Report to:

Abacus MINING & EXPLORATION CORP.

Ajax Copper/Gold Project, Kamloops, British Columbia – Preliminary Assessment Technical Report

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Report to:

ABACUS MINING & EXPLORATION CORP.

AJAX COPPER/GOLD PROJECT, KAMLOOPS, BRITISH COLUMBIA – PRELIMINARY ASSESSMENT TECHNICAL REPORT

EFFECTIVE DATE: JULY 31, 2009

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HG/alm

NOTICE

This report was prepared as a National Instrument 43-101 Technical Report for Abacus Mining and Exploration Corporation (Abacus) by Wardrop Engineering Inc. (Wardrop), AMEC Americas Limited (AMEC), Knight Piésold Ltd. (Knight Piésold), and BGC Engineering Inc. (BGC). The quality of information, conclusions, and estimates contained herein is consistent with the level of effort involved in Wardrop's, AMEC's, Knight Piésold's, and BGC's services, based on: (i) information available at the time of preparation, (ii) data supplied by outside sources, and (iii) the assumptions, conditions, and qualifications set forth in this report. This report is intended for use subject to the terms and conditions of Abacus' contract with Wardrop, AMEC, Knight Piésold, and BGC. This contract permits Abacus to file this report as a Technical Report with Canadian Securities Regulatory Authorities pursuant to National Instrument 43-101, *Standards of Disclosure for Mineral Projects*. Except for the purposes legislated under provincial securities laws, any other use of this report by any third party is at that party's sole risk.

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GLOSSARY

UNITS OF MEASURE

Above mean sea level	amsl
Acre	ac
Ampere	A
Annum (year)	a
Billion	B
Billion tonnes	Bt
Billion years ago	Ga
British thermal unit	BTU
Centimetre	cm
Cubic centimetre	cm^3
Cubic feet per minute	cfm
Cubic feet per second	ft^3/s
Cubic foot	ft^3
Cubic inch	in^3
Cubic metre	m^3
Cubic yard	yd^3
Coefficients of Variation	CVs
Day	d
Days per week	d/wk
Days per year (annum)	d/a
Dead weight tonnes	DWT
Decibel adjusted	dBa
Decibel	dB
Degree	°
Degrees Celsius	°C
Diameter	ø
Dollar (American)	US$
Dollar (Canadian)	Cdn$
Dry metric ton	dmt
Foot	ft
Gallon	gal
Gallons per minute (US)	gpm
Gigajoule	GJ
Gigapascal	GPa
Gigawatt	GW
Gram	g
Grams per litre	g/L
Grams per tonne	g/t

Greater than	>
Hectare (10,000 m^2)	ha
Hertz	Hz
Horsepower	hp
Hour	h
Hours per day	h/d
Hours per week	h/wk
Hours per year	h/a
Inch	"
Kilo (thousand)	k
Kilogram	kg
Kilograms per cubic metre	kg/m^3
Kilograms per hour	kg/h
Kilograms per square metre	kg/m^2
Kilometre	km
Kilometres per hour	km/h
Kilopascal	kPa
Kilotonne	kt
Kilovolt	kV
Kilovolt-ampere	kVA
Kilovolts	kV
Kilowatt	kW
Kilowatt hour	kWh
Kilowatt hours per tonne (metric ton)	kWh/t
Kilowatt hours per year	kWh/a
Less than	<
Litre	L
Litres per minute	L/m
Megabytes per second	Mb/s
Megapascal	MPa
Megavolt-ampere	MVA
Megawatt	MW
Metre	m
Metres above sea level	masl
Metres Baltic sea level	mbsl
Metres per minute	m/min
Metres per second	m/s
Metric ton (tonne)	t
Microns	µm
Milligram	mg
Milligrams per litre	mg/L
Millilitre	mL
Millimetre	mm
Million	M
Million bank cubic metres	Mbm^3
Million bank cubic metres per annum	Mbm^3/a

Million tonnes	Mt
Minute (plane angle)	'
Minute (time)	min
Month	mo
Ounce	oz
Pascal	Pa
Centipoise	mPa·s
Parts per million	ppm
Parts per billion	ppb
Percent	%
Pound(s)	lb
Pounds per square inch	psi
Revolutions per minute	rpm
Second (plane angle)	"
Second (time)	s
Specific gravity	SG
Square centimetre	cm^2
Square foot	ft^2
Square inch	in^2
Square kilometre	km^2
Square metre	m^2
Thousand tonnes	kt
Three Dimensional	3D
Three Dimensional Model	3DM
Tonne (1,000 kg)	t
Tonnes per day	t/d
Tonnes per hour	t/h
Tonnes per year	t/a
Tonnes seconds per hour metre cubed	ts/hm^3
Volt	V
Week	wk
Weight/weight	w/w
Wet metric ton	wmt
Year (annum)	a

Abbreviations and Acronyms

Abacus Mining & Exploration Corp.	Abacus
Absolute Value of Relative Difference	AVRD
Afton Operating Company	Afton
AMEC Americas Ltd.	AMEC
atomic absorption spectrophotometer	AAS
atomic absorption	AA
atomic emission spectroscopy	AEX
BC Transmission Corporation	BCTC
Beacon Hill Consulting	Beacon Hill

Berens River Mines Ltd.	Berens
BGC Engineering Inc.	BGC
British Columbia	BC
Canadian Institute of Steel Construction	CISC
Canadian National Railway	CNR
Canadian Pacific Railway	CPR
Canadian Portland Cement Association	CPCA
Canadian Standards Association	CSA
Certified Reference Materials	CRMs
coefficient of variation	CV
Cominco Ltd.	Cominco
Consolidated Mining and Smelting Company of Canada Ltd.	CM&S
copper equivalent	CuEq
copper	Cu
diamond drill holes	DDH
Discovery-Corp Enterprises Inc.	DCE
Distributed Control System	DCS
E&B Explorations Ltd.	E&B
Eco-Tech Laboratories Ltd.	Eco-Tech
Energy & Metal Consensus Forecasts	EMCF
fixed exchange rates	FXR
front-end loaders	FELs
G&T Metallurgical Services Ltd.	G&T
general and administrative	G&A
Geomex Development Eleventh Partnership	Geomex 11
Geomex Development-Eighth Partnership No.8	Geomex 8
Geomex Minerals Limited Partnership No.9	Geomex 9
Geostatistical Software Library	GSLIB
gold	Au
Granby Consolidated Mining, Smelting, and Power Company Ltd.	Granby
heating, ventilation, and air conditioning	HVAC
High Pressure Grinding Rolls	HPGR
Imperial Metals Corporation	Imperial
inductively coupled plasma	ICP
internal rate of return	IRR
inverse distance weighting to the fourth power	IDW4
joint venture	JV
Knight Piésold Ltd.	Knight Piésold
Lerchs-Grossman	LG
life-of-mine	LOM
London Metal Exchange	LME
Master Composite	MC
Material Safety Data Sheet	MSDS
methyl isobutyl carbinol	MIBC
MineSight® Version 4.10-01, Build 195 software	MineSight
Ministry of Energy, Mines, and Petroleum Resources	MEMPR

molybdenum	Mo
motor control centres	MCCs
National Building Code of Canada	NBCC
National Instrument 43-101	NI 43-101
nearest-neighbour	NN
net present interest	NPI
net present value	NPV
net smelter return	NSR
New Gold Inc.	New Gold
ordinary kriging	OK
potassium amyl xanthate	PAX
Preliminary Assessment	PA
qualified persons	QPs
quality assurance/quality control	QA/QC
quantile-quantile	QQ
Reduction to Major Axis	RMA
reverse circulation	RC
rock quality designation	RQD
Rotating Biological Contactor	RBC
run-of-mine	ROM
Savona	SVA
selective mining unit	SMU
semi-autogenous grinding	SAG
silver	Ag
specific gravity	SG
Supplement to the National Building Code of Canada	SNBCC
tailings storage facility	TSF
Teck Cominco Ltd.	Teck
three-dimensional block model	3DBM
Wardrop Engineering Inc., A Tetra Tech Company	Wardrop
work breakdown structure	WBS
Workplace Hazardous Materials Information Systems	WHMIS
x-ray fluorescence spectrometer	XRF

1.0 SUMMARY

The proposed Ajax Copper/Gold Project, owned by Abacus Mining & Exploration Corp. (Abacus), is located 10 km southwest of the city of Kamloops, British Columbia (BC) and is situated immediately south of the Kamloops city limits. The Ajax Project is a portion of the overall Afton property.

The Ajax Project will be a 60,000 t/d open pit operation with ore processed in a conventional milling plant and the copper/gold concentrate transported to the Port of Vancouver for shipment to offshore smelters. If molybdenum production proves feasible in the future, the molybdenum concentrate will be trucked from the mine to a roaster facilities location.

Exploration in the Ajax area began in the1880s and continued intermittently until the 1980s. In the 1980s, Afton Operating Company (Afton OC) defined a mineral resource. Mining operations began in 1989 and were suspended in 1991 due to low metal prices. A second period of production began in 1994 and was again suspended in 1997. During the periods of production, it is estimated that 17 Mt were mined and 13 Mt were milled.

Abacus acquired holdings in the Ajax area in 2002. In 2005, exploration drilling on the Ajax property indicated a potential copper-gold resource. Subsequent drilling during 2006 to 2008 further delineated the Ajax resource. The Ajax property is 100% owned by Abacus.

As of October 31, 2008, more than 139,000 m of drilling in 406 drill holes have been included in the Ajax resource database. Additional drill test programs for metallurgical samples and geotechnical data are in progress.

In January 2008, Abacus commissioned a team of engineering consultants to complete the component studies of the National Instrument 43-101 (NI 43-101) Technical Report for the project. The following consultants were commissioned to complete the component studies for this Technical Report:

- Wardrop Engineering Inc., A Tetra Tech Company (Wardrop) – geology, mineral resource estimate, processing, infrastructure, and financial analysis
- AMEC Americas Ltd. (AMEC) – mine design
- Knight Piésold Ltd. (Knight Piésold) – tailings handling, water management and environmental
- BGC Engineering Inc. (BGC) – pit slope designs
- G&T Metallurgical Services Ltd. (G&T) – metallurgical testwork.

The resource estimate is based on 411 exploration drill holes, with more than 140,000 m completed in the Ajax West, Ajax East, and the New Gold joint venture ground in between.

The mineral resources of the Ajax deposit were classified in accordance with CIM Definition Standards and best practices referred to in NI 43-101 which have a reasonable expectation of economic extraction. The mineralization of the project satisfies criteria to be classified into Measured, Indicated, and Inferred mineral resource categories. At a 0.13% copper equivalent cut-off, the Measured and Indicated resource totals 442 Mt at an average grade of 0.30% Cu and 0.19 g/t Au, with an additional 81 Mt of Inferred at 0.22% Cu and 0.16 g/t Au. It should be noted that mineral resources are not mineral reserves and do not have demonstrated economic viability.

Mine operating and capital costs were based on an owner-operated and maintained fleet in a large conventional open-pit, featuring 35 m^3 electric rope shovels, 220-t haul trucks, and electric blast-hole drills suitable for 311 mm drill holes and mining of 12 m benches. Large front-end loaders (FELs) complement the electric cable shovels for flexibility and mobility. A smaller diesel drill will provide pre-shear drilling to minimize blast damage to the walls. A standard complement of large-scale support equipment is utilized to maintain ramps, dumps, and haul roads. The initial mine capital is estimated at US$59 M with sustaining capital over the mine life of US$169 M.

Proposed production mining would follow a one year pre-production period, and continue for approximately 23 years. The average tonnage to the mill is 21.9 Mt/a at 0.27% copper and 0.17 g/t gold. The typical waste tonnage per year is 36.5 Mt, for a 1.7:1 strip ratio.

The preliminary process plant design for this project was developed from information provided by AMEC in the October 2008 report titled “NI 43-101 Technical Report on the Afton-Ajax E-W Deposit” and by G&T in the grinding and flotation test results from 2008. The information available from the earlier work (1970 to 2002) was also reviewed and reinforced by supplementary data developed from 2002 to 2008. G&T conducted metallurgical testwork to develop comminution and flotation studies to be used as the basis for mill process design.

Samples from the diamond drill cores from exploration work have been used for analysis and extensive metallurgical tests. The flotation circuit includes rougher/scavenger mechanical cells followed by regrinding and two cleaning stages.

The recent flotation tests at G&T confirmed that a copper concentrate grading 25% to 30% Cu and 28 g/t Au can be produced. Overall copper and gold recoveries of 84.5% and 81.3%, respectively, at a 25% Cu concentrate grade are predicted using a conventional crushing, grinding, and flotation process. Limited molybdenum flotation testing was conducted. Further resource estimation and metallurgical testing are required to include the molybdenum recovery circuit to the proposed process plant.

Knight Piésold has completed the preliminary design and associated costs of the tailings dam, which will be sufficient for the duration of mine life. It is sited downstream of the proposed mill site. Locations for the waste dumps have been selected to be compatible with plans for surface water management, which include a seepage recovery dam and pond downstream of the main dam structure.

In preparation for permitting, an environmental baseline study was completed to assess the current environmental status across the mine site. The study includes evaluation of the flora and fauna, ground and surface water quality, and static testing for acid generating potential. The study concluded that no significant issues are present that would impede the permitting process. The static testing for acid generating suggested the material to be mined is not acid generating. Kinetic testing is scheduled for completion during the upcoming pre-feasibility study.

Wardrop used the G&T test results for the Ajax preliminary process design of 60,000 t/d plant and associated infrastructure.

General information for the project is summarized below:

- estimated mineral resources (measured + indicated) .... 442 Mt
- estimated mineral resources (inferred) .... 81 Mt
- mine life .... 23 years
- milling rate .... 60,000 t/d
- strip ratio ....1.7 t waste/1.0 t ore
- total capital cost .... US$535,000,000
- average overall operating cost...................................US$4.7/t milled.

A pre-tax economic model has been developed from the estimated costs and the open pit production schedule. The base case has an internal rate of return of 12.4% and a net present value of US$192.7 M at an 8% discount rate for the 23-year mine life. The payback of the initial capital is within 6.5 years.

This report shows the deposit to be amenable to bulk mining with straight forward ore control and process. Ajax will benefit from nearby infrastructure and should have low costs as a result. It is recommended the project proceed to the pre-feasibility study stage.

2.0 INTRODUCTION

This NI 43-101 compliant report has been prepared by Wardrop based on work by the following independent consultants:

- G&T
- AMEC
- Knight Piésold
- BGC.

Hassan Ghaffari (P.Eng.), Andre de Ruijter (P.Eng.), Thomas C. Stubens (P.Eng.), and Miloje Vicentijevic (P.Eng.) visited the site on behalf of Wardrop from February 11 to 12, 2009.

A summary of the qualified persons (QPs) responsible for each section of this report is detailed in Table 2.1.

Table 2.1 Summary of QPs

Report Section	Company	QP
1.0 – Summary	All	Hassan Ghaffari
2.0 – Introduction	Wardrop	Hassan Ghaffari
3.0 – Reliance on Other Experts	Wardrop	Hassan Ghaffari
4.0 – Property Description and Location	Wardrop	Thomas C. Stubens
5.0 – Accessibility, Climate, Local Resources, Infrastructure and Physiography	Wardrop	Thomas C. Stubens
6.0 – History	Wardrop	Thomas C. Stubens
7.0 – Geological Setting	Wardrop	Thomas C. Stubens
8.0 – Deposit Types	Wardrop	Thomas C. Stubens
9.0 – Mineralization	Wardrop	Thomas C. Stubens
10.0 – Exploration	Wardrop	Thomas C. Stubens
11.0 – Drilling	Wardrop	Thomas C. Stubens
12.0 – Sampling Method and Approach	Wardrop	Thomas C. Stubens
13.0 – Sample Preparation, Analyses, and Security	Wardrop	Thomas C. Stubens
14.0 – Data Verification	Wardrop	Thomas C. Stubens
15.0 – Adjacent Properties	Wardrop	Thomas C. Stubens
16.0 – Mineral Processing and Metallurgical Testing	Wardrop	Andre de Ruijter
17.0 – Mineral Resource & Mineral Reserve Estimates	Wardrop	Thomas C. Stubens

table continues…

Report Section	Company	QP
18.0 – Other Relevant Data and Information		
18.1: Mining Planning and Production	AMEC	Ryan Ulansky
18.2: Infrastructure, Services, and Facilities	Wardrop	Hassan Ghaffari
18.3: Foundation and Soil Data	Wardrop	Hassan Ghaffari
18.4: Codes and Standards	Wardrop	Hassan Ghaffari
18.5: Materials Specifications	Wardrop	Hassan Ghaffari
18.6: Design Basis	Wardrop	Hassan Ghaffari
18.7: Building Descriptions	Wardrop	Hassan Ghaffari
18.8: Water and Waste Management Plan	Knight Piésold	Bruno Borntraeger
18.9: Geotechnical Design	BGC	Warren Newcomen
18.10: Environmental	Knight Piésold	Bruno Borntraeger
18.11: Capital Cost Estimate	All	Bruno Borntraeger/ Ryan Ulansky/ Hassan Ghaffari
18.12: Operating Cost Estimate	Wardrop/AMEC	Hassan Ghaffari Ryan Ulansky
18.13: Financial Analysis	Wardrop	Hassan Ghaffari
18.14: Project Development Plan	Wardrop	Hassan Ghaffari
19.0 – Interpretations and Conclusions	All	N/A
20.0 – Recommendations	All	N/A
21.0 – References	Wardrop	N/A
22.0 – Date and Signature Page	All	N/A

3.0 RELIANCE ON OTHER EXPERTS

Technical data provided by Abacus for use by Wardrop in this Preliminary Assessment (PA) Technical Report is the result of work conducted, supervised, and/or verified by Abacus professional staff or their consultants. Wardrop provides no guarantees or warranties with respect to the reliability or accuracy of information provided by third parties.

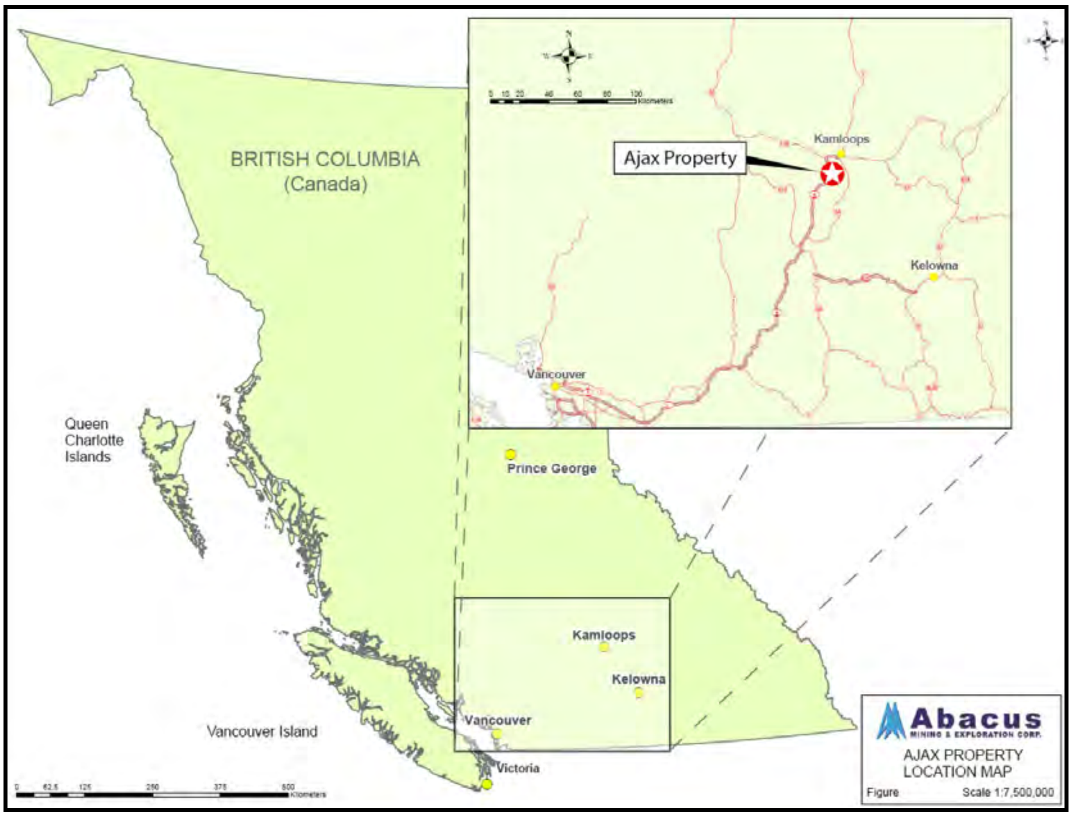
As outlined in Section 2.0, this report has been completed by independent consulting companies.

4.0 PROPERTY DESCRIPTION AND LOCATION

4.1 LOCATION

The Ajax property is located in south-central BC, approximately 10 km southwest of the city of Kamloops (Figure 4.1) at approximately 50°38' North latitude and 120°28' West longitude. The Ajax property is situated immediately south of the Kamloops city limits and is on mineral titles reference map M092I068 (NTS 92I/9) in the Kamloops mining division.

Figure 4.1 Ajax Property Location Map



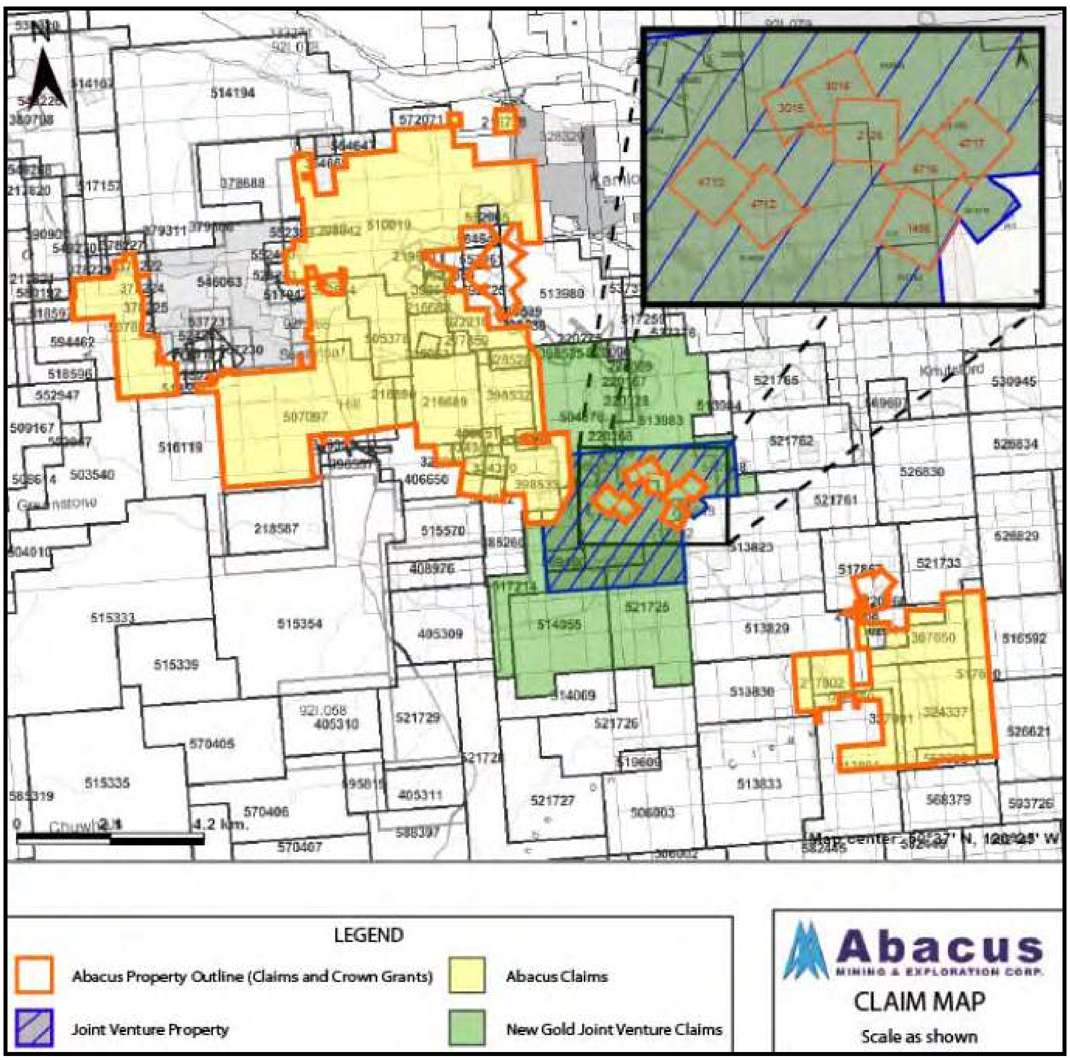
Source: Abacus.

4.2 MINERAL TENURE AND AGREEMENTS

4.2.1 MINERAL RIGHTS

Abacus controls approximately 8,124.066 ha (Figure 4.2 and Table 4.1) in the Ajax area. In the immediate Ajax area, Abacus has ownership of 8 Crown Granted claims and portions of 14 additional mineral claims that are part of a joint venture agreement with New Gold Inc. (New Gold). Abacus has ownership of an additional 20 Crown Grants and 27 contiguous mineral claims. Abacus controls an additional 8 mineral claims and 3 Crown Grants that are near but not contiguous with Ajax. The window inset in Figure 4.2 identifies the claims in the immediate Ajax area.

Figure 4.2 Ajax Property Claim Map



Source: Abacus.

Table 4.1 Ajax Area Claims

Tenure Number	Tenure Type	Claim Name	Owner	Good to Date	Area (ha)
New Gold Joint Venture Claims					
220268	Mineral	JET NO.1	New Gold	2011/Sep/26	25.0
220269	Mineral	JET NO.2	New Gold	2011/Sep/26	25.0
221619	Mineral	PLANE 19 FR.	New Gold	2018/Jun/01	25.0
415602	Mineral	AJ 7	New Gold	2012/Nov/06	25.0
415603	Mineral	AJ 8	New Gold	2012/Nov/06	25.0
504878	Mineral		New Gold	2018/Jun/01	574.0
513983	Mineral		New Gold	2018/Jun/01	635.5
514050	Mineral		New Gold	2018/Jun/01	451.2
514055	Mineral	AJAX	New Gold	2018/Jun/01	513.0
517214	Mineral	AJAX	New Gold	2018/Jun/01	205.1
517292	Mineral	AJAX	New Gold	2018/Jun/01	20.5
521725	Mineral	AJAX	New Gold	2018/Jun/01	492.4
552948	Mineral	AJ	New Gold	2018/Jun/01	102.5
559160	Mineral	NEW GOLD OPTION	New Gold+	2018/Jun/01	41.0
Total					**3,160.3**
Abacus Crown Grants at Ajax					
4710	Crown Grant	AJAX	Abacus		20.9
4712	Crown Grant	NEPTUNE	Abacus		18.0
1496	Crown Grant	GRASS ROOTS	Abacus		20.9
4716	Crown Grant	MONTE CARLO	Abacus		18.3
4717	Crown Grant	SULTAN	Abacus		18.9
2126	Crown Grant	WHEAL TAMAR	Abacus		20.9
3015	Crown Grant	COPPER STAR FRACT.	Abacus		10.6
3016	Crown Grant	FORLORN	Abacus		16.7
Total					**145.1**
Other Contiguous Abacus Claims					
216688	Mineral	RAINBOW NE	Abacus	2018/Oct/31	150.0
216689	Mineral	RAINBOW SE	Abacus	2018/Oct/31	300.0
216690	Mineral	RAINBOW SW	Abacus	2018/Oct/31	150.0
217859	Mineral	BILL	Abacus	2018/Oct/31	225.0
219961	Mineral		Abacus	2018/Oct/31	20.1
219963	Mineral		Abacus	2018/Oct/31	20.9
220551	Mineral	X #16	Abacus	2018/Oct/31	25.0
320909	Mineral	JAXD 8	Abacus	2018/Oct/31	25.0
324308	Mineral	INK 1	Abacus	2018/Oct/31	25.0
324309	Mineral	INK 2	Abacus	2018/Oct/31	25.0
324310	Mineral	INK 3	Abacus	2018/Oct/31	25.0
324311	Mineral	INK 4	Abacus	2018/Oct/31	25.0

table continues…

Tenure Number	Tenure Type	Claim Name	Owner	Good to Date	Area (ha)
324312	Mineral	INK 5	Abacus	2018/Oct/31	25.0
324313	Mineral	INK 6	Abacus	2018/Oct/31	25.0
398532	Mineral	DCE 1	Abacus	2018/Oct/31	300.0
398533	Mineral	DCE 2	Abacus	2018/Oct/31	300.0
398643	Mineral	WIRE 1	Abacus	2018/Oct/31	25.0
398644	Mineral	WIRE 2	Abacus	2018/Oct/31	25.0
398645	Mineral	WIRE 3	Abacus	2018/Oct/31	25.0
398646	Mineral	WIRE 4	Abacus	2018/Oct/31	25.0
505378	Mineral		Abacus	2018/Oct/31	225.4
507097	Mineral		Abacus	2018/Oct/31	1,004.4
510019	Mineral		Abacus	2018/Oct/31	1,659.0
522216	Mineral	DAVES DREAM	Abacus	2018/Oct/31	122.9
528528	Mineral	522216 EXTRA	Abacus	2018/Oct/31	41.0
216740	Mineral	OR #14	Abacus	2018/Oct/31	25.0
216745	Mineral		Abacus	2018/Oct/31	25.0
216761	Mineral	DELTA 1061	Abacus	2018/Oct/31	25.0
Total					**7,893.7**
Other Contiguous Abacus Crown Grants					
878	Crown Grant	IRON MASK			15.5
879	Crown Grant	SUNRISE			19.8
880	Crown Grant	COPPER QUEEN			20.6
1036	Crown Grant	LUCKY STRIKE			5.8
1050	Crown Grant	EMEROY			17.5
1066	Crown Grant	ERIN			14.0
1067	Crown Grant	JUMBO			1.7
1068	Crown Grant	CIVIL EARNSCLIFFE			0.7
1301	Crown Grant	FRACTION			0.7
1311	Crown Grant	MAY FRAC.			10.5
4666	Crown Grant	SODIUM FRACTION			2.3
4667	Crown Grant	WINTY			20.0
5622	Crown Grant	CHAMPION NO.1			9.6
5623	Crown Grant	CHAMPION NO.2			19.1
5624	Crown Grant	L.S. NO.6			15.6
5625	Crown Grant	L.S. NO.7			17.4
5626	Crown Grant	L.S. NO.11			16.7
5627	Crown Grant	L.S. NO.10			20.9
5628	Crown Grant	L.S. NO.8			12.2
5629	Crown Grant	L.S. NO.9			14.9
Total					**255.3**
TOTAL OF ALL CONTIGUOUS AJAX CLAIMS AND CROWN GRANTS					**8,454.3**

table continues…

Tenure Number	Tenure Type	Claim Name	Owner	Good to Date	Area (ha)
Abacus Claims Non-contiguous with Ajax					
216738	Mineral	OR #11	Abacus	2010/Feb/28	75.0
216739	Mineral	OR #13	Abacus	2010/Feb/28	25.0
217002	Mineral	SUNNY	Abacus	2010/May/05	225.0
220160	Mineral	ACE NO.1	Abacus	2010/Jul/19	25.0
307650	Mineral	JOKER	Abacus	2010/May/05	450.0
324337	Mineral	ACE	Abacus	2010/May/05	500.0
327091	Mineral	ACE 2	Abacus	2010/May/05	375.0
507852	Mineral		Abacus	2010/Oct/31	430.3
Total					**2,105.3**
Abacus Crown Grants Non-contiguous with Ajax					
1560		BLACK BEAUTY			17.8
1561		ADMIRAL DEWDNEY			7.9
1662		CYCLONE			14.3
Total					**40.1**
TOTAL OF ALL CLAIM AND CROWN GRANTS NON-CONTIGUOUS WITH AJAX					**2,145.2**

Source: Abacus

4.2.2 AGREEMENTS AND ROYALTIES

In 2002, Abacus completed option agreements with Teck Cominco Ltd. (Teck) to acquire 100% of Teck's 70% interests in mineral claims and Crown Granted mineral claims in the Afton area. These agreements also included claims in the Ajax area.

The agreements required Abacus to issue Teck 150,000 shares of capital stock and make the following expenditures:

- Cdn$150,000 on or before the first anniversary date
- Cdn$350,000 in aggregate on or before the second anniversary date
- Cdn$650,000 in aggregate on or before the third anniversary date
- Cdn$1,000,000 in aggregate on or before the fourth anniversary date.

In 2004, Abacus met the expenditure requirements listed above therefore earned and obtained 100% ownership of Teck's mineral interests. Teck retained a back-in right for 65% of their original ownership if any deposit on the overall property was brought into production or a net smelter return (NSR) of up to 1.5% of Teck's original interest in any deposit put into production.

In 2004, Abacus acquired the remaining 30% interests in properties from Discovery-Corp Enterprises Inc. (DCE) of Vancouver, BC for Cdn$200,000 cash and 500,000 shares of Abacus.

In 2005, Abacus acquired an agreement to purchase the Afton mill and shop/warehouse buildings, the tailings impoundment, rock stockpile areas, and the back-in right for $10 M and 18,500,000 shares of Abacus.

In 2005, an amendment to the 2002 agreement with Teck required Abacus to pay both Teck and Afton each 1.5% NSR if Ajax reached production. This amendment also permitted Abacus to purchase the Teck and Afton NSR royalties for $3 M.

Production from Crown Granted mineral claims is subject to 30% net proceeds of a production royalty to Teck, E&B Explorations Ltd. (E&B), Geomex Minerals Limited Partnership No. 9 (Geomex 9), Geomex Development-Eighth Partnership (Geomex 8), and Geomex Development Eleventh Partnership (Geomex 11). E&B and the Geomex partnerships subsequently became part of Imperial Metals Corporation (Imperial).

Abacus entered into a joint venture (JV) agreement with New Gold on claims surrounding the Abacus Crown Grants on March 19, 2008. This agreement permits Abacus to earn a 60% interest in the mineral claims after expenditures of Cdn$2.5 M and completion of a PA. Upon completion of the terms of agreement, New Gold may elect to participate in the JV within 90 days, or be diluted to a 10% net present interest (NPI). Under the terms of the JV, Abacus would be operator and New Gold would be responsible for 40% of all costs on JV ground. The expenditure requirements have been met.

On June 11, 2009, the agreement with Teck to purchase the Afton assets was amended, whereby Teck will receive additional common shares of Abacus common stock to increase its interest to 19.99%.

4.3 TAXES AND ASSESSMENT WORK REQUIREMENTS

There are no assessment requirements on Crown Granted mineral claims. Assessment requirements for mineral claims are Cdn$8.00/ha/a. The assessment requirements for JV claims are Cdn$25,288. Assessments for Abacus mineral claims are Cdn$56,000.

The 2008 taxes for all Crown Grant claims controlled by Abacus were Cdn$848.59. The 2008 taxes for the eight Crown Grant claims in the immediate Ajax area were Cdn$463.61.

4.4 ENVIRONMENTAL LIABILITY

Each year, Abacus is responsible for providing the Ministry of Energy, Mines, and Petroleum Resources (MEMPR) an "Annual Summary of Work for Exploration Activities". Abacus also maintains a cumulative total area of disturbance and cumulative total area of reclamation (contouring and seeding). As of the end of

2008, the net remaining reclamation to be completed is 0.08 ha. The latest Abacus exploration permit (No. MX-15-188) requires Abacus to put up a $2,000 reclamation security deposit.

The Ajax area contains two historic open pit mines that were operated intermittently during the period 1989 to 1997. These open pits have been partially back-filled. Wardrop is not aware of any liabilities that may have occurred from these operations.

4.5 Operational Permits and Jurisdictions

To date, Abacus exploration activities at Ajax have been limited to diamond drilling. These activities fall under MEMPR Permit No. MX-15-188, which includes the Ajax area.

5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE, AND PHYSIOGRAPHY

5.1 ACCESSIBILITY

The Ajax property is accessed by the old Afton mine haul road, which crosses the Lac Le Jeune highway approximately 8.3 km southwards from the intersection of Lac Le Jeune highway and Copperhead Drive off of Highway 1, west of Kamloops.

5.2 CLIMATE

The Ajax area has an occasional semi-arid climate. Average winter temperatures are commonly below 0°C with lows falling below -20°C and snowfall is light. Dry summers have moderate to hot temperatures ranging upwards of 30°C.

Exploration activities can operate year round with appropriate equipment.

5.3 LOCAL RESOURCES

Local resources necessary for the exploration, development, and operation of the Ajax property are located in Kamloops. Kamloops has a resource-based economy and is a transportation hub for the Canadian National Railway (CNR) and Canadian Pacific Railway (CPR). The Trans-Canada Highway (Highway 1) services Kamloops; the Coquihalla Highway (Highway 5) is situated within 6 km of the Ajax property.

Currently, the common land use in the area is ranching. Surface rights are privately owned, and water is available year-round at Jacko, Inks, and Wallender lakes. The lakes are reserved for ranching and recreation. Water used by project activities is commonly hauled by truck or pumped from Kamloops Lake.

5.4 INFRASTRUCTURE

A haul road right-of-way exists from the Ajax area to the Afton OC plant site. The haul road would require upgrading for use in future production. The Afton OC plant site consists of a process building, truck shop building, and warehouse.

5.5 PHYSIOGRAPHY

The Ajax area consists of rolling grasslands with timber at the higher elevations. Elevations range from 800 to 1100 masl. Sugarloaf hill is the prominent landform in the area and has an elevation of 1130 m. The area has been glaciated and numerous drumlins are present.

At lower elevations, the vegetation is typically bunchgrass, sagebrush, and prickly pear cacti. Higher elevations commonly sustain growths of Lodge Pole Pine, Douglas Fir, and Ponderosa Pine.

6.0 HISTORY

The exploration history in the Ajax area is summarized from information available on MINFILE (minfile.gov.bc.ca).

Exploration began in the area in the 1880s. Copper, gold, and iron mineralization was discovered at the Iron Mask Mine near Kamloops in 1896. Nearby properties were explored by underground methods in the following years, including the Wheal Tamar, Ajax, and Monte Carlo claims in the Ajax area (Figure 4.2, Table 4.1).

In the Ajax area, underground exploration began on the Wheal Tamar claim in 1898. Development work was completed on the Monte Carlo claim as early as 1905 and on the Ajax claim in 1906. The Monte Carlo claim included an 18 m shaft. Exploration is reported to have continued over the Wheal Tamar, Ajax, and Monte Carlo areas but became sporadic after 1914.

In 1916, Granby Consolidated Mining, Smelting, and Power Company Ltd. (Granby) completed diamond drilling on the Wheal Tamar group.

In 1928, the Consolidated Mining and Smelting Company of Canada Ltd. (CM&S) obtained options on claims in the Ajax area and completed surface drilling on the Ajax claims (10 diamond drill holes (DDH)) and the Monte Carlo (3 DDH) claims. Sparse mineralization was reported.

In 1952, the property was optioned to Berens River Mines Ltd. (Berens). Berens completed four DDH between the Monte Carlo and Wheal Tamar claims but no mineralization was reported.

In 1954, CM&S and its successor, Cominco Limited (Cominco), entered into option agreements and explored the area until 1980. Exploration included electromagnetic (1954) and magnetometer (1967) geophysical surveys. Cominco completed 56 DDH (>7,500 m) in 1967 on the Ajax, Wheal Tamar, and Monte Carlo claims.

In 1973, Afton Mines Ltd. completed a reduced polarization survey and drilled 55 percussion drill holes totalling approximately 4,700 m on the Ajax, Wheal Tamar, and Monte Carlo claims.

In 1980, Cominco completed magnetometer and induced potential geophysical surveys, and drilled 190 percussion holes (14,347 m) in the Ajax area.

In 1986, Afton, controlled by Teck, obtained an option to earn 70% interest in the Ajax properties from Cominco. In 1987, Afton completed 77 DDH (11,582 m). In 1988, development work began on the Ajax West and East open pits and a haul road was constructed to the Afton mill (10 km northwest of the Ajax area).

Afton commenced production at Ajax East and Ajax West in 1989. Production was suspended in 1991 due to low metal prices. A second period of production began in 1994 and was again suspended in 1997. During the periods of production, it is estimated 17 Mt were mined and 13 Mt were milled.

Abacus acquired the Afton property in 2002 from Teck. Abacus completed 62 km of 3D induced polarization and magnetometer survey and diamond drilling on the Rainbow and Comet-Davenport areas during 2003 and 2004. In 2005, NI 43-101 compliant resource estimates were completed for the Comet-Davenport area (Darney et al, 2005a) and for the Rainbow area (Darney et al, 2005b).

Abacus has explored the Ajax property with DDH from 2005 to 2008. Details of this drilling are given in Section 11.0 of this report. Beacon Hill Consultants (1988) Ltd. completed an NI 43-101 compliant resource estimate for the Ajax West area in 2007 (Stokes, 2007).

7.0 GEOLOGICAL SETTING

7.1 REGIONAL GEOLOGY

The regional geology of the Ajax area is dominated by the Upper Triassic Iron Mask batholith. The batholith is approximately 5 km wide, 20 km in length, and trends northwest through the region (Figure 7.1).

The Iron Mask batholith intruded a sequence of Nicola Group flows and volcaniclasitc rocks of mafic and intermediate composition. Near the contact with the Iron Mask batholith, the Nicola Group rocks are commonly basalt to andesite flows and flow breccias. Stratigraphically above the Nicola Group is a series of serpentinized picrite basalts, which are present within the batholith and are apparently localized along major structural corridors.

Multiple phases are recognized in the Iron Mask Batholith. The Pothook diorite is the oldest phase and consists of a medium to coarse-grained biotite pyroxene diorite. A hybrid unit is recognized where Nicola Group rocks have been incorporated into the Pothook. The Hybrid phase consists of up to 80% Nicola Group fragments within Pothook intrusive breccia.

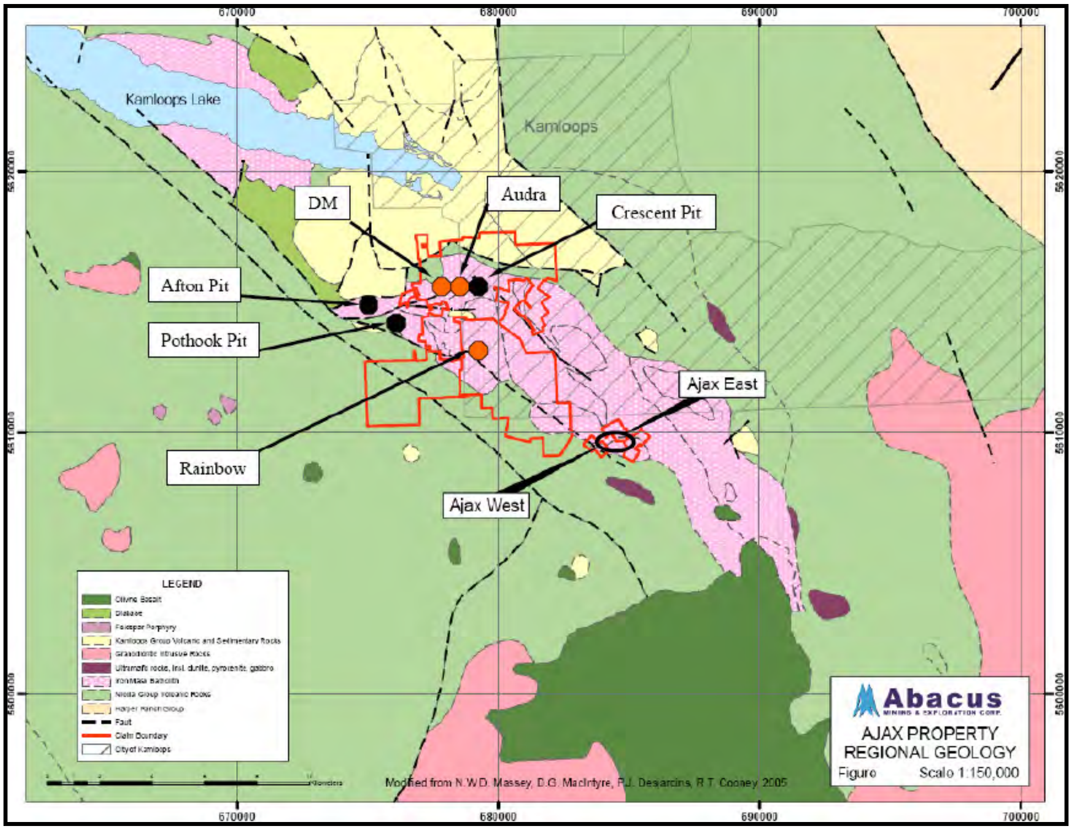
The Cherry Creek phase dominates the north and east margins of the batholith and forms a pluton northwest of the batholith. The Cherry Creek postdates the Pothook and consists of a monzonite to monzodiorite. Ubiquitous K-feldspar generally gives the Cherry Creek a pinkish colour.

