disposed of in the heap or buried in the bottom of the pond excavation.

The crushing plant will likewise be disassembled and moved offsite for sale to another user. This plant will also carry a high residual value.

The generators will be sold and moved offsite.

During mining operations the open pit will be partially backfilled, however the Company does not intend to return the remaining waste into the open pit at the end of mine operations. Given the pre-mining static water levels this likely means the pit will flood to about the 625 m elevation.

### 20.2 PERMITTING

The Moss Mine recently operated as a fully permitted heap leach during Phase I (pilot plant), including all permit approvals for the mining, crushing, and heap leaching of roughly 122,000 tonnes of ore and mining of an additional 60 tonnes of waste. Phase 1 was one of limited production to test the leach kinetics and recovery parameters for the Moss ores. The Phase 1 mining and production was completed in 2014 and the pilot phase was considered a success.

During Phase II operations, all recoverable ore will be mined and processed from the patented lands, and all related surface disturbance will also be confined to the patented lands.

Environmental permits and approvals had to be secured for the first phase at Moss, as described later in this section. These permits and approvals will need to be amended and new permits and approvals will have to be sought for Phase II. The following table lists the permits and approvals and their current status that will apply to the Phase II



operations. The required permits and approvals, timeframes, and costs are further detailed in the remainder of this section. Table 20-4 shows applicable permits.

Permit/Authorization or Approval	Granting Agency	Permit Purpose
	al Permits, Approvals and Registrations	
Explosives Permit	U.S. Bureau of Alcohol, Tobacco & Firearms	Storage and use of explosives
EPA Hazardous Waste ID No.	U.S. Environmental Protection Agency	Registration as a small-quantity generator of wastes regulated as hazardous
Notification of Commencement of Operations	Mine Safety & Health Administration	Mine safety issues, training plan, mine registration
Section 404 Permit	U.S. Army Corps of Engineers	Placing fill in waters of the United States
Endangered Species Act	U.S. Fish and Wildlife Service	Only if project affects species listed as threatened or endangered, or critical habitat
Federal Communications Commission	FCC	Frequency registrations for radio/microwave communication facilities
	State Permits/Approvals	
Air Quality Emissions Permit	Arizona Department of Environmental Quality	Regulates project sources of air emissions. Will require compliance with the new source performance standards. Site currently operates under a Letter of Non-Determination.
Reclamation Plan Amendment	Arizona State Mine Inspector	Reclamation of surface disturbance due to mining and mineral processing includes financial assurance requirements. Site currently operates under a plan approval as of May 17, 2013.
Aquifer Protection Permit Amendment	Arizona Department of Environmental Quality	Prevent degradation of ground waters of the state from mining, establishes minimum facility design and containment requirements. Site currently operates under Permit #P- 511225 issued on July 19, 2013
Multi Sector General Permit for storm water management for industrial activities.	Arizona Department of Environmental Quality	Management of site storm water. Site currently operates under a Notice of Intent.
Drilling and Water Well Permits	Arizona Department of Water Resources	Exploration and water development.
Septic Treatment Permit Sewage Disposal System	Mohave County	Design, operation, and monitoring of septic and sewage disposal systems.
Hazardous Materials Storage Permit		Hazardous materials safety.
	Local Permits	
Building Permits	Mohave County Building Department	Continued Use
County Road Use and Maintenance Permit	Mohave County Building Planning Department	Use and maintenance of county roads.



## 20.2.1 Permit History/Background

The Company obtained permits and approvals for the Moss Mine pilot operation (Phase I) to produce gold in 2013. The approved operations included a 122,000 tonne cyanide heap leach, a lined pregnant pond, a lined barren pond, and a waste rock facility containing overburden and very low grade ore. The operation was authorized through permits and approvals that were issued by Arizona State agencies. Access to the site by use of the #7717 road was authorized by the local Kingman field office of the BLM.

Because the ore crushing operations generated fugitive emissions that were below a specific threshold value of tons per year, the State of Arizona Department of Environmental Quality (ADEQ) issued a Letter of Non-Determination. As long as the Company operated at emissions levels below that threshold, there was no need to secure an individual emissions permit under the state authorized Clean Air Act permitting program. However, the letter did require the Company to report the actual tons of ore processed to demonstrate conformance to the threshold requirement.

The cyanide heap leach, pregnant solution pond, and barren solution pond are considered discharging facilities (i.e. facilities with the potential to discharge to groundwater) under the Arizona Aquifer Protection Program. An Arizona Aquifer Protection Program (APP) permit was required in order for the Company to operate the mine. The permit application was submitted on December 5<sup>th</sup>, 2012 and was formally accepted the same day. The permit was issued on July 19<sup>th</sup>, 2013. In conjunction with the permit, the Company had to post a \$510,700 bond to cover the costs of closure for the permitted facilities.

The open pit and waste rock facility were authorized under a Reclamation Plan approval that was issued by the Arizona State Mine Inspector's office on May 20<sup>th</sup>, 2013. The Reclamation Plan specifies the plan for reduction of pit slopes and for grading and stabilizing the waste rock facility when mining operations cease. The reclamation plan authorization required the posting of a bond in the amount of \$205,807 to cover the costs for post mining reclamation of the pit and waste facility, as well as for reclamation of roads, structure demolition, and site grading and stabilization.

The Company also filed a Notice of Intent (NOI) for coverage under the Arizona Multi Sector General Storm Water Permit (MSGP, Clean Water Act) for storm water discharges during operation of the Moss Mine during Phase 1. A Storm Water Pollution Prevention Plan (SWPPP) was also prepared to define best management practices (BMPs) for control of storm water discharges from the site.

The pilot phase of the operation (Phase I) was completed in late 2014 and the cyanide heap leach was flushed and rinsed in the spring of 2015. Approximately 4,150 ounces of gold were produced by the pilot operation.

### 20.2.2 Compliance History

The permits and approvals that were granted for the Phase 1 operations at the Moss Mine specified certain requirements that needed to be met. With respect to the APP permit, this included an ongoing obligation to monitor and report groundwater quality in down gradient wells (called points of compliance), and a few items for future submittal that were contained in a compliance schedule. The Reclamation Plan approval requires the submittal of an annual report on the anniversary date of the approval.

The Company has an excellent history of permit compliance and fulfilled all the obligations for data collection, monitoring and reporting. This includes ground water monitoring in accordance with the requirements of the APP permit. There was only one instance where one of the permit limits, an alert level, was exceeded during the monitoring for nitrate; however, subsequent monitoring resulted in a non-detect for nitrate.



There were also requirements for the characterization of discharge during leaching activities, submittal of construction completion drawings and reports, and calculation of alert levels and aquifer quality limits for aquifer water quality parameters as part of the compliance schedule. All of these requirements have been satisfied.

### 20.2.3 Description of Applicable Permits, Permit Amendments, and Approvals<sup>3</sup>

In order to proceed with the development of the Moss Mine into Phase II, the Company will have to obtain the following permits and approvals:

- Aquifer Protection Permit Amendment
- Air Quality Permit
- Arizona Reclamation Plan Amendment
- Arizona Storm Water

An APP amendment will be required for a new/expanded cyanide leach facility, and replacement of the pregnant solution and barren solution ponds. The leach facility will be expanded from the current 114,000 tonnes to 8.05 million tonnes. The existing solution ponds will be closed in place and new solution ponds will be constructed. The capacities of the solution ponds will be approximately 3.7 million gallons for the pregnant ponds and 5.8 million gallons for the stormwater ponds. As with Phase 1, it is expected that the waste rock will qualify as inert and will therefore not be considered a discharging facility.

During the early phases of the operation, it is expected that the Company will be able to continue to operate under the Air Quality Letter of Non-Determination that was previously issued by ADEQ. The Company will have to operate in conformance with the presumed threshold for that Letter until such time as an individual Air Quality Emissions Permit is issued. This permit will be required before the Company can go into full production in Phase II.

The proposed Phase II operation will require an amendment to the Reclamation Plan approval through the Arizona State Mine Inspector's Office. The amendment will include the expansion of the pit from 5.44 to 46 acres, expansion of the waste rock facility from 2.35 to 64 acres, and expansion of the roads and ancillary facility areas from 3.57 to 15 acres. The amendment will also provide the plans for proper post-mining reclamation of those facilities consistent with the reclamation plans for Phase 1.

Both the Reclamation Plan and the APP contain provisions for the closure and reclamation of facilities upon the cessation of mining activity. The Reclamation plan requires reduction of pit slopes and grading, covering and seeding of waste piles, roads, and other disturbed areas. The APP requires proper closure of the leach pad and associated process ponds. The Company has already initiated the closure sequence for the leach facility by rinsing the leach material. For the most part, however, the closure and reclamation plans will be modified by the respective amendments with the recognition that these facilities will become a part of the Phase II operations which will then be addressed in a revised Phase II plan.

A SWPPP amendment will have to be prepared to address the control of storm water discharges from the expanded operations in Phase II. An amended NOI will have to be filed for the expanded operations as well.

### 20.2.4 Additional Permits during Mine Operations

During the latter stages of mine development in Phase II, the Company will be impacting drainages that will likely be considered Waters of the US (jurisdictional waters) for the purposes of the Clean Water Act Section 404 Dredge and Fill Permit Program. The Company will need to secure a permit from the US Army Corps of Engineers (USCOE) to be able to proceed with impacting of those drainages. It is estimated that one to five acres of jurisdictional waters

<sup>3</sup> Valid as of the Effective Date of this report.



may be impacted by future operations and will need to be mitigated. Mitigation options may be available through the USCOE through mitigation banking or in-lieu fees.

An application will also need to be submitted to ADEQ for a Clean Water Act 401 Certification for the proposed operation. The application will consist of a description of the proposed operations sufficient to assess the potential impacts to downstream receiving water quality. The State will review the application materials and assess whether or not the proposed operations will be conducted in a manner to protect downstream water quality. A Certification is granted with conditions (typically best management practices) if the State determines that water quality will be sufficiently protected. The process for issuance of the 401 Certification can take from 6 months to a year, and will be conducted parallel to the Section 404 permit process.

Subsequent to the Effective Date of this report the EPA issued revised criteria for the issue of a Clean Water Act Section 404 Dredge and Fill Permit. The Company is assessing the likely impact of this change on the development timeline.

## 20.2.5 Permit Submittals and Approvals

The preparation of the permit amendment application package for the APP will commence prior to the completion of 60% design documents for Phase II, but the application package will not be complete until the 60% design is completed. According to the regulations for the APP program, a permit must be issued within 180 days of the submittal of a complete application. That 180 days only includes the time that the application is under review and does not include the amount of time necessary for an applicant to respond to deficiencies identified during the review. ADEQ has completed a process improvement procedure to reduce the time to permit issuance with a great deal of success. In the case of the Phase 1 permit for the Moss Mine pilot operation, the permit was issued in seven months from the original date of the application.

An application will need to be submitted to the ADEQ for an Air Quality Permit for the expanded operations. The permit application will include a detailed process flow diagram, emissions calculations for predicted emissions from the proposed operations, an assessment of best available control technology (BADCT), analysis of new source performance standards (NSPS), review of applicability of National Emission Standards for Hazardous Air Pollutants (NESHAPS), and federal acid rain regulations. As mentioned, it is anticipated that initial operations may occur consistent with the Letter of Non-determination that was discussed previously. It is anticipated that the application, review, and approval process for the air quality permit will take approximately 12 to 18 months.

Preparation of the Reclamation Plan amendment application will occur concurrent with the preparation of the APP amendment application. The amendment application will be submitted to the Arizona Mine Inspector's Office. Typical processing for a new mine application is 150 days. The reclamation plan approval was issued for Phase 1 approximately five months after the submittal of the application.

A new storm water Notice of Intent (NOI) will need to be filed with ADEQ to reflect the increased acreage and nature of disturbance. Prior to filing, a revised SWPPP will be prepared to identify the new facility footprints, measures for controlling runoff, and discharge monitoring locations. Unless notified otherwise, an applicant is authorized seven days after submittal of a complete and accurate NOI. There is no bonding requirement or application fee for the permit.

## 20.2.6 Estimated Costs for Permits, Permit Amendments, and Approvals

Table 20-5 summarizes the anticipated costs for obtaining the various permits and approvals required prior to the project startup. Estimates for material preparation for submittal, agency review, and financial assurance are based on the experience with the applicable processes during Phase I. For financial assurance, estimates were derived on a cost per acre basis.



Permit/Approval	Application/Submittal Preparation	Agency Review	Financial Assurance	Permit Fees per Annum*	Total
Aquifer Protection Permit Amendment	59,000	15,000**	1,500,000	30,000	1,604,000
Air Quality Permit	74,500	25,000**	NA	75,000	174,500
Arizona Reclamation Plan Amendment	21,000	600	1,100,000	NA	1,121,600
Arizona Storm Water Permit (AZMSGP)	4,500	NA	NA	NA	4,500
Total	159,000	40,00	2,600,000	105,000	3,065,600

### Table 20-5: Estimated Costs for Startup Permits

\* Permit fees per annum are the sum of annual fees over the anticipated life of the operation (5 years).

\*\* Represent typical levels of effort for agency reviews. Actual cost may be more or less depending on the complexity of an application or degree of controversy.

Table 20-6 provides an estimate of the cost for permit submittals for the additional permits needed during mine operations. These costs are exclusive of any National Environmental Policy Act (NEPA) compliance or mitigation costs.

Permit/Approval	Application/Submittal Preparation	Agency Review	Financial Assurance	Permit Fees per Annum*	Total
Clean Water Act Section 404 Permit	141,000	NA	15,000	NA	156,000
Clean Water Act Section 401 Certification	5,000	NA	NA	NA	5,000
Total	146,000	NA	15,000	NA	161,600

\* Permit fees per annum are the sum of annual fees over the anticipated life of the operation (5 years).

\*\* Represent typical levels of effort for agency reviews. Actual cost may be more or less depending on the complexity of an application or degree

#### 20.3 SOCIAL AND COMMUNITY ISSUES

The following information was provided by the Company for inclusion into this document.

Northern Vertex, through its US subsidiary, Golden Vertex, is endeavoring to be an organization recognized for its safety culture, community commitment, Tribal involvement, educational enhancement, open communication culture and transparency that will create a legacy for the stakeholders in the Bullhead City area for many years to come. Since December 2012, the Company has established the means to achieve this goal as follows:

- The Company's safety record during Phase I Pilot Plant operations was exemplary with no loss time accidents or MSHA reportable incidents occurring. The Company was awarded two State/National awards as a result.
- A community enhancement plan was initiated to establish a cultural and heritage center in Bullhead City's Community Park. The first phase of that initiative was completed in August 2013 and the second phase is expected to be completed later this year. The intention is to have a central location to celebrate and showcase the unique and diverse local history of the Bullhead City area with specific recognition of the important role the Colorado River played in this history with various stakeholders providing exhibits.
- The Company has had continuous dialogue with the local Fort Mojave Tribe, to ensure the Tribe is informed and up to date about the Company's activities and to discuss possible job training programs for the mine when in production. Where possible, site visits have been conducted to illustrate the nature and location of the



Company's mine development plans and site cultural surveys have been carried out. Other Tribes in the region have been visited and informed of the Company's activities.

- An educational enhancement program was initiated to facilitate the establishment of an Earth Sciences program at Mohave High School along with a pathway to a mining engineering degree or related tertiary education at the University of Arizona. Site visits by students are actively encouraged and the Company's goal is to have senior mine staff be locally educated.
- Each month, the Moss Mine Project advisory Council a volunteer group chaired by an individual independent of the Company meets to discuss the latest developments related to the project. The Company presents its updates to this forum which is open to key stakeholders in the region and to the general public.
- Continuous contact is also maintained with the local government institutions Bullhead City Council, Mohave County Board of Supervisors, Arizona State government representatives and local Federal Congressional elected officials and staff. Site visits have been conducted with all these key parties.

The mine is removed from the nearest community – Bullhead City – and does not infringe upon any other land uses apart from periodic off-road recreational activities. The Company remains focused on working effectively and respectfully with local stakeholders to enhance the capacity of the local communities in the area



## 21 CAPITAL AND OPERATING COSTS

### 21.1 CAPITAL COST ESTIMATE

Table 21-1 shows a summary of estimated initial capital expenses.

Table 21-1: Direct	and Indirect Capital	Cost Estimate Summary

Description	Cost
Direct Costs	
Site General	\$895,619
Mining Fleet	\$0
Primary Crushing	\$1,914,626
Fine Crushing	\$4,311,434
Crushed Ore Transfer	\$1,479,804
Leach Pad – Stacking	\$1,482,549
Leach Pad & Ponds – Earthworks &	\$5,251,058
Lining	
Ponds – Pump & Pipe	\$1,202,534
Merrill Crowe	\$4,410,729
Refinery	\$1,726,463
Water Systems	\$1,062,094
Power Generation	\$838,330
Reagents	\$195,297
Ancillaries	\$68,348
Subtotal Direct Cost	\$24,838,885
Indirect Costs	
Contingency	\$2,180,434
Other Indirects Including EPCM,	\$4,339,641
Leach Pad Lining QA, Mobilization,	
Spares and Commissioning	
Owner's Costs	\$1,650,000
Arizona Tax	\$0
TOTAL	\$33,008,960

## 21.1.1 Introduction

In general M3 based this capital cost estimate (CAPEX) on its knowledge and experience of similar types of facilities and work in similar locations. Resources available to M3 included major equipment vendor quotations and recent cost data collected from similar process plants that have been constructed, are under construction, are being designed or studied in other locations.

