Report to:

REGULUS RESOURCES INC.

Rio Grande Cu-Au-Ag Project, Northwest Argentina

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REGULUS RESOURCES INC.

RIO GRANDE CU-AU-AG PROJECT, NORTHWEST ARGENTINA

EFFECTIVE DATE: JANUARY 19, 2012

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Prepared by	*"Original signed and sealed by Robert Morrison, Ph.D., MAusIMM (CP), P.Geo."* Robert Morrison, Ph.D., MAusIMM (CP), P.Geo.	Date	*January 19, 2012*
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REVISION HISTORY

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02	2011/12/29	Robert Morrison	Tim Maunula	Robert Morrison	Final Draft
03	2011/01/19	Robert Morrison	Tim Maunula	Robert Morrison	Final Report

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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

all-terrain vehicle	ATV
AMEC Americas Limited	AMEC
Antares Minerals Inc.	Antares
British Columbia Business Corporations Act	BCBCA
calcium	Ca
copper equivalent	CuEQ
copper	Cu
digital terrain model	DTM
electromagnetic	EM
First Quantum Minerals Ltd.	First Quantum
four wheel-drive	4 WD
global positioning system	GPS

gold	Au
gradient array induced polarization	GAIP
induced coupled plasma	ICP
induced polarization	IP
inverse distance squared	ID2
iron oxide copper gold	IOCG
iron	Fe
kriging efficiency	KE
Mansfield Minerals Inc.	Mansfield
molybdenum	Mo
National Instrument 43-101	NI 43-101
nearest neighbour	NN
ordinary kriging	OK
Pachamama Resources Inc.	Pachamama
preliminary economic assessment	PEA
quality assurance/quality control	QA/QC
Regulus Resources Inc.	Regulus
reverse circulation	RC
Rio Grande Property	the Property
Roscoe Postle Associated Inc.	RPA
silver	Ag
sodium	Na
Spin-off Plan of Arrangement	the Arrangment
sulphidation, acidification, recovery and thickening	SART
Teck Corporation	Teck
Wardrop, a Tetra Tech Company	Tetra Tech

1.0 SUMMARY

Wardrop, a Tetra Tech Company (Tetra Tech) was retained by Regulus Resources Inc. (Regulus) to produce the first National Instrument 43-101 (NI 43-101) compliant resource estimate on the Rio Grande Property (the Property) and to provide the accompanying updated NI 43-101 Technical Report.

1.1 PROPERTY DESCRIPTION AND OWNERSHIP

The Rio Grande project, in Salta Province, Argentina, is a 50/50 joint venture between Regulus and Pachamama Resources Inc. (Pachamama), with Regulus acting as the operator.

From Price, 2010:

The Rio Grande property consists of nine titles covering a total area of 18,048.1 ha. The concessions form one contiguous block that covers all of the exploration targets that have been identified. The Rio Grande property is located on the southern edge of Lake Salar Arizaro, in the western part of Salta Province in north-western Argentina. The Property is approximately 260 km west of the city of Salta and 40 km east of the Chilean border. Access to the project from Salta, which is the principal economic centre of the region, is by paved roads for approximately 100 km, followed by all-weather dirt roads for 350 km along National Highway 51 and Provincial Highway 27, extending from Salta to the Chilean border. Total travel time is approximately 7 hours. The camp for the Property is situated on the south shore of the Salar Arizaro, 10 km east of the centre of the Property.

1.2 GEOLOGY AND MINERALIZATION

The Rio Grande copper-gold deposit lies in the western part of the Salta province in the Puna area, where Andean Volcanic Arcs are concentrated along the north trending axis of the high Andes. This volcanic arc and associated cross structures have localized magmatic activity and later hydrothermal emanations, producing a number of the most important copper porphyry deposits in the world. Rio Grande lies within a 100 km-wide by 130 km-long extensional basin, which includes the Salar de Arizaro and contains continental sedimentary rocks. These sedimentary rocks include immature red beds, extrusive volcanic rocks and significant evaporite deposits, some of which are being exploited for boron and lithium. Eroded stratovolcanic complexes characterize the volcanic belt; these consist of andesite, dacite porphyries, and coeval volcanic rocks including ignimbrites, dacite-andesite tuffs and other volcaniclastic rocks, and are the loci of many of the hydrothermal systems and important mineral deposits.

The Rio Grande project is favourably located along the prominent northwest-trending Archibarca Lineament which also controls the location of the world-class giant Escondida porphyry copper deposit 150 km to the northwest in Chile. The Rio Grande project setting shares many similarities with that of porphyry copper-gold (Cu-Au) systems. For example, the Bajo de Alumbrera porphyry copper-gold deposit is located along a similar northwest-trending regional structural lineament approximately 300 km to the south. However, the system also displays similarities in alteration and mineralization styles with Iron Oxide Copper Gold (IOCG) systems like Candelaria in Chile.

The Rio Grande property is hosted in a thick pile of young porphyritic andesite and dacite volcanics that are cut by post-mineralization andesite dikes and several (andesite to diorite) plugs. The volcanic and igneous intrusive system is thought to represent at least two dissected stratovolcanic centres. The mineralizing system consists of a large zone of hydrothermal alteration covering an area of 2.2 km (east-west) by 2.0 km (north-south) and may extend under cover. Rio Grande has a number of named mineralized zones arranged around a central core as follows: North Zone, Sofia Zone, Discovery Zone, Southwest Zone, and Number 7 Zone. These zones form lenses in an annulus around a suspected deep magmatic source. To the northeast sits the separate and less-explored Northeast Zone. The main copper-gold mineralization at Rio Grande occurs as fracture-controlled copper oxides and sulphides, with blue-green and black copper oxides in the near-surface environment, both with associated gold. Supergene oxidation typically extends to depths of 300 to 400 m. The principal copper oxide minerals are chrysocolla, malachite, and traces of azurite. The principal sulphide minerals are chalcopyrite and pyrite, which are typically associated with magnetite.

A deeper and distinctly separate zone of molybdenum mineralization was encountered beneath the Sophia North zone. The deposits are thought to be transitional between IOCG deposits and classic potassic porphyry deposits.

Alteration styles include a central core area of strong potassic alteration (K-feldspar and biotite) and albite-diopside surrounded by sericite-argillic alteration that grades outwards into propylitic alteration. Copper and gold mineralization appears to be largely restricted to the potassic zone. Hypogene mineralization consists mainly of fine-grained disseminated chalcopyrite in association with disseminated magnetite. Gold grades appear to have a strong correlation with copper grades, with a general ratio of 1 g/t gold to 1% copper.

1.3 EXPLORATION STATUS

In 1999, Mansfield Minerals Inc. (Mansfield) discovered, staked and prospected the Rio Grande area. In early 2000, Mansfield signed a joint venture agreement with a wholly owned subsidiary of Teck Corporation (Teck), who had the opportunity to earn a 55% interest and was the manager of the exploration project. Teck completed geological mapping and sampling, soil sampling, trenching and geophysical surveys followed by a diamond drilling program consisting of 11 holes, *totalling 3,220.6 m. Additional work on the property was recommended; however, Teck terminated its exploration efforts in Argentina in early 2002.*

From 2002 to 2004, Mansfield explored and maintained the Property. In 2004, Mansfield and Planet Ventures Inc. (predecessor of Antares Minerals Inc.[1] (Antares)) signed a joint venture agreement under which Antares became the operator, and Antares began a comprehensive exploration program which is still in progress.

Pachamama was incorporated in a Spin-Off Plan of Arrangement with Mansfield, and Pachamama holds a 50% interest in the Rio Grande. Pachamama signed a joint venture agreement with Antares. Under the agreement, Antares was to remain the project operator. At present, a total of 78 drill holes totalling 33,015.47 m have been completed by Antares and Pachamama on the project.

On October 18, 2010 First Quantum Minerals Ltd. (First Quantum) and Antares announced that they had entered into an agreement pursuant to which a wholly-owned subsidiary of First Quantum will acquire, by way of a court-approved plan of arrangement, all of the outstanding securities of Antares. As Antares has 50% ownership of the Rio Grande Joint Venture, this equity is being spun-out to a new subsidiary called Regulus Resources Inc. and Regulus will now be a joint venture and operator of the joint venture with Pachamama.

Initially, trenching work at the Rio Grande project by Mansfield and Teck proved to be a highly effective exploration technique. Within the area of mineralization there is only 10 to 15% outcrop, but the cover (soil, talus, and colluvium) is often less than 2 m deep. The soil sampling programs outlined a substantial and strong copper-gold anomaly. Geophysical surveys, particularly induced polarization (IP), have outlined the sulphide rich areas.

To the end of June 2008, a total of 66 drill holes, totalling in excess of 26,000 m, had been completed at the Rio Grande project. In April 2009, Antares, on behalf of itself, Mansfield, and Pachamama reported results for an additional 12 diamond drill holes (6,523 m) in the Discovery, North, and Number 7 zones to offset previously identified mineralization in these areas. All twelve holes intersected zones of significant grade copper-gold mineralization and confirm the presence and continuity of mineralization in the Discovery and North zones. The twelve drill holes were drilled as 75 to 100 m offsets to previously completed drill holes at the Discovery, North, and Number 7 targets zones.

The holes are typically drilled at inclinations of minus 60 to 70° to traverse the defined zones of mineralization and are aligned to form drill fences spaced at 75 to 100 m intervals along strike.

Work to date has included geological, geophysical (IP and magnetic), soil geochemical, trenching and diamond drilling which has outlined a number of

[1] and includes its successor in interest Regular, where applicable.

related bodies of copper-gold mineralization arranged in an annular pattern around an unexplored core.

A Titan 24 geophysical survey was also conducted in early- to mid-2011. Results of the survey are being used to define drill targets below the current known mineralized zones and to define deeper drill targets within the large, under-explored portion of the ring structure.

From Price, 2011:

To date, a total of 33,015 m in 78 drill holes has been drilled at Rio Grande. Mineralization identified to date occurs in a steeply inward dipping conical ring zone and consists of a chalcopyrite-magnetite assemblage that has been partially to completely oxidized to depths of approximately 300 to 400 m. Sulphide mineralization remains open to depth. Additional untested targets remain including the NE zone with geological and geochemical similarities to the nearby Lindero Au deposit of Mansfield, and a distinct zone containing higher grade molybdenum which is spatially separate from the Cu-Au zones identified to date.

No drilling has been done on the project since 2008, however, 15,000 m of drilling is planned for 2011.

1.4 RESOURCE ESTIMATE

Rio Grande resource modelling and estimate was performed using Datamine™ software (Version 3.19.3638.0). The Rio Grande block model is composed of 40 m by 40 m by 40 m (i.e. easting, northing and elevation) waste rock cells, 10 m by 40 m by 40 m east and west ore cells, and 40 m by 10 m by 40 m north ore cells. The estimate first used Ordinary Kriging (OK) to estimate orientations into individual ore cells, then used OK to determine grade for copper, molybdenum, gold and silver. Due to the presence of trench data, which is compatible with drill hole data, an Indicated resource classification was viable within an Inferred resource.

The resource tabulation is based on a copper equivalent tabulation (CuEQ%) by combining molybdenum, gold and silver with copper. No recoveries have been applied to the CuEQ% calculation.

At a 0.4 CuEQ% cut-off the Rio Grande deposit recorded an Indicated resource of approximately 55 million tonnes at 0.34% Cu, 15.9 ppm Mo, 0.34 g/t Au and 4.4 g/t Ag. At a 0.4 Cu% cut-off the Rio Grande deposit recorded an Inferred resource of approximately 101 million tonnes at 0.30% Cu, 16.4 ppm Mo, 0.31 g/t Au and 4.4 g/t Ag.

1.5 CONCLUSIONS AND RECOMMENDATIONS

Tetra Tech suggests the following recommendations for present and future work on the Rio Grande Property:

- Rigorous infill drilling to aim for 60 m-spaced fences for the successful conversion of the Inferred resource to Indicated classification status , as highlighted by the kriging efficiency and the slope of regression.
- Refinement of wireframing strategies pertaining to the base of oxidation and the base of the mix zone, in light of current wireframe validation issues.
- Undertake a topographic survey ideally covering the area within 612000 mE to 617000 mE and 7229000 mN to 7232500 mN. In the future, this could provide mining engineers with additional area for space when optimizing pit shells.
- Build an on-going density measurement routine for future drilling in order to better define density values for the various types of mineralization. Estimate density into the block model and not assign density values.
- Perform down hole electromagnetic (EM) surveys when drilling is targeting sulphides, in order to potentially increase success rate of intersecting mineralization.
- Complete metallurgical test-work, and use the test-work results to calculate metal recoveries for a more accurate tabulation of the CuEQ% resource.
- Review of long-term metal price forecasts to be applied to any future CuEQ% calculation.
- Find and collate missing Teck Corporation assay certificates.

2.0 INTRODUCTION

Tetra Tech was retained by Regulus to provide the first NI 43-101 compliant resource estimate and accompanying updated technical report for the Rio Grande copper-gold-silver system in northern Argentina.

2.1 ISSUER

Regulus is a Canadian exploration company that is traded on the TSX Venture Exchange (TSX-V). It was formed in December 2010 under the directorship of the former management of Antares. Regulus was created through the spin-out of the Rio Grande project along with $5 million in cash from Antares in a Plan of Arrangement concluding the sale of Antares to First Quantum Mining for roughly Cdn$600 million, primarily for the Haquira copper-molybdenum-gold deposit in Peru. In conjunction with the Plan of Arrangement, the Corporation has issued 0.4505 Regulus shares to each holder of an Antares common share. The Rio Grande project is a 50/50 joint-venture with Pachamama Resources, with Antares as the operator. The primary objective of Regulus is to continue with the evaluation of the Rio Grande porphyry copper-gold-silver system.

The Rio Grande porphyry copper-gold-silver system is located within the mining friendly Salta province of north western Argentina. Mineralization occurs within a distinct 2 km diameter ring-shaped fracture zone, which is defined by IP chargeability. It is also well-defined by copper- and gold- soil geochemical anomalies. The ring structure is mineralized in several zones; clockwise, these zones are North, Sofia, Discovery, Southwest, and Number 7.

2.2 TERMS OF REFERENCE AND PURPOSE OF REPORT

The scope of work for Tetra Tech focused on creating the first NI 43-101 compliant resource estimate and accompanying technical report for the Rio Grande project.

2.3 INFORMATION AND DATA SOURCES

The main sources of information in preparing this report are listed below. A complete list of references is provided in Section 19.0 of this report.

- Chlumsky, Armbrust and Meyer, LLC, (2005); Technical Report, Rio Grande Project, Republic of Argentina Prepared for Antares Minerals Inc. and Mansfield Minerals Inc. dated April 29, 2005 prepared by George A. Armbrust, PhD., CPG, Robert L. Sandefur, P.E., Kenneth L. Meyer (Filed on SEDAR).

- Heather, Kevin B., Robeto, Javier, Caram, Nelson, Saiz, Lourdes, Avila, Gustavo, Chavez, Ivan, Pantano, Ana, and Black, John (2009); Rio Grande Project 2007 & 2008 Annual Progress Report. Internal report for Antares Minerals Inc., 92 pp, dated June 24, 2009.
- Price, Barry J, (2010); Technical Report, Rio Grande Cu-Au Property, Salta Province, NW Argentina Prepared for Regulus Resources Inc., Antares Minerals Inc., Mansfield Minerals Inc., and Pachamama Resources Ltd. dated November 2010 prepared by B.J. Price Geological Consultants Inc. (filed on SEDAR).
- Other internal company reports.
- Geological data provided by Regulus.
- Press releases from Regulus and Mansfield.

2.4 TETRA TECH QP SITE VISIT

One of the authors (Callum Grant), based out of Buenos Aires Argentina, visited the property from July 20 to 22, 2011. He inspected drilling operations and sampled older core (Teck Limited) for check assays. Results are presented in Section 11.6 on Quality Assurance and Quality Control.

3.0 RELIANCE ON OTHER EXPERTS

In preparation of this report, Tetra Tech relied heavily on the technical report prepared by B.J. Price Geological Consultants Inc. dated November 10, 2010, internal company reports (particularly Heather et al. 2009), geological data provided by Regulus staff, and press releases from Regulus and Mansfield. Some reliance was also placed on the initial technical report prepared for the Rio Grande Project by Chlumsky, Armbrust and Meyer, LLC dated April 29, 2005.

The contents of Price (2010) and Heather et al. (2009) are very similar, and since Price 2010 post-dates Heather et al. 2009, the former is referenced more frequently within this Technical Report.

4.0 PROPERTY DESCRIPTION AND LOCATION

The property locations, description, agreement, spin-off transaction, and environmental and surface right are addressed in this section of the report.

4.1 LOCATION

From Price, 2010:

The Rio Grande property is located on the southern edge of Salar Arizaro, in the western part of Salta Province in north-western Argentina. The property is approximately 260 km west of the city of Salta and 40 km east of the Chilean border. The geographic coordinates of the property are approximately Latitude 25° 01‘ 56.2 S and Longitude 67° 52' 00W, and UTM Coordinates: (WGS 84 – Zone 19 J) 614327mE and 7230999mN. The camp for the property is situated on the south shore of the Salar and is 10 km east of the centre of the property. Locations are shown in the accompanying figures (Figure 4.1 to Figure 4.3).

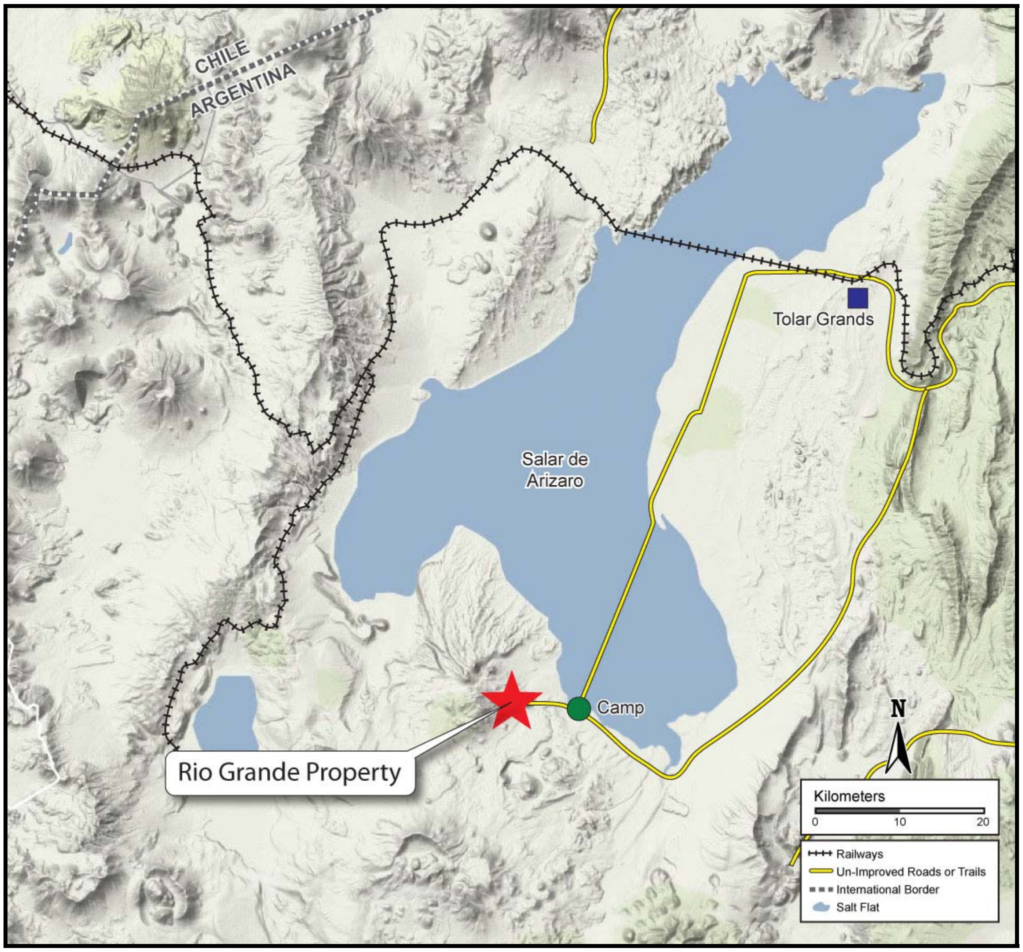
Figure 4.1 Location Map of Argentina, with the Rio Grande Property Site Shown

Source: modified from http://en.18dao.net/Map/Argentina.

Figure 4.2 Location Map of Northwestern Argentina, with the Rio Grande Property Site Shown

Source: modified from Google Earth and Price (2010).

Figure 4.3 Generalized Location Map of the Rio Grande Property



Source: modified from Google Earth and Price (2010).

4.2 PROPERTY DESCRIPTION

The Rio Grande property consists of 9 titles covering a total area of 18,048.1 hectares. The concessions form one contiguous block that covers all of the exploration targets that have been identified to date (Price, 2010)*.*

Figure 4.4 and Table 4.1 highlight the mineral titles and concessions.

Figure 4.4 Plan of Mineral Titles at Rio Grande

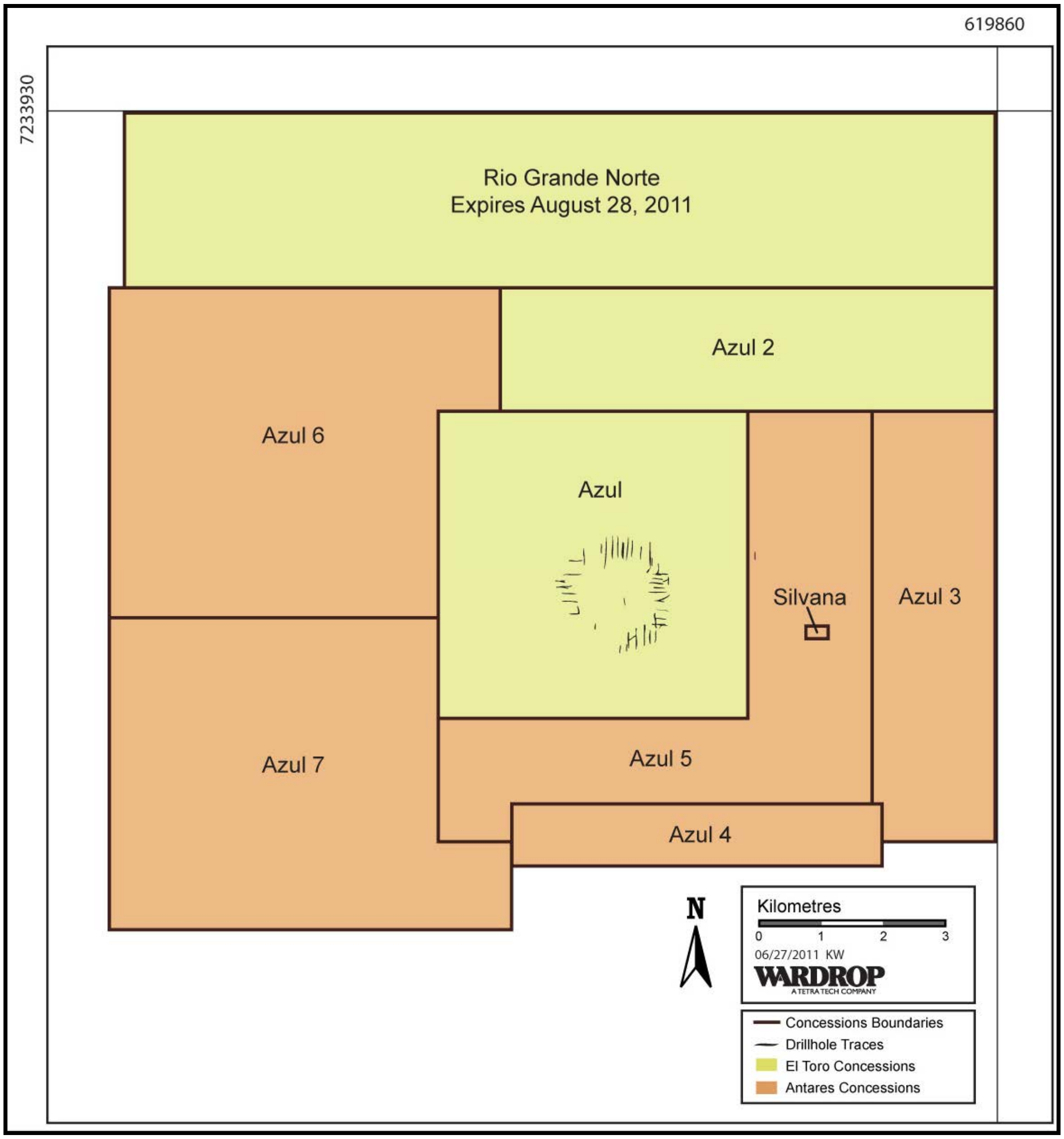


Table 4.1 Rio Grande Concessions

File No.	Name	Registered	Area (ha)	Comments
Minera Toro				
16674	Mina Azul	September 6, 1999	2,500	Survey approved
16689	Mina Azul 2	January 15, 2008	1,600	Survey approved
18986	Cateo Rio Grande Norte	July 4, 2008	4,000	Exp. August 28, 2011 Reduced twice
Antares Concessions				
17021	Mina Azul 5	April 6, 2005	2,042.75	Survey approved
16916	Mina Azul 4	August 23, 2006	6,00	Survey approved
16690	Mina Azul 3	August 23, 2006	1,388.35	Survey approved
6376	Mina Silvana	June 24, 2005	6	Survey approved
19418	Mina Azul 6	September 10, 2009	3,000	Not surveyed
19419	Mina Azul 7	September 10, 2009	2,911	Not surveyed
9 titles			**18,048.0**	

Source: Price, 2010.

The reported concessions hold sufficient land for exploration and development activities, and contain all known mineralized regions that are the subject of this report. To Tetra Tech's knowledge, there no social issue or environmental issue that would not affect title, nor are there any encumbrances or royalties, and Antares holds all required permits for exploration.

4.3 PROPERTY AGREEMENT

From Price (2010):

In 1999, Mansfield acquired the Rio Grande property by staking. During fiscal 2005, Mansfield and Antares executed a Letter of Understanding, under which Antares could earn an initial 50% interest in the property by spending US$3,000,000, making option payments totaling US$600,000 and issuing 900,000 shares over a four year period. Antares could obtain a further 10% interest by spending an additional US$1,500,000 on the property over an 18-month period. In fiscal 2007, Mansfield entered into a Vesting Letter with Antares which amended the original Letter of Understanding. Under the new Letter, Antares agreed to vest a 50% interest in the Rio Grande property on the date of completion of work expenditures in the amount of US$3,375,000 and the issuance of a further 300,000 shares of Antares (received subsequent to year end bringing the total shares received from Antares to 600,000). The US$3,375,000 work expenditure commitment was to have been completed on or before September 30, 2007.

Mansfield has released Antares from its obligation to make the cash payments totaling US$175,000 and US$200,000 due on the 3rd and 4th anniversaries of the effective date, respectively, and the issuance of 300,000 shares of Antares due on the 4th anniversary of the effective date. In consideration of Antares forfeiting its *option to earn an additional 10% interest, the Company subscribed for 3.0 million units ($1.75/unit) of a private placement in Antares, each unit consisting of one common share and one half of one share purchase warrant, with each full warrant exercisable to acquire an additional share of Antares for a period of one year at $2.25 per share. Antares completed the required expenditures and payments to vest in its 50% interest in the property in 2008, and Antares and Pachamama formalized a definitive joint venture agreement in 2009.*

4.3.1 PACHAMAMA RESOURCES LTD.

Pachamama was incorporated on August 18, 2008 under the British Columbia Business Corporations Act (BCBCA) for purposes of participating in a Spin-Off Plan of Arrangement (The Arrangement) with Mansfield, and, following completion of the Arrangement, carrying on business as a mining exploration and development corporation. Pachamama's registered office is located at Suite 1300 – 777 Dunsmuir Street, Vancouver, BC, V7Y 1K2, and the head and principal office is located at Suite 922, 510 West Hastings St., Vancouver, BC, V6B 1L8, Canada. Under the Arrangement, Pachamama will acquire certain Spin-Off Assets, which include a 50% interest in the Rio Grande Project in Argentina, a portfolio of early stage exploration prospects and cash and investments of $13,383,709 to be used for working capital purposes.

Management of Pachamama is led by John M. Leask, as President and Chief Executive Officer, Megan Cameron-Jones, Jorge Kesting, Murray W.Hitzman, Gordon P. Leask, and Hans J. Rasmussen. Pachamama is a reporting issuer in British Columbia and Alberta and is subject to the continuous disclosure requirements prescribed by the securities laws in force in each of those jurisdictions.

4.4 SPIN-OFF TRANSACTION

A spin-off transaction will be completed by Plan of Arrangement, and Antares will transfer, assign and convey to Regulus all of Antares' rights of title and interest in and to the Rio Grande Property and $5,000,000. Regulus shares will subsequently be distributed to Antares in accordance with the terms of the Plan of Arrangement. Regulus will then form a new Joint Venture with a subsidiary of Pachamama for exploration of the Rio Grande property.

4.5 ENVIRONMENTAL AND SURFACE RIGHTS

To Tetra Tech's knowledge, all exploration activities conducted on the Rio Grande property are in compliance with relevant environmental permitting requirements, and Antares, the current operator, has obtained all permits to use the surface rights. Environmental restitution work thus far has focused on existing trenches and drill roads.

5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

Section 5.0 has been taken from Price (2010). Minor changes have been made for grammatical and structural consistency.

5.1 PHYSIOGRAPHY AND CLIMATE

The property lies at high elevation (3,600 to 4,600 m) in the desert area of the Andes Mountains, close to the Chilean border. Local relief on the property is generally formed by low hills, but some steep areas do exist. Vegetation and water are scarce on the property. The climate is generally dry and windy, but snow can occur during storms. The high elevation can cause respiratory problems for those unaccustomed to the altitude. Vegetation and water are scarce on the property. Exploration activities may take place year-round.

5.2 ACCESS, PROXIMITY TO POPULATION, AND TRANSPORT

Access to the project is from Salta (Figure 4.1 and Figure 4.2), which is the principal economic centre of the region. Access is paved roads for approximately 100km, followed by all-weather dirt roads for 350 km along National Highway 51 and Provincial Highway 27, extending from Salta to the Chilean border. Total travel time is approximately 8 to 9 hours. From Salta to San Antonio de Los Cobres on National Highway 51 (140 km, 3 hours), the road continues to the small town of Tolar Grande on Provincial Highway 27 (210 km, 4.5 hours). From Tolar Grande one travels southward along an undesignated route across the salar to the Antares Rio Grande Camp at Mina Aritza (80 km, 1.5 hours).

Access to the Property from the Antares camp at Mina Arita is via primitive dirt roads for a distance of approximately 25 km (40 minutes) from the camp to the Rio Grande volcanic centre. Several bulldozer roads were constructed on the property in order to provide access for drilling and trenching. All other areas on the property are accessible by four wheel-drive (4 WD) truck or all-terrain vehicle (ATV). Access routes to the property are shown in Figure 4.2 and Figure 4.3.

5.3 SUFFICIENCY OF SURFACE RIGHTS

The property has sufficient land for exploration and development purposes.

5.4 AVAILABILITY OF SOURCES

Fresh water springs and wells near the margin of the Salar de Arizaro and other nearby salars provide water for the drilling programs but trucking of water to drill sites is time-consuming. Tolar Grande is the only significant town close to the project and provides a source for casual labour and basic supplies. Antares Rio Grande Camp is located at the site of the abandoned Mina Arita Onyx Mine. The nearest town with significant services is San Antonio des las Cobres, but realistically, Salta is the most practical location for supplies, equipment and services. All supplies and fuel are trucked to the camp. The railway form Chile is active on the Chilean side as far as Tolar Grande (about 57 km from the property) but the service from Tolar Grande to Salta has been discontinued due to landslides west of Salta. A Gas Pipeline extends from Salta to Chuquicamata copper mine in Chile, with a branch line to the Hombre Muerto lithium mine 75 km east of Rio Grande. A high tension power line also extends from Salta to Chuquicamata, and this line lies about 100 km north of Tolar Grande. Infrastructure is illustrated in Figure 4.2 and Figure 4.3.

5.5 CAMP FACILITIES

The camp has running water, generator power and sewage facilities, and is capable of housing 70 personnel. Full office facilities are present with satellite telephone and internet capabilities, scanners printers etc. All drilling database entry is at the property. Mansfield also maintains an exploration camp nearby for the Linderos property. Condition of a small airfield on the salar is not known. Water is obtained from a location along the shore of the salar.

6.0 HISTORY

Section 6.0 has been taken from Price (2010). Minor changes have been made for grammatical and structural consistency. There are no historical mineral resources or mineral reserve estimates, nor has there been any production from the Rio Grande property.

1999: In June and July 1999, Mansfield prospected the Rio Grande area collecting 210 surface rock samples which delineated a zone of copper-gold mineralization. A simplified sketch alteration map was generated showing the different alteration types and exploration targets in the 2 km^2 area.

2000: In early 2000, Mansfield signed a joint venture agreement with Minera Teck de Argentina (Teck), a wholly owned subsidiary of Teck Corporation. Teck had the opportunity to earn a 55% interest and was the manager of the exploration project. During April and May 2000, Teck prepared a geological map at a scale of 1:20,000 covering roughly an area of 80 km^2. A smaller zone, mainly consisting of the area of potassic and scapolite diopside-magnetite alteration, was mapped at a scale of 1:5,000. Another 118 surface rock samples were collected, defining new mineralized zones. An orientation soil survey was done to correlate discovered mineralization with surface soil anomalies. Three hand trenches were dug, channel samples were collected along the length of the trenches, and assays returned encouraging results.

2001: Follow-up exploration programs re-started in September 2001. The soil survey was completed over an area of 20 km^2 collecting 1,420 samples; the results showed an extended gold-copper anomaly. Quantec Argentina performed geophysical surveys consisting of a Magnetometer survey covering an area of 12 $km^2$and an IP survey covering an area of 3.5 km^2. A 2.7 km trenching program was undertaken in order to test the Cu-Au anomalies generated by the soil sampling and prospecting program. In all, 22 trenches were dug in the main area, as well as five test pits. Special studies were performed to better understand the alteration and mineralization styles, include petrographic studies, potassium-argon (K-Ar) geochronology and Pima studies. A diamond drilling program consisting of 11 holes, totaling 3,220.6 m was drilled. The results of Teck's exploration programs are described in a report prepared by Teck geologist, Moira Smith, entitled Rio Grande Property-Geological, Geophysical, and Diamond Drilling Investigations, Salta, Argentina, dated July 2001. Additional work on the property was recommended; however, Teck terminated its exploration efforts in Argentina in early 2002.

2002: In October 2002, Mansfield designed a program to re-map the Rio Grande Property and interpret all exploration results previously generated. Ten days were spent in the field remapping lithologies, mineralization, and alteration from the main *zone at a scale of 1:5,000. The area covered is 10.5 km^2. Outcrops, trenches, road cuts and information generated by drilling were used to complete the mapping. Core was re-logged, and reinterpretation of the geophysics was completed. New plots, sections and maps in different scales were generated to better show the relations between geophysics, mineralized zones, alteration, drilling, soil anomalies and trenching.*

2004: In June 2004, Mansfield and Planet Ventures Inc. (predecessor of Antares Minerals Inc.) signed a joint venture agreement in which Antares became the operator for exploration on the property. Antares began an exploration program in November 2004 which is still in progress. The exploration is described under the appropriate heading.

7.0 GEOLOGICAL SETTING AND MINERALIZATION

The following discussion is a summary of the geological setting and mineralization of the Rio Grande deposit. The reader is referred to the 2010 Technical Report prepared by B.J. Price Geological Consulting Inc. and 2005 CAM Technical Report for more detailed descriptions.

7.1 REGIONAL GEOLOGY

From Price, 2010:

The western part of the Salta province is underlain by mid- to late-Tertiary continental volcanic arcs and related sedimentary rock of the Andean cycle. The Andean Volcanic Arcs are concentrated along the north trending axis of the high Andes in Chile and Argentina and along several northwest trending "structural transverse zones". This volcanic arc and associated cross structures have localized magmatic activity and later hydrothermal emanations, producing a number of the most important copper porphyry deposits in the world. The sedimentary rocks have been deposited in large back arc continental basins, particularly the Siete Curvas basin, a portion of which is active and includes the large Salar de Arizaro, immediately adjacent to the Rio Grande and Taca Taca copper-gold deposits.

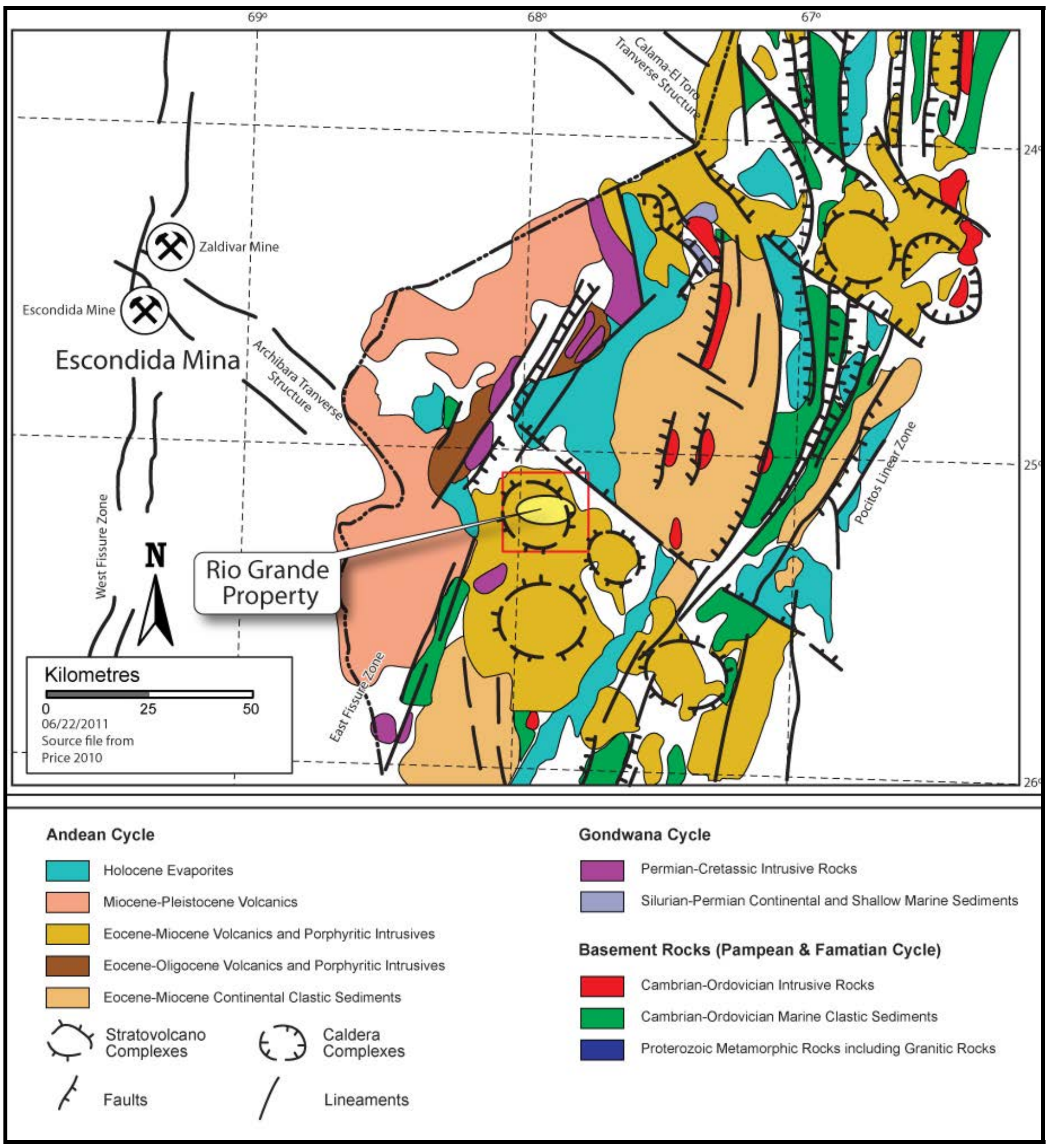
The basement rock is composed of medium to high grade metamorphic rocks of Proterozoic age, which are exposed south of the Siete Curvas basin. Cambrian-Ordovician granites and granodiorites form a magmatic belt oriented north-south, outcropping to the east and south of the Salar de Arizaro. Cambrian to Ordovician platform-shelf clastic sedimentary rocks with submarine volcanic facies are exposed east of this basin, and these units generally have a north-south trend.

The Siete Curvas (Seven Curves) basin is a 100 km wide by 130 km long extensional basin and includes the Salar de Arizaro, which occupies the central zone. This Basin contains continental sedimentary rocks including immature red beds, extrusive volcanic rocks and significant evaporite deposits, some of which are being exploited for boron and lithium. The basin is suspected to be active since early Tertiary times.