The Sugarloaf phase dominates the western margin of the batholith and also postdates the Pothook phase. The age relationship with Cherry Creek is uncertain. The Sugarloaf phase is commonly a fine-grained porphyritic hornblende diorite. Albite alteration is common near zones of mineralization.

The Kamloops Group contains the youngest rocks in the region and consists dominantly of tuffaceous sandstone, siltstone, and shale with minor flows and agglomerates of basaltic and andesitic composition.

Copper-gold mineralization associated with the Iron Mask batholith is classified as alkaline porphyry copper-gold deposits and is associated with the Cherry Creek and Sugarloaf phases. Mineralization is generally localized along major fault zones and associated with albite and K-feldspar alteration.

Figure 7.1 Regional Geologic Map



Source: Abacus.

7.2 PROPERTY GEOLOGY

Numerous authors have reported on the geology of the Ajax area (Ross, 1993; Ross et al., 1995; Logan et al., 2007). The following summary of the Ajax property geology is derived from discussions with Abacus geologists, summarizations from Abacus reports, and from Stokes (2007).

As many as 11 rock types have been recognized in the Ajax area, but these can generally be combined into 3 main rock types: Iron Mask Hybrid, Sugarloaf Diorite, and Nicola Volcanics (Figure 7.2).

Outcrops are generally abundant in the Ajax area. The contact between the Sugarloaf Diorite and the Iron Mask strikes south-easterly through the West Ajax area and changes to a north-easterly strike through the East Ajax area. The Sugarloaf-Iron Mask contact is truncated by a south-easterly striking fault at the north end of the East Ajax area. The contact between the Sugarloaf Diorite and Nicola Group generally strikes south-easterly through the Ajax area.

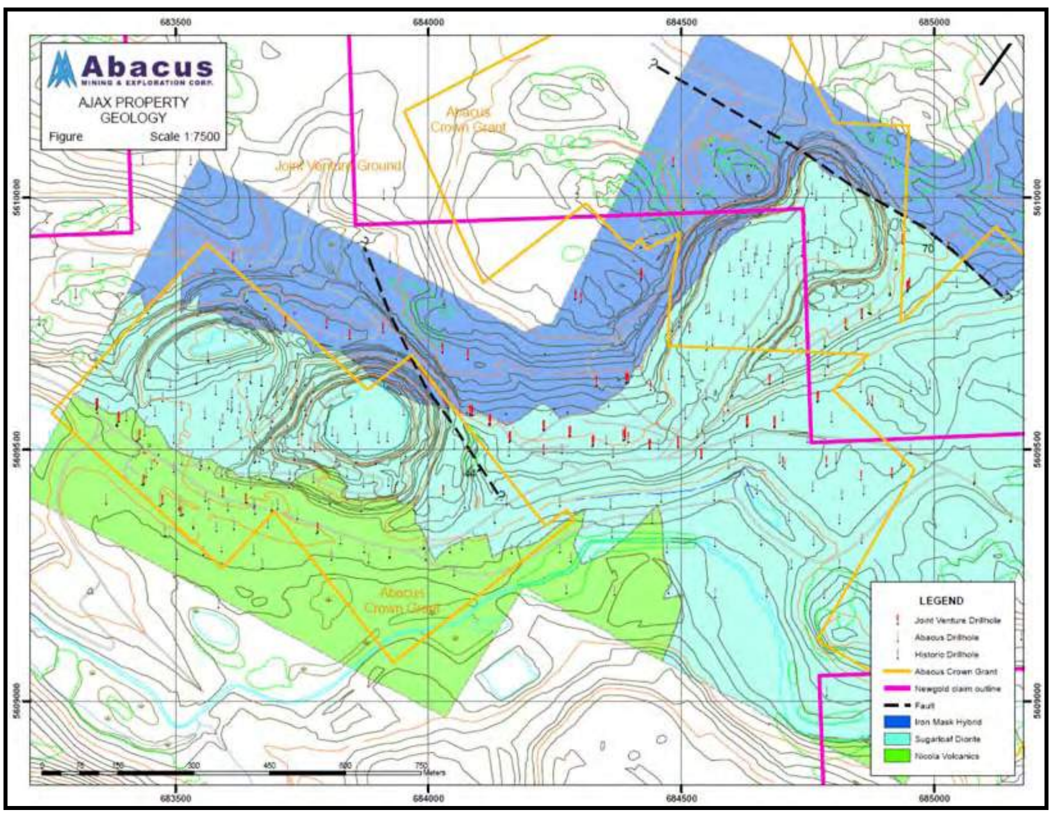
Sugarloaf Diorite is characteristically a fine to coarse-grained, light to medium gray porphyritic diorite containing euhedral hornblende phenocrysts. Unaltered Sugarloaf may contain up to 5% fine-grained magnetite. Locally, the Sugarloaf Diorite has assimilated rocks of the Nicola Group and is referred to as the Sugarloaf Hybrid. Albite and K-feldspar alteration is present in varying degrees. Strong albite alteration has commonly destroyed original textures locally. Sulphide mineralization is associated with albite alteration and consists predominantly of chalcopyrite and pyrite. Molybdenite, tetrahedrite, and bornite have been observed.

The Iron Mask Hybrid is considered to be an assimilation of the Nicola Group into the intruding Pothook Diorite. The Iron Mask is coarse-grained and dioritic to gabbroic in composition. Weak propylitic alteration is common with K-feldspar and albite alteration occurring locally. The Iron Mask Hybrid may contain up to 10% magnetite and locally chalcopyrite and pyrite are present.

The Nicola Group consists of picrite and various fine-grained and pyroxene porphyritic mafic volcanic rocks.

A variety of steeply dipping, unmineralized dykes up to 5 m wide intrude the main rock types. Dykes are composed of aplite, monzonite, latite, and fine-grained mafic rocks.

Figure 7.2 Geologic Map of the Ajax Property



Source: Abacus.

8.0 DEPOSIT TYPES

Five copper-gold open pit deposits have been mined by Afton OC since the 1970s. The Afton, Pothook, and Crescent deposits are approximately 10 km northwest of the Ajax area. The Ajax West and Ajax East mine areas are within the Ajax area. Copper-gold mineralization has also been identified at the Rainbow property, 5 km northwest of Ajax area.

Mineralization in the Iron Mask Batholith is typically associated with the Sugarloaf and Cherry Creek phases where they are in contact with the older Pothook and Iron Mask Hybrid.

Mineralization is commonly represented by chalcopyrite. Bornite, chalcocite, copper carbonates, and native copper are present locally in supergene zones in the Afton and Ajax areas. Gold mineralization is common and has a significant correlation with copper. Minor molybdenum and palladium mineralization has been identified in the Rainbow and Ajax West areas.

Alteration is variable and commonly consists of a broad propylitic assemblage of pyrite, chlorite, and epidote. Albite alteration is present in the Ajax area and is a strong control for mineralization.

Potassic alteration represented by plagioclase replaced by K-feldspar is present in all the deposits and is the dominant alteration in the Pothook and Cherry Creek phases.

Structural corridors, defined as zones of brittle deformation, are recognized as favourable zones for mineralization. Structural corridors have been interpreted from surface mapping and magnetic surveys and generally define the outer boundaries of the batholith.

9.0 MINERALIZATION

The descriptions of alteration and mineralization provided in this section are adapted from Stokes (2007).

9.1 IRON MASK BATHOLITH

The Iron Mask Batholith is host to more than 20 known mineral deposits and occurrences. Mineralization is commonly copper-gold. Chalcopyrite is the dominant sulphide mineral. The presence of accessory sulphide minerals is highly variable and can include tetrahedrite and molybdenite. Secondary copper oxides (bornite and chalcocite) and native copper have been observed locally. Mineralization is associated with regional fault zones that trend easterly or south-easterly through the area.

9.2 AJAX AREA

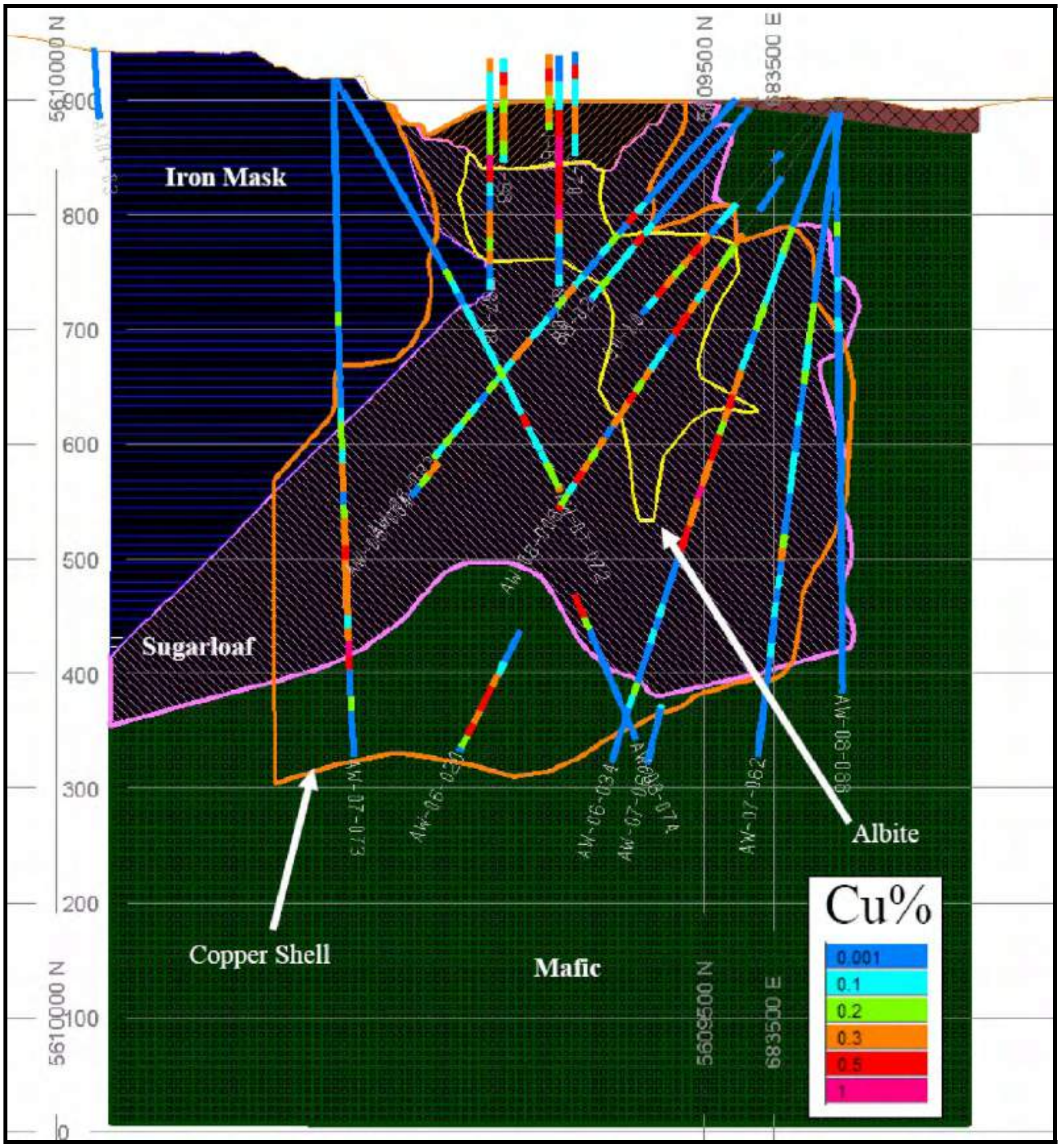
The mineralization in the Ajax area is associated with structural corridors of highly fractured sections of Sugarloaf and Sugarloaf Hybrid phases of the Iron Mask Batholith. Chalcopyrite is the dominant copper mineral and occurs as veins, veinlets, fracture fillings, disseminations, and isolated blebs in the host rock. Concentrations of chalcopyrite rarely exceed 5%. Accessory sulphide minerals include pyrite, magnetite, and molybdenite.

High-grade copper mineralization (>1.0% Cu) is confined to chalcopyrite vein systems. Copper grades decrease away from the chalcopyrite veins. High-grade mineralization can extend several metres from the vein structure. Low-grade copper mineralization (0.10% to 0.50% Cu) is generally associated with the Sugarloaf-Iron Mask contact. Mineralization extends to depths exceeding 400 m and has a strike length exceeding 2,000 m.

It is common for gold concentrations to be directly correlated with copper concentrations. Gold mineralization increases slightly in areas where strong albite alteration occurs. The albite alteration is in part controlled by fault and vein structures.

Minor palladium mineralization is associated with copper near the contacts of the Iron Mask Hybrid and Sugarloaf units.

Figure 9.1 Typical Geological Section



10.0 EXPLORATION

Abacus initially focused exploration activities in the Ajax West area and subsequently expanded eastward into Ajax East. Exploration has consisted almost exclusively of diamond drilling completed during the years 2005 to 2008.

10.1 AJAX EXPLORATION WORK

10.1.1 DRILLING

Abacus exploration activity in the Ajax area has been limited to DDH drilling during the period November 2005 to August 2008. DDH are predominantly NQ (47.6 mm diameter). Some drill holes were completed with a BQ (36.4 mm diameter) tail when a reduction was required during drilling. Details of the Abacus drill programs are given in Section 11.0 of this report.

10.2 PREVIOUS OPERATORS EXPLORATION WORK

Previous operators explored the Ajax property using geophysics, geochemistry, and drilling. The exploration history of the Ajax property is included in Section 6.0. Exploration work carried out by previous operators is summarized in Table 10.1.

Table 10.1 Summary of Exploration Programs by Previous Operators

Year	Company	Activity
1916	Granby	DDH
1928	CM&S	DDH
1952	Berens	DDH
1954	CM&S	Geophysics
1955 to 1957	CM&S	DDH
1961	CM&S	DDH
1967	Cominco	Geophysics & DDH
1972/1973	Afton Mines	Geophysics & Percussion Drilling
1980	Cominco, E&B	Geophysics & Percussion Drilling
1981	Cominco, E&B	Percussion
1987	Afton OC	DDH
1988	Afton OC	DDH
1989	Afton OC	DDH
1990	Afton OC	DDH

10.3 PROSPECTS

Abacus controls other exploration prospects near the Ajax property. Abacus completed geophysical surveys and drilling on the Rainbow and DM-Audra prospects during the period 2003 to 2004 (Figure 7.1). In 2005, resources were reported on these two areas (Darney, Friesen, and Giroux 2005a, 2005b). High level economic evaluations were completed for these areas and it was concluded that they do not currently meet reasonable prospects for economic extraction and no further work was recommended. However, more favourable economics may make these prospects viable.

10.3.1 RAINBOW

The Rainbow area is located approximately 8 km northwest of the Ajax area. The Rainbow area is underlain by Pothook and Sugarloaf phases of the Iron Mask Batholith to the north and is separated from the Nicola Group to the south by the Leemac Fault zone. Abacus completed 43 drill holes (16,289 m) of NQ-size core during 2002, 2003, and 2004.

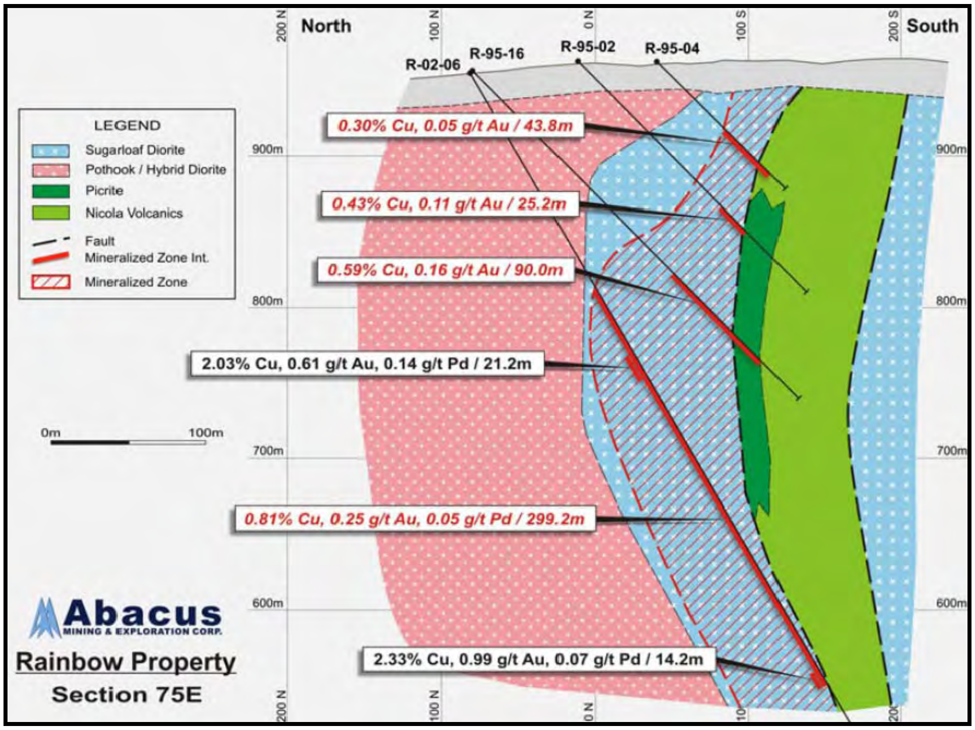
Mineralization in the Rainbow area is localized within and along the Leemac Fault zone (Figure 10.1). Four zones of mineralization have been identified. Mineralization is controlled in highly fractured zones of the Sugarloaf phase. Chalcopyrite, with variable amounts of pyrite, magnetite, and molybdenite, is within veins, fracture fillings, and dissemination. Gold is also present and visible gold has been observed on instance as quartz-carbonate veinlets.

10.3.2 DM-AUDRA-CRESCENT

The DM-Audra-Crescent is located approximately 10 km northwest of the Ajax area. The DM-Audra-Crescent is underlain by Nicola Group Volcanics intruded with the Pothook, Cherry Creek, and Sugarloaf phases of the Iron Mask Batholith. Abacus completed 97 drill holes (27,604 m) of NQ-size core during 2004, 2006, and 2007.

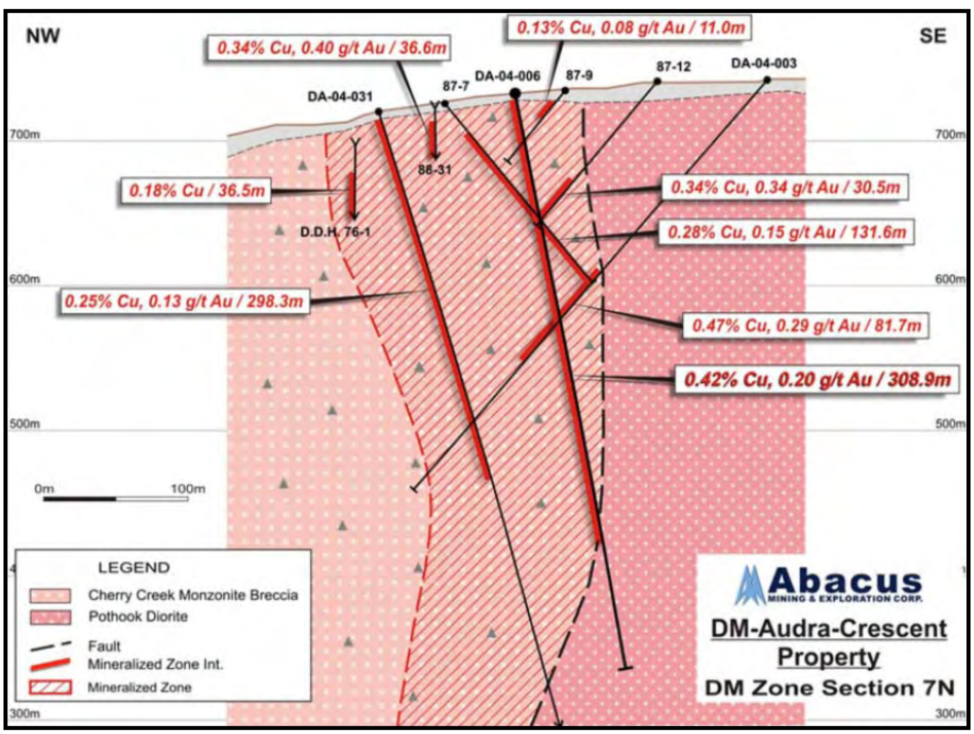
Mineralization in the DM-Audra-Crescent area is localized in potassic altered monzonite intrusive breccias that trend northeast (Figure 10.2). Mineralization consists of chalcopyrite, pyrite, and minor bornite within calcite-epidote-chlorite veins and disseminations. The DM Audra zone has a strike length of approximately 800 m and varies in width from 20 to 200 m. Drilling has indicated the zone extends to a depth of at least 300 m.

Figure 10.1 Geological Cross Section for the Rainbow Prospect



Source: Abacus

Figure 10.2 Geological Cross Section for the DM-Audra Prospect



Source: Abacus

11.0 DRILLING

The Ajax area was initially drilled as early as 1916 and since that time, more than 620 drill holes have been completed in the area totalling 174,525 m (Table 11.1). Most early drilling, from 1916 to 1980, is poorly documented. Drilling on the Ajax property concentrated in the areas of the open pit mines that were in production in the 1980s. Recent drilling completed by Abacus has targeted extensions of mineralization along strike and to depth.

11.1 DRILL CAMPAIGNS

Documentation for the drilling campaigns completed in the Ajax area before 1980 is limited or not available. Because of the limited documentation, the pre-1980 drill data were not included in the 2009 resource model database.

Drilling campaigns completed during the period 1980 to 1990 have limited documentation generally consisting of geological logs, survey information, and assay certificates. Abacus has compiled this information into drill files located at the Ajax project offices near Kamloops.

The resource database includes 419 drill holes totalling 144,878 m of drilling. Approximately 97% of the drill data included in the 2009 resource model database has been completed using DDH methods. The remaining data come from reverse-circulation (RC) holes drilled by Cominco in 1981.

All Ajax drill campaigns are summarized in Table 11.1 and flagged to indicate whether they were used in this resource update. Figure 11.1 shows the spatial distribution of the drill holes used in the resource model database.

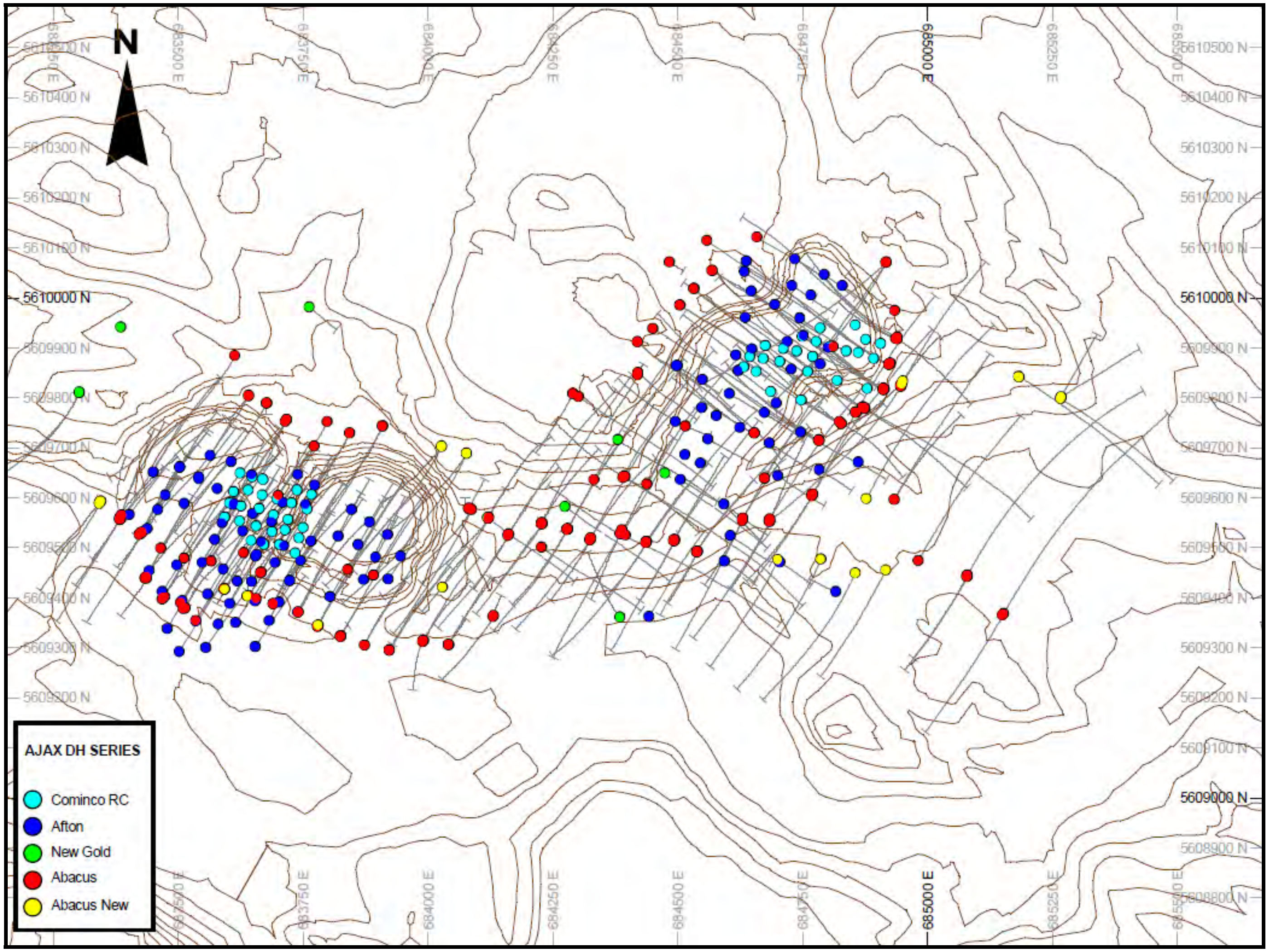
11.2 COMINCO CAMPAIGNS (1980 WT SERIES)

Documentation for Cominco WT series drill holes drilled in 1980 is limited to drill logs. These drill holes are reported to be vertical percussion drill holes that were less than 100 m in length. The drill hole collar locations were obtained from historic maps. The collar locations indicate WT drilling was completed on a grid spacing of 100 to 150 m. There is no documentation regarding drilling, sampling, or laboratory protocols. Generally, the WT drilling has been replaced with recent Abacus drilling and this campaign was not included in the 2008 resource model database.

Table 11.1 Summary of Drill Campaigns

Year	Company	Drill Type	Used for Resource Model	No. of Drill Holes	Depth (m)
1928	CM&S	DDH	No	?	621
1952	Berens River	DDH	No	?	421
1955 to1957	CM&S	DDH	No	?	4,633
1961	CM&S	DDH	No	?	305
1967	Cominco	DDH	No	?	1,271
1972/1973	Afton Mines	Percussion	No	?	4,420
1970s	Cominco	DDH	No	7	1,045
1980	Cominco, E&B	Percussion	No	186	15,944
1981	Cominco, E&B	Percussion	Yes	53	4,387
1987	Afton	DDH	Yes	77	11,669
1988	Afton	DDH	Yes	15	2,518
1989	Afton	DDH	Yes	5	1,493
1990	Afton	DDH	Yes	13	3,507
2004	New Gold	DDH	Yes	6	2,016
2005	Abacus	DDH	Yes	5	2,714
2006	Abacus	DDH	Yes	50	25,811
2006	New Gold	DDH	Yes	4	2,620
2007	Abacus	DDH	Yes	88	41,104
2008	Abacus	DDH	Yes	113	48,025
Total					**174,524**

Figure 11.1 Ajax Drill Hole Location Map



11.3 COMINCO CAMPAIGNS (1981 J SERIES)

Documentation for Cominco J series drill holes is limited to drill logs. These drill holes are vertical percussion drill holes that were less than 100 m in length. The J series drilling is confined to areas of the East and West Ajax open pit mines. The drilling was completed on a grid system of 25 to 50 m. Significant portions of many of these drill holes have been mined in the 1980s during periods of open pit mine production.

11.4 AFTON CAMPAIGNS (87, 88, 89, 90 SERIES)

Documentation for Afton drilling campaigns from 1987 to 1990 consists of geological logs and assay certificates. The drill holes have an average depth of 150 m. Typical depths range from 100 to 200 m. The deepest hole is 350 m. The drill core is NQ size (47.6 mm diameter) and is available at core farms near the Afton mill site. The drill core is stored in wooden core boxes and stacked in core racks. The core boxes and racks are showing advanced stages of weathering. It is recommended that the legacy core be salvaged and stored in a similar manner as Abacus drill core. There is no information regarding drilling and sampling protocols. The drilling procedures are not documented.

A twin sample investigation of this drilling was performed and it was concluded that the drilling could be included in the database for the 2009 resource model but limited to only supporting indicated and inferred resources.

11.5 NEW GOLD CAMPAIGNS (2004 AND 2006)

New Gold completed 10 drill holes totalling 4,637 m in the Ajax area in 2004 and 2006. New Gold drilling was completed using NQ size core. Of the 10 drill holes, AX04-06 had only two samples near the collar and AX04-05 was not sampled at all; therefore, AX04-05 was not included in the resource model database.

11.6 ABACUS DRILLING CAMPAIGNS

Abacus drill campaigns comprise over 80% of the drill data in the 2009 resource model database. Documentation for Abacus drilling campaigns from 2005 to 2008 consists of geological logs, assay certificates, and survey reports. Most drilling was completed with NQ core but a few drill holes were completed with BQ core tails. The drill core is stored in wooden core boxes and stacked in covered core racks at the Ajax project office near Kamloops. The drill hole files are well organized and filed at the Ajax project office.

11.7 Abacus Drilling Procedures and Conditions

No core drills were active during the time of the Wardrop site visit.

All Abacus drilling has been completed with DDH methods. Drilling commonly collected NQ size core (47.6 mm diameter) using a 10 ft (3.04 m) core barrel. Due to reduction while drilling, 7 drill holes have BQ size (36.4 mm diameter) tails.

Drill hole collars are marked in the field with a wooden post placed in the drill hole. A tag is attached to the post identifying the drill hole. The collars are surveyed with a total station.

Core recovery is commonly excellent and exceeds 90%. The core recovery versus grade relationship was reviewed for both assays and composites and no grade trends related to percent core recovery were observed.

It is recommended that the drilling procedures be summarized in a document.

11.8 Geological Logging

Wardrop observed core logging during the Ajax site visit. The core logging facilities at the Abacus site are excellent and set up for all-season use. Wardrop noted a limited reference core library and that the drill core has not been photographed.

Core logging is completed on paper logging forms. Generally, the core logging consists of good geological descriptions and the geological descriptions are captured in the Ajax database. The current format of the geologic information is cumbersome during database manipulation and analysis, as most of the desired information is in a general comment field.

11.9 Geotechnical Logging

Geotechnical logging was conducted for each core interval and consists of rock quality designation (RQD) determination, core recovery, and other rock mass rating parameters including number of joints, weathering, rock hardness, and joint angle. The geotechnical information is recorded on a separate logging form and is commonly not captured in the drill hole database.

11.10 Drill Collar Surveys

Collar locations from the Abacus 2005 to 2008 drill campaigns were surveyed using a Leica T1610 Total Station by Ward Garroway, an independent survey contractor of Kamloops, BC.

Survey methods for pre-Abacus drilling are not documented. Many collar locations have been mined out during mine operations in the 1980s and 1990s.

11.11 Down Hole Surveys

The majority of Ajax drilling completed by Abacus is oriented along drill sections with a 28° azimuth (True North) and is approximately perpendicular to the strike of the mineralization (Figure 11.1). A series of sections in the East Pit area are oriented at 118° azimuth to accommodate a change in strike of the mineralization in that area. The drill holes commonly have inclinations of -45° to -85°. Some holes are vertical.

During the process of diamond drilling, Abacus personnel completed down hole surveys using an Icefield MI3 Multi-Shot. In 2008, Abacus began using a Reflex Ez-Trac. An Acid Etch method was used to obtain the dip of the drill hole when the deviation survey tool was not functioning or not available.

DDH drilling completed by Afton was oriented along cross section lines at 28° and 118° azimuths (Figure 11.1). The drill holes have inclinations that vary from -45° to vertical. The majority of these drill holes are <200 m in depth. Down hole surveys were completed for 96 drill holes.

Percussion drill holes completed by Cominco (J series) are all vertical and do not exceed 100 m in depth. Down hole surveys were not completed due to the shallow depths drilled.

11.11.1 Magnetic Susceptibility Study

Disseminated magnetite, commonly observed in drill core and locally in veins, may exceed 5% in abundance. Both the Ice Field and Reflex survey tools used for deviation surveys use a magnetic instrument to obtain azimuth readings. Concerns regarding the reliability of the azimuth data due to the presence of magnetite observed in drill core resulted in a detailed review of the deviation survey data. The magnetic susceptibility data were evaluated to determine the influence of magnetite on the deviation surveys.

Minimal correlation was observed between magnetic susceptibility readings, magnetite observed during geological logging, and deflections present in the deviation azimuth data. It was concluded that the deviation surveys are reasonable and suitable for use in the resource model to spatially locate mineralized intercepts.

11.11.2 Modelling Deviation Surveys

All deviation surveys for Abacus drill holes were evaluated using software that identifies abrupt changes in drill trajectory. The software flags the depths at which azimuth and/or dip may be inconsistent with the trend of values above and below the survey depth or exceed a user-defined tolerance (degrees per unit length),

Anomalous changes in drill trajectory were observed in 40 drill holes and the anomalous data points were removed from the deviation survey.

Deviation surveys were modeled for 67 drill holes without deviation surveys. The modelled surveys were based on an average of deviation surveys from drill holes with similar azimuths and dips.

11.12 Drilling Results

The Ajax deposits have been sampled at drill hole spacing appropriate for a property at this level of development. The approximate drill spacing is 50 m by 50 m in the areas of mineralization. The drill spacing increases at the margins of the defined mineralization. Significant intercepts are summarized in Table 11.2. Mineralized intervals, averaging more than 0.10% Cu, commonly range between 100 to 300 m in length. High grade intercepts (greater than 1.00% Cu) are commonly less than 30 m in length and appear to be structurally controlled. Because of the irregular shape of the mineralized body, the orientation of the mineralization with respect to drill intercepts is unknown. The relationship between drill width and mineralization shape is illustrated in Figure 9.1.

Table 11.2 summarizes significant intervals of mineralization encountered in the new DDHs added to the database since the 2008 AMEC resource estimate was completed. A complete list of the significant mineralized intervals intersected by Abacus is found in Section 5.2 of the Supporting Documents.

Table 11.2 Significant New Intercepts on the Ajax Property

Hole ID	From (m)	To (m)	Interval (m)	Cu (%)	Au (g/t)
AE-08-062	190	549	359	0.35	0.3
AE-08-063	332	431.83	98.83	0.2	0.13
AM-08-009	180	198	18	0.59	0.23
AM-08-011	169	244	75	0.25	0.09
AN-08-074	130	268	138	0.32	0.12
AW-08-090	407	458	51	0.28	0.16
AW-08-091	135	293	158	0.28	0.19
AW-08-092	315.55	507	191.45	0.32	0.13
AW-08-094	130.75	520.65	389.9	0.35	0.19
AW-08-096	179	202	23	0.49	0.2
	263	278	15	0.38	0.15

table continues…

Hole ID	From (m)	To (m)	Interval (m)	Cu (%)	Au (g/t)
AW-08-097	167	189	22	0.32	0.28
	374	454.55	80.55	0.37	0.22
AW-08-098	159	231.45	72.45	0.34	0.28
	385	518	133	0.3	0.14
AW-08-099	237	264	27	0.56	0.4
	377.65	459.7	82.05	0.34	0.14
AW-08-100	81	403.65	322.65	0.37	0.15
(including)	157	217	60	0.59	0.23
(including)	250	316	66	0.57	0.23
(including)	352.25	392.75	40.5	0.56	0.2
AW-08-101	101	113	12	0.39	0.2

Source: Abacus.

12.0 SAMPLING METHOD AND APPROACH

12.1 INTRODUCTION

Wardrop was not able to observe the sampling of core during their site visit on February 11 and 12, 2009. However, based on the observations of AMEC (as discussed in their “NI 43-101 Technical Report on the Afton-Ajax E-W Deposit” dated October 31, 2008), an inspection of the facilities, and conversations with on-site personnel, Wardrop is of the opinion that Abacus is following industry-standard practices for core sampling.

The following discussion applies to Abacus sampling methods. Abacus drilling represents approximately 80% of the drilling carried out on the Ajax property. Abacus provided no information regarding drilling and sampling protocols used by Cominco and Afton OC.

12.2 DIAMOND DRILLING CORE SAMPLING

Core is placed in wooden core boxes at the drill site with the core run footage marked on wood blocks, and the drill hole name and drill interval marked on the outside of the box. At least once per day, a geologist retrieves the full core boxes at the drill site and transports them to the core logging facility at the Ajax project office near Kamloops. The core is quick-logged for geology and areas of mineralization. An Abacus technician logs the core for core recovery and RQD.

The core is geologically logged on paper forms by an Abacus geologist. Sample intervals are noted on the geological log and recorded in a sample book with triplicate tags. The preferred sample interval is 3 m and this is also the maximum sample length. Samples honour geological contacts where appropriate. The minimum specified sample interval is 0.4 m.

The sample interval is marked on the core box with permanent markers, and a metal aluminum tag is engraved with the sample number and attached to the core box at the start of each sample interval by the geologist.

The core is moved to the sample processing area for cutting. The core is sawn into halves using diamond-studded saw blades. One-half of the core is placed in clear plastic bags marked with the sample number. The remaining half-core is returned to the core box. A sample tag is placed in the sample bag. A second sample tag is stapled to the core box at the start of the sampled interval. The third sample tag remains in the sample book as a permanent record.

12.3 SAMPLING OF PERCUSSION DRILL HOLES

There is no information regarding the sampling procedures for the J series drill holes. Sample intervals were 10 ft (3.04 m). There is no information available regarding sample sizes.

12.4 TWIN HOLES

No designated twin holes have been completed at the Ajax property.

12.5 SAMPLE PAIRS

Because of the lack of information for Afton OC and Cominco drilling, these drill campaigns were compared to Abacus drilling using paired samples. Sample pairs of Abacus-Afton OC and Abacus-Cominco composite samples were created using the Geostatistical Software Library (GSLIB) program *getpairs.exe*. A sample pair was created when a sample from each group was within a threshold distance of 25 m.

12.5.1 ABACUS-AFTON OC PAIRS

A total of 471 Abacus-Afton OC composite pairs were examined. Histograms, probability plots, and quantile-quantile (QQ) plots were constructed to compare the Abacus and Afton OC copper values. Histograms indicate similar distributions and summary statistics. Mean grades are 0.227% Cu for Abacus samples and 0.234% Cu for Afton OC samples. The QQ plot indicates the two drilling campaigns have similar distributions.

Histograms, probability plots, and QQ plots were also constructed of gold values. Histograms and summary statistics are similar. The QQ plot indicates the Afton OC values have a low-bias in the grade ranges of 0.30 to 0.45 g/t Au. At grades >0.45 g/t Au, the QQ plot suggests similar distributions but data is insufficient.

It was concluded that the copper and gold values are within reasonable tolerance. It was also concluded that the Afton OC drilling could be used for resource estimation with limitations. Model blocks with grade estimates primarily supported by Afton OC drilling should be limited to an indicated classification.

12.5.2 ABACUS-COMINCO PAIRS

A total of 72 Abacus-Cominco pairs were identified. Only copper values are available for evaluation (gold was not analyzed). Histograms, probability plots, and QQ plots were constructed for copper values. Histograms indicate similar distributions and summary statistics. Mean grades are 0.131% Cu for Abacus samples and 0.170% Cu for Cominco samples. The mean grades as well as the distribution observed in the QQ plot suggest the Cominco data has a high bias.

It was concluded that the Cominco data are acceptable for resource estimation with limitations. Model blocks with grade estimates primarily supported by Cominco drilling should be limited to an inferred classification.

13.0 SAMPLE PREPARATION, ANALYSES, AND SECURITY

Discussion of sample preparation, assay procedures, assay quality assurance/quality control (QA/QC) program results, and security is divided into sections by drill campaign, as defined in Section 11.0. The discussion below focuses on copper, gold, molybdenum, and silver assays. Palladium and platinum were analyzed for certain drill campaigns but are not considered relevant to the mineral resource at Ajax.

13.1 COMINCO DRILLING CAMPAIGNS

No information is available regarding sample preparation for drill holes completed by Cominco drill campaigns.

No tabulation of independent QA/QC data was provided for the Cominco drilling. The Cominco drill data was compared to Abacus drill data (detailed in Section 12.5).

13.2 AFTON DRILLING CAMPAIGNS

Samples were analyzed at the Afton mine laboratory. No information is available regarding sample preparation for drill holes completed by Afton drill campaigns.

No tabulation of independent QA/QC data was provided for the Afton drilling. The Afton drill data was compared to Abacus drill data (detailed in Section 12.5).

13.3 ABACUS DRILLING CAMPAIGNS

Abacus employed Eco-Tech Laboratories Ltd. (Eco-Tech) in Kamloops, BC for sample preparation and analysis.

Wardrop visited the Eco-Tech laboratory facility in Kamloops, BC in July 2008. The visit was part of due diligence on the part of Wardrop prior to reviewing the Abacus assay database. Wardrop was satisfied with the procedure in place at Eco-Tech for receiving samples, storage, and analysis. At the time of Wardrop's visit, there was no sample preparation being done.

The Eco-Tech sample protocol has not changed during the Abacus drill campaigns. Sample preparation is the same for both copper and gold analysis.

Samples with a minimum sample size of 250 g are catalogued and logged into the sample-tracking database. During the logging-in process, samples are checked for spillage and general sample integrity. Sample tags are verified as matching the sample shipment requisition provided by the customer. The samples are transferred into a drying oven and dried.

Rock/core samples are crushed in a Terminator jaw crusher to minus 10 mesh ensuring that 70% passes through a Tyler 10 mesh screen.

Every 35 samples, a re-split is taken using a riffle splitter to be tested to ensure the homogeneity of the crushed material. Every 10 samples, a repeat sample is taken to ensure proper weighing and digestion occurred.

A 250 g sub-sample of the crushed material is pulverized in a ring mill pulverizer ensuring that 95% passes through a 150 mesh screen. The sub-sample is rolled, homogenized, and bagged in a pre-numbered bag.

A barren gravel blank is prepared after each job passes through the sample preparation; this blank is analyzed for trace contamination along with the actual samples.