## 21.1.2 Assumptions

The project is assumed to be constructed in a conventional EPCM format, e.g. Northern Vertex will retain a qualified EPCM contractor to manage and design the project; bid and procure materials and equipment as agent for Northern Vertex; bid and award construction contracts as agent; and manage the construction of the facilities as agent.



Northern Vertex will order major material supplies (e.g., structural and mechanical steelwork) as well as bulk orders (e.g., piping and electrical). These will be issued to construction contractors on site using strict inventory control.

All costs to date by Owner are considered as sunk costs.

"Initial Capital" is defined as all capital costs through to the end of construction. Capital costs predicted for later years are carried as sustaining capital in the financial model.

All costs are in 2<sup>nd</sup> quarter 2015 US dollars.

## 21.1.3 Estimate Accuracy

The accuracy of this estimate for those items identified in the scope-of-work is estimated to be within the range of plus 15% to minus 15%; i.e., the cost could be 15% higher than the estimate or it could be 15% lower. Accuracy refers to the level of detail of the estimate, which is an issue separate from contingency which accounts for undeveloped scope.

## 21.1.4 Contingency

Contingency is intended to cover unallocated costs from lack of detailing. It is a compilation of aggregate risk from all estimated cost areas. Contingency is not simply a "buffer" to cover estimate inaccuracy. Properly calculated contingency will be spent.

## 21.1.5 Reference Documents

Documents available to the estimators include the following:

Design Criteria	(Yes)
Equipment List	(Yes)
Equipment Specifications	(Partial)
Flowsheets	(Yes)
P&IDs	(Yes)
General Arrangements	(Yes)
Civil Drawings	(Partial)
Electrical Schematics	(Yes)
Vendor Quotations	(Partial)

A number of other detail drawings, such as the architectural and structural details, will be developed at the EPCM stage of the project.

### 21.1.6 Leach Pad and Ponds – Earthwork and Lining

Capital costs for the earthwork and lining of the leach pad, pregnant solution pond and event pond were provided by Golder Associates in some detail.

### 21.2 OPERATING AND MAINTENANCE COSTS

### 21.2.1 Introduction

This section addresses the following costs:

• Mining Costs



- Process Plant Operating & Maintenance Costs
- General and Administrative Costs

The operating and maintenance costs for the Moss Mine operations are summarized by areas of the plant, and shown in Table 21-2.

Mining	\$5.96
Process Plant	\$6.65
General Administration	\$0.95
Refining/Transportation	\$0.10
Total	\$13.66

### Table 21-2: Life of Mine Operating Cost by Area

### 21.2.2 Contract Mining

During the feasibility study the Company invited several experienced mining contractors to bid on the Phase II mining for the full 5 year life-of-mine. Typically these bids are not solicited until after the feasibility is complete, however in anticipation of the favorable economics for Moss, the Company elected to solicit the bids earlier.

Five contractors were invited to bid. A site inspection tour was conducted with each contractor and site specific requirements were elaborated on. This included the necessity to stay on patented lands at all times, and the requirement that all mobile and fixed equipment must be delivered via the #7717 road without any roadworks such as widening or re-grading as was the case for Phase I.

The lowest bidder was selected as the preferred contractor since it had the lowest cost escalation risk in the event of an increase in the bid quantities. The bid also included the rental of a loader on the weekend to feed the crusher so that the mining can limited to week days. The Company intends to conclude a mining services contract with the preferred contractor in the near term.

The unit prices in the low bid were used to develop the mining operating costs used in the financial model.

## 21.2.3 Process Plant Operating Cost

The process plant operating costs are summarized by areas of the plant and then by cost elements of labor, power, reagents, maintenance parts and supplies and services. Table 21-3 summarizes the monthly cost for each production phase.

Process Tonnes	2,500 tpd		3,500 tpd		5,000 tpd	
	Month Cost	\$/t	Month Cost	\$/t	Month Cost	\$/t
Primary Crushing	\$61,832	\$0.85	\$67,900	\$0.67	\$77,163	\$0.53
Fine Crushing	\$146,899	\$2.01	\$192,729	\$1.89	\$261,998	\$1.80
Leaching	\$154,301	\$2.12	\$197,357	\$1.93	\$262,101	\$1.80
Merrill Crowe/Refinery	\$110,615	\$1.52	\$132,824	\$1.30	\$166,581	\$1.14
Ancillaries	\$109,386	\$1.50	\$123,647	\$1.21	\$145,223	\$1.00
Total Process Plant	\$583,033	\$8.00	\$714,457	\$7.00	\$913,065	\$6.26

Table 21 2. Drococc	Diant Operating Cost
1 able 21-3. PTUCESS	Plant Operating Cost



### 21.2.4 Process Plant Labor & Fringes

Process labor costs were derived from a staffing plan and based on prevailing daily or annual labor rates in the Bullhead City area. Labor rates and fringe benefits for employees include all applicable social security benefits as well as all applicable payroll taxes. The staffing plan summary and gross annual labor costs are shown in Table 21-4.

Area	Staff	Month Cost
Primary Crushing	8	\$37,557
Leaching	8	\$37,557
Merrill Crowe/Refinery	6	\$29,213
Ancillary	10	\$63,661
Maintenance	17	\$83,048
Total	49	\$251,037

### 21.2.5 Power

Power costs were based on power generation and the overall power rate is estimated at \$0.20 per kWh assuming a diesel price of US\$2.50 per gallon. Power consumption was based on the equipment list connected kW, discounted for operating time per day and anticipated operating load level. A power consumption summary is shown in Table 21-5 by area for each production phase.

Process Tons	72,917	102,083	145,833
Summary	Month kWh	Month kWh	Month kWh
Area 100 — Primary Crushing	36,278	50,789	72,555
Area 200 — Fine Crushing	259,601	363,438	519,198
Area 250 — Crushed Ore Transfer	43,781	61,293	87,561
Area 300 — Leach Pad	59,892	83,848	119,783
Area 350 — Ponds	26,719	37,407	53,439
Area 400 — Merrill Crowe	105,486	147,680	210,971
Area 500 — Refinery	65,805	92,126	131,609
Area 650 — Water Systems	50,099	70,138	100,197
Area 655 — City Raw Water System	25,606	35,848	51,212
Area 800 — Reagents	1,879	2,630	3,757
Total	675,146	945,196	1,350,282

#### Table 21-5: Power Consumption Summary

### 21.2.6 Reagents

Consumption rates were determined from the metallurgical test data or industry practice. Budget quotations were received for reagents supplied from local sources where available with an allowance for freight to site.



	kg/t	\$/kg
Leaching		
Cement	2.00	\$0.15
Sodium Cyanide	0.38	\$2.35
Merrill Crowe/Refinery		
Zinc Dust	0.016	\$2.80
Diatomaceous Earth	0.05	\$0.85
Flux	0.05	\$1.35
Ancillary		
Antiscalant	0.05	\$4.40

### Table 21-6: Reagents Summary

### 21.2.7 Maintenance Wear Parts and Consumables

Grinding media consumption and wear items (liners) were based on industry practice for the crusher and grinding operations. These consumption rates and unit prices are shown in Table 21-7.

	kg/t	\$/kg
Primary Crusher Liners	0.01	\$4.55
Secondary Crusher Liners	0.04	\$4.55
Tertiary Crusher Liners	0.09	\$4.55

Table 21-7: Grinding Media and Liners

An allowance was made to cover the cost of maintenance of all items not specifically identified and the cost of maintenance of the facilities. The allowance was calculated using the direct capital cost of equipment times a percentage for each area, which totaled approximately \$150,000 per month.

### 21.2.8 Process Supplies & Services

Allowances were provided in process plant for outside consultants, outside contractors, vehicle maintenance, and miscellaneous supplies which amounted to approximately \$0.07/ore ton. The allowances were estimated using M3's information from other operations and projects.

### 21.2.9 General and Administration (G&A)

General and administration costs include labor and fringe benefits for the administrative personnel, human resources, safety and environmental and accounting. Also included are office supplies, communications, insurance, employee transportation and camp, and other expenses in the administrative area. Labor costs are based on a staff of 16. Monthly wages and benefits amounted to approximately \$91,000 and offices expenses were estimated at approximately \$21,000 per month.

### 21.2.10 Labor Rates Analysis

This section presents an overview of the current labor rate environment in Arizona compared to the wage rates adopted for this study. Table 21-8 and Table 21-9 outline the wage and salary rates utilized in this study, and Table 21-10 provides a comparison of prevailing wage rates in southern Arizona compared to the Moss study.

In summary the Moss Project is being developed in a favorable labor market due to a number of recent mine closures and project slowdowns. This has created an available pool of local skilled labor and contractor at very competitive rates. The Bullhead City rates do not have to compete with other markets in Arizona, such as Phoenix and Tucson



where the cost of living is higher and hence prevailing wages are higher. In addition the Bullhead City area is favored by many outdoor enthusiasts who would rather live and work in a rural environment such as the Moss region offers.

	Annual	Annual	Total
Department and Position	Base Salary	Benefits	Annual
	US\$	US\$	Cost
Process Plant Administration - Operations			
Plant Manager	\$83,200	\$33,280	\$116,480
Metallurgical Engineer	\$73,028	\$29,211	\$102,239
Plant Supervisor	\$68,000	\$27,200	\$95,200
Administrative Assistant	\$32,000	\$12,800	\$44,800
Process Plant Operations			
Primary Crushing			
Crusher Operator	\$42,480	\$16,992	\$59,472
Crusher Helper	\$38,000	\$15,200	\$53,200
Fine Crushing			
Fine Crushing Operator	\$42,480	\$16,992	\$59,472
Fine Crushing Helper	\$38,000	\$15,200	\$53,200
Leaching			
Leaching Operator	\$42,480	\$16,992	\$59,472
Leaching Helper	\$38,000	\$15,200	\$53,200
Merrill Crowe/Refinery			
Merrill Crowe Operator	\$42,480	\$16,992	\$59,472
Refinery Operator	\$42,480	\$16,992	\$59,472
Merrill Crowe/Refinery Helper	\$38,000	\$15,200	\$53,200
Laboratory			
Lab Supervisor	\$68,000	\$27,200	\$95,200
Assayer	\$44,720	\$17,888	\$62,608
Sample Prep	\$32,000	\$12,800	\$44,800
Plant Administration - Maintenance			
Plant Maintenance Supervisor	\$68,000	\$27,200	\$95,200
Maintenance Planner	\$52,628	\$21,051	\$73,679
Maintenance Clerk	\$32,000	\$12,800	\$44,800
Plant Maintenance			
Plant Mechanic	\$42,480	\$16,992	\$59,472
Mechanical Helper	\$38,000	\$15,200	\$53,200
Electrician	\$42,480	\$16,992	\$59,472
Electrician Helper	\$38,000	\$15,200	\$53,200

## Table 21-8: Plant Operations Labor Positions



Area	Position	Annual Wages	Labor Benefits
Office	General Manager	\$112,000	\$44,800
	Accountant & Purchasing & Pers	\$48,000	\$19,200
	Clerks	\$28,000	\$11,200
	Secretaries	\$24,000	\$9,600
	Community Relations Officer	\$60,000	\$24,000
	Mine Superintendent	\$88,000	\$35,200
	Mine Engineer (senior)	\$72,000	\$28,800
	Mine Geologist (senior)	\$64,000	\$25,600
	Chief Surveyor	\$64,000	\$25,600
	Surveyor Assistant	\$32,000	\$12,800
	Grade Control Technician	\$20,000	\$8,000
Other	Safety Officer	\$60,000	\$24,000
	Security, Safety & First Aid	\$30,000	\$12,000

## Table 21-9: General and Administrative Labor Costs

# Table 21-10: Prevailing Rates vs. Study Rates for Operators

	Arizona Rates	Feasibility Rates
Crusher operator	\$24.50	\$19.00
Crusher helper	\$23.00	\$17.00
Plant Operator	\$24.50	\$19.00
Plant Helper	\$23.00	\$17.00
Refinery Operator		\$19.00
Leach Pad Operator		\$19.00
Assayer	\$24.00	\$18.00
Sample Prep	\$23.00	\$14.32
Mechanic	\$26.00	\$19.00
Mechanic Helper	\$23.00	\$17.00
Electrician	\$26.00	\$19.00



### 22 ECONOMIC ANALYSIS

The Qualified Person for this section of the Technical Report is Dr. David Stone, P.E.

#### 22.1 INTRODUCTION

The financial evaluation presents the determination of the after-tax Net Present Value (NPV), payback period (time in years to recapture the initial capital investment), and the Internal Rate of Return (IRR) for the project. Monthly cash flow projections were estimated over the life of the mine based on the estimates of capital expenditures and production cost and sales revenue. The sales revenue is based on the production of a gold and silver bullion. The estimates of capital expenditures and site production costs have been developed specifically for this project and have been presented in earlier sections of this report.

#### 22.2 MINE PRODUCTION STATISTICS

Mine production is reported as ore, low grade ore and waste from the mining operation. The annual production figures were obtained from the mine plans as reported earlier in this report.

The life of mine ore and waste quantities and ore grade are presented in Table 22-1.

	Tons	Gold (g/t)	Silver (g/t)
Ore	7,500,000	0.862	9.656
Low Grade Ore	461,000	0.218	3.219
Waste	13,008,000		

#### Table 22-1: Life of Mine Ore, Waste and Metal Grades

#### 22.3 PLANT PRODUCTION STATISTICS

Ore will be processed with crushing, agglomeration and stacking of ore onto a conventional heap leach pad. Gold and silver will be recovered using a Merrill Crowe process to produce a doré bar. The estimated metal recoveries are presented in Table 22-2.

#### Table 22-2: Metal Recovery Factors and Production

	%	Recovered Metal (kozs)
Gold	82.0%	175
Silver	65.0%	1,562

### 22.4 MARKETING TERMS

Doré bars will be produced and sent to a precious metal refinery. The refining charges are negotiable at the time of the agreement. The refining terms and transportation charges used in the analysis are shown below.

### Table 22-3: Marketing Terms

Payable - Au %	99.0%
Payable - Ag %	98.0%
Refinery Charge - \$/oz	\$0.22
Freight/Insurance - \$/oz	\$0.22



### 22.5 CAPITAL EXPENDITURES

### 22.5.1 Initial Capital

The financial indicators have been determined with 100% equity financing of the initial capital. The initial capital carried in the financial model is shown in Table 22-4. It should be noted that the mine does not require any prestripping to access ore, and the mine will utilize a contractor-owned mining fleet; hence, there are no initial capital expenses associated with the mine.

Mine	\$0
Process Plant	\$26,108
Heap Leach	\$5,251
Owner's Cost	\$1,650
Phase 1 Salvage	-\$60
Total	\$32,949

### 22.5.2 Sustaining Capital

An allowance for sustaining capital expenditures during the production period has been included in the financial analysis. The sustaining capital contained in the financial model is estimated at \$3.9 million.

### 22.5.3 Working Capital

A 19-day delay of receipt of revenue from sales is used for accounts receivables. A delay of payment for accounts payable of 15 days is also incorporated into the financial model. Supply inventory was based on 1% of the cost of capital equipment which is estimated at \$137,000. All the working capital is recaptured at the end of the mine life and the final value of these accounts is \$0.

#### 22.5.4 Salvage Value

An allowance for salvage value has been included in the cash flow analysis which was based on 20% of the capital cost of equipment and is estimated at \$2.7 million.

#### 22.6 REVENUE

Monthly revenue was determined by applying estimated metal prices to the monthly payable metal estimated for each month. Sales prices have been applied to all life of mine production without escalation or hedging. The revenue is the gross value of payable metals sold before treatment and transportation charges. Metal sales prices used in the evaluation are as shown in Table 22-5.

#### Table 22-5: Metal Prices

Gold (\$/oz.)	\$1,250.00
Silver (\$/oz.)	\$20.00



### 22.7 OPERATING COSTS

Life of mine Cash Operating Costs include mine operations, process plant operations, general and administrative costs and refining/transportation charges. Contract mining is being used for the mining cost which obtained from various bids from contractors. The process plant were estimated from first principles and quotes for the major consumables including cyanide, cement and fuel. Presented in Table 22-6 is the estimated operating cost by area per ton of ore processed.