The area west of the Salar de Arizaro is also underlain by Cambrian to Ordovician intrusive rocks mainly characterized by course-grained granites. In the same north-south magmatic belt Permian to Jurassic granitic intrusive rocks and spatially related dacite volcanics and rhyolitic to dacitic porphyries of Eocene-Oligocene age are present. These units are covered by Pliocene volcanics of the

Andean Volcanic arc. North of the Salar de Arizaro, Silurian to Permian continental and shallow marine clastic sedimentary rocks form part of an uplifted structural block. To the north and south the Siete Curvas basin is bounded by northwest trending transverse volcanic arcs of the Andean cycle. Adjacent or superimposed eroded stratovolcanic complexes characterize these volcanic belts; these consist of andesite, dacite porphyries, and coeval volcanic rocks including ignimbrites, dacite-andesite tuffs and other volcaniclastic rocks, and are the locus of many of the hydrothermal systems and important mineral deposits.

Figure 7.1 Regional Geology of the Rio Grande Property Area



Source: modified after Dow (2000).

7.2 LOCAL GEOLOGY

From CAM (2005):

The Rio Grande area consists of two overlapping andesitic volcanic centres, as well as numerous flanking shallow intrusive plugs, dikes and sills. There is relatively little outcrop, with most areas covered by a thin veneer of colluvium. Thicker alluvial fans are present in many areas. The southeastern part of the project area is underlain by volcanic flows of relatively recent age. These overlie a basement of relatively flat-lying, maroon, volcanolithic sandstones, which also form the basement on which the Rio Grande volcanic complex was constructed. The two volcanic centres appear to overlap slightly. Both are constructed of dacitic to andesitic flows, sills and dikes, intruding and flanked by volcaniclastic rocks, including breccias, agglomerates, and lahars, generally dipping away from the volcanic centres. All are broadly of andesitic or dacitic composition, and collectively are here term "Rio Grande Volcanic Complex". Radial dikes are present on all sides of the edifice. A plug of fine-grained felsic intrusive rocks forms the highest point on the ridge between the two volcanic centres. An age of 16 million years has been estimated by K-Ar dating from a coarse hydrothermal biotite sample collected near the core of the complex, placing the Rio Grande volcanic complex in a mid-Miocene age.

Alteration is roughly concentrically zoned and is strongly influenced by rock type. Volcaniclastic rocks on the outer flanks of the volcanic complex are often clay altered, with alteration becoming more intense toward the centre. Corresponding volcanic rocks may contain propylitic or weak argillic alteration. Large areas of volcaniclastic rocks are bleached, leached and probably clay altered. Near the cores of both volcanic edifices, rocks are potassically altered. The innermost zone of the southwesterly of the two volcanic centres contains zones of intense scapolite-diopside-magnetite alteration and zones of intense potassically altered rock (disseminated biotite, K-spar veinlets and pervasive K-spar). Very strong bleached clay-crystalline Kfeldspar-sericite altered volcanics apparently represent the core of the hydrothermal alteration.

7.3 PROPERTY GEOLOGY

From CAM (2005):

Rock types on the property include volcanic rocks (crystalline tuffs and flows of dacitic to andesitic composition), volcaniclastic rocks (breccias, and lapilli and crystal tuffs) and intrusive rocks (dykes, sills, intrusive bodies and plugs). The structure of the area is difficult to determine due to lack of outcrop and distinctive marker horizons. There are, however, several sets of apparent lineaments on Landsat images and air photos. The dominant structure set trends WNW, parallel to the "Archibarca Transverse Zone"; another set trends NE, approximately parallel to the "East Fissure Zone" and a third and fourth set consists of NW and NS *trending lineaments. Circular structures marking the volcanic centres are evident, and commonly radial dykes ring the centre. Given the extremely limited extent of true "outcrop", essentially none of the air photo lineaments can be definitely linked to fault zones on the ground. Small-scale structures were recorded in cleaned trenches. Within the main alteration zone, the dominant fracture orientation is WNW and near-vertical. A second dominant set of joints trends NE and dip nearly vertical. These are consistent with dominant trends in air photo interpretation. Fault zones interpreted from surface trenches are generally steeply dipping and typically strike either NW to WNW or NE, and are parallel to the main trends of lineaments and joints property-wide. They are characterized; both on surface and at depth in drill holes, by white to orange-brown clay-sericite-Fe-oxide alteration and gouge.*

The two volcanic centres that comprise the Rio Grande volcanic complex are the locus of intense and widespread hydrothermal activity, ranging from weak argillic and propylitic at the margins to intense calcic-sodic alteration in the core. Alteration types include propylitic (carbonate, epidote, chlorite), argillic (clay), sericitic (sericite, Fe-oxides), potassic (biotite and K-spar) and SDM (scapolite-diopside-magnetite). The latter two alteration types are largely restricted to the centre of the main or southwestern volcanic centre designated the "core zone" of alteration. The core zone of alteration presents alteration styles of two different types of mineralized systems. An altered area of 2.2-kilometres by 1.9-kilometres with an oval shape represents the alteration assemblages of the iron-oxide Cu-Au (IOCG) hydrothermal system.

From Price (2010):

The alteration developed in rocks from Rio Grande project is the result of extensive hydrothermal activity, mainly concentrated in two centres of igneous activity. Six main alteration types have been identified and the relative chronology of alteration events established at Rio Grande, from oldest to youngest, is as follows:

1. *Potassic – K-feldspar - An early, pervasive, moderate to strong K-feldspar alteration event affected rocks within the central part of Rio Grande system. The distribution of this alteration type is widespread.*
2. *Silicification - silicification appears to be related to quartz veinlets, or as selective replacement of the groundmass. In some cases, quartz veinlets are seen together with magnetite or sulphides, and can develop sheeted veinlets and stockworks. The exact timing of this alteration is not known.*
3. *Calcic-Iron-Sodic – The CaFeNa (calcium-iron-sodium) alteration event occurs in a variety of intensities and habits. Thin section studies describe cross-cutting relationships between clinopyroxene (diopside?) veinlets and the early potassic K-feldspar alteration. Cross-sections suggest that this alteration forms a relatively shallow blanket or cap. Some evidence suggests that there may be relationships between the K-feldspar and CaFeNa events.*

4. *Potassic – Biotite – Finely disseminated biotite and biotite ±magnetite ±K-feldspar veinlets clearly cross-cut the previous alteration types.*
5. *Chloritic / Propylitic – Chloritic and/or propylitic alteration is developed mainly in the rocks surrounding the main central Rio Grande alteration system.*
6. *Iron Oxide / Clay – Fe-oxide/clay alteration, largely controlled by surface supergene processes, is the youngest event and overprints all the other alteration types. The downward penetration of this alteration is important and drill holes show that secondary iron oxides can be found at greater than 300 metres depth below surface.*

Zonation of the alteration is roughly concentric, with a strong to intensely altered central core area, where mainly intrusive subvolcanic rocks are located, grading outward to less altered rocks in the surrounding areas. Rocks in the outlying areas often exhibit clay and/or chloritic or weak propylitic alteration. Diorite intrusive rocks found to the east and inside the core area are almost fresh, usually showing only selective chloritic alteration after mafic minerals. Near the core of the Rio Grande system, the rocks exhibit variable degrees of potassic, (K-feldspar) alteration. The innermost zone of the main igneous centre contains broad zones of moderate to intense calcic-iron-sodic (CaFeNa) alteration that commonly consists of variable amounts of diopside, magnetite, scapolite and actinolite. Limited areas of potassic biotite altered rocks are confined to the central area of the Rio Grande system. In addition to the six (6) major alteration types, a number of common accessory alteration minerals are also observed, including: sericite, silica, calcite, anhydrite, apatite, and titanite. Sericite appears to present in many altered rock types based on thin section studies. In rare cases individual, secondary white mica crystals can be seen with naked eye. Anhydrite occurs as soft, translucent veinlets in many different rock units. In drill core, some of them are accompanied by sulphides, however good cross-cutting examples between pyrite-chalcopyrite veinlets and later anhydrite have been documented. White to translucent calcite occurs as fracture infillings in all rock units. Thin section results show that it is commonly associated with presence of chlorite. Apatite and titanite are present in the majority of thin section samples studied, with important secondary hydrothermal growth of apatite crystals in some cases. It is notable the presence of these calcic minerals and calcic clinopyroxene (diopside?) in several samples. One thin section sample was noted to also contain fluorite.

The average general depths of (1) oxidation (oxides only) and the (2) transition zone (from mixed oxides sulphides to only sulphides) are as follows:

Discovery

1. *Lower limit oxides zone: 210m*
2. *Lower limit mixed oxide-sulphide zone: 330m*

Sofia

1. *Lower limit oxides zone: 250m*
2. *Lower limit mixed oxide-sulphide zone: 375m*

North

1. *Lower limit oxides zone: 230m*
2. *Lower limit mixed oxide-sulphide zone: 400m*

Number 7

1. *Lower limit oxides zone: 250m*
2. *Lower limit mixed oxide-sulphide zone: 315m*

7.4 MINERALIZATION

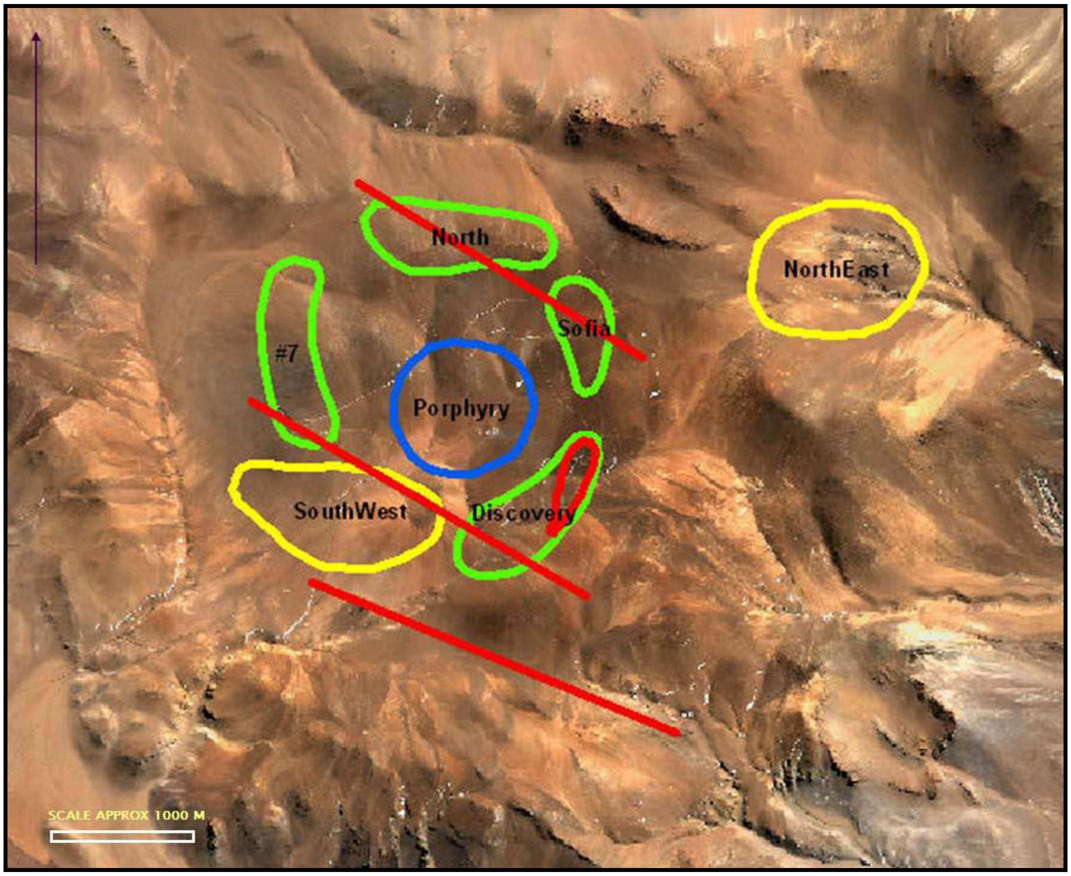
From Price (2010):

As previously noted, the Rio Grande area has several styles of mineralization:

- *Near surface, fracture-controlled copper oxides ±sulphides (at depth) with gold (green in* Figure 7.2*),*
- *Deeper porphyry copper-gold style mineralization (blue in* Figure 7.2*),*
- *Structurally controlled gold (±copper) mineralization associated with pyrite (red in* Figure 7.2*), and*
- *Gold-copper mineralization associated with quartz-magnetite stockworks in diorite intrusive rocks similar to the nearby Linderos deposit (yellow in* Figure 7.2*).*

The Rio Grande deposit has a number of named mineralized zones arranged around the central core as follows: North Zone, Sofia Zone, Discovery Zone, Southwest Zone, Number 7 Zone and, to the northeast, the separate and less-explored Northeast Zone. The main copper-gold mineralization at Rio Grande occurs as fracture-controlled copper oxides and sulphides, which form an annular ring around the main zone of alteration. Mineralization occurs as blue-green and black copper oxides in the near surface environment. The principal copper oxide minerals are chrysocolla, malachite, and traces of azurite. The principal sulphide minerals are chalcopyrite and pyrite, which are typically associated with magnetite. Chalcopyrite (with gold) occurs as coarse-grained clots, disseminations, stringers, and fracture-fillings. In the near surface environment the chalcopyrite is commonly oxidized to a dark brown colored, translucent copper limonite, as well as chrysocolla and other blue-green and black oxides (i.e., Cu-bearing Mn-oxides and neotocite). One small diorite intrusion hosts minor quartz-magnetite sheeted veinlets which contain gold and copper mineralization similar to the nearby Linderos deposit of Mansfield Minerals Inc. Mineralization of this style also occurs *in the Northeast (NE) target. In addition there are more classic, quartz-pyrite-magnetite veins and stockworks associated with K-feldspar alteration; which occur within the Crowded Feldspar Porphyry intrusive unit.*

Figure 7.2 Types of Mineralization at Rio Grande



Source: Price 2010.

8.0 DEPOSIT TYPES

The Rio Grande copper-gold-silver prospect has been the subject of much debate concerning the origin of the mineralization and to what deposit type it belongs. Two styles of copper-gold mineralization with associated alteration have been recognized. There is an early mineralized system with affinities to IOCG type deposits, and a later mineralized system with affinities to porphyry style copper-gold deposits.

From Price (2010):

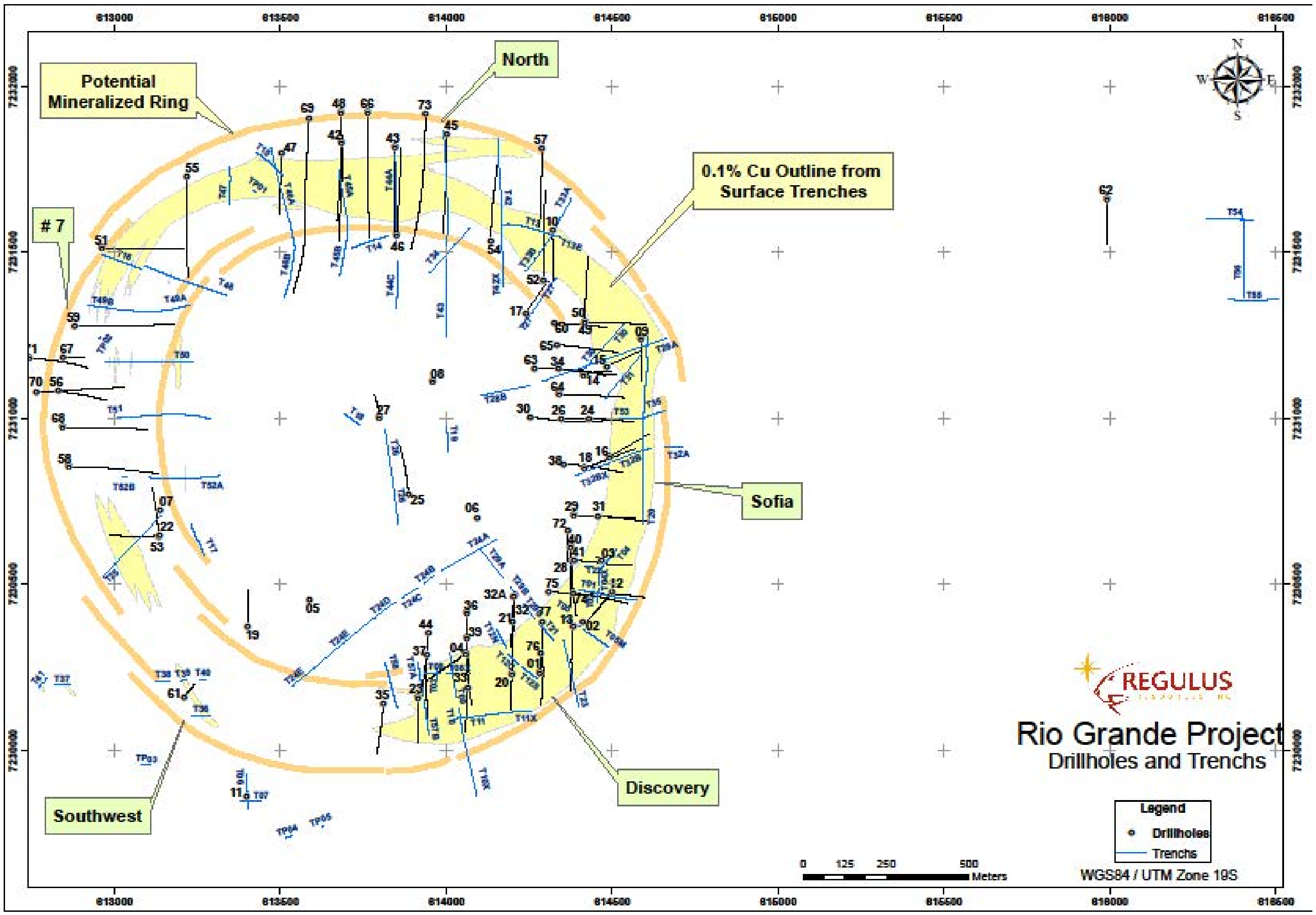
The IOCG deposits generally form in a structural and tectonic setting which includes extensional-arc environments with high-angle structures that are adjacent to continental red bed sequences which contain evaporites. In addition, IOCG deposits generally have an alteration assemblages consisting of K-feldspar-sericite and diopside-scapolite-magnetite. Porphyry-style copper-gold deposits typically have a core of K-feldspar alteration with an associated quartz magnetite-pyrite-chalcopyrite stockwork, flanked by quartz-sericite-pyrite alteration. Rio Grande shares characteristics in common with both of these deposit types; when considering the geo-tectonic setting and the alteration assemblages.

Structurally, the Rio Grande area within the Siete Curvas basin is bounded by large, regional normal and strike-slip faults. The bounding structure on the north is the northwest trending, Calama-Olacapato-El Toro Transverse Zone and on the south is the northwest trending Archibarca Transverse Zone (Figure 8.1). These transverse zones are interpreted to be the surface expressions of ancient deep crustal trans-lithospheric fault structures, which have been periodically reactivated, and are possibly related to the initial opening of the Proto Atlantic Ocean during Cretaceous times. The East Fissure Fault Zone and the Pocitos Linear bound the basin to the west and east respectively. These regional north-south trending structures are believed to represent suture zones of previously accreted terranes; a geotectonically similar situation to the West Fissure Fault Zone in Chile.

Intersections of these regional structures appear to create favourable tectonic preparation for the locus of mineralizing systems. These deep-crustal structures have undergone complex, episodic movements related to ongoing subduction, which has created permeable conduits that have focused magmatic activity which in turn has provided a heat source for fluid movement. The combination of these fundamental basics is critical for the development of hydrothermal deposits, similar that documented for many of the world-class porphyry copper deposits in Chile, for example, the world-class Escondida copper deposit lies at the intersection of the West Fissure Fault Zone and the Archibarca Transverse Zone, while the El Abra and world class-sized Chuquicamata Cu porphyry systems are located at the intersection of the Calama Transverse Zone and the West Fissure Fault Zone.

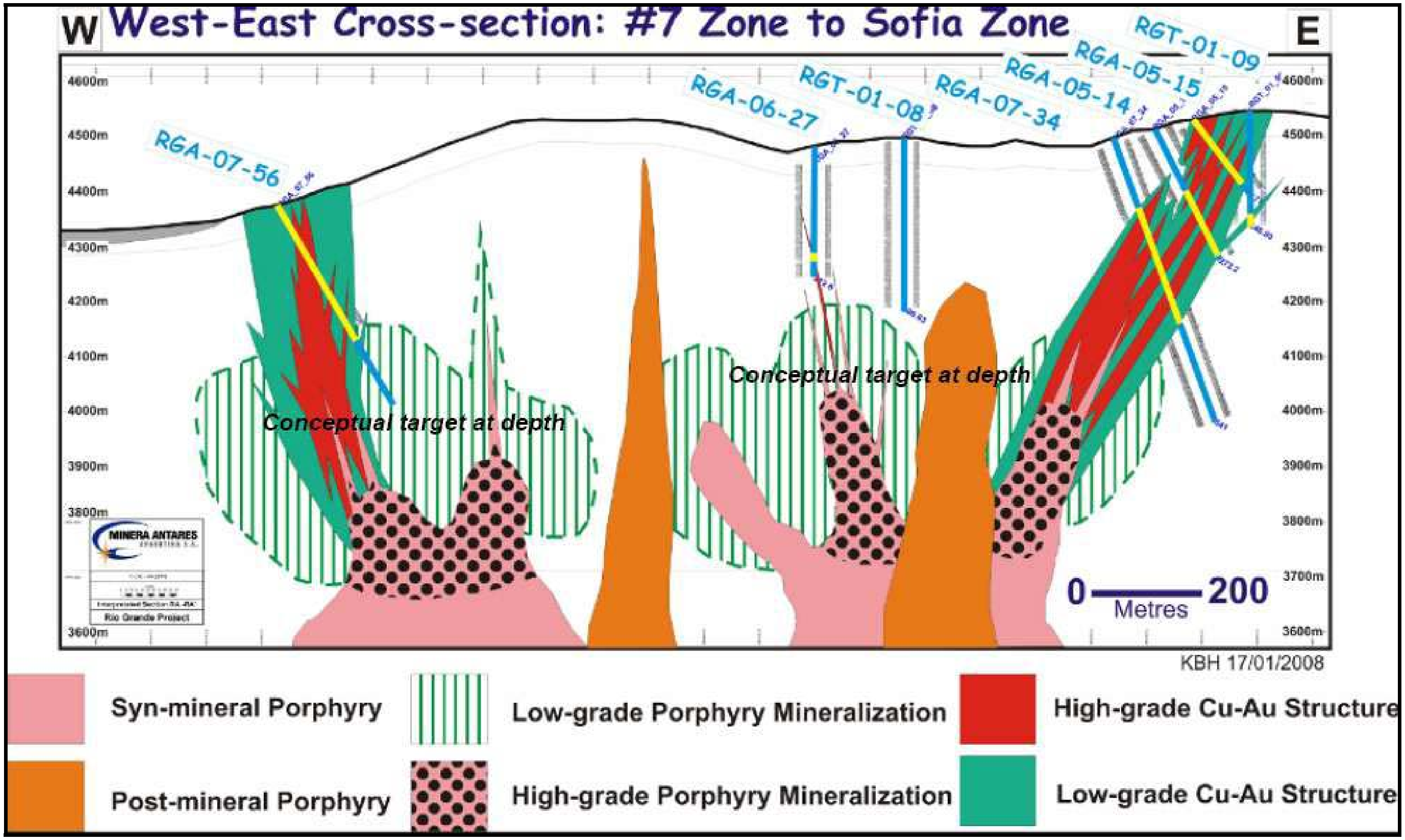
Similar structural intersections localizing magmatic-hydrothermal systems have been documented at the Cerro Samenta copper porphyry prospect (approximately 40 km to the west of Rio Grande) and the Arizaro-Lindero gold-copper porphyry prospects (5 to10 km to the east). The Rio Grande Cu-Au deposit lies at the intersection of the north trending East Fissure Fault Zone and the Archibarca Transverse Zone.

Figure 8.1 Annular Mineralized Zones and Trenches at Rio Grande



Source: Javier A. Robeto, VP Exploration, Regulus Resources (August 2011).

Figure 8.2 Conceptual East-West Cross Section Through Rio Grande



Source: Price (2010).

9.0 EXPLORATION

The past exploration of the property has been described in detail in the previously filed Technical Reports (CAM, 2005 and Price, 2010), and only a summary of the more recent work and significant work is presented.

9.1 GEOCHEMISTRY

From Price, 2010:

A picket grid was installed in 2000 and 2001 with sampling stations at 50 m intervals on N-S trending lines spaced 200 m apart. Stations were surveyed using a Garmin 12XL Global Positioning System (GPS) unit. Soil samples were obtained by shoveling off an area down to subcrop and sieving for the fines. The grid covers the entire area of the large volcanic centre and portions of the smaller centre located to the NE. A total of 1420 samples were collected and analyzed for assay for Ag, Cu and Au initially, with only some samples analyzed at Acme Laboratories for 32 elements by Induced Coupled Plasma (ICP). As this work has been described in several past reports, the results are only summarized here.

9.1.1 COPPER

Copper values in soils ranged up to 7,000 ppm. Samples over 200 ppm copper show a horseshoe shape anomaly oriented to the NW and centred over the central area of the main volcanic centre, corresponding to the zones of potassic alteration. Some of the other smaller anomalies may be due to transported copper minerals. One anomaly is coincident with the quartz-magnetite stockwork encountered in trenches # 6 and # 7 (porphyry style mineralization). Several other anomalous samples show a weak anomaly centred in the northeastern volcanic centre.

9.1.2 GOLD

Gold values in soils ranged to a high of 413 ppb. Gold shows a similar distribution to copper, samples over 20 ppb Au form a horseshoe shape body coincident with the Cu anomaly. Other scattered anomalies from 20 to 60 ppb occur.

In early 2011, Regulus announced that a soil and talus sampling program outlined a large area of anomalous gold mineralization to the northeast of the Rio Grande ring structure. The Northeast gold target is located 1,500 m to the northeast of the Discovery and Sofia Zones. The 2011 work program will include extending the soil and surface magnetic surveys to the east and north of the 1,000 by 400 m, greater than 50 ppb, gold anomaly.

9.2 GEOPHYSICS

From Price (2010):

A series of geophysical surveys were performed by Quantec Geoscience for Teck Cominco in 2000, superseded by broader surveys done by Antares in 2004 -2005. The studies included gradient- array Induced Polarization and Magnetic surveys and are discussed by Heather (personal communication 2008) below (as provided verbatim).

Quantec Geoscience performed a Titan IP/Resistivity survey in 2011 and pending results will be used to plan the 2011 drill campaign.

9.2.1 GRADIENT ARRAY INDUCED POLARIZATION (GAIP)

From Price (2010):

CHARGEABILITY

The following preliminary observations can be made regarding the chargeability data at the Rio Grande project. The principal area of high chargeability is contained within an approximately circular feature, which coincides reasonable well with the main area of known alteration and mineralization at Rio Grande. The areas of very high chargeability are likely due to high pyrite content; which has been confirmed by drill-holes RGT_01_05 and RGA_05_13. This circular distribution of high chargeability is interpreted to be part of a marginal pyritic halo on a porphyry system.

The largest zone of high-chargeability, located on the southwest corner of the circular, is coincident with the lowest topographic part of the system and where it appears the depth of oxidation is less than is encountered in most other parts of the system. Hence in this area, primary sulphides are likely preserved at shallower depths, as observed in drill-hole RGT_01_05. Contrarily, the northeast half of the system occurs in a high topographic position, where the oxidation is strong, and extends to greater than 200 m depth. Here the chargeability appears slightly weaker which is interpreted to be due to the increased depth before primary sulphide minerals are encountered, and hence, a weaker signal. Here again there is field and drill-hole evidence indicating the presence of a strongly supergene altered pyritic halo marginal to the main system.

Areas of moderate chargeability, such as those cut by drill-holes RGA_05_14 and RGA_05_15, appear to coincide with areas where pyrite and chalcopyrite, both as fracture fillings and disseminations were found. Therefore, it would seem that areas of intermediate or moderate chargeability are potentially of interest, versus the high chargeability features which appear to in most cases to be pyrite, likely related to the marginal pyritic halo. Additionally, areas of particular interest may be *where intermediate chargeability features occur adjacent to high chargeability features.*

Finally, the chargeability clearly defines several important structural orientations; westnorthwest east-southeast (WNW-ESE), east-northeast west-southwest (ENE-WSW), and northnortheast south-southwest (NNE-SSW). All of these orientations are known regional orientations, as well as important orientations observed in the detailed fracture data from the mineralized zones.

RESISTIVITY

The following preliminary observations can be made regarding the resistivity data at the Rio Grande project. A pronounced area of lower resistivity, roughly circular in shape, is coincident with the main Rio Grande intrusive complex centre and the principal area of hydrothermal alteration and mineralization within that. Inside this circular feature there are at least two annular structures which enclose zones of the most highly fractured rocks, within which are found the principal mineralized zones. In addition, there are a number of smaller areas of higher conductivity which may be related to mineralized zones at depth.

There several areas of higher resistivity such as southwest of the principal zone of alteration and two smaller centres located to the north and southeast, which may represent weakly fractured, subvolcanic intrusions, similar to the main host rock at Rio Grande, the Bi-modal Feldspar Porphyry Intrusion (unit BFPi). Finally, there is a well-developed pattern of linear features that can be seen in the data and these are interpreted to be faults and corridors of high fractured rocks. Four principal orientations can be deduced; northwest-southeast (NW-SE), west-northwest east-southeast (WNWESE), east- west (E-W), and northeast-southwest (NE-SW).

9.2.2 *REAL SECTION IP LINES*

Gradient Array Induced Polarization (GAIP) survey results for Rio Grande by geophysical consultant Webb (2005) suggested that there is some along line displacement of the sources at depth where the strike of the source is not orthogonal to the Real Section/pole-dipole line. This is not unexpected and may, in some cases, indicate (horizontal) direction toward the stronger part of the source.

The complex structural setting for the project is particularly evident in resistivity sections, especially within, and near, <u>the —circle of prospects</u> where structure density appears to increase markedly. Many of these structures are also (at least weakly) chargeable.

Apparent north dips toward the southern end of sections and apparent south dips toward the northern end of sections imply a structural focus and probably an intrusive complex at depth below the <u>—circle of prospects</u>. Resistivity sections show a network of lower resistivity zones with some linear, some arcuate, and some exhibiting a paisley pattern. These patterns reflect structure with the paisley *and arcuate patterns being due to 3D effects on the 2D inversion (i.e., structural complexity, especially structures sub parallel to the line). Streaking at depth (usually 150 to 200 m below surface) and approximately parallel to surface of the modeled resistivity and, to a lesser extent, the chargeability, is likely a function of the depth of investigation limit for the configurations used (not discounting possible coupling). However, given the setting of the project, the structural complexity and the fact that the streaking occurs at essentially the same depths for both configurations, this streaking may represent depth of complete oxidation or possibly water table. Occasional, less obvious pseudo-horizontal features in the resistivity sections may indicate the presence of sub-horizontal faulting (e.g., 613200E below the crest at ~7231000N resistivity).*

Some boundaries are quite clear and assumed to be lithological. Good examples are observed toward the northern and southern ends of both resistivity and chargeability inversion sections for Line 614400E. Similar, although not so well defined, boundaries can be interpreted toward the northern end of lines 613200E and 614000E. High chargeability / low resistivity are not exclusively related to low magnetic susceptibility.

9.2.3 MAGNETICS

The ground magnetic data is presented in three formats:

- *Total Field,*
- *Reduce to Pole, upward continued 40 m*
- *Reduce to Pole, 1st Derivative.*

Images show elevated magnetics in the north of the area surveyed and relatively low magnetic in the south. There is an apparent gradient across the survey with levels increasing from southeast to northwest. This gradient appears to be reflecting changing lithology rather than a regional effect. Several prominent linear features are apparent and are best observed in shaded images of RTP. Full and part circular features, which may be reflecting intrusive rocks at depth, can also be interpreted. The magnetics in the vicinity of the current prospect areas is quite disturbed with strong north-south and northeast linear features dominating the zone inside the circle defined by the supplied prospect outlines (circle of prospects). A prominent northwest trending magnetic ridge extends from the gap between the North and #7 prospects to the northwest corner of the survey area. A less prominent northeast trending magnetic ridge, which coincides with a topographic ridge, passes from the gap between the North and Sofia prospects through the northeast corner of the survey area. These features may be the local (magnetic) representation of regional lineaments.

Images were assessed for breaks and linear features that may represent significant structures. Circular features were also noted as they may represent deeper intrusive rocks. The most prominent linear features are oriented northeast. These *northeast oriented lineaments cross cut and occasionally terminate a set of less prominent east northeast lineaments. Other orientations (north-south, east-west and northwest) are also present across the survey area. These are almost all short strike length features and often give the impression that the northeast and east northeast features have disrupted them. Of these, the north-south oriented features within the circle of prospects were considered important as they are represented by prominent magnetic highs. The implication being that north-south structures within the circle of prospects have opened up and allowed the emplacement of intrusive rocks and/ or passage of mineralizing fluids.*

A small set of short strike length north northeast oriented lineaments is peculiar to the northwest corner of the survey area. The northeast direction is prominent in model results with interpreted intrusive rocks within the circle of prospects showing that orientation. The model indicates that northwest oriented structures are also important; disrupting the northeast trending interpreted intrusive rocks.

Modelling indicates that the bulk of the intrusive rocks in the survey area are non-magnetic. This, combined with the modeled short depth extent of their sources (see discussion of individual prospects), implies that the source of the north-south magnetic highs within the circle of prospects is secondary magnetite associated with alteration.

Several circular features are evident in the magnetics. The most prominent of these is approximately 1500m in diameter and is located to the northwest of, and slightly overlapping, the circle of prospects. A strong northwest oriented linear disrupts the elevated magnetics within this feature. The circle of prospects itself does not generate a circular feature in the magnetic however; it does lie at the north-western end of a somewhat weakly defined northwest oriented elliptical circular. Other circular and arcuate features are also present. Smaller features, such as that seen centred on ~614660E, 7231990N, may represent the response from individual intrusive plugs and their associated alteration.

Circular features are shown to be polygonal rather than circular, a common feature in these types of system. This is particularly the case for the prominent circular to the northwest of the circle of prospects whose geometry is suggestive of an intrusive source. The feature mentioned above, centred on ~614660E, 7231990N, shows in the model as having short depth extent above a larger body of non-magnetic material with susceptibilities increasing to ~3600RL before decreasing into the larger body.

9.2.4 QUANTEC TITAN 24 GEOPHYSICAL SURVEY

An 11 line (~24,000 m) Titan 24 IP/resistivity survey was performed by Quantec Geoscience in early to mid-2011. The survey covered the full extent of the Rio Grande ring structure and the purpose was to;

- more clearly define the deep porphyry targets in the centre of the Rio Grande ring structure
- define drill targets below the current known mineralized zones
- outline additional targets in the area of the ring structure that have yet to be drilled.

As discussed in the July 25, 2011 press release, the IP survey successfully outlined the contact between the oxide and transitional material and the underlying fresh volcanic rocks. Additionally, the MT survey outlined several high priority drill targets at depth within the central portion of the ring. At the time of writing this report, Phase I report evaluation was pending and 3D modelling was underway.

9.2.5 PREVIOUS TECK (2000-2001) SURVEYS

From Price, 2010:

The following discussion of the previous 2000-2001 geophysical work were taken and modified from Ambrust et al. (2005).

INDUCED POLARIZATION

An induced polarity and resistivity survey was performed for Teck in 2000-2001 by Quantec Geophysics, using personnel from the Quantec Argentina office in Mendoza Argentina, and the Quantec Chile office in Antofagasta, Chile. The purpose of the survey was to attempt to detect areas of disseminated sulphide and/or magnetite mineralization at depth (most surface sulphides are at least partially oxidized). The survey was conducted in the time domain using a pole-dipole array and 50 m dipole spacing. After several lines were surveyed and the results reviewed, the dipole spacing was lengthened to 100 m for the rest of the survey in order to image what appeared to be a more deep-seated chargeability anomaly. In all, 23.9 line-km on nine north-south lines spaced between 200 and 400 m apart were surveyed. Pseudo-sections produced from this survey suggested the presence of a large chargeability feature in the southern part of the survey area, as well as two elongated chargeability bodies; one coincident with the Discovery Zone, and the other a north-northwest trending body located west of the main zone affected by CaFeNa alteration.

IP and resistivity surveys were inverted using a 2-D inversion program (DCIP2D) developed at University of British Columbia and a plan map at the 4,050 m elevation, and six sections through the inversion model showing chargeability and resistivity. The "depth reliability" of these inversion sections is estimated to be about 250 m for the 50 m dipoles and 500 m for the 100 m dipoles. This estimate is arbitrary and based only on the appearance of the pseudo-sections. Because the model is not constrained at depth, sections produced from surveys with 100 m dipole-spacing produce more pronounced anomalies than that for lines with 50 m dipole spacing.

The inverted IP data produced a large chargeability anomaly that underlies much of the southern and western parts of the grid area. The IP anomaly is presumed by Quantec to result from the presence of moderate amounts of disseminated pyrite and/or chalcopyrite, or the presence of a large amount of disseminated magnetite, or both. The anomaly generally starts at a depth of approximately 200 m, although it rises to near surface on line 613600E. The chargeability anomaly appears to be open-ended to the east, and perhaps to the north. A large part of this anomaly was not drill tested by Teck, particularly to the west and north.

The resistivity model shows mottled highs in near surface areas, with generally lower anomalies at depth. This effect may be a function of the depth to the water table, with higher resistivity recorded in unsaturated, near surface rocks. It may also reflect the presence of K-feldspar or strong calcium-sodium (Ca-Na) alteration in near surface areas. A pronounced low anomaly is present in the core of the chargeability high on line 613600E.

An independent review of the previous magnetic and induced polarization work completed by Quantec was conducted by CAM consultants as part of Antares 43-101 technical review. CAM concluded that although the results do not have a unique interpretation, the models selected by Quantec are reasonable approximations based on the available survey data. Furthermore, they suggested that modifications to this interpretation will undoubtedly be made as more geological data are obtained from additional drilling and new surface exposures.

MAGNETICS

A surface magnetic survey was performed for Teck in 2000 by Quantec Geophysics, using personnel from the Quantec Argentina office in Mendoza Argentina (Unger and Rideout, 2001). The data was processed by personnel from the Quantec Argentina office. The magnetic survey was run over the periods from October 4-15 and November 24-28, 2000. The total magnetic field was measured using a GSM-19 magnetometer and a base station for diurnal corrections. Readings were taken at 25-meter intervals on north-south trending lines spaced 200 m apart in the centre of the grid and 400 m apart on the ends of the grid. The survey covered approximately 66 line-km or roughly 12 km^2.

Data were reduced to pole and contoured using Geosoft mapping software. According to Quantec, prominent magnetic deflections from near surface sources, together with large line separations produced a map with an irregular appearance, suggesting that additional measurements on lines between the existing lines would improve the interpretation. In particular, the Rio Grande core zone of alteration is distinguished from surrounding areas on the total field magnetic map by a roughly east-west trending zone of pronounced magnetic highs with flanking magnetic lows. On a scale of several tens of metres, there is not an obvious correlation between surface rocks with abundant magnetite and *the total field magnetic map. In general, however, the zone of irregular highs and lows does correspond to the area with abundant magnetite in the rocks, and the eastwest-trending anomaly in general does correspond in part to a zone of intense scapolite-diopside magnetite mineralization that extends through the middle of the core alteration zone.*

The ground magnetic data were inverted using the UBC Geophysical Department's MAG3D software. It is important to understand that this type of data manipulation does not produce a unique solution; that is, there can be a multitude of different models that fit the data equally well. The magnetic inversion model indicated the presence of strongly magnetic material at depth, with magnetic susceptibilities ranging from 0.15 to over 0.4. The general shape of the magnetic material in the area of the main alteration zone is that of a relatively flat-lying to hemi-cylindrical body that is up to 300 m thick. At the north end of the grid, the magnetic material appears to dip sharply to the north where it coalesces with a deeper magnetic body. Smaller scale features, such as a possible south-dipping fault zone at approximately 7231300N on line 613600E, may be significant as well.

TRENCHING

Trenching work at the Rio Grande project by Mansfield and Teck proved to be a highly effective exploration technique. Within the area of mineralization there is only 10 to 15% outcrop, but the cover (soil, talus, colluvium) is often less than 2 m deep.