Gold assays are performed by fire assay on a 30 g sample size using appropriate fluxes. Final analysis was completed with aqua regia digestion and then analyzed on an atomic absorption (AA) instrument (Perkin Elmer/Thermo S-Series AA instrument) for gold and palladium. The gold/palladium detection limit on the AA is 0.03 g/t. Platinum is read on a Thermo IRIS Intrepid II XSP Inductively Coupled Plasma (ICP) unit (detection limit: 0.03 g/t). Internal laboratory standards and repeat/re-split samples (QC components) accompany the samples on the data sheet for QC assessment.

Copper is initially analyzed using an ICP-Atomic Emission Spectroscopy (AES) method. This method requires dissolving a 0.5 g sample with 3 mL of a 3:1:2 ($HCl:HNO_3:H_20$) for 90 minutes in a water bath at 95°C. The sample is then diluted to 10 mL with water. All solutions used during the digestion process contain beryllium, which acts as an internal standard for the ICP run. The sample is analyzed on a Jarrell Ash/Thermo IRIS Intrepid II XSP ICP unit. Internal laboratory certified reference material is used to check the performance of the machine and to ensure that proper digestion occurred in the wet lab. QC samples are run along with the customer samples to ensure no machine drift occurred or instrumentation issues occurred during the run procedure.

Results are collated by computer and are printed along with accompanying quality control data (repeats, re-splits, and standards). Any of the base metal elements (Cu, Pb, Zn) that are over limit (greater than 1.0%) are immediately run as an assay. The Cu samples and standards undergo aqua regia digestion in 200 mL phosphoric acid flasks. Appropriate standards and repeat/re-split samples (QC components) accompany the samples on the data sheet.

The digested solutions are made to volume with demineralized water and allowed to settle. An aliquot of sample is analyzed on a Perkin Elmer/Thermo S-Series AA instrument (detection limit 0.01%). Instrument calibration is done by verified synthetic standards, which have undergone the same digestion procedure as the samples. Standards used narrowly bracket the absorbance value of the sample for maximum precision. Results are collated and are printed along with accompanying QC data (repeats, re-splits, and standards).

13.4 QA/QC

Abacus employed a QA/QC program that consisted of inserting Certified Reference Materials (CRMs) and blanks into the sample stream at a combined rate of 1 in 20 project samples. The average insertion rates were 2.7% and 2.6% for blanks and CRMs, respectively, for a combined average rate of 5.3%. CRM samples were obtained from WCM Minerals Ltd., Burnaby, BC. Table 13.1 summarizes the insertion rates by drill campaign. The QA/QC program was consistent throughout the Abacus drill campaigns.

The Abacus insertion rate is lower than Wardrop's recommended insertion rate for CRMs of at least 5%.

A review of the 1,037 CRM samples inserted into the sample stream revealed that 1 sample was not assayed, 4 blank samples were mislabelled as CRMs, and 25 samples were labelled with the wrong CRM code resulting in an error rate of 3.0%. These samples were removed from the CRM analysis.

A summary of CRM results are presented in Table 13.2. CRM results for copper and gold are within acceptable tolerances for bias (±10%). Two gold CRMs (Cu141 and PM112) indicate a negative bias exceeding 6%. A total of 4 gold CRMs (0.5%) exceeded ±5% of the best value for gold. A total of 7 copper CRMs (0.8%) exceeded ±5% of the best value for copper. Wardrop recommends that Abacus investigate the potential bias for Cu141 and PM112.

Table 13.1 Insertion Rates for Abacus Control Samples

Year	Total Sample	Blank Samples		CRM Samples		Combined (%)
		No.	%	No.	%	
2005	829	23	2.8	25	3.0	5.8
2006	8,253	236	2.9	233	2.8	5.7
2007	14,408	404	2.8	388	2.7	5.5
2008	16,619	442	2.6	391	2.3	4.9
Total	**40,409**	**1,105**	**2.7**	**1,037**	**2.6**	**5.3**

Table 13.2 Summary of CRM Results for Au (g/t) and Cu (%)

Year	CRM	No. Inserted	Gold Best Value[1]	Mean[2]	Bias[3]	Copper Best Value[1]	Mean[2]	Bias[3]
2005	Cu131	11	1.04	1.02	-1.7%	1.35	1.36	0.8%
	Cu132	11	0.17	0.17	1.1%	0.17	0.17	1.1%
2006	Cu131	111	1.04	1.02	-1.6%	1.35	1.36	0.4%
	Cu132	115	0.17	0.17	-0.2%	0.17	0.17	0.8%
2007	Cu136	184	2.28	2.28	0.0%	0.07	0.07	0.1%
	Cu140	83	0.81	0.82	1.1%	0.49	0.49	-0.9%
	Cu142	99	0.58	0.60	2.9%	0.71	0.71	0.1%
2008	Cu136	44	2.28	2.25	-1.5%	0.07	0.07	0.3%
	Cu140	35	0.81	0.81	-0.5%	0.49	0.49	-0.2%
	Cu141	74	0.13	0.12	-6.1%	0.45	0.46	2.1%
	PM1112	56	1.35	1.26	-6.3%	0.23	0.24	4.0%

[1] Best Value reported by WCM Minerals
[2] Mean excludes outliers
[3] Bias (%) = (Mean/BV) - 1

It was observed that less than 1% of blank samples exceed the lower detection limit of the analytical methods employed at Eco-Tech.

Abacus submitted 196 pulp duplicates to ALS Chemex as check samples during the 2006, 2007, and 2008 drill campaigns at an average rate of 0.5%. Table 13.3 summarizes the pulp duplicates submitted to ALS Chemex. Using the Reduction to Major Axis (RMA) method, it is concluded that the analytical precision of Eco-Tech copper and gold assays is acceptable for 2006 to 2008.

Table 13.3 Pulps Submitted to ALS Chemex

Year	Total Samples	Pulp Duplicates	Total Duplicates (%)
2005	829	none	n/a
2006	8,253	101	1.2
2007	14,408	65	0.5
2008	16,619	31	0.2
Total	**40,409**	**197**	**0.5**

Wardrop concludes the QA/QC review did not encounter issues that materially impact resource estimation. Contamination events were absent and the performance of CRMs was within acceptable range of ±5% for copper best value and ±10% for gold best value. ALS Chemex check samples, compared to Eco-Tech values, exceed the recommended range of ±10% during 2008. Wardrop recommends additional duplicates be submitted to identify and quantify any bias.

Wardrop recommends the Ajax QA/QC program be augmented to increase the confidence in the Ajax data. Wardrop recommends insertion rates for CRMs to be at least 5%. Wardrop also recommends insertion rates to be at least 5% blanks, 5% duplicates, and 5% check assays for a combined insertion rate of 20%. Additional scrutiny should be implemented to ensure the QA/QC samples are properly labelled.

13.5 PHASE 3 QA/QC REVIEW

13.5.1 CRM

The results were reviewed from the three CRMs provided by Abacus: CU120, PGM8, and PGM9. The Certificates of Analysis for these standards were obtained and the "Best Value" and the 95% Confidence Limit were recalculated as described in "Assay QA/QC for Drilling Projects at the Pre-Feasibility to Feasibility Report Level" (Long, 2005). Acceptable limits were determined by the following formulae and are shown in Table 13.4.

- Upper Limit = BV*1.05+95%CI
- Lower Limit = BV*0.95-95%CI
- where:
  - BV = Best Value
  - 95%CI = 95% Confidence Interval (or error of the mean).

Table 13.4 CRM Summary

CRM	Certified Value	95% Confidence	Acceptable Limits	
			Lower	Upper
Cu %				
CU120	1.527	0.05%	1.450	1.604
Au g/t				
PGM8	0.826	0.13%	0.783	0.868
PGM9	1.032	0.08%	0.980	1.084

All 79 results from CU120 fell within the upper and lower limits as defined above. Three of 70 results from PGM8 fell outside the acceptable limits, and all 38 results from PGM9 fell within the allowed limits. Results plotted over time from these CRMs are shown in Figure 13.1 through Figure 13.3. One of the outlying results from PGM8 falls well outside the allowable limits and should be investigated by Abacus. It was reported on assay certificate AK8-1194a from September 15, 2008.

Figure 13.1 CRM CU120 Performance (Excludes Outliers)

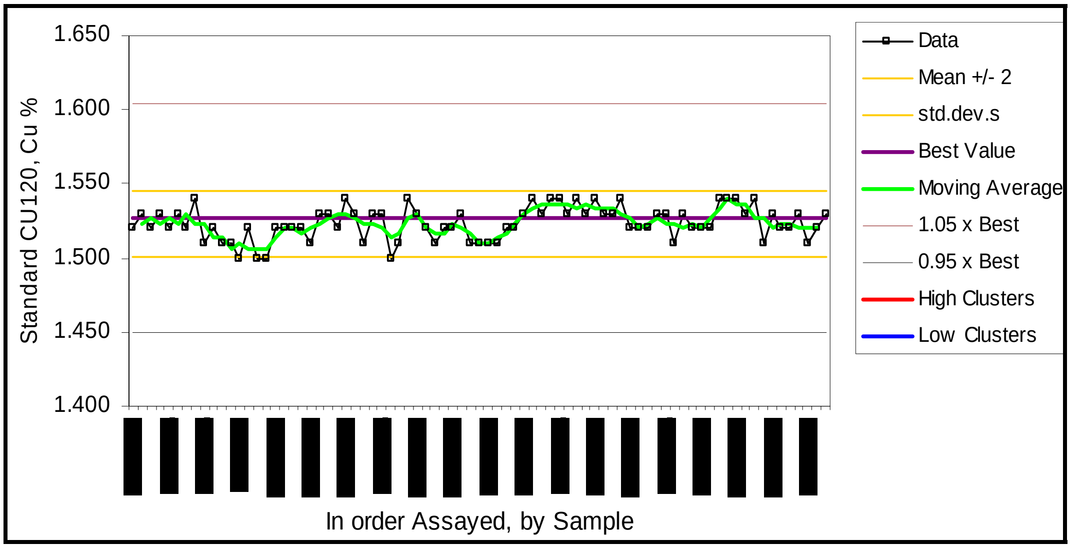


Figure 13.2 CRM PGM8 Performance (Excludes Outliers)

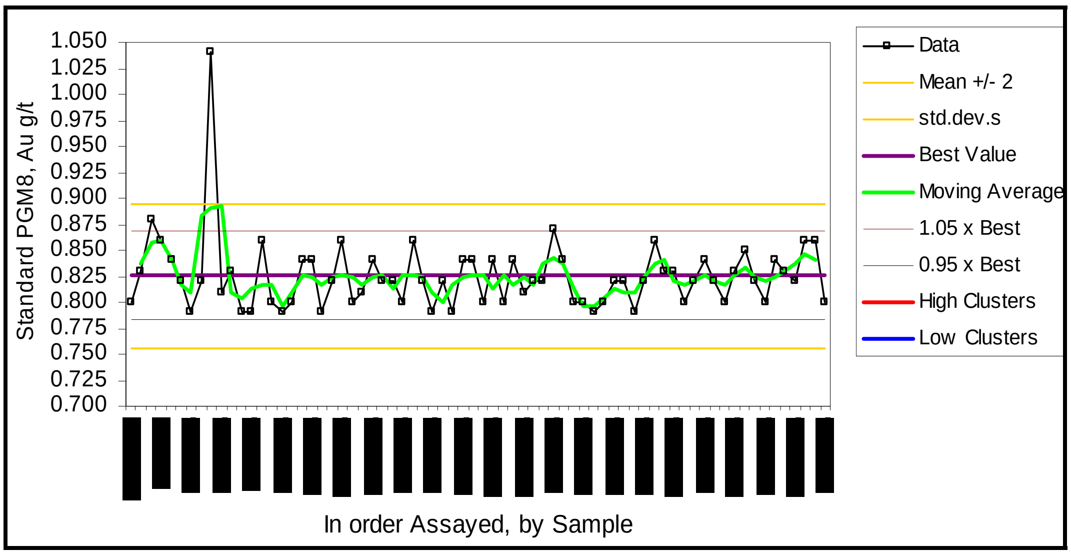
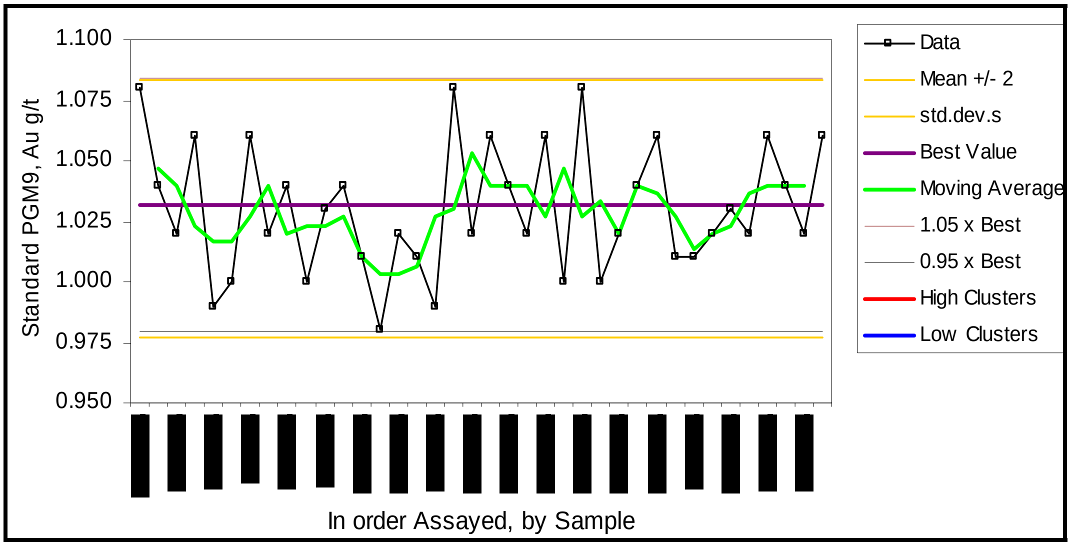


Figure 13.3 CRM PGM9 Performance (Excludes Outliers)



Wardrop did not note any significant biases indicated by the CRM results. All biases were significantly below 1%. Results are summarized in Table 13.5. Wardrop noted the insertion rate for CU120 was only 3%. Wardrop recommends an insertion rate of 5% for CRMs for each metal of economic importance. The insertion rate for PGM8 and PGM9 combined was 4.1%, which is slightly below Wardrop's recommended rate.

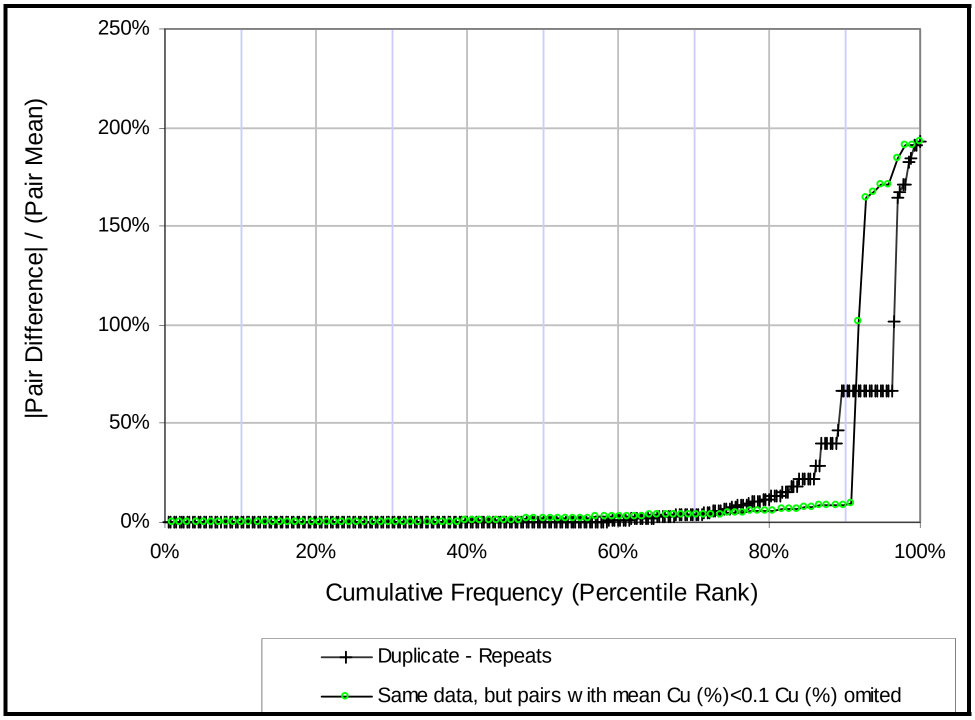
Table 13.5 CRM Performance

CRM	Certified Value	95% Confidence	Bias (Mean – Certified) / Certified
Cu %			
CU120	1.527	±0.05%	-0.23%
Au g/t			
PGM8	0.826	±0.13%	-0.08%
PGM9	1.032	±0.08%	-0.19%

13.5.2 DUPLICATES

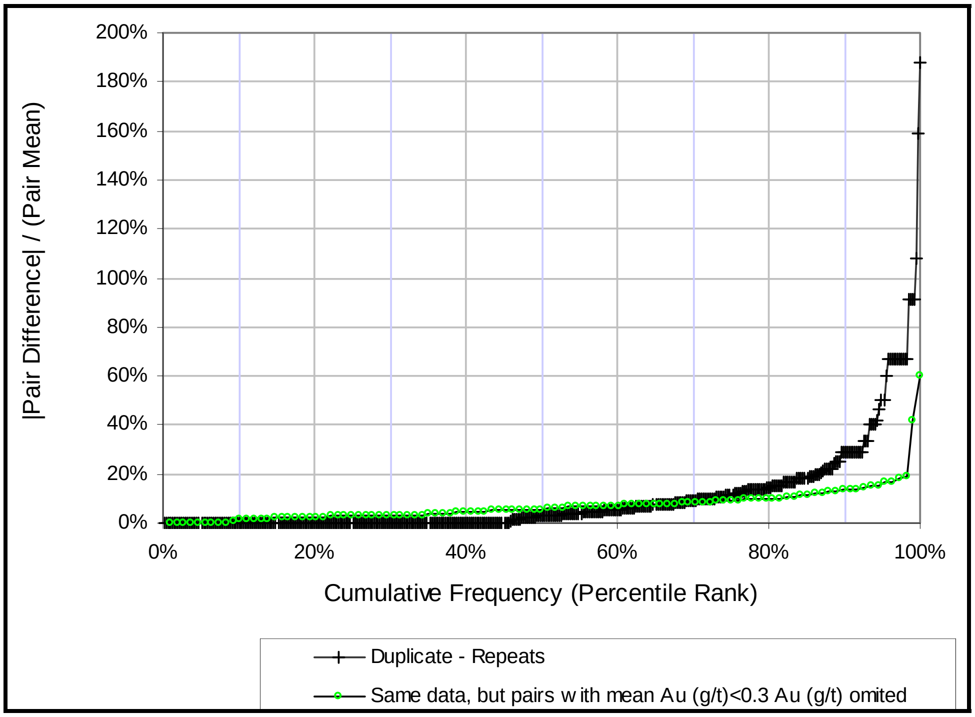
Duplicate results for 396 (gold) and 228 (copper) repeat (pulp) duplicates were reviewed. In addition, 106 (gold) and 105 (copper) resplit (coarse reject) duplicates were reviewed as a check on gold and copper assay precision. Precision estimates are based upon the 90th percentile of the population of AVRD (absolute value of relative difference: the absolute value of the pair difference divided by the pair mean), using duplicate pairs that have mean grades well above the detection limit (typically 10 to 20 times the detection limit). The Eco-Tech precision was found to be acceptable for both gold and copper assays. An AVRD value of 10% at the 90th percentile is considered acceptable for pulp duplicates and an AVRD value of 20% at the 90th percentile is considered acceptable for coarse rejects. Higher AVRD values are acceptable for gold. Eco-Tech achieved an AVRD of 10% and 14% on pulp duplicates for copper and gold, respectively. The results for coarse reject duplicates indicate an AVRD of 12% and 35% for copper and gold respectively. The results of this review are shown in Figure 13.4 through to Figure 13.7.

Figure 13.4 Cu Pulp Duplicates



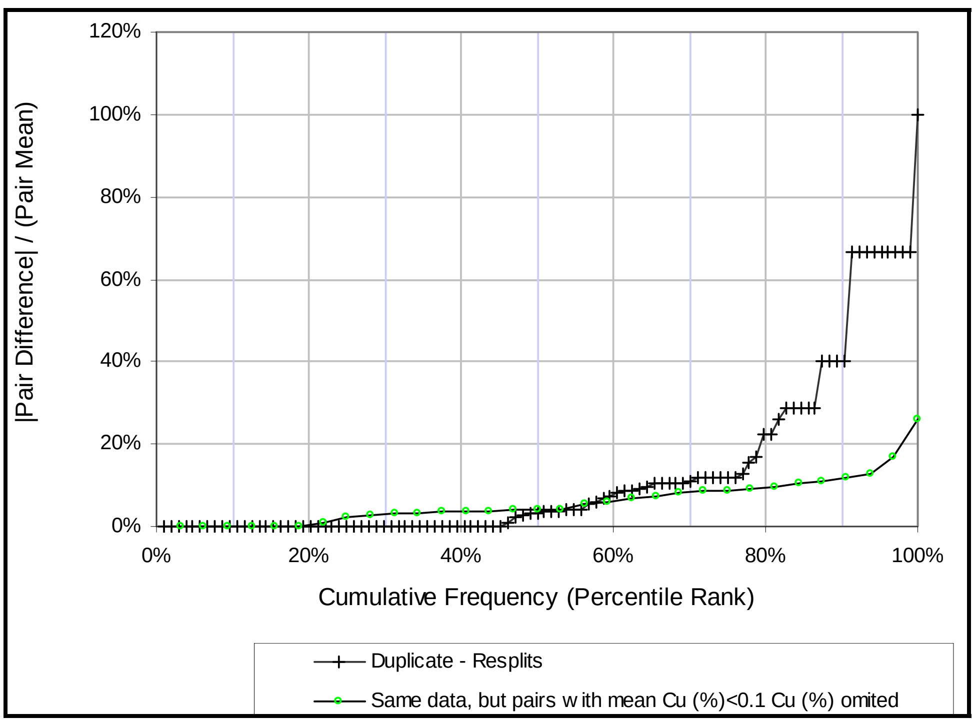
Note: precision shown by cumulative frequency of relative pair differences of duplicates.

Figure 13.5 Au Pulp Duplicates



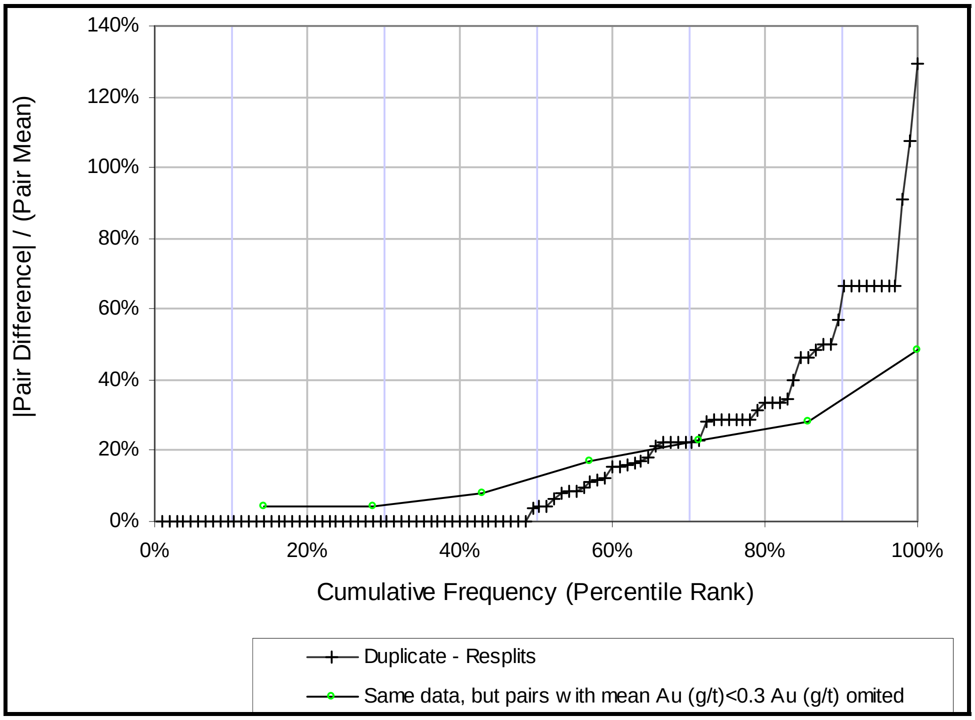
Note: precision shown by cumulative frequency of relative pair differences of duplicates.

Figure 13.6 Cu Coarse Reject Duplicates



Note: precision shown by cumulative frequency of relative pair differences of duplicates.

Figure 13.7 Au Coarse Reject Duplicates



Note: precision shown by cumulative frequency of relative pair differences of duplicates.

13.6 SECURITY

The Ajax project facility and core storage area is a fenced area with barbed wire. Metal gates to the facility are locked when the area is not occupied. The facility contains permanent and temporary structures for offices, core logging, core sampling, lunchroom, core storage, and warehouse.

Core is collected at the drill site each day and transported to the project facility by Abacus personnel. Core samples are delivered to Eco-Tech each day for processing. Core is placed in permanent storage in covered core racks.

In Wardrop's opinion, the sample preparation, security, and analytical procedures meet industry standards.

14.0 DATA VERIFICATION

Exploration data were verified for drill holes completed by Abacus to December 31, 2008. The review included the geology logs, collar and down-hole surveys, and assays in the Ajax mineral resource database.

Wardrop spot-checked the data verified by AMEC as part of the report titled "NI 43-101 Technical Report on the Afton-Ajax E-W Deposit" dated October 31, 2008, and performed a thorough verification of 23 new drill holes added to the Ajax mineral resource database.

AMEC performed a verification of exploration data for pre-Abacus drilling that included percussion drill holes (J series) completed by Cominco and diamond drill holes completed by Afton (87, 88, 89, 90 series).

14.1 DATABASE

The Ajax project data is stored in Surpac (Version 6.0.3, Build February 2008) commercial software. This database is secure and is operated by a single database administrator at the Ajax project office located near Kamloops, BC.

An extensive audit of the Ajax database was conducted. This audit consisted of checking the digital data against source documents to ensure proper data entry as well as exhaustive data integrity checks (checking for overlapping intervals, data beyond total depth of hole, unit conversion, etc.).

14.2 COLLAR AND DOWN-HOLE SURVEYS

Collar surveys were checked against source documentation for 92% of 249 drill holes completed by Abacus. Discrepancies were noted for collar coordinates of <1 m at an error rate of <1%. The errors were corrected in the final database used for the resource model. Data entry errors were observed for azimuth and dip; error rates were <1%. Errors were corrected in the final database used for the resource model.

Original surveys are not available for legacy drill holes. Collar coordinates for the Cominco (J series) and Afton (87, 88, 89, 90 series) were originally surveyed in a local mine grid system and mine grid coordinates are recorded on drill logs. Mine grid coordinates were converted to UTM coordinates by Abacus. UTM coordinates were obtained for mine grid control points and UTM coordinates were calculated.

The coordinates were compared against the digital database for 5% of the drill holes and no errors were observed. The coordinate calculations of the raw survey data were not reviewed.

The collar and deviation surveys are considered to accurately represent the source documentation and to be suitable to support geological modelling.

14.3 Drill Hole Logs

A minimum of 5% of drill hole logs were checked against source documentation. No data entry errors were found for the Abacus drilling.

Abacus modified the legacy drill codes to conform to Abacus lithology codes. Wardrop considers the modifications to be reasonable and consistent. No data entry errors were observed in the new geologic codes assigned to for the legacy drilling.

Wardrop considers the lithology codes in the database to accurately represent the source documentation and to be suitable to support geological modelling.

14.4 Assays

Assay data was transferred electronically from Eco-Tech to Abacus. The assay data in the Ajax database were compared against copper and gold digital assay certificates received from Eco-Tech. A total of 33,157 intervals were compared to assay certificates. An error rate of 0.14% was observed.

It was noted that gold and copper assay intervals with values below laboratory detection limit were entered into the database as a zero value. For the resource model database, intervals below detection limits were edited from zero to one-half the detection limit. Unsampled intervals were given a null value and ignored in the resource estimation.

Afton assays for copper and gold values are available on drill logs and assay certificates from the Afton mine laboratory. Eight percent of the Afton assay data were checked against Afton mine laboratory certificates. No data entry errors were observed.

Cominco assays for copper and gold assay values are available on drill logs. Six percent of Cominco assay data were checked against assays available on drill logs. No data entry errors were observed.

The Ajax assay database was checked for gaps and overlaps in sample intervals. One incidence of an overlapping sample interval was observed, and corrected in the final resource database. Missing intervals (gaps) representing missing samples or intervals with outstanding laboratory results were given a null value.

Wardrop considers the copper and gold fire assay values for Cominco drilling to accurately represent the source documentation and to be suitable to support mineral resource estimation.

Wardrop compared copper, molybdenum, silver, and gold assay data in the Ajax database against the original Eco-Tech assay certificates. Ten percent of the 3,354 intervals (23 drill holes) were checked and an error rate of 0.06% was observed.

Data discrepancies were observed in the additional data included in the Phase 3 model update. None are considered material but it is recommended that the database be reviewed and the errors corrected. Errors noted include the following:

- An elevation difference of 0.7 m was noted for drill hole AW-08-102.
- Drill hole AW-08-101 appears to have incorrect data at 157 ft and 357 ft. Because this drill hole is near vertical (-84.3°), this discrepancy is not considered material; however, it is recommended that the database be reviewed and the appropriate corrections made.
- The collar azimuth for drill AW-08-102 is 208°. This value is not supported by any of the data provided. As this drill hole is near vertical (-89.4°), the error is not considered material; however, It is recommended that the database be reviewed and the appropriate corrections made.
- Drill hole AE-08-062 was surveyed using a Reflex survey tool; however, the database includes a “modelled” survey. It is recommended that this hole be reviewed and the use of the modelled survey should be justified instead of the actual Reflex survey.

15.0 ADJACENT PROPERTIES

The New Afton copper-gold project, being developed by New Gold is located approximately 10 km northwest of the Ajax property. Mineralization at New Afton is hosted in the Cherry Creek phase of the Iron Mask Batholith. The mineralization is controlled by east-northeast striking steeply dipping faults that are constrained within a west northwest striking structural corridor. The New Afton deposit is under development and will be mined using underground methods. In 2007, New Gold reported a mineral reserve of 44 Mt grading 0.98% Cu, 0.72 g/t Au, and 2.27 g/t Ag.

Information about the New Afton project was compiled from reports filed on SEDAR by New Gold. Wardrop has not verified this information. It is stated here for reference only and is not necessarily indicative of the mineralization to be found on the Ajax property.

16.0 MINERAL PROCESSING AND METALLURGICAL TESTING

16.1 INTRODUCTION

Abacus is proposing the mining and processing of 60,000 t/d of a fine-grained porphyrtic hornblende diorite containing copper-bearing chalcopyrite resource material located in the Kamloops area of BC. Wardrop has conducted a review of testwork reports completed since 2007. For this study, testwork results from the “Metallurgical Testing on Samples from Ajax & DM-Audra Project – Report No. KM2228” by G&T of Kamloops, BC, dated October 2008, will be used as a basis for the design parameters. This report details the latest and most comprehensive testwork conducted on the resource material that has been slated for treatment.

The feed material to the process plant will contain copper minerals primarily as chalcopyrite with an associated gold content. Minor silver and molybdenum components are also present in the ore.

The initial feed to the plant is planned to have a nominal head grade of 0.36% Cu, 0.23 g/t Au, and 0.4 g/t Ag. The metal recoveries were estimated to be as follows:

- copper recovery of 84.5% with a concentrate grade of 25% Cu
- gold recovery of 81.3% with a grade of 28 g/t Au.

The gold will be recovered in the copper concentrate and this will add to the value of this product.

16.2 TESTWORK REVIEWED

This study is based on the results recorded from the following test reports:

- “Mineral Resource Estimate for the Ajax West Deposit” by Beacon Hill Consulting (Beacon Hill), May 2007
- “Preliminary Metallurgical Data – Report No. KM2350” by G&T, May 2007
- “Metallurgical Testing on Samples from Ajax and DM-Audra Project – Report No. KM1929” by G&T, May 2007

- "Summary Report on the 2007 and 2008 Abacus-New Gold Inc. Joint Venture Diamond Drill Program on the Ajax Property" by Abacus, September 2008
- "Metallurgical Testing on Samples from Ajax & DM-Audra Project – Report No. KM2228" by G&T, October 2008
- "NI 43-101 Technical Report on the Afton-Ajax E-W Deposit" by AMEC, Tim Kuhl, Alexandra Kozak, October 2008
- G&T Excel files for Test Program No. KM2350, February 2009
- "Magnetic Separation Tests on Samples from the Ajax Project- KM2228" G&T Correspondence, December 2008.

16.3 MINERALOGY

G&T have conducted mineralogical evaluations on samples recently supplied from the Ajax deposit, while Beacon Hill and Abacus have reported results obtained from previous mineralogical assessments. A brief summary of the collective findings is described in the following paragraph.

Copper mineralization in the Ajax deposit is a porphyry-style hypogene deposit characterized by chalcopyrite associated with variable pyrite, local molybdenite, tetrahedrite, minor bornite, magnetite, and rare native copper. The chalcopyritye mineralization occurs as stringers, fracture fillings, blebs, and disseminations. Gold appears to be closely correlated with copper but the presence of rare visible gold strongly suggests that there may be bimodal occurrences of the precious metal. Palladium appears closely associated with the copper mineralization in localized areas with the palladium values up to 0.5 g/t having been reported.

16.4 TESTWORK

16.4.1 G&T KM1929 STUDY – MAY 2007

Initial metallurgical testing was conducted by G&T in 2007. The drill hole samples were received and combined to produce five unique composite samples. The detailed reasoning behind the composite makeup was not reported. After the individual samples had been assayed, a Master Composite (MC) sample was prepared using four of the five individual composite samples. Sample AW06-023 was the composite sample that was not included in the MC for unspecified reasons.

The MC was prepared for use in the subsequent testing of the metallurgical response of the ore.

FEED GRADE

The head analysis characterization of the five composite samples gave results that ranged from 0.29 to 0.63% Cu, and 0.21 to 0.59 g/t Au, as listed in Table 16.1. The MC sample was also analyzed for head grade and results of 0.51% Cu and 0.21 g/t Au were reported.

Table 16.1 Sample Feed Assays - KM1929 Study

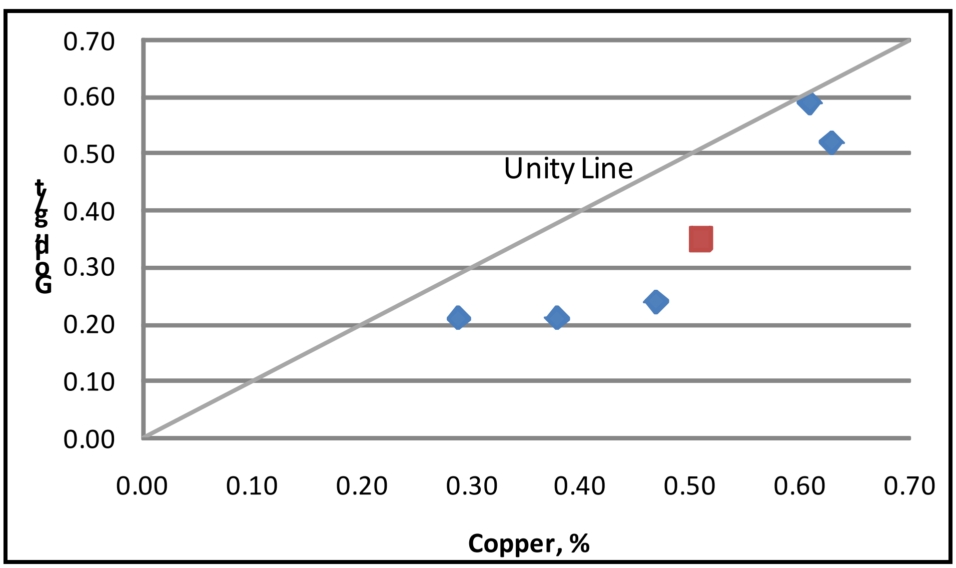
Composite	Assay			
	Cu (%)	Fe (%)	S (%)	Au (g/t)
AW05-001	0.63	2.9	1.7	0.52
AW06-006	0.38	1.5	0.8	0.21
AW06-020	0.61	3.1	1.2	0.59
AW06-021	0.47	2.5	1.5	0.24
AW06-023*	0.29	4.1	0.7	0.21
MC	0.51	2.8	1.3	0.35
Arithmetic Average of Samples Included in MC	0.52	2.5	1.3	0.39

* not included in MC.

A comparison of the arithmetic average of the samples used in the composition of the MC alongside the actual assay of the MC sample are fairly comparable at 0.52% Cu versus 0.51% Cu, and 0.39 g/t Au versus 0.35 g/t Au, respectively.

A graphical representation of the copper to gold correlation for the feed grades of the various composite samples is shown in Figure 16.1. The MC assay is indicated as a square point on the graph. The unity line has been included in Figure 16.1 for added perspective.

Figure 16.1 Copper vs. Gold Feed Grade Correlation – KM1929 Study



The copper to gold ratio in the composite samples appears to have a relatively consistent ratio ranging between 1.03 and 1.95, which may suggest a morphological-based association between the copper and gold. However, as shown by the unity line, the apparent copper-gold relationship depicted in Figure 16.1 should be seen as an indicator only since the straight-line relationship over the range tested gives a slope of 1.15 at a correlation coefficient of only 0.82.

ORE CHARACTERISTICS

A mineralogical analysis of the MC was conducted to guide the metallurgical test program.

A modal analysis was conducted on a portion of the MC sample that was ground to a primary grind size of P_{80} 141 µm. Particular attention was given to the liberation and mineral composition of the sample. The minerals found in the composite sample are listed in Table 16.2.

Table 16.2 Mineral Composition of Master Composite – KM1929 Study

Sample ID	Mineral Assay (Weight, %)					
	Chalcopyrite	Bornite	Pyrite	Magnetite	Hematite	Non-sulphide Gangue
MC	1.5	<0.1	1.3	3.7	0.3	93.2

Along with the mineral composition, the mineral fragmentation of the sample was examined and reported. Table 16.3 shows the mineral liberation estimates for the MC sample.

Table 16.3 Mineral Fragmentation Data of Master Composite – KM1929 Study

Sample ID	Distribution (%)		
	Chalcopyrite	Pyrite	Non-sulphide Gangue
Liberated Grains	50	75	92
Binary with Chalcopyrite	-	2	4
Binary with Non-sulphide Gangue	46	18	-
Other Composites	4	5	4

The chalcopyrite liberation of 50% is within the normal range to achieve good rougher flotation performance for a copper porphyry ore. Based on experience, it was hypothesized by G&T that coarsening the primary grind size to 200 µm may have a detrimental effect on primary recovery, depending on the composition of the non-liberated binary particles.

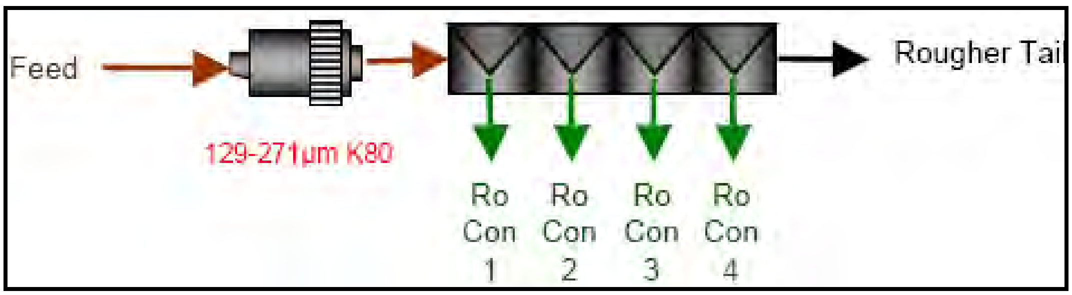
FLOTATION TESTS

As reported in KM1929, the reagents scheme used in the all flotation tests was straightforward with potassium amyl xanthate (PAX) used as the collector, methyl isobutyl carbinol (MIBC) used as the frother, and lime used in the regrind and cleaners to adjust the pH value.

Rougher Flotation

A flowsheet was developed based on the information obtained from the modal analysis. Optimization was done using the individual composite samples as comparison points alongside the MC sample. Initial testing was conducted with rougher kinetic flotation testing following the flowsheet shown in Figure 16.2. The flow diagrams from G&T use K_{80} to denote particle size; however, throughout the text of the report, the more common designation or P_{80} will be used.

Figure 16.2 Rougher Flotation Flowsheet

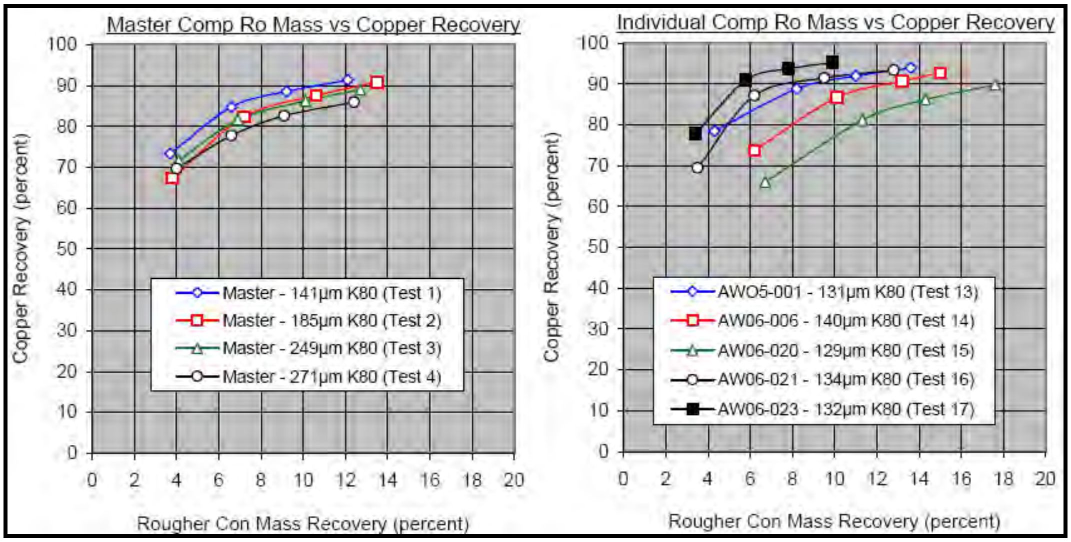


Relationships between rougher mass recovery and copper metal recovery from the results obtained were compiled. Also reported was the copper versus gold recovery correlation for the kinetic flotation tests.

The four tests completed at varying primary grinds on the MC had results that ranged from 85 to 91% copper recovery at primary grind sizes of between 140 and 270 µm. The individual composite samples all had primary grinds P_{80} values of about 130 µm, and recoveries ranged from 82 to 95% copper for the five tests completed. Results compared were at a 12% mass recovered to the rougher concentrate. The results of the tests are shown in Figure 16.3.

The individual assay results for each test were analyzed for the mass recovery and copper and gold recovery versus time of flotation. These results for a 12% mass recovery were then determined from the graphs. The reasons for selecting 12% mass were not stated but it was likely chosen to provide a common basis for comparing the results. As can be seen from Figure 16.3, a 12% mass recovery corresponds to the near-maximum recovery condition for copper (just under 90%) for the MC sample.