Mining	\$5.96
Process Plant	\$6.65
General Administration	\$0.95
Refining/Transportation	\$0.10
Total	\$13.66

### 22.8 OTHER CASH COSTS

Other cash costs include a royalty payment, reclamation/closure cost and salvage value at the end of the mine life:

- Royalty payments are included for several royalties; the estimated royalty payments for the life of the mine are \$7.4 million.
- Reclamation and closure costs are estimated to be \$2.0 million.
- Salvage value at the end of the mine life was estimated at 20% of the cost of capital equipment which are \$2.7 million.

### 22.9 TAXATION

#### 22.9.1 Income Taxes

Taxable income for income tax purposes is defined as metal revenues minus operating expenses, royalty, property and severance taxes, reclamation and closure expense, depreciation and depletion. Income tax rates for state and federal are as follows:

•	State rate	6.5%
•	Federal rate	34.2%

Income taxes were calculated on the taxable income described above using the federal and state rates.

### 22.9.2 Depreciation

Depreciation is calculated using the units of production method starting with first year of production.

### 22.9.3 Depletion

The percentage depletion method was used in the evaluation. It is determined as a percentage of gross income from the property, not to exceed 50% of taxable income before the depletion deduction. The gross income from the property is defined as metal revenues minus downstream costs from the mining property (smelting, refining and transportation). Taxable income is defined as gross income minus operating expenses, overhead expenses, and depreciation and state taxes.



Also included in the analysis was the Arizona severance tax which is based on the 50% of the net gross revenue times a rate of 2.5%. It is estimated that \$1.5 million will be paid for the Arizona severance tax.

## 22.10 PROJECT FINANCIAL INDICATORS

The economic analysis was carried out using standard discounted cash flow modelling techniques. The production and cost estimates derived for the Feasibility Study were estimated on a monthly basis for all pre-production costs and for the first twelve months of production. Quarterly estimates were used for the remaining forty-eight months of production.

Applicable royalties were applied – the BHL, Greenwood and MinQuest royalties – current Federal and Arizona State taxes were incorporated into the cash flow model and the "unit of production" depreciation method was used to calculate net taxable income. The economic analysis was carried out on a 100% project basis. Given the location and relatively uncomplicated nature of the project, the Base Case uses a 5% discount factor in arriving at the project Net Present Value ("NPV"). Standard payback calculation methodology was also utilized.

The project generates a Before-Tax cashflow of \$94 million (\$70 million After-Tax) over 5 years or roughly \$20 million in free cashflow per year. The project financial indicators are shown in Table 22-7 below.

	Pre-Tax	After-Tax
NPV @ 0%	US\$94.0 M	US\$70.3 M
NPV @ 5%	US\$75.3 M	US\$55.3 M
NPV @ 10%	US\$60.4 M	US\$43.3 M
IRR %	54.6%	44.3%
Payback (yrs)	2.3	2.4

## 22.11 SENSITIVITY ANALYSIS

Table 22-8, Table 22-9 and Table 22-10 illustrate the Base Case project economics and the sensitivity of the project to changes in the base case metal prices, operating costs and capital costs. As is typical with precious metal projects, the Moss project is most sensitive to metal prices, followed by operating costs, and initial capital costs. The NPV in these tables is in thousands.

	Gold Price (\$/oz)	Silver Price (\$/oz)	NPV @ 0%	NPV @ 5%	NPV @ 10%	IRR	Payback (yrs)
Base Case	\$1,250	\$20	\$70,288	\$55,253	\$43,271	44.3%	2.4
+20%	\$1,500	\$24	\$103,667	\$84,231	\$68,709	62.7%	2.1
+10%	\$1,375	\$22	\$87,063	\$69,817	\$56,056	53.7%	2.2
0%	\$1,250	\$20	\$70,288	\$55,253	\$43,271	44.3%	2.4
-10%	\$1,125	\$18	\$52,954	\$40,199	\$30,050	34.2%	2.7
-20%	\$1,000	\$16	\$34,861	\$24,454	\$16,195	23.2%	3.3

Table 22-8: Metal Price Sensitivity Analysis



	NPV @ 0%	NPV @ 5%	NPV @ 10%	IRR	Payback (yrs)
Base Case	\$70,288	\$55,253	\$43,271	44.3%	2.4
+20%	\$55,493	\$42,171	\$31,581	34.7%	2.7
+10%	\$63,010	\$48,824	\$37,530	39.5%	2.6
0%	\$70,288	\$55,253	\$43,271	44.3%	2.4
-10%	\$77,259	\$61,415	\$48,775	48.8%	2.3
-20%	\$84,082	\$67,448	\$54,165	53.4%	2.2

## Table 22-9: Operating Cost Sensitivity Analysis

# Table 22-10: Capital Cost Sensitivity Analysis

	NPV @ 0%	NPV @ 5%	NPV @ 10%	IRR	Payback (yrs)
Base Case	\$70,288	\$55,253	\$43,271	44.3%	2.4
+20%	\$66,008	\$50,653	\$38,414	36.4%	2.6
+10%	\$68,162	\$52,966	\$40,854	40.1%	2.5
0%	\$70,288	\$55,253	\$43,271	44.3%	2.4
-10%	\$72,384	\$57,515	\$45,665	49.1%	2.3
-20%	\$74,457	\$59,757	\$48,043	55.0%	2.2

### 22.12 FINANCIAL MODEL

A detailed financial model is shown in Table 22-11.



### Table 22-11: Financial Model

#### NORTHERN VERTEX - MOSS GOLD HEAP LEACH PROJECT PHASE II MINING - FINANCIAL MODEL - Base Case

PHASE II MINING - FINANCIAL MODEL - Base Case											
Mining Operations Ore	Tot	al	-6	-5	-4	-3	-2	-1	1	2	3
Beginning Inventory (kt) Mined (kt) Ending Inventory (kt)		7,500 7,500	7,500 - 7,500	7,500 - 7,500	7,500 - 7,500	7,500 - 7,500	7,500 - 7,500	7,500 - 7,500	7,500 75 7,425	7,425 75 7,350	7,350 75 7,275
Gold Grade (g/t) Silver Grade (g/t)		0.862 9.656							1.18 10.51	0.95 8.26	0.83 9.00
Contained Gold (kozs) Contained Silver (kozs)		208 2,328	-	-	-	:	-	-	3 25	2 20	2 22
Low Grade Ore Beginning Inventory (kt) Mined (kt) Ending Inventory (kt)		461 461	461 - 461	461 - 461	461 - 461	461 - 461	461 - 461	461 - 461	461 0 461	461 3 458	458 5 454
Gold Grade (g/t) Silver Grade (g/t)		0.218 3.219	-	-	-	-	-	-		0.20 3.31	0.21 3.25
Contained Gold (kozs) Contained Silver (kozs)		3 48		÷	-	:	-	÷		0 0	0 0
Waste Beginning Inventory(kt) Mined (kt) Ending Inventory (kt)		13,008 13,008 -	13,008 - 13,008	13,008 - 13,008	13,008 - 13,008	13,008 - 13,008	13,008 - 13,008	13,008 - 13,008	13,008 175 12,833	12,833 174 12,659	12,659 170 12,489
Total Material Mined (kt)		20,969	1-1	-	-	-	3 <b>-</b> 3	-	250	252	250
Process Plant Operations											
Beginning Ore Inventory (kt) Ore - Processed (kt) Ending Ore Inventory		8,052 8,052	8,052 - 8,052	8,052 8,052	8,052 - 8,052	8,052 - 8,052	8,052 - 8,052	8,052 - 8,052	8,052 75 7,977	7,977 75 7,902	7,902 75 7,827
Gold Grade (g/t) Silver Grade (g/t)		0.83 9.28	•	-	•	-	•	-	1.18 10.51	0.95 8.26	0.83 9.00
Contained Gold (kozs) Contained Silver (kozs)		214 2,403	-	-		;	-	-	3 25	2 20	2 22
Recovery Gold (%) Recovery Silver (%)		82.0% 65.0%									
Recovered Gold (kozs) Recovered Silver (kozs)		175 1,562							0 2	1 5	1 8
Payable Metals Payable Gold (kozs) Payable Silver (kozs)		173 1,531		-	-	-	-	÷	0 2	1 4	1 8
Income Statement (\$000) Metal Prices Gold (\$/oz) Silver (\$/oz)		\$1,250 \$20	\$1,250 \$20	\$1,250 \$20	\$1,250 \$20	\$1,250 \$20	\$1,250 \$20	\$1,250 \$20	\$1,250 \$20	\$1,250 \$20	\$1,250 \$20
Revenues Gold Revenue (\$ 000) Silver Revenue (\$ 000) Total Revenues	\$/t \$26.93 \$ \$3.80 \$ \$30.73 \$	216,865 30,613 247,477	\$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0	\$351 \$39 \$390	\$810 \$90 \$900	\$1,375 \$158 \$1,534
<b>Operating Cost</b> Mining Process Plant General Administration Treatment & Refining Charges	\$5.96 \$6.65 \$0.95	\$48,019 \$53,575 \$7,621	\$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0	\$592 \$583 \$112	\$597 \$583 \$112	\$592 \$583 \$112
Dore' Refinery Charge Freight/Insurance	\$0.05 \$0.05	\$382 \$382	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$1 \$1	\$1 \$1	\$2 \$2
Total Operating Cost	\$13.66	\$109,979	-	-		-		-	1,289	1,295	1,291
Royalty Salvage Value Reclamation & Closure Total Production Cost	\$0.92 -\$0.34 \$0.25 \$14.49	\$7,436 -\$2,736 \$2,000 \$116,679	\$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0	\$0 \$0 \$0	\$2 \$0 \$0 \$1,290	\$4 \$0 \$0 \$1,298	\$6 \$0 <u>\$0</u> \$1,298
Operating Income	\$16.24	\$130,799	\$0	\$0	\$0	\$0	\$0	\$0	-\$900	-\$399	\$236
Initial Capital Depreciation Sustaining Capital Depreciation Total Depreciation	\$4.10 \$0.48 \$4.58	\$33,009 \$3,878 \$36,887	\$0	\$0	\$0	\$0	\$0	\$0	\$53 \$0 \$53	\$123 \$0 \$123	\$209 \$0 \$209
Net Income After Depreciation	\$11.66 \$	93,911 \$	- \$	- \$	- \$	- \$	- \$	- \$	(953) \$	(522) \$	27
Income Taxes	\$2.94 \$	23,684	150	181	121	25	121		1077	:52	
Net Income After Taxes	\$8.72 \$	70,228	-		-	-		*	(953)	(522)	27
Cash Flow Operating Income after Depreciation Add Back Depreciation	\$ \$	93,911 \$ 36,887 \$	- \$ - \$	- \$ - \$	- \$ - \$	- \$ - \$	- \$ - \$	- \$ - \$	(953) \$ 53 \$	(522) \$ 123 \$	27 209
Working Capital Account Recievable Accounts Payable Inventory - Parts, Supplies Total Working Capital	\$ \$ \$		\$0 \$0 - \$	\$0 \$0 - \$	\$0 \$0 - \$	\$0 \$0 -\$46 (46) \$	\$0 \$0 -\$46 (46) \$	\$0 \$0 -\$46 (46) \$	-\$247 \$644 397 \$	-\$323 \$3 (320) \$	-\$402 -\$2 (403)
Capital Expenditures Initial Capital Mine Process Plant Heap Leach Owners Cost Phase 1 Salvage		\$0 \$26,108 \$5,251 \$1,650 -\$60	\$0 \$1,305 \$263 \$83 -\$60	\$0 \$2,611 \$525 \$165 \$0	\$0 \$5,222 \$1,050 \$330 \$0	\$0 \$7,832 \$1,575 \$495 \$0	\$0 \$5,222 \$1,050 \$330 \$0	\$0 \$2,611 \$525 \$165 \$0	\$0 \$1,305 \$263 \$83 \$0	\$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0
Sustaining Capital Mine Process Plant Total Capital Expenditures	_	\$600 \$3,278 \$36,827	\$0 \$0 \$1,590	\$0 \$0 \$3,301	\$0 \$0 \$6,602	\$0 \$0 \$9,903	\$0 \$0 \$6,602	\$0 \$0 \$3,301	\$0 \$0 \$1,650	\$0 \$0 \$0	\$0 <u>\$0</u> \$0
Cash Flow before Taxes Cummulative Cash Flow before Taxes	S	93,971 \$ \$	\$1,590 (1,590) \$ (1,590) \$	(3,301) \$	(6,602) \$ (11,493) \$	(9,948) \$	(6,647) \$	(3,346) \$		(718) \$	(167) (34,474)
Taxes Income Taxes	\$	23,684 \$	- \$	- S	- \$	- \$	- \$	1.0 - \$	1.0	1.0	1.0
Cash Flow after Taxes Cummulative Cash Flow after Taxes	\$	70,288 \$ \$	(1,590) \$ (1,590) \$	(3,301) \$	(6,602) \$ (11,493) \$	(9,948) \$	(6,647) \$ (28,089) \$	(3,346) \$		(718) \$	(167) (34,474)



#### NORTHERN VERTEX - MOSS GOLD HEAP LEACH PROJECT PHASE II MINING - FINANCIAL MODEL - Base Case

Mining Operations	4	5	6	7	8	9	10	11	12	13
Ore Beginning Inventory (kt) Mined (kt) Ending Inventory (kt)	7,275 75 7,200	7,200 75 7,125	7,125 75 7,050	7,050 105 6,946	6,946 105 6,841	6,841 105 6,736	6,736 105 6,631	6,631 105 6,526	6,526 105 6,421	6,421 141 6,280
Gold Grade (g/t) Silver Grade (g/t)	0.78 7.95	0.84 8.61	0.78 7.58	0.94 10.74	0.87 9.17	0.90 8.90	0.88 7.36	0.88 8.56	0.85 10.65	0.94 10.29
Contained Gold (kozs) Contained Silver (kozs)	2 19	2 21	2 18	3 36	3 31	3 30	3 25	3 29	3 36	4 47
Low Grade Ore Beginning Inventory (kt) Mined (kt) Ending Inventory (kt)	454 3 451	451 6 444	444 7 438	438 3 435	435 6 428	428 7 421	421 7 414	414 4 410	410 5 405	405 12 393
Gold Grade (g/t) Silver Grade (g/t)	0.21 3.06	0.21 3.00	0.20 2.63	0.20 3.89	0.20 2.48	0.20 1.88	0.20 2.17	0.20 2.30	0.20 2.75	0.20 2.59
Contained Gold (kozs) Contained Silver (kozs)	0 0	0 1	0 1	0 0	0 1	0 0	0 0	0 0	0 0	0 1
Waste Beginning Inventory(kt) Mined (kt) Ending Inventory (kt)	12,489 172 12,317	12,317 168 12,149	12,149 167 11,982	11,982 227 11,755	11,755 223 11,532	11,532 221 11,311	11,311 222 11,089	11,089 224 10,865	10,865 222 10,643	10,643 348 10,295
Total Material Mined (kt)	250	249	248	335	334	334	333	333	332	500
Process Plant Operations										
Beginning Ore Inventory (kt) Ore - Processed (kt) Ending Ore Inventory	7,827 75 7,752	7,752 75 7,677	7,677 75 7,602	7,602 105 7,498	7,498 105 7,393	7,393 105 7,288	7,288 105 7,183	7,183 105 7,078	7,078 105 6,973	6,973 146 6,827
Gold Grade (g/t) Silver Grade (g/t)	0.78 7.95	0.84 8.61	0.78 7.58	0.94 10.74	0.87 9.17	0.90 8.90	0.88 7.36	0.88 8.56	0.85 10.65	0.94 10.28
Contained Gold (kozs) Contained Silver (kozs)	2 19	2 21	2 18	3 36	3 31	3 30	3 25	3 29	3 36	4 48
Recovery Gold (%) Recovery Silver (%)										
Recovered Gold (kozs) Recovered Silver (kozs)	1 7	1 11	1 9	1 11	1 12	2 19	2 16	2 18	2 17	2 20
<b>Payable Metals</b> Payable Gold (kozs) Payable Silver (kozs)	1 7	1 10	1 9	1 11	1 12	2 18	2 16	2 18	2 17	2 20
Income Statement (\$000) Metal Prices Gold (\$/oz) Silver (\$/oz)	\$1,250 \$20	\$1,250 \$20	\$1,250 \$20	\$1,250 \$20	\$1,250 \$20	\$1,250 \$20	\$1,250 \$20	\$1,250 \$20	\$1,250 \$20	\$1,250 \$20
Revenues Gold Revenue (\$ 000) Silver Revenue (\$ 000) Total Revenues	\$1,172 	\$1,659 \$207 \$1,866	\$1,529 \$186 \$1,715	\$1,643 \$217 \$1,859	\$1,789 \$237 \$2,025	\$2,845 \$365 \$3,210	\$2,623 \$315 \$2,938	\$2,816 \$357 \$3,173	\$2,706 \$340 \$3,046	\$2,941 <u>\$391</u> \$3,331
<b>Operating Cost</b> Mining Process Plant General Administration Treatment & Refining Charges Dore'	\$593 \$583 \$112	\$592 \$583 \$112	\$590 \$583 \$112	\$766 \$714 \$112	\$763 \$714 \$112	\$762 \$714 \$112	\$762 \$714 \$112	\$762 \$714 \$112	\$759 \$714 \$112	\$1,095 \$913 \$112
Refinery Charge Freight/Insurance	\$2 \$2	\$3 \$3	\$2 \$2	\$3 \$3	\$3 \$3	\$5 \$5	\$4 \$4	\$5 \$5	\$4 \$4	\$5 \$5
Total Operating Cost	1,291	1,292	1,290	1,598	1,596	1,598	1,597	1,597	1,594	2,130
Royalty Salvage Value	\$64 \$0	\$10 \$0	\$11 \$0	\$113 \$0	\$15 \$0	\$22 \$0	\$166 \$0	\$24 \$0	\$26 \$0	\$223 \$0
Reclamation & Closure Total Production Cost	\$0 \$1,356	\$0 \$1,302	\$0 \$1,301	\$0 \$1,710	\$0 \$1,611	\$0 \$1,620	\$0 \$1,763	\$0 \$1,621	\$0 \$1,620	\$0 \$2,354
Operating Income	-\$42	\$564	\$414	\$149	\$414	\$1,590	\$1,175	\$1,552	\$1,426	\$978
Initial Capital Depreciation Sustaining Capital Depreciation Total Depreciation	\$178 	\$252 \$0 \$252	\$232 \$0 \$232	\$250 \$0 \$250	\$272 \$0 \$272	\$432 \$0 \$432	\$398 \$0 \$398	\$428 \$0 \$428	\$411 \$0 \$411	\$447 \$0 \$447
Net Income After Depreciation	\$ (220) \$	312 \$	182 \$	(100) \$	143 \$	1,158 \$	777 \$	1,124 \$	1,015 \$	531
Income Taxes	4	1	7	6	3	5	18	15	108	225
Net Income After Taxes	(223)	311	175	(106)	139	1,153	759	1,109	907	306
Cash Flow Operating Income after Depreciation Add Back Depreciation	\$ (220) \$ \$ 178 \$		182 \$ 232 \$	(100) \$ 250 \$	143 \$ 272 \$	1,158 \$ 432 \$	777 \$ 398 \$	1,124 \$ 428 \$	1,015 \$ 411 \$	531 447
Working Capital Account Recievable Accounts Payable Inventory - Parts, Supplies Total Working Capital	\$139 \$0 \$ 139 \$	-\$349 \$0 (349) \$	\$96 -\$1 95 \$	-\$92 \$154 62 \$	-\$105 -\$1 (106) \$	-\$750 \$1 (749) \$	\$173 -\$1 172 \$	-\$149 \$0 (149) \$	\$81 -\$2 79 \$	-\$181 \$268 88