During 2000-2001, Teck dug 22 trenches totaling approximately 2,650 m (Table 9.1 and Figure 9.1). From the trenches, a total of 1,399 rock chip samples for Au, Ag, and Cu geochemical analyses were collected (Table 9.2). Trenches are typically, 0.5 to 1.0 m deep, with channel samples collected in areas where bedrock was exposed. However, not all of the trenches were sampled. A Komatsu PC220-6 excavator was used for this work; and was found to be a highly versatile machine in comparison to a traditional backhoe.

Trench locations were established first using all the available information within the Rio Grande GIS database. In order to avoid confusion in the numbering of the new trenches; the first new trench of the 2004-2005 campaign was designated T-23, with the last Teck trench from 2000-2001 being T-22. As a general rule, for safety reasons, all new trenches are no more than 2 m deep.

Additional details are provided in the Antares (internal) summary report for 2005. The Teck trenches are well described in a previous technical report. The New (Antares) trenches are summarized below:

Table 9.1 Summary of 2004-2005 Antares Trenches

Trench	Zone	Length (m)	Samples (m)	Not Sampled (m)	Samples	Mapped
T_23	Discovery	206	206	0	101	Yes
T_24	Central	662	428	234	204	No
T_25	# 7	252	193	59	101	No
T_26	Central	286	118	168	56	Yes
T_27	Sophia North	173	127	46	61	No
T_28	Sophia	535	535	0	273	Yes
T_29	Discovery	191	191	0	86	No
T_30	Sophia	161	126	35	64	Yes
T_31	Sophia	167	167	0	85	Yes
T_32	Sophia	230	193	37	99	No
T_33	North	233	233	0	121	Yes
T_34	North	179	0	179	0	No
T_35	Sophia	67	31	36	13	No
T_10 ext.	Discovery	202	39	163	20	no
	Total 15	**3,544**	**2,587**	**957**	**1,284**	

Source: Price (2010).

Figure 9.1 Sketch of Trenches at Rio Grande

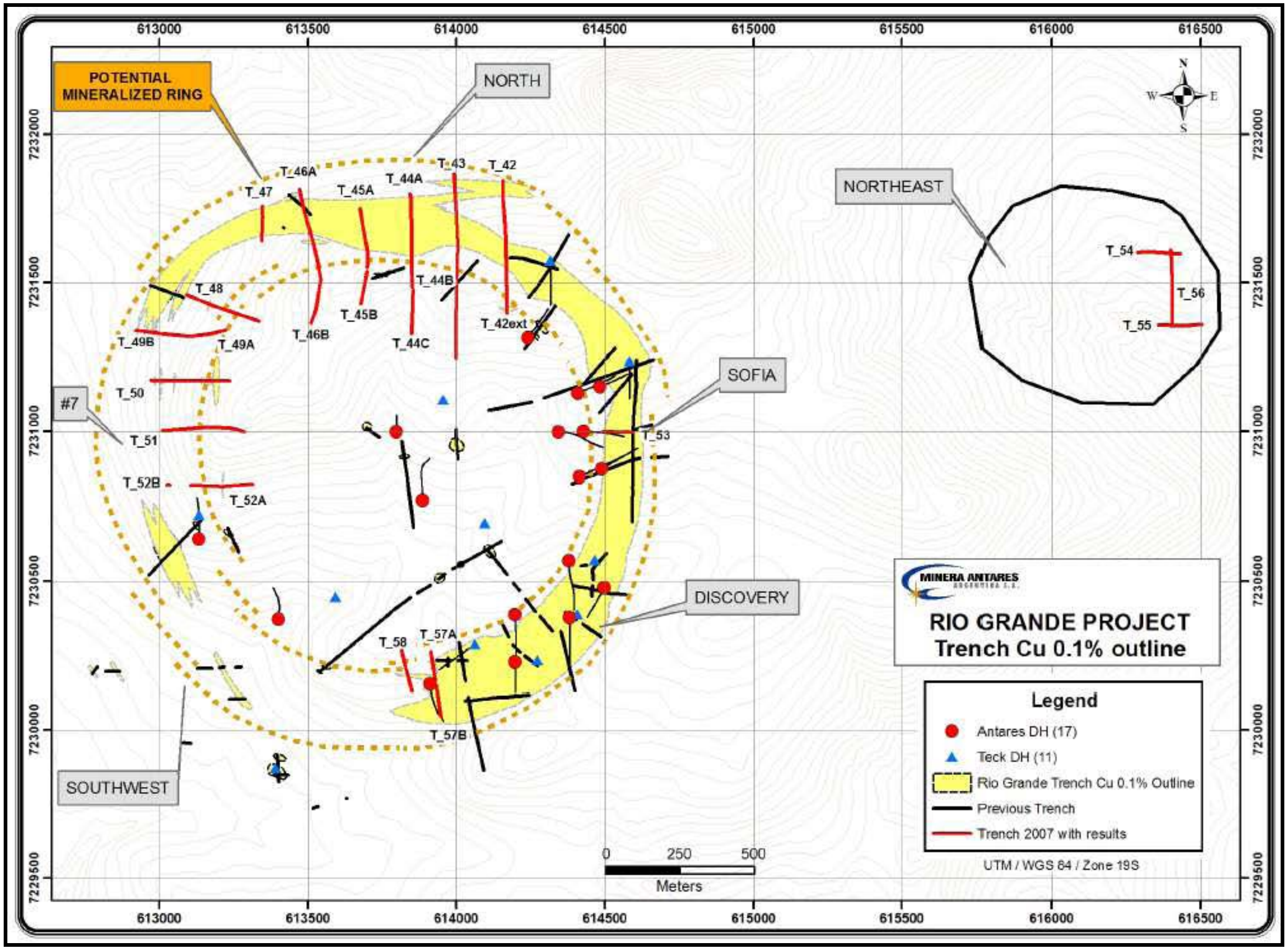


Table 9.2 Summary of the Principle Mineralized Intervals Cut by the 2004-2005 Antares Trenches

Trench	Zone	Interval (m)	Length (m)	Cu (%)	Au (g/t)	Ag (g/t)
T-23	Discovery	0-108	108	0.33	0.42	3.20
		incl. 64-100	36	0.54	0.65	4.00
T-24	Central	182-232	50	0.12	0.25	0.50
		incl. 202-212	10	0.32	0.39	0.50
T-25	# 7	154-200	46	0.15	0.10	0.80
		incl. 192-200	8	0.20	0.28	1.30
T-26	Central	52-62	10	0.11	0.33	0.80
T-27	Sophia North	76-80	4	0.16	0.70	26.80
		110-116	6	0.35	1.24	13.40
		incl. 112-114	2	0.80	3.34	31.40
T-28	Sophia	10-22	12	0.28	0.16	1.50
		76-184	108	0.57	0.92	3.80
		incl. 76-136	60	0.82	0.66	3.10
		incl. 86-130	44	0.95	0.79	3.70
		incl. 156-184	28	0.30	2.00	7.20
		incl. 168-182	14	0.20	3.41	10.70
T-29	Central	erratic anomalous values, no significant results				
T-30	Sophia	20-46	26	0.26	0.08	0.40
		64-90	2	0.30	0.22	1.60
T-31	Sophia	0-86	86	0.39	0.41	1.60
		incl. 0-56	56	0.49	0.55	2.00
		incl. 0-36	36	0.64	0.70	2.50
		incl. 74-86	12	0.38	0.35	1.40
T-32	Sophia	10-66	56	0.21	0.07	0.68
		82-144	62	0.35	0.37	2.12
		incl. 122-136	24	0.49	0.52	1.95
T-33	North	104-124	20	0.32	0.43	2.68
T-34	North	not sampled				
T-35	Sophia	0-26	26	0.19	0.16	0.97
T-10-EXT	Discovery	8-40	32	0.10	0.15	1.10

Source: Price (2011).

2007 TRENCHING

In January 2007, Antares published assay results for the first 5 trenches of a 25 trench (5200 m) program at Rio Grande. The results are from the previously poorly exposed North Zone target area (Table 9.3); highlights include: Trench T-42 to 48 m with 0.47 g/t Au and 0.29% Cu and Trench T-44A – 54 m with 0.48 g/t Au and 0.37% Cu (0.2% Cu cut-off).

These results delineate the surface of the North Target as a 60 to 200 m wide zone that extends for more than 800 m to the west of the Sofia Zone. The North Zone remains open to the southwest and possibly to the north beneath colluvial cover. The trenching program has been highly successful at penetrating extensive thin colluvial cover with bedrock exposed along more than 85% of the trench lengths. The effectiveness of the trenching was better than anticipated and the trenching program was extended to 5,200 m from the originally planned 4,400 m. Results from initial trenches are shown below:

The 2006-07 trenching program (25 trenches, 4646 m of bedrock) was completed in May 2007. Significant new results are as follows:

Table 9.3 Antares Rio Grande Trenches 2007

Trench	Zone	Interval (m)	Length (m)	Au (g/t)	Cu (%)	Ag (g/t)
T-42	North	14-50	36	0.24	0.25	1.0
		232-280	48	0.47	0.29	1.7
		incl. 240-256	16	0.74	0.44	2.3
		incl. 268-276	8	0.58	0.23	1.2
T-43	North	22-38	16	0.25	0.22	1.7
		162-172	10	0.57	0.21	1.1
		200-218	18	0.46	0.38	3.2
		incl. 204-216	12	0.54	0.45	4.3
T-44A	North	12-66	54	0.48	0.37	4.6
		incl. 12-22	10	0.62	0.44	12.1
		incl. 36-56	20	0.66	0.53	3.8
		106-116	10	0.43	0.29	3.3
T-44B	North	no sign results				
T-45A	North	14-20	6	0.42	0.30	1.5
		50-60	10	0.46	0.35	1.5
T-46A	North	46-72	26	0.25	0.38	0.8
		incl. 52-64	12	0.21	0.57	0.6
		106-118	12	0.25	0.22	0.6
		126-144	18	0.25	0.16	1.0
		176-1847 open to S	8	0.32	0.23	2.2

Source: Price (2010). *Significant Results as of 31 January 2007*
Cutoff = 0.2% Cu and/or 0.2 g/t Au, Min length = 6 m, Max dilution = 4 m

Trench metres commence with 0 m at N end of trench
Source: Price (2010).

The 2006-07 trenching program (25 trenches, 4646 m of bedrock) was completed in May 2007.

Significant results are as follows:

- *The Discovery Zone has been extended approximately 100 m to the west with results from Trench 57A (20 m of 0.24 g/t Au and 0.28% Cu) and Trench 57B (30 m of 0.56 g/t Au and 0.36% Cu, plus 24 m of 0.48 g/t Au and 0.46% Cu, plus 30 m of 0.35 g/t Au and0.46% Cu).*
- *The North Zone has been extended by 150 m to the west with Trench 47 (16 m with 0.41 g/t Au and 0.36% Cu and 10 m with 0.31 g/t Au and 0.26% Cu).*
- *Trench 53 exposed 63 m of 0.39 g/t Au and 0.57% Cu in the Sofia zone immediately above the drill fan that includes RGA-06-24 and RGA-06-26*
- *Trench 56 intersected anomalous gold values (28 m of 0.21 g/t Au and 26 m of 0.14 g/t*

Au with individual 2m intervals up to 0.5 g/t Au) associated with quartz-magnetite veining in intermediate intrusive rocks along the eastern margin of the Northeast Target.

The majority of the previously unreported trenches are located inboard of the projected mineralized ring fracture along the western and northern portions of the system and did not expose significant areas of mineralization. Thicker colluvial cover prevented effective trenching across the most favorable portions of the western side of the system.

Since the 2010 Technical Report, the interpretation of systematic sections over the project area has been completed. Digitization and 3D wireframes for mineral zones and grade shells have also been built.

10.0 DRILLING

From Price (2010):

To date, a total of 78 drill holes (Figure 10.1), totaling 33,015m have been completed at the Rio Grande project. In 2001, Teck Corporation (now Teck Cominco) completed the first 11 holes (1-11) totaling 3,220.57m (Phase 1) on the project. In 2005, Antares Minerals completed Phase 2 drilling consisting of seven holes (12-18) totaling 1,763.40m. In 2006, Antares Minerals completed Phase 3 drilling consisting of 11 holes (19-28) totaling 3,382.30m. In 2007, Antares Minerals completed a more aggressive Phase 4 drill program consisting of 34 holes (29-62) totaling 16,238.35m. In 2008, Antares (for the JV) completed holes 63-78.

On April 30, 2009, Antares published the results from the final twelve holes (6,523 m) of the 2008 drilling program at the Rio Grande. The holes were drilled in the Discovery, North, and Number 7 zones to offset previously identified mineralization in these areas. All twelve holes intersected zones of significant grade copper-gold mineralization and confirm the presence and continuity of mineralization in the Discovery and North zones. The more significant intercepts from the most recent twelve holes are:

- *RGA-06-26 (Sofia Zone): 158 m @ 0.46% Cu, 0.51g/t Au, 4.2 g/t Ag*
- *RGA-06-24 (Sofia Zone): 128 m @ 0.47% Cu, 0.71g/t Au, 4.4 g/t Ag*
- *RGA-07-40 (Discovery Zone): 103 m @ 0.58% Cu, 0.75g/t Au, 13.1 g/t Ag*
- *RGA-07-56 (#7 Zone): 135 m @ 0.53 Cu, 0.65g/t Au, 8.9 g/t Ag*
- *RGA-07-43 (North Zone): 151m @ 0.40% Cu, 0.46g/t Au, 12.4 g/t Ag*
- *RGA-07-48 (North Zone): 152 m @ 0.44% Cu, 0.41g/t Au, 5.32 g/t Ag., (within a long lower-grade intercept of 428m @ 0.30% Cu, 0.29 g/t Au, 5.31 g/t Ag*
- *RGA-08-064: (Sofia North Zone): 114 m with 0.56% Cu, 0.58 g/t Au and 10.6 g/t Ag*
- *RGA-08-065: (Sofia North Zone): 146 m with 0.60% Cu, 0.57 g/t Au and 7.2 g/t Ag*
- *RGA-08-066: (North Zone) 111.00 m with 0.39% Cu, 0.39 g/t Au and 5.4 g/t Ag*
- *RGA-08-069: (North Zone) 166.50 m with 0.35% Cu, 0.44 g/t Au and 5.6 g/t Ag*

- *RGA-08-073: (North Zone) 58.50 m with 0.54% Cu, 0.59 g/t Au and 7.3 g/t Ag*
- *RGA-08-074: (Discovery Zone) 44.00 m with 0.68% Cu, 0.75 g/t Au and 6.4 g/t Ag*
- *RGA-08-077: (Discovery Zone) 69.00 m with 0.43% Cu, 0.57 g/t Au and 4.2 g/t Ag*

All intercepts discussed in this report are core widths or lengths. Antares has implemented a well-designed QA /QC protocol which will provide credibility to the database for a resource estimate. Additional programs of diamond core drilling to the extent of many thousands of metres may be required to completely define these zones.

The 2005-2006 exploration program involved using a combination of RC (reverse circulation) and diamond drilling methods on seven of the drill holes. The strategy was to use the less costly RC drilling method from surface to near the projected depth of mineralization, which was typically at a depth of 150m. Conventional diamond drilling was then used to drill to the end of the hole. Table 10.1 lists the depths of RC drilling on the seven drill holes.

Table 10.1 RC Drilling Depths (m)

DDH	From (m)	To (m)
RGA_05_12	0	174
RGA_05_13	0	156
RGA_05_14	0	150
RGA_06_19	0	150
RGA_06_22	0	150
RGA_06_25	0	150
RGA_06_27	0	150

Holes were surveyed using a variety of instruments including Reflex Single Shot, Reflex Maxibor, and a gyroscope. When possible, holes were re-surveyed with a gyroscope to achieve optimal results.

Figure 10.1 Drill Plan, 2007-2008 Drill Program

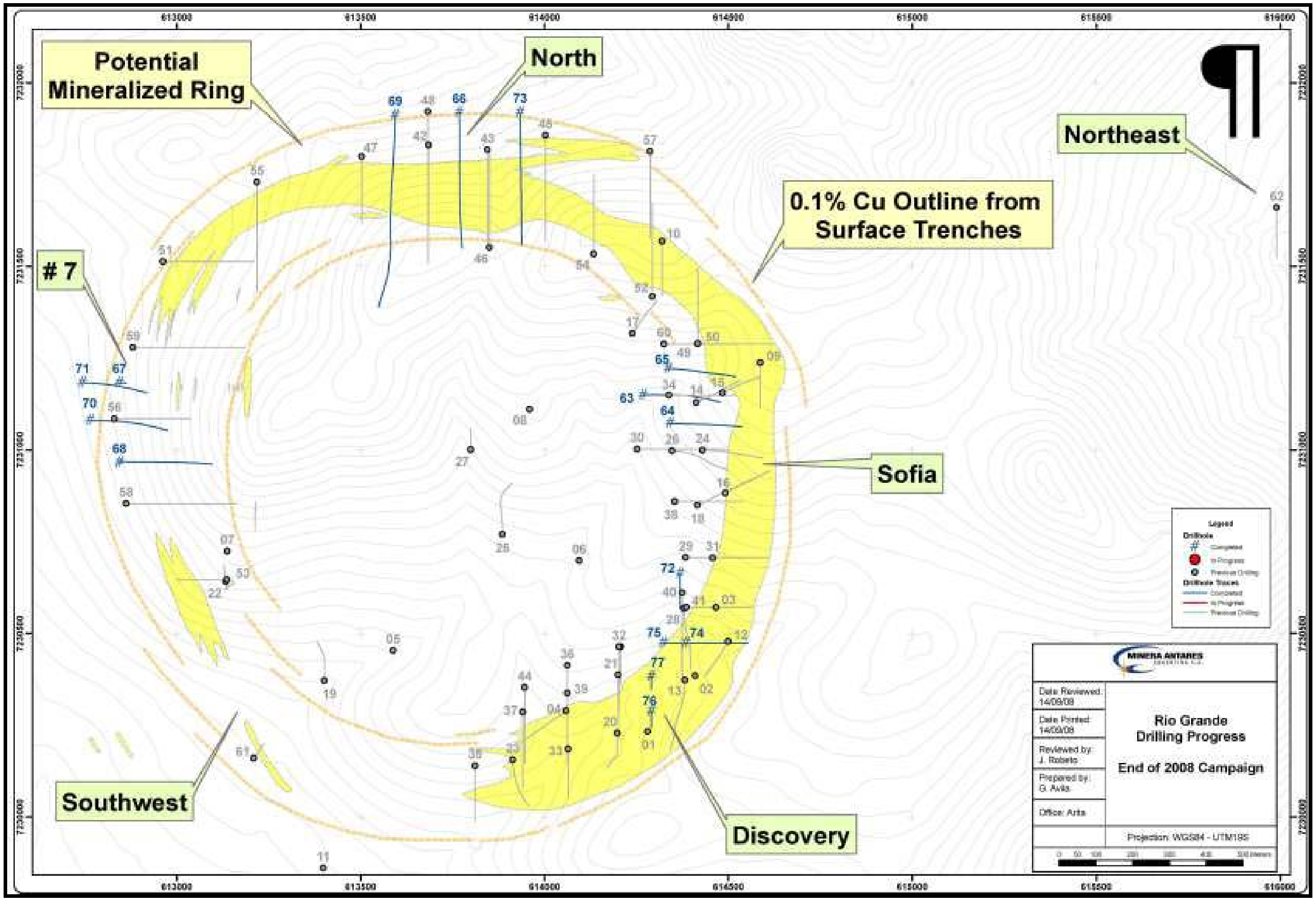
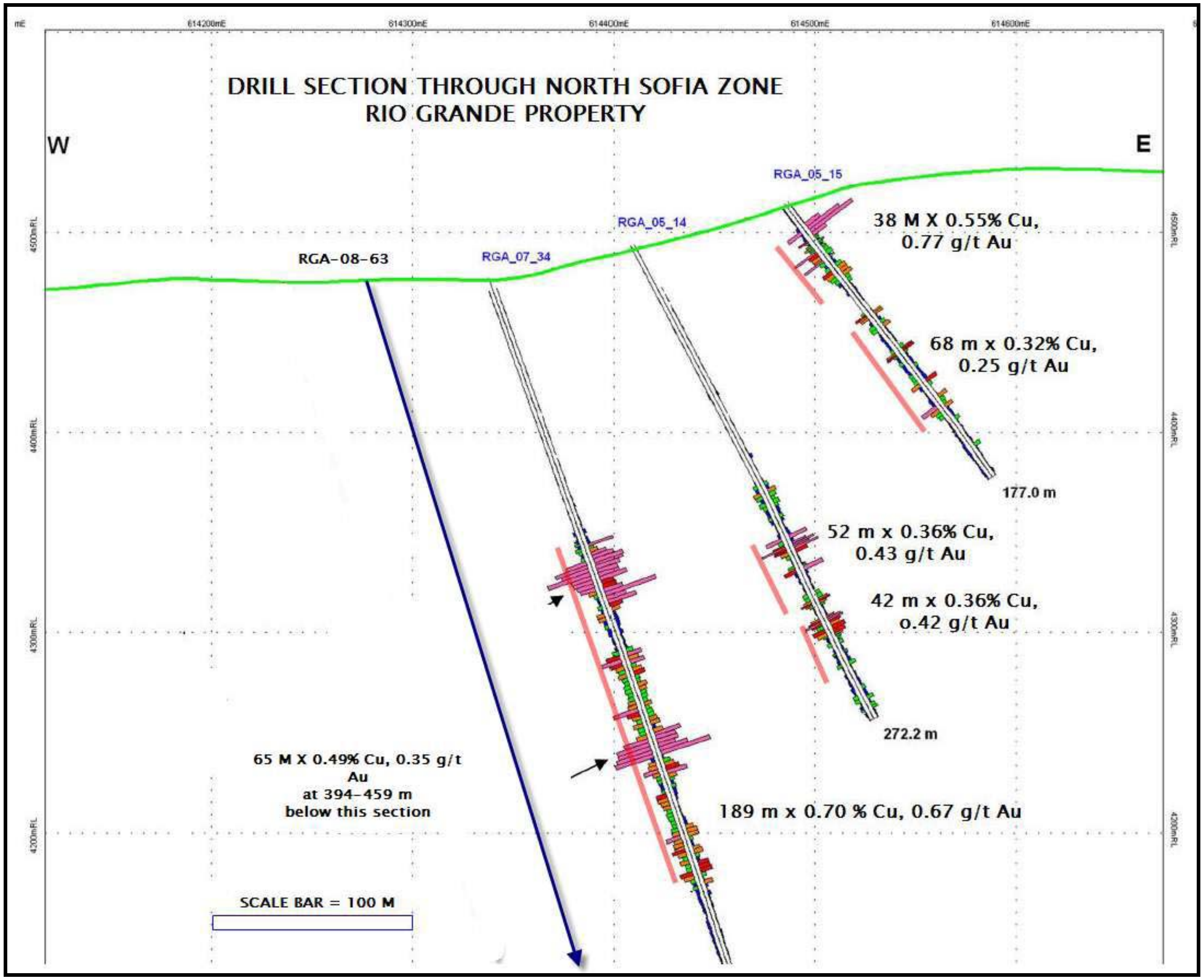


Figure 10.2 Drill Section Through DDH RGA 07-34



The drilling to date has encountered significant widths with copper and gold grades comparable to other major porphyry deposits (Price, 2010).

Following a two and a half year hiatus in drilling on the Rio Grande Project, Regulus announced the commencement of a 15,000 m drill program in July 2011. The drill program is currently underway, and is utilizing two drill rigs with Boart Longyear. The program is designed to consist of: (a) infill and extension drilling in the northern region of the Sofia Zone, (b) infill and extension drilling in the # 7 Zone, (c) extension drilling to the west of the existing drilling in the North Zone, (d) deep (up to 1,500 metre) targets on the deep rooted porphyry copper-gold-silver system, (e) initial testing of the under-explored southwest area of the ring structure (Source: July 25, 2011 press release).

11.0 SAMPLE PREPARATION, ANALYSES, AND SECURITY

Section 11.0 has been taken from Price (2010). Minor changes have been made for grammatical and structural consistency.

11.1 SURFACE ROCK CHIP SAMPLES

Surface rock chip and grab samples are collected by Antares field-personnel using hammers and chisels. Rock chips are immediately placed into cloth or plastic sample bags, secured with a plastic zip tie, and labeled with a unique Antares sample number. Most of the rock chip samples are semi-continuous chip channel samples and are typically two (2) metres in length, but this depends upon the nature of the outcrop and/or road cut being sampled. The bagged samples were then transported to the nearest Antares field camp, by Antares personnel, where they were stored in a secure area pending shipment to a certified laboratory sample preparation facility.

11.1.1 TALUS DEBRIS (FLOAT) SAMPLES

Talus debris or float samples were collected in those areas of low outcrop density or cover. Many of the areas in which Antares works are covered with a thin veneer of rock talus or float; however this float material has not been transported very far and is basically a result of in situ weather and erosion of the bedrock. Therefore, the objective of collecting this type of sample is to test if it would be useful in the identification of thinly buried/covered mineralization.

11.1.2 TRENCH SAMPLES

Trenches are typically excavated to bedrock with an average depth of 0.5-2.0 m and a width of 1-1.5 m using a large excavator. If bedrock was not encountered within approximately 2 m, then for safety reasons the trench would be discontinued. All loose rock was cleared away from the floor of the trench to expose a clean smooth bedrock surface. Sample intervals, typically 2 m in length, but variable depending upon the nature of the bedrock, were then marked by an Antares geologist.

Channel samples were then cut with a portable, gas-powered, water-cooled, diamond channel saw. Two parallel cuts were made approximately 5 cm apart and to a depth of 3 to 4 cm. Samples were then extracted by Antares field personnel with the aid of a hammer and chisel; with emphasis on constant sample volume for the length of the sample interval. Rock chips were immediately placed into a plastic *sample bag, secured with a plastic zip tie, and labeled with a unique Antares sample number. The sample site was then marked with a metal tag inscribed with the unique Antares sample number. The bagged samples were then transported to the nearest Antares field camp, by Antares personnel, where they were stored in a secure area pending shipment to a certified laboratory sample preparation facility.*

11.2 Diamond Drill Core Samples

Rock drill core obtained from diamond drilling was taken from the drill core barrel and immediately put into wooden boxes, marked with the drill-hole number and depth information, as provided by the drill contractor under the supervision of Antares personnel. The filled core boxes were then transported to the nearest Antares camp, by Antares personnel, where they were stored in a locked room dedicated to drill core storage.

The core was then measured, sample intervals marked, and photographs taken of each individual box. In addition, core recovery and RQD information was taken before the core is cut and sampled, as well as a quick log of the core, completed by an Antares geologist; noting the sample quality, main rock types, main alteration, and main character of the mineralization (i.e., oxide versus sulphide, etc.).

Antares support staff then sawed the core in half lengthwise; one half of the sampled core interval was returned to the core box, while the other half of the sampled core interval was placed into a plastic bag labeled with a unique Antares sample number and then sealed with a plastic zip tie. The sealed bags were then returned to the secure storage area pending shipment to a certified laboratory sample prep facility.

A more comprehensive geological log of each drill hole was subsequently completed from the remaining half of the drill core stored in the boxes, or RC cuttings. Upon completion of the drill program, the drill core boxes were carefully transported to a more permanent and secure warehouse facility controlled by Antares.

11.3 Geochemical Analytical Procedures

All sample preparation was completed at an internationally certified laboratory sample prep facility (i.e., international standards ISO 9001:2000 and ISO 17025:1999). Surface rock and drill samples were dried and entirely crushed to -10 mesh size (70% of the sample smaller than 2mm) and then a 250 gm split was pulverized to -200 mesh (85% or the sample smaller than 75 microns) to produce a sample pulp; which were then analyzed for various elements according to project specifications.

11.4 Sample Transport and Security

Samples were assembled and stored in a dedicated, secure storage area at the nearest Antares camp pending shipment to a certified laboratory sample prep facility. For shipment, several individual sealed samples were placed into larger, labeled and sealed rice bags. Shipment was typically by contract truck transport, with all necessary authorizations, directly from the Antares field camp to the certified laboratory sample prep facility. On occasion samples may have been transported by Antares vehicles, from the field locality to the nearest Antares office and then shipped directly to the nearest certified laboratory sample preparation facility.

11.5 Assay Procedures

All Antares samples were shipped directly to certified laboratory sample preparation facility in sealed bags with unique Antares identification numbers. Samples were prepared and analyzed only at internationally certified labs (e.g., international standards ISO 9001:2000 and ISO 17025:1999), which control their data quality with the use of reagent blanks, reference materials, and replicates. All lab control results pertinent to Antares Minerals Inc. data, such as standards, blanks, and duplicates were reported Antares.

All Rio Grande core samples were shipped directly to the ALS Chemex preparation laboratory in Mendoza, Argentina in sealed bags with unique Antares identification numbers. The samples were prepared at the Mendoza laboratory and sample pulps were then shipped to the ALS Chemex laboratory in La Serena, Chile for analysis. The ALS Chemex quality system complies with the requirements of the international standards ISO 9001:2000 and ISO 17025:1999 and operates in all laboratory sites. ALS Chemex controls data quality with the use of reagent blanks, reference materials, and replicates. The results of ALS Chemex standards, blanks, and duplicates are reported to Antares. The author is satisfied that the assays reported are accurate and the methods used and QA/QC procedures employed are above general industry standards.

11.6 Quality Assurance and Quality Control

CAM determined in 2005 that documentation of the QA/QC procedures used during the earlier programs, prior to acquisition of the property by Antares, was lacking. Antares for the JV partners has implemented a quality assurance (QA) and quality control (QC) program to ensure the reliability of all litho-geochemical sampling and analyzes of both surface samples and drill samples from all of its projects.

In Addition, Antares independently inserted certified control standards, coarse field blanks, and duplicates into the sample stream to monitor data quality. These standards were inserted —blindly to the laboratory in the sample sequence. Antares inserted a minimum of 5% control samples in all sample batches and 10%

control samples for drilling samples. The results of all data quality controls were carefully reviewed prior to the public release of any data. Finally, Antares periodically performs surprise laboratory visits to inspect cleanliness and assess overall lab performance.

Callum Grant, Senior Geologist with Tetra Tech, based out of Buenos Aires, Argentina, performed a visit to the Rio Grande in July 2011. In the course of the site visit, some representative samples of older Teck Corporation diamond drill core was re-sampled for check assays. The results are tabulated below (Table 11.1).

Table 11.1 Check Assays from Teck Corporation Diamond Drill Core

Hole ID (RGT)	Tetra Tech Checks				Regulus Originals				Percent Change		
	Sample	Cu (%)	Au (g/t)	Ag (g/t)	Cu (%)	Au (g/t)	Ag (g/t)	Sample	Cu	Au	Ag
01_01	1001	0.29	0.24	2	0.72	0.28	3	806	-21.3%	-3.8%	-10.0%
01_01	1002	0.35	0.96	4.1	0.51	0.88	9.2	3012	-9.3%	2.2%	-19.2%
01_02	1003	0.82	0.88	6.6	0.96	1.02	12.5	3140	-3.9%	-3.7%	-15.4%
01_02	1004	0.56	0.93	4.4	0.65	0.82	6.5	3156	-3.7%	3.1%	-9.6%
01_03	1005	0.45	0.96	5.5	0.53	1.15	11.9	3276	-4.1%	-4.5%	-18.4%
01_03	1006	0.61	0.89	5.2	0.73	0.95	8	3303	-4.5%	-1.6%	-10.6%
01_03	1007	0.62	0.81	5.2	0.71	0.78	8.1	3307	-3.4%	0.9%	-10.9%
01_03	1008	0.59	0.04	1.4	0.61	0.04	3.5	3374	-0.8%	0.0%	-21.4%
01_04	1009	1.15	0.51	0.5	0.64	0.52	0.6	3428	11.0%	-0.5%	-4.5%
01_04	1010	0.77	0.05	2.1	0.93	0.06	2.8	3502	-4.7%	-4.5%	-7.1%
01_04	1011	0.61	1.96	5	0.6	1.95	4.2	3562	0.4%	0.1%	4.3%
01_05	1012	0.71	0.22	0.5	1.29	0.41	1.3	3701	-14.5%	-15.1%	-22.2%
01_07	1013	0.45	0.45	2.3	0.71	0.66	5.1	3997	-11.2%	-9.5%	-18.9%
01_09	1014	1.29	0.96	3.7	0.72	0.49	3.9	4184	8.1%	16.2%	-1.3%
01_10	1015	0.08	0.06	1.4	0.15	0.56	6.7	4353	-15.2%	-40.3%	-32.7%
								Avg	-5.1%	-4.1%	-13.2%

Note: Where Tetra Tech Checks Cu% = 1, samples are in the process of re-assaying using a different technique for determining higher grades. Where Tetra Tech Checks Ag = 0.5, samples are in the process of re-assaying using a different technique for determining lower grades.

It was noted that although there were considerable differences (i.e. greater than 10%) between the original and check assays for copper and gold, in general, the average amounted to approximately 5% difference. However, the average difference for silver exceeded 13%. As silver was not used in the determination of the Indicator model, this discrepancy has minimal influence in the final resource tabulation.

12.0 DATA VERIFICATION

Tetra Tech performed an internal verification process of Regulus' Rio Grande project database against the original collar location files, downhole directional survey files, and laboratory-issued assay certificates. The validation of the data files was completed on 8 of the 78 drill holes and 9 of the 87 trenches/test pits, accounting for approximately 10% of the dataset. The drill holes and trenches which were examined are as follows: RGA_05_16, RGA_06_24, RGA_06_27, RGA_07_36, RGA_07_43, RGA_07_52, RGA_08_64, RGA_08_75, T23, T27, T31, T36, T40, T48, T53, T55, and T58.

The data verification process examined collar coordinates, down hole survey depths, azimuths and dips, and assay certificates including sample id, certificate id, and copper, gold, silver, and molybdenum grades. No errors were identified in any of the collar, survey or assay files. However, original coordinate files and directional survey files for RGA_05_16 and the trenches were not available.

It was also noted that assay certificates were not available for holes drilled by Teck. This represents 9.67% of the dataset, and a statistical data comparison of assays from Teck and Antares holes was therefore performed. Results are presented in Table 12.1, where RGA and RGT represent data for holes drilled by Antares and Teck, respectively.

Table 12.1 Statistical Comparison of Assays from Teck and Antares Drill Holes

	Statistic	Length	Au (g/t)	Cu (%)	Ag (g/t)
RGA	Mean	1.99	0.13	0.13	2.07
	Standard Error	0.00	0.00	0.00	0.05
	Median	2.00	0.04	0.05	0.90
	Mode	2.00	0.00	0.00	0.10
	Standard Deviation	0.22	0.26	0.21	6.46
	Sample Variance	0.05	0.07	0.04	41.69
	Kurtosis	31.05	138.89	56.31	871.26
	Skewness	0.89	7.75	5.24	24.64
	Range	5.90	8.29	5.20	296.90
	Minimum	0.50	0.00	0.00	0.10
	Maximum	6.40	8.29	5.20	297.00
	Count	14871	14871	14871	14871
	Coefficient of Variance	0.11	1.96	1.62	3.12

table continues…

	Statistic	Length	Au (g/t)	Cu (%)	Ag (g/t)
RGT	Mean	2.01	0.10	0.12	1.33
	Standard Error	0.00	0.00	0.00	0.05
	Median	2.00	0.04	0.07	0.80
	Mode	2.00	0.01	0.03	0.60
	Standard Deviation	0.15	0.15	0.14	1.82
	Sample Variance	0.02	0.02	0.02	3.31
	Kurtosis	147.65	25.18	9.23	165.80
	Skewness	9.38	3.81	2.49	9.46
	Range	3.78	1.95	1.28	41.00
	Minimum	0.79	0.00	0.00	0.10
	Maximum	4.57	1.95	1.29	41.10
	Count	1588	1588	1588	1588
	Coefficient of Variance	0.08	1.49	1.18	1.37
% Difference	Mean	0.78%	28.12%	9.67%	43.78%
	Standard Error	70.56%	54.86%	67.20%	14.75%
	Median	0.00%	1.17%	21.52%	11.76%
	Mode	0.00%	94.74%	146.29%	142.86%
	Standard Deviation	37.66%	54.16%	41.33%	112.04%
	Sample Variance	72.74%	100.92%	79.27%	170.56%
	Kurtosis	130.51%	138.60%	143.69%	136.05%
	Skewness	165.45%	68.03%	71.34%	89.04%
	Range	43.80%	123.90%	120.82%	151.46%
	Minimum	44.96%	85.71%	157.89%	0.00%
	Maximum	33.36%	123.89%	120.74%	151.38%
	Count	161.41%	161.41%	161.41%	161.41%
	Coefficient of Variance	38.41%	27.07%	31.98%	77.80%

Results indicate that there are differences in average metal grades between the two datasets, whereby values for holes drilled by Teck are consistently lower than those drilled by Antares. However, all values were deemed to be valid, and all assays were used in the generation of the resource estimate.

Where assay grades were below detection limit, half the detection limit was used for that value in the database. These values are shown in Table 12.2.

Table 12.2 Metal Detection Limits

Metal	Detection Limit	Value Used When Assay Below Detection Limit
Au	0.05 g/t	0.025 g/t
Ag	0.2 g/t	0.1 g/t
Mo	1 ppm	0.5 ppm

The drill hole data was imported into the Datamine™ program, which has a routine that checks for duplicate intervals, overlapping intervals and intervals beyond the end of hole. The errors identified in the routine were checked against the original logs and corrected.

13.0 MINERAL PROCESSING AND METALLURGICAL TESTING

From Price (2010):

> *According to previous drilling completed by Teck, the depth to the base of oxidation is commonly 250 to 300 metres or more over much of the project area with primary copper sulfides weathered in situ to secondary copper oxides. This presents potential for low-cost heap-leaching of copper oxide mineralization.*

In an April 5, 2011 press release, Regulus announced that samples had been shipped to two metallurgical labs for preliminary test work. RDI Laboratories in Denver Colorado is conducting bottle roll tests on 20 composite samples for copper leaching and gravity gold separation in the oxide samples, as well as, floatation testing for sulphide on 2 samples. SGS Canada Inc. is testing 4 oxide and transitional composite samples for gold leaching as well as SART (Sulphidation, Acidification, Recovery and Thickening) analysis for copper and cyanide recovery in the oxidized material. Results from both labs are pending.

14.0 MINERAL RESOURCE ESTIMATES

14.1 INTRODUCTION

This section describes the processes and data involved in the construction, interrogation and validation of the Rio Grande resource estimation block model. It is structured in seven parts; description of files used in the block model, description of statistics used to help define parent cell size, spatial data analysis, block model interpolation plans, modelling (and domaining) strategies, resource tabulation and block model validation.

This block model represents the first resource estimate performed for the Rio Grande deposit. The resource estimation was performed using Datamine™ software (Version 3.19.3638.0), and the macro used to construct the resource model is presented as Appendix B.

14.1.1 DATA, STRINGS AND WIREFRAMES

Data provided by Regulus includes;

- drill hole data (in the form of collar, survey, assay and geology as .csv files)
- topographic DTM wireframe as a .dxf file
- oxide, transitions ("mix") and fresh rock zones as .dxf files
- copper cut-off (0.1% Cu and 0.4% Cu) wireframes as .dxf files
- gold cut-off (0.1 g/t and 0.4 g/t) wireframes as .dxf files
- string and wireframe data for the different target areas (as Datamine™ files).

All data was verified by Tetra Tech. Drill hole data and block model data for the resource estimate have been imported into Datamine™ software (Version 3.19.3638) from .csv files supplied by Regulus. These text files contain collar, survey and assay data used in this resource model and associated resource estimate. The Datamine™ routine HOLES3D was used to generate the de-surveyed drill hole files from supplied .csv files. No errors were reported in the routine and all holes were successfully reconstructed.

As mentioned, modelling and resource estimation was performed using Datamine™ software (Version 3.19.3638.0). All other files were imported into Datamine™ to generate corresponding wireframe, string and point files.

The following section describes the methodology and results of block modelling and resource estimation for the Rio Grande deposit.

Excessive point data in the supplied .dxf topographic wireframe inhibited effective use in Datamine[TM]. However, a suitable wireframe topographic digital terrain model (DTM) was constructed using filtered point data from the originally supplied .dxf file. Drill hole geological codes were originally used to define the base of overburden. However, this was not used in resource estimation as the overburden is considered a minor component (0 to 2 m thick) with respect to the entire deposit, and represents a sub-set of the underlying oxidized sequence (i.e. colluvium).

Some wireframes supplied by Regulus (i.e. copper, gold cut-off wireframes; oxide, mix and fresh rock wireframes) were too intricate to be used directly in resource modelling. These wireframes could not be adequately verified within Datamine[TM]. Instead, for example, DTM surfaces were created from original string data to replicate the oxide, mix and fresh rock positions, while new, simplified wireframes (i.e. cut-off wireframes) were constructed using the supplied, intricate wireframes as a template. The new cut-off wireframes were verified and validated. These wireframes were subsequently used in defining low grade and high grade domains within the resource block model.