Figure 16.3 Rougher Performance for the Master and Individual Composites

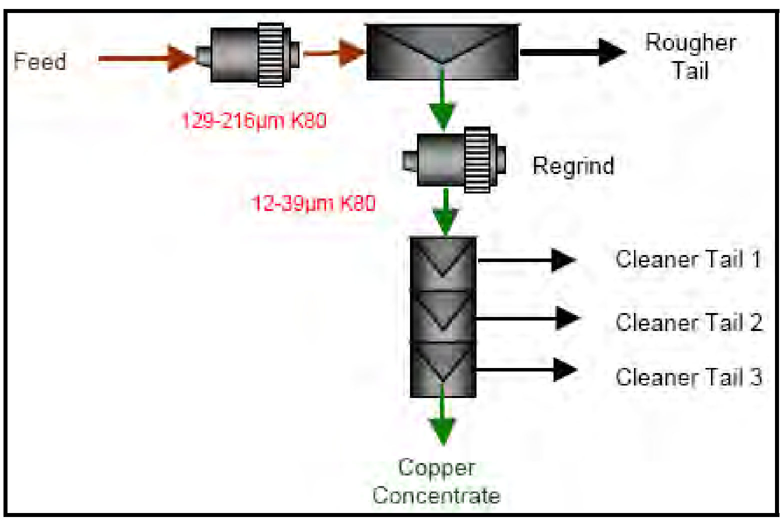


The rougher kinetic testing also indicated that between 80 to 90% of the gold was recovered at a copper recovery of 90%.

Cleaner Flotation

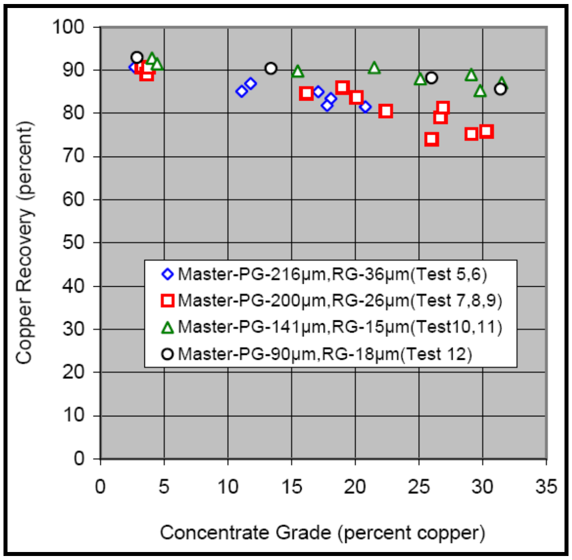
Cleaner flotation batch tests were carried out to define the reagent and regrind size requirement for optimum cleaner circuit performance using the flowsheet show in Figure 16.4.

Figure 16.4 Batch Cleaner Flotation Flowsheet



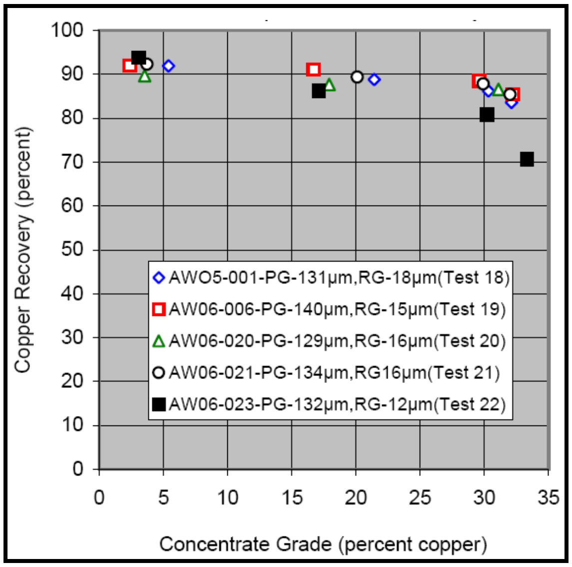
A total of 13 cleaner tests were completed; 8 tests used the MC sample and the remaining 5 tests used each of the individual composite samples as feed material. The MC was used to determine the regrind size requirement with testing done on concentrates that had been ground to a P_{80} ranging between 15 and 36 µm. A summary of the MC test results is shown in Figure 16.5.

Figure 16.5 MC Copper Grade Recovery Data – KM1929 Study



This set of results indicated that, in order to obtain optimal copper upgrading and recovery, regrinding the concentrate to a P_{80} of 15 µm was required prior to cleaning. Copper and gold recoveries to the final concentrate were approximately 1:1 with 90% recovery of both metals indicated. The five individual samples had a targeted regrind P_{80} of 15 µm with actual regrind size values of between 12 and 18 µm obtained. Recoveries from the tests on the individual samples were comparable to those obtained on the MC at the fine regrind sizes as illustrated in Figure 16.6.

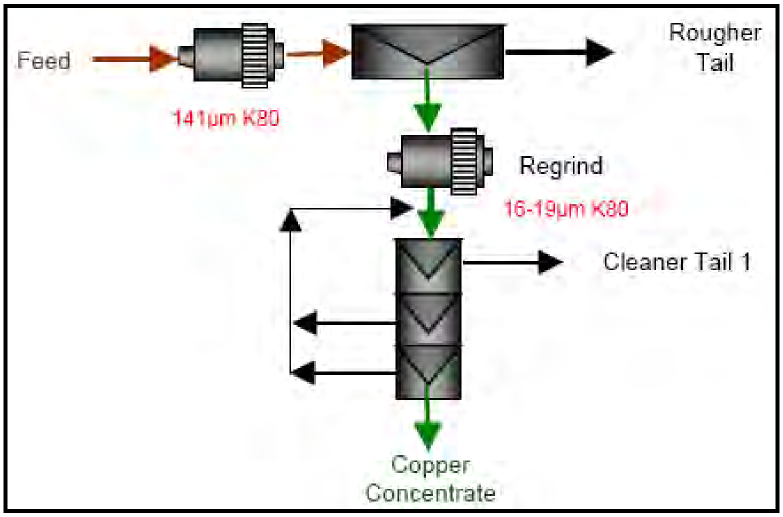
Figure 16.6 Individual Composite Copper Grade Recovery Data – KM1929 Study



Locked Cycle Flotation

Based on the tests completed in the preliminary stage, 2 locked cycle tests were performed on the MC at differing primary grind sizes (141 µm and 200 µm, respectively) followed by 3 stages of dilution cleaning. The process flowsheet that was used for the locked cycle tests is shown in Figure 16.7. The reason for selecting this flowsheet, which does not allow for the regrinding of the first cleaner tailings, was not explained.

Figure 16.7 Locked Cycle Test Process Flowsheet-KM1929 Study, Tests 23 & 24



The overall metallurgical performance was very good with approximately 90% copper recovery and 85% gold recovery to a final concentrate grading 28.8% copper, as summarized in Table 16.4. It should be noted that, in these tests, the average amount of mass recovered to the rougher concentrate was about 17%, which is 5% higher than the rougher concentrate mass recovered in the preliminary open cycle tests.

Table 16.4 Metallurgical Performance Data - Master Composite

			Concentrate				
				Grade		% Recovery	
Test Number	Grind P_{80} (µm)	Product	Mass (%)	Cu (%)	Au (g/t)	Cu	Au
KM1929-23 & 24	141	Rougher Concentrate	16.9	2.94	1.92	93	93
		Final Concentrate	1.7	28.8	17.8	90	85
KM1929-25 & 26	200	Rougher Concentrate	17.7	2.69	1.78	92	93
		Final Concentrate	1.6	28.8	17.7	88	83

The copper and gold metallurgy appears relatively insensitive to the primary grind between 141 and 200 µm with similar recoveries of 93% for both copper and gold to the rougher concentrate at both primary grind sizes. Some of the increase in recovery compared with the open cycle test must be attributed in part to the increase in mass reporting to the rougher concentrate.

The losses to the first cleaner tails are 3.0% for copper, which is reasonable. The losses for gold are closer to 10% to the first cleaner tails but it is not possible to identify the reason for the losses.

16.4.2 G&T KM2228 Study – October 2008

Drill hole samples were received at G&T in two lots – one in May and the other in August of 2008 – for a total of 201 samples. The samples were combined into 13 composites listed as Ajax 1 through to 9, and Audra 1 though to 4. The main focus of this section will be to discuss results of the testing of Ajax ore. Results from the testing of Audra samples will not be evaluated but may be included as required for clarity and completeness.

The general test objectives were to provide the following:

- preliminary measurement of ore hardness
- copper head grade versus copper recovery relationship for Ajax samples
- general relationship between copper and gold recovery to the final concentrate
- determination of the amount and type of deleterious elements present in the final concentrate.

Further to this, an evaluation of the silver and molybdenum responses to flotation will be discussed.

Ore Characteristics

In Report No. KM2228, the mineralogical analysis focused on an Audra sample and will therefore not be discussed.

Feed Grade

The head analysis characterization of the nine Ajax composites gave results ranging from 0.07 to 0.70% Cu and <0.0 to 0.40 g/t Au. A summary of the main element assays is presented in Table 16.5.

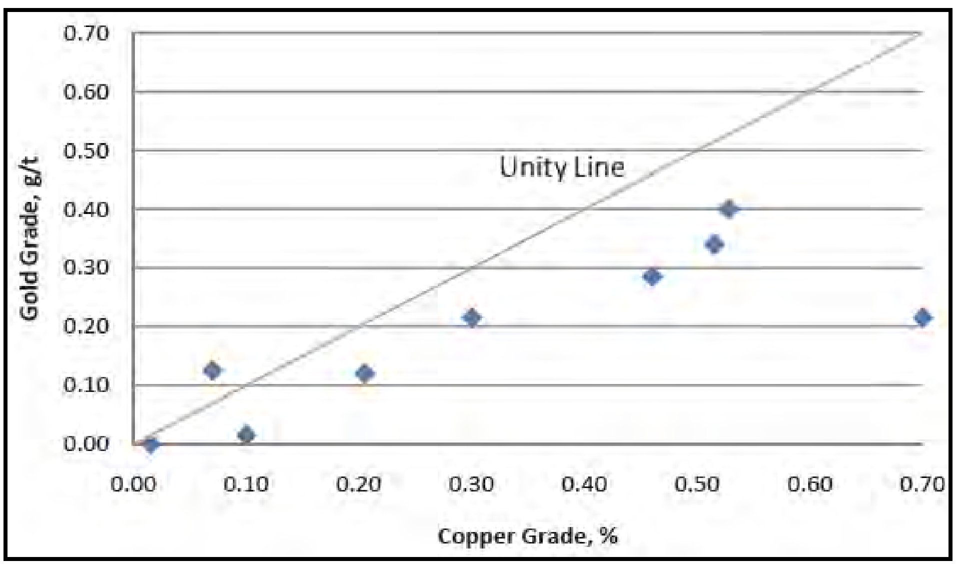
Table 16.5 Sample Feed Composition – KM2228 Study

Composite No.	Cu (%)	Au (g/t)	Fe (%)	S (%)
Ajax 1	0.52	0.34	3.0	0.74
Ajax 2	0.70	0.22	3.7	1.14
Ajax 3	0.07	0.13	10.1	0.21
Ajax 4	0.10	0.02	2.1	0.40
Ajax 5	0.02	<0.01	6.4	0.20
Ajax 6	0.53	0.40	5.4	0.74
Ajax 7	0.21	0.12	4.0	0.37
Ajax 8	0.30	0.22	5.2	0.38
Ajax 9	0.46	0.29	2.3	0.52

A copper-gold head grade correlation study was conducted and is shown graphically in Figure 16.8. Again, the unity line has been included for perspective.

There is some degree of correlation between the gold and copper feed grades for the nine Ajax samples tested, but there is limited information regarding the samples. The iron and sulfur assay values in the samples also vary; therefore, the response of the samples may differ greatly during process testing. Since the mineralogical study of the G&T report did not include Ajax, no conclusions can be drawn regarding the significance of these variations.

Figure 16.8 Copper vs. Gold Grades in Feed Samples – KM2228 Study



Again, the apparent copper-gold relationship should be viewed as an indicator only. In this case, the straight-line correlation coefficient over the range tested is only 0.66

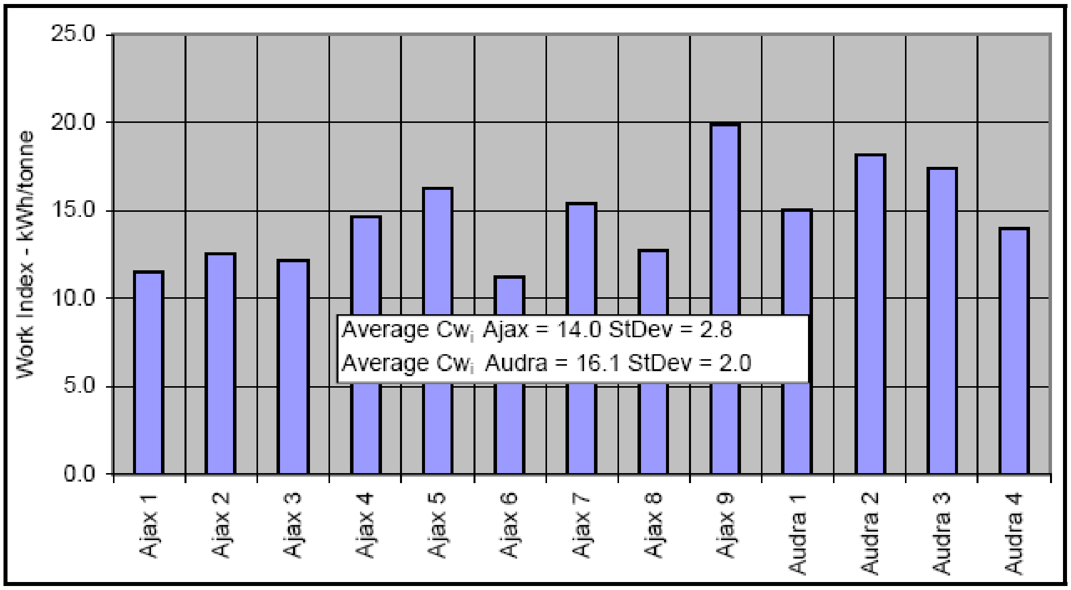
with the slope of the line at 0.47, which is significantly different from the previous apparent relationship.

GRINDABILITY

A standard Bond Ball Mill Work Index test was performed on the Ajax 9 sample with a reported result of 19.7 kWh/t. Comparative work indices for the remaining samples were determined using results from the grind test determinations, and comparing them with the size reduction of the Ajax 9 sample.

The results are graphically presented in Figure 16.9 for the outcomes from all the Audra and Ajax samples.

Figure 16.9 Comparative Ball Mill Work Index Values – KM2228 Study



The arithmetic average for the nine Ajax samples was calculated to be 14.0 kWh/t; however, it should be noted that the Ajax 9 sample represented an albitized Sugarloaf diorite, which constitutes 10% of the resource and had a much harder actual result of 19.7 kWh/t. The hardness of the Sugarloaf diorite, which represents 83% of the resource, will be tested further in the pre-feasibility stage testing program in order to adequately design the grinding circuit.

FLOTATION TESTS

The open circuit and locked cycle test program followed that of the previous study flowsheets, as reported in Section 16.4.1. The study was carried out to develop a preliminary copper feed grade versus copper recovery model, as well as for gold recovery. A brief analysis of silver and molybdenum will also be given.

The reagents scheme used in all flotation tests (reported in KM1929) was straightforward with PAX used as the collector, MIBC used as the frother, and lime used in the regrind and cleaners to adjust the pH value of the slurry.

Cleaner Flotation

Open circuit cleaner tests were carried out to develop a preliminary copper feed grade versus copper recovery model, as well as for gold recovery. The overall test results for the open circuit tests are summarized in Table 16.6.

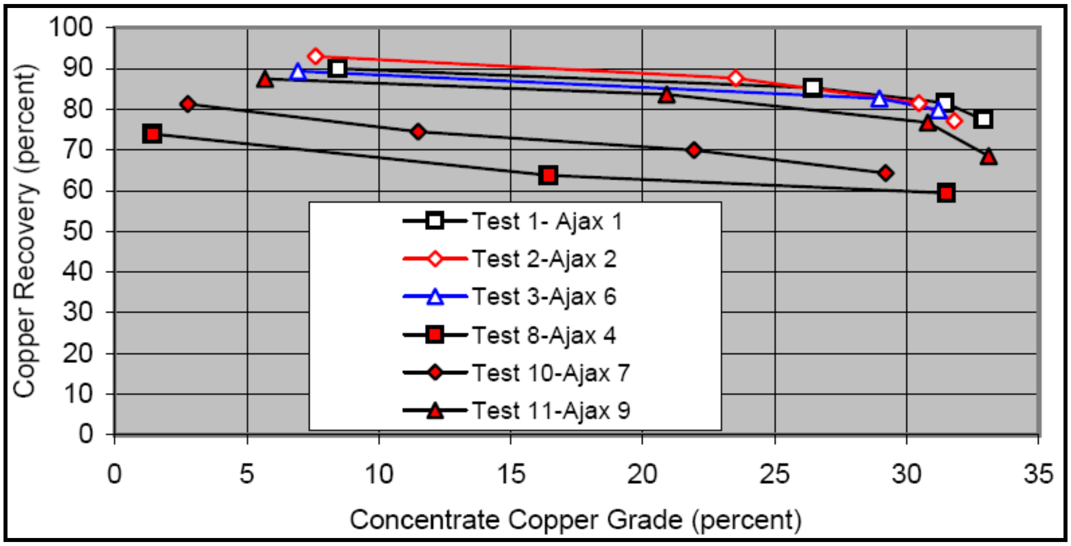
Table 16.6 Summary of Open Circuit Cleaner Test Results – KM2228 Study

Test No. KM2228	Sample ID	Grind Size P_{80} (µm)	Product	Mass (%)	Grade		% Recovery	
					Cu (%)	Au (g/t)	Cu	Au
01	Ajax 1	129	Feed	—	0.53	0.48	100.0	100.0
			Ro. Conc	5.6	8.45	7.28	90.0	86.1
			Final Conc	1.24	32.9	26.5	77.4	69.3
02	Ajax 2	157	Feed	—	0.73	0.23	100.0	100.0
			Ro. Conc	8.9	7.61	2.27	93.0	88.1
			Final Conc	1.77	31.8	9.97	77.1	76.8
03	Ajax 6	147	Feed	—	0.49	0.41	100.0	100.0
			Ro. Conc	6.4	6.94	5.35	89.4	81.9
			Final Conc	1.26	31.2	24.1	79.8	73.3
08	Ajax 4	125	Feed	—	0.09	0.10	100.0	100.0
			Ro. Conc	4.7	1.42	1.83	73.9	90.1
			Final Conc	0.17	31.5	42.1	59.4	75.3
10	Ajax 7	187	Feed	—	0.20	0.17	100.0	100.0
			Ro. Conc	5.9	2.77	2.77	81.3	94.6
			Final Conc	0.44	29.2	31.3	64.3	80.3
11	Ajax 9	202	Feed	—	0.45	0.38	100.0	100.0
			Ro. Conc	6.9	5.69	4.70	87.5	85.2
			Final Conc	0.92	33.1	30.9	68.5	75.4
13	Ajax 8	131	Feed	—	0.29	0.33	100.0	100.0
			Ro. Conc	4.9	5.04	5.20	86.7	77.7
			Final Conc	0.62	32.1	30.3	69.2	56.5
14	Ajax 4	67	Feed	—	0.10	0.09	100.0	100.0
			Ro. Conc	3.2	2.57	2.56	79.5	89.5
			Final Conc	0.22	29.6	30.8	63.9	75.3
15	Ajax 6	70	Feed	—	0.50	0.42	100.0	100.0
			Ro. Conc	10.6	4.42	3.53	94.1	90.3
			Final Conc	1.33	32.7	25.1	86.9	80.1

Copper and Gold Results

The results of the metallurgical performance for copper are graphically illustrated as grade recovery curves for the various Ajax samples in Figure 16.10. Two repeat tests were performed on Ajax 4 and Ajax 6 at a much finer primary grind with a P_{80} of approximately 70 µm with no discernable improvements in grade or recovery realized. Ajax 3 and Ajax 5 samples were not tested due to the low copper and gold mineralization in the samples.

Figure 16.10 Grade Recovery Curves – KM2228 Study



The majority of the Ajax samples tested produced copper recoveries between 80 and 85% at a concentrate grade of between 20 and 25% copper. Poor results were obtained on samples from Ajax 4 and Ajax 7, which had the lowest feed grades of the samples tested at 0.10 and 0.20% Cu, respectively. It is evident in this set of tests that the flotation procedure used varies from the previous test program (KM1929) in that a much lower mass is recovered to the rougher concentrate (namely, an average of 6% mass compared with the previous 12% mass). The lower mass to the rougher affects the rougher recovery, which ranges from 73.9 to 94.1% copper recovery as compared with the previous 85 to 95% copper recovery. This change in the mass of rougher concentrate recovered has affected the metallurgical performance by lowering the overall copper recovery for the tests to between 64.3 and 77.4%. This excludes the low recovery result obtained for Ajax 4 at 59.4%, and the finely ground samples in Tests 14 and 15 at 63.9% and 86.9%, respectively.

Four locked cycle tests were performed on Ajax samples, or a blend of two samples. The results of the locked cycle tests are summarized in Table 16.7. The results for silver have been included where available.

Table 16.7 Summary of Locked Cycle Test Results – KM2228 Study

Test No. KM2228-	Sample ID	Grind P80 (µm)	Product	Mass (%)	Grade			% Recovery		
					Cu (%)	Au (g/t)	Ag (g/t)	Cu	Au	Ag
23	Ajax 7	103	Feed	—	0.19	0.18	n/a	100.0	100.0	—
			Ro. Conc	6.00	2.63	2.76	n/a	83.8	92.4	—
			Final Conc	0.42	30.9	35.0	n/a	68.8	81.7	—
24	Ajax 9	64	Feed	—	0.41	0.32	1.37	100.0	100.0	100.0
			Ro. Conc	6.33	5.75	4.64	9.04	88.6	91.4	41.8
			Final Conc	1.00	33.3	26.2	39.96	80.9	81.5	29.2
25	Ajax 2/6	161	Feed	—	0.60	0.34	1.49	100.0	100.0	100.0
			Ro. Conc	10.70	5.21	3.00	6.05	92.8	93.5	43.2
			Final Conc	1.68	31.2	17.8	28.0	87.5	87.3	31.5
26	Ajax 7/9	217	Feed	—	0.32	0.31	1.11	100.0	100.0	100.0
			Ro. Conc	6.70	4.16	4.21	7.61	86.0	90.9	52.1
			Final Conc	0.84	30.6	31.1	34.0	79.1	84.1	25.5

When comparing the results from the open cycle tests to the locked cycle tests, the results show that recovery differences are not consistent. When comparing Ajax 7 test results (Tests 10 and 23), a recovery increase of 0.9% was shown for copper. However, a dramatic increase was observed on the combined sample of Ajax 2/6 (Tests 2/3 and 25) with an increased recovery of 12% when the locked cycle test data was compared to the open cycle test data. As a result of this variability, a meaningful average recovery increase attributable to the locked cycle test procedure cannot be calculated.

An analysis of the locked cycle test data presented in Table 16.7 has enabled metal grades and recoveries to be calculated in accordance with the variations in ore feed grade. For the purpose of the exercise, results from locked cycle Tests 23, 25, and 26 will be used; however, the results from Test 24 will be omitted because of test stability issues as well as the much finer primary grind employed. Test 23, although not completely stable for gold, allows for a point on the graph to be included at a lower feed grade for the copper analysis. The stability of the locked cycle tests is not good, especially with regards to gold recovery, but the results of Test 23 have been used in the analysis to determine the recovery of copper and gold at varying feed grades of copper.

By graphing the results of the three locked cycle tests, the following correlation was developed for copper recovery and feed grade at a copper concentrate grade of 30% Cu.

The equation obtained, and the correlation coefficient is shown here:

- Equation 1:
  - Copper: $y = -120.08\ x^2 + 140.47x + 46.446$.

where *x* is the copper feed grade as % Cu, and *y* is the % copper recovery. The correlation coefficient is $R^2 = 1.0$.

Using Equation 1, and considering a feed grade of 0.36% Cu, a copper recovery of 81.45% for a 30% copper concentrate grade is anticipated.

When comparing open cycle and locked cycle test data available for the gold values, a correlation between the gold recovered to the final concentrate compared with the gold available in the feed does not appear to exist. Due to the instability of the gold performance evident in the locked cycle test program, certain qualifications will made with regard to the data analysis. In order to find a correlation with the limited data available, a graph was created for gold recovery to the final concentrate versus copper recovery to the final concentrate for the three locked cycle tests. This relationship was developed at a copper concentrate grade of 30% Cu.

The relationship obtained is as follows:

- Equation 2:
  - Gold: $y = 0.297x + 61.063$.

where *x* is the copper feed grade as % Cu, and *y* is the % copper recovery. The correlation coefficient obtained for this equation is $R^2 = 0.98$.

This correlation is significantly better than any seen in the open cycle tests, and is likely due in part to the limited sample set. The resulting gold recovery determined from this data is 85.3% for a copper recovery of 81.45%. The copper results indicated good metallurgical stability and will be considered reliable, but the gold performance was shown to be unstable, as mentioned before. Also, the gold recovery exceeds the copper recovery obtained.

The locked cycle tests with the best stability and nearest in grind size to the target grind of a P_{80} of 150 µm were Tests 25 and 26. A second relationship was developed using only these two data points, which consisted of blended samples. Since only two tests are used, a linear correlation is made and can only be used for data points within the range of the feed grade to the samples tested, namely between 0.30 and 0.60% Cu.

The new copper relationship for a 30% copper concentrate grade is as follows:

- Equation 3:
  - Copper: $y = 30x + 69.5$.

where *x* is the copper feed grade as % Cu, and *y* is the % copper recovery. The correlation coefficient is unity.

The calculated copper recovery is 80.3% for a 30% copper concentrate grade, and the calculated gold recovery is 84.0%. Again, the calculated gold recovery exceeds the copper recovery value. Since the gold shows unstable tendencies in all the locked cycle tests, an artificial constraint will be used such that gold recovery does not exceed the copper recovery. Therefore, a somewhat arbitrary gold recovery of 80%, which is much closer to the calculated copper recovery of 80.3%, will be used.

The copper and gold recoveries were requested at a copper concentrate grade of 25% for purposes of a financial analysis. Using the graphs of the grade recovery curves for the two locked cycle tests, the recovery values for a 25% copper concentrate were developed and plotted. The equation for the copper recovery and feed grade at a 25% Cu concentrate grade was found to be:

- Equation 4:
  - Copper: $y = 32.591x + 72.732$.

where *x* is the copper feed grade as % Cu, and *y* is the % copper recovery. The correlation coefficient is unity.

By using Equation 4, with the anticipated feed grade of 0.36% Cu, a copper recovery of 84.5% was calculated.

Again, as a result of the erratic gold results, concentrate grade recovery curves could not be developed to show changes in recovery that could be attributed to the lower target copper concentrate grade of 25% copper. Therefore, the original gold argument will be used, as was developed in Equation 2.

Using Equation 2, the calculated gold recovery at an 84.5% copper recovery is 86.2%. However, due to the factors previously listed regarding the stability of the test, the gold recovery will again not be allowed to exceed the value of the copper recovery. Therefore, the anticipated gold recovery will be increased incrementally from the 80% value that had been introduced earlier. The anticipated gold recovery is therefore 81.3% (86.2 - 4.9) when the feed grade is 0.36% Cu and the copper concentrate is targeted at 25% Cu.

The grade of the gold content in the copper concentrate varied significantly between 10 and 35 g/t Au over the full range of tests, and between 17.8 and 35.0 g/t Au for the locked cycle tests. The anticipated gold grade will be taken as the average of the gold values recovered to the copper concentrate in the locked cycle tests at 28 g/t Au.

In summary, the copper recoveries have been calculated using the results of two tests (Tests 25 and 26), and this decision was based on test stability, primary grind size, and composite sample make-up. In contrast, the gold calculations used the results from three tests (Tests 23, 25, and 26) since these results were considered to be reliable considering the limited number of tests conducted. The following results were determined:

- For a postulated feed grade of 0.36% copper containing 0.28 g/t Au, the anticipated recoveries at a copper concentrate value of 25% Cu are:
  - copper recovery 84.5%
  - gold recovery 81.3%
  - gold grade of 28 g/t Au in the copper concentrate.

Silver Results

A limited analysis of the silver deportment was conducted. The feed grades of silver in the samples tested were between 1.0 and 1.5 g/t Ag. Therefore, a 'zero-zero' point was included on a silver feed grade versus silver recovery graph in order to create a truer correlation, which could then be used with a lower copper head grade. The data used in the correlation was at a copper concentrate grade of 30% Cu with 31 g/t Ag in the copper concentrate from locked cycle tests 24, 25, and 26. The equation developed was as follows:

- Equation 5:
  - Silver: $y = -4.8842x^2 + 28.262x + 0.0068$.

where *x* is the copper feed grade as % Cu, and *y* is the % silver recovery. The correlation coefficient is $R^2 = 1.0$.

Using an anticipated head grade of 0.4 g/t Ag, Equation 5 yields a silver recovery of 10.5%. It is anticipated that, at the lower copper concentrate grade of 25% Cu, the silver grade will be approximately 30 g/t Ag.

MAGNETIC AND GRAVITY SEPARATION

Gravity concentration and magnetic separation testing was also conducted on the composite samples to examine the possibility of producing a high-grade magnetite concentrate.

The two Ajax composite samples chosen for magnetic separation testing using a Davis Tube were those with the highest iron content, namely Ajax 3 and Ajax 5 samples. Only iron assays were done on the test products and the results are shown in Table 16.8.

Table 16.8 Summary of Results of Magnetic Separation Tests – KM2228 Study

Test KM2228	Composite	Grind Size P_{80} (µm)	Feed Grade (% Fe)	Magnetic Concentrate		
				Wt (%)	Grade (% Fe)	Recovery (% Fe)
19	Ajax 5	127	5.8	34.1	12.7	74.3
20	Ajax 3	43	10.2	10.8	64.2	67.9
21	Ajax 5	21	6.4	14.5	26.2	59.5
22	Ajax 3	81	9.7	11.7	58.7	70.6

Both Ajax 3 and Ajax 5 samples responded to the magnetic separation, although the response for the Ajax 5 sample was poor. The copper and gold feed mineralization of these samples was low with 0.07 and 0.01% Cu, and 0.13 and <0.01 g/t Au, respectively. Because of this, it is considered to be unlikely that this material will be processed for copper and gold recovery.

A further study of magnetic response was conducted on 39 assay reject samples received at G&T in August 2008. The samples are not identified as to their property location. The results were published in a Memorandum dated December 24, 2008 and show that concentrate grades as high as 79% Fe could be obtained with 67% of the samples producing a concentrate of over 50% Fe. The recovery of Fe ranged from 3% to 85% with 74% of the samples achieving recoveries of over 70%. Of note is that the average feed assay of the samples tested was 11.9% Fe, which is considerably higher than any of the Ajax composites analyzed in this study that had iron feed assays ranging between 2.0 and 5.4% Fe.

An alternative separation method employed during testing was that of gravity separation via centrifugal concentration followed by panning, which yielded the results shown in Table 16.9. A sulphur analysis was conducted on the products and the results indicated that some of the iron was (probably) present as a sulphide (pyrite) with the bulk being magnetite, which was to be expected. Gold assays were conducted and are shown in Table 16.9, but no copper assays were done on the test products.

Once again an iron-rich magnetic concentrate can be formed, although the recovery of the iron species using this separation method does not allow for an acceptable overall recovery of iron. It was noted that the head mineralization for copper and gold is unsatisfactory, as shown in Table 16.5, and it is unlikely these samples will be processed for copper and gold.

What is evident from the results is the relatively high recovery and upgrading of gold realized from a low feed grade sample with a limited sample feed size of 2 kg. This observation warrants further study into gravity gold recovery on the higher feed grade samples.

Table 16.9 Summary of Results from Gravity Separation – KM2228 Study

Test KM2228-	Composite	Feed		Pan Concentrate		% Recovery	
		Au (g/t)	Fe (%)	Au (g/t)	Fe (%)	Au	Fe
16	Ajax 3	0.2	10.7	8.8	59.6	41.6	5.9
17	Ajax 5	0.1	6.6	2.4	37.4	51.2	6.2

The testwork results show that there is the possibility of producing a magnetic concentrate. However, the iron feed grades appear to have an impact upon the achievable recovery and concentrate grade achievable. In the absence of a specific objective, it is uncertain whether the test results can be used for any purpose other than being indicative of the ability to produce a magnetite concentrate.

16.4.3 G&T EXCEL FILES, KM2350 TEST PROGRAM – FEBRUARY 2009

MOLYBDENUM TESTWORK

Preliminary testwork was performed to determine the feasibility of recovering molybdenum for inclusion in the process design of the plant. The samples tested were unidentified but were similar to the Ajax samples previously investigated.

Two locked cycle tests were conducted to determine whether further investigation was warranted at this stage of the project. The overall results obtained are shown in Table 16.10. The results indicate that molybdenum can be recovered into a bulk copper-molybdenum concentrate, but that the recoveries for these tests are relatively low. No molybdenum cleaning stages, separation, or upgrading of the molybdenum present in the bulk copper-molybdenum concentrate was undertaken in this study.

Table 16.10 Molybdenum Locked Cycle Test Result Summary – KM2350

Test #	Grind/ Regrind P_{80} (µm)	Product	Concentrate				
			Mass (%)	Grade		% Recovery	
				% Cu	% Mo	Cu	Mo
KM1930-11	152,14	Feed		0.91	0.015		
		Bulk 2nd Cleaner Concentrate	2.6	30.8	0.24	89.6	41.9
		Bulk 3rd Cleaner Concentrate	2.5	32.8	0.21	89.2	34.2
KM1929-12	122,15	Feed		0.37	0.031		
		Bulk 2nd Cleaner Concentrate	2.0	17.1	1.10	92.7	69.5
		Bulk 3rd Cleaner Concentrate	1.6	24.5	1.31	88.5	55.1

The primary conclusions from initial testing were:

- Mo feed grades below 0.02% are unlikely to produce a sufficiently high Mo content worth pursuing in a bulk concentrate, with respect to a Cu-Mo separation.
- There may be a variation in the mode of occurrence of molybdenum and its association with copper in the feed that could affect its metallurgical performance.

Although preliminary in nature, the results are not encouraging. The highest molybdenum recovery was 70% obtained in the bulk concentrate at a rather low copper grade concentrate of 17% Cu. The molybdenum recovery into an at-grade copper concentrate is only 42%.

16.4.4 CONCLUSIONS

The initial batch-flotation testwork results targeted a rougher flotation mass recovery of 12%. However, the subsequent batch-flotation test program results indicated mass recoveries which varied between 3.2% and 10.6% for the individual Ajax samples. The locked-cycle test program that followed gave results with mass recoveries which ranged from 6.0% to 10.7%. This reduced mass recovery, relative to 12% as initially adopted, will result in a slightly lower overall recovery of both copper and gold. A more consistent approach to the mass recovery of a future testwork program will be required to facilitate the evaluation of the results obtained.

The presence of palladium has been reported but its potential for exploitation has not been determined. The presence of silver has been documented but its potential contribution to the value of the copper concentrate produced has not been determined. Molybdenum has been reported to occur throughout the deposit but higher grade areas being confined to specific geological locations. The metallurgical recovery of molybdenum has not been conclusively tested and its potential for contributing financially to the project remains untested.

The Ajax process plant design is based on the results obtained from testwork reviewed from the metallurgical testing of samples of Ajax 2, Ajax 6, Ajax 7, and Ajax 9, which originate from the area designated as potential plant feed material with a feed grade of 0.3% Cu and 0.23g/t Au.

The results show that saleable flotation concentrate products can be produced from conventional comminution and flotation processes. The plant feed will be crushed and milled, then subjected to flotation to produce a high grade copper concentrate containing gold, namely a 25% Cu concentrate with 28g/t Au, and respective recoveries of 84.5% and 81.3%. Additional testwork is recommended as outlined in Section 16.6.

16.4.5 RECOMMENDATIONS

The following metallurgical testwork program is recommended in order that the requirements for a Pre-feasibility Study may be met:

- mineralogy on each of the various ore types to define the mineral composition and mineral fragmentation properties
- grindability testing including (but not limited to) further Bond Ball Mill Work Index tests, as well as Crushability Index and Abrasion Index determinations to confirm the ore hardness for the various ore types. The grindability testwork is to include semi-autogenous grinding (SAG) tests and supplementary Bond Ball Mill Work Index tests on the main rock type, namely the Sugarloaf diorite.
- specific gravity and bulk density determinations of the feed material as well as concentrate
- open circuit flotation testing on sample material of all three potentially significant ore types to define the primary grind size and the regrind particle size required
- open circuit flotation tests to refine the test conditions with respect to reagent type and quantity
- locked cycle flotation testing, at least in duplicate, for each of the three major ore types; optimal conditions will be required to simulate continuous circuit operation
- minor/impurity element determinations are required on the locked cycle concentrates produced to characterize the presence of potential smelter penalty elements
- standard settling tests for the determination of a thickener area for the tailings and concentrate products
- standard filtration testing of the final concentrate produced.

Further detailed variability tests on the mineralogy, and the metallurgical aspects of grinding, flotation, dewatering and filtration, as well as gravity concentration within the grinding and/or flotation circuit, will ultimately have to be undertaken to take the project to the Feasibility Stage.

16.5 MINERAL PROCESSING

16.5.1 INTRODUCTION

The Ajax concentrator has been designed to process a nominal 60,000 t/d of copper-gold porphyry ore. The concentrator will produce a marketable copper concentrate of 25% Cu containing 28 g/t Au.

16.5.2 SUMMARY

The unit processes selected were based on the results of metallurgical testing performed at G&T and described earlier in this section, along with resources set out by Abacus. The metallurgical processing procedures have been designed to produce a saleable high grade copper-gold concentrate. Since the economic viability of the recovery of molybdenum has not been proven to date, the recovery process for molybdenum has been excluded from the process design. The inclusion of a molybdenum recovery section would be a relatively straightforward undertaking.

The treatment plant will consist of a crushing stage and comminution, followed by a flotation process to recover and upgrade copper from the feed material. As shown in the simplified flowsheet (Figure 16.11), the flotation concentrate will be thickened and filtered and sent to the concentrate stockpile for subsequent shipping to smelters.

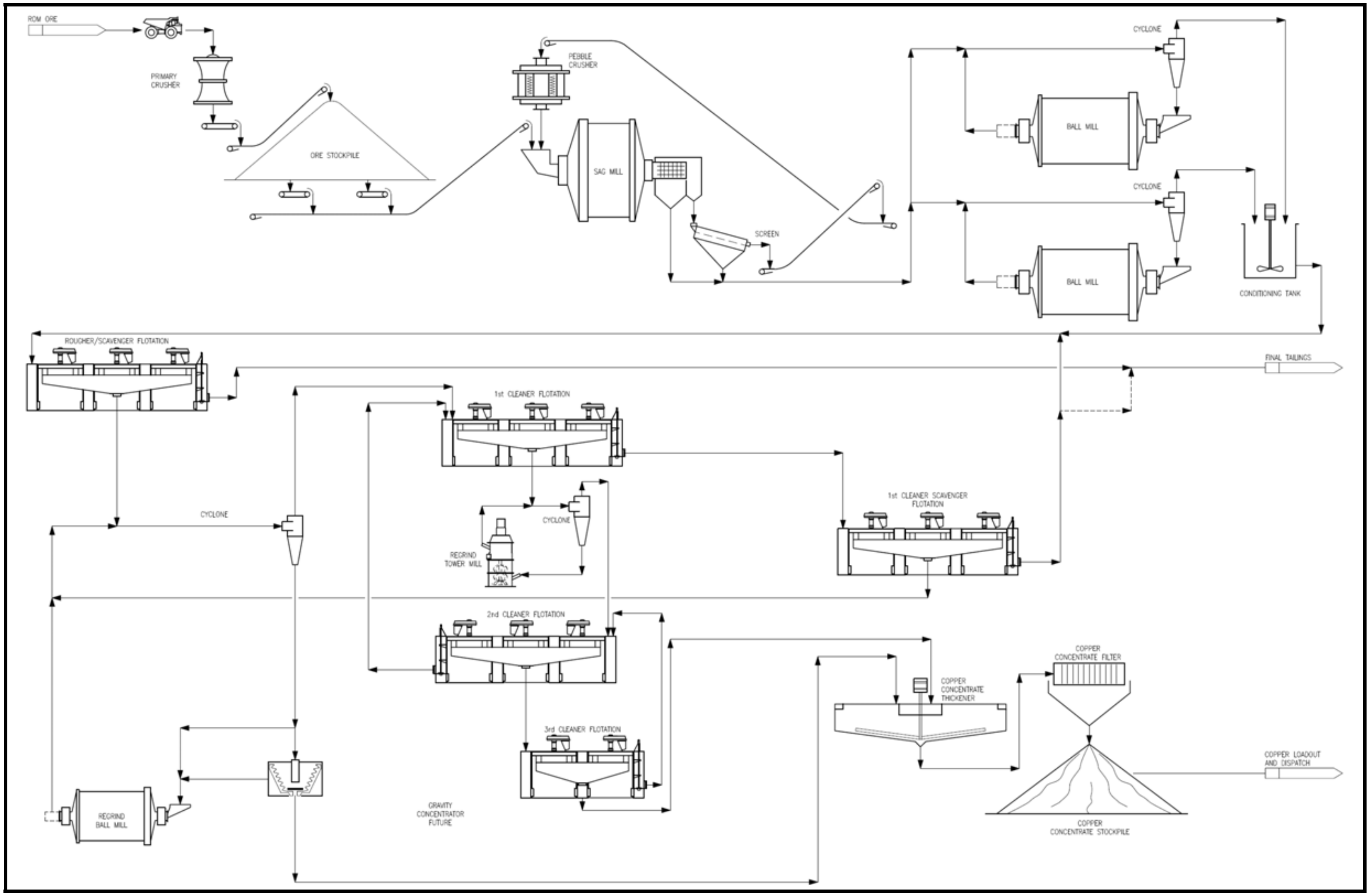
The final flotation tailings will be disposed of using a conventional tailings pond. Process water will be recycled from the tailings pond. Fresh water will only be used for gland service and reagent preparation.

The process plant will consist of the following unit operations and facilities:

- run-of-mine (ROM) ore receiving
- primary crushing
- crushed ore stockpile
- ore reclaim
- a SAG and ball mill grinding circuit incorporating cyclones for classification
- SAG mill pebble crushing circuit
- copper rougher and scavenger flotation
- copper cleaner flotation
- copper concentrate thickening, filtration, and dispatch
- tailings disposal to a tailings pond.

The simplified flowsheet is shown in Figure 16.11. The detailed process flowsheets are located in Section 1.2 of the Supporting Documents (Drawings A00-09-002 to A0-09-13).

Figure 16.11 Simplified Process Flowsheet



16.5.3 MAJOR DESIGN CRITERIA

The concentrator has been designed to process 60,000 t/d, equivalent to 21,900,000 t/a. The major criteria used in the design are outlined in Table 16.11. The complete design criteria are included in Section 5.1 of the Supporting Documents.

Table 16.11 Major Design Criteria

Criteria	Unit	
Operating Year	d	365
Crushing Availability	%	70
Grinding and Flotation Availability	%	92
Primary Crushing Rate	t/h	3,572
Milling & Flotation Process Rate	t/h	2,717
SAG Mill Feed Size, 80% Passing	µm	150,000
SAG Mill Transfer Size, 80% Passing	µm	1,250
Ball Mill Grind Size, 80% Passing	µm	150
Ball Mill Circulating Load	%	300
Bond Ball Mill Work Index	kWh/t	19.7
Bond Abrasion Index	g	0.26
Concentrate Regrind Size, 80% Passing	µm	15

The design parameters are based on testwork results obtained by G&T, particularly from the tests performed in 2008 using the results from Report No. KM 2228.

The grinding mills were sized based on the Bond Work Index data for SAG and ball mills. The regrind mills were sized using the conventional Bond Work Index equation for ball mills, and using the standard tower mill to ball mill efficiency factor.