Capital Expenditures										
Initial Capital										
Mine	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Process Plant	\$0	\$0	\$0	\$0 \$0 \$0 \$0 \$0	\$0	\$0	\$0	\$0 \$0 \$0	\$0	\$0
Heap Leach	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0 \$0
Owners Cost	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Phase 1 Salvage	\$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0	\$0	\$0	\$0 \$0 \$0 \$0	\$0	\$0	\$0	\$0	\$0
Sustaining Capital										
Mine	\$0	\$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$13
Process Plant	\$0	\$0	\$0 \$0	\$0	\$0 \$0	\$0	\$0	\$0	\$0	\$0
Total Capital Expenditures	 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$13
Cash Flow before Taxes	\$ 98 5	§ 215 \$	509 \$	212 \$	308 \$	841 \$	1,347 \$	1,403 \$	1,505 \$	1,053
Cummulative Cash Flow before Taxes	\$ (34,376) \$	6 (34,161) \$	(33,653) \$	(33,441) \$	(33,133) \$	(32,292) \$	(30,945) \$	(29,542) \$	(28,037) \$	(26,985)
	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Taxes										
Income Taxes	\$ 4 9	§ 1\$	7 \$	6 \$	3 \$	5 \$	18 \$	15 \$	108 \$	225
Cash Flow after Taxes	\$ 94 5	§ 214 \$	502 \$	206 \$	305 \$	836 \$	1,329 \$	1,388 \$	1,397 \$	827
Cummulative Cash Flow after Taxes	\$ (34,380) \$	\$ (34,166) \$	(33,665) \$	(33,459) \$	(33,153) \$	(32,318) \$	(30,989) \$	(29,601) \$	(28,204) \$	(27,376)



Mining Operations		14	15	16	17	18	19	20	21	22	23
Ore Beginning Inventory (kt) Mined (kt) Ending Inventory (kt)		6,280 141 6,140	6,140 141 5,999	5,999 141 5,858	5,858 141 5,718	5,718 141 5,577	5,577 141 5,436	5,436 141 5,296	5,296 141 5,155	5,155 141 5,014	5,014 141 4,874
Gold Grade (g/t) Silver Grade (g/t)		0.94 10.29	0.94 10.29	0.94 10.29	0.83 9.03	0.83 9.03	0.83 9.03	0.83 9.03	0.86 9.06	0.86 9.06	0.86 9.06
Contained Gold (kozs) Contained Silver (kozs)		4 47	4 47	4 47	4 41						
Low Grade Ore Beginning Inventory (kt) Mined (kt) Ending Inventory (kt)		393 12 381	381 12 370	370 12 358	358 9 349	349 9 340	340 9 332	332 9 323	323 10 313	313 10 303	303 10 294
Gold Grade (g/t) Silver Grade (g/t)		0.20 2.59	0.20 2.59	0.20 2.59	0.22 3.12	0.22 3.12	0.22 3.12	0.22 3.12	0.23 2.72	0.23 2.72	0.23 2.72
Contained Gold (kozs) Contained Silver (kozs)		0 1	0 1	0 1	0 1	0 1	0 1	0 1	0 1	0 1	0 1
Waste Beginning Inventory(kt) Mined (kt) Ending Inventory (kt)		10,295 348 9,948	9,948 348 9,600	9,600 348 9,253	9,253 351 8,902	8,902 351 8,551	8,551 351 8,201	8,201 351 7,850	7,850 350 7,501	7,501 350 7,151	7,151 350 6,801
Total Material Mined (kt)		500	500	500	500	500	500	500	500	500	500
Process Plant Operations											
Beginning Ore Inventory (kt) Ore - Processed (kt) Ending Ore Inventory		6,827 146 6,681	6,681 146 6,535	6,535 146 6,390	6,390 146 6,244	6,244 146 6,098	6,098 146 5,952	5,952 146 5,806	5,806 146 5,660	5,660 146 5,515	5,515 146 5,369
Gold Grade (g/t) Silver Grade (g/t)		0.94 10.28	0.94 10.28	0.94 10.28	0.83 9.02	0.83 9.02	0.83 9.02	0.83 9.02	0.86 9.05	0.86 9.05	0.86 9.05
Contained Gold (kozs) Contained Silver (kozs)		4 48	4 48	4 48	4 42						
Recovery Gold (%) Recovery Silver (%)											
Recovered Gold (kozs) Recovered Silver (kozs)		3 21	3 27	3 27	3 28	3 26	3 26	3 27	3 28	3 29	3 29
Payable Metals Payable Gold (kozs) Payable Silver (kozs)		3 21	3 26	3 26	3 27	3 26	3 25	3 27	3 28	3 28	3 28
Income Statement (\$000) Metal Prices Gold (\$/oz) Silver (\$/oz)		\$1,250 \$20	\$1,250 \$20	\$1,250 \$20	\$1,250 \$20	\$1,250 \$20	\$1,250 \$20	\$1,250 \$20	\$1,250 \$20	\$1,250 \$20	\$1,250 \$20
Revenues Gold Revenue (\$ 000) Silver Revenue (\$ 000) Total Revenues		\$3,148 \$420 \$3,568	\$3,859 \$527 \$4,385	\$3,782 \$527 \$4,309	\$4,048 \$545 \$4,593	\$3,936 \$514 \$4,450	\$3,811 \$510 \$4,321	\$3,792 \$533 \$4,325	\$4,106 \$558 \$4,664	\$4,133 \$559 \$4,692	\$4,169 \$559 \$4,728
Operating Cost Mining Process Plant General Administration Treatment & Refining Charges Dore'		\$1,095 \$913 \$112	\$1,095 \$913 \$112	\$1,095 \$913 \$112	\$1,096 \$913 \$112						
Refinery Charge Freight/Insurance		\$5 \$5	\$7 \$7	\$7 \$7	\$7 \$7	\$6 \$6	\$6 \$6	\$7 \$7	\$7 \$7	\$7 \$7	\$7 \$7
Total Operating Cost	-	2,131	2,134	2,134	2,134	2,134	2,133	2,134	2,135	2,135	2,135
Royalty Salvage Value		\$47 \$0	\$67 \$0	\$287 \$0	\$75 \$0	\$67 \$0	\$312 \$0	\$56 \$0	\$69 \$0	\$333 \$0	\$74 \$0
Reclamation & Closure Total Production Cost	-	\$0 \$2,178	\$0 \$2,201	\$0 \$2,421	\$0 \$2,210	\$0 \$2,201	\$0 \$2,446	\$0 \$2,190	\$0 \$2,204	\$0 \$2,467	\$0 \$2,208
Operating Income		\$1,390	\$2,184	\$1,888	\$2,384	\$2,249	\$1,875	\$2,134	\$2,461	\$2,224	\$2,520
Initial Capital Depreciation Sustaining Capital Depreciation Total Depreciation		\$478 \$0 \$479	\$586 \$1 \$587	\$574 <u>\$1</u> \$575	\$615 \$1 \$616	\$598 \$40 \$638	\$579 \$39 \$618	\$576 \$39 \$615	\$624 \$43 \$666	\$628 \$43 \$671	\$633 <u>\$44</u> \$677
Net Income After Depreciation	\$	911 \$	1,597 \$	1,312 \$	1,768 \$	1,611 \$	1,257 \$	1,519 \$	1,794 \$	1,553 \$	1,843
Income Taxes		110	185	377	271	432	379	257	350	438	344
Net Income After Taxes		801	1,412	935	1,496	1,179	878	1,262	1,444	1,115	1,498
Cash Flow Operating Income after Depreciation Add Back Depreciation	\$ \$	911 \$ 479 \$	1,597 \$ 587 \$	1,312 \$ 575 \$	1,768 \$ 616 \$	1,611 \$ 638 \$	1,257 \$ 618 \$	1,519 \$ 615 \$	1,794 \$ 666 \$	1,553 \$ 671 \$	1,843 677
Working Capital Account Recievable Accounts Payable Inventory - Parts, Supplies Total Working Capital		-\$150 \$0 (149) \$	-\$518 \$1 (517) \$	\$49 \$0 49 \$	-\$180 \$0 (180) \$	\$91 \$0 90 \$	\$82 \$0 82 \$	-\$3 \$0 (2) \$	-\$215 \$0 (215) \$	-\$17 \$0 (17) \$	-\$23 \$0 (23)
Capital Expenditures	*	(***) Ψ	(31)) V	τ <i>ν</i> Ψ	(100) 0	20 0	υL Φ	(2) 0	(215) 0	(1) Φ	(23)

Capital Expenditures Initial Capital Mine

Mine	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Process Plant	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Heap Leach	\$0	\$0	\$0 \$0 \$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Owners Cost	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Phase 1 Salvage	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Sustaining Capital										
Mine	\$13	\$13	\$13	\$13	\$13	\$13	\$13	\$13	\$13	\$13
Process Plant	\$0	\$0	\$0	\$0	\$1,741	\$0	\$0	\$0	\$0	\$0
Total Capital Expenditures	 \$13	\$13	\$13	\$13	\$1,753	\$13	\$13	\$13	\$13	\$13
Cash Flow before Taxes	\$ 1,228 \$	1,655 \$	1,924 \$	2,191 \$	586 \$	1,944 \$	2,120 \$	2,233 \$	2,195 \$	2,484
Cummulative Cash Flow before Taxes	\$ (25,757) \$	(24,102) \$	(22,178) \$	(19,987) \$	(19,401) \$	(17,456) \$	(15,337) \$	(13,103) \$	(10,909) \$	(8,424)
	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Taxes										
Income Taxes	\$ 110 \$	185 \$	377 \$	271 \$	432 \$	379 \$	257 \$	350 \$	438 \$	344
Cash Flow after Taxes	\$ 1,118 \$	1,470 \$	1,546 \$	1,920 \$	154 \$	1,565 \$	1,863 \$	1,883 \$	1,756 \$	2,140
Cummulative Cash Flow after Taxes	\$ (26,259) \$	(24,789) \$	(23,242) \$	(21,322) \$	(21,168) \$	(19,603) \$	(17,740) \$	(15,857) \$	(14,101) \$	(11,961)



Mining Operations	24	25	26	27	28	29	30	31	32	33
Ore Beginning Inventory (kt) Mined (kt) Ending Inventory (kt)	4,874 141 4,733	4,733 148 4,585	4,585 148 4,436	4,436 148 4,288	4,288 148 4,139	4,139 148 3,991	3,991 148 3,842	3,842 148 3,694	3,694 148 3,546	3,546 148 3,397
Gold Grade (g/t) Silver Grade (g/t)	0.86 9.06	1.05 11.49	1.05 11.49	1.05 11.49	1.05 11.49	1.05 11.49	1.05 11.49	0.69 8.43	0.69 8.43	0.69 8.43
Contained Gold (kozs) Contained Silver (kozs)	4 41	5 55	5 55	5 55	5 55	5 55	5 55	3 40	3 40	3 40
Low Grade Ore Beginning Inventory (kt) Mined (kt) Ending Inventory (kt)	294 10 284	284 6 278	278 6 273	273 6 267	267 6 262	262 6 256	256 6 251	251 15 236	236 15 221	221 15 207
Gold Grade (g/t) Silver Grade (g/t)	0.23 2.72	0.21 3.18	0.21 3.18	0.21 3.18	0.21 3.18	0.21 3.18	0.21 3.18	0.23 3.34	0.23 3.34	0.23 3.34
Contained Gold (kozs) Contained Silver (kozs)	0 1	0 1	0 1	0 1	0 1	0 1	0 1	0 2	0 2	0 2
Waste Beginning Inventory(kt) Mined (kt) Ending Inventory (kt)	6,801 350 6,452	6,452 204 6,247	6,247 204 6,043	6,043 204 5,839	5,839 204 5,634	5,634 204 5,430	5,430 204 5,226	5,226 195 5,030	5,030 195 4,835	4,835 195 4,640
Total Material Mined (kt)	500	358	358	358	358	358	358	358	358	358
Process Plant Operations										
Beginning Ore Inventory (kt) Ore - Processed (kt) Ending Ore Inventory	5,369 146 5,223	5,223 146 5,077	5,077 146 4,931	4,931 146 4,785	4,785 146 4,640	4,640 146 4,494	4,494 146 4,348	4,348 146 4,202	4,202 146 4,056	4,056 146 3,910
Gold Grade (g/t) Silver Grade (g/t)	0.86 9.05	1.05 11.49	1.05 11.49	1.05 11.49	1.05 11.49	1.05 11.49	1.05 11.49	0.69 8.43	0.69 8.43	0.69 8.43
Contained Gold (kozs) Contained Silver (kozs)	4 42	5 54	5 54	5 54	5 54	5 54	5 54	3 40	3 40	3 40
Recovery Gold (%) Recovery Silver (%)										
Recovered Gold (kozs) Recovered Silver (kozs)	3 29	3 28	4 30	4 32	4 32	4 33	4 33	4 32	3 30	3 30
<b>Payable Metals</b> Payable Gold (kozs) Payable Silver (kozs)	3 28	3 28	3 29	4 31	4 31	4 32	4 32	4 31	3 30	3 29
Income Statement (\$000) Metal Prices Gold (\$/oz) Silver (\$/oz)	\$1,250 \$20		\$1,250 \$20	\$1,250 \$20	\$1,250 \$20	\$1,250 \$20	\$1,250 \$20	\$1,250 \$20	\$1,250 \$20	\$1,250 \$20
Revenues Gold Revenue (\$ 000) Silver Revenue (\$ 000) Total Revenues	\$4,169 \$559 \$4,728	\$558	\$4,333 \$585 \$4,917	\$4,544 \$620 \$5,164	\$4,544 \$620 \$5,164	\$4,751 \$649 \$5,400	\$4,751 \$649 \$5,400	\$4,547 \$627 \$5,174	\$4,241 \$593 \$4,835	\$4,056 \$586 \$4,642
<b>Operating Cost</b> Mining Process Plant General Administration Treatment & Refining Charges Dore'	\$1,096 \$913 \$112	\$913	\$818 \$913 \$112	\$818 \$913 \$112	\$818 \$913 \$112	\$818 \$913 \$112	\$818 \$913 \$112	\$818 \$913 \$112	\$818 \$913 \$112	\$818 \$913 \$112
Refinery Charge Freight/Insurance	\$7 \$7		\$7 \$7	\$8 \$8	\$8 \$8	\$8 \$8	\$8 \$8	\$8 \$8	\$7 \$7	\$7 \$7
Total Operating Cost	2,135	1,857	1,857	1,858	1,858	1,859	1,859	1,858	1,857	1,857
Royalty Salvage Value Reclamation & Closure Total Production Cost	\$74 \$0 \$0 \$2,208	\$0 \$0	\$63 \$0 \$0 \$1,920	\$65 \$0 \$0 \$1,923	\$358 \$0 \$0 \$2,216	\$70 \$0 \$0 \$1,929	\$70 \$0 \$0 \$1,929	\$380 \$0 \$0 \$2,238	\$57 \$0 \$0 \$1,914	\$49 \$0 <u>\$0</u> \$1,906
Operating Income	\$2,520		\$2,997	\$3,241	\$2,948	\$3,471	\$3,471	\$2,936	\$2,921	\$2,736
Initial Capital Depreciation Sustaining Capital Depreciation Total Depreciation	\$633 \$44 \$678	\$45	\$658 \$47 \$705	\$690 \$50 \$740	\$690 \$50 \$740	\$722 \$53 \$774	\$722 \$70 \$792	\$691 \$68 \$758	\$644 \$64 \$708	\$616 \$61 \$677
Net Income After Depreciation	\$ 1,842	\$ 1,860	\$ 2,292	\$ 2,501	\$ 2,208	\$ 2,697	\$ 2,679	\$ 2,177 \$	\$ 2,213 \$	2,059
Income Taxes	454	454	463	619	687	575	751	744	562	593
Net Income After Taxes	1,388	1,406	1,829	1,882	1,520	2,122	1,928	1,434	1,650	1,466
Cash Flow Operating Income after Depreciation Add Back Depreciation	\$ 1,842 \$ 678		\$ 2,292 \$ 705							2,059 677
Working Capital Account Recievable Accounts Payable Inventory - Parts, Supplies	\$0 \$0	-\$139	-\$117 \$0	-\$156 \$0	\$0 \$0	-\$149 \$0	\$0 \$0	\$143 \$0	\$215 \$0	\$122 \$0
Total Working Capital	\$ -	\$ (141)	\$ (117)	\$ (156)	\$ -	\$ (149)	\$ -	\$ 143 \$	5 214 \$	122