14.2 Statistics and Exploratory Data Analysis

14.2.1 Introduction

This section describes the data used for grade estimations for the Rio Grande deposit. In each deposit, copper is the main grade estimated, as this metal has the most assay data of all samples. Gold and silver were also estimated, but are considered minor elements associated with copper mineralization.

14.2.2 Declustering

When sample data are not based on a regular grid, then the full dataset may give a biased estimate of the mean. Visual inspection of the drill hole data for Rio Grande deposit show that although most of the data is position in a regular grid, there are some clustered areas of data. Declustering is a process of volumetrically adjusting the full set of data to give a more representative set of samples.

For Rio Grande, the sample datasets (composited and capped) were declustered on the basis of average grades within 20 m by 20 m by 10 m cells, and average grades within 40 m by 40 m by 20 m cells. These were compared with the original composited (and capped) data and tabulated below (Table 14.1).

The statistical comparisons demonstrate that there is little effect on the mean grade and coefficient of variance for all metals in the course of declustering the data – either using 20 m by 20 m by 10 m grid size or 40 m by 40 m by 20 m grid size. This implies that the original data are not clustered to the extent which will introduce an unacceptable bias in grade estimation.

Table 14.1 Declustered Drillhole Data Compared with Original Composited Data for the Rio Grande Deposit

Sample	Field	NSamples	Minimum	Maximum	Mean	Variance	Standard Deviation	StanderR	Skewness	Kurtosis	CV
tc-c	Cu_pct	7,150	0.000	2.400	0.122	0.029	0.169	0.002	3.361	19.540	1.388
tc-c	Mo_gt	6,391	0.667	2,320	20.4	6,202	78.8	0.985	14.9	285.1	3.852
tc-c	Au_gt	7,150	0.001	4.160	0.127	0.046	0.214	0.003	4.946	44.995	1.680
tc-c	Ag_gt	7,150	0.100	59.367	1.758	9.206	3.034	0.036	6.425	65.970	1.725
202010	Cu_pct	3,964	0.001	1.826	0.121	0.025	0.160	0.003	2.987	14.965	1.315
202010	Mo_gt	3,553	0.879	1,577	21.1	5,486	74.1	1.243	12.5	193.9	3.517
202010	Au_gt	3,964	0.001	2.058	0.126	0.037	0.193	0.003	3.722	20.070	1.533
202010	Ag_gt	3,964	0.100	50.333	1.789	7.847	2.801	0.044	5.535	51.747	1.566
404020	Cu_pct	2,118	0.001	1.278	0.119	0.021	0.145	0.003	2.463	8.959	1.222
404020	Mo_gt	1,924	1.000	1,497	21.125	5,242	72.4	1.651	13.1	213.4	3.427
404020	Au_gt	2,118	0.001	1.628	0.122	0.030	0.173	0.004	3.446	17.564	1.419
404020	Ag_gt	2,118	0.100	31.900	1.762	5.798	2.408	0.052	4.050	26.051	1.367
tc vs 20	Cu_pct	44.6%	-212.0%	23.9%	0.4%	11.1%	5.7%	-26.6%	11.1%	23.4%	5.3%
tc vs 21	Mo_gt	44.4%	-31.9%	32.0%	-3.0%	11.5%	5.9%	-26.1%	16.2%	32.0%	8.7%
tc vs 22	Au_gt	44.6%	-100.0%	50.5%	1.2%	18.8%	9.9%	-21.0%	24.8%	55.4%	8.8%
tc vs 23	Ag_gt	44.6%	0.0%	15.2%	-1.7%	14.8%	7.7%	-24.0%	13.9%	21.6%	9.2%
tc vs 40	Cu_pct	46.6%	-8.0%	30.0%	2.0%	17.1%	8.9%	-24.6%	17.6%	40.1%	7.0%
tc vs 41	Mo_gt	45.8%	-13.7%	5.1%	-0.3%	4.5%	2.3%	-32.8%	-5.2%	-10.1%	2.5%
tc vs 42	Au_gt	46.6%	0.0%	20.9%	2.7%	19.0%	10.0%	-23.1%	7.4%	12.5%	7.5%
tc vs 43	Ag_gt	46.6%	0.0%	36.6%	1.5%	26.1%	14.0%	-17.6%	26.8%	49.7%	12.7%

Note: Cu_pct – copper %, Mo_gt – molybdenum g/t, Au_gt – gold g/t, Ag_gt – silver g/t; lower section of table defines percent change from original data with different declustering grids.

14.2.3 Assays

Copper, gold, silver and molybdenum assays for the Rio Grande property are from diamond drill core, RC, and trench samples. Assays were provided by Regulus in the form of an .xls file, along with a drill collar file and downhole survey files. From these, a drill hole file was de-surveyed into Datamine™ and used for modelling, statistics and grade interpolation.

Assays are separated into their respective metals and sample type, and the statistics are presented in Table 14.2.

Statistics demonstrate that assays from trench samples and assays from drill holes are compatible, thus both sample type assays were used for the resource model.

14.2.4 Outlier Management and Capping Strategy

When dealing with skewed populations, as well as “outlier” assay samples to the normal population distribution, it is common practice in the industry to restrict the influence of these high grade assays through “top-cutting” or “capping”. Capping limits were chosen as a function of the continuity – discontinuity of the high-grade “tail” of the copper, gold, silver and molybdenum assay histograms.

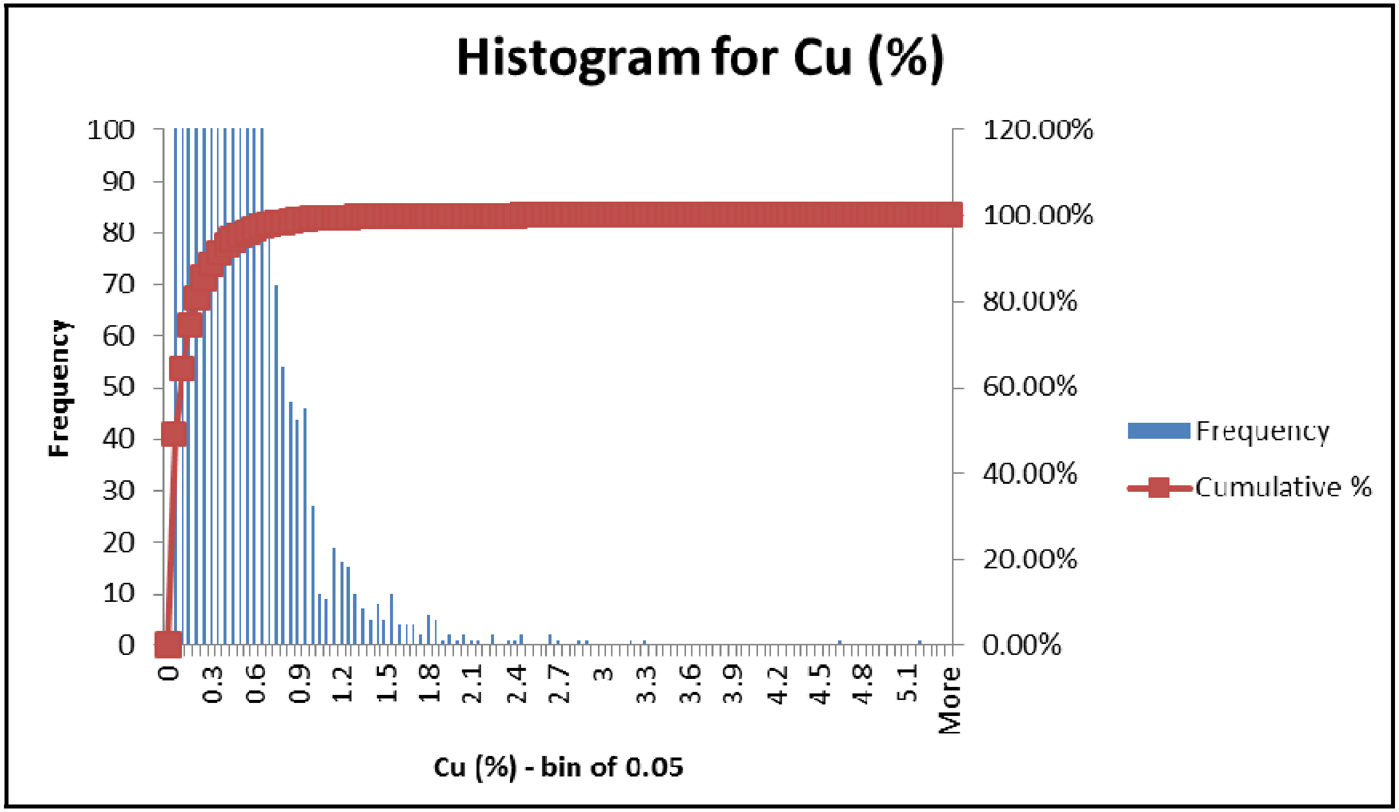
The Rio Grande deposit’s entire raw assay data was evaluated. Inspection of the histogram distributions (Figure 14.1, Figure 14.3, Figure 14.5, and Figure 14.7 and associated top-cut sensitivity plots (

Figure 14.2, Figure 14.4, Figure 14.6, and Figure 14.8) demonstrate that the high grade tail lost continuity at grades greater than 3.0% Cu, 4.6 g/t Au, 80 g/t Ag, and 2610 ppm Mo.

Table 14.2 Drill Hole and Trench Assay Statistics for Rio Grande

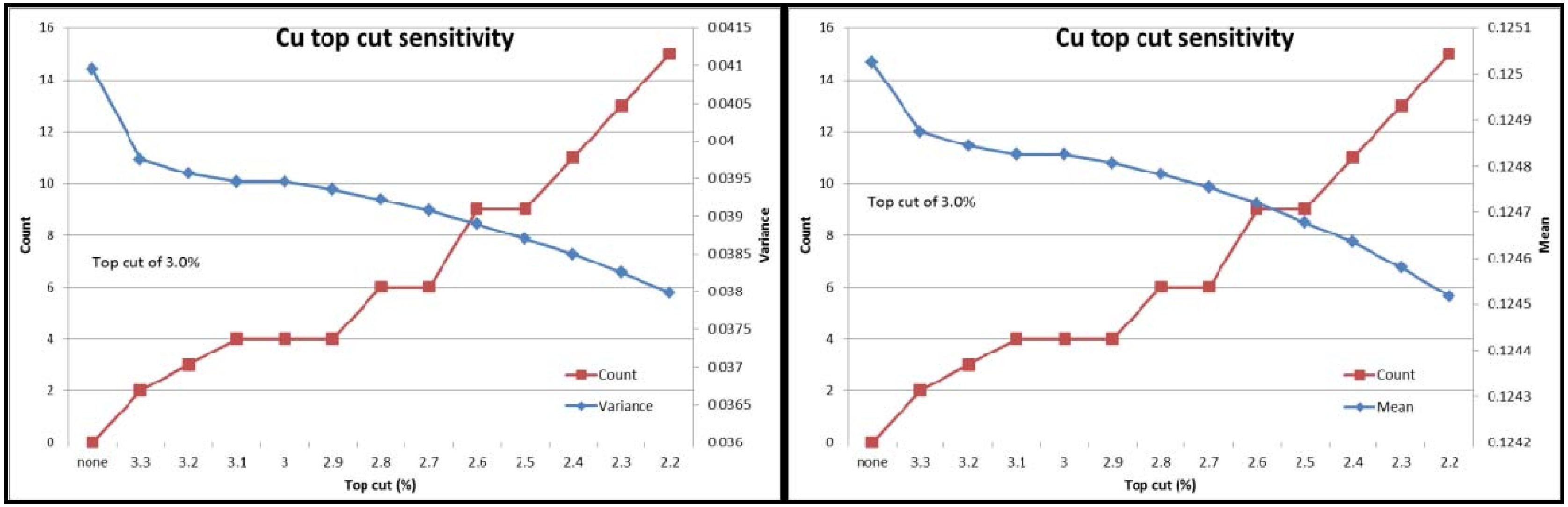
Statistic	Trench					DDH (including RC)				
	Length (m)	Cu (%)	Au (g/t)	Ag (g/t)	Mo (ppm)	Length (m)	Cu (%)	Au (g/t)	Ag (g/t)	Mo (ppm)
Count	5,046	5,046	5,046	5,046	4,430	16,459	16,459	16,459	16,459	14,871
Mean	1.99	0.12	0.14	1.31	16.13	2.00	0.13	0.13	2.00	22.27
Standard Error	0.00	0.00	0.00	0.04	1.07	0.00	0.00	0.00	0.05	0.93
Median	2.00	0.04	0.04	0.50	6.00	2.00	0.06	0.04	0.80	9.00
Mode	2.00	0.00	0.00	0.10	3.00	2.00	0.01	0.00	0.10	4.00
Standard Deviation	0.25	0.20	0.31	2.57	71.53	0.22	0.20	0.25	6.17	113.47
Sample Variance	0.06	0.04	0.09	6.62	5,115.99	0.05	0.04	0.06	38.04	12,875.47
Kurtosis	33.20	61.25	60.91	166.58	474.14	37.13	57.29	143.81	947.27	864.88
Skewness	1.90	5.23	6.29	8.94	19.18	1.37	5.24	7.82	25.60	24.39
Minimum	1.00	0.00	0.00	0.10	0.50	0.50	0.00	0.00	0.10	0.50
Maximum	4.00	4.62	5.15	74.00	2,330.00	6.40	5.20	8.29	297.00	5,960.00
Coefficient of Variance	0.13	1.71	2.21	1.97	4.44	0.11	1.59	1.94	3.08	5.10

Figure 14.1 Histogram for Raw Copper Assays from Rio Grande



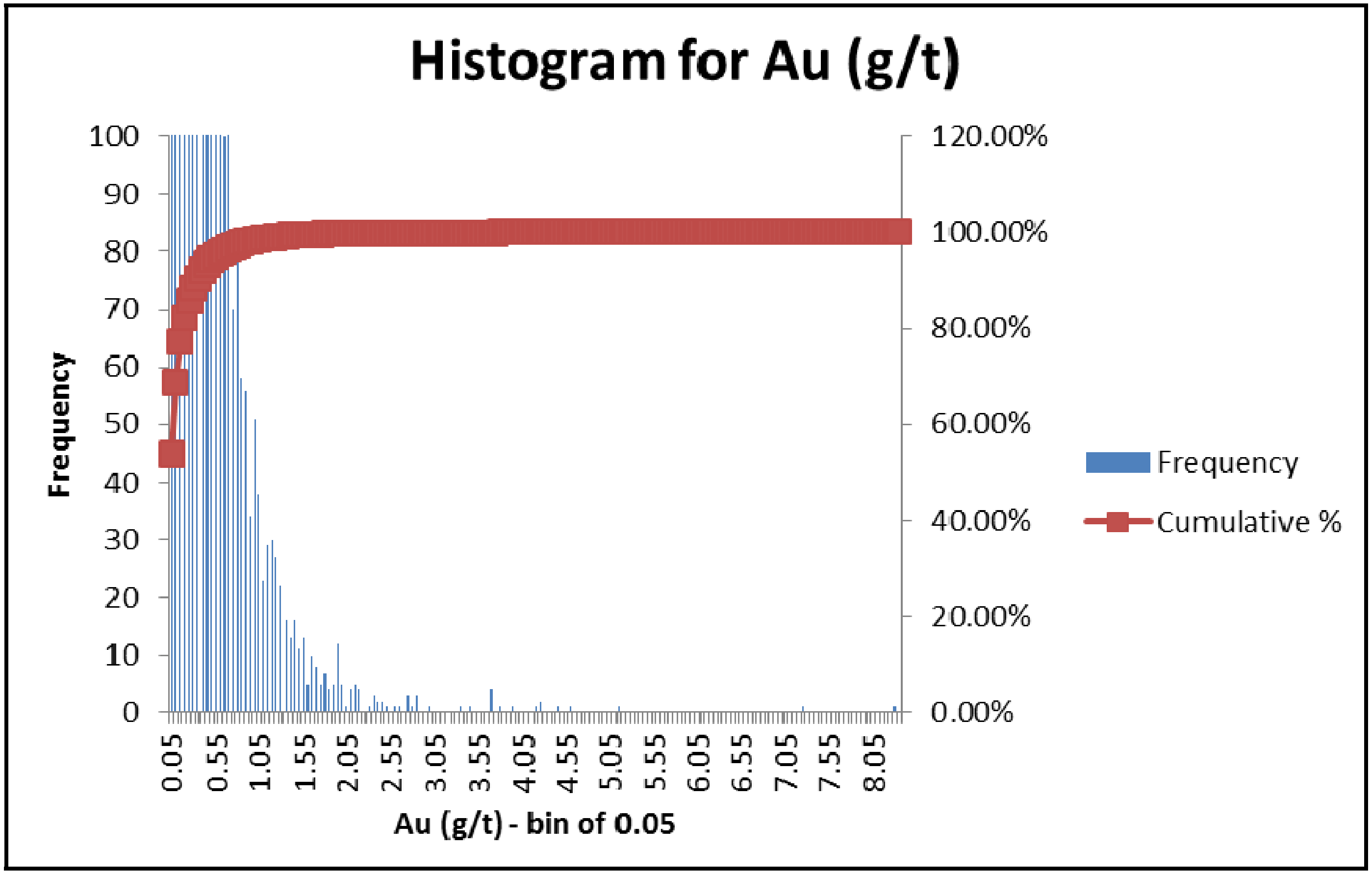
Note: Possible lack of high-grade tail continuities exist above values ranging from 2.2 to 3.3% Cu.

Figure 14.2 Top-cut Sensitivity Plot for Cu



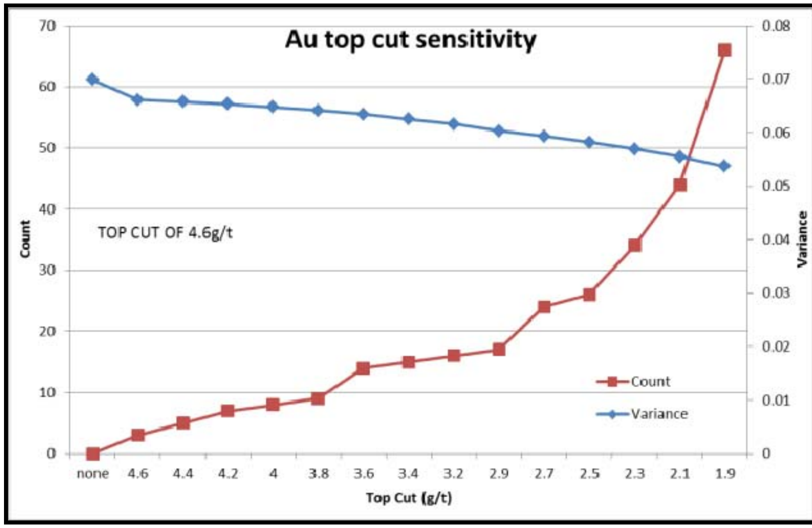
Note: The most appropriate top-cut value for Cu is 3.0%.

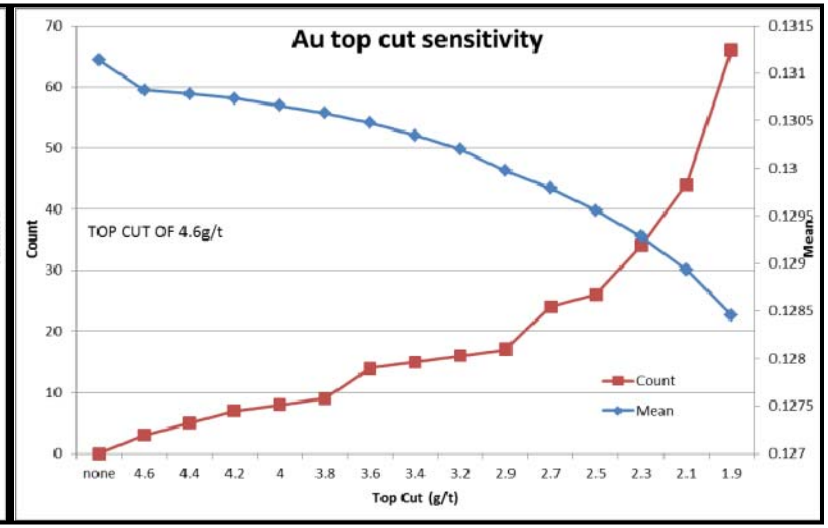
Figure 14.3 Histogram for Raw Gold Assays from Rio Grande



Note: Possible lack of high-grade tail continuities exist above values ranging from 1.9 to 4.4 g/t Au.

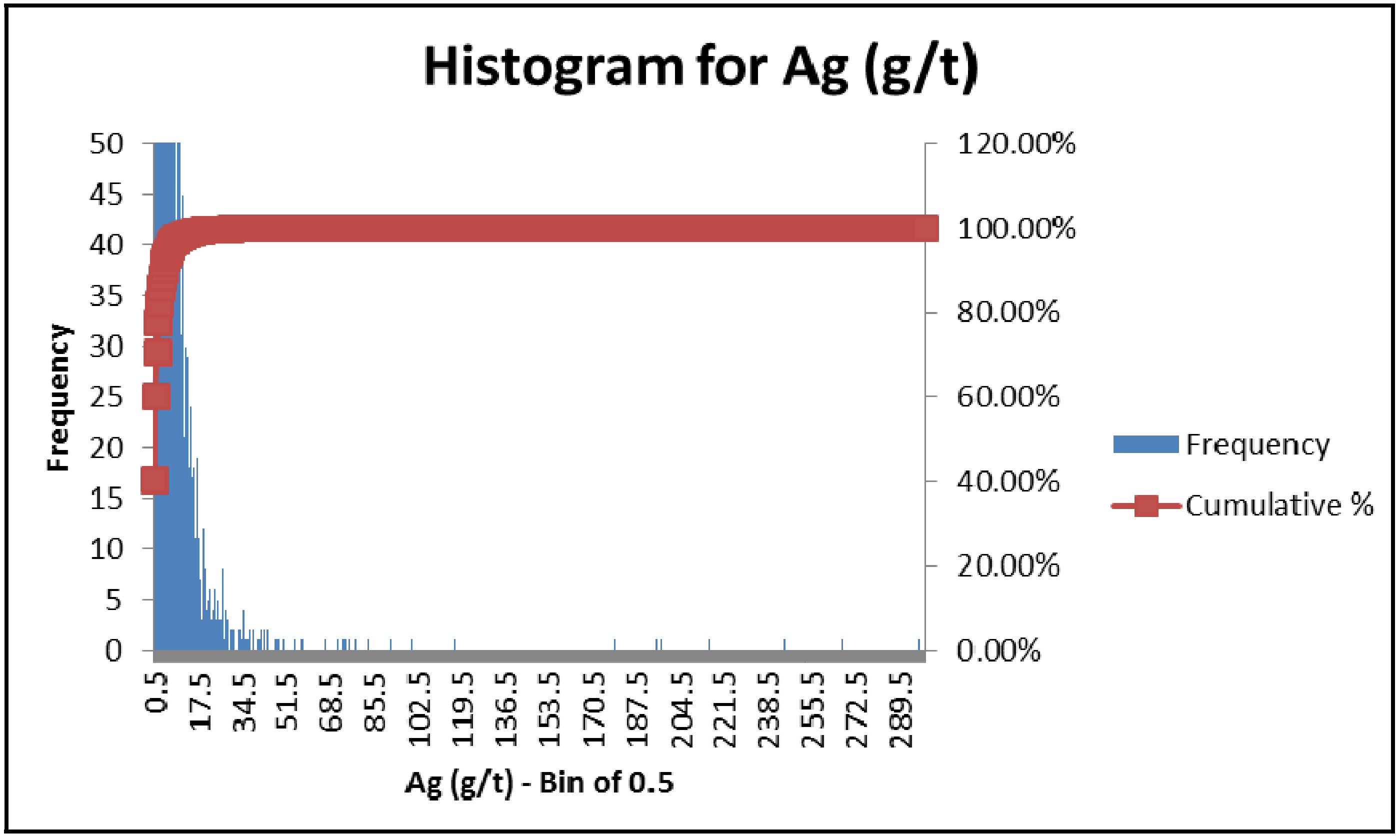
Figure 14.4 Top-cut Sensitivity Plot for Au





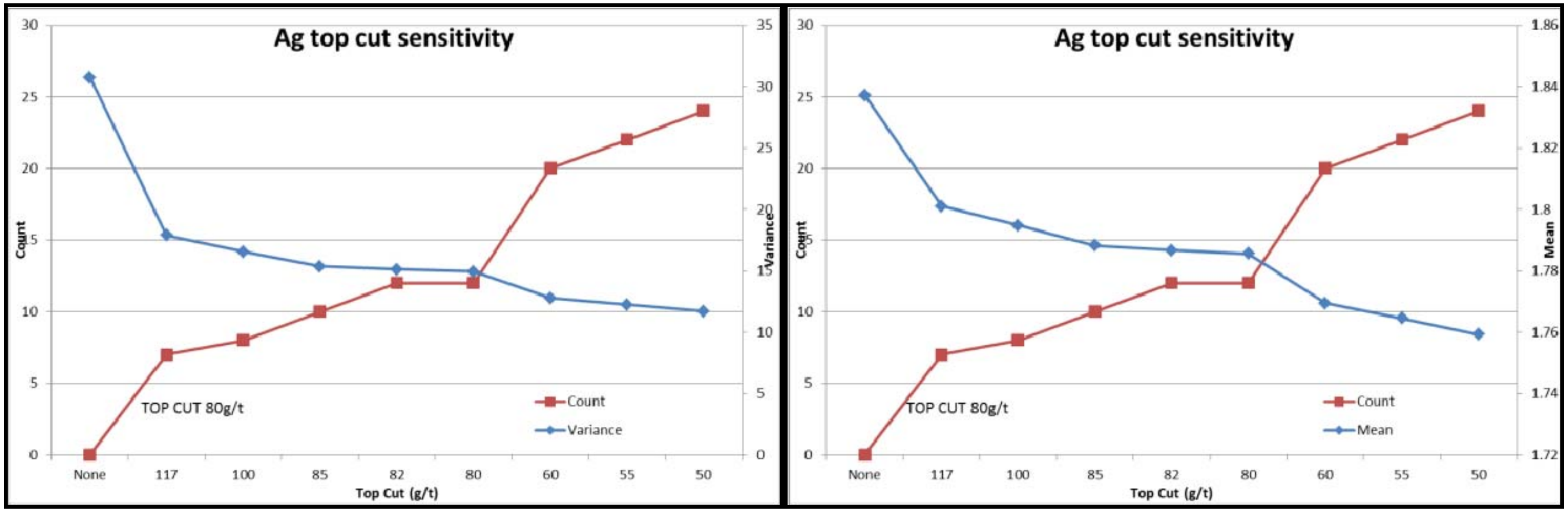
Note: The most appropriate top-cut value for Au is 4.6 g/t.

Figure 14.5 Histogram for Raw Silver Assays from Rio Grande



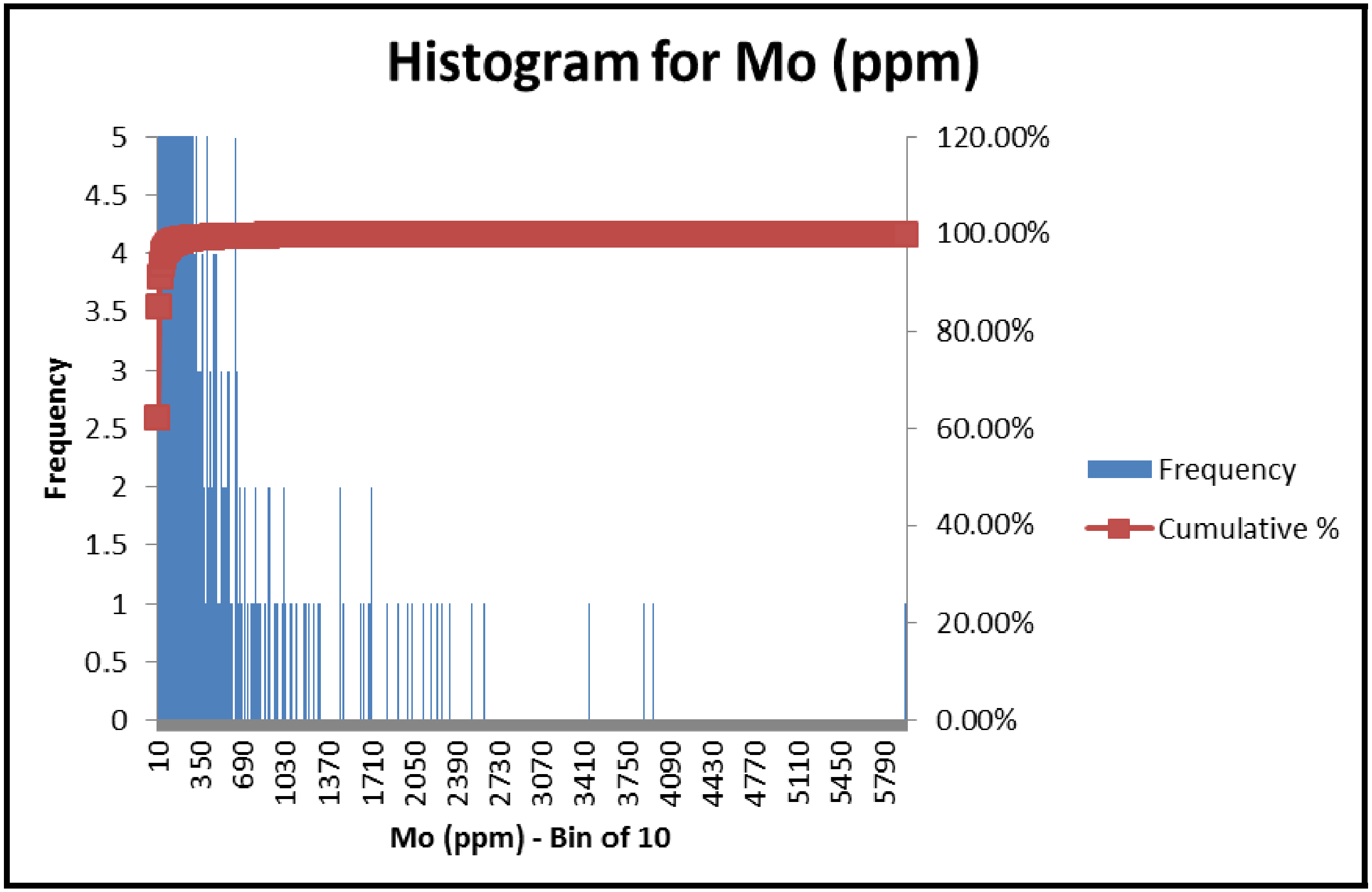
Note: Possible lack of high-grade tail continuities exist above values ranging from 50 to 117 g/t Ag.

Figure 14.6 Top-cut Sensitivity Plot for Ag



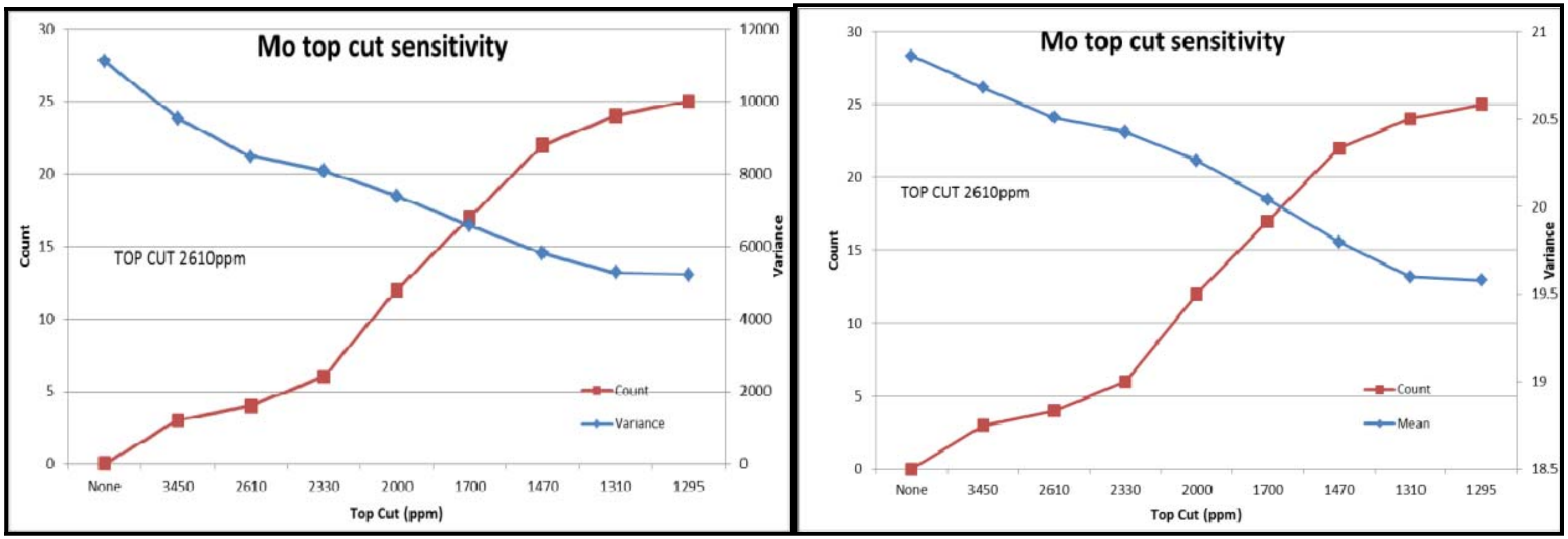
Note: The most appropriate top-cut value for Ag is 80 g/t.

Figure 14.7 Histogram for Raw Molybdenum Assays from Rio Grande



Note: Possible lack of high-grade tail continuities exist above values ranging from 1295 to 3450 ppm Mo.

Figure 14.8 Top-cut Sensitivity Plot for Mo



Note: The most appropriate top-cut value for Mo is 2610 ppm.

Thus, a top-cut or "cap" was applied to the raw data to limit grades above 3.0% Cu, 4.6 g/t Au, 80.0 g/t Ag, and 2610 ppm Mo. Out of a total of 21,505 assays, only four copper assays, three gold assays, and 12 silver assays were affected by the top-cuts. Similarly, out of a total of 19,301 assays, only four molybdenum assays were affected by the top cut. As shown in Table 14.3, these values represent very small fractions of the entire sample population. It is noteworthy to mention that not all samples were analyzed for molybdenum, resulting in fewer assay results for this metal.

Table 14.3 Quantity of Assays Affected by Individual Metal Top-cuts

Metal	Total Number of Assays	Top-cut	Number of Assays Affected by Top-cut	Percentage of Total Assays Affected by Top-cut
Cu	21505	3.00%	4	0.018600326
Au	21505	4.6 g/t	3	0.013950244
Ag	21505	80 g/t	12	0.055800977
Mo	19301	2610 ppm	4	0.020724315

14.2.5 *COMPOSITES*

Composite sample lengths of 2 m, 3 m, 4 m, 5 m, 6 m, 8 m, and 10 m were considered. The resultant mean metal grades and number of samples were then examined (Figure 14.9 to Figure 14.12). From this, a composite length of 6m was chosen.

Figure 14.9 Mean Cu grade (%) versus Composite Length (m)

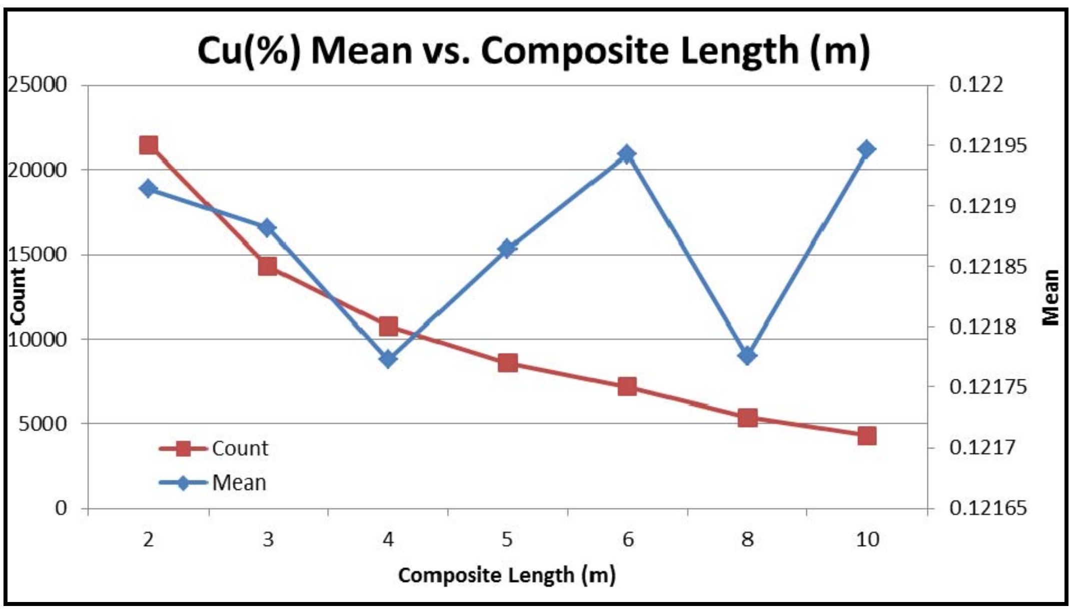


Figure 14.10 Mean Au Grade (g/t) versus Composite Length (m)

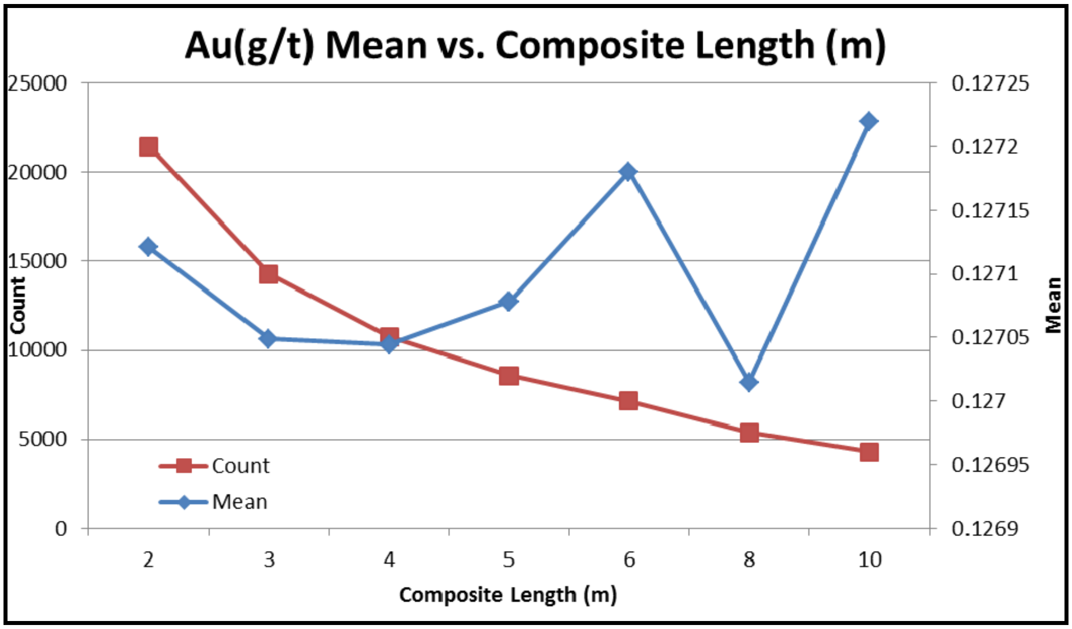


Figure 14.11 Mean Ag Grade (g/t) versus Composite Length (m)

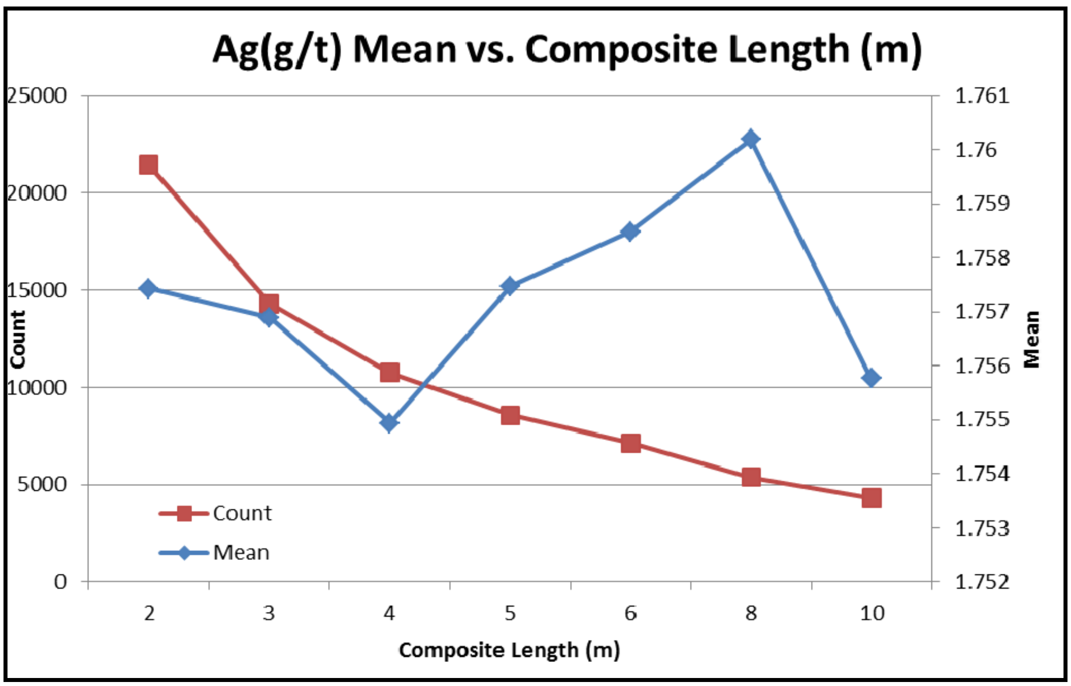
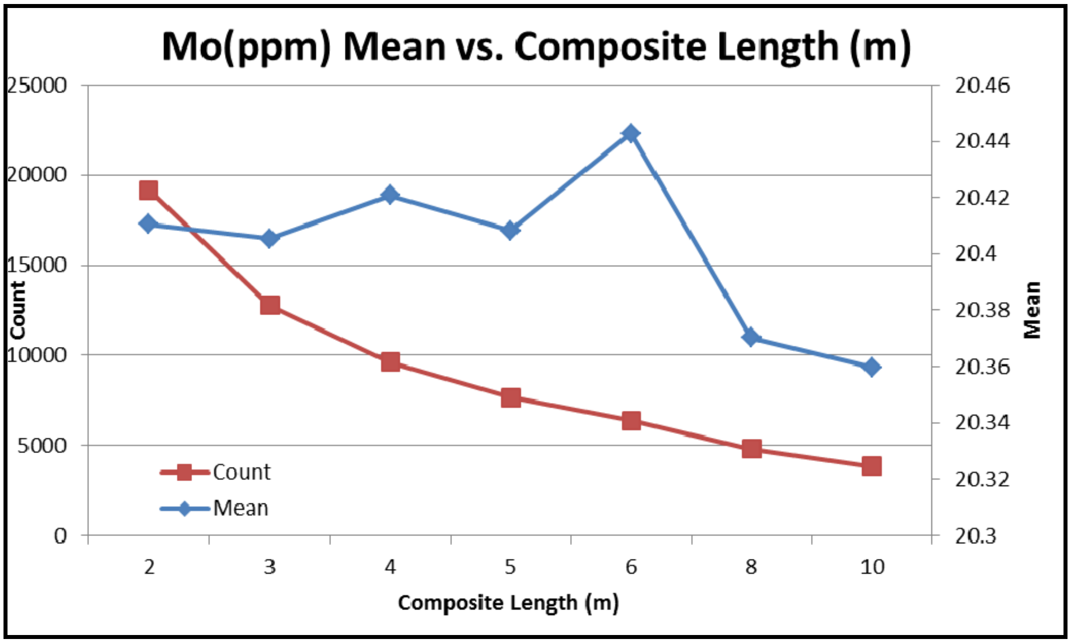


Figure 14.12 Mean Mo Grade (ppm) versus Composite Length (m)



With the initial proposed block sizes of 10 m by 40 m by 40 m and 40 m by 10 m by 40 m, 6 m composited samples were considered sufficient to honour the geological variability of the data while optimizing the average assays to a consistent length for grade interpolation.