The flotation cells were sized based on the optimum flotation times as determined during the laboratory testwork. Typical scale-up factors have been applied.

16.5.4 PLANT DESIGN

OPERATING SCHEDULE AND AVAILABILITY

The primary crushing and process plant will be designed to operate on the basis of two 12-hour shifts per day, for 365 d/a.

The primary crusher overall availability will be 70% and the grinding and flotation circuit availability will be a running time of 92%. This will allow for a potential increase in crushing rate, and will allow sufficient downtime for the scheduled and unscheduled maintenance of the crushing and process plant equipment.

16.5.5 Process Plant Description

Primary Crushing and Crushed Ore Stockpile and Reclaim

A conventional gyratory crusher facility will be designed to crush ROM ore to reduce the size of the rocks in preparation for the grinding process at an average rate of 3,572 t/h.

The major equipment and facilities in this area includes:

- dump pocket
- stationary grizzly
- hydraulic rock breaker
- gyratory crusher – 1,525 mm x 2,794 mm (60″ x 110″)
- apron feeders
- crushed ore stockpile, 60,000 t capacity
- reclaim apron feeders
- conveyor belts, metal detectors, self-cleaning magnets, and belt tear detectors
- belt scale
- dust collection system.

The ROM ore will be trucked from the open pit to the primary crusher by 240-t haul trucks. The ore will be reduced to 80% minus 150 mm using a gyratory crusher. A rock breaker will be installed to break any oversize rocks retained by the static grizzly.

The crusher product will be discharged into a 360-t dump pocket and then onto an apron feeder. The apron feeder discharge will be conveyed to the crushed ore stockpile.

The crushed ore stockpile will have a live capacity of 60,000 t. The ore will be reclaimed from this stockpile by apron feeders at a nominal rate of 2,717 t/h. The apron feeders will feed a 960 mm wide conveyor, which in turn feeds the SAG mill. The conveyor belt will be equipped with a belt scale.

The crushed ore facility and the crushed ore stockpile will be equipped with a dust collection system to control fugitive dust that will be generated during conveyor loading and the transportation of the ore.

Grinding and Classification

The grinding circuit will consist of a SAG/ball mill combination circuit. It will be a two-stage operation with the SAG mill in closed circuit with a pebble crusher, and the ball mills in closed circuit with the classifying cyclones. The SAG mill will be equipped with pebble ports to remove pebbles coarser than 65 mm. The grinding will be conducted as a wet process at a nominal rate of 2,717 t/h of material. The grinding circuit will include:

- conveyor feed belt
- conveyor belt weigh scale
- SAG mill – 12.1 m diameter x 7.62 m long (40 ft x 25 ft)
- two ball mills – 7.62 m diameter x 12.5 m long each (25 ft x 41 ft)
- two pebble crushers – 1,308 mm diameter each (4.29 ft)
- SAG mill discharge pumpbox
- ball mill feed distributor box
- two ball mill discharge pumpboxes
- two sets of cyclone feed slurry pumps
- two cyclone clusters
- mass flow meter
- particle size analyzer
- sampler system.

The ore from the crushed ore stockpile will be reclaimed under controlled feed rate conditions using apron feeders. These feeders will discharge the material onto a conveyor belt feeding the SAG mill. A belt scale will control the feed to the SAG mill. Water will be added to the SAG mill feed material to assist the grinding process. The SAG mill will operate at a critical speed of 75%.

The SAG mill discharge end will be equipped with 65 mm pebble ports to remove the critical size material. The mill discharge will be screened by the mill trommel. The oversize material will be conveyed via transfer conveyors to the pebble crushers. The cone crushers will crush the pebbles to a P_{80} of 15 mm. The crushed material will be returned to the conveyor belt feeding the SAG mill for further grinding. The trommel underflow will be discharged into the SAG mill discharge pumpbox.

The slurry in the SAG mill discharge pumpbox will be pumped to a distribution box to equally split the slurry into two portions. The split slurries will report separately to two cyclone feed pumpboxes.

Each ball mill will be operated independently in closed-circuit with a cyclone cluster. The product from each ball mill will be discharged into its separate cyclone feed pumpbox combining with a portion of the SAG mill discharge to become the cyclone feed. The slurry in each mill discharge pumpbox will be pumped to a cyclone cluster for classification. The cut size for the cyclones will be a P_{80} of 150 µm, and the circulating load to the individual ball mill circuits will be 300% with the cyclone underflow returning to the ball mill as feed material.

The new feed to each ball mill circuit will be 1,359 t/h and the combined total of the two mills (2,718 t/h) will constitute the feed rate to the copper flotation circuit. The ball mills will operate at a critical speed of 75%. Dilution water will be added to the grinding circuit as required.

The cyclone overflow from both classification circuits will be discharged into the copper flotation conditioning tank ahead of the flotation process. The pulp density of the cyclone overflow slurry will be approximately 33% solids.

Provision will be made for the addition of lime to the SAG mill for the adjustment of the pH of the slurry in the grinding circuit prior to the flotation process.

Grinding media will be added to the mills in order to maintain the grinding efficiency. Steel balls will be periodically added to each mill using a ball charging kibble.

FLOTATION CIRCUIT

The milled ore will be subjected to flotation to recover the targeted minerals into a high-grade copper concentrate containing gold.

Copper Flotation Circuit

The copper flotation circuit will include the following equipment:

- conditioning tank – 7.7 m diameter x 8.3 m
- flotation reagent addition facilities
- rougher flotation tank cells – 6 x 300 m^3 each
- scavenger flotation tank cells – 6 x 300 m^3 each
- regrind ball mill – 5,030 mm diameter x 6,400 mm long (16.5 ft x 21.0 ft)
- two classification cyclone clusters (one for each regrind stage)
- first cleaner flotation tank cells – 5 x 50 m^3 each
- first cleaner scavenger flotation tank cells – 4 x 50 m^3 each
- regrind tower mill – 13.46 m high x 4.09 m long x 4.52 m wide
- second cleaner flotation tank cells – 5 x 10 m^3 each
- third cleaner flotation tank cells – 4 x 10 m^3 each

- pumpboxes and standpipes
- slurry and concentrate pumps
- two particle-size analyzers (one for each regrind stage)
- sampling system.

The cyclone overflow from the grinding circuit will be combined to feed the flotation circuit conditioning tank by gravity flow from the cyclone clusters. The slurry will be conditioned in the copper conditioning tank at the design feed rate of 2,718 t/h. The first cleaner scavenger tailings will report to the conditioning tank for reprocessing. Flotation reagents will be added to the conditioning tank as defined through testing. The flotation reagents added will be the collector, PAX, and the frother, MIBC. Lime will be used as a pH modifier throughout the process as required. Provision will be made for the staged addition of the reagents in the cleaner stage of the flotation circuit.

The conditioned slurry will overflow the conditioning tank into the rougher flotation tank cells. Rougher and scavenger concentrates will be processed and discharged into the first regrind ball mill circuit cyclone feed pumpbox from where it will be pumped to the regrind classification cyclone. The scavenger tailings will be sampled automatically prior to discharge into the final tailings pumpbox. This stream will constitute the final tailings leaving the plant.

To completely liberate the fine-sized grains of the copper minerals from the gangue constituents and to enhance upgrading of the copper concentrate, stage regrinding and cleaning will be incorporated in the cleaner flotation circuit.

The rougher regrind circuit cyclone will separate the finely ground flotation concentrate into a cyclone overflow product according to the design particle size P_{80} of 60 µm. The coarser cyclone underflow will be the feed for the rougher regrind mill. The regrind mill will be a ball mill. The ball mill will discharge into the cyclone feed pumpbox together with the rougher and scavenger flotation concentrates and the first cleaner scavenger tailings. This will constitute the feed for classification by the cyclone.

The cyclone overflow from the rougher/scavenger regrind circuit will combine with the second cleaner tailings as feed to the first cleaner stage. The first cleaner concentrate will report to the cleaner regrind cyclone feed pumpbox where it will join the regrind mill discharge for pumping to the cleaner regrind cyclone for sizing. The cleaner regrind mill will be a tower mill. The cyclone overflow product will have a design particle size P_{80} of 20 µm. The concentrate from the first cleaner stage will feed the second cleaner flotation stage with the second cleaner concentrate reporting to the third cleaner flotation stage. The concentrate from the third cleaner flotation stage will be the final copper concentrate and will feed directly to the copper concentrate thickener. The tailings from the third cleaner stage will be returned to join the feed to the second cleaner stage. Tailings from the second cleaner flotation stage will be recycled back to the first cleaner flotation stage. Tailings from the first cleaner scavenger flotation stage will report to the conditioning tank. Operationally, there will be the option of directing the first cleaner scavenger tailings to the final tailings pumpbox.

Conventional tank flotation cells will be used for the entire copper flotation circuit.

Provision will be made for the use of copper concentrate thickener overflow water to be re-used in the grinding circuit as dilution water providing this does not have a deleterious effect on the flotation of the copper and gold minerals.

Concentrate Handling

The cleaner flotation concentrate will be thickened, filtered, and stored prior to shipment to the smelter. The concentrate handling circuit will have the following equipment:

- concentrate thickener
- concentrate thickener overflow standpipe
- concentrate slurry pumps
- process water tank and pump
- concentrate stock tank
- concentrate filter press
- concentrate storage and dispatch facility.

The concentrate produced will be pumped from the final cleaner flotation stage to the concentrate thickener. Flocculant will be added to the thickener feed to aid the settling process. The thickened concentrate will be pumped to the concentrate stock tank using thickener underflow slurry pumps. The underflow density will be 60% solids. The concentrate stock tank will be an agitated tank that will serve as the feed tank for the concentrate filter. The concentrate filter will be a filter press unit. Since filtration with a filter press unit will be a batch process, the concentrate stock tank will also act as a surge tank for the filtration operation. The filter press will dewater the concentrate to produce a final concentrate with a moisture content of about 8%. The filtrate will be returned to the concentrate thickener. The filter press solids will be discharged to the concentrate stockpile. The dewatered concentrate will be stored in a designated storage facility. The concentrate will periodically be loaded into trucks for dispatch off the property.

The thickener overflow solution from the concentrate thickener will be collected in the process water tank for recycling within the grinding circuit. Excess overflow solution will be discharged to the process water pond.

Tailings Handling

The flotation tailings from the flotation circuit will be the final plant tailings.

The final tailings will be sent to a tailings pond for final deposition. The tailings handling circuit will have the following equipment:

- pumpbox
- slurry pumps
- reclaim water barge and pumps.

Solution from the concentrate thickener overflow and the tailings thickener will normally be pumped to the process water tank for recycling. In the event that there will be an excess of process solution, or a build-up of flotation reagents, the water will be discharged to the process water pond for later reclamation. This will allow the various reagents to oxidize and/or degrade prior to returning the water to the plant as reclaimed process water.

Reagent Handling and Storage

Various chemical reagents will be added to the process slurry stream to facilitate the copper flotation process. The preparation of the various reagents will require:

- a bulk handling system
- mix and holding tanks
- metering pumps
- a flocculant preparation facility
- a lime slaking and distribution facility
- eye-wash and safety showers
- applicable safety equipment.

Various chemical reagents will be added to the grinding and flotation circuit to modify the mineral particle surfaces and enhance the floatability of the valuable mineral particles into the copper-gold concentrate product. Fresh water will be used in the making up or the dilution of the various reagents that will be supplied in powder/solids form, or which require dilution prior to the addition to the slurry. These solutions will be added to the addition points of the various flotation circuits and streams using metering pumps. The PAX collector reagent will be made up to a solution of 10% strength in a mixing tank, and then transferred to the holding tank, from where the solution will be pumped to the addition point. The frother reagent, MIBC, will not be diluted and will be pumped directly from the bulk containers to the point of addition using metering pumps.

Flocculant will be prepared in the standard manner as a dilute solution with 0.30% solution strength. This will be further diluted in the thickener feed well.

Lime, as quick-lime, will be delivered in bulk and will be off-loaded pneumatically into a silo. The lime will then be prepared in a lime slaking system as 20% concentration slurry. This lime slurry will be pumped to the points of addition using a closed loop system. The valves will be controlled by pH monitors that will control the amount of lime added.

To ensure spill containment, the reagent preparation and storage facility will be located within a containment area designed to accommodate 110% of the content of the largest tank. In addition, each reagent will be prepared in its own bunded area in order to limit spillage and facilitate its return to its respective mixing tank. The storage tanks will be equipped with level indicators and instrumentation to ensure that spills do not occur during normal operation. Appropriate ventilation, fire and safety protection, and Material Safety Data Sheet (MSDS) stations will be provided at the facility.

Each reagent line and addition point will be labelled in accordance with Workplace Hazardous Materials Information Systems (WHMIS) standards. All operational personnel will receive WHMIS training, along with additional training for the safe handling and use of the reagents.

Assay and Metallurgical Laboratory

The assay laboratory will be equipped with the necessary analytical instruments to provide all routine assays for the mine, the concentrator, and the environment departments. The most important of these instruments includes:

- fire assay equipment
- atomic absorption spectrophotometer (AAS)
- x-ray fluorescence spectrometer (XRF)
- Leco furnace.

The metallurgical laboratory will undertake all necessary testwork to monitor metallurgical performance and, more importantly, to improve process flowsheet unit operations and efficiencies. The laboratory will be equipped with laboratory crushers, ball and stirred mills, particle size analysis sieves, flotation cells, filtering devices, balances, and pH meters.

Water Supply

Two separate water supply systems for fresh water and process water will be provided to support the operation.

Fresh Water Supply System

Fresh and potable water will be supplied to a fresh/fire water storage tank from the pits and from wells. Fresh water will be used primarily for the following:

- fire water for emergency use
- cooling water for mill motors and mill lubrication systems
- gland service for the slurry pumps
- reagent make-up
- potable water supply.

The fresh/fire water tank will be equipped with a standpipe which will ensure that the tank is always holding at least 40 m^3 of water, equivalent to a 2-h supply of fire water.

The potable water from the fresh water source will be treated and stored in the potable water storage tank prior to delivery to various service points.

Process Water Supply System

Some process water generated in the flotation circuit as concentrate thickener overflow solution will be re-used in the grinding circuit. Excess water will be discharged to the process water tank. Reclaimed water will be pumped from the tailings pond to the process water tank for distribution to the points of usage.

AIR SUPPLY

Separate air service systems will supply air to the following areas:

- Low-pressure air for flotation cells will be provided by air blowers.
- High-pressure air for the filter press and drying of concentrate will be provided by dedicated air compressors.
- Instrument air will come from the plant air compressors and will be dried and stored in a dedicated air receiver.

ON-LINE SAMPLE ANALYSIS

The plant will rely on the on-stream analyzer for process control. An on-line analyzer will analyze each flotation stage for the circuit. A sufficient number of samples will be taken so that the circuit can be balanced by analytical resultant and calculation as required. Specific samples that will also be taken for metallurgical accounting purposes will be the flotation feed to the circuit, the final tailings, and the final concentrate sample; these samples will be assayed in the assay laboratory. An on-stream particle size monitor will determine the P_{80} particle size of the primary cyclone overflow and the regrind circuit products.

17.0 MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES

During May 2009, Tim Kuhl, P.Geo., an employee of AMEC, updated the Ajax mineral resource estimates of copper (Cu %) and gold (Au g/t) using MineSight® (Version 4.10-01, Build 195) software (MineSight). This work was reviewed and accepted by Wardrop in 2009.

Wardrop imported the AMEC model into Datamine Studio 3 (Version 3.16.2299.1), where resource estimates of molybdenum (Mo %) and silver (Ag g/t) were added. The mineral resource estimate was then reported at a revised copper-equivalent cut-off (CuEq %), which included revised Cu recovery and current metal prices. AMEC assumed a Cu price of $2.50/lb, an Au price of $750/troy oz, and a Cu recovery of 43.619 x Cu Grade + 63.002 (to a max of 92%) to calculate CuEq in their work. Wardrop assumed a Cu price of $2.00/lb, an Au price of $700/troy oz, and a Cu recovery of 32.591 x Cu Grade + 72.732, which was developed during the PA to calculate CuEq. The Au recovery formula generated by AMEC was retained for this PA.

The qualified person for the mineral resource estimate for the purposes of this PA report is Thomas C. Stubens, P.Eng., an employee of Wardrop. The mineral resource estimate has an effective date of June 18, 2009.

Table 17.1 Ajax Deposit – Mineral Resource Estimate

	Cut-off CuEq (%)	Mt	Cu (%)	Au (g/t)	Mo (%)	Ag (g/t)	CuEq (%)	Contained Metal	
								Cu (M lb)	Au (k oz)
Measured	0.13	231.4	0.30	0.18	0.0018	0.35	0.32	1,527	1,364
Indicated	0.13	211.0	0.29	0.19	0.0012	0.31	0.32	1,368	1,287
Measured + Indicated	0.13	422.4	0.30	0.19	0.0015	0.31	0.32	2,895	2,651
Inferred	0.13	80.6	0.22	0.16	0.0011	0.38	0.24	391.0	404

Note: Mineral resources are not mineral reserves and do not have demonstrated economic viability.

17.1 DATA USED FOR GRADE ESTIMATION

The database for the 2009 mineral resource update consists of 419 drill holes totalling 144,877 m of drilling. The database consists of 366 diamond drill holes (140,490 m) and 53 percussion drill holes (4,386 m). The DDH drilling is predominantly NQ in size. Minor intervals are BQ size due to core size reductions during drilling.

Nine drill holes completed by Abacus and one drilled by New Gold are not included in the resource database. One drill hole completed by New Gold in 2004 was abandoned and re-drilled, and not included in the resource database. Six Abacus drill holes completed in 2007 were abandoned and re-drilled, and not included in the resource database. Two drill holes completed by Abacus in 2008 are not included in the resource database because they were neither logged nor sampled. The drill holes used for the mineral resource model are summarized in Table 17.2.

Table 17.2 Drill Holes Used in the Mineral Resource Model Update

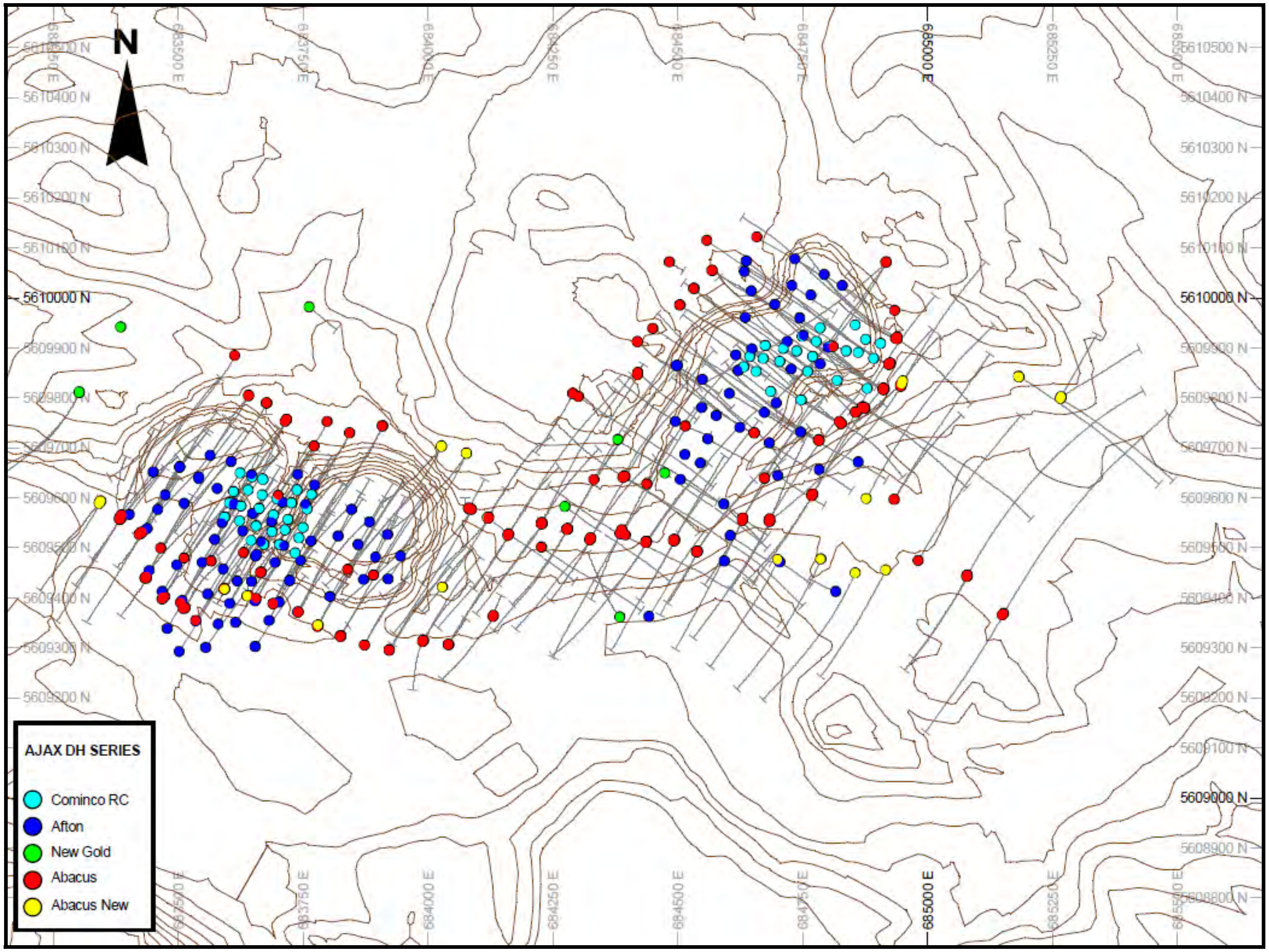
Company	Year	Drill Type	No. Holes	Total (m)
Cominco	1981	Percussion	53	4,387
Afton OC	1987	Core	77	11,669
Afton OC	1988	Core	15	2,518
Afton OC	1989	Core	5	1,493
Afton OC	1990	Core	13	3,507
New Gold	2004	Core	5	1,757
Abacus	2005	Core	5	2,714
New Gold	2006	Core	4	2,620
Abacus	2006	Core	49	25,734
Abacus	2007	Core	82	40,577
Abacus	2008	Core	111	47,901
Total			**419**	**144,877**

Drill hole collar, survey, and assay data (collar, survey, lithology, and assay files) were imported into MineSight software. Copper and molybdenum assays were loaded as percent total copper; gold and silver assays were loaded in grams per tonne. Un-assayed intervals (missing samples) were set to null values (-1) and not used in the mineral resource estimation. Detection limits varied between the drill campaigns and analytical labs.

At the time of the data cut-off for the 2008 resource estimate (September 30, 2008), 8 drillholes were excluded from the resource database because they had outstanding analyses. These drill holes, and 13 new holes completed after the cut-off date, have been added to create the 2009 resource database.

Figure 17.1 shows the location and general orientation of the drill holes in the Ajax prospect area. The drill hole spacing is approximately 50 m in the mineralized areas and increases at the margins of defined mineralization. All drill holes were collared on the surface.

Figure 17.1 Ajax Drill Hole Location Map

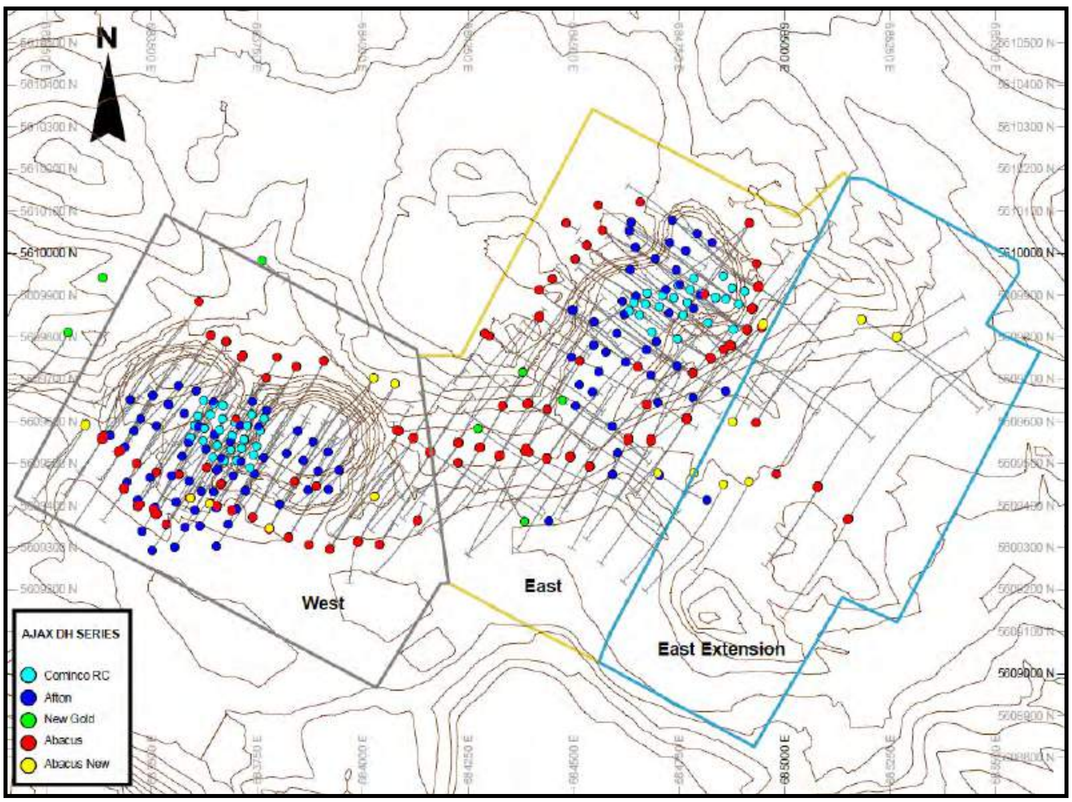


Down-hole deviation surveys of Ajax drill holes indicate that significant deviations occur. Abacus drill holes without deviation surveys were provided surveys based on modelled surveys obtained from drill holes with surveys. Legacy drill holes commonly do not have deviation surveys and no surveys were modelled for these drill holes (see Section 11.11 for a discussion of deviation surveys).

17.2 AREAS

The Ajax model was divided into three areas (West, East, and Monte Carlo) to accommodate a change in the strike of mineralization. Mineralization generally strikes east-southeast in the West area, changes to north-easterly in the East area, and returns to east-southeast in Monte Carlo area (Figure 17.2).

Figure 17.2 Model Extent Including West, East, and Monte Carlo Areas



17.3 GEOLOGICAL MODEL

Abacus personnel constructed geological solids representing four main rock groups: Sugarloaf, Iron Mask, Mafic Volcanics, and Albite zones. The Albite zone identifies regions where there is an abundance of intervals coded as albite alteration. The Albite zones characteristically contain higher Cu and Au values.

The geological model for Monte Carlo consists of triangulated solids for Sugarloaf, Iron Mask, and Mafic Volcanics rock domains. No Albite zones have been interpreted in the Monte Carlo area. The geological model of the Monte Carlo area was compared to the geological data and to the adjacent Ajax East area. It was concluded that the geological interpretation was reasonable.

For the Phase 3 resource model, no modifications were made to the geological model in the Ajax West and Ajax East areas.

Geological interpretations were initially completed in cross section and reconciled to level plan. The geological solids were then constructed from the cross section polygons. Geological solids were also constructed for Overburden, Pit Backfill, and Pit Lake (water).

A solid representing a copper mineralization shell was constructed by Abacus personnel. The copper mineralization shell identifies regions where copper mineralization exceeding 0.10% Cu can be expected. Generally, the copper mineralization shell includes the Sugarloaf and Albite regions of the model and locally extends into the Iron Mask and Mafic Volcanic rock types. The geological solids were checked for integrity and used to code the block model with area, rock type, and copper shell using MineSight procedures.

17.4 EXPLORATORY DATA ANALYSES

17.4.1 ASSAYS

SUMMARY STATISTICS

Summary statistics of assay data by rock type are shown in Table 17.3 to Table 17.6. The majority of the assays are coded as Sugarloaf. Albite and Sugarloaf rock groups have the highest mean grades for both copper and gold. The coefficient of variation (CV) (standard deviation/mean) exceeds 1.50 for most rock types. The high CV values are abnormal for typical porphyry-style copper deposits. The rock types for fault and dyke have minimal samples (64 and 121 respectively).

Table 17.3 Summary Statistics of Copper Assay Data by Rock Type

Rock Type	Rock Code	No. of Samples	Cu (%)			CV
			Mean	Maximum	Minimum	
Albite	2	4,300	0.29	3.51	0.002	1.13
Volcanics	3	5,924	0.08	4.89	0.0005	2.89
Sugarloaf	4	30,051	0.20	11.5	0.0005	1.59
Iron Mask	6	4,755	0.06	5.77	0.0005	2.52

table continues…

Rock Type	Rock Code	No. of Samples	Cu (%)			CV
			Mean	Maximum	Minimum	
Overburden	9	0	0.00	0	0	0
Mined-Out	7	2,426	0.33	9.5	0.0005	1.36
Total		**47,456**	**0.18**	**11.5**	**0.0005**	**1.69**

Table 17.4 Summary Statistics of Gold Assay Data by Rock Type

Rock Type	Rock Code	No. of Samples	Au (g/t)			CV
			Mean	Maximum	Minimum	
Albite	2	4,075	0.193	3	0.009	1.31
Volcanics	3	5,924	0.047	3.52	0.007	2.80
Sugarloaf	4	29,720	0.119	7.84	0.004	1.85
Iron Mask	6	4,755	0.084	9.2	0.009	3.74
Overburden	9	0	0.000	0	0	0
Mined-Out	7	1,579	0.219	5.66	0.009	1.41
Total		**46,053**	**0.116**	**9.2**	**0.004**	**2.01**

Table 17.5 Summary Statistics of Molybdenum Assay Data by Rock Type

Rock Type	Rock Code	No. of Samples	Mo (%)			CV
			Mean	Maximum	Minimum	
Albite	2	2,441	0.0028	0.0965	0.00005	2.38
Volcanics	3	5,455	0.0011	0.1302	0.00005	3.40
Sugarloaf	4	27,209	0.0017	0.2258	0.00005	3.25
Iron Mask	6	3,774	0.0005	0.0582	0.00005	3.13
Overburden	9	0	0	0	0	0
Mined-Out	7	0	0	0	0	0
Total		**38,879**	**0.0016**	**0.2258**	**0.00005**	**3.28**

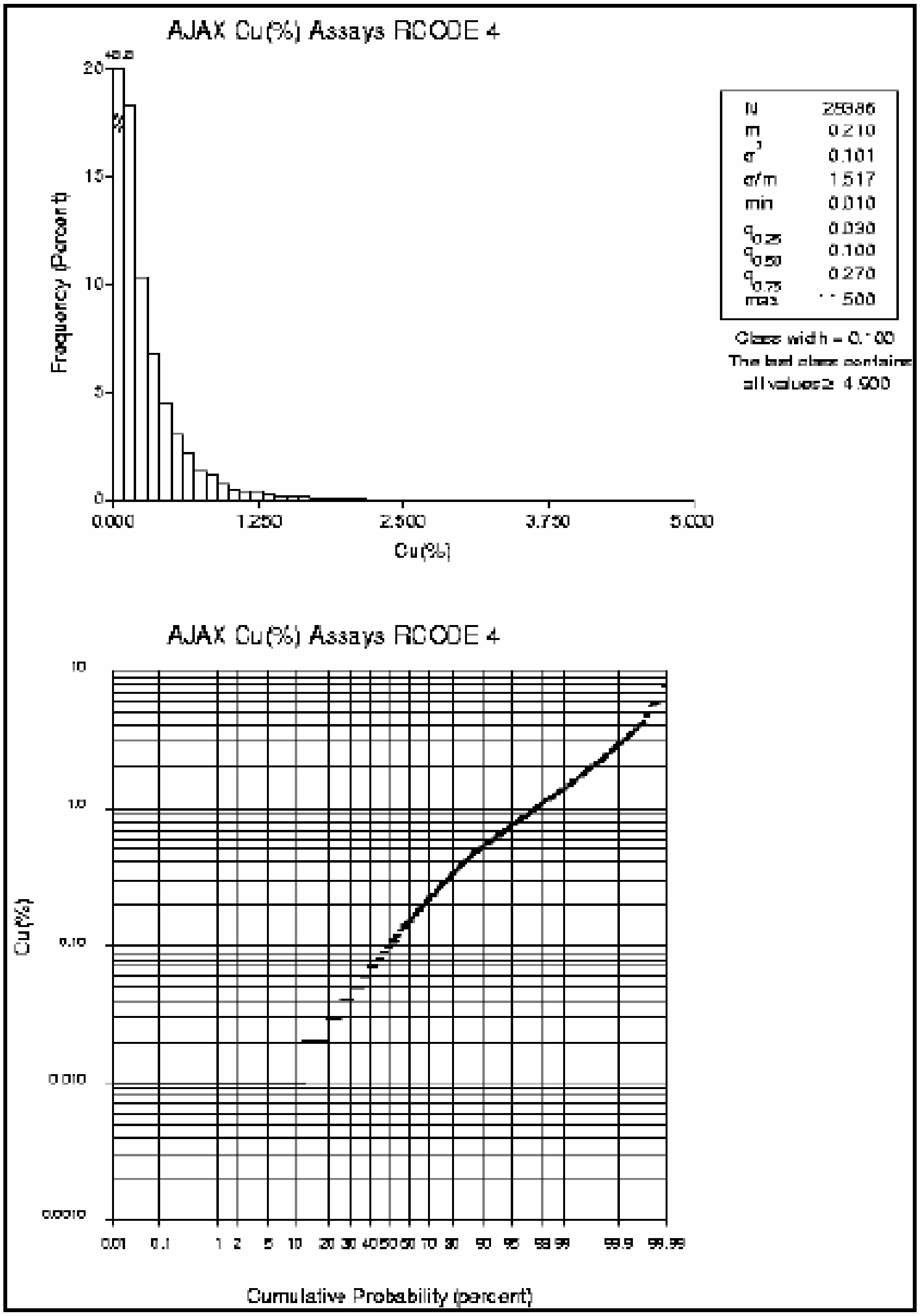
Table 17.6 Summary Statistics of Silver Assay Data by Rock Type

Rock Type	Rock Code	No. of Samples	Ag (g/t)			CV
			Mean	Maximum	Minimum	
Albite	2	2,441	0.344	6.90	0.04	1.33
Volcanics	3	5,455	0.190	30	0.1	3.54
Sugarloaf	4	27,209	0.288	30	0.1	1.93
Iron Mask	6	3,774	0.153	8.4	0.1	1.61
Overburden	9	0	0	0	0	0
Mined-Out	7	0	0	0	0	0
Total		**38,879**	**0.2644**	**30**	**0.04**	**2.07**

HISTOGRAMS AND PROBABILITY PLOTS

Histograms and probability plots were constructed of assay data categorized by rock type. The plots of assay data display lognormal distributions for both copper and gold with outliers generally above 2.0% Cu and 2.0 g/t Au (Figure 17.3).

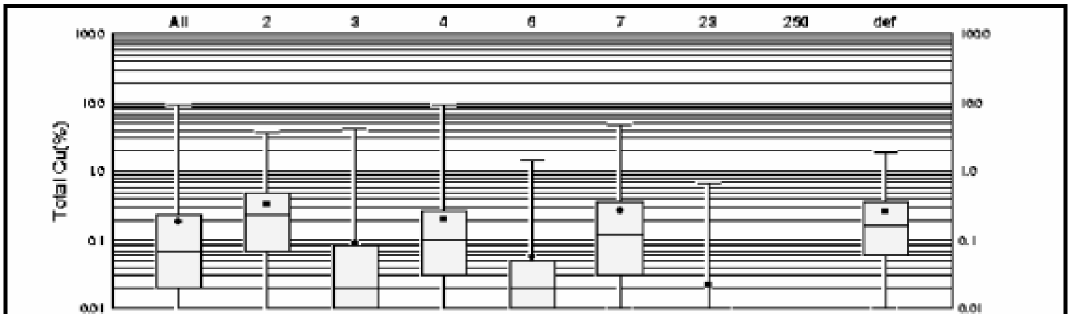
Figure 17.3 Histograms and Probability Plot of Sugarloaf Copper Assays



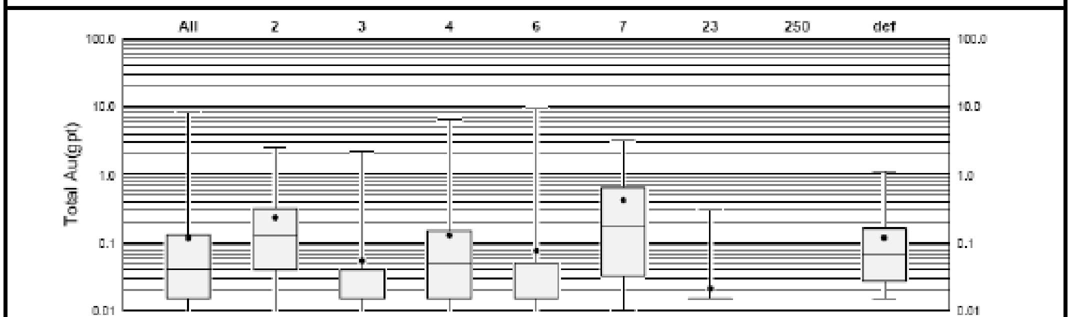
BOX PLOTS

Box plots of assay data by rock type were constructed (Figure 17.4). No significant trends in grade were observed. Box plots were also constructed for assay data categorized by drill campaign. No significant trend was observed.

Figure 17.4 Box Plots of Copper and Gold Assay by Rock Type Code*



	All	2	3	4	6	7	23	250	def	
Number of data	22784	1446	3846	14225	2160	64	121	0	917	Number of data
Mean	0.1671	0.3377	0.091	0.2088	0.0579	0.2719	0.0227	0.0	0.2682	Mean
Maximum	9.19	3.75	4.26	9.5	1.45	4.76	0.65	0.0	1.64	Maximum
Upper quartile	0.23	0.49	0.08	0.27	0.05	0.3614	0.01	0.0	0.36	Upper quartile
Median	0.07	0.23	0.02	0.1	0.02	0.1222	0.01	0.0	0.16	Median
Lower quartile	0.02	0.07	0.01	0.03	0.01	0.0312	0.01	0.0	0.06	Lower quartile
Minimum	0.0	0.0	0.0	0.0	0.0	0.01	0.01	0.0	0.01	Minimum
Variance	0.0886	0.1414	0.0446	0.1022	0.0131	0.2718	0.0048	0.0	0.0885	Variance
CV	1.591	1.1134	2.3211	1.5309	1.979	1.9176	3.0549	0.0	1.1174	CV
Skewness	4.8932	2.5834	7.7019	6.7455	4.5539	6.4631	7.0312	0.0	2.0763	Skewness



	All	2	3	4	6	7	23	250	def	
Number of data	22082	1446	3846	14225	2160	64	121	0	217	Number of data
Mean	0.1175	0.2317	0.0534	0.1274	0.0789	0.4205	0.0209	0.0	0.1179	Mean
Maximum	7.98	2.5	2.19	6.4	9.2	3.1	0.3	0.0	1.13	Maximum
Upper quartile	0.13	0.32	0.04	0.15	0.05	0.6424	0.015	0.0	0.16	Upper quartile
Median	0.04	0.13	0.015	0.05	0.015	0.1789	0.015	0.0	0.07	Median
Lower quartile	0.015	0.04	0.015	0.015	0.015	0.0323	0.015	0.0	0.0277	Lower quartile
Minimum	0.007	0.009	0.009	0.007	0.009	0.01	0.015	0.0	0.015	Minimum
Variance	0.0504	0.0787	0.0169	0.0494	0.102	0.3348	0.001	0.0	0.0232	Variance
CV	1.91	1.2106	2.4363	1.7436	4.1515	1.376	1.5423	0.0	1.2917	CV
Skewness	8.4217	2.8262	7.8794	7.0844	20.843	2.3273	6.8398	0.0	3.4295	Skewness

* see Table 17.3 for rock codes.

17.4.2 METAL-AT-RISK

In mineral deposits having positively skewed distributions, it is not uncommon for a small percentage of high-grade assays to account for a disproportionately large proportion of the total metal content of the deposit. Although these assays are real and reproducible, they may show little continuity, add to the uncertainty of grade, and should be constrained during mineral resource estimation.

Reducing the uncertainty of these high-grade values to a manageable level can be made several ways. A common method is to cap the grades above a chosen threshold. A second method restricts the distance that the high-grade samples can influence the grade estimate.

A Monte Carlo simulation method was used to establish the amount of metal-at-risk by “re-drilling” the deposit 1,000 times. For each simulation, the number and grade of the high-grade assays are recorded and then used to predict the metal represented by the high-grade portion of the distribution. Results for all simulations are ordered, and the metal represented by the 20th percentile is accepted. A capping grade threshold is then calculated, which reduces the metal content represented by the high-grade assays to this level. Unlike selecting a capping threshold at a flexure in cumulative probability plots or at an arbitrary percentile, this method accounts for the spatial relations quantity of data available. As the density of data increases, the cap grade may also increase (uncertainty is reduced with more data).

Simulations were made to assess the sensitivity of the amount of high-grade material present. The risk analysis assumed a production rate of 60,000 t/d and a drill spacing of 50 m by 50 m. During one year, approximately 1,029 samples (21,000 tonnes per sample) will be mined out. A capping level of 2.1% Cu was identified in the simulation. For the 20th percentile, only 6 high-grade samples would be present and the contained copper metal would be 98.3% of the unadjusted metal content. This suggests a method be implemented to remove 1.7% of the copper metal. If this is done, the mine can be expected to do better in four out of five years; in one year out of five, it will achieve less metal than forecast.

A metal-at-risk study was also completed on the gold assay data using the same assumptions. A capping level was identified at 1.25 g/t Au. For the 20th percentile, 3 high-grade samples would be present and the contained gold metal would be 96.5% of the unadjusted metal content. The simulation suggests that a method be implemented to remove 3.5% of the gold metal during the estimation.

The metal-at-risk was addressed by restricting outliers at a distance and grade threshold rather than capping assays or composites. The outlier restriction permits the high-grade values to be used within a permitted distance of the sample. The sample is capped beyond the threshold distance. Sufficient iterations of the estimate were performed to remove the appropriate metal-at-risk.

17.4.3 COMPOSITING

The Ajax assay data were composited into 12 m lengths. The Ajax deposit is expected to be mined using bulk mining methods, and no geological boundaries were used in the compositing. The MineSight composite database contains 10,691 composites.

The composites were coded with rock type by back tagging from the 3DBM (Section 17.3). Composites were also coded from the assay file and from the geological solids for comparison. The three lithology codes were inspected in cross section and plan section. Composites in mined out and backfill areas were assigned rock codes using the assay table.

The composites were also coded for the copper shell domain, area, and drill campaign.

17.4.4 *High-grade Domain*

It was observed that the copper shell includes significant areas of low-grade mineralization (<0.10% Cu) defined by significant drill intervals with <0.10% Cu. To prevent smearing of high-grade into low-grade areas, blocks were separated into high-grade (~0.10% Cu) and low-grade (<0.10% Cu) domains using a probabilistic methodology.

Each composite was coded with an indicator using a 0.10 % Cu threshold (<0.10% Cu = 0, and ~ 0.10% Cu = 1). Variograms were then modelled on the high-grade indicators using SAGE 2001. Probabilities for high-grade occurrence were estimated for each block using ordinary kriging (OK). The probabilities were inspected in cross-section and plan section. A 0.45 probability was seen to best define the boundary between high-grade and low-grade with minimal “checker-boarding”. Each block in the 3DBM was then coded as high-grade (HGCU = 1) or low-grade (HGCU = 0).

Each composite was also coded as high-grade and low-grade by back-tagging from the 3DBM. The high-grade domain composites were then inspected in cross-section and level plan. Miss-coded composites were noted along the margins of the high-grade domain and were manually modified from a low-grade code to a high-grade code. A total of 47 low-grade composites were modified to high-grade.