Capital Expenditures Initial Capital

Initial Capital										
Mine	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0 \$0
Process Plant	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Heap Leach	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Owners Cost	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0 \$0 \$0	\$0 \$0	\$0	\$0
Phase 1 Salvage	\$0 \$0 \$0	\$0 \$0	\$0 \$0 \$0 \$0 \$0	\$0	\$0	\$0 \$0 \$0 \$0 \$0	\$0	\$0	\$0 \$0	\$0 \$0 \$0
Sustaining Capital										
Mine	\$13	\$13 \$0	\$13	\$13	\$13	\$13	\$13	\$13	\$13	\$13
Process Plant	\$0	\$0	\$0	\$0	\$0	\$0	\$457	\$0	\$0	\$0
Total Capital Expenditures	\$13	\$13	\$13	\$13	\$13	\$13	\$469	\$13	\$13	\$13
Cash Flow before Taxes	\$ 2,507 \$	2,385 \$	2,868 \$	3,072 \$	2,935 \$	3,309 \$	3,002 \$	3,066 \$	3,122 \$	2,845
Cummulative Cash Flow before Taxes	\$ (5,917) \$	(3,532) \$	(665) \$	2,408 \$	5,343 \$	8,652 \$	11,654 \$	14,720 \$	17,842 \$	20,688
	1.0	1.0	1.0	0.2	-	-	-	-	-	-
Taxes										
Income Taxes	\$ 454 \$	454 \$	463 \$	619 \$	687 \$	575 \$	751 \$	744 \$	562 \$	593
Cash Flow after Taxes	\$ 2,054 \$	1,931 \$	2,405 \$	2,453 \$	2,248 \$	2,735 \$	2,251 \$	2,322 \$	2,560 \$	2,252
Cummulative Cash Flow after Taxes	\$ (9,907) \$	(7,976) \$	(5,571) \$	(3,118) \$	(871) \$	1,864 \$	4,115 \$	6,437 \$	8,997 \$	11,250



Mining Operations		34 35	5 36	37	38	39	40	41	42	43
Ore Beginning Inventory (kt)	3,39			2,952	2,811	2,670	2,529	2,389	2,248	2,107
Mined (kt) Ending Inventory (kt)	14 3,24	8 148	148	141 2,811	141 2,670	141 2,529	141 2,389	141 2,248	141 2,107	141 1,966
Gold Grade (g/t) Silver Grade (g/t)	0.6 8.4		0.69	0.62 7.41	0.62 7.41	0.62 7.41	0.62 7.41	0.62 7.41	0.62 7.41	0.62 7.41
Contained Gold (kozs) Contained Silver (kozs)		3 3 0 40		3 34	3 34	3 34	3 34	3 34	3 34	3 34
Low Grade Ore Beginning Inventory (kt) Mined (kt) Ending Inventory (kt)	20 1 15	5 15	15	163 11 152	152 11 141	141 11 130	130 11 119	119 11 108	108 11 97	97 11 86
Gold Grade (g/t) Silver Grade (g/t)	0.2 3.3			0.22 3.67	0.22 3.67	0.22 3.67	0.22 3.67	0.22 3.67	0.22 3.67	0.22 3.67
Contained Gold (kozs) Contained Silver (kozs)		0 0 2 2		0 1	0 1	0 1	0 1	0 1	0 1	0 1
Waste Beginning Inventory(kt) Mined (kt) Ending Inventory (kt)	4,64 15 4,44	5 195	195	4,054 206 3,847	3,847 206 3,641	3,641 206 3,434	3,434 206 3,228	3,228 206 3,021	3,021 206 2,815	2,815 206 2,608
Total Material Mined (kt)	35	8 358	358	358	358	358	358	358	358	358
Process Plant Operations										
Beginning Ore Inventory (kt) Ore - Processed (kt) Ending Ore Inventory	3,91 14 3,76	6 146		3,473 146 3,327	3,327 146 3,181	3,181 146 3,035	3,035 146 2,890	2,890 146 2,744	2,744 146 2,598	2,598 146 2,452
Gold Grade (g/t) Silver Grade (g/t)	0.6 8.4			0.63 7.48	0.63 7.48	0.63 7.48	0.63 7.48	0.63 7.48	0.63 7.48	0.63 7.48
Contained Gold (kozs) Contained Silver (kozs)		3 3 0 40		3 35	3 35	3 35	3 35	3 35	3 35	3 35
Recovery Gold (%) Recovery Silver (%)										
Recovered Gold (kozs) Recovered Silver (kozs)		3 3 0 28		3 28	3 27	3 24	3 24	2 24	2 24	2 24
Payable Metals Payable Gold (kozs) Payable Silver (kozs)		3 3 9 28		3 27	3 27	3 24	3 24	2 23	2 23	2 23
Income Statement (\$000) Metal Prices Gold (\$/oz) Silver (\$/oz)	\$1,2 \$	50 \$1,250 20 \$20			\$1,250 \$20	\$1,250 \$20		\$1,250 \$20	\$1,250 \$20	\$1,250 \$20
Revenues Gold Revenue (\$ 000)	\$4,0	56 \$3,730	\$3,730	\$3,692	\$3,636	\$3,133	\$3,133	\$3,072	\$3,072	\$3,072
Silver Revenue (\$ 000) Total Revenues	<u>\$5</u> \$4,6				\$533 \$4,169	\$473 \$3,605		\$461 \$3,534	\$461 \$3,534	\$461 \$3,534
<b>Operating Cost</b> Mining Process Plant General Administration Treatment & Refining Charges	\$8 \$9 \$1	13 \$913	\$ \$913	\$913	\$816 \$913 \$112	\$913	\$913	\$816 \$913 \$112	\$816 \$913 \$112	\$816 \$913 \$112
Dore' Refinery Charge Freight/Insurance		\$7 \$7 \$7 \$7				\$6 \$6		\$6 \$6	\$6 \$6	\$6 \$6
Total Operating Cost	1,85	7 1,856	1,856	1,855	1,855	1,853	1,853	1,853	1,853	1,853
Royalty Salvage Value Reclamation & Closure		42 \$40 \$0 \$0 \$0 \$0	\$0	\$0	\$44 \$0 \$0	\$34 \$0 \$0	\$0	\$37 \$0 \$0	\$37 \$0 \$0	\$254 \$0 \$0
Total Production Cost	\$2,2				\$1,899	\$1,887		\$1,890	\$1,890	\$2,107
Operating Income	\$2,4	42 \$2,385	\$2,385	\$2,069	\$2,270	\$1,718	\$1,473	\$1,644	\$1,644	\$1,427
Initial Capital Depreciation Sustaining Capital Depreciation Total Depreciation	\$6 \$ \$6	62 \$50	7 \$92	\$92	\$552 \$91 \$643	\$476 \$79 \$554	\$79	\$467 \$78 \$545	\$467 \$84 \$550	\$467 \$84 \$551
Net Income After Depreciation	\$ 1,76	5 \$ 1,761	\$ 1,726	\$ 1,416	\$ 1,627	\$ 1,164	\$ 918	\$ 1,099	\$ 1,093 \$	876
Income Taxes	54	4 430	447	434	317	401	252	188	230	228
Net Income After Taxes	1,22	1,330	1,279	983	1,310	762	666	911	863	648
Cash Flow Operating Income after Depreciation Add Back Depreciation		5 \$ 1,761 8 \$ 624								876 551
Working Capital Account Recievable Accounts Payable Inventory - Parts, Supplies		\$0 \$229 \$0 \$0	) \$0	-\$1	\$0	-\$1	\$0	\$45 \$0	\$0 \$0	\$0 \$0
Total Working Capital	\$ -	\$ 229	\$-	\$ 28	\$ 42	\$ 356	s -	\$ 45 5	\$-\$	

Capital Expenditures

\$0		\$0		\$0		\$0				\$0	\$0	)	\$0		\$0		\$0
\$0		\$0		\$0		\$0		\$0		\$0	\$	)	\$0		\$0		\$0
\$0		\$0		\$0		\$0		\$0		\$0	\$0	)	\$0		\$0		\$0
\$0		\$0		\$0		\$0		\$0		\$0	\$	)	\$0		\$0		\$0
\$0		\$0		\$0		\$0		\$0		\$0	50	)	\$0		\$0		\$0 \$0 \$0
\$13		\$13		\$13		\$13		\$13		\$13	\$1:	3	\$13		\$13		\$13
\$0		\$0		\$944		\$0		\$0		\$0	\$0	)	\$0		\$137		\$0
 \$13		\$13	ŝ.	\$957		\$13		\$13		\$13	\$1:	3	\$13		\$149		\$13
\$ 2,430	\$	2,601	\$	1,428	\$	2,084	\$	2,300	\$	2,062 \$	1,460	\$	1,676	\$	1,494	\$	1,414
\$ 23,118	\$	25,718	\$	27,146	\$	29,230	\$	31,530	\$	33,592 \$	35,052	\$	36,728	\$	38,223	\$	39,637
-		-				-		1 - C		-			-0		1		
\$ 544	\$	430	\$	447	\$	434	\$	317	\$	401 \$	252	\$	188	\$	230	\$	228
\$ 1,886	\$	2,170	\$	981	\$	1,650	\$	1,983	\$	1,661 \$	1,208	\$	1,488	\$	1,264	\$	1,186
\$ 13,136	\$	15,306	\$	16,287	\$	17,937	\$	19,920	\$	21,581 \$	22,790	\$	24,277	\$	25,542	\$	26,728
\$ \$ \$ \$	\$0 \$0 \$0 \$13 \$13 \$2,430 \$23,118 - \$544 \$1,886	\$0 \$13 \$ 2,430 \$ \$ 23,118 \$ - \$ 544 \$ \$ \$ 1,886 \$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	\$0         \$0<	S0         S13         S13         S13         S13         S13         S13         S13         S13         S13         S13 <ths13< th=""> <ths13< th=""> <ths13< th=""></ths13<></ths13<></ths13<>	\$0         \$0<											



Mining Operations		44	45	46	47	48	49	50	51	52	53
Ore Beginning Inventory (kt) Mined (kt) Ending Inventory (kt)		1,966 141 1,825	1,825 141 1,684	1,684 141 1,544	1,544 141 1,403	1,403 141 1,262	1,262 105 1,157	1,157 105 1,052	1,052 105 946	946 105 841	841 105 736
Gold Grade (g/t) Silver Grade (g/t)		0.62 7.41	0.62 7.41	0.62 7.41	0.62 7.41	0.62 7.41	1.13 13.06	1.13 13.06	1.13 13.06	1.13 13.06	1.13 13.06
Contained Gold (kozs) Contained Silver (kozs)		3 34	3 34	3 34	3 34	3 34	4 44	4 44	4 44	4 44	4 44
Low Grade Ore Beginning Inventory (kt) Mined (kt) Ending Inventory (kt)		86 11 75	75 11 64	64 11 53	53 11 42	42 11 31	31 3 28	28 3 26	26 3 23	23 3 21	21 3 18
Gold Grade (g/t) Silver Grade (g/t)		0.22 3.67	0.22 3.67	0.22 3.67	0.22 3.67	0.22 3.67	0.22 3.70	0.22 3.70	0.22 3.70	0.22 3.70	0.22 3.70
Contained Gold (kozs) Contained Silver (kozs)		0 1	0 1	0 1	0 1	0 1	0 0	0 0	0 0	0 0	0 0
Waste Beginning Inventory(kt) Mined (kt) Ending Inventory (kt)		2,608 206 2,402	2,402 206 2,195	2,195 206 1,989	1,989 206 1,782	1,782 206 1,576	1,576 131 1,444	1,444 131 1,313	1,313 131 1,182	1,182 131 1,051	1,051 131 919
Total Material Mined (kt)		358	358	358	358	358	239	239	239	239	239
Process Plant Operations											
Beginning Ore Inventory (kt) Ore - Processed (kt) Ending Ore Inventory		2,452 146 2,306	2,306 146 2,160	2,160 146 2,015	2,015 146 1,869	1,869 146 1,723	1,723 146 1,577	1,577 146 1,431	1,431 146 1,285	1,285 146 1,140	1,140 146 994
Gold Grade (g/t) Silver Grade (g/t)		0.63 7.48	0.63 7.48	0.63 7.48	0.63 7.48	0.63 7.48	0.89 10.43	0.89 10.43	0.89 10.43	0.89 10.43	0.89 10.43
Contained Gold (kozs) Contained Silver (kozs)		3 35	3 35	3 35	3 35	3 35	4 49	4 49	4 49	4 49	4 49
Recovery Gold (%) Recovery Silver (%)											
Recovered Gold (kozs) Recovered Silver (kozs)		2 24	2 23	2 23	2 23	2 23	3 24	3 26	3 28	3 28	3 29
<b>Payable Metals</b> Payable Gold (kozs) Payable Silver (kozs)		2 23	2 22	2 22	2 22	2 22	3 23	3 25	3 27	3 27	3 29
Income Statement (\$000) Metal Prices Gold (\$/oz) Silver (\$/oz)		\$1,250 \$20	\$1,250 \$20	\$1,250 \$20							
Revenues Gold Revenue (\$ 000) Silver Revenue (\$ 000) Total Revenues	2	\$3,072 \$461 \$3,534	\$2,993 \$447 \$3,440	\$2,993 \$447 \$3,440	\$2,993 \$447 \$3,440	\$2,993 \$447 \$3,440	\$3,143 \$468 \$3,611	\$3,367 \$501 \$3,868	\$3,667 \$544 \$4,210	\$3,667 \$544 \$4,210	\$3,906 \$578 \$4,484
<b>Operating Cost</b> Mining Process Plant General Administration Treatment & Refining Charges		\$816 \$913 \$112	\$816 \$913 \$112	\$816 \$913 \$112	\$816 \$913 \$112	\$816 \$913 \$112	\$913	\$576 \$913 \$112	\$576 \$913 \$112	\$576 \$913 \$112	\$576 \$913 \$112
Dore' Refinery Charge Freight/Insurance		\$6 \$6	\$6 \$6	\$6 \$6	\$6 \$6	\$6 \$6		\$6 \$6	\$7 \$7	\$7 \$7	\$7 \$7
Total Operating Cost	-	1,853	1,853	1,853	1,853	1,853	1,613	1,614	1,615	1,615	1,616
Royalty Salvage Value		\$37 \$0	\$42 \$0	\$254 \$0	\$42 \$0	\$42 \$0	\$244 \$0	\$34 \$0	\$28 \$0	\$266 \$0	\$22 \$0
Reclamation & Closure Total Production Cost		\$0 \$1,890	\$0 \$1,894	\$0 \$2,106	\$0 \$1,894	\$0 \$1,894	\$0 \$1,857	\$0 \$1,648	\$0 \$1,643	\$0 \$1,881	\$0 \$1,638
Operating Income		\$1,644	\$1,546	\$1,334	\$1,546	\$1,546	\$1,754	\$2,220	\$2,568	\$2,329	\$2,846
Initial Capital Depreciation Sustaining Capital Depreciation Total Depreciation		\$467 \$85 \$551	\$455 \$83 \$538	\$455 \$84 \$538	\$455 \$84 \$539	\$455 \$85 \$539	\$90	\$511 \$97 \$608	\$557 \$106 \$663	\$557 \$107 \$664	\$593 \$115 \$708
Net Income After Depreciation	\$	1,092 \$	\$ 1,008 \$	796 \$	1,007	\$ 1,006	\$ 1,187	\$ 1,612	\$ 1,905 \$	\$ 1,665 \$	2,138
Income Taxes		180	228	205	164	204	204	262	413	508	416
Net Income After Taxes		913	780	591	843	802	983	1,350	1,492	1,157	1,722
Cash Flow Operating Income after Depreciation Add Back Depreciation	\$ \$	1,092 \$ 551 \$			1,007 539						2,138 708
Working Capital Account Recievable Accounts Payable Inventory - Parts, Supplies Total Working Capital	\$	\$0 \$0 - \$	\$59 \$0 \$ 59 \$	\$0 \$0 - \$	\$0 \$0 -	\$0 \$0 \$ -		-\$163 \$0 \$ (162)	-\$217 \$1 \$ (216) \$	\$0 \$0 \$ - \$	-\$174 \$0 (173)
Capital Expenditures									0.12		18