The statistics reflecting the influence of this compositing strategy on assays is presented in Table 14.4.

Table 14.4 Assay Statistics with Top-cuts and Composite Length of 6 m Applied

Statistic	Cu (%)	Au (g/t)	Ag (g/t)	Mo (ppm)
Count	7,150	7,150	7,150	6,391
Mean	0.12	0.13	1.76	20.44
Standard Error	0.00	0.00	0.04	0.99
Median	0.06	0.05	0.84	8.81
Mode	0.01	0.00	0.10	4.33
Standard Deviation	0.17	0.21	3.03	78.76
Sample Variance	0.03	0.05	9.21	6,203.39
Kurtosis	19.55	45.03	66.02	285.31
Skewness	3.36	4.95	6.43	14.90
Minimum	0.00	0.00	0.10	0.67
Maximum	2.40	4.16	59.37	2,320.00
Coefficient of Variance	1.39	1.68	1.73	3.85

Note: Top-cuts are as follows; 3.0% for Cu, 4.6 g/t for Au, 80 g/t for Ag, and 2610 ppm for Mo.

14.2.6 DENSITIES

Site personnel have collected bulk density measurements from drill core. Samples were chosen based upon the three main types of mineralization; oxides, sulphides and a transitional mix zone of both oxides and sulphides. Samples were weighed while dry, and then suspended in water. The bulk densities were estimated from the ratio of the weight in air to the difference between the weight in air and the weight in water (i.e. the ratio of the dry weight to the weight of water displaced by the specimen).

At the time of compilation of this resource estimate, a total of 80 bulk density measurements had been collected. Measurements were taken twice on each sample; once without a paraffin coating, and once with a paraffin coating. Since the paraffin coating eliminates the effects of porosity, and at the request of Regulus staff, values taken with the paraffin coating have been used in the resource model.

Histograms of the density measurements for samples with a paraffin coating were produced for each of the three mineralization types. As illustrated in Figure 14.13, Figure 14.4, and Figure 14.5, rare outliers within this data set do exist. Table 14.5 lists these outliers.

Figure 14.13 Histogram of Bulk Density Measurements (with paraffin) for Oxides

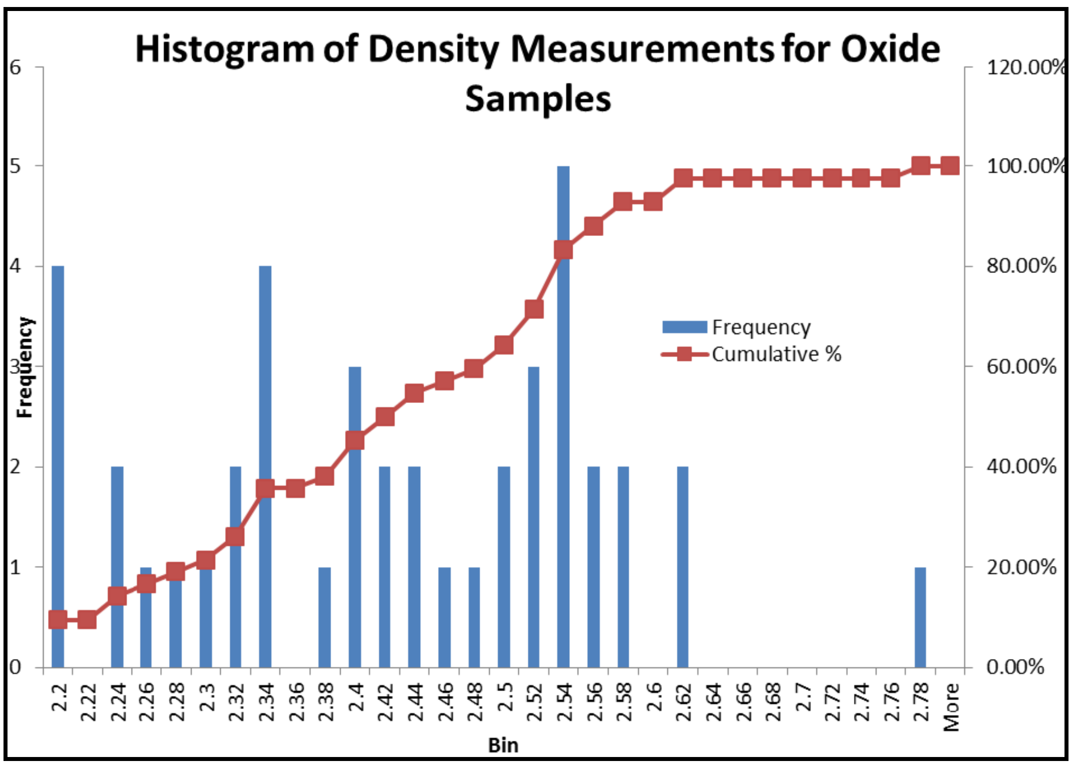


Figure 14.14 Histogram of Bulk Density Measurements (with Paraffin) for Mix (Oxide-sulphides)

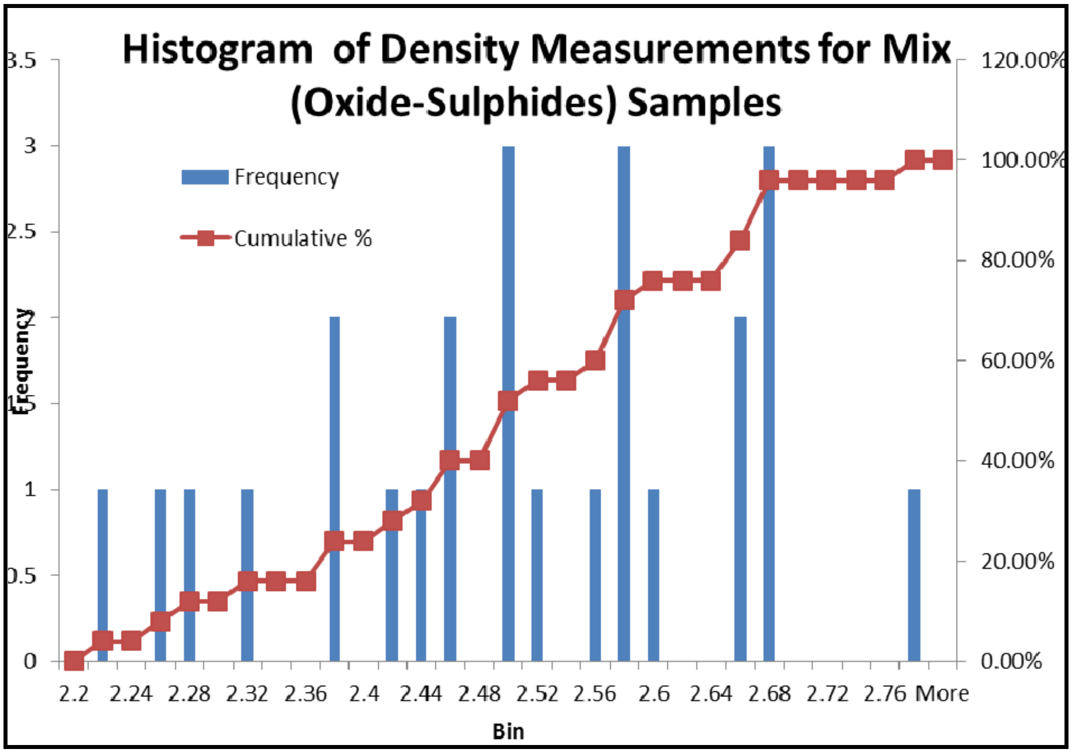


Figure 14.15 Histogram of Bulk Density Measurements (with Paraffin) for Sulphides

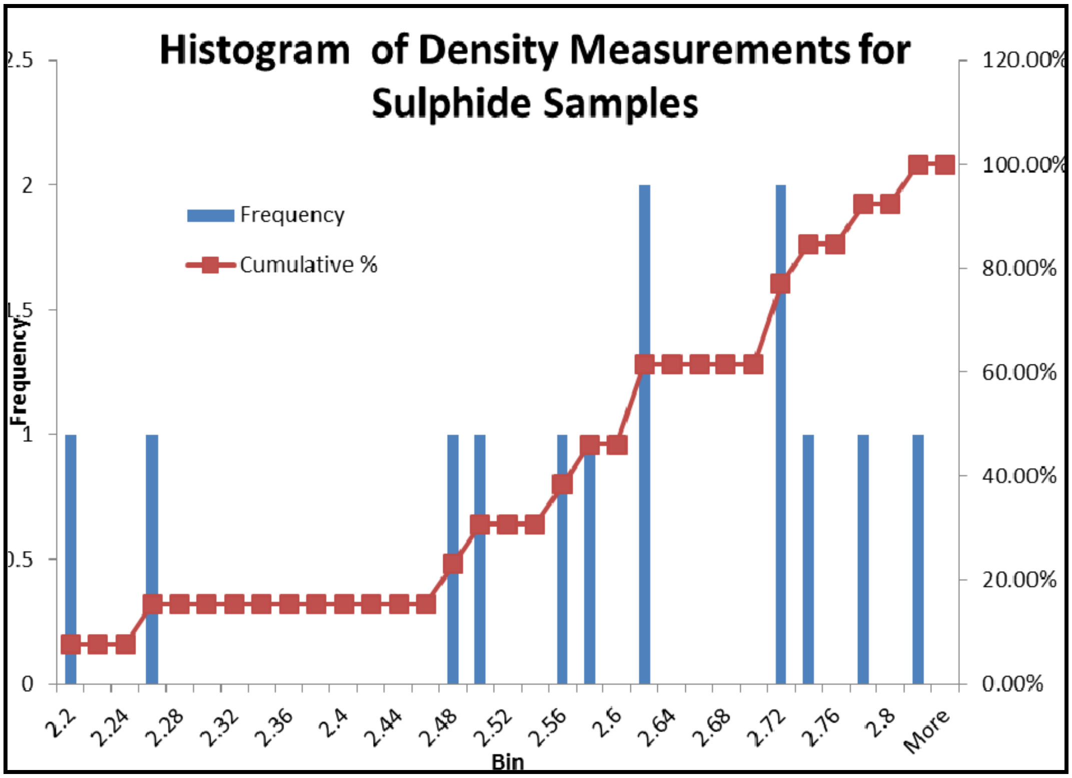


Table 14.5 Outliers in the Bulk Density Measurements

Mineralization Type	Outlier Value (t/m^3)
Oxide	2.78
Mix	2.77
Sulphide	2.15, 2.26

With the removal of the outlier values, the average bulk density values for oxides, mix, and sulphides are 2.41 tonnes/m^3, 2.49 tonnes/m^3, and 2.64 tonnes/m^3, respectively. These are the values that have been used in the resource estimate. Statistics of the bulk density measurements are provided in Table 14.6 and Table 14.7.

Table 14.6 Statistics for the Bulk Density Measurements of Oxides, Mix and Sulphides (with a Paraffin Coating) Prior to Removal of Outliers

Statistic	Oxides (t/m^3)	Mix (t/m^3)	Sulphides (t/m^3)
Mean	2.42	2.50	2.58
Standard Error	0.02	0.03	0.05
Median	2.43	2.50	2.61
Mode	2.34	2.58	2.72
Standard Deviation	0.15	0.15	0.20
Sample Variance	0.02	0.02	0.04
Kurtosis	0.24	-0.66	0.61
Skewness	-0.29	-0.26	-1.02
Range	0.76	0.55	0.67
Minimum	2.02	2.22	2.15
Maximum	2.78	2.77	2.82
Count	42	25	13
Coefficient of Variance	0.06	0.06	0.08

Table 14.7 Statistics for the Bulk density Measurements of Oxides, Mix and Sulphides (with a Paraffin Coating) after Removal of Outliers

Statistic	Oxides (t/m^3)	Mix (t/m^3)	Sulphides (t/m^3)
Mean	2.41	2.49	2.64
Standard Error	0.02	0.03	0.03
Median	2.42	2.50	2.62
Mode	2.54	2.67	2.72
Standard Deviation	0.14	0.14	0.12
Sample Variance	0.02	0.02	0.01
Kurtosis	-0.07	-0.78	-1.22
Skewness	-0.62	-0.40	-0.07
Range	0.60	0.46	0.35
Minimum	2.02	2.22	2.47
Maximum	2.62	2.68	2.82
Count	41.00	24.00	11.00
Coefficient of Variance	0.06	0.06	0.04

Note: The mean values have been used for the resource estimate.

14.3 Spatial Analysis – Variography

Variography was conducted for copper, molybdenum, gold and silver, and was completed using Datamine™ software. The composited and capped drill hole datasets were used for all variography. Resultant variograms are presented in Appendix C.

Downhole variograms, using a lag distance equal to the composite length, were created for each of the separate domains to determine the intrinsic sample variance ("nugget").

As the average distance between drill holes varies significantly with different azimuths and dips, variography was not sensitive to lag distance. The number of lags varied, but usually 15 lags to cover at least 300 m sufficed. All variograms utilized 30° directional increments and +15° tolerance to optimize orientations.

Variography was performed on all four metals, with one variogram used for each of the respective metals (copper, molybdenum, gold and silver) in the Rio Grande deposit, and for the entire Rio Grande deposit respectively. To select appropriate cells for estimation, indicator variography was also undertaken using a cut-off which mirrored a very low grade-waste rock separation (0.1% copper equivalent – CuEQ). Indicator variography was used to facilitate cell selection for subsequent grade estimation.

Copper equivalence was calculated as a sum of copper, gold and silver as a function of copper. The equation used to calculate copper equivalent is provided below. The equation uses a $3.00 per pound copper price, an $1,100 per ounce gold price and a $20 per ounce silver price. The calculation assumes a 100% recovery.

xx1 = (Cu_pct * 3.00 * 22.04622)

xx2 = (Au_gt * 1100.00 / 31.1035)

xx3 = (Ag_gt * 20.00 / 31.1035)

cu1 = xx1+xx2+xx3

CuEQ = cu1 / 3.00 / 22.04622

Examples of variograms are depicted in Figure 14.6 and Figure 14.7.

Modelled variography results were recorded as an enclosed parameter file (Kriging Plan, Table 14.8), and as plot files, as mentioned above, in Appendix C.

14.3.1 *INTERPOLATION PLANS*

The interpolation plan for the resource block model consists of three parts; the estimation parameter file (designated as "epar" file in Datamine™), the search parameter file (designated as "spar" file in Datamine™), and the variogram parameter file (designated as "vpar" in Datamine™). The variogram parameter file is tabulated above (Table 14.8), whereas the estimation and search parameter files are tabulated in Table 14.9 and Table 14.10, respectively.

Figure 14.16 Cu Downhole Variogram for OK

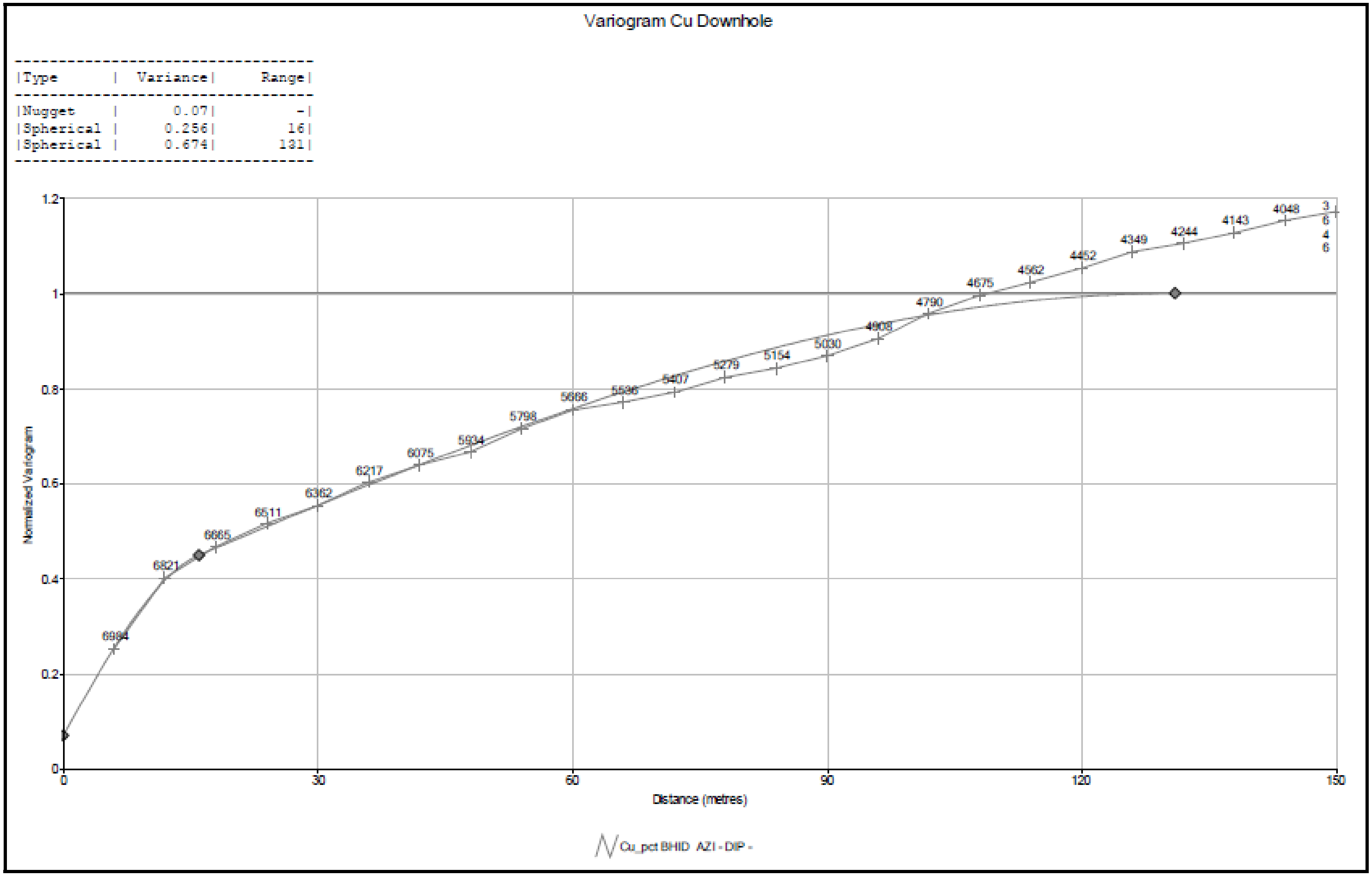


Figure 14.17 Cu Variogram for OK

Variogram Cu

Type	Variance	135/0	225/45	45/45
Nugget	0.07	-	-	-
Spherical	0.487	36	86	37
Spherical	0.443	66	145	110

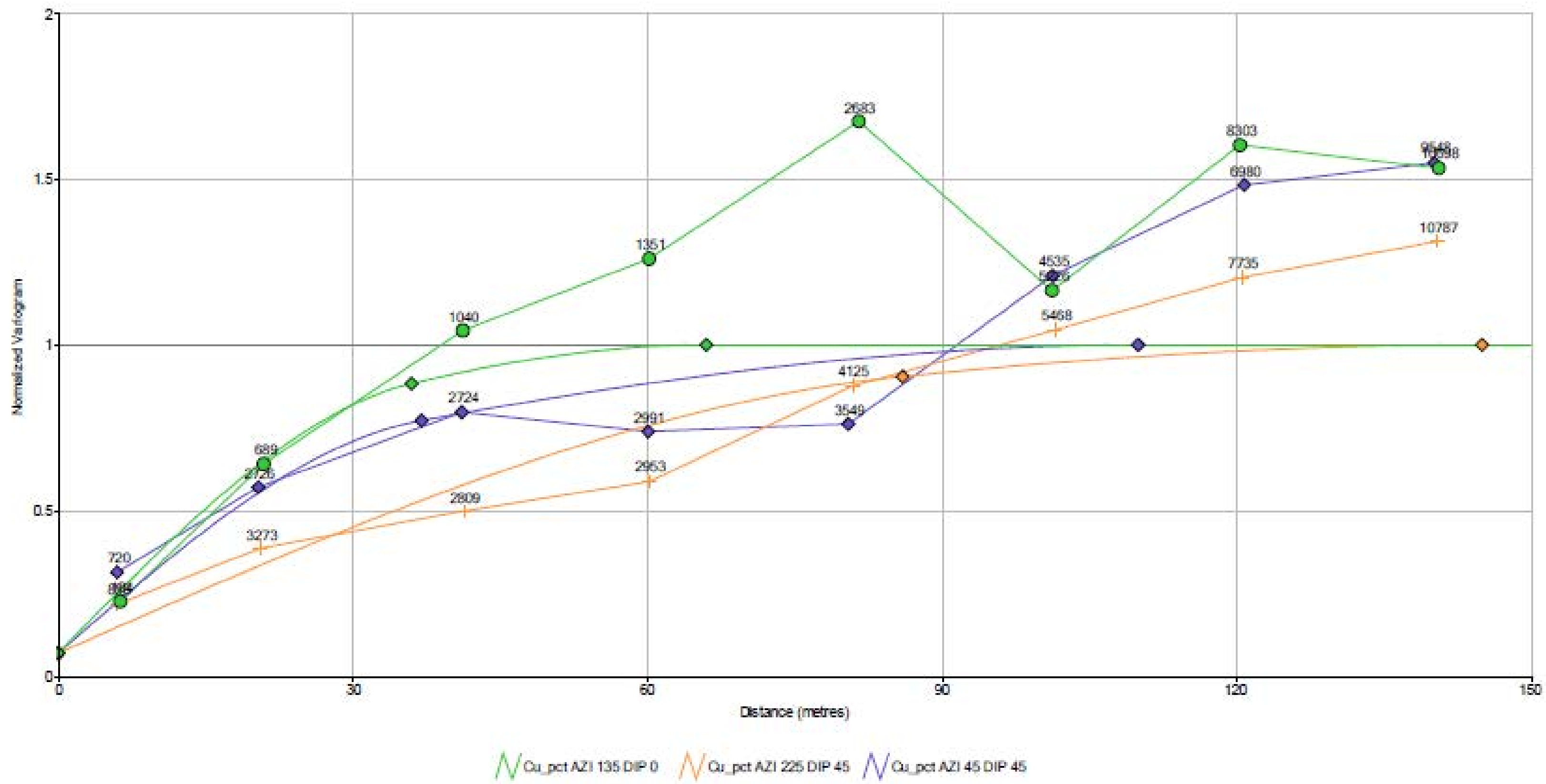


Table 14.8 Variogram Parameter Files

Description 1	VDESC	VREFNUM	VANGLE1	VANGLE2	VANGLE3	VAXIS1	VAXIS2	VAXIS3	NUGGET
Rio Grande Cu	cu	1	45	0	135	3	2	1	0.07
Rio Grande Cu	mo	1	0	0	0	0	0	0	0.24
Rio Grande Mo	au	1	0	0	135	3	2	1	0.064
Rio Grande Mo	ag	1	-45	0	45	3	2	1	0.29

Description 1	VDESC	ST1	ST1PAR1	ST1PAR2	ST1PAR3	ST1PAR4	ST2	ST2PAR1	ST2PAR2	ST2PAR3	ST2PAR4
Rio Grande Cu	cu	1	36	86	37	0.487	0	0	0	0	0
Rio Grande Cu	mo	1	33	33	33	0.331	1	137	137	137	0.429
Rio Grande Mo	au	1	9	22	80	0.307	1	18	101	90	0.629
Rio Grande Mo	ag	1	107	125	26	0.463	0	0	0	0	0
Rio Grande Au											

Table 14.9 Estimation Parameter File

Model	EDESC	EREFNUM	VALUE_IN	VALUE_OU	SREFNUM	NUMSAM_F	SVOL_F	VAR_F	MINDIS_F	IMETHOD	ANISO	POWER	VREFNUM	TOL	MAXITER	CUTOFF
Grade Estimation	cu	1	Cu_pct	Cu_pct	1	NUMSAM	SV_CU	KV	MINDIS	3	1	2	1	0.01	3	0
	mo	2	Mo_gt	Mo_gt	2		SV_MO			3	1	2	2	0.01	3	0
	au	3	Au_gt	Au_gt	3		SV_AU			3	1	2	3	0.01	3	0
	ag	4	Ag_gt	Ag_gt	4		SV_AG			3	1	2	4	0.01	3	0
	cu_lg	5	Cu_pct	LG	1					102	1	2	1	0.01	3	0
	cu_f	6	Cu_pct	F	1					101	1	2	1	0.01	3	0
	Cu_id	7	Cu_pct	Cu_id	1					2	1	2	0	0.01	3	0
	Mo_id	8	Mo_gt	Mo_id	2					2	1	2	0	0.01	3	0
	Au_id	9	Au_gt	Au_id	3					2	1	2	0	0.01	3	0
	Ag_id	10	Ag_gt	Ag_id	4					2	1	2	0	0.01	3	0
	Cu_nn	11	Cu_pct	Cu_nn	1					1	1	2	0	0.01	3	0
	Mo_nn	12	Mo_gt	Mo_nn	2					1	1	2	0	0.01	3	0
	Au_nn	13	Au_gt	Au_nn	3					1	1	2	0	0.01	3	0
	Ag_nn	14	Ag_gt	Ag_nn	4					1	1	2	0	0.01	3	0
Indicator Kriging	cu_eq	1	cu_eq	cu_eq	1	NUMSAM	SVOL	KV	MINDIS	3	1	2	1	0.01	3	0.1
Dynamic Anisotrophy	APDIP	1	APDIP	APDIP	1		SVOL			8	1	2	1	0.01	3	0
	TRDIPDIR	2	TRDIPDIR	TRDIPDIR	1		SVOL			8	1	2	1	0.01	3	0

Note: Indicator Kriging was not used in this model (i.e. cu_eq).

Table 14.10 Search Parameter Files

Model	SDESC	SREFNUM	SMETHOD	SDIST1	SDIST2	SDIST3	SAXIS1	SAXIS2	SAXIS3	MINNUM1	MAXNUM1
Grade Estimation	cu	1	2	120	80	80	3	1	2	12	24
	mo	2	2	120	80	80	3	1	2	12	24
	au	3	2	120	80	80	3	1	2	12	24
	ag	4	2	120	80	80	3	1	2	12	24

Model	SDESC	SREFNUM	SVOLFAC2	MINNUM2	MAXNUM2	SVOLFAC3	MINNUM3	MAXNUM3	MAXKEY	SANGL1_F	SANGL2_F
Grade Estimation	cu	1	1.5	12	24	2	12	24	3	TRDIPDIR	APDIP
	mo	2	1.5	12	24	2	12	24	3	TRDIPDIR	APDIP
	au	3	1.5	12	24	2	12	24	3	TRDIPDIR	APDIP
	ag	4	1.5	12	24	2	12	24	3	TRDIPDIR	APDIP

14.4 BLOCK MODELS OF RIO GRANDE

14.4.1 INTRODUCTION

The table below (Table 14.11) details the Rio Grande block model configuration.

Table 14.11 Block Model Configurations

Block Model	Origin			Cell Size			Cell Number			Number of sub-cells		
	X	Y	Z	X	Y	Z	X	Y	Z	X	Y	Z
40 x 40 x 40	612000	7229000	3000	40	40	40	125	85	50	4	4	4
10 x 40 x 40	612000	7229000	3000	10	40	40	500	85	50	4	4	4
40 x 10 x 40	612000	7229000	3000	40	40	10	125	380	100	4	4	4
20 x 20 x 20	612000	7229000	3000	20	20	20	250	190	100	4	4	4

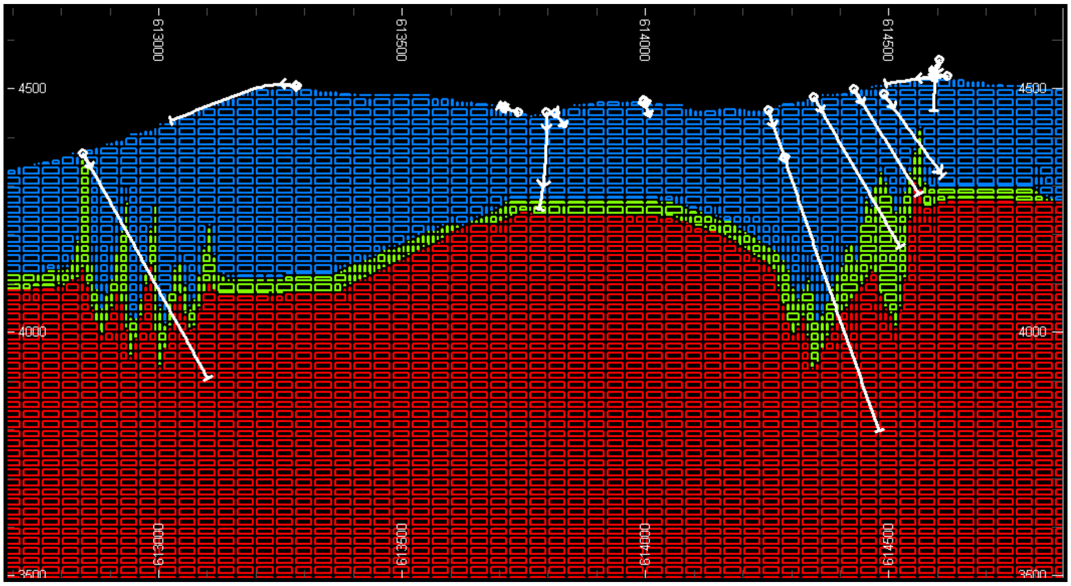
The initial waste block model had parent cell size of 40 m (easting) by 40 m (northing) by 40 m (elevation). Sub-cells were employed to improve resolution along mineral zones boundaries (i.e. "air", "oxide", "mix" and "sulphide". The low grade mineralization block model had parent cell size of 20 m (easting) by 20 m (northing) by 20 m (elevation). Sub-cells were employed to improve resolution along mineral zones boundaries (i.e. "air", "oxide", "mix" and "sulphide"). The high grade block model had parent cell size of 40 m (easting) by 10 m (northing) by 40 m (elevation). Sub-cells were employed to improve resolution, especially along north and south contacts with the low grade domain in the northern section. The high grade block model also had parent cell size of 10 m (easting) by 40 m (northing) by 40 m (elevation). Sub-cells were employed to improve resolution, especially along east and west contacts with the low grade domain. The different cell sizes employed for different sectors of the block model maintained resolution while reducing the relative distance from sample point to cell margin (i.e. improve sample support).

14.4.2 DOMAINS OF RIO GRANDE

The Rio Grande deposit is composed of a single estimation domain. However, this single domain is annular in nature, dipping steeply towards the apex of the deposit, as described in the deposit geology section of this report. No attempt was made to sub-divide the deposit into zones of similar mineralization orientations. Instead, Datamine's ™ *Dynamic Anisotropy* was employed to accommodate varying orientations, or "trends", in mineralization (see below).

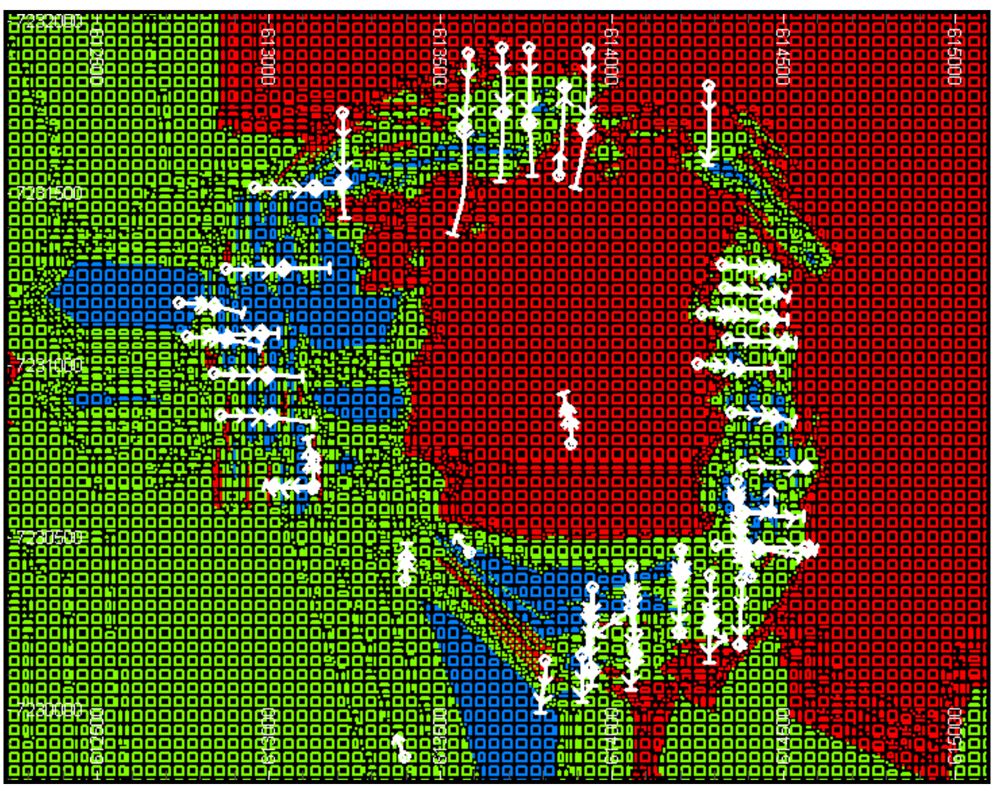
Similarly, the distribution of metals has not been influenced by oxidation of the deposit. Thus there was no need to separate and independently estimate the "oxide", "mix" and "sulphide" portions of the deposit. However, this separation was maintained to assign appropriate densities and to categorize parts of the deposit for different metallurgical test work regimes. The following figures demonstrate the distribution of the mineral zones within the block model (Figure 14.18 and Figure 14.19).

Figure 14.18 Mineral Zones in the Block Model at 77231000 mN



Note: Blue is "oxide", green is "mix" and red is "sulphide".

Figure 14.19 Mineral Zones in the Block Model at 4100 m Elevation



Note: Blue is "oxide", green is "mix" and red is "sulphide".

14.4.3 DYNAMIC ANISOTROPY

The continuity of mineralization often varies with direction. The direction is usually represented by a 3D ellipsoid where the lengths and directions of the three orthogonal axes of the ellipsoid describe the continuity and orientation of mineralization. If the orientation of mineralization is constant, then a single ellipsoid can be defined for the entire orebody. However, this may not be adequate if orientations change over the orebody.

The dynamic anisotropy option in Datamine™ allows the orientation of the ellipsoid to be defined individually for each cell in the block model. However, this requires that the angles are first interpolated into the model before they can be used for the estimation. These angles can be derived from the orientation of wireframe triangles and/or from strings digitized in plan and section.

Although the orientation of the ellipsoid can be defined individually for each model cell, it is assumed that the dimensions of the ellipsoid, the lengths of the three axes, remain constant. They can either be constant over the entire orebody, or the orebody can be divided into areas within which the axes are constant.

If the degree of folding is not too severe, then the variogram ranges calculated from the untransformed data will give a good enough approximation of the true values. It can be shown that a grade estimate is more sensitive to changes of the orientation of an ellipsoid than to changes in the length of the axes. A misalignment of only a few degrees can cause the extrapolation of ore into waste and waste into ore.

Three components are required to estimate the orientation into each cell; the block model, and mineralization trend lines in sequential plan views (i.e. elevations) and trend lines along a regular sections (e.g. along sequential northings or eastings but not both). The interpretations of these grade trends, for the Rio Grande deposit respectively, is facilitated by detailed grade envelope wireframes supplied by Regulus. As there are no definitive geological controls for specific estimation domains (apart from domains assigned to volumes of similar oxidation states for densities), then using trend lines in conjunction with Dynamic Anisotropy optimises estimation orientations.

DYNAMIC ANISOTROPY – RIO GRANDE

Wireframe data outline trends in mineralization in the Rio Grande deposit. These trends could not otherwise be accurately estimated in wider-spaced exploration drilling. These trends, both in plan view (along strike) and in west-east sections (apparent dip) are depicted below (Figure 14.20 and Figure 14.21). The white strings in the plan view and the blue strings in the section view define mineralization trends for the central domain (Domain 1), whereas the green strings in the plan view and the magenta strings in the section view define mineralization trends for the surrounding domain (Domain 2). The third domain, extending out to the northwest of

Domain 1, also uses Dynamic Anisotropy, but relies on a single search orientation parallel to the domain as depicted in dip and dip direction points (Figure 14.22).