17.4.5 *Composite Summary Statistics*

The composite data statistics were summarized by rock type (Table 17.7 to Table 17.10). The majority of the composites are Albite and Sugarloaf. Albite has the highest mean grade for both copper and gold. The CV value is <1.0 with the exception of gold in Mafic Volcanics. The fault and dyke rock types were incorporated into the remaining four rock types.

Table 17.7 Summary Statistics of Copper Composites by Rock Type

Rock Type	Rock Code	No. of Samples	Cu (%)			CV
			Mean	Maximum	Minimum	
Albite	2	1,044	0.29	2.08	0.005	0.85
Volcanics	3	1,428	0.08	1.59	0.002	1.94
Sugarloaf	4	7,158	0.20	2.50	0.003	1.07
Iron Mask	6	1,112	0.06	1.60	0.001	1.69
Overburden	9	0	0.00	0.00	0	0
Mined-Out	7	656	0.32	3.93	0.005	1.04
Total		**11,398**	**0.18**	**3.93**	**0.001**	**1.20**

Table 17.8 Summary Statistics of Gold Composites by Rock Type

Rock Type	Rock Code	No. of Samples	Au (g/t)			CV
			Mean	Maximum	Minimum	
Albite	2	983	0.194	1.290	0.009	0.95
Volcanics	3	1,428	0.044	0.878	0.009	1.86
Sugarloaf	4	7,072	0.119	2.372	0.009	1.25
Iron Mask	6	1,112	0.084	3.853	0.009	2.45
Overburden	9	0	0.000	0.000	0	0
Mined-Out	7	430	0.217	1.678	0.009	1.03
Total		**11,025**	**0.116**	**3.853**	**0.009**	**1.38**

Table 17.9 Summary Statistics of Molybdenum Composites by Rock Type

Rock Type	Rock Code	No. of Samples	Mo (%)			CV
			Mean	Maximum	Minimum	
Albite	2	566	0.0027	0.0395	0.00005	1.55
Volcanics	3	1,297	0.0010	0.0200	0.00005	1.79
Sugarloaf	4	6,476	0.0016	0.0598	0.00005	1.93
Iron Mask	6	924	0.0005	0.0079	0.00005	1.50
Overburden	9	0	0	0.0000	0	0
Mined-Out	7	0	0	0.0000	0	0
Total		**9,263**	**0.0015**	**0.0598**	**0.00005**	**1.98**

Table 17.10 Summary Statistics of Silver Composites by Rock Type

Rock Type	Rock Code	No. of Samples	Ag (g/t)				CV
			Mean	Maximum	Minimum		
Albite	2	566	0.34	2.64	0.1		0.92
Volcanics	3	1,297	0.17	7.725	0.1		1.07
Sugarloaf	4	6,476	0.28	7.725	0.1		1.13
Iron Mask	6	924	0.15	1.4	0.1		0.83
Overburden	9	0	0.00	0	0		0
Mined-Out	7	0	0.00	0	0		0
Total		**9,263**	**0.26**	**7.725**	**0.1**		**1.15**

17.4.6 Box Plots

Box plots were completed for the 12 m composites by rock type and by low-grade and high-grade domain. Box plots for copper indicate the CV values for each rock type are below 1.0. Box plots for gold indicate gold CV values are near 1.0 (Figure 17.5 and Figure 17.6). Box plots also suggest rock types can be combined for the estimation based on similar statistics; however, contact profiles suggest hard contacts should be used (see Section 5.3 of the Supporting Documents).

Figure 17.5 Box Plot of High-grade Copper Composites by Rock Type

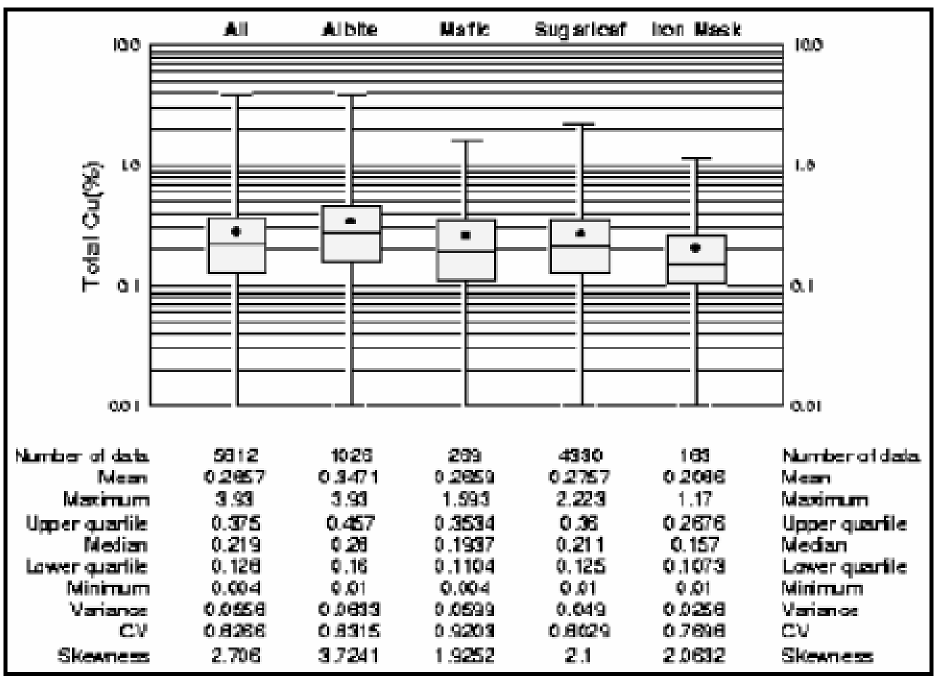
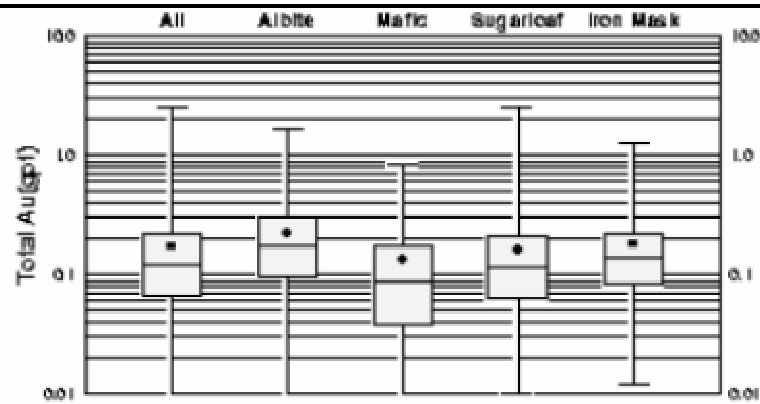


Figure 17.6 Box Plot of High-grade Gold Composites by Rock Type



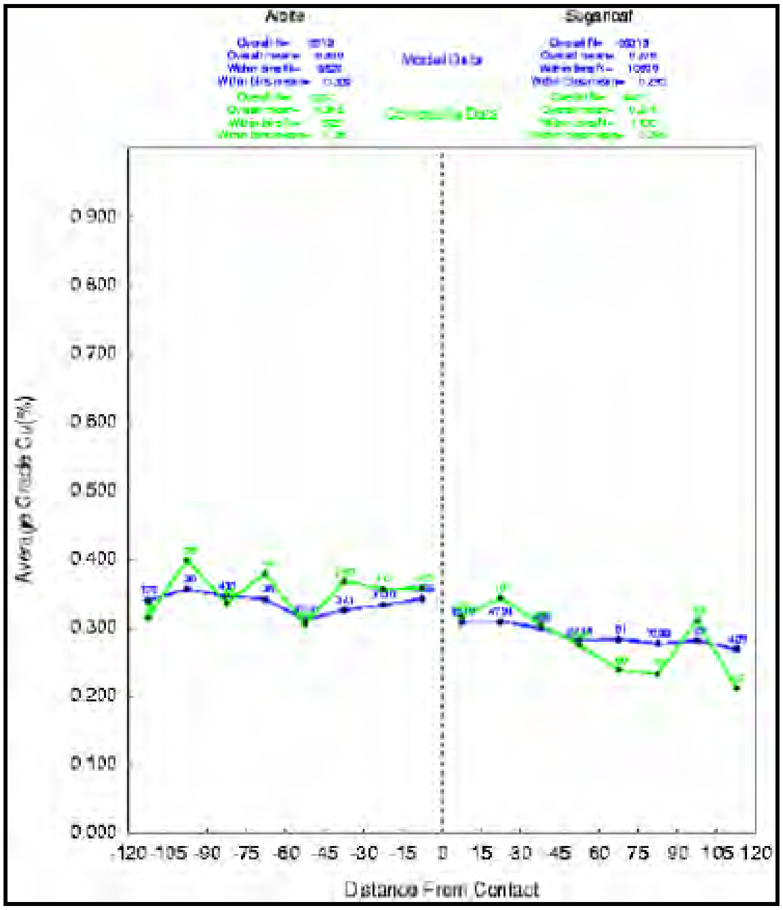
	All	Albite	Mafic	Sugarloaf	Iron Mask	
Number of data	5812	1026	269	4330	163	Number of data
Mean	0.1759	0.2277	0.1376	0.1656	0.1655	Mean
Maximum	2.53	1.676	0.833	2.53	1.288	Maximum
Upper quartile	0.227	0.3063	0.1766	0.211	0.226	Upper quartile
Median	0.124	0.173	0.087	0.116	0.137	Median
Lower quartile	0.066	0.095	0.039	0.063	0.0644	Lower quartile
Minimum	0.009	0.009	0.009	0.01	0.012	Minimum
Variance	0.0296	0.0397	0.0215	0.0269	0.0294	Variance
CV	0.976	0.875	1.066	0.9897	0.9247	CV
Skewness	3.0725	2.3307	1.9783	3.4176	2.8997	Skewness

17.4.7 *CONTACT PROFILES*

Contact profiles were completed on 12 m composites between the four main lithology groups and by low-grade and high-grade domains. Generally, contact profiles display characteristics for hard boundaries.

The Albite-Sugarloaf contact profile indicates a soft boundary may apply (Figure 17.7). However, visual inspections and summary statistics by rock type of preliminary estimations indicated that grade smearing was occurring across the contact boundary from Albite into Sugarloaf. A hard boundary was implemented with more reasonable results.

Figure 17.7 Merged Contact Profile for Albite & Sugarloaf Composites & Blocks



17.4.8 VARIOGRAPHY

Variography was completed on the 12 m composites for copper and gold. Separate variograms were modelled for the high-grade and low-grade domains in the West and East areas. The variography combined all four rock groups and variogram modelling was completed using the auto-fit functions in SAGE 2001. High-grade variograms are isotropic in the first structure with some longer range continuity in some of the steeper directions evidenced in the second structure. Variograms for the low-grade variograms have a high nugget effect. Variograms were used for the preliminary kriging estimates used for the model validation.

17.5 BLOCK MODEL

17.5.1 GEOLOGICAL MODEL

The geological model was coded from the geological solids. Geological codes for assays, composites, and 3DBM are summarized in Table 17.11. The 3DBM was coded with the copper mineralization shell solid (Section 17.3).

Table 17.11 Lithology Codes for Assays, Composites, and Model

Rock Type	Assays	Composites	Model
Water	N/A	N/A	1
Albite	2	2	2
Mafic Volcanics	3	3	3
Sugarloaf	4	4	4
Iron Mask	6	6	6
Faults	7	N/A	N/A
Fill	N/A	N/A	10
Felsic Dikes	23	N/A	N/A
Overburden	250	250	250

Note: N/A indicates code not used.

17.6 GRADE ESTIMATION

Preliminary estimations were completed in multiple iterations using OK and inverse distance weighting to the fourth power (IDW4). Herco (hermitian polynomial discrete Gaussian change of support) analysis of the OK estimate indicated both copper and gold estimates were being over-smoothed and modifications in sample search strategy did not remove the over-smoothing. Swath plots of OK estimates also tended to be “noisy”.

Validation checks of IDW4 estimations indicated better Herco comparisons as well as removed the “noise” from the swath plots.

The estimation methodology for the Phase 3 model was IDW4. All estimations were completed by rock type. All rock boundaries were considered hard for estimation purposes. An outlier restriction was implemented on uncapped 12 m composites to address metal-at-risk.

The model estimate was completed in 3 passes with expanding searches for each pass. A fourth pass was implemented for both copper and gold to address “blow-outs” of high grade in the blocks classified as Inferred. Visual inspection of cross-sections and plan-section noted local areas where higher grade “blow-outs” extended into extrapolated areas at the margins of the model.

The Estimation Plan is summarized in Section 5.3 of the Supporting Documents.

17.7 Bulk Density

Abacus supplied 855 specific gravity (SG) determinations from the Ajax area. The SG data were coded for rock code from the MineSight composite file. Histograms were then constructed by area. The results are summarized in Table 17.12.

Table 17.12 Specific Gravity Determinations

Area	Rock Type	Code	No. Determinations	Mean SG
West	Albite	2	15	2.713
	Mafic Volcanic	3	91	2.875
	Sugarloaf	4	124	2.787
	Iron Mask	6	21	3.076
East and Monte Carlo	Albite	2	28	2.709
	Mafic Volcanic	3	47	2.823
	Sugarloaf	4	413	2.759
	Iron Mask	6	66	2.991
All	Fill	10	none	2.000
	Overburden	250	none	2.000

Note: no SG data are available for rock types Fill and Overburden; typical values for these materials were used.

17.8 Model Validation

For model validation a nearest-neighbour (NN) model was completed. The NN model utilized the same search criteria as the IDW4 estimate. The NN estimate was used for comparison of summary statistics in box plots, swath plots, and change of support (Herco).

Model validation consisted of visual inspection of cross-sections and plan-sections. Box plots, contact profiles, swath plots, and Herco analysis were completed by area, low-grade and high-grade, and rock type. The Herco analysis was completed using an effective selective mining unit (SMU) size of 15 m by 15 m by 12 m.

17.8.1 Visual Comparison

A visual examination of the estimated block model Cu, Au, Mo and Ag grades was performed in cross section and level plan by comparing grade estimates with 12 m drill hole composites. Figure 17.8 through to Figure 17.12 are horizontal slices through the block model showing Cu, Au, Mo, Ag, and calculated CuEq grades.

Figure 17.8 Level Plan Showing Copper Block Grades (Elevation 634 m)

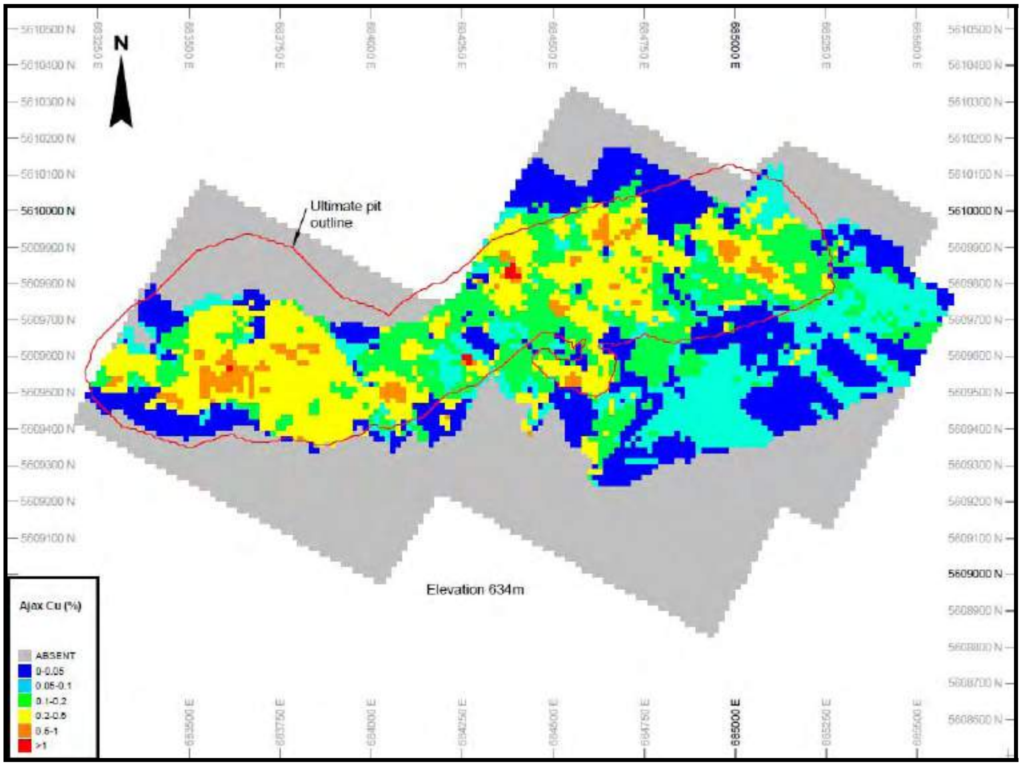


Figure 17.9 Level Plan Showing Gold Block Grades (Elevation 634 m)

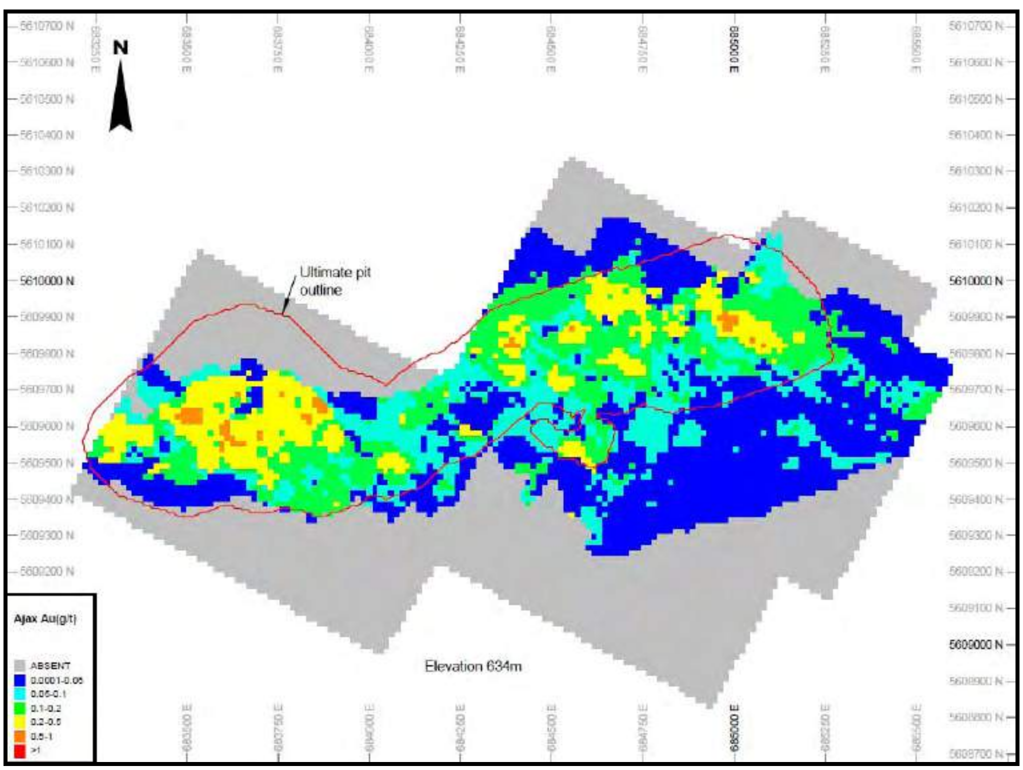


Figure 17.10 Level Plan Showing Molybdenum Block Grades (Elevation 634 m)

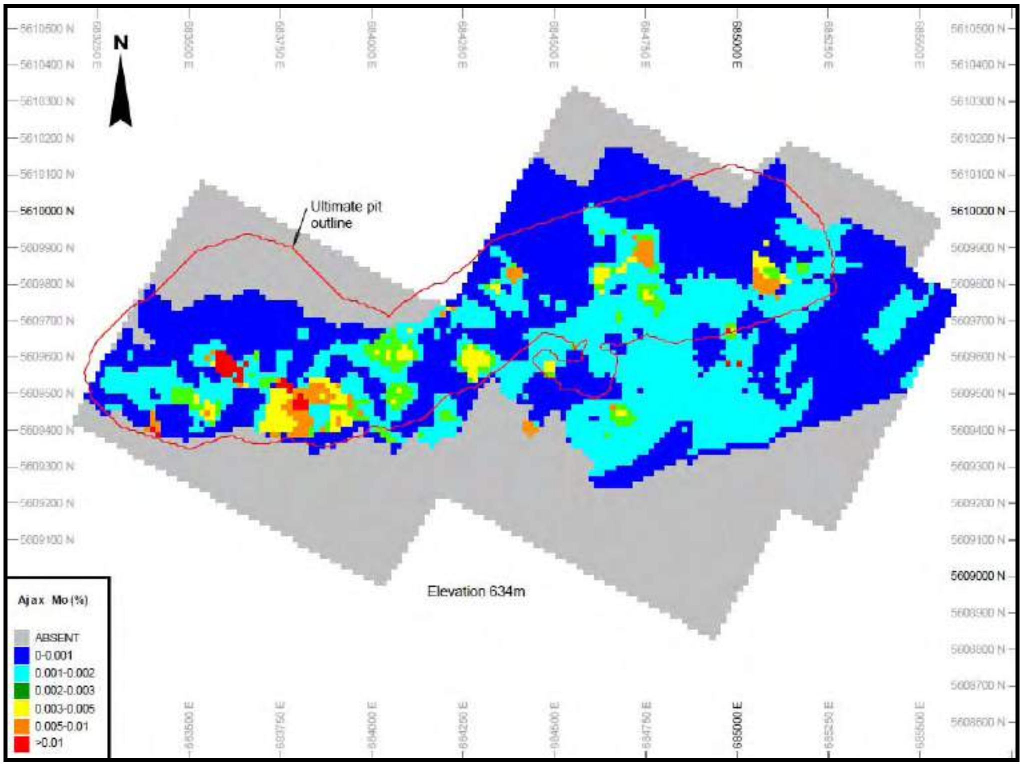


Figure 17.11 Level Plan Showing Silver Block Grades (Elevation 634 m)

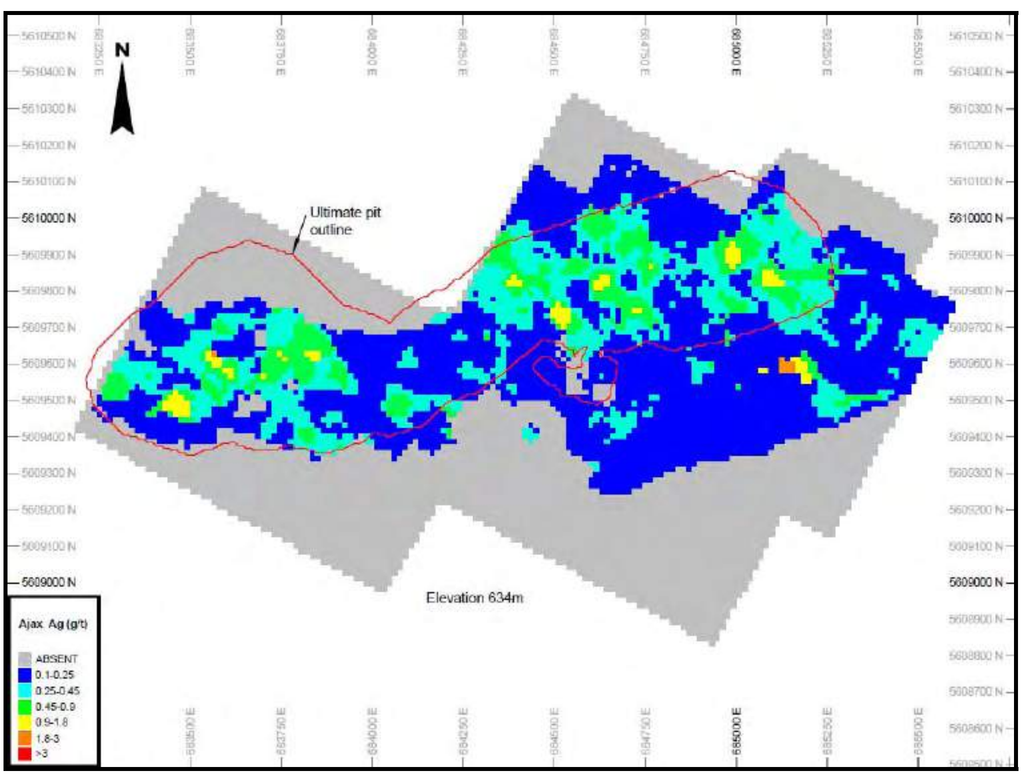
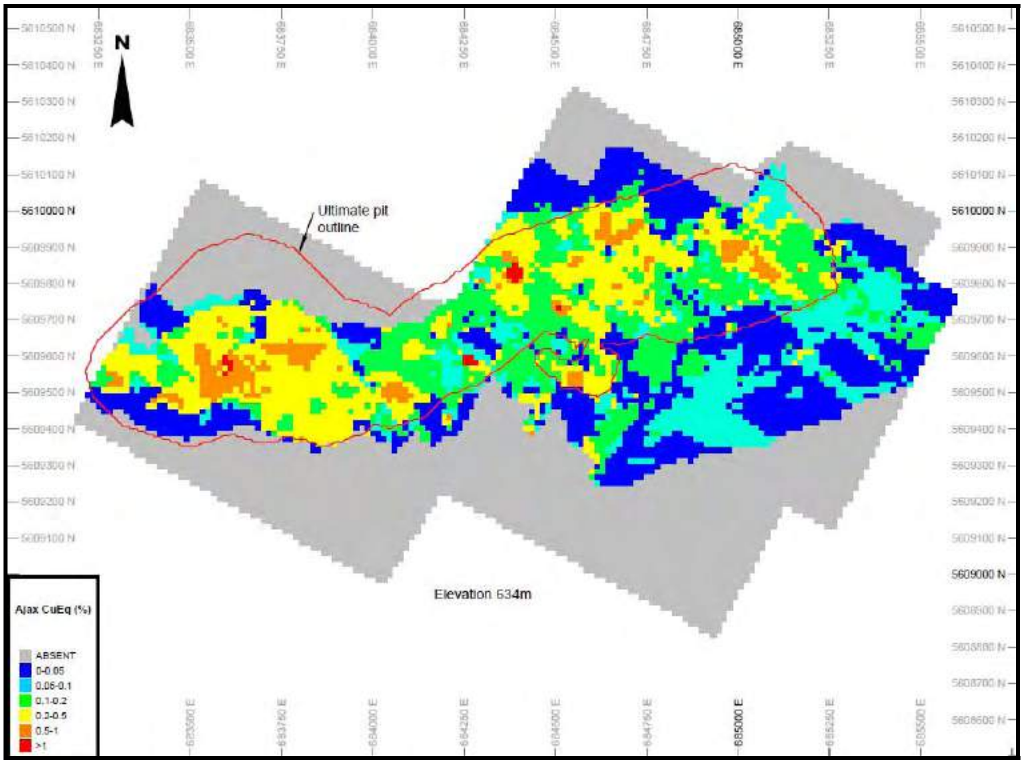


Figure 17.12 Level Plan Showing CuEq Block Grades (Elevation 634 m)



17.8.2 *BOX PLOTS*

During the validation process, it was observed that mean grades of the IDW4 estimate can exceed the NN estimate in some rock types. However, as the grades are well below a current economic cut-off, it was determined that time spent improving the low-grade estimation was not justified (see Section 5.3 of the Supporting Documents).

17.8.3 *SWATH PLOTS*

Local trends in the grade estimates were evaluated using swath checks. Swath plots compare the mean values from the NN estimate to the IDW4 estimate for blocks categorized as measured and indicated for 100 m increments (or swaths) in east-west, north-south directions, and 75 m intervals in the vertical direction. Swath plots were completed for copper and gold. Generally, swaths show good agreement with the exception of areas where data is sparse (see Section 5.3 of the Supporting Documents).

17.9 Resource Classification

A resource classification for the Ajax model was developed by AMEC based on the copper mineralization shell provided, grade continuity observed in the cross-section and plan-section, and confidence limits. This classification was reviewed and adopted by Wardrop in this study.

"In addressing confidence limits, AMEC has found that most operating mines can tolerate random discrepancies between actual production and estimates of contained metal of up to 15% in a quarter without materially affecting short-term plans. Similarly, deviations from forecasts of up to 15% in any one year do not typically threaten the economic viability of an operation. Therefore, AMEC includes a statistical criterion during the classification procedure. For the indicated resource, yearly ore production grade and tonnage should be known at least ±15% with 90% confidence. The criterion for measured resources is ±15% with 90% confidence for quarterly production. Confidence limits calculations assumed a 60,000 t/d production schedule.

"The classification criteria for Ajax mineral resources included an assessment of grade continuity and confidence limits. AMEC also determined the percentage of influence that Cominco and Afton OC drill holes had on the copper grade estimate.

"Classification was limited to blocks within the copper mineralization shell and implemented in two steps.

- *Step 1:*
  - *measured blocks – 3 drill holes within 55 m and 1 of these is within 39 m*
  - *indicated blocks – 2 drill holes within 75 m and 1 of these is within 58 m*
  - *inferred blocks – remaining blocks within the copper shell that were not classified as measured or indicated.*
- *Step 2 – Adjustment for Legacy Drill Holes:*
  - *where Cominco percussion holes contribute >60% of copper grade estimate, the block is downgraded to inferred classification,*
  - *where Afton OC core holes contribute >50% of the grade estimated, measured blocks are downgraded to indicated classification.*

"The nominal drill spacing for blocks that are classified as measured is 40 to 50 m. Blocks that are classified as indicated have a nominal drill spacing of 50 to 80 m. Blocks that are classified as inferred have nominal drill spacing exceeding 100 m.

"Using these criteria, 33% of the blocks within the copper mineralization shell are classified as measured, 37% are classified as indicated, and 29% are classified as inferred."

17.10 MINERAL RESOURCE

To determine the reasonable expectations for economic extraction, a Lerchs-Grossmann (LG) pit optimization was completed using blocks classified as measured, indicated, and inferred.

An NSR was calculated for each block using the criteria listed in Table 17.13.

The LG was completed using Whittle 4D (Version 4.1.3). The LG parameters are shown in Table 17.14. The LG is shown in an isometric view in Figure 17.13. The footprint of the 2009 resource shell is shown in Figure 17.14.

Based on preliminary assessments, the net value of the resource shell exceeds capital cost estimates.

Table 17.13 NSR Parameters

		Units[1]	Value
Recovery	Copper	%	CuRec = 43.619 x Cu Grade + 63.002 max. 92%
	Gold	%	Au Rec = 33.871 x Au Grade + 75.29 max. 90%[2]
Concentrate	Moisture	%	8.5
	Grade	%	30
Freight	Land	$/wmt	27.90
	Port	$/wmt	5.58
	Ocean	$/wmt	50.00
Smelter Terms	Participation	$/lb	none
	PP%	%	none
	Conc. Treat.	$/dmt	60.00
	Conc. Pay	%	96.50
	Conc. Deduct	%	1.0
	Cu Refine	$/lb	0.085
	Au Refine	$/troy oz	2.50
	Au Pay %	%	97.0
	Au Deduct	g/t	1.0

[1] Currency is in US$.
[2] Gold recovery is permitted to exceed copper recovery.

Table 17.14 Parameters Used in the Whittle LG Optimization

	Item	Units[1]	Value
Mill Throughput		t/d	60,000
		Mt/a	21.6
Mining Costs	Waste	$/t	1.5
	Fill Waste	$/t	1.23
	Processed Material	$/t	1.50
Process	Processing	$/t	3.70
	Reclamation	$/t	0.06
	Total	$/t	3.76
G&A	All	$/t	0.90
Price	Gold	$/troy oz	750
	Copper	$/lb	2.50
Slopes	Overall	degrees	50

[1] Currency is in US$.

Figure 17.13 Isometric View of Resource Shell

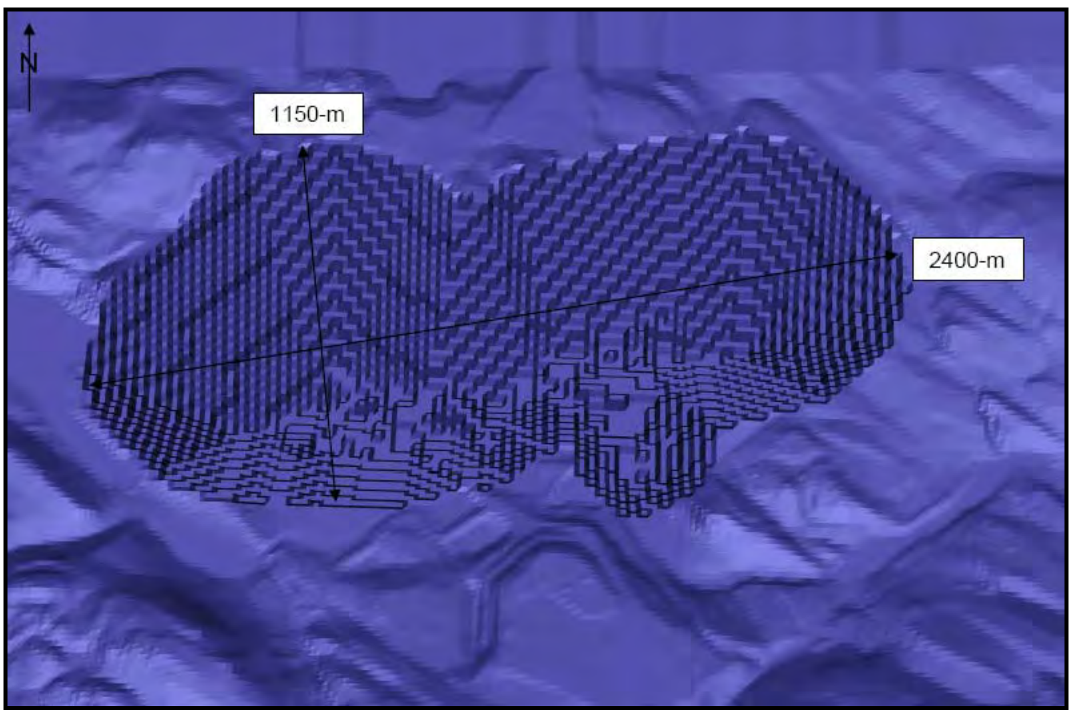
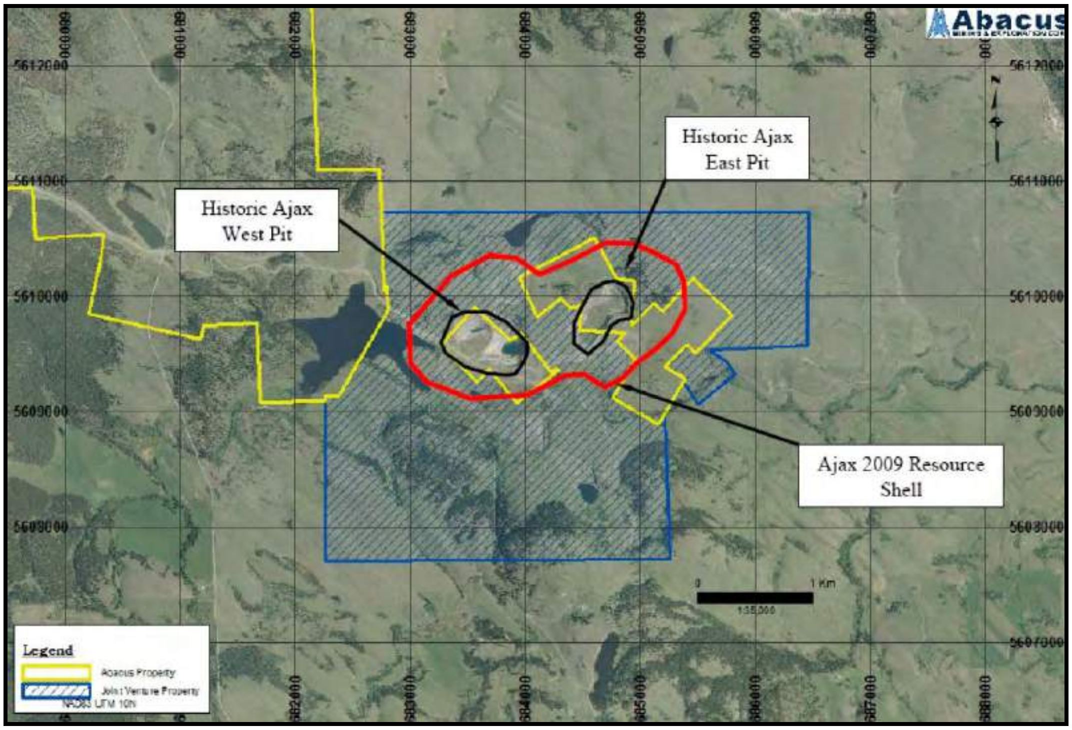


Figure 17.14 Ajax 2009 Resource Shell and Historic Open Pits



17.11 MINERAL RESOURCE TABULATION

Measured and indicated mineral resources within the LG mineral resource shell are summarized at various CuEq cut-off grades in Table 17.15. The base case is in bold. Inferred mineral resources within the LG mineral resource shell are summarized at various CuEq cut-off grades in Table 17.16.

For the base case cut-off grade, 47% of the measured and indicated mineral resource is within the mineral resource shell defined by the LG optimization. Only 6% of the inferred mineral resource is within the mineral resource shell. Mineralization is open at depth and laterally to the West and to the East. Additional drilling may expand the resource shell to the west and east. Improved economics may permit the resource shell to increase at depth.

A recovered copper equivalent grade (CuEq %) is calculated using copper and gold commodity prices of US$2.00/lb and US$700/troy oz (respectively) in the formula:

$$\textbf{CuEq (\%)} = \frac{[Cu(\%) \times Cu\text{-}Rec \times 22.0462 \times \$2.00 + Au(g/t) \times Au\text{-}Rec \times 0.03216 \times \$700]}{[22.0462 \times \$2.00]}$$

Where: *Cu-Rec = 32.591 x Cu(%) + 72.732*, and *Au-Rec = 33.87 1 x Au(g/t) + 75.29* (max. value = 90%).

Table 17.15 Summary of Ajax Measured and Indicated Mineral Resources at Various Grades as of June 18, 2009

	Cut-off CuEq (%)	Mt	Cu (%)	Au (g/t)	Mo (%)	Ag (g/t)	CuEq (%)	Cu (M lb)	Au (koz)
Measured	0.09	253.36	0.283	0.173	0.0018	0.34	0.30	1,581.3	1,412
	0.11	244.41	0.290	0.177	0.0018	0.34	0.31	1,561.9	1,393
	0.13	**231.37**	**0.299**	**0.183**	**0.0018**	**0.35**	**0.32**	**1,527.3**	**1,364**
	0.15	216.13	0.311	0.191	0.0019	0.35	0.34	1,480.5	1,324
	0.17	198.73	0.324	0.199	0.0019	0.36	0.35	1,420.0	1,272
	0.19	182.19	0.337	0.208	0.0020	0.37	0.37	1,355.4	1,218
Indicated	0.09	230.54	0.279	0.179	0.0012	0.30	0.30	1,415.5	1,330
	0.11	222.19	0.285	0.184	0.0012	0.31	0.31	1,397.2	1,313
	0.13	**210.99**	**0.294**	**0.190**	**0.0012**	**0.31**	**0.32**	**1,367.7**	**1,287**
	0.15	197.17	0.305	0.197	0.0012	0.31	0.33	1,325.4	1,250
	0.17	181.06	0.318	0.206	0.0012	0.31	0.35	1,269.9	1,201
	0.19	165.25	0.332	0.216	0.0012	0.33	0.37	1,209.3	1,146
Measured & Indicated	0.09	483.90	0.281	0.176	0.0015	0.32	0.30	2,996.8	2,741
	0.11	466.60	0.288	0.180	0.0015	0.33	0.31	2,959.1	2,706
	0.13	**442.36**	**0.297**	**0.186**	**0.0015**	**0.33**	**0.32**	**2,895.0**	**2,651**
	0.15	413.30	0.308	0.194	0.0015	0.33	0.34	2,805.9	2,574
	0.17	379.79	0.321	0.203	0.0015	0.34	0.35	2,689.8	2,473
	0.19	347.44	0.335	0.212	0.0016	0.35	0.37	2,564.7	2,364

Note: Mineral resources are not mineral reserves and do not have demonstrated economic viability.

Table 17.16 Summary of Ajax Inferred Mineral Resources at Various Grades as of June 18, 2009

	Cut-off CuEq (%)	Mt	Cu (%)	Au (g/t)	Mo (%)	Ag (g/t)	CuEq (%)	Cu (M-lb)	Au (koz)
Inferred	0.09	91.83	0.206	0.146	0.0011	0.37	0.22	417.1	430
	0.11	86.24	0.213	0.151	0.0011	0.38	0.23	405.3	418
	0.13	**80.64**	**0.220**	**0.156**	**0.0011**	**0.38**	**0.24**	**391.0**	**404**
	0.15	73.18	0.229	0.163	0.0011	0.39	0.25	368.8	382
	0.17	65.82	0.237	0.170	0.0011	0.39	0.26	343.6	359
	0.19	56.10	0.248	0.179	0.0012	0.41	0.28	306.8	324

18.0 OTHER RELEVANT DATA AND INFORMATION

18.1 MINE PLANNING AND PRODUCTION

18.1.1 SUMMARY AND CONCLUSIONS

This section outlines the parameters and procedures used by AMEC to perform scoping-level mine planning work for the Ajax project at a proposed milling rate of 60,000 t/d. The mine plan and cost analysis are based on the Measured, Indicated, and Inferred mineral resources contained in pit designs based on a $2.00/lb copper and $700/oz gold LG optimized pit shell. The resource model described in Section 17.0 was used for the pit optimization and mine planning work.

Operating and capital costs were estimated to support the LG work and pit shell selection. These were further refined by creating a first-principles operating and capital model based on a mining schedule to generate a more robust estimate of these costs. AMEC has assumed open pit mining using conventional truck and shovel/loader equipment fleets.

Mine operating and capital costs were based on an owner-operated and maintained fleet in a large conventional open-pit, featuring 35 m^3 electric rope shovels, 220-t haul trucks, and electric blasthole drills suitable for 311 mm drill holes and mining of 12 m benches. Large FELs complement the electric cable shovels for flexibility and mobility. A smaller diesel drill will provide pre-shear drilling to minimize blast damage to the walls. A standard complement of large-scale support equipment is utilized to maintain ramps, dumps, and haul roads. The initial mine capital is estimated at US$59 M with sustaining capital over the mine life of US$169 M. The average mine operating cost is US$1.08/t moved.

Proposed production mining would follow a one year pre-production period and continue for approximately 23 years. The average tonnage to the mill is 21.9 Mt/a at 0.27% copper and 0.17 g/t gold. The typical waste tonnage per year is 36.5 Mt, for a 1.7:1 strip ratio.

The Ajax PA shows this deposit to be amenable to bulk mining with straight forward ore control. Ajax will benefit from nearby infrastructure and should have low costs as a result.

18.1.2 PIT OPTIMIZATION

Whittle® (v4.2) software was utilized to generate a series of nested LG shells as a basis for pit phase design, phase selection, and analysis. Pit optimization input parameters are summarized in Table 18.1 and discussed in this section.

MINING

Costs

Preliminary mining costs were estimated to be US$1.25/t mined. An additional US$0.10/t mined for a sustaining capital cost allowance was added, for a total of US$1.35/t mined. This amount is inclusive of allowances for dewatering but excludes reclamation costs. Rehandling of overburden and the historical Ajax East pit backfilled waste was estimated at US$1.11/t mined (including sustaining allowance) to reflect the savings from not requiring drilling and blasting. No mining dilution or material loss has been assumed.

METAL PRICES

Wardrop has determined that long term base case metal prices of US$2.00/lb of copper and US$700/troy oz of gold are reasonable. No price participation has been taken into account for this analysis (Table 18.1).