Capital Expenditures Initial Capital

	\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0
			\$0		\$0		\$0		\$0		\$0		\$0		\$0				\$0
					\$0						\$0								\$0
	\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0
	\$0		\$0		\$0		\$0				\$0				\$0		\$0		\$0
	\$13		\$13		\$13		\$13		\$13		\$13		\$13		\$13		\$13		\$13
	\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0
1	\$13		\$13		\$13		\$13		\$13		\$13		\$13		\$13		\$13		\$13
\$	1,631	S	1,592	\$	1,321	\$	1,533	\$	1,533	\$	1,513	S	2,045	\$	2,339	S	2,316	\$	2,661
\$	41,269	\$	42,861	\$	44,182	\$	45,715	\$	47,248	\$	48,761	\$	50,806	\$	53,145	\$	55,462	\$	58,122
			-		10		-				-		-						100
\$	180	\$	228	\$	205	\$	164	\$	204	\$	204	\$	262	\$	413	\$	508	\$	416
\$	1,451	\$	1,365	\$	1,117	\$	1,369	\$	1,329	\$	1,309	s	1,783	\$	1,926	\$	1,809	\$	2,245
\$	28,179	\$	29,544	\$	30,660	\$	32,030	\$	33,358	\$	34,667	\$	36,450	\$	38,377	\$	40,185	\$	42,430
	\$ \$ \$ \$	\$0 \$0 \$0 \$13 \$13 \$13 \$13 \$13 \$13 \$13 \$13 \$13 \$13	\$ 41,269 \$ - \$ 180 \$ \$ 1,451 \$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	S0         S0<	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	S0         S0<												



Mining Operations		54	55	56	57	58	59	60	61	62	63
Ore Beginning Inventory (kt) Mined (kt) Ending Inventory (kt)		736 105 631	631 105 526	526 105 421	421 105 315	315 105 210	210 105 105	105 105 (0)	(0) - (0)	(0) (0)	(0) (0)
Gold Grade (g/t) Silver Grade (g/t)		1.13 13.06		2							
Contained Gold (kozs) Contained Silver (kozs)		4 44	-	ň R	-						
Low Grade Ore Beginning Inventory (kt) Mined (kt) Ending Inventory (kt)		18 3 15	15 3 13	13 3 10	10 3 8	8 3 5	5 3 3	3 3 (0)	(0) (0)	-(0) (0)	-(0) -(0)
Gold Grade (g/t) Silver Grade (g/t)		0.22 3.70	-	-	÷						
Contained Gold (kozs) Contained Silver (kozs)		0 0	-	-	:						
Waste Beginning Inventory(kt) Mined (kt) Ending Inventory (kt)		919 131 788	788 131 657	657 131 525	525 131 394	394 131 263	263 131 131	131 131 0	0 - 0	- 0 0	0 - 0
Total Material Mined (kt)		239	239	239	239	239	239	239	-	-	
Process Plant Operations											
Beginning Ore Inventory (kt) Ore - Processed (kt) Ending Ore Inventory		994 146 848	848 146 702	702 146 556	556 146 410	410 146 265	265 146 119	119 119 (0)	(0) - (0)	(0) - (0)	(0) - (0)
Gold Grade (g/t) Silver Grade (g/t)		0.89 10.43	-	-	5						
Contained Gold (kozs) Contained Silver (kozs)		4 49	4 49	4 49	4 49	4 49	4 49	3 40	•	-	
Recovery Gold (%) Recovery Silver (%)											
Recovered Gold (kozs) Recovered Silver (kozs)		3 29	3 29	3 29	3 32	3 32	3 32	3 31	3 27	2 21	2 14
Payable Metals Payable Gold (kozs) Payable Silver (kozs)		3 29	3 29	3 29	3 31	3 31	3 31	3 30	3 26	2 20	2 14
Income Statement (\$000) Metal Prices Gold (\$/oz) Silver (\$/oz)		\$1,250 \$20									
Revenues Gold Revenue (\$ 000) Silver Revenue (\$ 000) Total Revenues		\$3,906 \$578 \$4,484	\$3,906 \$578 \$4,484	\$3,906 \$578 \$4,484	\$4,221 \$623 \$4,844	\$4,221 \$623 \$4,844	\$4,221 \$623 \$4,844	\$4,125 \$609 \$4,735	\$3,563 \$526 \$4,089	\$2,743 \$405 \$3,149	\$1,904 \$282 \$2,186
<b>Operating Cost</b> Mining Process Plant General Administration Treatment & Refining Charges Dore'		\$576 \$913 \$112	\$576 \$913 \$112	\$576 \$913 \$112	\$576 \$913 \$112	\$576 \$913 \$112	\$576 \$913 \$112	\$796 \$913 \$112	\$0 \$496 \$112	\$0 \$382 \$112	\$0 \$265 \$112
Refinery Charge Freight/Insurance		\$7 \$7	\$7 \$7	\$7 \$7	\$8 \$8	\$8 \$8	\$8 \$8	\$8 \$8	\$7 \$7	\$5 \$5	\$4 \$4
Total Operating Cost		1,616	1,616	1,616	1,617	1,617	1,617	1,836	621	504	385
Royalty Salvage Value		\$22 \$0	\$298 \$0	\$22 \$0	\$14 \$0	\$306 \$0	\$14 \$0	\$14 \$0	\$322 \$0	\$9 \$0	\$7 \$0
Reclamation & Closure Total Production Cost		\$0 \$1,638	\$0 \$1,913	\$0 \$1,638	\$0 \$1,631	\$0 \$1,923	\$0 \$1,631	\$0 \$1,850	\$0 \$943	\$0 \$513	\$0 \$391
Operating Income		\$2,846	\$2,571	\$2,846	\$3,213	\$2,921	\$3,213	\$2,885	\$3,147	\$2,635	\$1,795
Initial Capital Depreciation Sustaining Capital Depreciation Total Depreciation		\$593 \$116 \$710	\$593 \$117 \$711	\$593 \$119 \$712	\$641 \$130 \$771	\$641 \$132 \$773	\$641 \$134 \$776	\$627 \$134 \$761	\$541 \$116 \$657	\$417 \$89 \$506	\$289 \$62 \$351
Net Income After Depreciation	\$	2,137 \$	1,860 \$	2,134 \$	2,442 \$	2,148 \$	2,438 \$	2,124 \$	2,490 \$	2,129 \$	1,444
Income Taxes		584	583	477	582	682	569	681	563	747	657
Net Income After Taxes	-	1,553	1,277	1,657	1,860	1,465	1,869	1,443	1,926	1,382	786
Cash Flow Operating Income after Depreciation Add Back Depreciation	\$ \$	2,137 \$ 710 \$	1,860 \$ 711 \$	2,134 \$ 712 \$	2,442 \$ 771 \$	2,148 \$ 773 \$	2,438 \$ 776 \$	2,124 \$ 761 \$	2,490 \$ 657 \$	2,129 \$ 506 \$	1,444 351
Working Capital Account Recievable Accounts Payable Inventory - Parts, Supplies		\$0 \$0	\$0 \$0	\$0 \$0	-\$228 \$1	\$0 \$0	\$0 \$0	\$69 \$110	\$409 -\$608	\$596 -\$59	\$609 -\$60
Total Working Capital	\$	- \$	- \$	- \$	(227) \$	- \$	- \$	179 \$	(199) \$	537 \$	550

Capital Expenditures

Capital Experiences														
Initial Capital														
Mine	\$0	1	\$0	\$0	\$0	\$0	\$0	\$0		\$0		\$0		\$0
Process Plant	\$0 \$0	1	\$0 \$0	\$0	\$0	\$0 \$0	\$0	\$0	i i	\$0 \$0		\$0		\$0
Heap Leach	\$0	í.	\$0	\$0	\$0	\$0	\$0	\$0 \$0	6			\$0		\$0
Owners Cost	\$0	1	\$0	\$0	\$0	\$0	\$0	\$0	6	\$0 \$0		\$0		\$0
Phase 1 Salvage	\$0 \$0 \$0	í.	\$0	\$0 \$0 \$0 \$0 \$0	\$0	\$0	\$0 \$0 \$0 \$0 \$0	\$0		\$0		\$0 \$0		\$0 \$0 \$0 \$0 \$0
Sustaining Capital														
Mine	\$13		\$13	\$13	\$13	\$13	\$13	\$13		\$0		\$0		\$0
Process Plant	\$0	i	\$0	\$0	\$0	\$0	\$0	\$0	i	\$0		\$0		\$0
Total Capital Expenditures	 \$13		\$13	\$13	\$13	\$13	\$13	\$13		\$0	È	\$0		\$0
Cash Flow before Taxes	\$ 2,834	\$	2,558	\$ 2,834	\$ 2,973	\$ 2,908	\$ 3,201	\$ 3,051	\$	2,948	\$	3,173	s	2,345
Cummulative Cash Flow before Taxes	\$ 60,956	\$	63,514	\$ 66,348	\$ 69,321	\$ 72,230	\$ 75,430	\$ 78,482	\$	81,429	\$	84,602	\$	86,946
Taxes	-		-	-		-	-	-		-				-
Income Taxes	\$ 584	\$	583	\$ 477	\$ 582	\$ 682	\$ 569	\$ 681	\$	563	\$	747	\$	657
Cash Flow after Taxes	\$ 2,250	\$	1,975	\$ 2,357	\$ 2,391	\$ 2,226	\$ 2,632	\$ 2,371	\$	2,384	\$	2,426	\$	1,687
Cummulative Cash Flow after Taxes	\$ 44,680	\$	46,656	\$ 49,013	\$ 51,404	\$ 53,630	\$ 56,262	\$ 58,632	\$	61,016	\$	63,442	\$	65,129



Mining Operations		64	65	66	67	68	69	70
Ore Beginning Inventory (kt) Mined (kt) Ending Inventory (kt)		(0) - (0)	(0) - (0)	(0) - (0)	(0) - (0)	(0) - (0)	(0) - (0)	(0) - (0)
Gold Grade (g/t) Silver Grade (g/t)			-		-	-	a a	8. 1
Contained Gold (kozs) Contained Silver (kozs)		-	-		-	с С	;	5. 7
Low Grade Ore Beginning Inventory (kt) Mined (kt) Ending Inventory (kt)		(0) - (0)	(0) - (0)	(0) - (0)	(0) - (0)	(0) - (0)	-(0) -(0)	(0) - (0)
Gold Grade (g/t) Silver Grade (g/t)		-	-	-	-	-	-	-
Contained Gold (kozs) Contained Silver (kozs)			-	2 <u>1</u> 2			-	-
Waste Beginning Inventory(kt) Mined (kt) Ending Inventory (kt)		- 0	0 - 0	0-0	0-000	0 - 0	- 0	0 - 0
Total Material Mined (kt)					-	3 <b>.</b>	-	-
Process Plant Operations								
Beginning Ore Inventory (kt) Ore - Processed (kt) Ending Ore Inventory		(0) - (0)	(0) - (0)	(0) - (0)	(0) - (0)	(0) - (0)	(0) - (0)	(0) - (0)
Gold Grade (g/t) Silver Grade (g/t)		-	-	390 190		-	-	-
Contained Gold (kozs) Contained Silver (kozs)			-	10- 10-		-	-	
Recovery Gold (%) Recovery Silver (%)								
Recovered Gold (kozs) Recovered Silver (kozs)		1 13	1 8	1 8	1 8	1 7	-	
<b>Payable Metals</b> Payable Gold (kozs) Payable Silver (kozs)		1 13	1 8	1 8	1 8	<b>1</b> 7	1	:
Income Statement (\$000) Metal Prices Gold (\$/oz) Silver (\$/oz)		\$1,250 \$20	\$1,250 \$20	\$1,250 \$20	\$1,250 \$20	\$1,250 \$20	\$1,250 \$20	\$1,250 \$20
Revenues Gold Revenue (\$ 000) Silver Revenue (\$ 000) Total Revenues	-	\$1,752 \$259 \$2,011	\$1,081 \$160 \$1,241	\$1,081 \$160 \$1,241	\$1,081 \$160 \$1,241	\$881 \$130 \$1,011	\$0 \$0 \$0	\$0 \$0 \$0
<b>Operating Cost</b> Mining Process Plant General Administration Treatment & Refining Charges		\$0 \$244 \$112	\$0 \$151 \$112	\$0 \$151 \$112	\$0 \$151 \$112	\$0 \$123 \$112	\$0 \$0 \$0	\$0 \$0 \$0
Dore' Refinery Charge Freight/Insurance		\$3 \$3	\$2 \$2	\$2 \$2	\$2 \$2	\$2 \$2	\$0 \$0	\$0 \$0
Total Operating Cost		363	267	267	267	238	÷	-
Royalty Salvage Value Reclamation & Closure Total Production Cost		\$213 \$0 \$0 \$576	\$4 \$0 \$271	\$4 \$0 \$0 \$271	\$107 \$0 \$0 \$374	\$3 -\$2,736 <u>\$2,000</u> -\$494	\$0 \$0 \$0 \$0	\$52 \$0 <u>\$0</u> \$52
Operating Income		\$1,435	\$970	\$970	\$867	\$1,506	\$0	-\$52
Initial Capital Depreciation Sustaining Capital Depreciation Total Depreciation	_	\$266 \$57 \$323	\$164 \$35 \$199	\$164 \$35 \$199	\$164 \$35 \$199	\$201 \$31 \$232	\$0 \$0 \$0	\$0 \$0 \$0
Net Income After Depreciation	\$	1,112 \$	771 \$	771 \$	668 \$	1,274 \$	- \$	(52)
Income Taxes Net Income After Taxes		443 669	325 446	233 537	233 434	194 1,080	438 (438)	(52)
Cash Flow Operating Income after Depreciation Add Back Depreciation	\$ \$	1,112 \$ 323 \$	771 \$ 199 \$	771 \$ 199 \$	668 \$ 199 \$	1,274 \$ 232 \$	- S - S	(52)
Working Capital Account Recievable		\$111	\$488	\$0	\$0	\$146	\$640	\$0
Accounts Payable Inventory - Parts, Supplies Total Working Capital	\$	-\$11 100 \$	-\$48 440 \$	\$0 - \$	\$0 - \$	-\$14 137 268 \$	-\$119 521 \$	\$0 -
Capital Expenditures Initial Capital Mine		\$0	\$0	\$0	\$0	\$0	\$0	\$0
Process Plant Heap Leach Owners Cost Phase 1 Salvage		\$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0 \$0	\$0 \$0 \$0 \$0
Sustaining Capital Mine Process Plant		\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0
Total Capital Expenditures Cash Flow before Taxes Cummulative Cash Flow before Taxes	\$ \$	\$0 1,535 \$ 88.482 \$	\$0 1,410 \$ 89.892 \$	\$0 970 \$ 90,862 \$	\$0 867 \$ 91,729 \$	\$0 1,774 \$ 93,502 \$	\$0 521 \$ 94.024 \$	\$0 (52) 93 971
Cummulative Cash Flow before Taxes Taxes Income Taxes	\$ \$	88,482 \$ - 443 \$	89,892 \$ - 325 \$	90,862 \$ - 233 \$	91,729 \$ - 233 \$	93,502 \$ - 194 \$	94,024 \$ - 438 \$	93,971
Income Taxes Cash Flow after Taxes Cummulative Cash Flow after Taxes	<u> </u>	443 \$ 1,092 \$ 66,222 \$	325 \$ 1,085 \$ 67,307 \$	233 \$ 737 \$ 68,043 \$	634 \$ 68,677 \$	1,580 \$	438 \$ 83 \$ 70,340 \$	(52)
Communant Cuon From aller 1 and	Ø	Φ	- τι,συτ Φ	Φ	00,077 Ø	φ (ευτογούς) φ	, v, это Ф	.0,200



# 23 ADJACENT PROPERTIES

There are no adjacent properties that are of relevance to the Moss Mine Project.