Figure 14.20 Plan View, Rio Grande Cu 0.1% Wireframe (magenta) with Trend Lines (blue) and Block Model Outline Coloured by Rock; 4,000 mRL

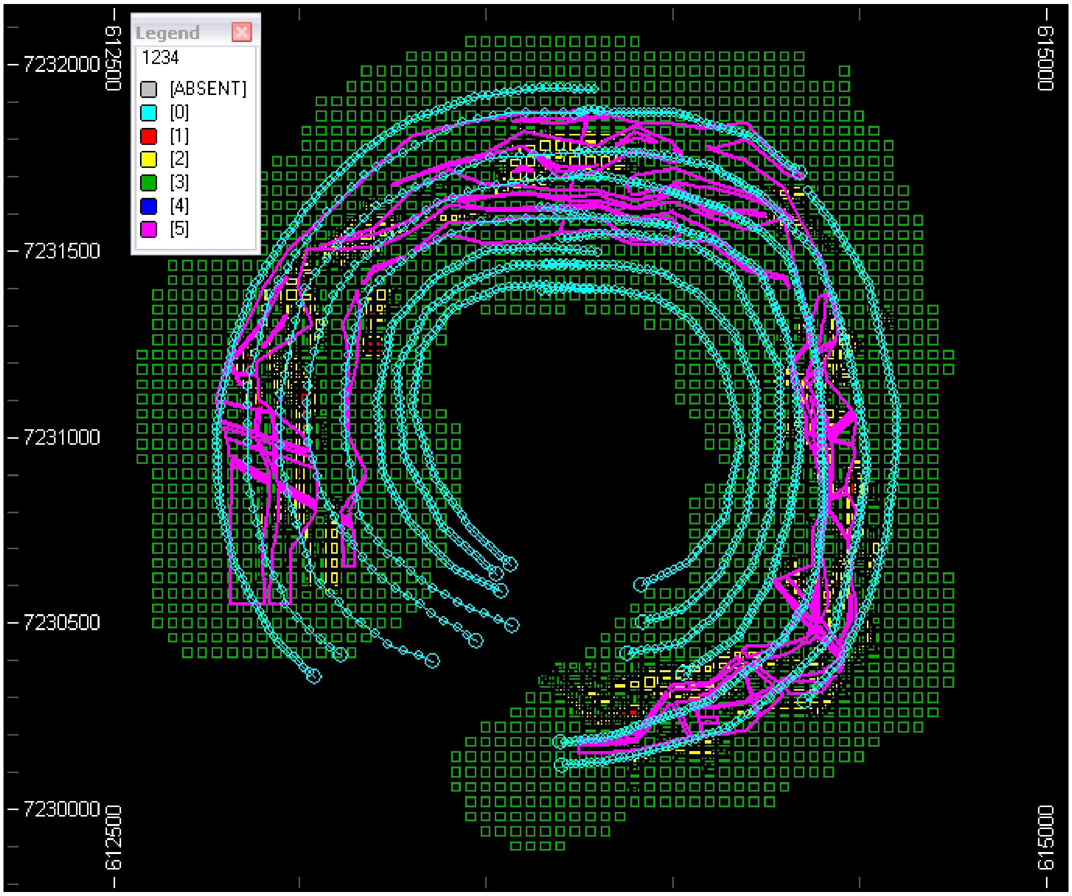
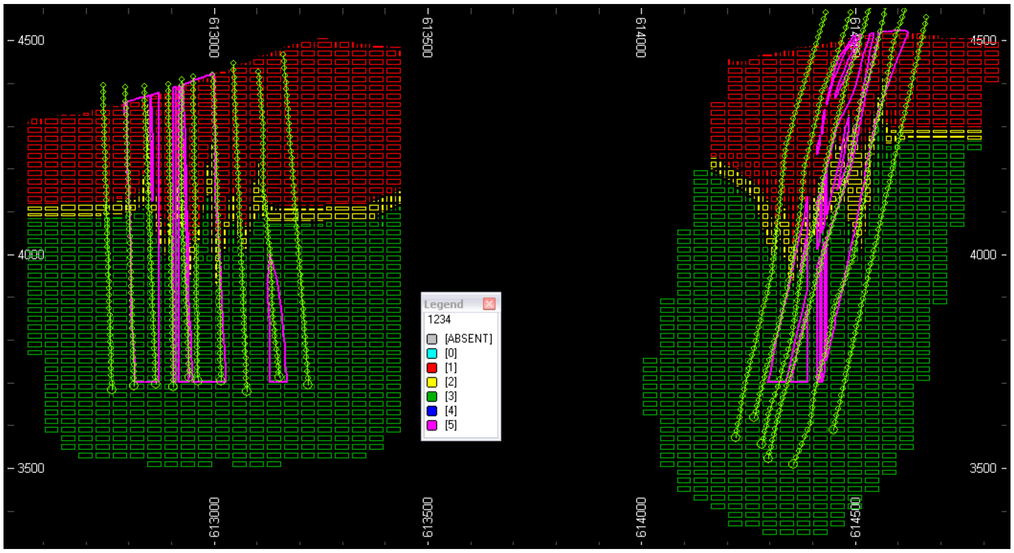
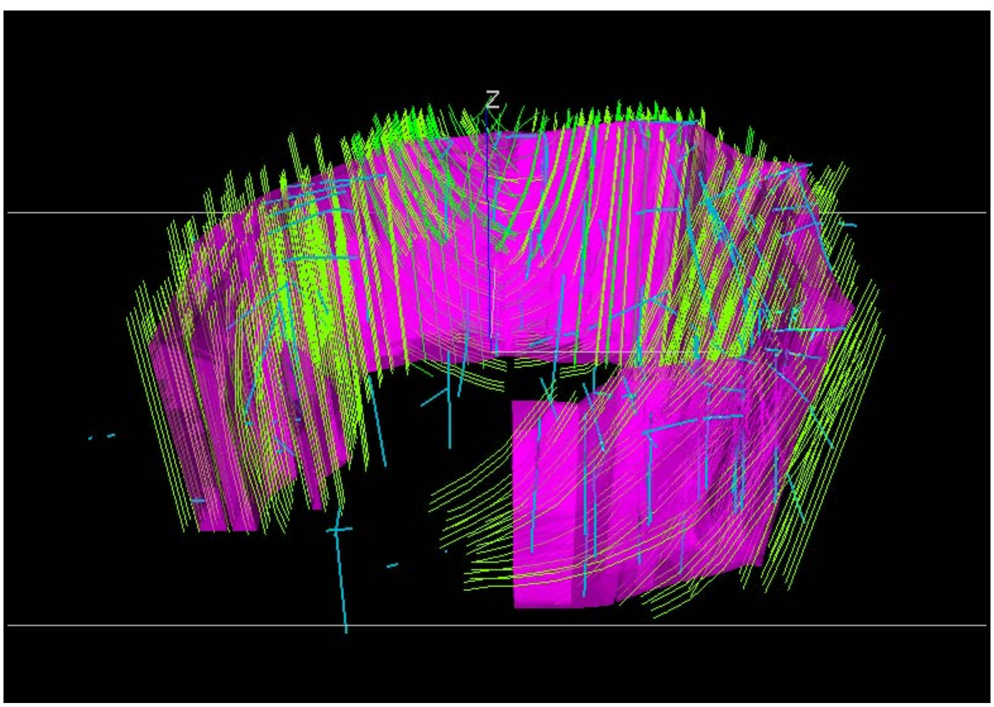


Figure 14.21 Section View, Rio Grande Cu 0.1% Wireframe (magenta) with Trend Lines (blue) and Block Model Outline Coloured by Rock; 7231000 mN



These strings are then used to create a points file to record a dip direction (along strike) and apparent dip (across sections), which is depicted in the isometric view below (Figure 14.22).

Figure 14.22 Isometric View of the Orientation Points used to Estimate Dip and Dip-direction; Isometric View Looking North; Cu 0.1% Wireframe (magenta) and Drill Hole Data (blue) also Shown



Using Inverse Distance Squared (ID2) as an interpolation method, and using the points file as the dataset, the apparent dip and dip direction are estimated into each cell of the block model. The true dip is then calculated from the estimated apparent dip and recorded in each cell of the block model. Some cells are too distal from orientation points to fulfil estimation requirements for sample selection. However, these same cells are also too distal from drill hole assay data, and do not estimate grade.

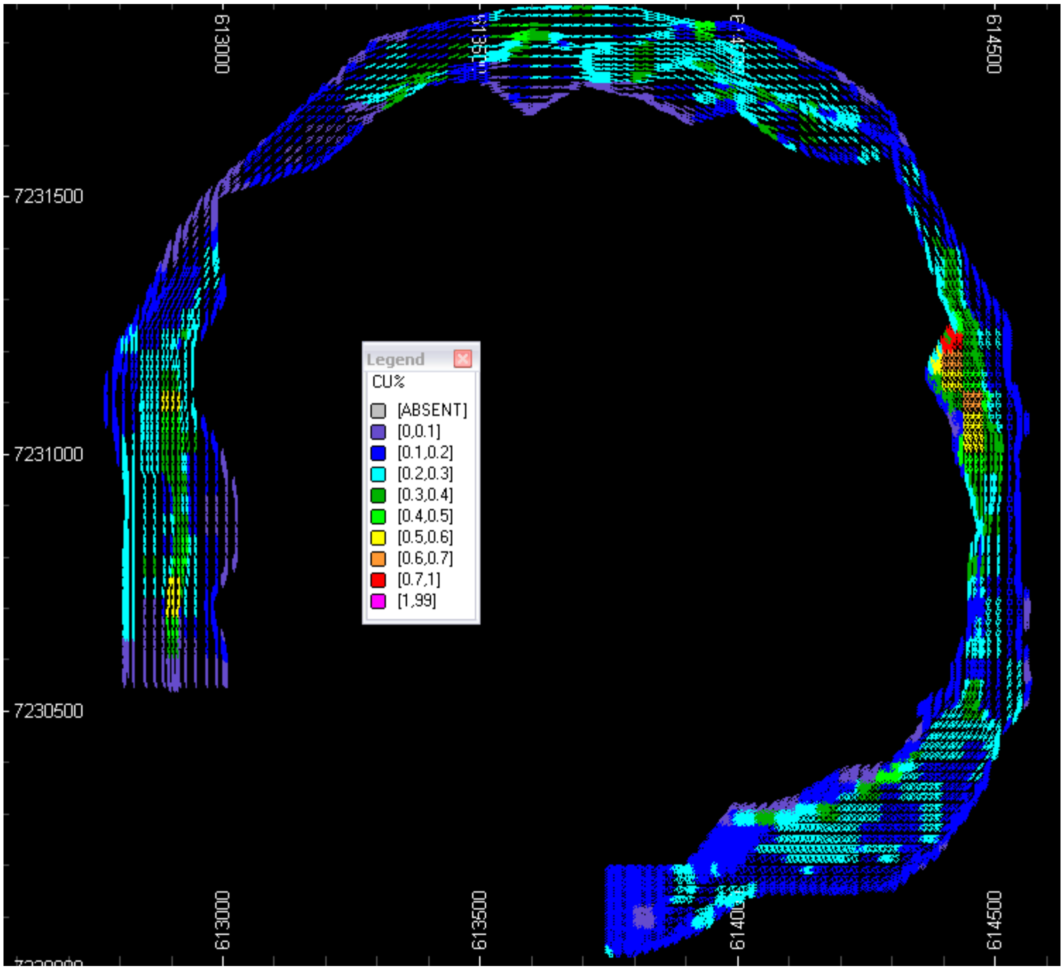
The dip and dip directions for the models of the three domains are added together using Datamine's TM "ADDMOD" routine logic to form one block model into which grade is estimated.

The resultant combined apparent dip – dip direction point file is depicted below (Figure 14.23) along with the drill hole file, coloured by search volume used for this estimate (SVOL).

These points are used to estimate apparent dip and dip direction into cells using ID2 interpolator, and then converted from apparent dip to true dip. The recorded dip and dip direction are then used to determine the sample search orientation for OK and ID2 grade estimation.

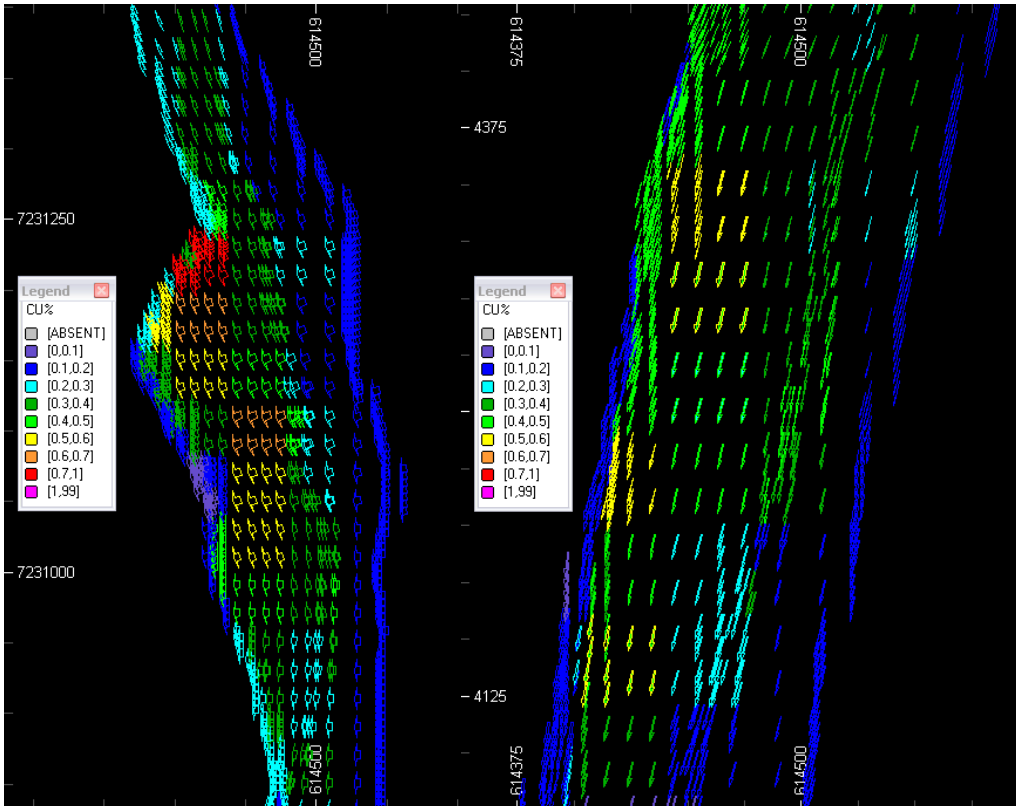
Images demonstrating the results of Dynamic Anisotropy in calculating true dip and dip direction into block model cells are depicted below.

Figure 14.23 Rio Grande Dynamic Anisotropy Coloured by Cu% Showing Dip and Dip Direction Arrows for each Cell at 4,300 mRL



Note: Cells (points) not recording an estimated orientation are not shown. Red = first search pass, yellow = second search pass, green = third search pass.

Figure 14.24 Rio Grande Dynamic Anisotropy Coloured by Cu% Showing Dip and Dip Direction Arrows for each Cell (detail) at 4,300mRL (Plan View - left) and 7,231,000 mN (West-East Section View - right)



Note: Cells (points) not recording an estimated orientation are not shown. Red = first search pass, yellow = second search pass, green = third search pass.

Correlation with Minor Metals

Dynamic Anisotropy was modelled on the mineralization trends of copper, largely based on grade shell wireframes provided by Regulus. The correlation of the minor metals (molybdenum, gold and silver) with copper was investigated to determine if the same Dynamic Anisotropy could be applied to Mo, Au and Ag, and results are presented.

There are approximately 11,130 separate coexisting composite samples between copper and the minor metals for the Rio Grande deposit, and approximately 2,918 for the Rio Grande deposit. The correlation coefficients for copper and molybdenum, gold and silver, respectively, were calculated and their scatter-plots are depicted below (Figure 14.25 to Figure 14.27).

Figure 14.25 Scatter Plot for Cu versus Mo – Rio Grande Deposit

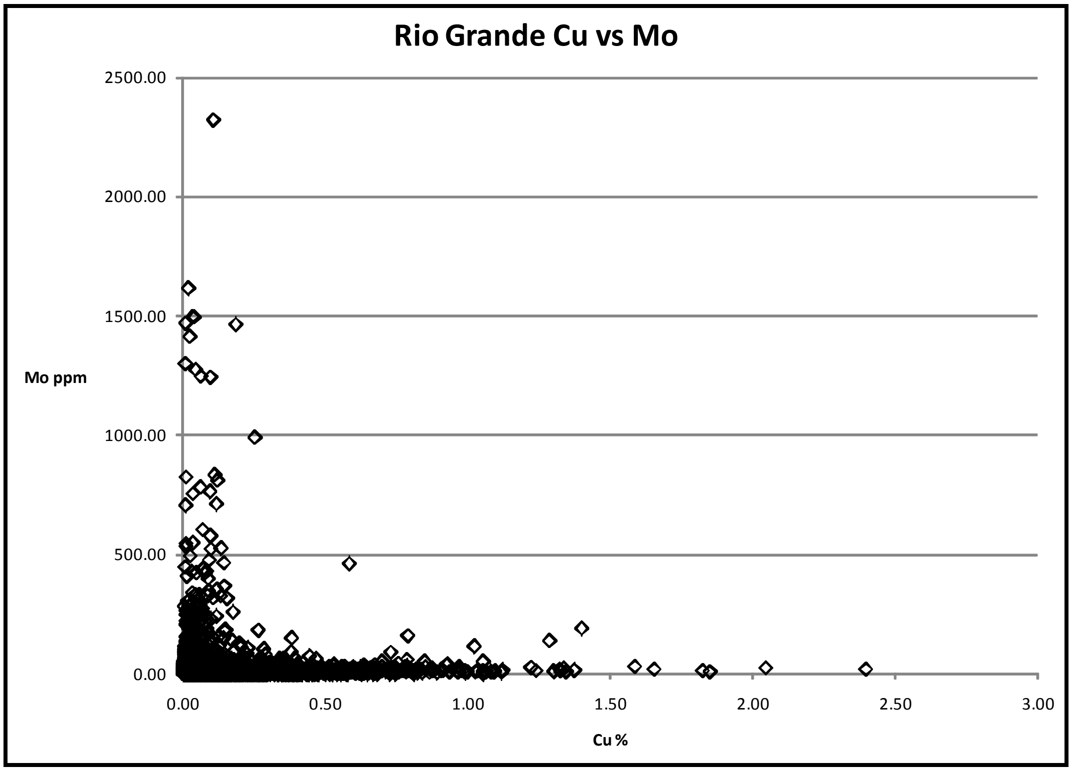


Figure 14.26 Scatter Plot for Cu versus Au – Rio Grande Deposit

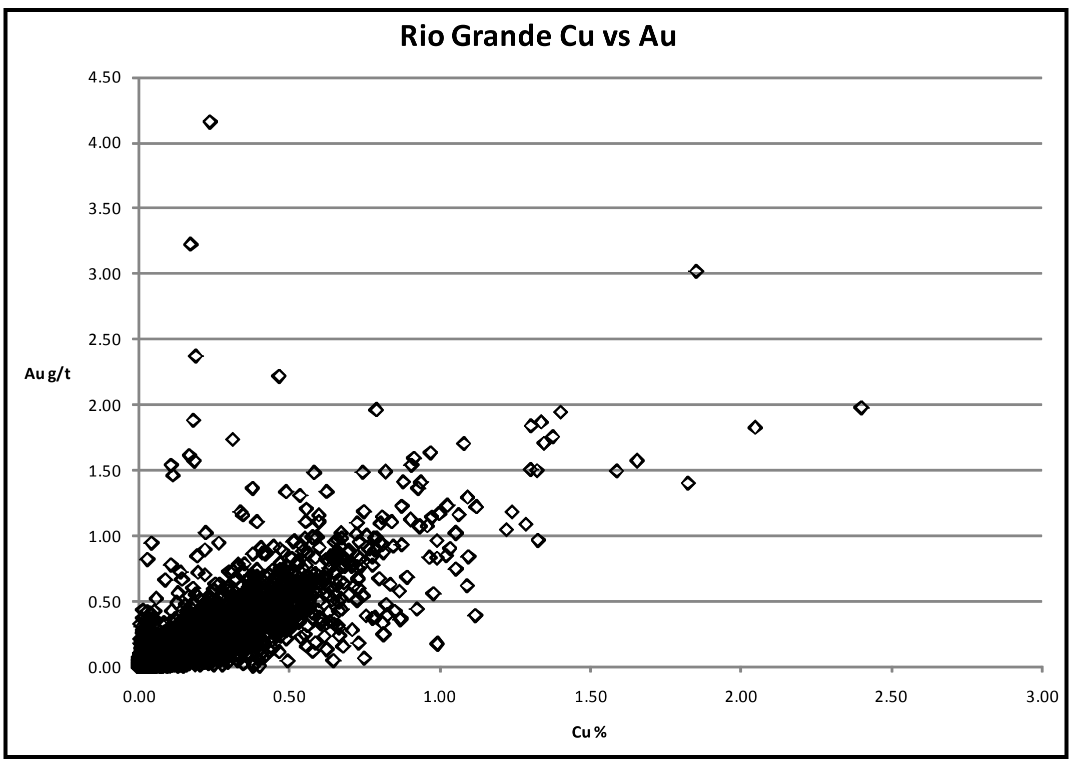
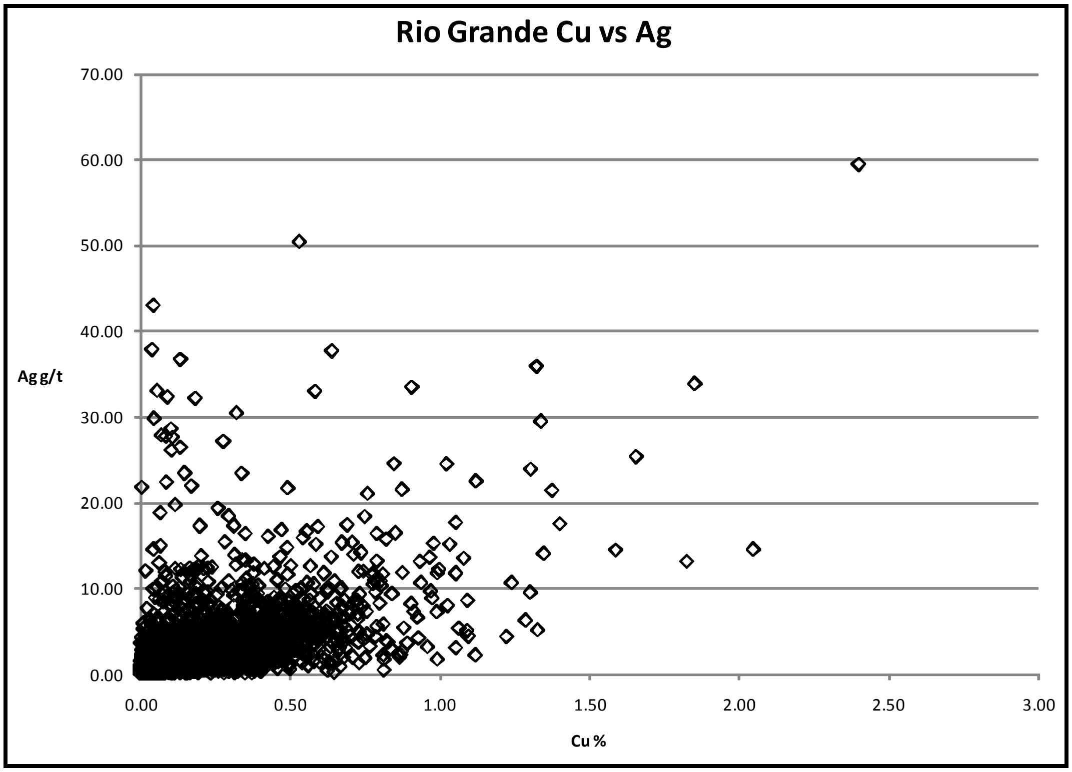


Figure 14.27 Scatter Plot for Cu versus Ag – Rio Grande Deposit



The correlation between the minor metals and copper is most pronounced with respect to gold (correlation coefficient = 0.81) indicating the gold is an integral component with copper mineralization. Similar correlation coefficient is noted with silver (0.61). However, a negative correlation coefficient in noted with respect to Mo (-0.005). Thus although Au and Ag are related to copper mineralization, Mo appears to be independent copper mineralization.

14.5 RESOURCE ESTIMATION BLOCK MODELS

14.5.1 THE RIO GRANDE BLOCK MODEL

The final block model is composed of parent cells with dimensions size set at 40 m by 40 m by 40 m in the waste model, with sub-cells as small as 2.5 m (XINC) by 5 m (YINC) by 5 m (ZINC) and no rotation. The model axes are aligned with a regional grid system (metres), and the model uses these coordinates.

Number of parent cells to the east in Rio Grande: 85; number of cells to the north: 125; number of cells in rising elevation: 100. Thus the total volume in the Rio Grande block model represents 34 cubic kilometres. The Rio Grande block models are truncated by the surface wireframes. Cells representing “air” cells are included in these models and contain zero values for density and grade.

The following table (Table 14.12) details the attributes recorded into estimated cells within the block model.

Table 14.12 Cell Attributes within the Rio Grande Block Models

Attribute	Description	Unit	Details
IJK	Unique parent cell location code	Integer	Sub-cells may have the same code
XC	Cell Centroid (X)	Metres	Easting
YC	Cell Centroid (Y)	Metres	Northing
ZC	Cell Centroid (Z)	Metres	Elevation
XINC	Cell dimension (X)	Metres	Easting
YINC	Cell dimension (Y)	Metres	Northing
ZINC	Cell dimension (Z)	Metres	Elevation
ZONE	Not used		Datamine feature
density	Density	t/m^3	Calculation assigned to mineral zone
rock	rock code	Integer	1=oxide, 2=mix, 3=sulphide
APDIP	Apparent dip	Degrees	For Dynamic Anisotropy
TRDIP	True dip	Degrees	For Dynamic Anisotropy
TRDIPDR	True dip direction	Degrees	For Dynamic Anisotropy
PRAB1	Proportion of cell above cut-off	0-1	Used in Indicator Kriging
NUMSAM	Number of samples	Integer	Used in Cu estimate
MINDIS	Minimum sample distance	Function	Samples estimation distances in Cu
Cu_ind	Initial Cu indicator	0-1	Not used
Cu_pct	Cu OK estimate	Percent	Rio Grande estimated separately
Cu_id	Cu ID2 estimate	Percent	Rio Grande estimated separately
Cu_nn	Cu Nearest Neighbour (NN) estimate	Percent	Rio Grande estimated separately
Mo_gt	Mo OK estimate	g/t	Rio Grande estimated separately
Mo_id	Mo ID2 estimate	g/t	Rio Grande estimated separately
Mo_nn	Mo NN estimate	g/t	Rio Grande estimated separately
Au_gt	Au OK estimate	g/t	Rio Grande estimated separately
Au_id	Au ID2 estimate	g/t	Rio Grande estimated separately
Au_nn	Au NN estimate	g/t	Rio Grande estimated separately
Ag_gt	Ag OK estimate	g/t	Rio Grande estimated separately
Ag_id	Ag ID2 estimate	g/t	Rio Grande estimated separately
Ag_nn	Ag NN estimate	g/t	Rio Grande estimated separately
SVOL	Cu estimation search pass	Integer	1=First, 2=Second, 3=Third
mo_vol	Mo estimation search pass	Integer	1=First, 2=Second, 3=Third
au_vol	Au estimation search pass	Integer	1=First, 2=Second, 3=Third
ag_vol	Ag estimation search pass	Integer	1=First, 2=Second, 3=Third
cu_rcat	Resource Classification for Cu	Integer	1=Indic.; 2=Inferr.; 3=Inferr.
rescat	Resource Classification for Mo	Integer	1=Indic.; 2=Inferr.; 3=Inferr.

table continues…

Attribute	Description	Unit	Details
SILL	Total sample variance	Integer	Normalised to 1
KV	Kriging Variance	Function	Cu estimation variance in Cu_pct
GRAB1	Cell grade above indicator cut-off	Estimate	Rio Grande only – not used
LG	Lagrange Multiplier	Function	Used to calculate ZZ in Cu_pct
F	F-Function	Function	Used to calculate ZZ in Cu_pct
KE	Kriging Efficiency	Function	Used to evaluate OK quality in Cu_pct
ZZ	Theoretical slope of regression	Function	Used to evaluate OK quality in Cu_pct
BV	Block Variance	Function	Used to calculate KE and ZZ
XMORIG	Block model origin	Metres	Least Easting
YMORIG	Block model origin	Metres	Least Northing
ZMORIG	Block model origin	Metres	Least Elevation
NX	Number cells	Integer	Easting
NY	Number cells	Integer	Northing
NZ	Number cells	Integer	Elevation

14.5.2 RESOURCE ESTIMATION

Copper, molybdenum and gold grades was estimated in cells within two domains based on solid wireframes; a low grade domain and a high grade domain. No estimations were undertaken outside these wireframes. Copper, Au, Ag and Mo were estimated using OK, ID2 and NN. The latter two estimation methods were used for model verification purposes only. Only the OK estimation resource was reported.

For each of the three estimation methods, three sequential estimation passes were run, based on increasing sample search distances accompanied by decreasing minimum sample requirements for successful cell interpolation. These are defined in the search parameter file and tabulated above.

Based on the copper estimation run, Kriging Efficiency (KE %) and the theoretical slope of regression (Z / *Z) were estimated into each grade cell as a function of Kriging Variance, the F-Function and the LaGrange Multiplier. These were used to evaluate the quality of the OK estimate.

14.6 MINERAL RESOURCE CLASSIFICATION

NI 43-101 relies on the CIM Standards on Mineral Resources and Reserves Definitions and Guidelines for the definition of Mineral Resources. Among other things, for a mineralized body to be considered Mineral Resources, it must be demonstrated that under reasonable technical assumptions, it must have “reasonable prospects for economic extraction”.

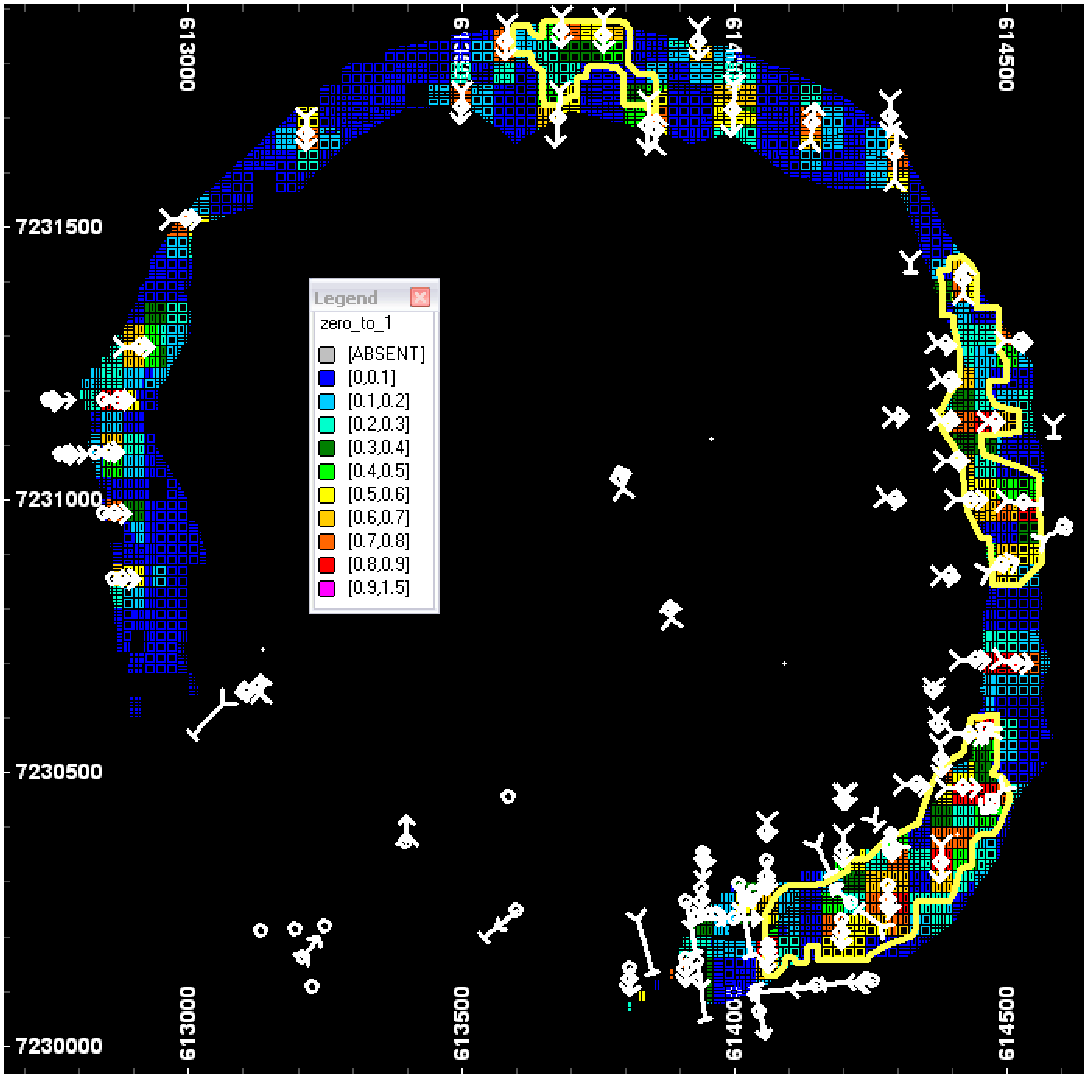
Mineral resource classification for copper, Mo, Au and Ag was based on a combination of drill density, search pass, Kriging efficiency and slope of regression. This combination provided a measure of confidence in the grade estimation.

The classification was in part assigned to first search pass, corresponding to the cells which were successfully interpolated at the minimum search distance employed. Naturally, this volume coincides with the combination of both surface sampling and drilling data. The remainder of estimated cells (i.e. those which were estimated on the second and third search passes) were assigned an Inferred category. With this strategy, relatively low KE % and Z / *Z values for the estimates discouraged the allocation of higher resource classifications, or the extension of Indicated resources outside the first search pass distance.

A solid wireframe was designed to capture cells which had sufficiently high KE % and Z / *Z values, significant drill density and first search pass cell estimation characteristics to warrant Indicated resource classification. All other estimated cells outside this wireframe were allocated Inferred resource status.

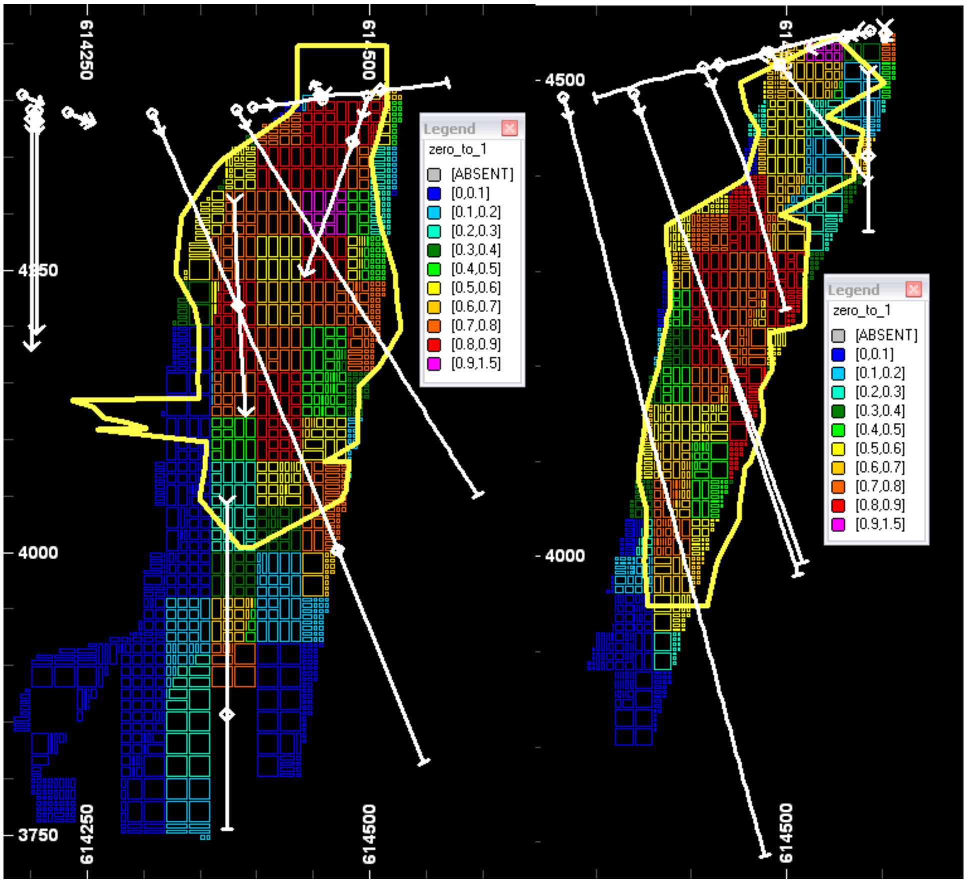
Representative sections showing block model resource classification with respect to drill hole data is depicted below (Figure 14.28 and Figure 14.29). Note that the smaller Indicated resource corresponds to drill holes in proximity to surface trenches. In this situation, the cells were successfully estimated in the first pass, and thus warranted an Indicated resource status. Drill holes alone do not necessarily provide sufficient density of data for proximal cells to be estimated in the first pass. Note also that the position of the Indicated resource represents a more mineable configuration (Figure 14.29).

Figure 14.28 Section Showing Resource Classification in the Rio Grande Block Model (Coloured by Z/Z* and Drill Holes are white traces) at 4,330 mRL



Note: Indicated wireframe outline is in yellow. Cells within the outline are Indicated, cells outside the outline are Inferred.

Figure 14.29 Plan View Showing Resource Classification in the Rio Grande Block Model (Coloured by Z/Z* and Drill Holes are white traces) at 7230460 mN (left) and 7321160 mN (right).



Note: Indicated wireframe outline is in yellow. Cells within the outline are Indicated, cells outside the outline are Inferred.

14.7 MINERAL RESOURCE TABULATION

Table 14.13 to Table 14.20 outline the mineral inventory, as reported with reference to Inferred and Indicated resource classification categories, within the Rio Grande deposit. A further table outlines the mineral inventory with respect to rock type (oxide, transitional and sulphide). Associated grade – tonnage curves for each of the categories can be found in Appendix D.