Table 18.1 LG Input Parameter Summary

Item	Unit	Base Case
Mining Costs		
Waste & Processed	US$/t mined	1.35
Process		
Processing	US$/t milled	3.35
General and Administrative		
Overhead, Admin	US$/t milled	0.44
Reclamation	US$/t milled	0.05
Cut-off		
NSR Basis	US$/t milled	3.84
Recovery		
Copper	%	32.591xCu Grade+72.732, max 92%
Gold	%	33.871xAu Grade+75.29, max 90%
Pit Slopes		
Overall		37 to 55
Freight Cost		
Total	US$/wmt	83.48

table continues…

Item	Unit	Base Case
Copper Terms		
Cu Concentrate Grade	%	25
Cu Concentrate Moisture	%	8.5
Treatment	US$/dmt	60.00
Deduction	Unit	1.0
Refining	US$/lb copper	0.085
Gold Terms		
Payable Percent	%	97, or deduction
Deduction	g in Cu Con	1.0

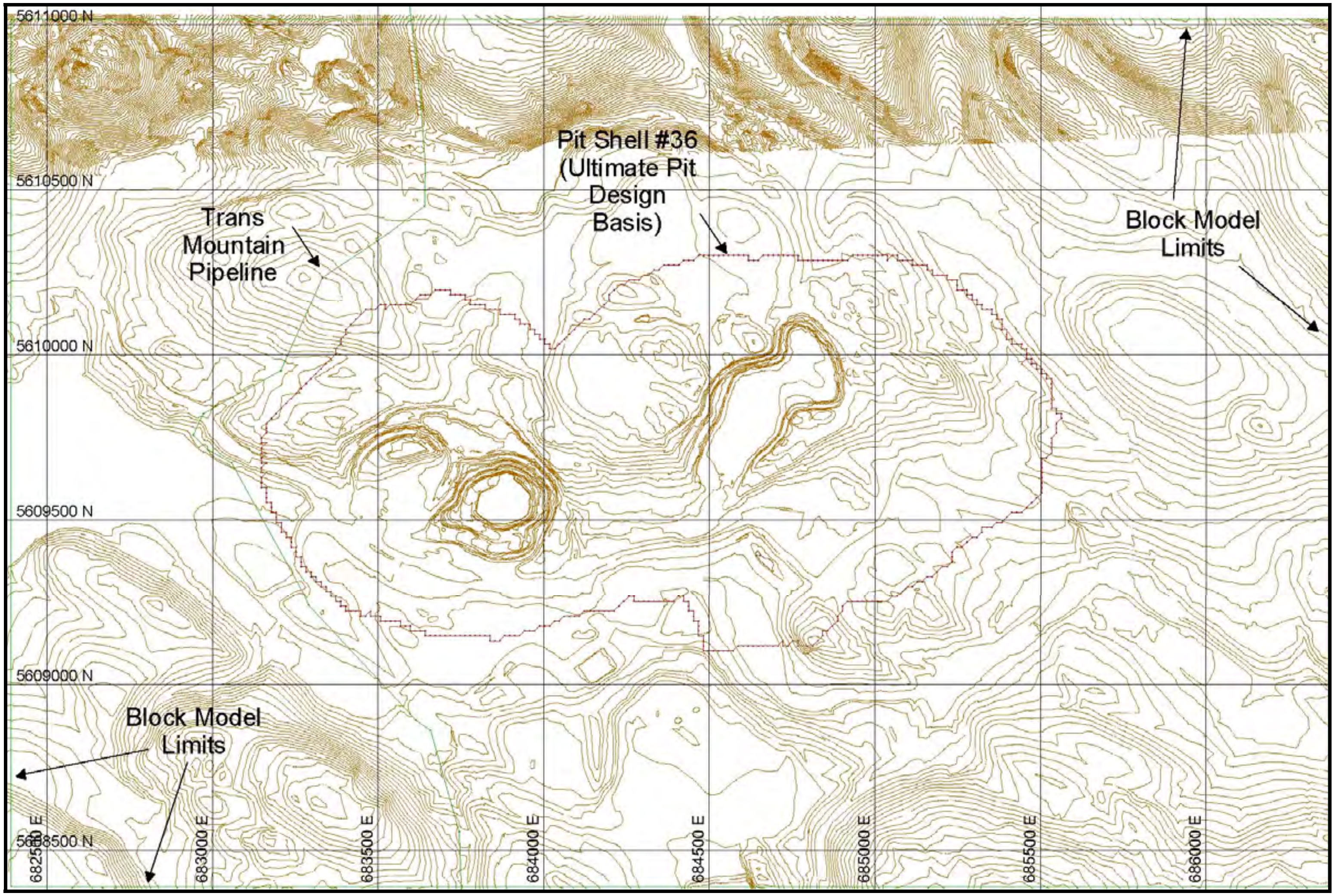
GEOTECHNICAL ASSUMPTIONS

Refer to Section 18.9 for pit slope design recommendations as proposed by BGC Engineering Inc.

OTHER MINING LIMITS TO BLOCK MODEL

The Trans Mountain Pipeline runs adjacent to the Ajax property. A 50 m boundary was placed on both sides of the line to provide a buffer zone. Figure 18.1 shows the Trans Mountain Pipeline location in relation to the topography, the ultimate pit shell limit, and block model limits.

Figure 18.1 Topography, Pit Limit, Block Model Coverage, and Trans Mountain Pipeline Location



NET SMELTER RETURN MODEL

The block model was received as a text file which was imported into Gemcom Software GEMS® (v6.2). A script was run in order to generate a value for each block on a dollar per tonne basis. This block value contains all net deductions and costs from recovered metal values, excluding mining, processing, general and administrative (G&A), and sustaining and initial capital costs.

The cut-off grade applied was the sum of the process, reclamation, and G&A costs. This total is $3.84/t milled. On a copper-equivalent basis (at $2.00/lb Cu and $700/oz gold), this $3.84/t cut-off is approximately equal to a recovered 0.11% CuEq.

18.1.3 PIT AND PHASE DESIGN

PIT SHELL SELECTION

A pit-by-pit graph of the nested pit shells created in Whittle® is shown in Figure 18.2. This shows the tonnes of process material (21,900 kt/a), waste, and discounted (8%) and undiscounted pit shell values for a series of revenue factors or factored pit shells. A revenue factor is a multiplier used to generate pit shells at a range of metal values. This results in a series in which the actual metal prices can be applied to create curves of values. In this case, revenue factor 1.0 represents the shell generated at US$2.00/lb copper and $700/troy oz gold.

The revenue factor 1.0 shell was selected as the ultimate or final pit shell for this study. Internal shells were selected to be a Starter and Intermediate pit shells, to provide higher grade material and defer waste stripping.

A representative section through the selected shells with NSR (US$/t) grades in blocks, nested shells, and topography is included as Figure 18.3.

Figure 18.2 Whittle® Nested Shell Output Graph (Pit-by-Pit)

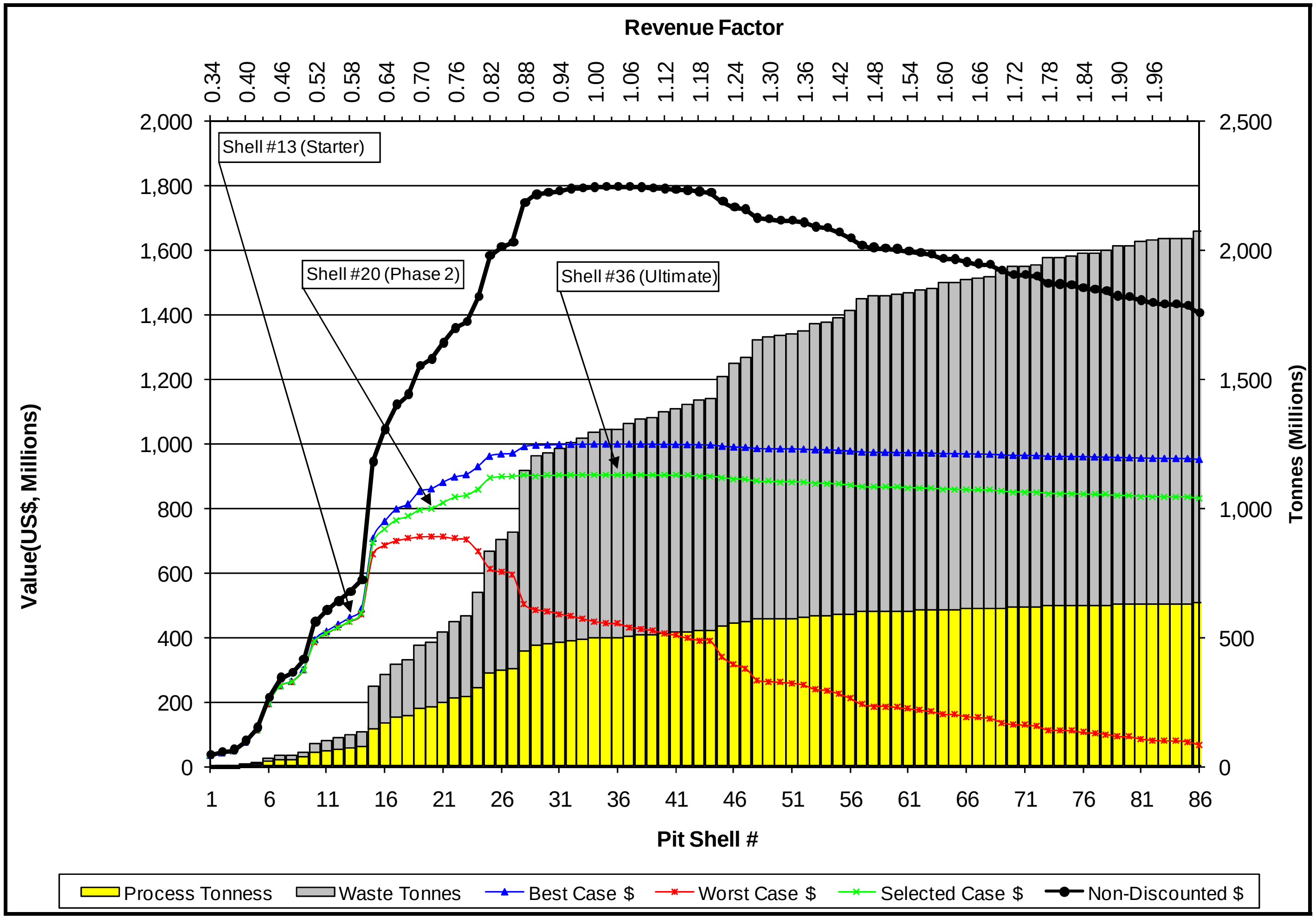
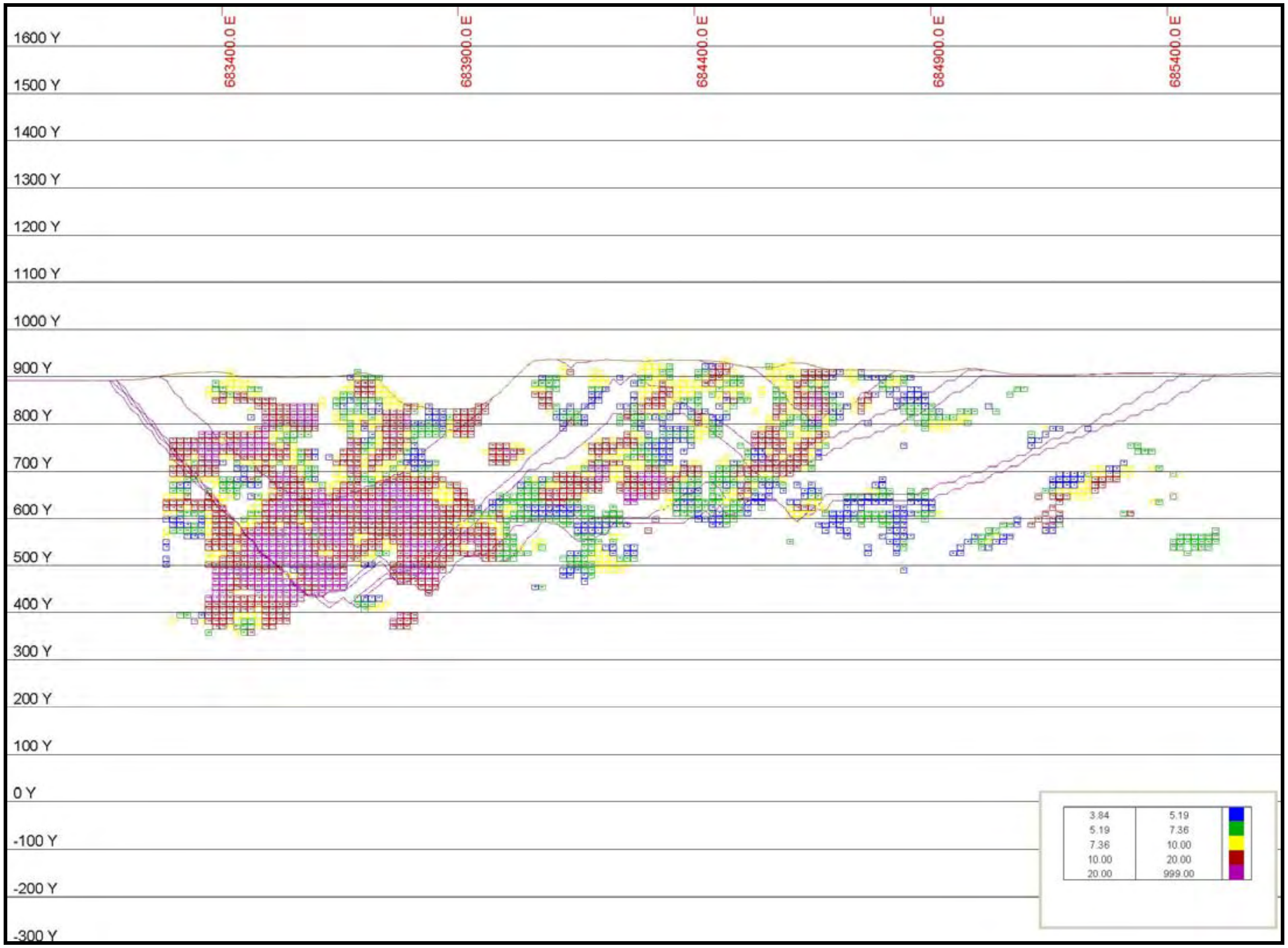


Figure 18.3 Section 5609600 N (Looking North) with NSR $/t Blocks



PIT AND PHASE DESIGN

Smoothed pit designs for the ultimate pit and 6 internal phases were completed with 35-m wide and 10% grade ramps. The designs utilize double benching of 12-m benches with variable width berms following BGC's recommendations. A batter angle of 70° was used to achieve the overall smoothed pit shell. The exception is the single-benched and 65° batter angles in the picrite unit to the south west highwall. The ultimate pit design is shown in Figure 18.4, with the phases shown in plan in Figure 18.5. The preliminary waste dumps are shown in Figure 18.6.

The pit designs do not include any surface water diversion structures. The west wall approaches the northeast arm of Jacko Lake in later-developed pit phases and this area will require further study. As well, the creek from Jacko Lake approaches the pit wall and may require a short diversion. At present, it is assumed that measures will be taken to keep wall slopes dry. The mine operating cost model has $13.5 M ($0.01/t mined) added for a pit dewatering cost allowance.

The ultimate pit design tonnages are compared to the LG shell they are based on in Table 18.2. In the process of converting LG shells to smoothed pit designs with access ramps, the designs contain more waste and grades are slightly lower. Note that the pit shell smoothing adds approximately 5.6% additional waste tonnes in the Ajax ultimate pit case (well within the industry generally accepted limit of 10%).

Table 18.2 Ultimate Pit Design versus LG Shell (at US$3.84/t Cut-off)

	Estimated Waste (Mt)	Estimated Total Process (Mt)	Cu Grade (%)	Au Grade (g/t)	NSR Grade (US$/t)	Strip Ratio (W:O)
Ultimate Pit	852.7	502.2	0.27	0.17	10.70	1.70
LG Shell RF 1.00 (#36)	807.2	503.9	0.27	0.17	10.91	1.60
Difference	45.6	-1.7	-0.00	-0.00	-0.21	0.10
% Difference	5.6	-0.3	-2.2	-1.2	-1.9	6.2

Figure 18.4 Ultimate Pit Design

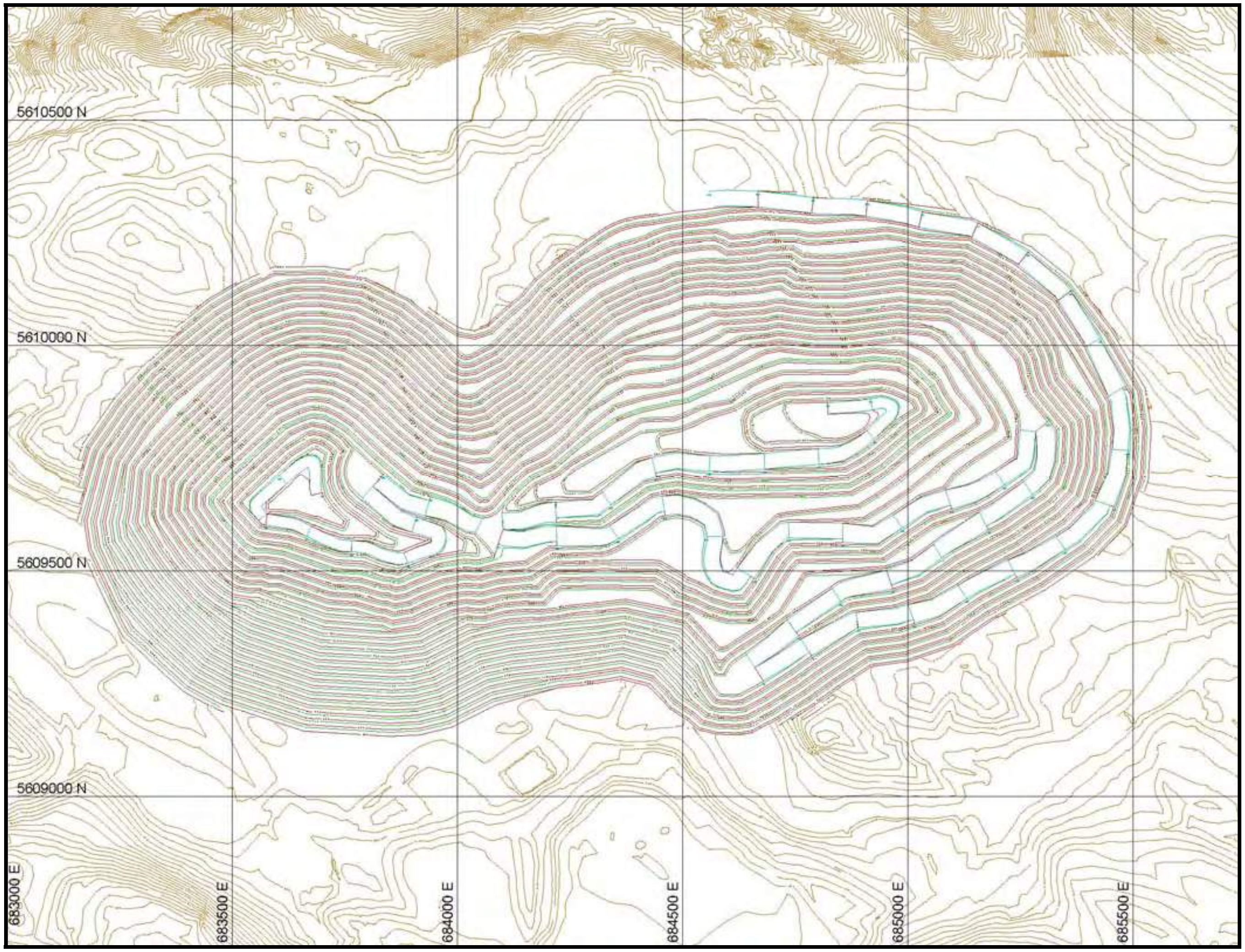


Figure 18.5 Ajax Phases in Plan at 834 m Elevation

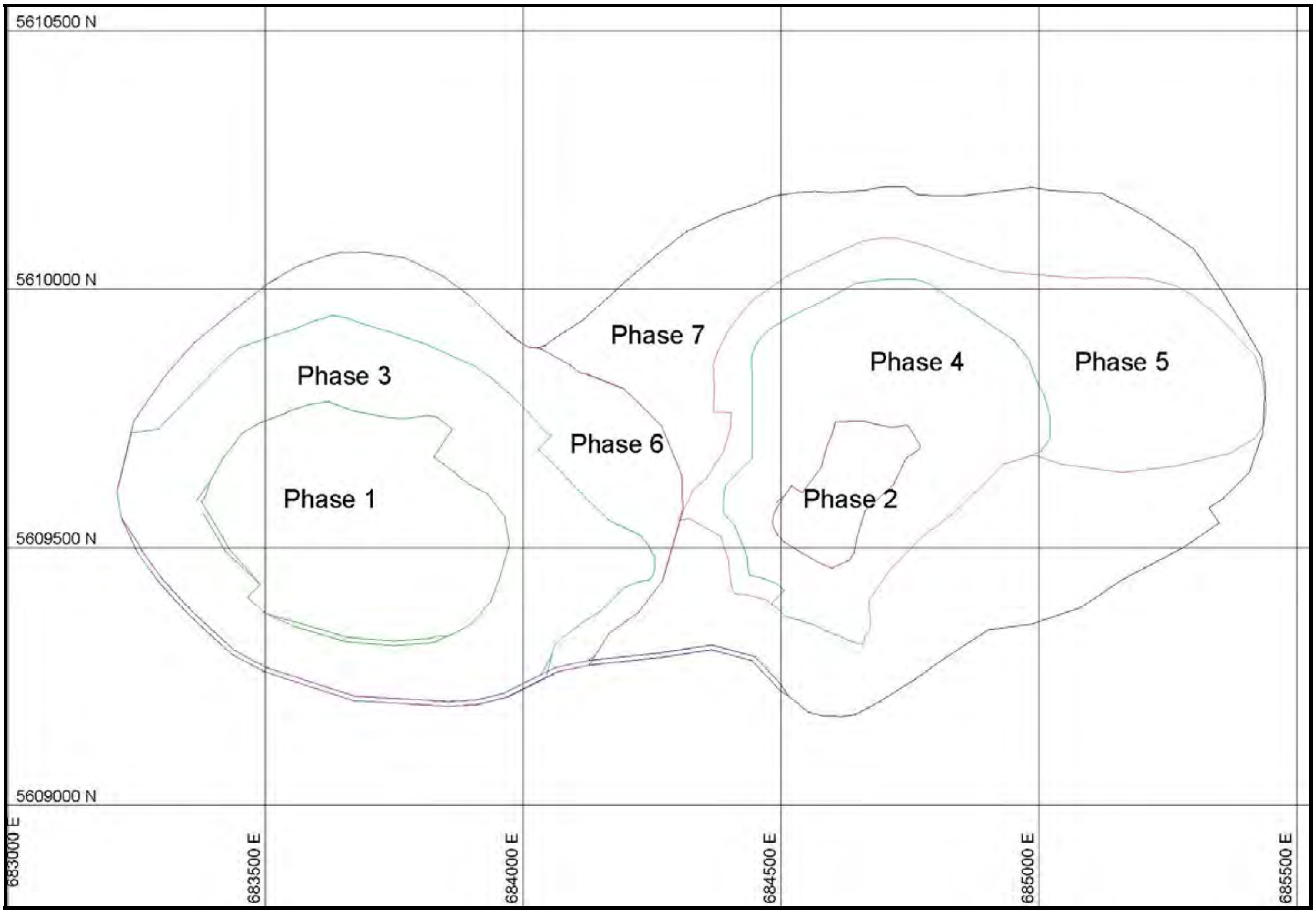
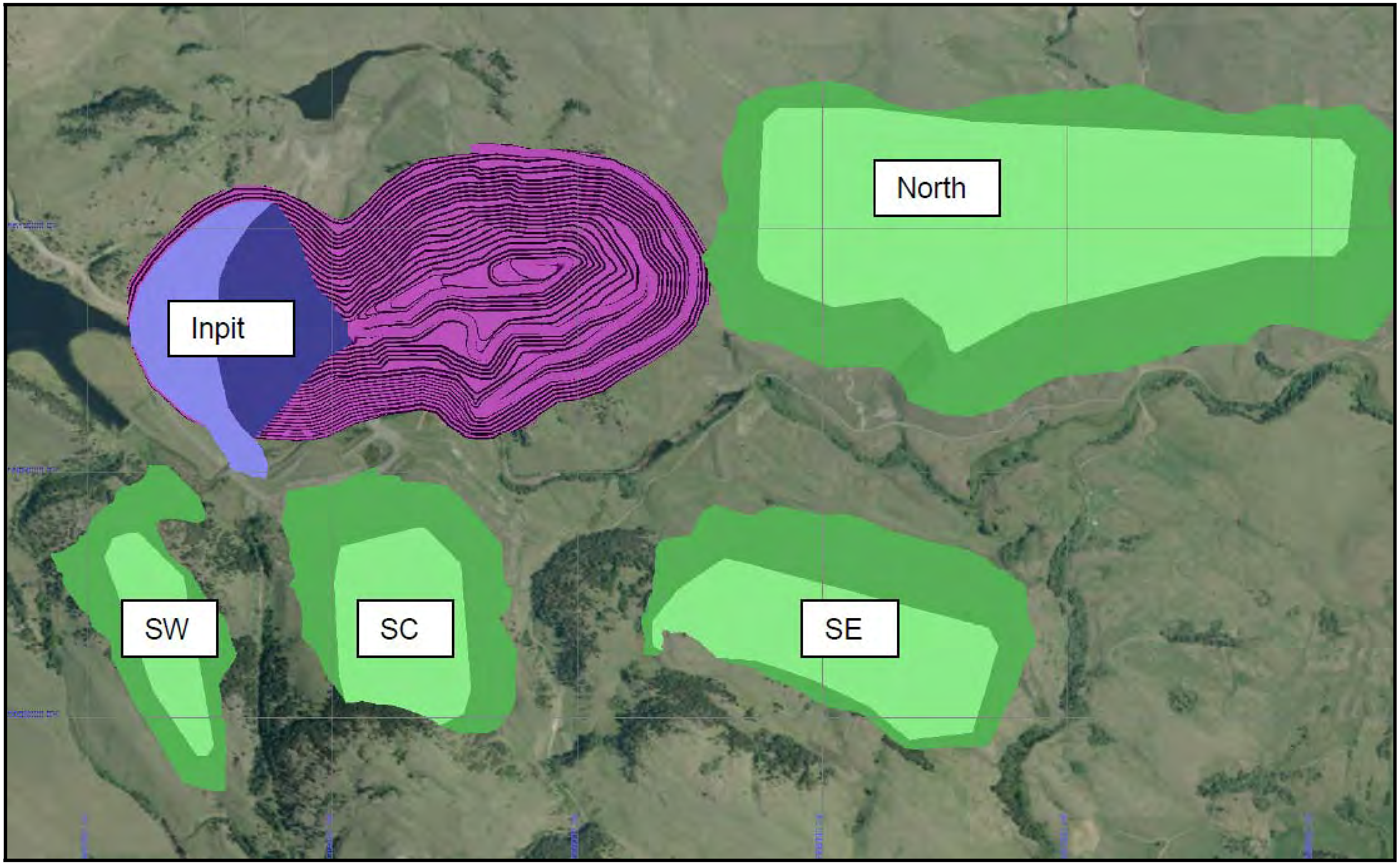


Figure 18.6 Waste Dump Locations (North, SW, SC, SE, In-pit Backfill)



18.1.4 ANALYSIS

GENERAL DESIGN

The ultimate pit design contains 77.8 Mt of inferred mineral resources (or 15.5% of the 502.2 Mt planned to be processed) grading 0.21% Cu, 0.15 g/t Au, and US$8.28/t NSR. However, the first 10 years of the projected mine schedule only contain 14.5 Mt (or 6.6% of 219 Mt processed). While there is a reasonable expectation that the inferred mineral resources can be upgraded and classified as higher-confidence mineral resources with additional exploration and infill drilling programs, AMEC cautions that some or all of this inferred mineralization may not be able to be converted to higher-confidence mineral resource categories.

MINE LIFE

Ajax has an estimated 22.9-year mine life at a 21.9 Mt/a process rate during production mining. A pre-production period of one year strips 11.7 Mt of waste and builds a 1.1 Mt of stockpile of process material.

Table 18.3 is an annual schedule of the planned mine process material, waste, and grades. The peak production rate is in Year 15 when a total of 97.3 Mt (266 kt/d) of material is moved. On average, the annual mining rate is 58.4 Mt (160 kt/d) of total mined material.

Table 18.3 Annual Schedule Based on 21.9 Mt/a

	Waste (kt)	Process (kt)	Grade % Cu	Grade Au g/t	Grade NSR $/t
Year -1	11,652	1,052*	0.21	0.16	8.74
1	28,501	20,848	0.31	0.21	12.67
2	26,587	21,900	0.33	0.21	13.56
3	33,882	21,900	0.27	0.17	10.64
4	42,282	21,900	0.22	0.13	8.45
5	50,537	21,900	0.26	0.15	10.06
6	31,722	21,900	0.30	0.18	11.83
7	14,263	21,900	0.30	0.21	12.33
8	37,161	21,900	0.29	0.16	11.09
9	24,227	21,900	0.23	0.13	8.71
10	18,848	21,900	0.24	0.15	9.29
11	44,225	21,900	0.26	0.16	10.22
12	64,324	21,900	0.25	0.18	10.11
13	60,271	21,900	0.28	0.16	10.58
14	52,313	21,900	0.28	0.19	11.34
15	75,357	21,900	0.32	0.22	13.29

table continues...

	Waste (kt)	Process (kt)	Grade % Cu	Grade Au g/t	Grade NSR $/t
16	65,383	21,900	0.35	0.22	14.26
17	68,906	21,900	0.21	0.12	7.85
18	43,138	21,900	0.24	0.15	9.18
19	21,068	21,900	0.26	0.17	10.23
20	9,689	21,900	0.24	0.16	9.57
21	10,884	21,900	0.24	0.16	9.52
22	8,453	21,900	0.25	0.17	10.08
23	9,006	20,406	0.27	0.20	11.47
Total	**852,700**	**502,206**	**0.268**	**0.17**	**10.70**

*Stockpiled material in Year -1 is processed in Year 1. Combined material in Year 1 is 21,900 kt at 0.30%Cu, 0.20 g/t Au, and $12.48/t NSR.

18.1.5 Open Pit Mine Operating Costs

Basis of Estimate

Mine costs were based on an owner-operated and maintained fleet in a large conventional open-pit, featuring 35 m^3 electric rope shovels, 218-t haul trucks, and electric blasthole drills suitable for 311 mm drill holes and mining of 12 m benches. Large FELs assist the electric shovels for flexibility and mobility. A smaller diesel drill will provide pre-shear drilling to minimize blast damage to the walls. A standard complement of large-scale support equipment is utilized to maintain ramps, dumps and haul roads.

Key commodity costs used were US$0.74/L for diesel and US$0.0247/kWh for electrical equipment. The electricity cost was based on a BC Hydro quotation. Labour rates were based on Wardrop's estimate, which includes a 25% burden. It is AMEC's opinion that this labour burden appears low compared to a more typical 40% assumption. A more detailed labour cost survey should be completed prior to the pre-feasibility stage.

Mining Cost

The estimated life-of-mine (LOM) mining cost from Year 1 to Year 23 averages US$1.08/t mined, with a peak of US$1.42/t in Year 7.

On a LOM average, the general mine expense represents 11% of the total mine cost with drilling at 9%, blasting at 11%, loading at 10%, support at 8%, and hauling at 51%.

Haulage requirements were estimated by creating haul profiles for processed material and waste, and using a haul fleet cost estimating tool (Caterpillar FPC) to determine average haul times. Similarly, a productivity was applied for loaders and shovels and fleet sizes constructed to move the required tonnages, on an annual basis. Peak requirements are estimated at 37 haul trucks, 2 large electric shovels, 1 FEL, and 3 large drills with one additional smaller drill for pre-shear drillholes.

The average labour requirement in the mine is approximately 240 people with a peak of 326 in Year 15. The ratio of maintenance to operator staff is 0.5, or 1 maintenance worker for every 2 operators.

The cost of hauling is by far the highest cost factor and considerable effort should be placed on reducing this in further studies. Viable options to reduce haulage costs include larger haul trucks, in-pit crushing and conveying, and trolley assisted hauling.

18.1.6 *Open Pit Mine Capital Costs*

Basis of Estimate

The capital cost estimate was based on the following:

- mine production schedule
- pre-production portion of the operating cost estimate, as completed by the owner-operated fleet during Year -1
- mine ancillary equipment estimate
- estimates for engineering and technical support
- quotations for new (mobile) equipment, excluding taxes.

Mine capital costs were largely based on a PA-level quotation provided by a local distributor with experience in Western Canada. Other major equipment was based on recent AMEC quotations received for other projects. This estimate is considered to have a level of accuracy suitable for PA level work.

No inflationary adjustment was made for sustaining capital replacements and additions.

Initial (Pre-production) Capital Estimate

Initial mine capital is estimated to be US$59.3 M, including US$21.8 M in pre-stripping development. The pre-production stripping cost is estimated to be US$1.72/t. A summary of mine initial capital is shown in Table 18.4. A small portion of these costs, particularly within mine ancillary equipment, will include equipment sharing with the mill complex.

Table 18.4 Summary of Direct Mine Capital Costs

Area	Year -1 ($000)
Mine Pre-production Development	21,800
Mine Production Equipment	29,300
Mine Ancillary Equipment	5,200
Mine Water Management	110
Mine Engineering (inc. Dispatch, GPS)	2,900
Total Mine Capital	**59,310**

SUSTAINING CAPITAL ESTIMATE

The mine equipment fleet requires periodic additions or replacements as requirements increase or equipment reaches its useful life.

The LOM sustaining capital totals US$168.6 M or approximately US$0.126/t moved. Of this, US$86.5 M (or 51%) is for haul truck replacements and additions.

18.1.7 RISKS AND OPPORTUNITIES

The risks that may challenge mining of the Ajax property are metal price variability, labour cost, and world consumable prices such as diesel.

Metal prices of US$2.00/lb copper and US$700/oz gold were used at a time where spot prices were higher, in order to minimize this impact. However, the additional impact of Canadian dollar conversion on metal price may require further financial modelling and hedging strategies.

The labour cost and associated burden of 25% may be too low and a labour survey and benefit study should be considered.

This PA considered only diesel-powered haulage; therefore, Ajax has a high sensitivity to diesel price on the overall mining cost.

Possible opportunities to improve the long-term viability of this project are to study in-pit crushing and conveying and trolley-assisted haulage. The relatively low cost of electricity may indicate that both these options have benefits over the more volatile prices of diesel.

18.2 INFRASTRUCTURE, SERVICES, AND FACILITIES

The Ajax project is a property with developed infrastructure, services, facilities, and access road currently utilized for ongoing exploration. The ancillary facilities will include the following:

- access road upgrade and site roads
- fresh, fire, and potable water supply, and sewage collection and treatment
- power supply and distribution
- communications
- fuel storage
- buildings including the administration building, crushing and concentrator buildings, and truck shop and maintenance building.

Due to the proximity to Kamloops, a construction camp is not required.

18.2.1 ACCESS AND SITE ROADS

The 8.3 km highway of Lac Le Jeune connects the Ajax property northward to the intersection of Lac Le Jeune highway and Copperhead Drive off Highway 1, west of Kamloops. The access road requires minor upgrades.

A haul road right-of-way exists from the Ajax area to the Afton plant site. Single lane site roads are required to access the various ancillary facilities including the explosives storage and fresh water reservoir.

18.2.2 FRESH, FIRE, AND POTABLE WATER SUPPLY, AND SEWAGE DISPOSAL

The fresh and fire water is supplied primarily for start-up and emergency purposes, gland seal water, reagent, flotation cleaning stages, and process water makeup. The gland and seal water is pumped and distributed to the slurry pumps from the fire-fresh tank.

The fresh water is supplied from Kamloops Lake via an existing pipeline. Alternatively, water may be extracted from the diversion system that diverts water from upper Alkali Creek around the tailings storage facility during the snow and rainfall seasons.

A potable water tank and hydro-chlorination system will be provided.

The sewage treatment plant will be a pre-packaged Rotating Biological Contactor (RBC). The plant will be manufactured off site and containerized for simple connection to the collection system on site. Once treated, the sewage treatment plant effluent will be discharged into the environment in accordance with the requirements of the Environmental Impact Assessment.

18.2.3 *Power Distribution, Energy Efficiency, and Utilization*

Preliminary discussions with BC Hydro and BC Transmission Corporation (BCTC) suggest that the power distribution system in that area should be able to provide sufficient power for the mine's approximate running load of 74 MW, with a few upgrades to increase power supply reliability in that area.

For the purposes of this study, the option of running a new 138 kV overhead line from a substation called Savona (SVA) was selected. SVA is located approximately 40 km away from the mine's substation. Further information and analysis by BC Hydro and BCTC will be required to determine the optimal solution for the power distribution to the new mine.

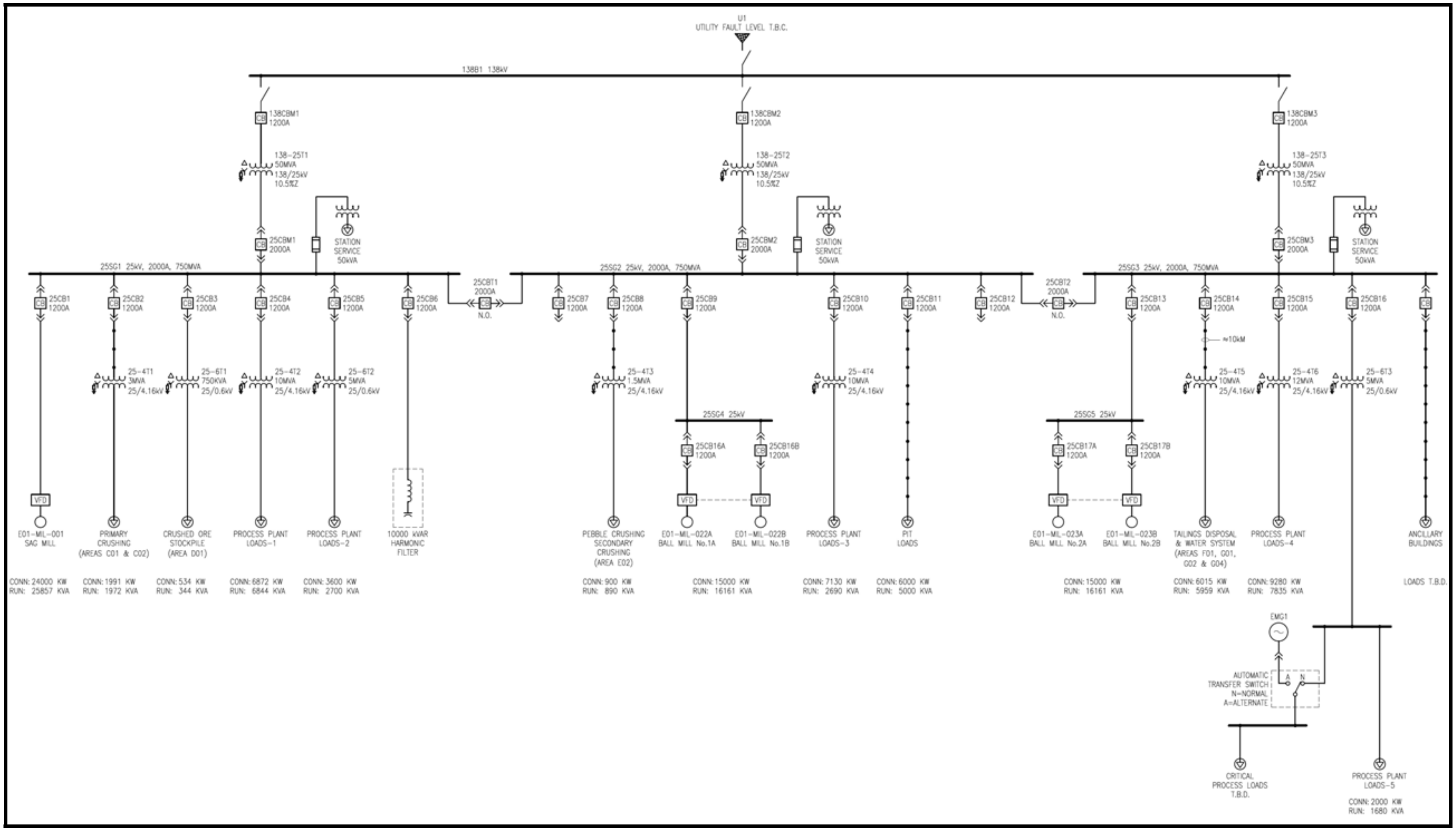
The plant's main substation will consist of 138 kV to 25 kV step-down power transformers. The 25 kV line will be the plant's main distribution voltage. This substation will consist of 25 kV switchgear line-ups that will be used to distribute power to the various plant areas as required by either overhead line or land based cable tray/conduit. The SAG mill and both dual pinion ball mills will also be powered at 25 kV.

Each major plant area will require an electrical room where the 25 kV distribution will be stepped down to the process level distribution voltages of 4.16 kV and 600 V. There will be a selection of 4.16 kV switchgear (breakers and starters) and 600 V motor control centres (MCCs).

A Critical Process MCC in each electrical room (where critical loads are identified) connected to a stand-alone generator system will transfer power from one source to another via an automatic transfer switch.

The electrical single line diagram is shown in Figure 18.7. The electrical load list is provided in Section 2.2 of the Supporting Documents.

Figure 18.7 Electrical Single Line Diagram



18.2.4 COMMUNICATIONS

At the site, an optical fibre backbone is included throughout the plant in order to provide a path for the data requirements for voice, data, and control system communications. A fibre backbone for a site Ethernet-type system is included, which will provide data and voice bandwidth.

18.2.5 FUEL STORAGE

Diesel fuel requirements for the mining equipment, and process and ancillary facilities will be supplied from above-ground diesel fuel storage tanks located near the truck shop. The diesel fuel storage tank will have a capacity sufficient for approximately three days of operation. Diesel storage will consist of above-ground tanks and a containment pad, complete with loading and dispensing equipment conforming to regulations. A fuel dedicated service truck will transport diesel to the mining equipment.

18.3 FOUNDATION AND SOIL DATA

Foundations governed by static loads, dynamic loads, and transitory loads produced by wind or earthquake will be designed in accordance with the following assumptions (to be confirmed by geotechnical investigation):

- native ground is firm and suitable to support industrial-type buildings typical to mineral processing functions without a further geotechnical ground improvement program required
- allowable bearing pressure (native bearing pressure) of 400 kPa
- minimum depth of footing of 2.5 m below finished grade (frost depth).

18.4 CODES AND STANDARDS

All work will be carried out in accordance with the latest edition of the following standards, specifications, and codes:

- National Building Code of Canada (NBCC)
- Supplement to the National Building Code of Canada (SNBCC)
- Canadian Standards Association (CSA)
- Canadian Institute of Steel Construction (CISC)
- Reference Handbooks:
  - Concrete Design Handbook by Canadian Portland Cement Association (CPCA)

- Handbook of Steel Construction by CISC
- soil reports and correspondence.

18.5 Materials Specifications

18.5.1 Structural Steel

The rolled structural steel shapes, plates, and bars conform to CAN/CSA-G40.20/G40.21-350W. The structural pipes conform to ASTM A53-96 Grade 240 MPa.

18.5.2 Concrete

The concrete conforms to NBCC and CAN/CSA-A23.3-M latest edition. The specified compressive strength of concrete will be 30 MPa.