# 24 OTHER RELEVANT DATA AND INFORMATION

# 24.1 HYDROGEOLOGICAL CONDITIONS

The Company commissioned a hydrogeological investigation during the feasibility study, to investigate the sources and quantities of water that may be available on the patented claims.

Groundwater from wells on the patented claims was the sole source of water for mining and heap leaching during the Phase I operations hence it has been established that a groundwater resource is available. Well #WW2, which is within the footprint of the open pit, was the primary water source for the Phase I operations.

In addition to the Phase I water usage:

- A number of exploration holes drilled through the Moss Vein encountered measurable quantities of water and was measured through airlift testing and recorded.
- The historical underground mine workings at Moss are flooded and are known to recharge, likely from the Moss Vein.
- A number of springs are known to occur within the proximity of the project. The two most prominent springs are the Secret Pass spring at an elevation of 770 m and about 5 km northwest of the site, and the Silver Creek spring at an elevation of about 650 m about 5 km southeast of the site.

Groundwater level data collected from exploration holes, water wells and observations wells provide evidence that the Moss Project area can be divided in at least four compartments or hydrogeologic zones as follows:

- 1. East of the west margin of the basaltic dyke, groundwater levels are approximately 635 masl. Pumping tests were carried out within this zone.
- 2. In a 300 m central zone, the water levels were approximately 615 masl. The Ruth Mine workings are within this zone.
- 3. The western zone. From the central zone to the Canyon Fault trace has water levels of about 630 masl. The historic underground Moss Mine is within this zone.
- 4. There is little information about the water levels in the West Extension, but the little data available suggests water levels of about 650 masl.

# 24.1.1 Available Groundwater Resources

Based on the evaluations to date it would appear the best sources of water available on the patented claims are:

- Dry washes that transect the site, particularly the wash on the eastern end of the property. These washes are thought to demark faults or zones of fracturing that may act as pathways for water, or if gouge filled, as barriers to water.
- A local "wet" region about halfway along the south (hangingwall) of the open pit where a number of exploration holes encountered water. This zone is likely more fractured and appears to coincide with a cross-cutting fracture zone.
- Dewatering of the open pit.



# 24.1.1.1 Groundwater Well Drawdown Testing

During the investigation a number of short duration and long term pumping tests were conducted on existing groundwater wells at the Moss site (see plan on Figure 24-1). A number of observation wells were drilled for data collection.



Figure 24-1: Pumping Wells Plan with Pit Outline (in red)

Step tests and longer term pumping tests were conducted in 4 groundwater wells as follows:

- A step test of WW6 confirmed connection to the Moss underground workings
- WW9 was step tested and then was pumped at 80 gpm for 28 days.
- WW10 was step tested and then was pumped for 48 hours while WW9 was pumped
- WW13 was step tested.

Based on the pumping tests, the groundwater consultants' final recommendations were that the patented claims could provide 130 gpm as follows:

- 65 gpm is classed as a proven yield comprising 65 gpm from existing wells on the patented claims.
- Another 65 gpm is classed as an expected yield comprising 30 gpm from dewatering of the open pit, and another 35 gpm from new wells to be drilled on the patented claims.

In addition to the above yields from wells on the patented claims, a number of other groundwater resources may provide additional and potentially substantial resources. Potential sources include:

- Resources north of the site within the quartz monzonite intrusive, aligned with linear and fault traces. This would most probably be within the unpatented claims to the north.
- Resources within Silver Creek wash to the north of the patented ground. Drillhole MC-21 was drilled in that area with favorable air-lift results. These two areas can be evaluated further with an investigation program.



These resources will be investigated in detail in the time frame between the completion of the feasibility study and the start of mine operations. The feasibility budget includes an allowance for an expanded hydrogeological investigation off the patented claims.

# 24.1.2 Open Pit Dewatering

Geotechnical logs for drillholes though the Moss Vein show the hangingwall and footwall margins are commonly highly fractured or shattered, and the quartz tends to be quite vuggy, indicating a potential zone for passage of groundwater. This finding seems to be supported by downhole plots showing the airlift data superimposed over the Moss Vein traces. These plots are consistent with an interpretation that the water encountered in the airlift data coincides with the hangingwall contact on the Moss Vein (see Figure 24-2).

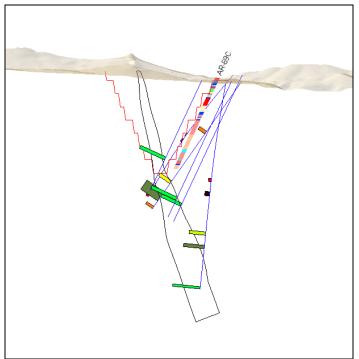


Figure 24-2: Moss Vein outline (black) with pit shell trace (red) and drill traces (blue) showing water encountered in airlift holes (green bars).

The above evidence suggests that dewatering of the open pit could also be an important source of water during operations. However, to date, no hydrogeological testing has been done specifically for the open pit.

The mining budget includes an annual allowance for pit dewatering and monitoring wells which will comprise:

- Monitoring of water levels in existing wells in proximity to the pit.
- Drilling of 8 additional monitoring wells (4 on the north pit wall and 4 on the south pit wall, angled at 60 deg towards the pit). The holes will be drilled to elevation 510 and will be fitted with vibrating wire piezometers.
- An annual allowance for the drilling of in-pit dewatering wells to maintain a static water elevation at least 12 m (2 benches) below the pit floor.



# 24.2 PROJECT SCHEDULE

Several advantages accrue to the development timeline, given the location of the project in Arizona and it being so close to the city of Bullhead City. Significant savings in time and costs can be achieved as a result of the ease of access to the deposit, the relative simplicity of the site geography and topography and the ability to source key supplies from Bullhead City, Phoenix or suppliers in Nevada, none of which are more than a day's drive away from the site. In addition, the ability to access ore without the necessity of any pre-strip mining, the trench pit mine design and the well tested mining and processing technology being utilized, all further reduce timeline and cost overrun risks. The size of the planned operation enables both equipment and supplies to be "off the shelf", thereby reducing equipment operating, maintenance or key parts re-supply risks.

The development timeline reflects the favorable year-round climate and accessibility of the Project. The detailed development timeline is shown in Figure 24-3 below.

# **Moss Mine Development Schedule**

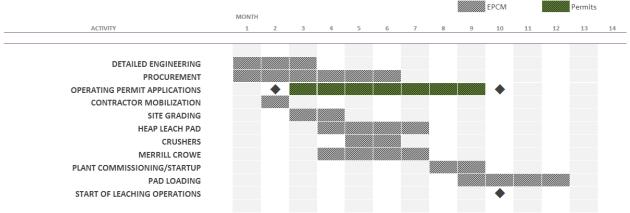


Figure 24-3: High-Level Mine Development Schedule



# 25 INTERPRETATION AND CONCLUSIONS

The feasibility results indicate the Moss Project offers significant financial returns on a modest up-front capital investment of \$33 million. The project does not present any unusual technical challenges or hurdles and it would appear that the regulatory process for project approvals will be straightforward and timely. The current development plan could see the Moss Project in production as early as 10 months after the start of construction. The project has been largely de-risked both from a technical and an economic standpoint through the extensive use of vendor quotations, prior operating experience during the Phase I operations, and the use of off-the-shelf technologies.

The geological model, upon which the mineral reserves and mine plan is based, is thought be robust and accurate and hence no major geological risks have been identified. The project upside includes an immediate access to ore without the need to pre-strip, a low strip ratio, a competent hangingwall and footwall, a simplified trench pit design, and industry standard gold recovery techniques through cyanide heap leaching and Merrill Crowe metals extraction. There are some operational risks in terms of grade control and minimizing dilution due to the narrow vein nature of the mining, however an industry standard blast hole sampling and grade control program is expected to mitigate these risks.

The Project boasts a number of positive factors including:

- Its location in a mining friendly jurisdiction in Arizona with a long history of gold mining
- Its proximity to Bullhead City which eliminates the need for a permanent camp and other site facilities
- Its proximity to skilled labor, experienced contractors, mining suppliers and vendors
- Its relationship with local stakeholders and the community which is fully supportive of the Company's efforts to re-activate the Moss Mine

The timing for the project also appears to be favorable in light of recent mine closures in Arizona and Nevada. This has resulted in a flood of skilled labor, inexpensive used equipment, and vendors who are offering incentives in order to sell their goods.

It is important to note that the Company already has an established relationship with the key regulatory bodies such as the ADEQ, the Mine Inspector and others due to its prior operations for Phase I.

An early startup at Phase II would allow the Company to transition to a producer with a cashflow which could then support the permitting process for development off the patented claims if this development is deemed economic.

While the Moss Project has largely been de-risked, both from a financial and implementation perspective, there are a number of remaining risks that must be realized. On the other hand the project offers a number of opportunities to improve on the returns and further de-risk the project. These are outlined in the following sections.

#### 25.1 **OPPORTUNITIES**

#### 25.1.1 Leasing versus Purchase

The recent slowdown in equipment sales has created an opportunity for savings through manufacturer's incentive programs on new equipment. These programs include vendor financing on the cost of new equipment, and even bank financing.



Company has secured proposal for lease-to-own financing for the crushing equipment that offers significant financial benefits to the project. The offer allows a reduction to the initial direct capital costs by almost 25%, and significant upside to the Internal Rate of Return.

# 25.1.2 Long Term Supply Contracts

Many of the consumables are open to long term supply contracts which can both reduce the unit costs, as well as provide a stable cost structure that reduces the risk of price escalations over the life of the mine. Some of the consumable items that should be pursued in long term bulk supply contracts include cyanide, cement, and diesel fuel.

# 25.1.3 Contractor Bids

The Company intends to make full use of competitive bidding for both construction and operations. The Arizona and Nevada markets are flooded with available contractors looking for work due to a string of recent mine closures. This competitive bidding process proved to be very successful during the feasibility study in securing very competitive rates from a highly regarded mining Contractor.

# 25.1.4 Direct Purchase of Supplies and Materials

During the feasibility costing tasks it became apparent that significant savings could be realized through direct purchase contracts with many of the vendors supplying services and materials for construction of the facilities. In particular it was noted that the geomembranes needed for the heap leach pad liners could be purchased directly from the liner manufacturer at a significant savings compared to a supply and install contract with a liner installer. Likewise, over \$2 million was saved in the Merrill Crowe plant by direct purchase of the components, compared to the cost of a pre-manufactured Merrill Crowe circuit.

# 25.1.5 Used Equipment

With the recent downturn in the mining industry in Nevada and Arizona there is flood of late model used equipment available on the market for a fraction of the cost of new equipment in good working condition.

# 25.1.6 Skilled Labor

Several recent mine closures and project slowdowns have created a local pool of highly skilled operators and professionals available for work. The Company expects that this lead to lower than average labor costs for the project as these individuals would rather not have to relocate.

# 25.2 RISKS

# 25.2.1 Groundwater

The most significant risk to the project is the availability and also cost of water. Heap leaching projects, by their nature, consume large quantities of water due to the need to pre-wet the ore for leaching. Additional water losses come from evaporation during operations, and dust control on the haul roads.

The Moss Project is located in a desert environment with limited recharge due to precipitation, and very high evaporation losses due to the low relative humidity. The heap has been designed to reduce or mitigate evaporation losses by use of buried drip lines for irrigation, and limited pond areas. However the make-up water needed for leaching still amounts to over 200 gpm at its peak.



The project has been designed on the basis that the make-up water for leaching operations will be supplied by groundwater. In the event of a groundwater shortage, the Company has two options available: (i) temporarily reduce the rate of stacking on the heap in order to reduce the make-up water quantities during periods of extreme dry, or (ii) purchase water from the Bullhead City at a cost of about \$8,500/acre-ft. The latter option will require the construction of a water supply pipeline at a capital cost of about \$1 million excluding permitting.

An expanded hydrogeological investigation has been recommended to identify and quantify the additional groundwater resources both on and off the patented claims. The capital cost estimate includes an allowance of \$300,000 for this investigation.

# 25.2.2 Geotechnical Risks

As has been noted several times, the project has been designed to be constrained wholly within the boundaries of the patented claims at the Moss project site. This places considerable reliance on the geotechnical stability of the facilities, in particular the open pit walls, the waste dumps, and the leach pad. All of the facilities are in close proximity to each other and there is no buffer zone or contingency in the event of instability. Any instability in any of these facilities will have a direct impact on the project.

# 25.2.3 Permitting Risks<sup>4</sup>

The Moss Project was a fully permitted going concern for the pilot heap Phase I operations. However the Phase II project will require additional permits and permit amendments. While the risk of being denied these permits is considered to be small, the timeline for obtaining the necessary approvals does pose a scheduling risk for construction and startup.

The two critical permits for startup are the Aquifer Protection Permit, and the Air Quality Permit. Both of these permits have a regulatory timeline of up to 18 months for approval, although expedited permitting timelines are common when the project is well defined and designed to meet the regulatory guidelines. The Air Quality Permit is likely needed before full scale construction can commence, and the Aquifer Protection Permit will be needed before ore can loaded onto the heap leach pad.

During the Phase I operations the Project was granted a Letter of Non-Determination for the Air Quality Permit and was able to operate as long as the fugitive dust from the crushing operations stayed below a thresh-hold of tons per year. The Company is assuming the Letter of Non-Determination can be extended to allow construction, and that the permit can be granted for operations.

It is likewise assumed that pad loading can commence as soon as the heap leach pad is competed because the Moss ores are inert (mainly quartz) and are free of sulphides. The permit would thus be needed prior to the commencement of leaching operations. This will require ADEQ approval.

The project area also likely spans several jurisdictional washes that will require additional permits and approvals before these areas can be disturbed. The Company has allowed 18 months in the project development schedule wherein no development will encroach on the jurisdictional washes to allow for the required permit approvals. However, if these approvals are delayed or with-held it will impact the Companies plan to continue to operate the mine.

<sup>4</sup> Subsequent to the Effective Date of this report the EPA issued a revised criteria for approval of a Clean Water Act Section 404 Permit. The Company is assessing the likely impact this change will have on the project and permitting timelines and will adjust its activities accordingly.



# 25.2.4 Capital Risks

The capital estimate for leach pad construction includes a savings of approximately \$500,000 through the re-use of spent ores from the Phase I heap. This material will require geochemical testing to confirm it is inert, and will require approval from ADEQ prior to its use.

The recommended program is as follows:

- Collection of a minimum of 11 samples from various locations around the Phase I heap. The samples can be sourced from surface samples around the perimeter as long as they are representative of the bulk of the leached material. Samples can also be obtained by trenching or auger drilling.
- Each sample should consist of a half to one gallon of material.
- The testing should include: Acid Generating Potential (AGP), Acid Neutralization Potential (ANP), Total Sulfur, Ratio of AGP/ANP, Net Neutralization Potential (NNP), Pyritic Sulfur, Sulfate Sulfur, and Residual Sulfur. Results for AGP, ANP, and NNP expressed in tons of CaCO<sub>3</sub> per 1000 tons of material. Sulfur forms should be expressed as % of total sulfur.
- The results should include metals that have a numeric water quality standard including antimony, arsenic, beryllium, cadmium, chromium, lead, mercury, nickel, selenium, and thallium. The analyses should be performed with detection limits that are below the standards (see the attachment).

If ADEQ approval is not granted, it will require the crushing and screening of additional drainage material, which represents a capital risk.

# 25.2.5 Recovery Risks

Metallurgical testing has shown the Moss ores to be amenable to cyanide extraction of the precious metals, however the material requires a very fine crush size (minus 6mm) to achieve the gold recovery targets. The pilot heap also revealed the Moss ores exhibit very slow leach kinetics and leach cycle times in excess of 250 days are needed to achieve a +80% gold recovery.

The long leach cycles require large areas of the pad to remain under leach. During peak operations some 45,000m<sup>2</sup> of pad area will be under continuous leach. This becomes problematic during the last year of the mine where the top surface area of the leach pad begins to shrink due to the space constraints imposed by the patented boundaries. In the last few months it will be necessary to stack ore on pad lifts that have not been fully leached, which could have an impact on the recovery schedule.

# 25.2.6 Operational Risks

The success of the Moss Project is reliant on minimizing dilution to maximize head grades reporting to the heap. Excessive dilution can add to the operating costs as well as additional material must be moved and stacked to achieve the gold production.

The key to minimizing dilution during operations is grade control. The Company intends to adopt industry standard grade control practices as outlined in Section 16.10.3.