Table 14.13 Rio Grande Indicated Mineral Inventory; Copper, Molybdenum, Silver and Gold based on CuEQ% Cut-offs

				Metal ('000)					Grade				
	Cut-off CuEQ%	Tonnes ('000 t)	Density	CuEQ (t)	Cu (t)	Mo (kg)	Au (oz)	Ag (oz)	CuEQ (%)	Cu (%)	Mo (ppm)	Au (g/t)	Ag (g/t)
Indicated	0.1	131,511.4	2.440	530.52	319.12	2,922.43	1,040.34	12,690.64	0.403	0.243	22.222	0.246	3.001
	0.2	116,923.2	2.437	506.81	304.04	2,334.73	1,002.16	11,934.99	0.433	0.260	19.968	0.267	3.175
	0.3	88,007.0	2.436	432.73	258.34	1,489.22	863.63	10,173.01	0.492	0.294	16.922	0.305	3.595
	0.4	**55,257.9**	**2.436**	**318.30**	**188.80**	**877.23**	**637.02**	**7,787.34**	**0.576**	**0.342**	**15.875**	**0.359**	**4.383**
	0.5	31,812.7	2.435	212.57	125.37	461.13	428.06	5,291.60	0.668	0.394	14.495	0.419	5.174
	0.6	16,776.3	2.437	130.96	77.35	238.40	262.32	3,303.47	0.781	0.461	14.211	0.486	6.125
	0.7	9,218.5	2.440	82.26	48.23	133.69	164.92	2,182.47	0.892	0.523	14.503	0.556	7.364
	0.8	5,547.3	2.433	55.08	32.04	80.48	111.22	1,504.07	0.993	0.577	14.509	0.624	8.433
	0.9	3,572.1	2.435	38.28	22.58	50.23	74.33	1,104.73	1.072	0.632	14.061	0.647	9.619
	1	2,035.4	2.443	23.49	13.85	26.91	44.63	733.22	1.154	0.680	13.222	0.682	11.204
	1.1	1,156.1	2.442	14.34	8.49	15.39	26.21	492.48	1.241	0.735	13.311	0.705	13.250
	1.2	565.5	2.435	7.66	4.56	7.64	13.61	273.34	1.354	0.807	13.508	0.749	15.035

Table 14.14 Rio Grande Inferred Mineral Inventory; Copper, Molybdenum, Silver and Gold based on CuEQ% Cut-offs

					Metal ('000)					Grade				
	Rescant	Cut-off CuEQ%	Tonnes ('000 t)	Density	CuEQ (t)	Cu (t)	Mo (kg)	Au (oz)	Ag (oz)	CuEQ (%)	Cu (%)	Mo (ppm)	Au (g/t)	Ag (g/t)
Inferred	3	0.1	666,236.0	2.515	1,817.01	1,097.26	15,620.89	3,282.47	57,479.87	0.273	0.165	23.446	0.153	2.683
	3	0.2	433,902.6	2.489	1,458.56	880.48	9,291.81	2,686.62	43,403.86	0.336	0.203	21.415	0.193	3.111
	3	0.3	231,141.5	2.475	964.18	580.07	3,895.62	1,819.00	26,978.70	0.417	0.251	16.854	0.245	3.630
	3	**0.4**	**101,088.2**	**2.478**	**516.32**	**305.91**	**1,654.62**	**1,002.46**	**14,449.04**	**0.511**	**0.303**	**16.368**	**0.308**	**4.446**
	3	0.5	41,814.7	2.478	252.37	146.93	707.32	497.63	7,496.83	0.604	0.351	16.916	0.370	5.576
	3	0.6	15,425.7	2.468	108.96	62.71	245.82	218.53	3,275.62	0.706	0.407	15.936	0.441	6.605
	3	0.7	5,955.3	2.454	47.86	27.34	86.73	98.46	1,370.47	0.804	0.459	14.564	0.514	7.158
	3	0.8	2,613.5	2.453	23.16	13.11	35.69	49.26	615.60	0.886	0.502	13.654	0.586	7.326
	3	0.9	599.9	2.439	6.01	3.45	10.62	12.60	153.97	1.002	0.575	17.705	0.653	7.983
	3	1	271.5	2.425	2.92	1.68	5.67	6.11	76.66	1.077	0.618	20.868	0.700	8.782
	3	1.1	105.8	2.450	1.23	0.67	3.19	2.60	41.95	1.166	0.637	30.143	0.764	12.330
	3	1.2	31.4	2.460	0.40	0.22	0.43	0.82	13.67	1.267	0.700	13.680	0.814	13.556

Table 14.15 Rio Grande Indicated Mineral Inventory – Oxide Zone; Copper, Molybdenum, Silver and Gold based on CuEQ% Cut-offs

Rescat	Rock	Cut-off CuEQ%	Tonnes ('000 t)	Density	Metal ('000)					Grade				
					CuEQ (t)	Cu (t)	Mo (kg)	Au (oz)	Ag (oz)	CuEQ (%)	Cu (%)	Mo (ppm)	Au (g/t)	Ag (g/t)
Indicated	Oxide	0.1	86,072.4	2.410	357.32	212.73	1,780.34	725.68	7,902.81	0.415	0.247	20.684	0.262	2.856
		0.2	80,463.1	2.410	347.81	206.92	1,614.76	708.23	7,638.15	0.432	0.257	20.068	0.274	2.953
		0.3	60,879.8	2.410	297.67	176.38	1,071.96	610.35	6,542.60	0.489	0.290	17.608	0.312	3.343
		0.4	**37,658.2**	**2.410**	**216.34**	**127.12**	**605.09**	**447.49**	**4,891.58**	**0.574**	**0.338**	**16.068**	**0.370**	**4.040**
		0.5	22,055.9	2.410	145.75	85.09	311.22	304.03	3,336.63	0.661	0.386	14.110	0.429	4.705
		0.6	11,126.2	2.410	86.51	50.78	154.25	178.97	1,970.87	0.778	0.456	13.864	0.500	5.510
		0.7	5,761.6	2.410	51.97	30.30	87.36	107.37	1,259.94	0.902	0.526	15.162	0.580	6.802
		0.8	3,903.1	2.410	38.32	22.11	58.51	79.58	982.10	0.982	0.567	14.991	0.634	7.826
		0.9	2,447.4	2.410	25.94	15.24	36.34	51.56	701.71	1.060	0.623	14.848	0.655	8.918
		1	1,181.4	2.410	13.76	8.14	16.21	26.30	410.77	1.164	0.689	13.723	0.692	10.815
		1.1	686.7	2.410	8.59	5.09	9.07	15.83	287.00	1.251	0.741	13.202	0.717	13.000
		1.2	386.2	2.410	5.20	3.10	5.08	9.47	173.06	1.345	0.802	13.146	0.763	13.938
		1.3	280.2	2.410	3.86	2.37	3.61	6.69	125.95	1.377	0.844	12.884	0.743	13.982
		1.4	77.1	2.410	1.13	0.68	1.23	1.75	52.47	1.464	0.882	16.007	0.704	21.161

Table 14.16 Rio Grande Indicated Mineral Inventory – Transitional (mix) Zone; Copper, Molybdenum, Silver and Gold CuEQ% on Cu% Cut-offs

Rescat	Rock	Cut-off CuEQ%	Tonnes ('000 t)	Density	Metal ('000) CuEQ (t)	Cu (t)	Mo (kg)	Au (oz)	Ag (oz)	Grade CuEQ (%)	Cu (%)	Mo (ppm)	Au (g/t)	Ag (g/t)
Indicated	Transitional (mix)	0.1	42,353.3	2.490	164.62	101.25	1,051.86	298.97	4,511.3	0.389	0.239	24.835	0.220	3.313
		0.2	34,450.4	2.490	151.94	92.99	690.96	280.31	4,080.3	0.441	0.270	20.057	0.253	3.684
		0.3	25,951.1	2.490	130.16	79.08	400.93	243.86	3,478.1	0.502	0.305	15.450	0.292	4.169
		0.4	**17,062.4**	**2.490**	**99.23**	**60.09**	**265.04**	**184.43**	**2,800.0**	**0.582**	**0.352**	**15.534**	**0.336**	**5.104**
		0.5	9,524.6	2.490	65.45	39.50	147.05	121.43	1,902.5	0.687	0.415	15.439	0.397	6.213
		0.6	5,576.2	2.490	43.92	26.29	83.37	82.21	1,308.5	0.788	0.471	14.950	0.459	7.299
		0.7	3,383.0	2.490	29.75	17.65	45.55	56.41	898.4	0.880	0.522	13.464	0.519	8.260
		0.8	1,644.2	2.490	16.76	9.92	21.97	31.64	522.0	1.019	0.603	13.364	0.599	9.874
		0.9	1,124.7	2.490	12.34	7.34	13.89	22.76	403.0	1.097	0.652	12.347	0.629	11.146
		1	854.1	2.490	9.74	5.71	10.70	18.33	322.4	1.140	0.669	12.530	0.668	11.743
		1.1	469.4	2.490	5.75	3.41	6.32	10.38	205.5	1.226	0.726	13.471	0.688	13.616
		1.2	179.3	2.490	2.46	1.47	2.56	4.14	100.3	1.372	0.818	14.289	0.719	17.398

Table 14.17 Rio Grande Indicated Mineral Inventory – Sulphide Zone; Copper, Molybdenum, Silver and Gold CuEQ% on Cu% Cut-offs

					Metal ('000)					Grade				
Rescat	Rock	Cut-off CuEQ%	Tonnes ('000 t)	Density	CuEQ (t)	Cu (t)	Mo (kg)	Au (oz)	Ag (oz)	CuEQ (%)	Cu (%)	Mo (ppm)	Au (g/t)	Ag (g/t)
Indicated	Sulphide	0.1	3,085.7	2.640	8.58	5.14	90.23	15.69	276.51	0.278	0.166	29.243	0.158	2.787
		0.2	2,009.7	2.640	7.06	4.14	29.01	13.62	216.54	0.351	0.206	14.433	0.211	3.351
		0.3	1,176.1	2.640	4.90	2.88	16.32	9.42	152.32	0.417	0.245	13.878	0.249	4.028
		0.4	**537.2**	**2.640**	**2.73**	**1.59**	**7.09**	**5.11**	**95.77**	**0.509**	**0.297**	**13.205**	**0.296**	**5.545**
		0.5	232.3	2.640	1.37	0.78	2.86	2.60	52.43	0.590	0.335	12.321	0.348	7.020
		0.7	73.9	2.640	0.54	0.28	0.79	1.14	24.09	0.727	0.373	10.666	0.478	10.136

Table 14.18 Rio Grande Indicated Mineral Inventory – Oxide Zone; Copper, Molybdenum, Silver and Gold based on CuEQ% Cut-offs

Rescat	Rock	Cut-off CuEQ%	Tonnes ('000 t)	Density	Metal ('000)					Grade				
					CuEQ (t)	Cu (t)	Mo (kg)	Au (oz)	Ag (oz)	CuEQ (%)	Cu (%)	Mo (ppm)	Au (g/t)	Ag (g/t)
Inferred	Oxide	0.1	238,312.5	2.410	729.36	443.36	5,022.82	1,353.88	20,113.40	0.306	0.186	21.077	0.177	2.625
		0.2	192,468.3	2.410	655.44	398.12	4,267.61	1,225.16	17,709.52	0.341	0.207	22.173	0.198	2.862
		0.3	108,333.4	2.410	448.44	270.64	1,797.63	856.13	11,710.02	0.414	0.250	16.593	0.246	3.362
		0.4	**44,852.2**	**2.410**	**230.09**	**136.77**	**697.68**	**453.89**	**5,896.64**	**0.513**	**0.305**	**15.555**	**0.315**	**4.089**
		0.5	17,618.5	2.410	108.74	63.57	275.05	218.84	2,900.86	0.617	0.361	15.612	0.386	5.121
		0.6	7,348.5	2.410	53.02	31.02	107.70	107.24	1,377.63	0.722	0.422	14.656	0.454	5.831
		0.7	3,295.5	2.410	26.69	15.47	48.56	55.88	639.89	0.810	0.469	14.736	0.527	6.039
		0.8	1,494.0	2.410	13.40	7.76	19.99	28.69	286.57	0.897	0.520	13.377	0.597	5.966
		0.9	409.7	2.410	4.08	2.40	5.70	8.38	95.07	0.996	0.586	13.903	0.636	7.218
		1	218.9	2.410	2.31	1.36	3.21	4.67	57.23	1.055	0.621	14.652	0.663	8.134
		1.1	53.2	2.410	0.62	0.36	0.73	1.16	22.52	1.161	0.670	13.737	0.677	13.176
		1.2	11.4	2.410	0.15	0.08	0.15	0.30	4.82	1.278	0.717	13.405	0.811	13.098

Table 14.19 Rio Grande Indicated Mineral Inventory – Transitional (mix) Zone; Copper, Molybdenum, Silver and Gold CuEQ% on Cu% Cut-offs

Rescat	Rock	Cut-off CuEQ%	Tonnes ('000 t)	Density	Metal ('000)					Grade				
					CuEQ (t)	Cu (t)	Mo (kg)	Au (oz)	Ag (oz)	CuEQ (%)	Cu (%)	Mo (ppm)	Au (g/t)	Ag (g/t)
Inferred	Transitional (mix)	0.1	171,629.3	2.490	533.98	324.52	4,385.85	954.23	16,784.22	0.311	0.189	25.554	0.173	3.042
		0.2	131,604.0	2.490	471.61	285.47	2,985.07	856.45	14,451.62	0.358	0.217	22.682	0.202	3.416
		0.3	83,615.3	2.490	353.41	211.83	1,443.84	659.29	10,560.34	0.423	0.253	17.268	0.245	3.928
		0.4	**38,663.6**	**2.490**	**198.45**	**116.78**	**693.30**	**379.14**	**6,154.68**	**0.513**	**0.302**	**17.932**	**0.305**	**4.951**
		0.5	17,501.9	2.490	104.64	60.33	335.69	202.56	3,509.56	0.598	0.345	19.180	0.360	6.237
		0.6	6,225.2	2.490	43.54	24.46	112.26	86.54	1,549.33	0.699	0.393	18.034	0.432	7.741
		0.7	2,258.1	2.490	18.05	10.10	33.10	36.01	648.50	0.799	0.447	14.659	0.496	8.932
		0.8	938.0	2.490	8.26	4.49	13.65	17.30	292.56	0.880	0.479	14.551	0.574	9.702
		0.9	169.8	2.490	1.74	0.95	4.59	3.76	53.40	1.024	0.561	27.025	0.688	9.782
		1.1	52.0	2.490	0.61	0.31	2.41	1.42	19.21	1.171	0.605	46.461	0.851	11.494
		1.2	19.9	2.490	0.25	0.14	0.28	0.52	8.85	1.261	0.691	13.838	0.815	13.819

Table 14.20 Rio Grande Indicated Mineral Inventory – Sulphide Zone; Copper, Molybdenum, Silver and Gold CuEQ% on Cu% Cut-offs

					Metal ('000)					Grade				
Rescat	Rock	Cut-off CuEQ%	Tonnes ('000 t)	Density	CuEQ (t)	Cu (t)	Mo (kg)	Au (oz)	Ag (oz)	CuEQ (%)	Cu (%)	Mo (ppm)	Au (g/t)	Ag (g/t)
Inferred	Sulphide	0.1	256,294.17	2.64	553.68	329.38	6,212.22	974.36	20,582.25	0.216	0.129	24.239	0.118	2.498
		0.2	109,830.27	2.64	331.52	196.89	2,039.13	605.02	11,242.72	0.302	0.179	18.566	0.171	3.184
		0.3	39,192.78	2.64	162.33	97.60	654.16	303.57	4,708.34	0.414	0.249	16.691	0.241	3.737
		0.4	**17,572.34**	**2.64**	**87.79**	**52.36**	**263.64**	**169.43**	**2,397.71**	**0.500**	**0.298**	**15.003**	**0.300**	**4.244**
		0.5	6,694.38	2.64	39.00	23.03	96.58	76.23	1,086.41	0.583	0.344	14.427	0.354	5.048
		0.6	1,851.96	2.64	12.39	7.22	25.85	24.75	348.67	0.669	0.390	13.961	0.416	5.856
		0.7	401.61	2.64	3.12	1.78	5.07	6.57	82.08	0.776	0.442	12.619	0.509	6.357
		0.8	181.50	2.64	1.50	0.85	2.05	3.27	36.46	0.828	0.468	11.304	0.560	6.249
		0.9	20.46	2.64	0.19	0.09	0.34	0.47	5.50	0.928	0.464	16.513	0.716	8.368
		1.1	0.66	2.64	0.01	0.00	0.04	0.02	0.21	1.116	0.551	66.731	0.874	10.050

14.8 BLOCK MODEL VALIDATION

14.8.1 STATISTICS

The model statistics, with respect to each interpolation method (OK, ID2, NN) for each of the Rio Grande deposit were tabulated in Table 14.21. Included are the statistics for the sample dataset used in the interpolations.

All model blocks for comparison are those with copper equivalent values greater than 0.10%, as this represents the minimum cut-off for the resource declaration.

Results show good consistency between all interpolation methods.

Table 14.21 Model (OK) and Drill Hole Sample Statistics

Field	Drill Hole Data				Model Data			
	Cu_pct	Mo_gt	Au_gt	Ag_gt	Cu_pct	Mo_gt	Au_gt	Ag_gt
NRecords	7,150	7,150	7,150	7,150	352,869	352,869	352,869	352,869
NSamples	3,511	3,093	3,511	3,511	352,869	352,869	352,869	352,869
Minimum	0.01	1.00	0.01	0.10	0	0	0	0
Maximum	2.400	2,320	4.160	59.4	0.882	893	0.911	21.161
Mean	0.224	21.400	0.235	3.009	0.120	20.572	0.112	1.807
Variance	0.038	5727.949	0.070	15.349	0.012	2,715	0.014	3.355
Standard Deviation	0.194	75.683	0.264	3.918	0.111	52.107	0.118	1.832
StanderR	0.003	1.361	0.004	0.066	0.000	0.088	0.000	0.003
Skewness	2.993	16.954	4.106	5.126	1.071	7.267	1.547	1.494
Kurtosis	15.665	385.992	31.050	40.343	2.060	71.913	3.656	3.950
Geomean	0.171	11.577	0.156	1.945	0.152	16.603	0.131	2.197
SumLog	- 6,196	7,575	- 6,522	2,335	-459,717	684,635	-495,594	192,100
MeanLog	-1.765	2.449	-1.858	0.665	-1.883	2.810	-2.030	0.787
LogVar	0.523	0.693	0.805	0.816	0.255	0.725	0.436	0.347
LogeStmn	0.222	16.371	0.233	2.924	0.173	23.858	0.163	2.613

Table 14.22 Model (ID2 and NN) Statistics

Field	ID2				NN			
	Cu_id	Mo_id	Au_id	Ag_id	Cu_nn	Mo_nn	Au_nn	Ag_nn
NRecords	352,869	352,869	352,869	352,869	352,869	352,869	352,869	352,869
NSamples	352,869	352,869	352,869	352,869	352,869	352,869	352,869	352,869
Minimum	0	0	0	0	0	0	0	0
Maximum	0.941	1,173	1.179	20.246	2.400	2,320	3.227	59.367
Mean	0.118	20.241	0.110	1.801	0.117	21.010	0.107	1.685
Variance	0.013	3,057	0.015	3.742	0.027	6,865	0.032	8.424
Standard Deviation	0.113	55.287	0.122	1.934	0.164	82.855	0.179	2.902
StanderR	0.000	0.093	0.000	0.003	0.000	0.139	0.000	0.005
Skewness	1.221	8.704	1.925	1.921	2.889	9.928	3.941	5.466
Kurtosis	2.608	107.911	6.195	6.492	13.493	127.075	28.290	48.947
Geomean	0.148	16.128	0.125	2.141	0.107	12.081	0.083	1.490
SumLog	-467,023	677,571	- 506,757	185,898	- 545,964	607,162	- 607,719	97,391
MeanLog	-1.913	2.781	- 2.076	0.761	- 2.236	2.492	- 2.489	0.399
LogVar	0.293	0.721	0.481	0.387	1.070	1.013	1.365	0.997

14.8.2 SECTIONS

A few representative sections (by selected northing and easting) are illustrated below (Figure 14.30 to Figure 14.37) to demonstrate some interpolation results between the OK cells and corresponding drill hole data for copper, molybdenum, gold and silver.

Cells with absent copper values represent, in part, those which failed to achieve minimum requirements for the 0.1% Cu indicator block model. Other cells with absent values are those which could not satisfy sample requirements as specified in the respective search parameter files.

The orange line in each of the sections represent the position of topographic surface, while the yellow line and green line represent the base of total oxidation and the base of partial oxidation respectively.

Figure 14.30 Rio Grande Cu% Section View with Drill Holes at 7231050 mN

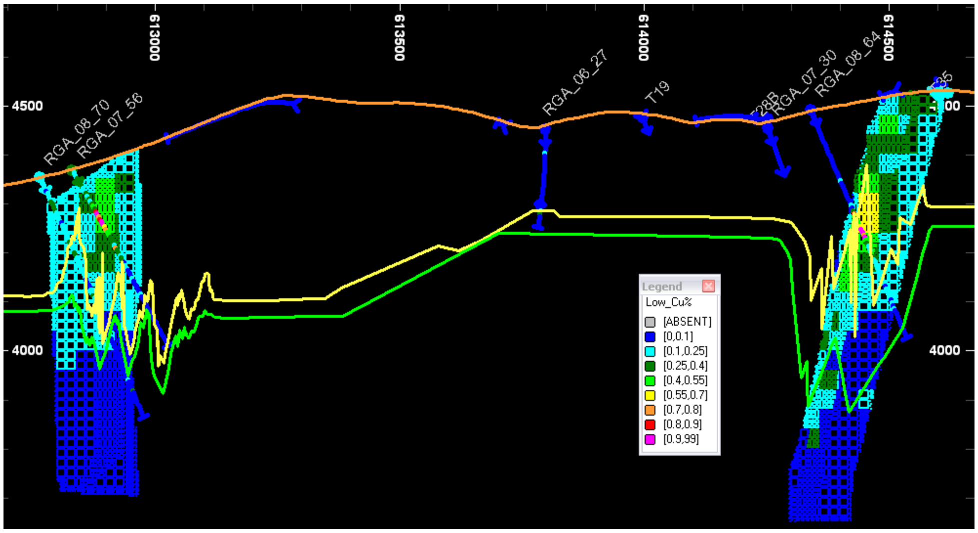


Figure 14.31 Rio Grande Cu% Plan View with Drill Holes at 4260 mRL

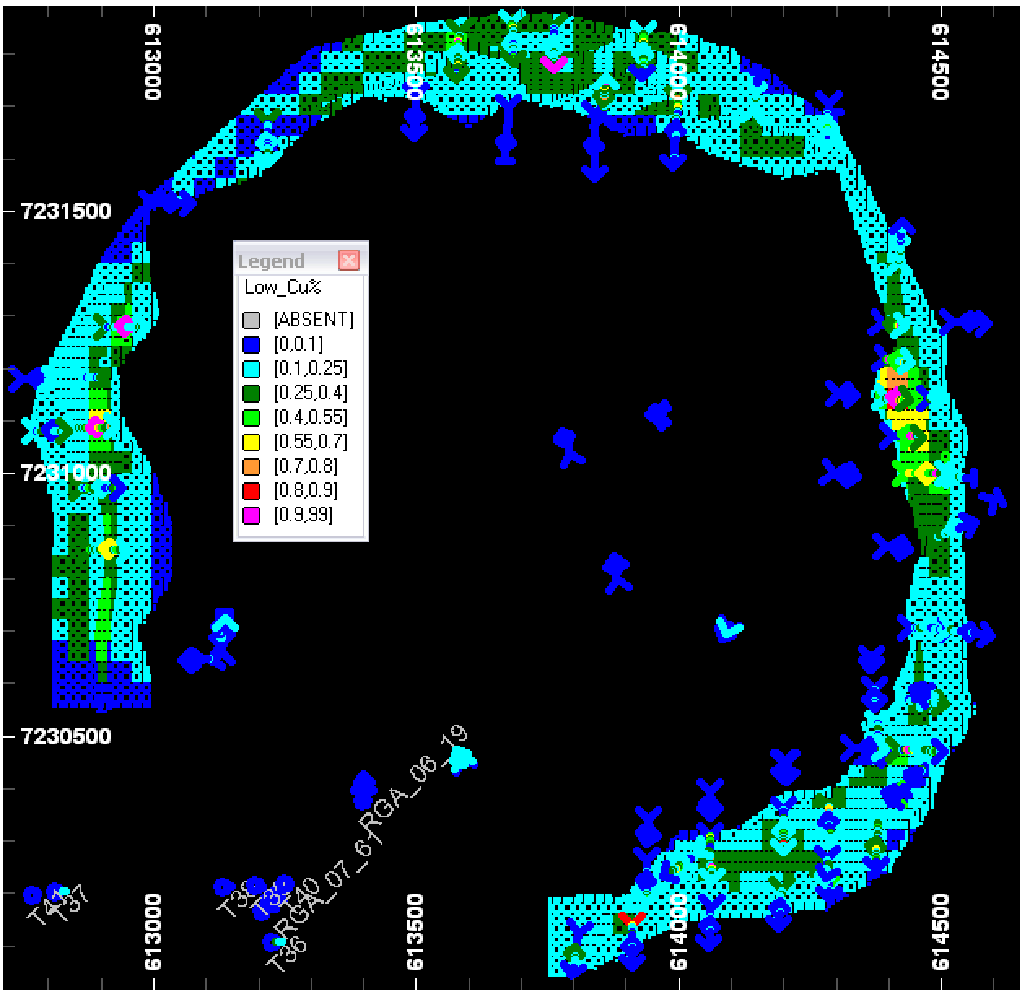


Figure 14.32 Rio Grande Mo g/t Section View with Drill Holes at 7231050 mN

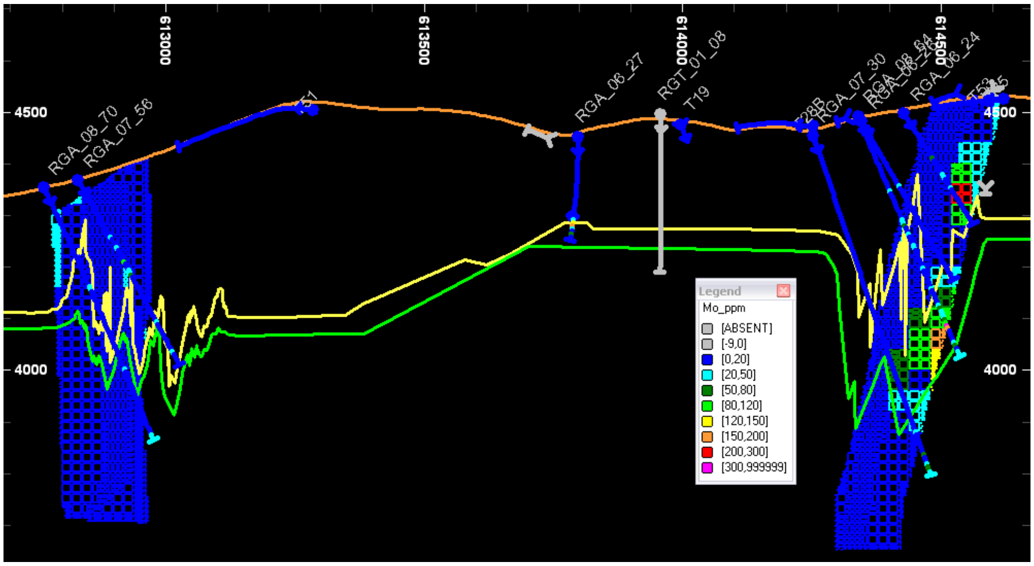


Figure 14.33 Rio Grande Mo g/t Plan View with Drill Holes at 4260 mRL

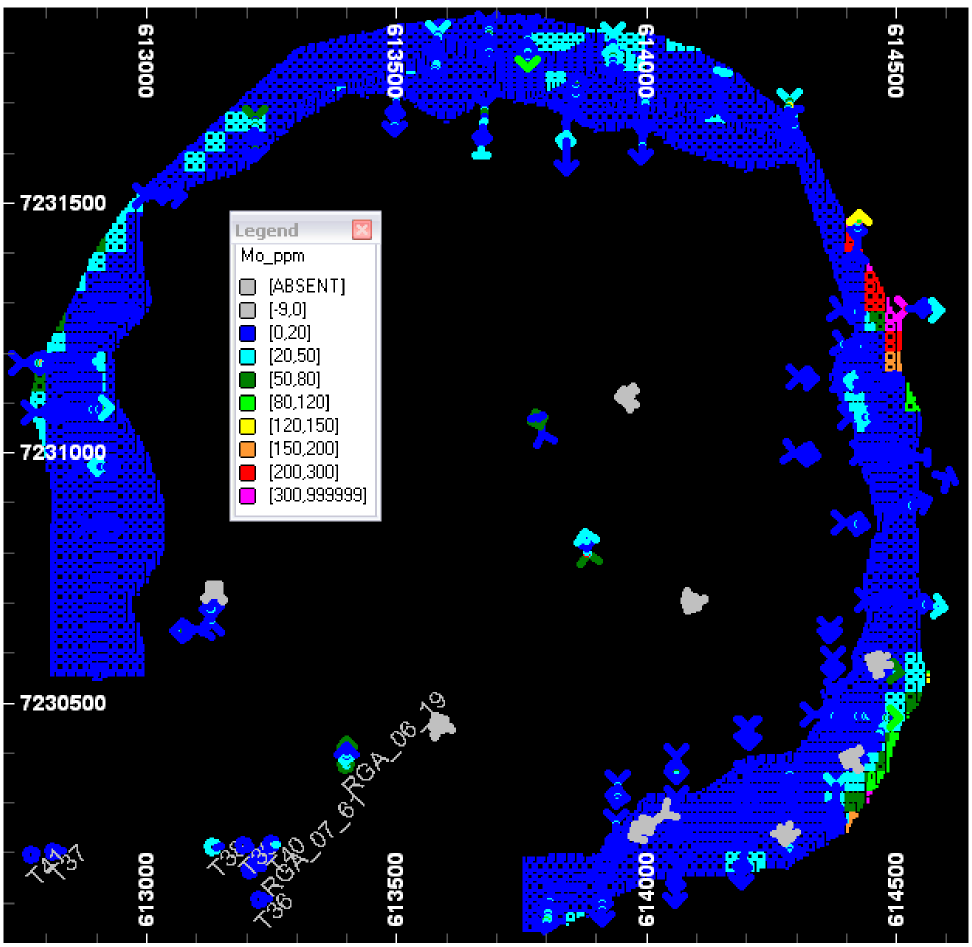


Figure 14.34 Rio Grande Au g/t Section View with Drill Holes at 7231050 mN

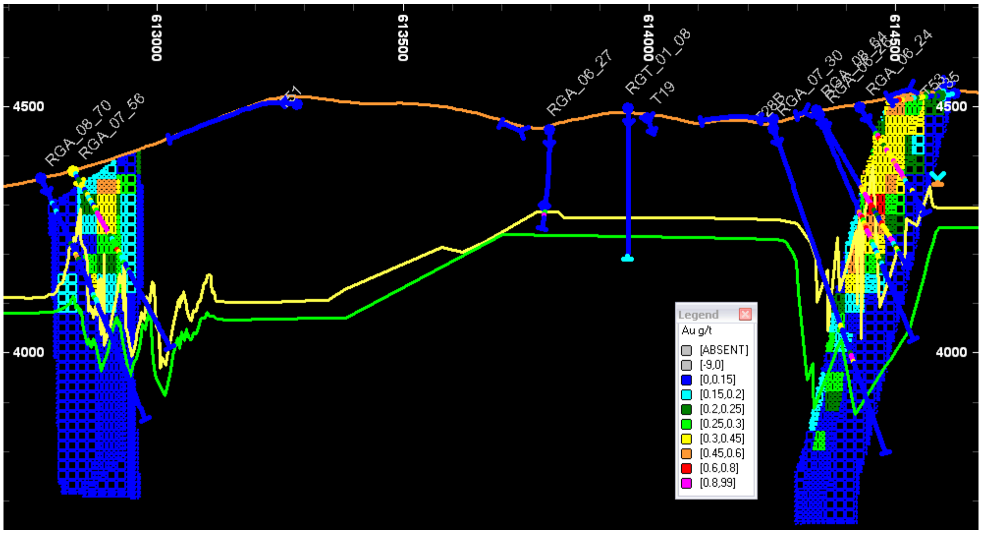


Figure 14.35 Rio Grande Au g/t Plan View with Drill Holes at 4260 mRL

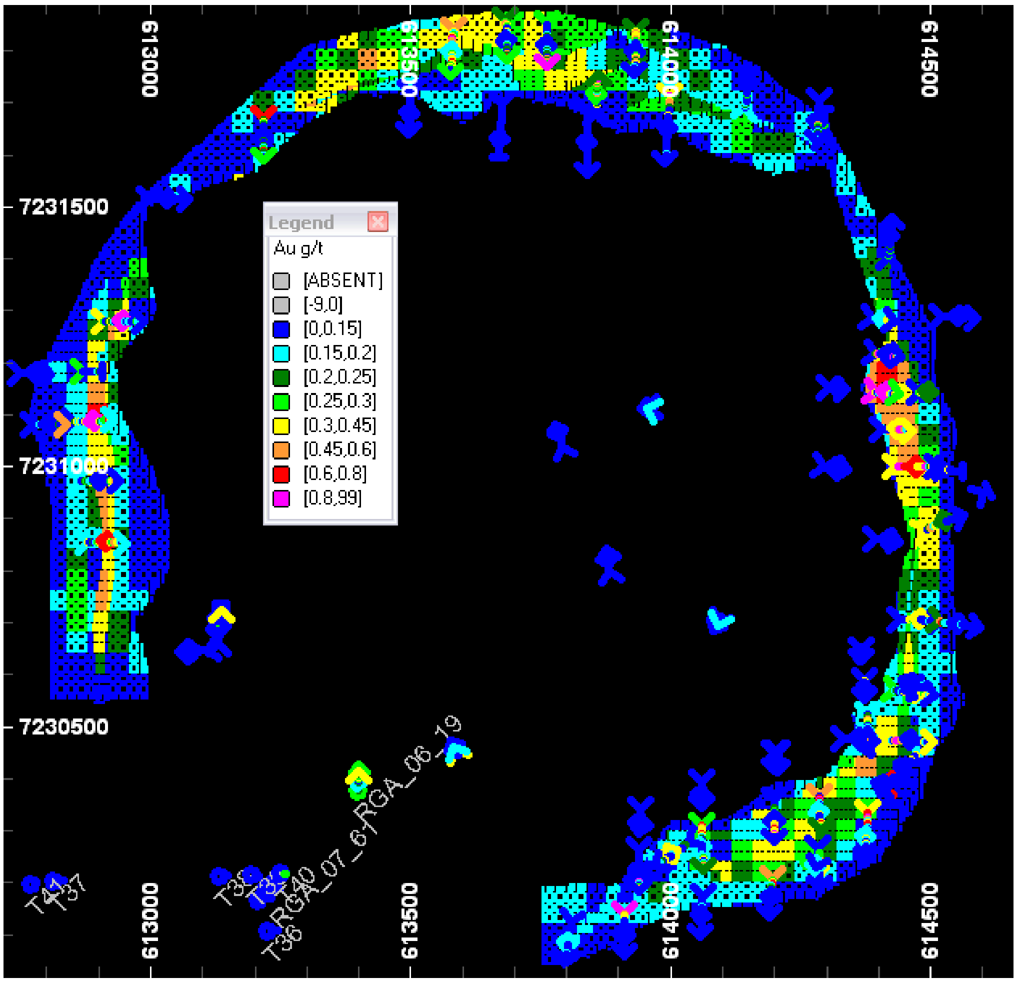


Figure 14.36 Rio Grande Ag g/t Section View with Drill Holes at 7231050 mN

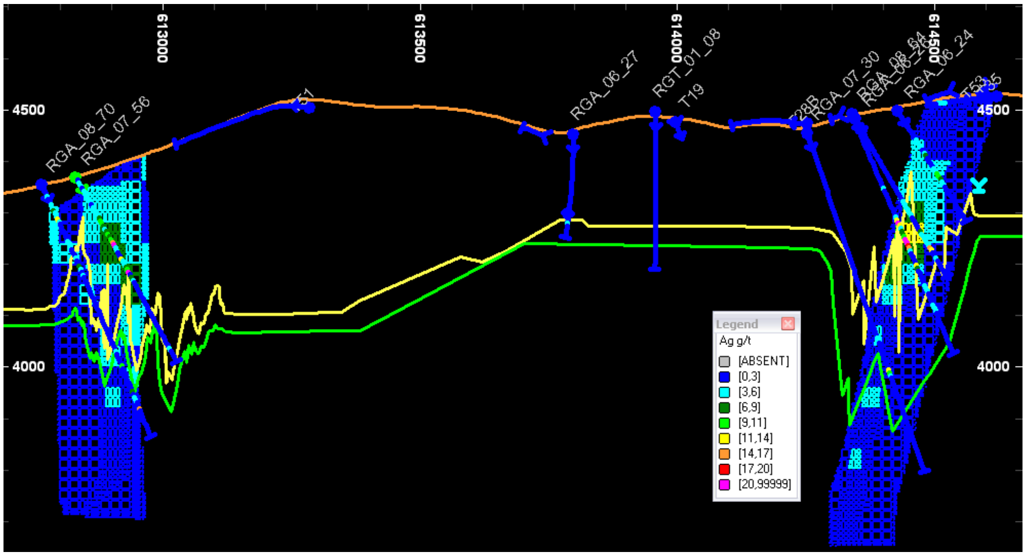
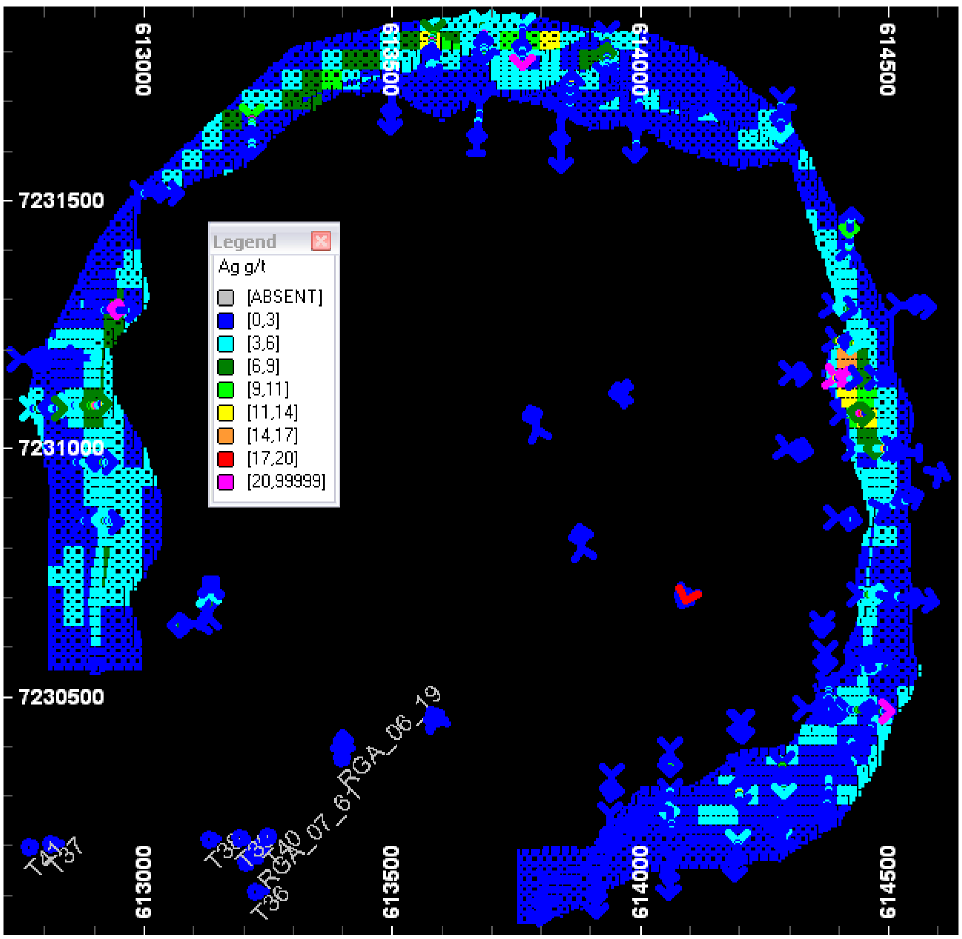


Figure 14.37 Rio Grande Ag g/t Plan View with Drill Holes at 4260 mRL

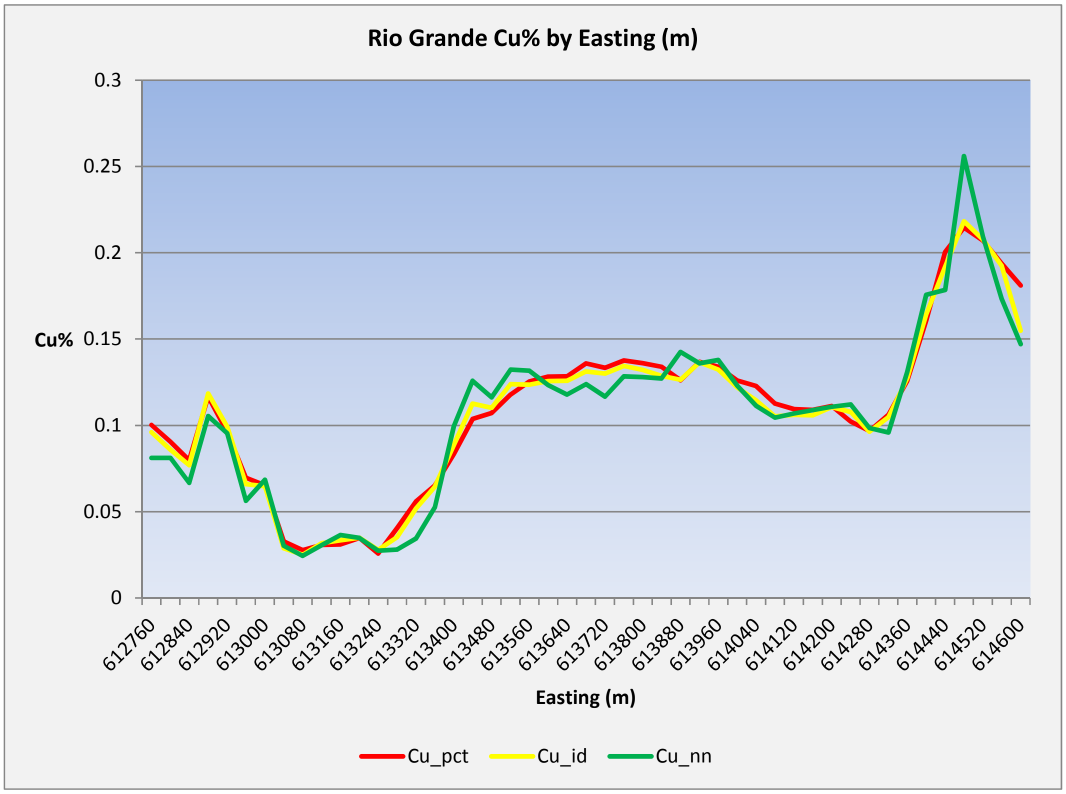


14.8.3 SWATH PLOTS

Swath plots showing grade variations across eastings, northings and elevations were generated for OK interpolation, ID2 interpolation and NN (polygonal) interpolation techniques. Examples of these plots are depicted below (Figure 14.38 and Figure 14.39).