The cement conforms to CAN/CSA-A5 Portland Cement Type 10 Normal UNO. Corrosive-resistant cement should be used, where applicable.

Reinforcing steel conforms to CAN/CSA-G30 18-M Billet Steel. The deformed type billet steel bar for concrete reinforcement will have a yield strength (fy) of 400 MPa.

18.6 Design Basis

Structural quantities for the following areas were estimated based on layout general arrangement drawings:

- concentrator building
- stockpile tunnel
- crushing building
- concentrate loadout building
- pebble crushing
- administration building
- maintenance shop
- assay laboratory
- cold warehouse
- conveying.

Structural quantities are based on “neat” line quantities from engineering designs and sketches. Costing is based on redi-mix concrete delivered from batching plant. Excavation quantities are taken to rough grade.

18.7 Building Descriptions

Main structural features of each building are listed in the following sections.

18.7.1 *Concentrator Building*

The Concentrator Building is a steel structure with insulated steel roof deck and wall cladding.

Two overhead cranes (a 50/10 t crane operating over the mill area, and a 25 t crane over the flotation area) are supported on steel beams cantilevered from building columns.

Interior steel platforms on multiple levels are provided to service ongoing operation and maintenance for equipments.

The building will house modular pre-fabricated units for electrical, MCC, control, change rooms, and offices.

Heavy mat concrete foundations and piers are provided to support mills.

18.7.2 *Stockpile Tunnel*

The main stockpile tunnel is of concrete construction with one level of elevated steel platforms supporting four apron feeders. It is connected at one end to a conveyor tunnel of corrugated steel construction and concrete floor slab. The opposite end is connected to an escape tunnel of corrugated steel construction with staircases to surface.

18.7.3 *Crushing Building*

The crushing building is of concrete construction with multiple levels housing the primary crusher, the crushing area apron feeder, and the stockpile feed conveyor. It consists of a steel roof over the dump pocket.

A 110 t/25 t overhead crane is supported on steel beams cantilevered from steel columns over the dump pocket. The control room adjacent to the dump pocket is a modular prefabricated unit.

The crushing building is constructed against an earth retaining wall.

18.7.4 CONCENTRATE LOADOUT BUILDING

The concentrate loadout building is a steel structure with insulated steel roof deck and wall cladding.

Interior steel platforms are positioned on multiple levels to service equipment.

18.7.5 PEBBLE CRUSHING

The pebble crushing building is a steel structure with insulated steel roof and wall cladding.

A 30/5 t overhead crane, serviced over the 250 t bin and the pebble crushers, is supported on steel beams cantilevered from building columns.

The pebble crushers are supported on elevated concrete slabs and piers over heavy concrete mat foundation.

MCC and electrical control rooms are modular prefabricated units.

18.7.6 ADMINISTRATION BUILDING

The administration building is a single-storey steel structure with insulated steel roof deck and steel wall cladding. It houses the administrative, engineering, and geology staff.

18.7.7 MAINTENANCE/TRUCK SHOP

The maintenance/truck shop facility is a steel structure with insulated steel roof deck and steel wall cladding. It is anticipated to be equipped with an overhead crane.

The floor space provides areas for maintenance shop activities including welding, repair, warehouse, offices, and associated facilities to support warehouse and maintenance personnel. The building includes the mine dry area with lockers and showering facilities.

18.7.8 ASSAY LABORATORY

The assay laboratory is a single-storey steel structure with an insulated steel roof deck and steel wall cladding. It is anticipated to house all necessary laboratory equipment.

18.7.9 COLD WAREHOUSE

The cold warehouse is an un-insulated sprung-type structure utilizing light industrial material.

18.7.10 Conveying

Conveyors are to be vendor supplied including all structural support frames, trusses, bents, and take-up structures.

Overland conveyors are supported on concrete pre-cast panels spaced at regular intervals. Elevated conveyors are supported with vendor supplied steel trusses and bents on concrete foundations.

18.7.11 Temporary Construction Facilities

Due to the proximity to Kamloops, a construction camp is not required.

18.8 Water and Waste Management Plan

The tailings storage facility (TSF) will incorporate the expansion of the existing impoundment, constructed of materials from local borrow sources and/or stockpiled non-reactive waste rock from previous operations.

The embankments will be constructed in stages over the life of the mine to defer capital expenditures and help distribute costs. The start-up impoundment will provide storage for the first year of mine production.

The final embankment will be raised 89 m to provide sufficient capacity to store the envisaged 372.3 Mt of tailings and associated site water.

An annual water balance and water management plan have been prepared for the mine and waste management facilities. The water balance is strongly dependent on various assumptions related to mill throughput and fresh water requirements in the mill process and for potable water supply.

Key aspects of water management include the following:

- Ajax pit water and runoff from the waste dumps will be transferred to the TSF during pre-production and throughout the mine life.
- The site is in a water deficit. This deficit can be made up through fresh water supply from Kamloops Lake via an existing pipeline and/or water may be extracted from the diversion system that diverts water from upper Alkali creek around the TSF during freshet and stored in the tailings impoundment.
- All affected site water will be captured in the TSF for containment. All unaffected water will be diverted around the site except as required to make up the water balance deficit.

The tailings delivery and reclaim systems have been routed to suit the arrangement of the major components of the tailings facility. The tailings delivery and reclaim systems will consist of the following:

- a tailings pipeline to transport slurry tailings from the mill to the TSF
- a reclaim barge within the TSF
- a land based pump station and pipeline to re-circulate the process water back to the mill.

Preliminary capital and operating cost estimates have been prepared by Knight Piésold for the TSF. This preliminary cost estimate has been completed to provide initial costing for the project financial model. Key contributors to cost include:

- embankment construction
- water management systems
- seepage control and collection systems
- tailings delivery and reclaim water pipelines
- access road development
- tailings and reclaim pumping costs
- contingency.

A summary of the TSF costs is shown in Table 18.5.

Table 18.5 Total Tailings Facility Costs

	Cdn$ (Millions)
Initial Capital	60
Sustaining Capital	149
Total Operating Cost	56

The overall site will be reclaimed after mine closure to mimic the previous land use. This will involve removing equipment, roads, stockpiles, capping the tailings surface with a dry cover, spreading topsoil over all disturbed areas, and revegetating.

18.9 Geotechnical Design

Abacus retained BGC to provide PA-level slope design criteria. BGC provided design recommendations for four rock units: Iron Mask Hybrid (IMH), Sugarloaf Diorite (SLD), Nicola Volcanic (NVV), and Picrite (NVP). The Iron Mask Hybrid and Sugarloaf Diorite units were split into West and East domains: EIMH/WIMH and

ESLD/WSLD. The Nicola volcanics were all assumed to be the more conservative picrite unit as modeling of this zone is incomplete.

The recommendations assume a bench batter angle of 70° is achieved with double benching of 12 m benches, except for the picrite unit. The slope design criteria were proposed over a range of design sectors by slope dip direction. A more simplified range for each unit is summarized in Table 18.6.

Table 18.6 Geotechnical Assumptions (Summary)

	Units	EIMH	ESLD	WIMH	WSLD	NV
Bench Height	m	12	12	12	12	12
Berm Width	m	9.3-19	9.3	9.3-18.9	10-20.4	9
Bench Berm Spacing	#	2	2	2	2	1
Batter Angle	°	70	70	70	70	65
Wall Height, maximum	m	216-312	480	288-432	216-432	144-366
Road Width, Includes Berm	m	32	32	32	32	n/a
Overall Wall Angle	°	41.6-54.7	51.8	41.2-53.9	41.4-51.3	36.6-40.9

The complete BGC report titled "Ajax Preliminary Economic Assessment Open Pit Slope Design" dated April 30, 2009 is available in Section 7.2 of the Supporting Documents.

18.10 ENVIRONMENTAL

In preparation for permitting, an environmental baseline study was completed to assess the current environmental status across the mine site. The study includes evaluation of the flora and fauna, ground and surface water quality, and static testing for acid generating potential. The study concluded that no significant issues are present that would impede the permitting process. The static testing for acid generating suggested the material to be mined is not acid generating. Kinetic testing is scheduled for completion during the upcoming pre-feasibility study.

18.11 CAPITAL COST ESTIMATE

The PA capital cost estimate has been prepared to an accuracy of +25%,-5%, with Canadian dollars as the base currency. A foreign exchange rate of Cdn$1.00 = US$0.82 was applied as required.

A summary of the capital cost estimate is shown in Table 18.7. The total estimated capital cost for this project is approximately US$535 M. The details of the estimate are provided in Section 3.2 of the Supporting Documents.

Table 18.7 Capital Cost Estimate Summary

Major Area	Description	Total Manhour	Total Labour Cost	Total Material Cost	Total Construction Equipment Cost	Total Equipment Cost	Total Cost
A	Overall Site	39,487	2,428,456	1,306,547	2,530,266	11,045,072	17,310,341
B	Mining	0	0	30,010,000	0	29,300,000	59,309,999
C	Crushing	94,579	5,816,631	4,801,107	496,588	8,952,748	20,067,074
D	Crushed Ore Storage And Reclaim	55,996	3,443,748	2,338,363	265,044	5,493,863	11,541,017
E	Process	484,833	29,817,210	30,059,622	7,764,447	101,369,575	169,010,854
F	Tailings (Knight Piésold)	176,823	10,874,639	21,598,023	3,810,673	963,500	37,246,835
G	Site Services and Utilities	25,813	1,587,519	1,560,732	283,884	2,712,191	6,144,326
J	Ancillary Buildings	92,959	5,716,963	8,321,084	496,564	2,022,361	16,556,972
I	Plant Mobile Fleet	669	41,162	82	0	3,745,282	3,786,526
N	Off-Site Infrastructure & Facilities	0	0	8,200,000	0	0	8,200,000
X	Project Indirects	460	28,290	103,832,950	12,300	0	103,873,540
Y	Owner's Costs	0	0	16,400,000	0	0	16,400,000
Z	Contingencies	0	0	65,481,101	0	0	65,481,101
Grand Total		**971,620**	**59,754,619**	**293,909,610**	**15,659,766**	**165,604,591**	**534,928,586**

18.11.1 BASIS OF ESTIMATE

Where appropriate, quantities will be developed from general arrangement drawings, process design criteria, process flow diagrams, and equipment lists. Percentage allowances are applied to bulk materials based on discussions between the respective discipline and the estimator. Details on the respective discipline quantities are as described in the following sections.

BULK EARTHWORKS INCLUDING SITE PREPARATION

Bulk earthwork quantities are generated from rough grading designs using Autodesk Land Development Desktop Civil Package. The excavation of topsoil and an allowance for rock excavation are based on the geotechnical information available at the time of the estimate preparation. Structural fill pricing is based on aggregates being produced at site utilizing a portable crushing and screening plant. The mobilization and set-up costs of the aggregate plant will be included in the capital cost estimate. The actual cost of aggregate production will be included in the unit rates. Earthwork quantities do not include an allowance for bulking or compaction of materials; these allowances are included in the unit prices. The estimate was developed based on 5 m topography.

In the bulk earthwork estimate, Wardrop has made the following assumptions:

- topsoil (300 mm average) to be stripped and stockpiled on site
- 15% of excavated material is deemed to be unsuitable
- 25% of excavated material is deemed to be excavation in rock, of which 50% will be rippable rock; the balance will require drilling and blasting
- surplus excavated material to be stockpiled on site
- an average of 300 mm-thick gravel surfacing (minus 30) is provided over the plant site area
- all roads will have 200 mm-thick surfacing material (minus 50) complete with a 300 mm-thick base (minus 300) and a 1,500 mm-thick sub-base
- granular materials are readily available to the plant site or from Kamloops.

SITE SERVICES

Site services (fresh/fire water and sewage) quantities are based on percentage allowances or allowances for this level of estimate.

CONCRETE

Concrete quantities are based on “neat” line quantities from engineering designs and sketches with a no allowance included for over pour and wastage. For estimating purposes, designers have provided quantities to the estimator in the following breakdown:

- concrete all in average
- anchor bolts
- embedded metal
- rock anchors.

Typically, all concrete is based on 30 MPa with the exception of lean mix levelling concrete, which is 10 MPa. Wardrop has assumed that concrete can be delivered from a Kamloops area batching plant. Concrete will be included based on \$486 m^3. For 30 MPa concrete, the concrete unit rates range from \$650 to \$1,250/m^3 dependent on the type of installation and lean mix levelling concrete at \$350 m^3.

Quantities were provided by area as defined by the project work breakdown structure (WBS). Unit rates for each type include formwork, reinforcing steel, placement, and finishing of concrete. A concrete supplier has been located 10 km from site so a concrete batch plant is not the most economic plan of action.

Structural Steel

Steel quantities are based on quantities developed from engineering design and sketches with no allowance made for growth and wastage. Allowances are included for cut-offs, bolts, and connections. For estimating purposes, designers have provided steel quantities as per the following breakdown:

- average steel sections – 61 to 90 kg/m (tonnes)
- stairways (tonnes) including platforms
- gratings are included in the overall rate
- handrail complete with kickplate is included in the overall rate.

The supply unit rates for fabricated steel range from \$2,300 to \$4,700/t. A value of \$3,500/t was used based on the latest budget prices.

Cranage was included for all tonnages at a rate of \$200/t.

Platework and Liners

Quantities for all platework and metal liners for tanks, launders, pumpboxes, and chutes will be included with information from previous projects, in-house data, and percentage allowances. Rubber lining for pumpboxes will also be included based on a percentage basis.

HVAC and Fire Protection

The cost for heating, ventilation, and air conditioning (HVAC) systems in ancillary buildings (based on costs per square metre) has been calculated from in-house data based on building function and site-specific climatic conditions.

Building heating and cooling loads were estimated based upon experience of similar projects in similar climates. Quantities for HVAC equipment (fans, heaters, air conditioning units, air handling units, etc.) were selected based upon the estimated heating and cooling loads for each building.

Fire protection is included based on information from recent similar projects.

Dust Collection

The dust collection equipment is included as a percentage based on the process flowsheets and best engineering practices.

Piping

Piping quantities have been included as a percentage. Allowances are included for specialty items (flexible hoses, etc.), supports, painting, and tagging as appropriate.

Wardrop assumed that some of the small-bore piping will be supported on cable tray.

Valves

All valves have been included as a percentage of the piping allowance.

Electrical

Electrical costs have been developed from the related study deliverables of other disciplines and are based on the single line diagram, project drawings, sketches, and are provided based on the project WBS structure.

The mechanical equipment list was used to estimate plant loading and site power requirements. Some non-mechanical loads were added to the equipment list in order to consolidate all known electrical loads in one document.

The equipment list, in conjunction with the site plan, was used to determine electrical building locations by centralizing electrical infrastructure to minimize cable runs.

A single line diagram was developed that indicates all major electrical equipment including 13.8 kV switchgear, power transformers, 4 kV and 600 V power distribution centers and MCCs. Requirements for major medium and low voltage adjustable speed drives (VFDs) were determined by the appropriate discipline and identified on the single line diagram.

Major electrical rooms are located within the large process buildings and infrastructure (warehouse/truckshop). For smaller and remote areas, or for areas in which large electrical rooms are impractical, allowances are made for prefabricated electrical buildings to be built off-site and delivered complete. The on-site work will consist of connecting incoming transformer feed and outgoing motor feeders. Any pre-manufactured electrical buildings will be self-contained with all necessary auxiliary equipment.

Requirement specifications were prepared for major electrical equipment only and sent to appropriate vendors. Prices were evaluated and included in the electrical portion of the capital cost estimate to reflect the project at the time that prices were received.

Cost estimates were developed using a material and labour approach for:

- major electrical equipment
- electrical infrastructure (based on in-house estimate and percentage)
- motor wiring (based on percentage)
- estimates are by area where possible; remaining equipment was designated as “infrastructure”
- factoring and in-house pricing was used for smaller items, as required.

INSTRUMENTATION

Instrumentation quantities and costs are included as percentages of the electrical allowance assigned to each area. Cable types and bulk quantities have been included in the percentage allowance for electrical.

Plant control system costs are based on the installation of a Distributed Control System (DCS). The cost of the DCS is based on pricing received for a recent similar project.

PRE-ENGINEERED BUILDINGS

Pre-engineered buildings are included based on the square metre footprint of each of the following buildings:

- truck shop, warehouse, tire change, and truck wash complex
- administration building
- gatehouse

- assay laboratory building
- cold warehouse building (sprung structure)
- mine dry and canteen.

18.12 Operating Cost Estimate

18.12.1 *Process Operating Cost Estimate*

Summary

All process operating costs are shown in Canadian dollars.

The average annual process operating cost is estimated to be approximately Cdn$87 M or Cdn$3.98/t (US$3.26/t) milled. The process operating costs are based on a process rate of 21,900,000 t of ore annually and 92% plant availability.

The estimated process operating costs are summarized in Table 18.8 and include the following:

- personnel requirements including supervision, operation, and maintenance; salary/wage levels based on current labour rates in comparable operations in BC
- liner and grinding media consumption estimated from the Bond Ball Mill Work Index and Abrasion Index equations and quoted budget prices or Wardrop database
- maintenance supplies based on major equipment capital costs
- reagents based on test results and quoted budget prices or Wardrop database
- other operation consumables including laboratory, filtering cloth, and service vehicles consumables
- power consumption for the process plant at the power unit cost of Cdn$0.029/kWh.

Table 18.8 Summary of Process Operating Costs

Description	Personnel	Annual Cost (Cdn$)	Unit Cost (Cdn$/t milled)
Personnel			
Operating Staff	12	$1,550,000	0.07
Operating Labour	40	$3,042,190	0.14
Maintenance Labour	36	$3,240,000	0.15
Met Lab and Quality Control	16	$1,040,000	0.05
Sub-total Staff	104	$8,872,190	0.41
Supplies			
Operating Supplies		$55,147,571	2.52
Maintenance Supplies		$7,850,000	0.36
Sub-total Supplies		$62,997,571	2.88
Power			
Process Power		$15,268,216	0.70
Total Process Operating Costs	**104**	**$87,137,978**	**3.98**

PERSONNEL

The projected personnel requirements are 104 persons, including 12 staff for management and professional services, 40 operators, 36 maintenance labour, and 16 personnel for laboratories, quality control, process optimization, and assaying. Salary/wage rates are based on current rates in northern BC including base salary, holiday and vacation pay, pension plan, various benefits, and tool allowance costs.

Total estimated personnel cost is Cdn$0.41/t milled. The detailed personnel description and costs are shown in Section 4.1 of the Supporting Documents.

OPERATING AND MAINTENANCE SUPPLIES

Major consumables and operating suppliers are estimated at $2.52/t milled. The major consumables include metal and reagents consumables. The liner and grinding media consumption were estimated from the Bond abrasion index equation and the prices from the latest supplier budget prices or Wardrop database.

Reagent consumptions were estimated from laboratory test results and comparable operations. The reagent costs were from the current budget prices from potential suppliers or Wardrop database.

The maintenance supplies are estimated at $0.36/t milled. Maintenance supplies are estimated based on comparable operations or a factor of major equipment capital costs.

POWER

The cost of power supply for the process plant is estimated to be Cdn$15.3 M or Cdn$0.70/t milled. A power cost of $0.029/t is used for an annual power consumption of approximately 526 GWh.

18.12.2 G&A OPERATING COST ESTIMATE

G&A costs are the costs that do not relate directly to the mining or processing operating costs. This includes:

- personnel – general manager and staffing in accounting, purchasing, and environmental departments, as well as G&A
- various employees in surface services
- G&A expenses including insurance, various administrative supplies, medical services, legal services, human resources related expenses, travelling, road maintenance, as well as external assaying and testing.

The G&A expenses are estimated at approximately Cdn$11.3 M or Cdn$0.52/t milled, including approximately $0.17/t for personnel and $0.35/t for general expenses. The major cost is insurance.

A summary of the G&A estimate for personnel and general expenses are shown in Table 18.9. The details of the G&A operating costs are shown in Section 4.1 of the Supporting Documents.

Table 18.9 G&A Operating Costs

Description	Personnel	Annual Cost (Cdn$)	Unit Cost (Cdn$/t milled)
Personnel	46	$3,614,600	0.17
G&A		$7,735,000	0.35
G&A Operating Cost Total	**46**	**$11,349,600**	**0.52**

18.13 FINANCIAL ANALYSIS

18.13.1 INTRODUCTION

An economic evaluation of the Ajax Project was prepared by Wardrop based on a pre-tax financial model.

For the 23-year mine life, the following pre-tax financial parameters were calculated:

- 12.4% internal rate of return (IRR)
- 6.5 year payback on US$534.9 M capital
- US$193 M net present value (NPV) at 8.0% discount rate.

The base case prices as of June 12, 2009 were as follows:

- copper – US$2/lb
- gold – US$700/oz.

The exchange rate for the financial analysis is $0.82:1 (US$:Cdn$).

A sensitivity analysis was carried out to evaluate the project economics for the base case metal prices.

18.13.2 PRE-TAX MODEL

FINANCIAL EVALUATIONS – NPV AND IRR

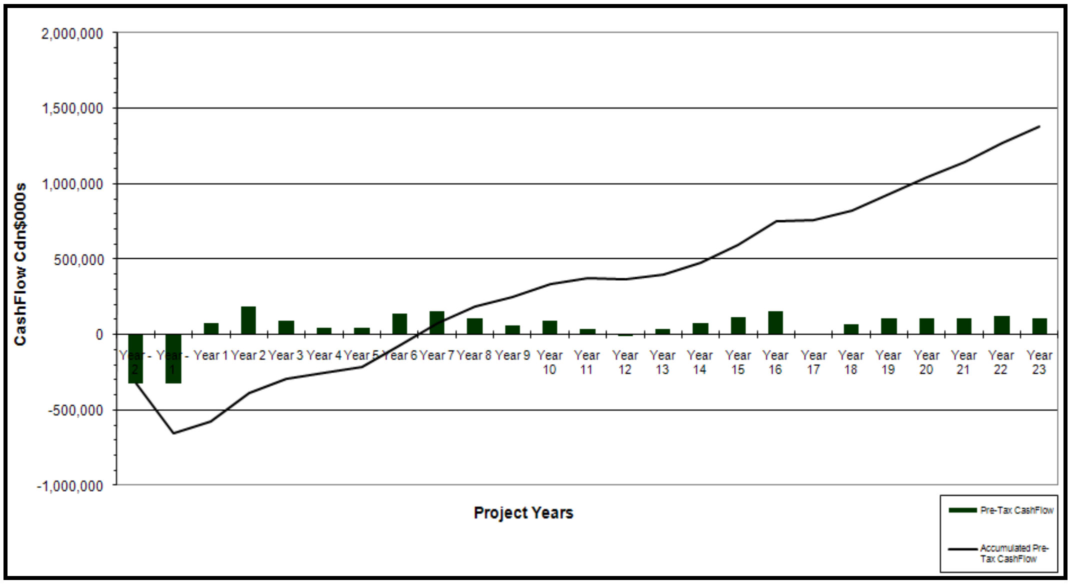
Production figures from AMEC have been incorporated into the 100% equity pre-tax financial model to develop annual recovered metal production from the relationships of tonnage milled, head grades, and recoveries. Market prices for copper, gold, and molybdenum have been adjusted to realized price levels by applying smelting, refining, and concentrate transportation charges from mine site to smelter in order to determine the NSR contributions for each metal.

Unit operating costs for mining, milling, and G&A areas were applied to annual milled tonnages to determine the overall mine site operating cost, which has been deducted from NSR to derive annual Net Revenues.

Initial and sustaining capital costs have been incorporated on a year-by-year basis over the mine life and deducted from the Net Revenue to determine the Net Cash Flow before taxes. Initial capital expenditures include costs accumulated prior to first production of concentrate; sustaining capital includes expenditures for mining and milling additions, replacement of equipment, and waste management.

The undiscounted annual cash flows are illustrated in Figure 18.8.

Figure 18.8 Undiscounted Annual and Cumulative Cash Flow



METAL PRICE AND EXCHANGE RATE SCENARIOS

The current economic downturn has resulted in all metals trading at prices that are currently considerably lower than their respective previous average prices.

Wardrop new policy utilizes the Energy & Metals Consensus Forecasts (EMCF) quarterly reports (The Consensus Economics Inc.) in calculating the Wardrop/EMCF prices. This new approach is to avoid large fluctuations in metal prices from study to study and to use the long term price averaged from three quarterly reports of EMCF. For this study, if executed between February 1 and July 31, the long term metal prices would be derived by averaging the long term prices for previous July, October, and January quarterly reports to derive the Wardrop/EMCF prices.

The base case prices, Wardrop/EMCF prices, and current prices (as of June 12, 2009) based on the rolling historical average prices from the London Metal Exchange (LME) are summarized in Table 18.10.

Table 18.10 Summary of Pre-tax Metal Price and Exchange Rate Scenarios

Scenario	Copper (US$/lb)	Gold (US$/oz)	Fixed Exchange Rate (US$:Cdn$)
3-year Average	2.99	773	0.91
Wardrop/EMCF Prices (Base Case)	2.00	700	0.82
Current Prices (June 12, 2009)	2.38	937	0.89

Fixed exchange rates (FXR) (Table 18.10) for the corresponding metal price scenarios would apply in the case of developing current costs and financial models.

A constant exchange rate of $0.82 (US$:Cdn$) has been used in the development of the capital cost estimate and in all scenarios.

The pre-tax financial model was established on a 100% equity basis, excluding debt financing and loan interest charges. The financial outcomes have been tabulated for NPV, IRR, and payback of capital. A discount rate of 8% was applied to all cases identified by metal price scenarios.

The current prices and the Wardrop/EMCF prices were applied to the same base case financial model. The results of all three scenarios as described are presented in Table 18.11.

Table 18.11 Summary of Pre-tax NPV, IRR, and Payback by Metal Price Scenario

Scenario	NPV at 8% Discount Rate (US$ M)	IRR (%)	Payback (Years)
3-Year Average	1,147	28.2	3.8
Wardrop/EMCF Prices	193	12.4	6.5
Current Prices (June 12, 2009)	669	20.7	4.8

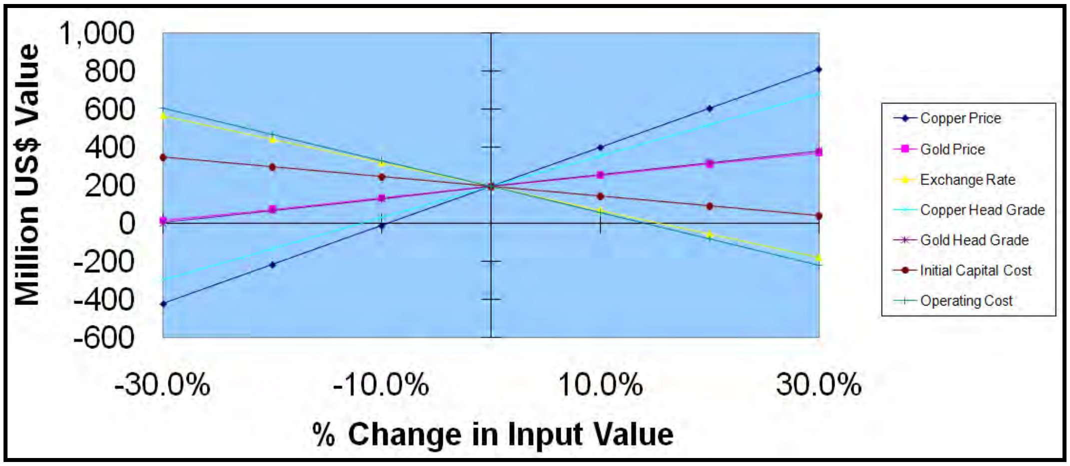
SENSITIVITY ANALYSIS

Sensitivity analysis was carried out on the following parameters:

- copper and gold prices
- copper head grade
- exchange rate
- initial capital expenditure
- mine site operating costs.

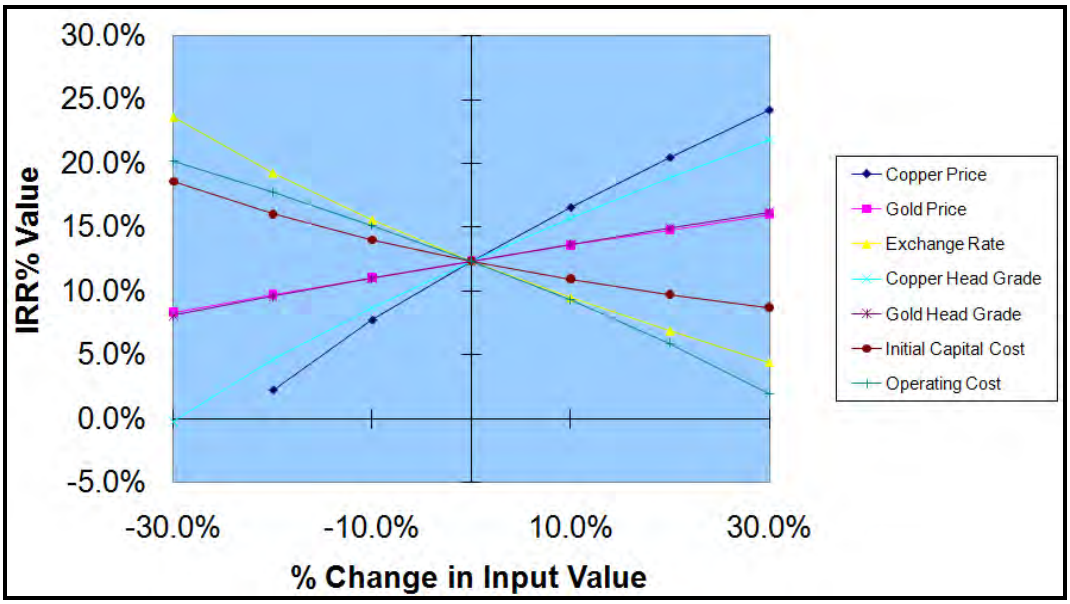
The analysis is presented graphically in Figure 18.9 and Figure 18.10 as financial outcomes in terms of NPV and IRR. The Project NPV (8% discount) is most sensitive to copper price and copper head grade, and is inversely most sensitive to operating cost and exchange rate.

Figure 18.9 NPV Sensitivity Analysis



Similarly, the project IRR is most sensitive to copper price followed by copper head grade, and inversely to operating cost and exchange rate.

Figure 18.10 IRR Sensitivity Analysis



ROYALTIES

No royalties were calculated for this evaluation.

18.13.3 Smelter Terms

Contracts will generally include payment terms as follows:

- Copper – pay 100% of content less 1.0 unit at the LME price for Grade A copper less a refining charge of US$0.085/accountable lb
- Gold – pay 96.5% on the gold content less a refining charge of $7/accountable troy oz
- Treatment Charge – US$60/dmt of concentrate delivered.

18.13.4 Concentrate Transport Logistics

Concentrate from the mine site will be truck transported to the Port of Stewart. Transportation charges have been based on concentrate tonnage of 155,000 dmt/a and are as follows:

- rail transport – Cdn$50.00/wmt
- stevedoring (port storage handling) – Cdn$13.00/wmt
- ocean transport to Asian port – US$48.00/wmt
- moisture content – 8%.

Owners Representation

For a 10,000 wmt shipment lot, a charge of US$6,600 would be applied for services provided by the Owner's representative. Duties would include attendance during vessel unloading at the smelter port, supervising the taking of samples for assaying, and determining moisture content.

Concentrate Losses

Concentrate losses are normally estimated at 0.05% per handling during shipment from the mine to smelter. For deliveries to Asia, an overall loss of 0.30% should be applied to the provisional invoice value for 7 handlings as follows:

1. loading truck at mine
2. offloading truck at port
3. reloading vessels at port
4. offloading at port storage shed
5. loading vessel
6. offloading vessel into truck transport to smelter
7. offloading truck into smelter storage bins.

18.13.5 Economic Evaluation Highlights

The pre-tax base case economic evaluation highlights for Years 1 though 23 and the LOM are shown in Section 9.0 of the Supporting Documents.

18.14 Project Development Plan

Upon completion of this PA, the subsequent phases of development will be:

- start of Pre-feasibility Study and permitting process – June 2009
- start of Feasibility Study – December 2009
- start of planning and development phase – May 2010
- start of detailed engineering – July 2010
- start of construction – April 2011
- mechanical completion – May 2013
- plant start-up and commissioning – completed July 2013.

In order to achieve the schedule, the long-lead process equipment will need to be identified at the beginning of the feasibility stage. The critical path of the project is through the supply and delivery of this equipment.

The early start date is driven by the short construction window for civil work. To achieve this aggressive schedule, several construction packages will need to be issued as unit rate packages. The unit rate packages will include rough grading, concrete and structural steel buildings, and interior steel platforms.

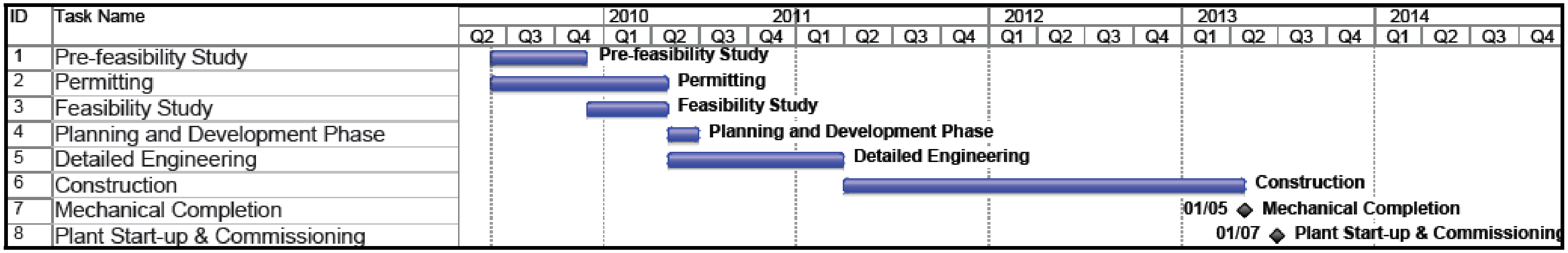
Temporary construction facilities will be mobilized in early 2011, including the batch plant and aggregate plant. Site preparation, grading, and the access road construction will commence immediately upon receipt of permits and approvals. Modular construction will be utilized wherever practical in order to reduce field construction.

The concrete for the main process building, truck shop, and powerhouse building foundations will be poured in the summer of 2011 to allow the buildings to be erected the following winter. Once the buildings are erected, the concrete inside the buildings (including equipment supports) can be poured in a controlled environment through the winter.

Electrical and mechanical installation contracts will be bid lump sum to qualified contractors. A start-up and commissioning period has been allowed at the completion of construction in order to complete mechanical check out and acceptance and commissioning of the facilities.

A summary schedule is shown in Figure 18.11.

Figure 18.11 Project Summary Schedule



19.0 INTERPRETATION AND CONCLUSIONS

The following interpretation and conclusions are made based on the findings within the components of the PA.

The model update of the Ajax area included additional drilling in the Monte Carlo area (5,245 m) as well as additional assay information in the Ajax West and Ajax East areas (1,893 m). The addition of the Monte Carlo area permitted the LG optimization to expand into the Monte Carlo area and increase the Measured and Indicated resource by 5% and increase the Inferred resource by 70%.

Table 19.1 Ajax Deposit – Mineral Resource Estimate

	Cut-off CuEq (%)	Mt	Cu (%)	Au (g/t)	Mo (%)	Ag (g/t)	CuEq (%)	Contained Metal	
								Cu (M lb)	Au (Koz)
Measured	0.13	231.4	0.30	0.18	0.0018	0.35	0.32	1,527	1,364
Indicated	0.13	211.0	0.29	0.19	0.0012	0.31	0.32	1,368	1,287
Measured + Indicated	0.13	422.4	0.30	0.19	0.0015	0.31	0.32	2,895	2,651
Inferred	0.13	80.6	0.22	0.16	0.0011	0.38	0.24	391.0	404

Note: Mineral resources are not mineral reserves and do not have demonstrated economic viability.

A recovered copper equivalent grade (CuEq %) is calculated using copper and gold commodity prices of US$2.00/lb and US$700/troy oz (respectively) in the formula:

$$\textbf{CuEq (\%)} = \frac{[\text{Cu(\%)} \times \text{Cu-Rec} \times 22.0462 \times \$2.00 + \text{Au(g/t)} \times \text{Au-Rec} \times 0.03216 \times \$700]}{[22.0462 \times \$2.00]}$$

Revised metal recoveries were used, which were developed during the preparation of the PA: *Cu-Rec = 32.591 x Cu(%) + 72.732*, and *Au-Rec = 33.87 1 x Au(g/t) + 75.29* (max. value = 90%).

The Ajax process plant design is based on the results obtained from testwork reviewed from the testing of samples of Ajax 2, Ajax 6, Ajax 7, and Ajax 9, which originate from the area designated as potential plant feed material with a feed grade of 0.3% Cu and 0.23 g/t Au.

The results showed that saleable flotation concentrate products can be produced from conventional comminution and flotation processes. The plant feed will be crushed and milled, then subjected to flotation to produce a high grade copper concentrate containing gold, namely a 25% Cu concentrate with 28 g/t Au and respective recoveries of 84.5% and 81.3%. Based on G&T test results for this stage, there are no elements that might be considered detrimental to marketability of copper concentrate. More tests are required during further stages.

A scoping-level design was completed for the Ajax Project that expanded the existing TSF to accommodate 372.3 Mt of tailings over the mine life at a mill throughput of 60,000 t/d. Quantities and preliminary costs were developed to provide initial costing for the project financial model and the PA.

A pre-tax economic model has been developed from the estimated costs and the open pit production schedule. The base case has an IRR of 12.4% and a NPV of US$192.7 M at an 8% discount rate for the 23-year mine life. The payback of the initial capital is within 6.5 years.

The Ajax PA shows this deposit to be amenable to bulk mining with straight forward ore control and process. Ajax will benefit from nearby infrastructure and should have low costs as a result. It is recommended the project proceed to the pre-feasibility stage.

20.0 RECOMMENDATIONS

Based on the conclusions within the components of this PA, it is recommended that this project proceed to the pre-feasibility stage. An estimated budget for this next phase is presented in Table 20.1.

Table 20.1 Estimated Budget during the Pre-feasibility Stage

	Cost (Cdn$)
Project Management	135,000
Project Administration	18,000
Drilling and Geology	575,000
Mining (in house)	7,000
Geotechnical	400,000
Process	195,000
Civil	198,000
Electrical	40,000
Estimating	61,000
Financial Model	6,000
Tailing Storage Facility	no planned work
Permitting	850,000
Total	**Cdn$2,485,000**

20.1 GEOLOGY

Based upon the database validation, exploratory data analysis, geologic modelling, and mineral resource estimation work, the following recommendations are made:

- The core from legacy drill holes should be salvaged and stored in a similar manner as Abacus drill core.
- Drilling and core logging procedures should be summarized in a document.
- Core logging can be improved by including columns with standardized rock and alteration names and vein types. Logging can include quantitative information including %sulphide, %chalcopyrite, %pyrite, %bornite, %tetrahedrite, fractures, veining, and others as required. These modifications would permit more efficient database searches and correlations. A standardized list of abbreviations should be developed for lithology and alteration.

- A library of reference core should be formalized and labelled. The reference core should include lithology types, alteration types, and qualitative references for the purpose of standardizing the core logging for the numerous geologists involved. The core should also be photographed and the photographs filed and stored for quick reference.
- CRMs, blanks, and pulp duplicates should be submitted at a rate of 5%. It is also recommended that coarse reject duplicates be included in the check sample program and be submitted at a rate of 5%.
- Additional duplicates should be submitted for the 2008 drill program to identify and quantify any bias.
- Sample intervals below detection should be entered into the database at 1/2 the detection limit.
- Values of ALS Chemex check samples, compared to Eco-Tech values, exceed the recommended range of ±10% compared to Eco-Tech values for 2008 pulp duplicate check samples. Abacus should investigate these differences.
- The geotechnical logging procedures should be documented to maintain continuity and provide a reference for the numerous geologist and technicians involved. Geotechnical data should be captured and maintained in the drill hole database.

Additional drilling is recommended in the Monte Carlo area to increase the resource classification to Indicated and Measured. Additional drilling in the Ajax West and Ajax East area is also required to convert Inferred resources to Measured and Indicated.

It has been noted that an easterly trend to mineralization is apparently off-set to the northeast in the vicinity of the Ajax East Pit. Additional drilling is recommended to explore the easterly trend into the Monte Carlo area.

The estimation of molybdenum and silver grades in the Ajax deposit would appear to show that neither is present in a sufficient quantity to add value to the deposit; however, there are local concentrations (particularly of Mo) that may be economically recoverable during short periods in the operation. To that end, it is recommended that all future drill samples be analyzed for Mo and Ag and that future resource updates continue to include estimates of Mo and Ag.

20.2 MINING

The risks that may challenge mining of the Ajax property are metal price variability, labour cost, and world consumable prices such as diesel.

Metal prices of US$2.00/lb copper and US$700/oz gold were used at a time where spot prices were higher, in order to minimize this impact. However, the additional impact of Canadian dollar conversion on metal price may require further financial modeling and hedging strategies.

The labour cost and associated burden of 25% may be too low and a labour survey and benefit study should be considered.

This report considered only diesel-powered haulage; therefore, Ajax has a high sensitivity to diesel price on the overall mining cost.

Possible opportunities to improve the long-term viability of this project are to study in-pit crushing and conveying and trolley-assisted haulage. The relatively low cost of electricity may indicate that both these options have benefits over the more volatile prices of diesel.

20.3 PROCESS

The following process recommendations for the next stage of study are made based on the findings of this report:

- Further mineralogical evaluations are required to better define the mineral composition and mineral fragmentation for gold and copper, and to characterize the relationship between copper and gold.
- Ore hardness confirmation is required on all ore types through grindability testing, which should include Bond Ball Mill Work Index tests as well as Crushability Index and Abrasion Index determinations. Further to this, SAG tests are required.
- Specific gravity and bulk density determination tests on the feed and concentrate material are required for characterization purposes.
- Open circuit flotation testing is required to define and confirm the primary grind size and the regrind particle size requirements. Preliminary reagent screening tests should be included in this program.
- Following the open cycle tests, locked cycle flotation testing for each of the three major ore types, and the incorporation of optimal flotation conditions, will be required to simulate continuous circuit operation.
- Potential smelter penalty elements should be determined on the locked cycle concentrates produced.
- Standard settling tests for the determination of the thickener area for the tailings and concentrate products is required, together with filtration testing for the concentrate.

Looking forward to future detailed studies, the design benefits of the inclusion of High Pressure Grinding Rolls (HPGR) in the comminution circuit should be investigated.

Also of benefit will be the evaluation of gravity processing and the potential for upgrading the initial rougher concentrate without the use of regrinding.

The potential economic benefits associated with molybdenum should be evaluated using geological mapping of the molybdenum resource together with open circuit and locked cycle flotation testing, which must demonstrate overall recovery and grade capability.

20.4 GEOTECHNICAL

Further geotechnical drillings and studies are recommended for proposed plant site location.

20.5 TAILINGS

Opportunities have been identified that may be more cost effective. It is recommended that future design studies evaluate the following:

- Confirm the availability of suitable construction borrow materials. For example, the core zone requires approximately 1.8 M m^3 of glacial till.
- Evaluate the suitability of the permitted fresh water pipeline and availability of water supply from Kamloops Lake.
- Evaluate potential alternative TSF scenarios. One scenario would be to develop the existing TSF through Stage 3 and then switch to a tailings cell that had been constructed from waste rock.
- Evaluate the potential synergies and conflicts with the New Gold operation.
- Evaluate land tenure status and implications for mine development options.

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22.0 DATE AND SIGNATURE PAGE

The effective date of this Technical Report, titled “Ajax Copper/Gold Project, Kamloops, British Columbia – Preliminary Assessment Technical Report”, is July 31, 2009.

Signed,

“signed and sealed”

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