# 25.2.7 Site Access

To access the Moss Mine patented claims, the Company must use a local road system that includes an unimproved road that crosses federal land administered by the BLM. This road, identified as #7717 in the BLM Kingman Resource Area Management Plan, is open to the public and has been used by the Company in connection with prior exploration activities and the initial phase of the project. The Company's ability to use the road may be restricted by



the BLM if the level of activity results in unnecessary and undue degradation. If restricted, or if the Company deems it necessary to make upgrades and improvements to the road (such as widening the road and installing culverts at local drainage features), a federal permitting process would likely be required. Restrictions and/or future permitting delays could impair the Company's ability to transport equipment and supplies to the project resulting in unexpected costs.



# 26 RECOMMENDATIONS

The authors recommend that the Company continues to advance the project towards production.

The authors further recommend that the Company secure funding for the project through submission of this document to funding groups and lenders as the feasibility study results indicate the project is economically robust and potentially financeable. After suitable financing has been secured, the authors recommend the Company proceed with detailed design and the necessary regulatory approvals as outlined in this document.



#### 27 REFERENCES

Addwest Minerals International Ltd. Moss Mine Project, Arizona. Company report, June 1997.

Arizona Department of Environmental Quality. Moss Mine Pilot Project, Permit Determination No. 57435. 2013.

- Baum, W. and Lherbier, L. W. Cyanide Leach Tests and Mineralogical Characterization of Gold Ore Samples from the Moss Mine Project. Consultancy report to Billiton Minerals dated December 17, 1990.
- Bureau of Land Management. Various reports secured online (www.blm.gov) relating to the Company's claims. December 2014.
- Brownlee, D. Report on Geological Model, Moss Project, Arizona, USA. August 23, 2014.
- Brownlee, D. Verification of Golden Vertex Corp., Moss Mine Drill Hole Database. December 31, 2013.
- Cuffney, R. Moss Mine Project Logging Guide, February 2013.
- Durning, W.P. and Buchanan, L.J. The Geology and Mineral Deposits of Oatman, Arizona. Arizona Geological Society Digest, Vol. 15, pp.141-158. 1984.
- Godden, S.J. Consultancy report to Golden Vertex Corporation entitled 'Moss Mine Gold-Silver Project, Mineralogical and Metallurgical Review'. November 23, 2014.
- Godden, S.J. Consultancy report to Golden Vertex Corporation entitled 'Moss Mine Gold-Silver Project, 2013 to 2014 Mineral Resource Estimates' Reconciliation (Summary). October 09, 2014.
- Godden, S.J. Consultancy report to Golden Vertex Corporation entitled 'Moss Mine Gold-Silver Project, Phase I Heap Leach Metallurgical Performance and Gold Recovery Analysis'. October 22, 2014.
- Godden, S.J. Consultancy report to Golden Vertex Corporation entitled 'Moss Mine Gold-Silver Project, Updated Phase I Reconciliation Extracted Material to 2014 Mineral Resource Model'. October 27, 2014.
- Heald, P., Foley, N.K. and Hayba, D.O. Comparative Anatomy of Volcanic-Hosted Epithermal Deposits: Acid-Sulfate and Adularia-Sericite Types. Economic Geology, Vol.82, pp.1-26. 1987.
- Henley, R.W. and Ellis, A.J. Geothermal Systems Ancient and Modern: A Geochemical Review. Earth-Science Reviews, Vol. 19, pp. 1-50. 1983.
- Hudson, D. M., 2011. Petrography of selected samples from the Moss Mine, Mojave County, Arizona. Consultancy report for Kappes, Cassiday & Associates, Reno, Nevada, September 2011.
- John, D. A. Miocene and Early Pliocene Epithermal Gold-Silver Deposits in the Northern Great Basin, Western United States: Characteristics, Distribution, and Relationship to Magmatism. Economic Geology, Vol. 96, pp. 1827-1853. 2001.
- Kappes, Cassidy & Associates. Consultancy report to Patriot Gold Corporation. Moss Mine, Report on Metallurgical Testwork, March 2011'.
- Kappes, Cassidy & Associates. Consultancy report to Patriot Gold Corporation. Moss Mine Project, Report on Metallurgical Testwork, November 2012'.
- Kappes, Cassidy & Associates. Consultancy report to Golden Vertex Corporation. Moss Mine, Report on Metallurgical Testwork. July 30, 2012.
- Malach, R. Adventurer John Moss: Gold Discovery in Mohave County. Kingman, Arizona, Mohave County Board of Supervisors. 1977.
- McClelland Laboratories, Inc. Direct Agitation Cyanidation Testwork Moss Bulk Ore and Cuttings Samples. Consultancy report to Magma Copper Company. May 29, 1991.



- McClelland Laboratories, Inc. Direct Agitation Cyanidation Testwork Moss Cuttings Intervals. Consultancy report to Magma Copper Company. January 29, 1992.
- McClelland Laboratories, Inc. Heap Leach Amenability Evaluation Various Crusher Product Ore Samples from the Moss Project. Consultancy report to Northern Vertex Mining Corporation. February 11, 2013.
- McClelland Laboratories, Inc. Heap Leach Amenability Evaluation Lower Grade Moss Composite, 2 x Thru Rolls #2. Consultancy report to Northern Vertex Mining Corporation. April 26, 2013.
- Metcon Research. Crush Size Study Locked Cycle Column Leach on Oxide Composite. Consultancy report to Patriot Gold Corporation. June 2008.
- MineFill Services, Inc., Technical Report on the 2014 Mineral Resource Update Moss Mine Gold-Silver Project, Mohave County, Arizona, USA for Northern Vertex Corporation. Effective Date October 31, 2014. Report Date December 30, 2014.
- Ransome, F.L. Geology of the Oatman Gold District, Arizona. USGS Bulletin 743. 1923.
- Schrader, F.C. Mineral Deposits of the Cerbat Range, Black Mountains and Grand Wash Cliffs, Mohave County, Arizona. USGS Bulletin 397. 1909.
- Sherman, J.E. & Sherman, B.H. (1969) Ghost Towns of Arizona. University of Oklahoma Press, 10th printing, 1980.
- Sillitoe, R.H. Rifting, Bimodal Volcanism, and Bonanza Gold Veins. Society of Economic Geologists Newsletter, No. 48, pp. 24-26. January 2002.
- Taylor, B.E. Epithermal Gold Deposits, in Goodfellow, W.D., ed., Mineral Deposits of Canada: A Synthesis of Major Deposit-Types, District Metallogeny, the Evolution of Geological Provinces, and Exploration Methods: Geological Association of Canada, Mineral Deposits Division, Special Publication No. 5, pp. 113-139. 2007.
- Thomas, D. A consultancy report to Golden Vertex Corp. entitled '2014 Model Reconciliation to 2013 PEA Model'. October 03, 2014.
- Thomas, D. A consultancy report to Golden Vertex Corp. entitled 'Moss Mine Project, 2014 Mineral Resource Update'. October 24, 2014.
- Varney, P. (1994). Arizona Ghost Towns and Mining Camps: a travel guide to history. Arizona Highways, 10th edition 2010.



APPENDIX A: FEASIBILITY STUDY CONTRIBUTORS AND PROFESSIONAL QUALIFICATIONS



#### **CERTIFICATE – DR. DAVID STONE, P.E.**

I, David Stone, P.E., of PO Box 725, Bothell, Washington, USA, as the principal author of this report entitled 'Technical Report: Feasibility Study on the Moss Gold-Silver Project, Mohave County, Arizona, USA' with an Effective Date of June 8, 2015 and which was prepared for Northern Vertex Mining Corporation (the "Issuer"), do hereby certify that:

- 1. I am currently employed as President of MineFill Services, Inc., that is a Washington, USA, domiciled Corporation.
- 2. I am a graduate of the University of British Columbia with a B.Ap.Sc in Geological Engineering, a Ph.D. in Civil Engineering from Queen's University at Kingston, Ontario, Canada, and an MBA from Queen's University at Kingston, Ontario, Canada.
- 3. I have practiced my profession for over 30 years and have considerable experience in the preparation of engineering and financial studies for base metal and precious metal projects, including Preliminary Economic Assessments, Preliminary Feasibility Studies and Feasibility Studies.
- 4. I am a licensed Professional Engineer in Ontario (PEO #90549718) and I am licensed as a Professional Engineer in a number of other Canadian and US jurisdictions.
- 5. I have read the definition of 'Qualified Person' set out in National Instrument 43-101 *Standards of Disclosure for Mineral Projects* ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a Qualified Person for the purposes of NI 43-101.
- 6. I first visited the subject property November 2014 and have returned several times since then.
- 7. I am responsible for the entire contents of this report except for Sections 15, 16, 17, 21.1, 21.1.6, 21.2.3 thru 21.2.8, 25.2.4, and 25.2.6.
- 8. I am independent of the Issuer applying all the tests in Section 1.5 of NI 43-101.
- 9. I have had prior involvement with the property that is the subject of the Technical Report as a Qualified Person and signatory to the December 2014 Technical Report filed on SEDAR.
- 10. I have read NI 43-101 and NI 43-101F1 and the Technical Report has been prepared in compliance with that instrument and form.
- 11. As of the Effective Date of the Technical Report (June 8, 2015), to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.
- 12. I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them, including electronic publication in the public company files on their website accessible by the public, of the Technical Report.

(Signed) (Sealed) "David Stone"

David Stone, P.E.

DATED at Bothell, Washington, USA, this 13<sup>th</sup> day of July 2015.



# CERTIFICATE of QUALIFIED PERSON

I, Thomas L. Drielick, P.E., do hereby certify that:

- 1. I am currently employed as Sr. Vice President by M3 Engineering & Technology Corporation located at 2051 W. Sunset Rd., Ste. 101, Tucson, Arizona 85704.
- 2. I am a graduate of Michigan Technological University and received a Bachelor of Science degree in Metallurgical Engineering in 1970. I am also a graduate of Southern Illinois University and received an M.B.A. degree in 1973.
- 3. I am a:
  - Registered Professional Engineer in the State of Arizona (No. 22958)
  - Registered Professional Engineer in the State of Michigan (No. 6201055633)
  - Member in good standing of the Society for Mining, Metallurgy and Exploration, Inc. (No. 850920)
- 4. I have practiced metallurgical and mineral processing engineering and project management for 44 years. I have worked for mining and exploration companies for 18 years and for M3 Engineering & Technology Corporation for 26 years.
- 5. I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
- 6. I am responsible for the preparation of Sections 17 and 21.2.3 thru 21.2.8 of the technical report titled "Moss Gold-Silver Project NI 43-101 Feasibility Study" for Northern Vertex Mining Corporation dated July 13, 2015 ("Technical Report").
- 7. I have not had prior involvement with the property that is the subject of the Technical Report. I have not visited the project site.
- 8. As of the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.
- 9. I am independent of Northern Vertex Mining Corporation and all their subsidiaries as defined by Section 1.5 of NI 43-101.
- 10. I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.
- 11. I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

Dated this 13 July 2015.

(Signed) (Sealed) "Thomas L. Drielick" Signature of Qualified Person

Thomas L. Drielick Print name of Qualified Person



# CERTIFICATE OF QUALIFIED PERSON

I, Daniel K. Roth, PE, do hereby certify that:

- 1. I am currently employed as a project manager and civil engineer at M3 Engineering & Technology Corporation located at 2051 West Sunset Rd, Suite 101, Tucson, AZ 85704.
- 2. I graduated with a Bachelor's of Science degree in Civil Engineering from The University of Manitoba in 1990.
- 3. I am a registered professional engineer in good standing in the following jurisdictions:
  - British Columbia, Canada (No. 38037)
  - Alberta, Canada (No. 62310)
  - Ontario, Canada (No. 100156213)
  - Yukon, Canada (No. 1998)
  - New Mexico, USA (No. 17342)
  - Arizona, USA (No. 37319)

I am also a member in good standing with the Society of Mining, Metallurgy and Exploration.

- 4. I have practiced engineering and project management for 22 years. I joined M3 Engineering in November 2003.
- 5. I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
- 6. I am responsible for Section 21.1 of the technical report titled "Moss Gold-Silver Project NI 43-101 Feasibility Study" for Northern Vertex Mining Corporation dated July 13, 2015 ("Technical Report").
- 7. I have not had prior involvement with the property that is the subject of the Technical Report. I last visited the Moss project site on February 20, 2015.
- 8. As of the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.
- 9. I am independent of Northern Vertex Mining Corporation and all their subsidiaries as defined by Section 1.5 of NI 43-101.
- 10. I have read the National Instrument 43-101 and Form 43-101F1. The sections of the Technical Report that I am responsible for have been prepared in compliance with that instrument and form.
- 11. I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them, including electronic publication in the public company files on their website accessible by the public, of the Technical Report.

Dated 13 July, 2015.

(Signed) (Sealed) "Daniel K. Roth" Signature of Qualified Person

Daniel K. Roth Print Name of Qualified Person





#### **CERTIFICATE of QUALIFIED PERSON**

I, Eugene Muller, PE, do hereby certify that:

1. I am a Senior Consultant employed by Golder Associates Inc. and contributed to the Technical Report titled "Moss Gold Project, NI 43-101 Technical Report, Feasibility Study, Mojave County, Arizona" dated July 13, 2015, prepared by M3 Engineering and Technology Corp. Golder Associate's address is:

Golder Associates Inc. 4730 N. Oracle Road Suite 210 Tucson, Arizona 85705

- 2. I received Bachelor of Science degrees in Geosciences and Civil Engineering from the University of Arizona in 1978 and 1986. I earned a Master of Science in Civil Engineering in 1989 from the University of Arizona.
- 3. I am a Registered Professional Engineer in the State of Arizona.
- 4. I have worked for over 20 years as a geologist and engineer on a variety of mining industry projects. Most of my project experience is directly relevant and applicable to the contributions made to the above referenced report.
- 5. I have read the definition of "Qualified Person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for the purposes of NI 43-101.
- 6. I prepared Sections 17.1.3 and 21.1.6, and developed leach pad, process pond and stormwater management facility construction costs incorporated in Sections 21 and 22.
- 7. I have had no prior involvement with the property that is the subject of the Technical Report.
- 8. I visited the project site on February 20, 2015.
- 9. I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Technical Report, the omission to disclose which makes the Technical Report misleading.
- 10. I am independent of the issuer applying all of the tests in Section 1.5 of National Instrument 43-101.
- 11. I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.



12. I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

Signed and dated this 13<sup>th</sup> day of July, 2015.



Signature of Qualified Person

Eugene Muller Print Name of Qualified Person



#### CERTIFICATE

To accompany the report entitled: NI 43-101 Technical Report: Feasibility Study on Moss Gold-Silver Project, Mohave County, Arizona, USA effective date June 8, 2015.

I, Scott Allan Britton, C.Eng, MIMMM(CP), residing in Hamilton, United Kingdom, do hereby certify that:

- I am a Principal Mining Engineer with the firm SAB Mining Consultants Ltd ("SAB") with an office at 37 Bothwell Road, Hamilton, United Kingdom;
- 2) I am a graduate of the Glasgow Caledonian University in 2003 (MSc). I have practised my profession continuously since 1993. I have been employed as a Mining Engineer by SAB since 2013. During which time I have been involved in a variety of engineering studies, valuations and technical reports and taken responsibility for mining and Mineral Reserve reporting aspects;
- I am a Chartered Professional Engineer and Member of the Institute of Minerals, Materials and Mining (Reg. number: 608878);
- 4) I have personally visited the project area, most recently between 22nd and 23rd September 2014;
- 5) I have read the definition of "qualified person" set out in National Instrument 43-101 and certify that by virtue of my education, affiliation to a professional association and past relevant work experience, I fulfil the requirements to be a "qualified person" for the purposes of National Instrument 43-101;
- 6) I am a co-author for this report and responsible for mining and reserve estimation aspects and accept professional responsibility for sections 15, 16 and 25.2.6 of the technical report;
- 7) I, as a qualified person, I am independent of the issuer as defined in Section 1.5 of National Instrument 43-101;
- 8) I have had no prior involvement with the subject property;
- I have read National Instrument 43-101 and confirm that this technical report has been prepared in compliance therewith;
- 10) SAB was retained by Golden Vertex Corp to support a Feasibility Study for the Moss Gold-Silver Mine, the findings of which are summarised in the following document: NI 43-101 Technical Report: Feasibility Study on Moss Gold-Silver Project, Mohave County, Arizona, USA. This assignment was completed using CIM "Best practices" and Canadian Securities Administrators National Instrument 43-101 guidelines. The preceding report is based on a site visit, a review of project files and discussions with Golden Vertex personnel;
- I have not received, nor do I expect to receive, any interest, directly or indirectly, in the Moss Mine Gold-Silver Project or securities of Golden Vertex Corp;
- 12) That, as of the date of this technical report, to the best of my knowledge, information and belief, this technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.
- 13) I consent to the filing of the technical report with any stock exchange and other regulatory authority and any publication for regulatory purposes, including electronic publication in the public company files on their websites accessible to the public of extracts from the technical report.

Mr Scott Allan Britton

Principal Consultant SAB Mining Consultants Ltd. Hamilton, United Kingdom, July 13, 2015