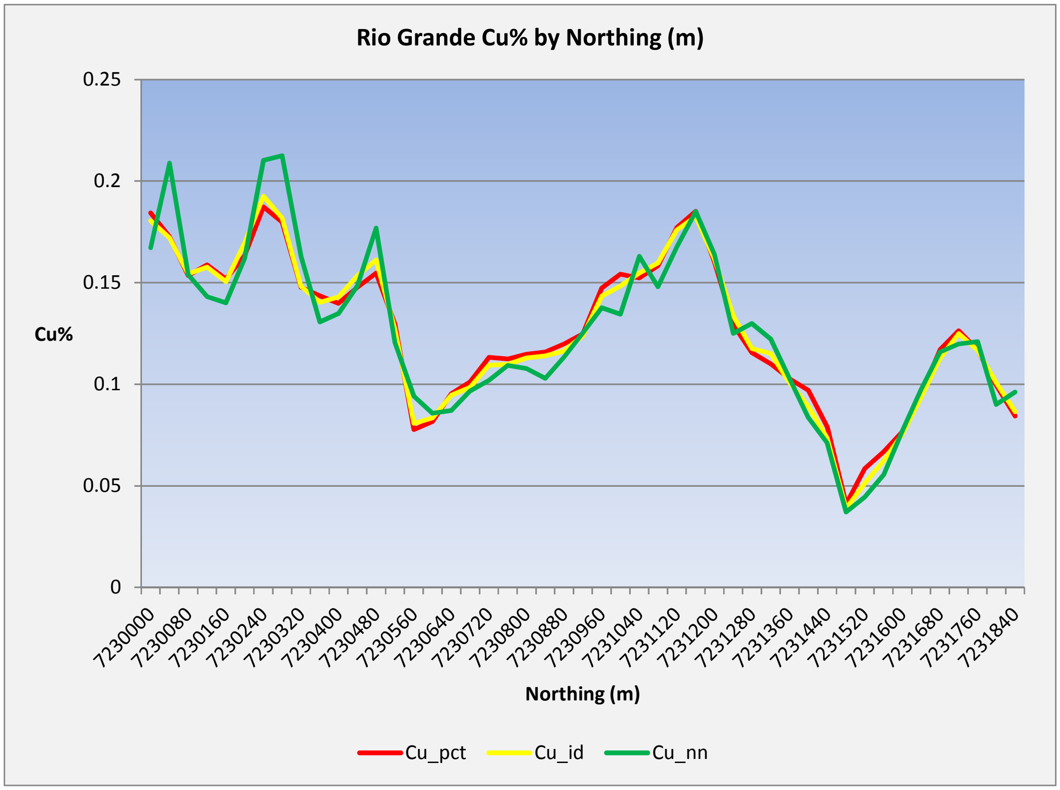
All plots for all elements interpolated demonstrate close correlation for all interpolation techniques. These results support a comprehensive validation for the grade estimations for the Rio Grande deposit in this report.

Figure 14.38 Representative Cu% Swath Plot by Easting for Rio Grande



Note: Cu_ok = OK estimate, Cu_id = ID2 estimate and Cu_nn = NN estimate.

Figure 14.39 Representative Cu% Swath Plot by Northing for Rio Grande



Note: Cu_ok = OK estimate, Cu_id = ID2 estimate and Cu_nn = NN estimate.

14.9 RECOMMENDATIONS

Preliminary wireframes used to define the bases of partial and complete oxidation were too intricate to be used within the resource model. These revised wireframes, preferably as DTM surfaces rather than solid volumes, should be reviewed and validated. These wireframes also need to extend beyond the margins of the block model.

If any subsequent preliminary pit optimization studies indicate that mining the Rio Grande is economic, further drilling should be undertaken to better define the resource and hence convert the Inferred resource to Indicated status.

The quality of the OK estimate could be quantitatively reported in terms of Kriging Efficiency and (theoretical) Slope of Regression. Kriging Efficiency and Slope of Regression in the block model can also be used to support more confident resource classification. Kriging Efficiency (KE%) and the slope of regression (Z/*Z), the F-Function (or F-Value) (F) and La Grange Multiplier (LG) have been estimated in cells in the block model. This allows for the calculation KE% and Z/*Z as:

*Z/*Z = (BV - KRIGV + abs(LG)) / BV (for the regression of *Z on Z)*
*KE% = ((BV-KRIGV) / BV) * 100.0*

Where BV = block variance (Sill – F) and KRIGV = Kriging Variance.

Kriging Efficiency (KE%) and slope of regression (Z / *Z) calculations, based on the parent cell block model, indicate that a minimum drill fence spacing of 60 m is required for conversion of Inferred material to Indicated resource classification status. It is also recommended that infill drilling at Rio Grande should include some tightly-spaced holes to confirm mineralization continuity and assist in modelling the spatial variography with respect to shorter ranges. Orientations for mineralization continuity at Rio Grande should be revisited in light of additional data, and appropriate changes made for subsequent resource estimations.

The great benefit of the current block model is the capability for expeditious model and resource updates based on new drilling data. The Datamine™ macro written for the Rio Grande deposit is very comprehensive (Appendix A). With new data, only updated collar, survey and assay data are required, in conjunction with revised wireframes, variography and associated estimation parameter file alterations, for a whole new and more comprehensive resource model.

15.0 ADJACENT PROPERTIES

The following discussion on adjacent properties is derived from publicly available documents, and is provided here as general information. An independent check of the information has not been performed by Tetra Tech, and the following contents are not necessarily suggestive of the mineralization of the Rio Grande property.

15.1 LINDERO DEPOSIT

From Price, 2010:

The Lindero property, owned 100% by Mansfield lies almost immediately adjacent to the Rio Grande porphyry (apart from a narrow corridor of claims owned by others), and is a porphyry gold deposit (Figure 15.1).

Mineralization was initially discovered by Mansfield in September 1999. Gold mineralization is hosted in a dioritic porphyry with ore grade gold mineralization in the main zone principally hosted in an intense magnetite and quartz-magnetite stockwork coincident with strong potassic alteration. To date, work at Lindero has included geologic mapping, soil geochem, metallurgy, trenching and 115 holes of diamond drilling.

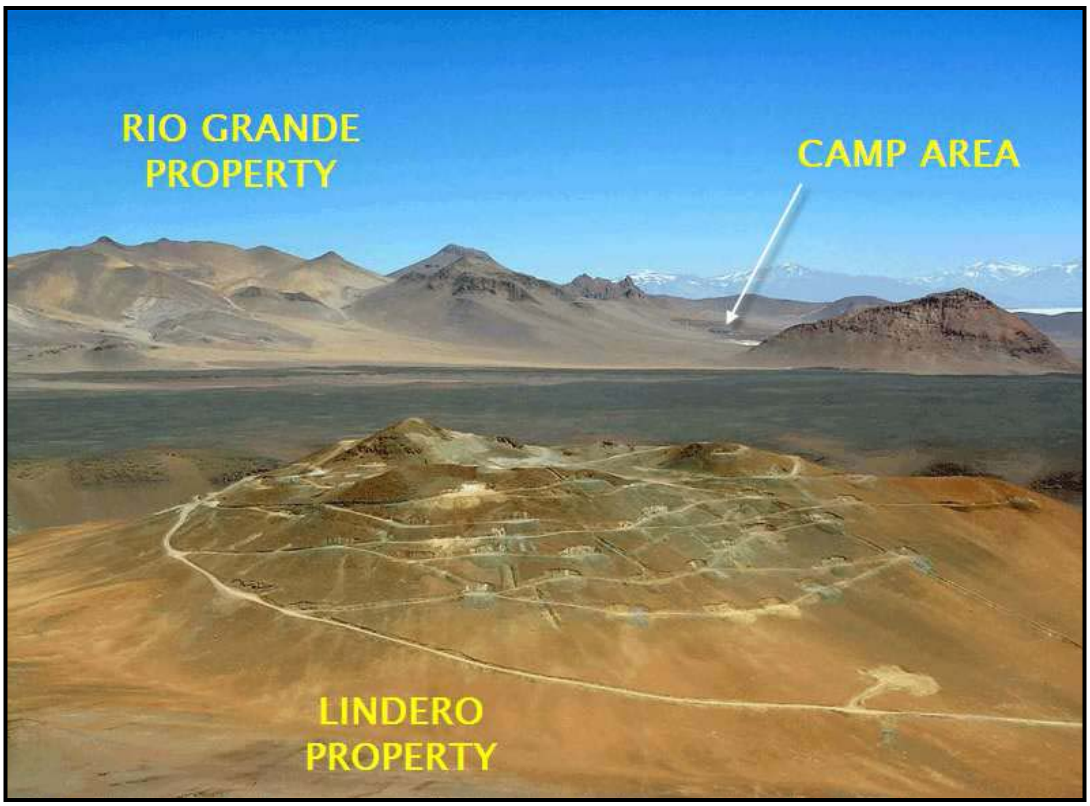
In 2002, Rio Tinto Mining and Exploration Limited (Rio Tinto) conducted two diamond drill programs comprising 3,278 m in ten holes at Lindero. In September 2003, the Company announced the results of an independent resource estimate. The estimate was audited by Roscoe Postle Associates Inc. (RPA), and was based upon drilling, assay data, and block models generated by Rio Tinto. In March 2010, AMEC Americas Limited (AMEC) completed a prefeasibility study on Lindero (the Study). Results of the Study indicate that at US$850/oz gold, Lindero is a very financially attractive gold deposit capable of producing 161,000 oz of gold per year at a cash cost of US$373 over the initial 5 years of production. The results of the resource estimate and preliminary economic assessment (PEA) are highlighted in Table 15.1.

Table 15.1 Reserves and Resources

	Cut-off Grade (g/t)	Tonnes ('000 t)	Average Grade (g/t)	Contained Gold (Moz)
Proven Reserve	0.19	27,929	0.76	0.69
Probable Reserve	0.19	73,169	0.52	1.24
Proven & Probable Reserve	0.19	101,098	0.59	1.92
Measured	0.20	28,400	0.76	0.70
Indicated	0.20	94,200	0.50	1.50
Measured & Indicated Resources	0.20	122,600	0.56	2.20
Inferred Resources	0.20	59,000	0.40	0.75
Measured	0.40	23,800	0.85	0.65
Indicated	0.40	48,100	0.68	1.06
Measured & Indicated Resource	0.40	71,900	0.74	1.71
Inferred Resource	0.40	19,400	0.59	0.37

Source: www.manisfieldminerals.com

Figure 15.1 Photograph of Lindero and Rio Grande Deposits



Source: Price 2010.

15.2 ARIZARO PROPERTY

The Arizaro prospect is a porphyry copper-gold target owned and explored by Mansfield Minerals Inc. It is located 3 km southeast of the Lindero deposit and 12 km southeast of the Rio Grande project. After executing 3,870 m of trenching and 628.93 m of drilling in two drill holes, management of Mansfield concluded that the porphyry target was deeply eroded and lacked economic potential. Subsequent to a comprehensive drill program at Lindero, the Company recognized the possibility that Arizaro may host buried copper-gold porphyries in a telescoped system. This hypothesis was tested with a 2,000 m drill campaign in late 2010 and was proven to be valid. Mineralization is hosted within potassic altered (k-feldspar and biotite) diorites. Hypogene mineralization consists of disseminated chalcopyrite with lesser bornite in association with disseminated to aggregated magnetite and biotite-magnetite veinlets. Gold grades have a 3:1 relationship with copper. To date, an area of 1.2 km by 1.0 km has been partially explored by trenching, soil geochemistry and eight drill holes totalling approximately 2,630 m of drilling. Seven of eight holes encountered significant gold-copper mineralization.

15.3 TACA TACA PROPERTY

From Price, 2010:

The Taca Taca property, is immediately west of (and partially beneath) the Salar de Arizaro, and approximately 5 km north of the Rio Grande property. It is a large Andean type "porphyry copper" hydrothermal system that has generated a significant amount of supergene and hypogene copper, molybdenum and gold mineralization. The supergene zone is typically 20 m to 60 m thick and consists of chalcocite and covellite coatings on hypogene chalcopyrite and pyrite. A 200 m to 300 m thick leached cap sits above most of the supergene zone. Other related types of mineralization identified on the property include exotic Cu-oxide occurrences beneath the Salar de Arizaro and Au-Cu quartz-hematite veins immediately to the north and west of the porphyry. Copper mineralization was first recognized on the Taca Taca property in the 1960's. Subsequently the property has undergone a number of exploration campaigns by Falconbridge, Gencor, BHP Minerals, Corriente and Río Tinto. A total of 24,033 m of reverse circulation and diamond drilling in 156 holes has been completed on the property. There are no NI 43-101 compliant resource estimates on the Taca Taca property.

In Jan 2008, the Company entered into an option agreement with a subsidiary of Rio Tinto, whereby Rio Tinto has the option to acquire a 75% interest in the property, within 3 years, by paying the Company $80 million. In order to maintain its option, Rio Tinto must make payments to the Company of $3 million over the course of the next 2 years, and drill a minimum of 25,000 m. Once Rio Tinto exercises its option, Rio Tinto will be responsible for the first $120 million of development costs on the project. In addition the Company reserves the right to have Rio Tinto fund its portion of the development and capital costs on a deferred *carried basis. In addition, the Company will retain the right to market its proportional share of products produced. Rio Tinto has announced that they are relinquishing the option on Taca Taca.*

16.0 OTHER RELEVANT DATA AND INFORMATION

Tetra Tech is not aware of any other relevant information for the Property.

17.0 INTERPRETATION AND CONCLUSIONS

The Rio Grande property hosts a low grade copper deposit with significant coexisting gold, silver and molybdenum mineralization. It is favourably located along the prominent northwest-trending Archibarca Lineament which also controls the location of the world-class giant Escondida porphyry copper deposit 150 km to the northwest in Chile. The Rio Grande project setting shares many similarities with that of porphyry copper-gold systems. However, the system also displays similarities in alteration and mineralization styles with IOCG systems like Candelaria in Chile.

Rio Grande resource modelling and estimate was performed using Datamine^{TM} software (Version 3.19.3638.0). The Rio Grande block model is composed of 40 m by 40 m by 40 m (i.e. easting, northing and elevation) waste rock cells, 10 m by 40 m by 40 m east and west ore cells, and 40 m by 10 m by 40 m north ore cells. The estimate first used OK to estimate orientations into individual ore cells, then used OK to determine grade for copper, molybdenum, gold and silver. Due to the presence of trench data, which is compatible with drill hole data, an Indicated resource classification was viable within an Inferred resource.

The resource tabulation is based on a copper equivalent tabulation by combining molybdenum, gold and silver with copper. No recoveries have been applied to the CuEQ% calculation.

At a 0.4 CuEQ% cut-off the Rio Grande deposit recorded an Indicated resource of approximately 55 million tonnes at 0.34% Cu, 15.9 ppm Mo, 0.34 g/t Au and 4.4 g/t Ag. At a 0.4 Cu% cut-off the Rio Grande deposit recorded an Inferred resource of approximately 101 million tonnes at 0.30% Cu, 16.4 ppm Mo, 0.31 g/t Au and 4.4 g/t Ag.

From Price, 2010:

> *The Rio Grande property is hosted in a thick pile of young porphyritic andesite and dacite volcanics that are cut by post mineral andesite dikes and several andesite to diorite plugs. The volcanic and intrusive system is thought o represent at least two dissected strato-volcanic centres. The mineralizing system consists of a large zone of hydrothermal alteration covering an area of 2.2 k (east-west) by 2.0 km (north-south) and may extend under cover. Alteration styles include a central core area of strong potassic alteration (K-feldspar and biotite) and calcic-iron (sodic) alteration (diopside-actinolite-magnetite) surrounded by sericite-argillic alteration that grades outwards into propylitic alteration. Copper and gold mineralization appears to be largely restricted to the potassic zone. Hypogene mineralization consists mainly of fine-grained disseminated chalcopyrite in association with disseminated magnetite. Gold grades appear to have a strong correlation with copper grades, with a general ratio of 1 g gold to 1% copper.*

Work to date has included geological, geophysical (IP and magnetic), soil geochemical, trenching and diamond drilling which has outlined a number of related bodies of copper-gold mineralization arranged in an annular pattern around a less-mineralized and relatively unexplored core.

The Discovery and Sophia zones represent mineralization continuing over a strike-length of 1.5 km, with width ranging from 50 m to a maximum of 200 m and depth of up to 500 m. Recent drilling has intersected high grade copper-gold mineralization at the north end of the Sofia Zone in which the values in RGA-07-34, which assayed 189 m of 0.7% Cu and 0.67 g/t Au, have now been extended by step out holes in three directions and to depth. One of the drill holes in the Discovery Zone in RGA-07-040, returned 102.8 m averaging 0.58% Cu and 0.75 g/t Au.

The Sofia Zone, traced as a significant area of near-surface copper-gold mineralization with the adjacent Discovery Zone; is now an annular zone measuring at least 1,450 m long and averaging 130 m wide (80 m wide at Sofia and 220 m wide at Discovery). The average grade of the combined Discovery and Sofia zones, using the 10 drill-holes and adjacent trenches, is 0.33% Cu and 0.35 g/t; including dilution. The North Zone has similarly being extended and defined by further drilling.

The drill-hole pattern in 2007 was too widely spaced to calculate a resource figure, but after the current (2008) round of drilling this may be accomplished. All of the zones are open to depth and along strike; and in the case of the Discovery Zone, to the west.

Geological and structural mapping have substantially improved the understanding of the Rio Grande property, and more importantly the setting of copper-gold mineralization. Integration of the geophysical and geochemical results with this new geological data has generated numerous new targets.

A total of 78 drill holes have been completed to date at Rio Grande. Grades of copper and gold have been encountered over significant widths in what appears to be one contiguous ring of mineralization measuring in excess of 2 km in diameter with true thickness estimates ranging from 70 to 120 m. There is potential for a large porphyry Cu-Au system similar to other important deposits in Argentina. Such potential cannot be quantified but may be substantiated by the drill program in progress, or future drill programs. The deposit demonstrates a very large mineralized and altered hydrothermal system and requires further extensive drilling to establish its economic potential.

18.0 RECOMMENDATIONS

Tetra Tech suggests the following recommendations for present and future work on the Rio Grande Property:

- Rigorous infill drilling to aim for 60 m-spaced fences for the Indicated resource, as highlighted by the kriging efficiency and the slope of regression.
- Refinement of wireframing strategies pertaining to the base of oxidation and the base of the mix zone, in light of current validation issues.
- A topographic survey ideally covering the area within 612000 mE to 617000 mE and 7229000 mN to 7232500 mN. In the future, this could provide mining engineers with plenty of space when optimizing pit shells.
- Build an on-going density measurement routine in order to better define values for the various types of mineralization.
- Perform down hole EM surveys when drilling is targeting sulphides, in order to potentially increase success rate of intersecting mineralization.
- Complete metallurgical test-work, and use the test-work results to calculate metal recoveries for a more accurate tabulation of the CuEQ% resource.
- Review of long-term metal price forecasts to be applied to any future CuEQ% calculation.
- Find and collate missing Teck Corporation assay certificates.
- Continue a more rigorous and comprehensive re-assay program on older Teck Corporation diamond drill core. This is to confirm differences in original and check assays and to assure that any bias in previous sampling programs are adequately explained and accounted for.
- Tetra Tech recommends that a new resource block model be undertaken once infill drilling to 60 m spacing has been completed. This should provide sufficient Indicated and Measured resources to warrant a preliminary economic assessment of the property.

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20.0 CERTIFICATE OF QUALIFIED PERSON

ROBERT SINCLAIR MORRISON, PH.D., MAUSIMM (CP), P.GEO.

I, Robert Sinclair Morrison, Ph.D., MAusIMM (CP), P.Geo., of Toronto, Ontario, Canada, do hereby certify:

- I am a Lead Resource Geologist with Tetra Tech WEI Inc., with a business address at 330 Bay Street, Suite 900, Toronto, Ontario, Canada, M5H 2S8.
- This certificate applies to the technical report entitled Rio Grande Cu-Au-Ag Project, Northwest Argentina, dated January 19, 2012 (the "Technical Report").
- I am a graduate of Acadia University, (B.Sc. 1981) and University of Adelaide (Ph.D. 1990). I am a Member in good standing of the Australasian Institute of Mining and Metallurgy (#11212), and I am registered as a Chartered Professional in Geology with the Australasian Institute of Mining and Metallurgy since 2004. I am a Member in good standing of the Association of Professional Geoscientists of Ontario (#1839) since 2010. My relevant experience with respect to base metal deposits includes three years as Senior Resource Geologist with BHP Billiton for their Olympic Dam Expansion Project in South Australia. My relevant experience with respect to deposit geology, ore body modelling and resource estimation includes 10 years with WMC Resources and Gold Fields Ltd as an Extensional Exploration Geologist, Senior Project Geologist, Resource Evaluation Geologist and Senior Resource Evaluation Geologist at the St Ives Gold Mine. I am a "Qualified Person" for purposes of National Instrument 43-101 (the "Instrument").
- I have not visited the property.
- I am responsible for Sections 1 to 20 of the Technical Report.
- I am independent of Regulus Resources Inc. as defined by Section 1.5 of the Instrument.
- I have no prior involvement with the Property that is the subject of the Technical Report.
- I have read the Instrument and the Technical Report has been prepared in compliance with the Instrument.
- As of the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

Signed and dated this 19th day of January, 2012 at Toronto, Ontario.

"Original document signed and sealed by
Robert Sinclair Morrison,
Ph.D., MAusIMM (CP), P.Geo."

Robert Sinclair Morrison
Ph.D., MAusIMM (CP), P.Geo.
Lead Resource Geologist
Tetra Tech WEI Inc.

CALLUM GRANT, P.ENG.

I, Callum Leith Brown Grant, P.Eng., of Vancouver, BC, do hereby certify that:

- I am a Senior Consultant, Mining with Tetra Tech WEI Inc. with a business address at 800-555 West Hastings Street, Vancouver, British Columbia, V6B 1M1.
- This certificate applies to the Technical Report entitled Rio Grande Cu-Au-Ag Project, Northwest Argentina dated January 19, 2012 (the "Technical Report").
- I am a graduate of the University of Aberdeen, Scotland, (B.Sc. Geology [Honours] 1971) and of the McGill University (M.Eng. [Mining] 1977). I am a member in good standing of the Association of Professional Engineers and Geoscientists of the Province of British Columbia (License # 137175) and of the Association of Professional Engineers of the Province of Ontario (License # 16937518). My relevant experience includes seven years of technical and operating experience at the nickel-copper properties of Falconbridge Limited in Sudbury, Ontario, and property assessments in Canada and China. I am a "Qualified Person" for purposes of National Instrument 43-101 (the "Instrument").
- My most recent personal inspection of the property was from July 20 to 22, 2011, inclusive.
- I am responsible for Section 11 of the Technical Report.
- I am independent of Regulus Resources Inc. as defined by Section 1.5 of the Instrument.
- I have no prior involvement with the Property that is the subject of the Technical Report.
- I have read the Instrument and the Technical Report has been prepared in compliance with the Instrument.
- As of the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Signed and dated this 19th day of January, 2012 at Vancouver, BC, Canada.

"Original document signed and sealed by Callum Leith Brown Grant, P.Eng."

Callum Leith Brown Grant, P.Eng.
Senior Consultant, Mining
Tetra Tech WEI Inc.

APPENDIX A

Rio Grande Datamine Macros

```
!START blocks

#####################################################
#
#	DATAMINE MACRO (1 of 2) FOR BLOCK MODELLING
#	OF
#	THE RIO GRANDE DEPOSIT
#	NORTHWESTERN ARGENTINA
#	FOR
#	REGULUS RESOURCES LTD
#
#	THIS MACRO WAS CONSTRUCTED BY
#	ROBERT S. MORRISON P.GEO.
#	ON BEHALF OF
#	WARDROP ENGINEERING INCORPORATED
#	A TETRA TECH COMPANY
#
#	Version 1:
#	JUNE 2011 - TORONTO, ONTARIO, CANADA
#	Version 2:
#	JULY 2011 - TORONTO, ONTARIO, CANADA
#	Version 3:
#	NOVEMBER 2011 - TORONTO, ONTARIO, CANADA
#
#######################################################

##################################################
#
#	Rio Grande Block Modelling for Low Grade Domain
#	RUN ME FIRST! Then run the high grade macro...

##################################################
#
#	Cell size is 40 (X) by 10 (Y) by 40 (Z) - north
#	Cell size is 10 (X) by 40 (Y) by 40 (Z) - east & west
#	Cell size is 40 (X) by 40 (Y) by 40 (Z) - waste
#
##################################################

!PROTOM   &OUT(proto_404040-m),@ROTMOD=0.0
	N
	Y
	612000
	7229000
	3000
	40
	40
	40
	125
	85
	50

!PROTOM   &OUT(proto_202020-m),@ROTMOD=0.0
```

```
          N
          Y
          612000
          7229000
          3000
          20
          20
          20
          250
          190
          100

!PROTOM   &OUT(proto_104040-m),@ROTMOD=0.0
          N
          Y
          612000
          7229000
          3000
          10
          40
          40
          500
          85
          50

!PROTOM   &OUT(proto_401040-m),@ROTMOD=0.0
          N
          Y
          612000
          7229000
          3000
          40
          10
          40
          125
          380
          50

#########################
#         WASTE BLOCK MODEL 40 BY 40 BY 40
#########################

!TRIFIL   &PROTO(proto_404040-m),&WIRETR(topotr),
        &WIREPT(topopt),&MODEL(xxair-m),@MODLTYPE=4.0,
        @MAXDIP=0.0,@SPLITS=0.0,@PLANE='XY  ',@XSUBCELL=4.0,
        @YSUBCELL=4.0,@ZSUBCELL=4.0,@RESOL=4.0

#################################################################
#
#         Assign air density

!EXTRA    &IN(xxair-m),&OUT(xx1-m),@APPROX=0.0
          rock=0
```

```
          density=0
          GO

!SORTX    &IN(xx1-m),&OUT(air-m),*KEY1(IJK),@BINS=5.0,@ORDER=1.0

!TRIFIL   &PROTO(proto_404040-m),&WIRETR(topotr),
        &WIREPT(topopt),&MODEL(xxrock-m),@MODLTYPE=3.0,
        @MAXDIP=0.0,@SPLITS=0.0,@PLANE='XY  ',@XSUBCELL=4.0,
        @YSUBCELL=4.0,@ZSUBCELL=4.0,@RESOL=4.0

##################################################################
#
#         Assign oxide density

!EXTRA    &IN(xxrock-m),&OUT(xx1-m),@APPROX=0.0
          rock=1
          density=2.41
          Cu_pct=0
          Mo_gt=0
          Au_gt=0
          Ag_gt=0
          GO

!SORTX    &IN(xx1-m),&OUT(oxide-m),*KEY1(IJK),@BINS=5.0,
        @ORDER=1.0

!TRIFIL   &PROTO(proto_404040-m),&WIRETR(oxi_tr),
        &WIREPT(oxi_pt),&MODEL(xxrock-m),@MODLTYPE=3.0,
        @MAXDIP=0.0,@SPLITS=0.0,@PLANE='XY  ',@XSUBCELL=4.0,
        @YSUBCELL=4.0,@ZSUBCELL=4.0,@RESOL=4.0

##################################################################
#
#         Assign transitional (mix) density

!EXTRA    &IN(xxrock-m),&OUT(xx1-m),@APPROX=0.0
          rock=2
          density=2.49
          Cu_pct=0
          Mo_gt=0
          Au_gt=0
          Ag_gt=0
          GO

!SORTX    &IN(xx1-m),&OUT(trans-m),*KEY1(IJK),@BINS=5.0,
        @ORDER=1.0

!TRIFIL   &PROTO(proto_404040-m),&WIRETR(sul_tr),
        &WIREPT(sul_pt),&MODEL(xxrock-m),@MODLTYPE=3.0,
        @MAXDIP=0.0,@SPLITS=0.0,@PLANE='XY  ',@XSUBCELL=4.0,
        @YSUBCELL=4.0,@ZSUBCELL=4.0,@RESOL=4.0

##################################################################
```

```
#
#         Assign fresh (sulphide) density

!EXTRA    &IN(xxrock-m),&OUT(xx1-m),@APPROX=0.0
          rock=3
          density=2.64
          Cu_pct=0
          Mo_gt=0
          Au_gt=0
          Ag_gt=0
          GO

!SORTX    &IN(xx1-m),&OUT(fresh-m),*KEY1(IJK),@BINS=5.0,
        @ORDER=1.0

!ADDMOD   &IN1(oxide-m),&IN2(trans-m),&OUT(xx2-m),
        @TOLERNCE=0.001

!ADDMOD   &IN1(xx2-m),&IN2(fresh-m),&OUT(xxbasic-m),
        @TOLERNCE=0.001

!PROMOD   &IN(xxbasic-m),&OUT(block-m),*KEY1(rock),*DENSITY(density),
        @DENSITY=1.0,@XINCMIN=5.0,@YINCMIN=5.0,@ZINCMIN=5.0,
        @OVERLAP=2.0,@OPTIMISE=2.0,@TOL=0.001,@ACCURACY=0.001

!LISTDR XX?,&OUT(XX)
!DELETE &IN(XX),@CONFIRM=0.0
#!END
#####################################################################

!START LGORE

#         MAKE LOW GRADE BLOCK MODEL
##################################

!TRIFIL   &PROTO(proto_202020-m),&WIRETR(low_grade_regtr),
        &WIREPT(low_grade_regpt),&MODEL(xx1-m),@MODLTYPE=1.0,
        @MAXDIP=0.0,@SPLITS=0.0,@PLANE='YZ  ',@XSUBCELL=4.0,
        @YSUBCELL=4.0,@ZSUBCELL=4.0,@RESOL=4.0

!SORTX    &IN(xx1-m),&OUT(low_grade_reg-m),*KEY1(IJK),@BINS=5.0,@ORDER=1.0

!SLIMOD   &PROTO(block-m),&IN(low_grade_reg-m),
        &OUT(xx1-m)

!SELWF    &IN(xx1-m),&WIRETR(topotr),&WIREPT(topopt),
        &OUT(xx6-m),*X(XC),*Y(YC),*Z(ZC),@SELECT=2.0,@PLANE='XY  ',
        @EXCLUDE=0.0,@TOLERANC=0.001

!SORTX    &IN(xx6-m),&OUT(xx7-m),*KEY1(IJK),@BINS=5.0,@ORDER=1.0

#################################################################
#
```

```
#        Assign oxide density

!EXTRA    &IN(xx7-m),&OUT(xx1-m),@APPROX=0.0
         rock=1
         density=2.41
         Cu_pct=absent()
         Mo_gt=absent()
         Au_gt=absent()
         Ag_gt=absent()
         GO

!SORTX    &IN(xx1-m),&OUT(xxoxide-m),*KEY1(IJK),@BINS=5.0,
       @ORDER=1.0

!SELWF    &IN(xxoxide-m),&WIRETR(oxi_tr),&WIREPT(oxi_pt),
       &OUT(xx6-m),*X(XC),*Y(YC),*Z(ZC),@SELECT=2.0,@PLANE='XY  ',
       @EXCLUDE=0.0,@TOLERANC=0.001

##################################################################
#
#        Assign transitional (mix) density

!EXTRA    &IN(xx6-m),&OUT(xx1-m),@APPROX=0.0
         rock=2
         density=2.49
         GO

!SORTX    &IN(xx1-m),&OUT(xxtrans-m),*KEY1(IJK),@BINS=5.0,
       @ORDER=1.0

!SELWF    &IN(xxtrans-m),&WIRETR(sul_tr),&WIREPT(sul_pt),
       &OUT(xx6-m),*X(XC),*Y(YC),*Z(ZC),@SELECT=2.0,@PLANE='XY  ',
       @EXCLUDE=0.0,@TOLERANC=0.001

##################################################################
#
#        Assign fresh (sulphide) density

!EXTRA    &IN(xx6-m),&OUT(xx1-m),@APPROX=0.0
         rock=3
         density=2.64
         GO

!SORTX    &IN(xx1-m),&OUT(xxfresh-m),*KEY1(IJK),@BINS=5.0,
       @ORDER=1.0

!ADDMOD   &IN1(xxoxide-m),&IN2(xxtrans-m),&OUT(xx2-m),
       @TOLERNCE=0.001

!ADDMOD   &IN1(xx2-m),&IN2(xxfresh-m),&OUT(xxbasic-m),
       @TOLERNCE=0.001

!SORTX    &IN(xxbasic-m),&OUT(lg_reg-m),*KEY1(IJK),@BINS=5.0,
```

```
        @ORDER=1.0

##############################################################
#       DATAMINE DYNAMIC ANISOTROPY
#############################################################

!START ANISO

!SELPER   &IN(lg_reg-m),&PERIMIN(east_per-s),&OUT(xxeast-m),*X(XC),
        *Y(YC),*Z(ZC),@OUTSIDE=0.0,@CLIP=0.0,@DPLUS=3000.0,
        @DMINUS=3000.0

!SELPER   &IN(lg_reg-m),&PERIMIN(east_per-s),&OUT(xxwest-m),*X(XC),
        *Y(YC),*Z(ZC),@OUTSIDE=1.0,@CLIP=0.0,@DPLUS=3000.0,
        @DMINUS=3000.0

!SELPER   &IN(lg_reg-m),&PERIMIN(north_peri-s),&OUT(xxnorth-m),*X(XC),
        *Y(YC),*Z(ZC),@OUTSIDE=0.0,@CLIP=0.0,@DPLUS=3000.0,
        @DMINUS=3000.0

!ANISOANG &PLANSTR(dyn_east_plan-s),&SECTSTR(dyn_east_sect-s),
        &POINTS(east-p),@TRIPTS=0.0,@PLANMODE=1.0,@SECTMODE=1.0,
        @MINDIP=-90.0,@MAXDIP=90.0,@ADDSYMB=1.0,@PLANSYMB=216.0,
        @SECTSYMB=216.0,@WFSYMB=224.0,@PLANCOL=1.0,@SECTCOL=2.0,
        @WFCOL=3.0,@SYMSIZE=2.0

!ANISOANG &PLANSTR(dyn_west_plan-s),&SECTSTR(dyn_west_sect-s),
        &POINTS(west-p),@TRIPTS=0.0,@PLANMODE=1.0,@SECTMODE=1.0,
        @MINDIP=-90.0,@MAXDIP=90.0,@ADDSYMB=1.0,@PLANSYMB=216.0,
        @SECTSYMB=216.0,@WFSYMB=224.0,@PLANCOL=1.0,@SECTCOL=2.0,
        @WFCOL=3.0,@SYMSIZE=2.0

!ANISOANG &PLANSTR(north_plan-s),&SECTSTR(north_sect-s),
        &POINTS(north-p),@TRIPTS=0.0,@PLANMODE=1.0,@SECTMODE=1.0,
        @MINDIP=-90.0,@MAXDIP=90.0,@ADDSYMB=1.0,@PLANSYMB=216.0,
        @SECTSYMB=216.0,@WFSYMB=224.0,@PLANCOL=1.0,@SECTCOL=2.0,
        @WFCOL=3.0,@SYMSIZE=2.0

#############################################################
#
#       Dynamic Anisotropy estimation of cell orientations
###########################################################

!ESTIMA   &PROTO(xxeast-m),&IN(east-p),&SRCPARM(dyn_ani_spar),
        &ESTPARM(dip_epar),&MODEL(east1-m),*X(XPT),*Y(YPT),
        *Z(ZPT),@DISCMETH=1.0,@XPOINTS=3.0,@YPOINTS=3.0,
        @ZPOINTS=3.0,@XDSPACE=1.0,@YDSPACE=1.0,@ZDSPACE=1.0,
        @PARENT=1.0,@MINDISC=1.0,@COPYVAL=0.0,@FVALTYPE=1.0,
        @FSTEP=1.0,@XMIN=612000.0,@XMAX=617000.0,@YMIN=7229000.0,
        @YMAX=7232800.0,@ZMIN=3000.0,@ZMAX=5000.0,@XSUBCELL=1.0,
        @YSUBCELL=1.0,@ZSUBCELL=1.0,@LINKMODE=3.0,@UCSAMODE=2.0,
        @UCSBMODE=3.0,@UCSCMODE=2.0,@PLANE=1.0,@TOLRNC=0.0,
```

```
        @GRMETHOD=3.0,@PGFIELDS=0.0,@ORDER=3.0

!ESTIMA   &PROTO(xxwest-m),&IN(west-p),&SRCPARM(dyn_ani_spar),
        &ESTPARM(dip_epar),&MODEL(west1-m),*X(XPT),*Y(YPT),
        *Z(ZPT),@DISCMETH=1.0,@XPOINTS=3.0,@YPOINTS=3.0,
        @ZPOINTS=3.0,@XDSPACE=1.0,@YDSPACE=1.0,@ZDSPACE=1.0,
        @PARENT=1.0,@MINDISC=1.0,@COPYVAL=0.0,@FVALTYPE=1.0,
        @FSTEP=1.0,@XMIN=612000.0,@XMAX=617000.0,@YMIN=7229000.0,
        @YMAX=7232800.0,@ZMIN=3000.0,@ZMAX=5000.0,@XSUBCELL=1.0,
        @YSUBCELL=1.0,@ZSUBCELL=1.0,@LINKMODE=3.0,@UCSAMODE=2.0,
        @UCSBMODE=3.0,@UCSCMODE=2.0,@PLANE=1.0,@TOLRNC=0.0,
        @GRMETHOD=3.0,@PGFIELDS=0.0,@ORDER=3.0

!ESTIMA   &PROTO(xxnorth-m),&IN(north-p),&SRCPARM(dyn_ani_spar),
        &ESTPARM(dip_epar),&MODEL(north1-m),*X(XPT),*Y(YPT),
        *Z(ZPT),@DISCMETH=1.0,@XPOINTS=3.0,@YPOINTS=3.0,
        @ZPOINTS=3.0,@XDSPACE=1.0,@YDSPACE=1.0,@ZDSPACE=1.0,
        @PARENT=1.0,@MINDISC=1.0,@COPYVAL=0.0,@FVALTYPE=1.0,
        @FSTEP=1.0,@XMIN=612000.0,@XMAX=617000.0,@YMIN=7229000.0,
        @YMAX=7232800.0,@ZMIN=3000.0,@ZMAX=5000.0,@XSUBCELL=1.0,
        @YSUBCELL=1.0,@ZSUBCELL=1.0,@LINKMODE=3.0,@UCSAMODE=2.0,
        @UCSBMODE=3.0,@UCSCMODE=2.0,@PLANE=1.0,@TOLRNC=0.0,
        @GRMETHOD=3.0,@PGFIELDS=0.0,@ORDER=3.0

!APTOTRUE &IN(east1-m),&OUT(east2-m),*APDIP(APDIP),*TRDIPDIR(TRDIPDIR),
        *TRDIP(TRDIP),@APDIPDIR=0.0

!APTOTRUE &IN(west1-m),&OUT(west2-m),*APDIP(APDIP),*TRDIPDIR(TRDIPDIR),
        *TRDIP(TRDIP),@APDIPDIR=0.0

!APTOTRUE &IN(north1-m),&OUT(north2-m),*APDIP(APDIP),*TRDIPDIR(TRDIPDIR),
        *TRDIP(TRDIP),@APDIPDIR=0.0

!ADDMOD   &IN1(west2-m),&IN2(east2-m),&OUT(xxwe-m),
        @TOLERNCE=0.001

!ADDMOD   &IN1(xxwe-m),&IN2(north2-m),&OUT(xxtotal-m),
        @TOLERNCE=0.001

!SORTX    &IN(xxtotal-m),&OUT(lg_dip-m),*KEY1(IJK),@BINS=5.0,
        @ORDER=1.0

!LISTDR XX?,&OUT(XX)
!DELETE &IN(XX),@CONFIRM=0.0
#!END

######################################################################
#
#        Select the right drill holes for the estimation
######################################################################

!START DRILL
######################################################################
```

```
!START LOWGRADE

!SELWF    &IN(cu_eq_tc-c),&WIRETR(hg_northtr),&WIREPT(hg_northpt),
        &OUT(xx1_tc-c),*X(X),*Y(Y),*Z(Z),@SELECT=4.0,@EXCLUDE=0.0,
        @TOLERANC=0.001
!SELWF    &IN(xx1_tc-c),&WIRETR(hg_westtr),&WIREPT(hg_westpt),
        &OUT(xx2_tc-c),*X(X),*Y(Y),*Z(Z),@SELECT=4.0,@EXCLUDE=0.0,
        @TOLERANC=0.001
!SELWF    &IN(xx2_tc-c),&WIRETR(hg_easttr),&WIREPT(hg_eastpt),
        &OUT(xx3_tc-c),*X(X),*Y(Y),*Z(Z),@SELECT=4.0,@EXCLUDE=0.0,
        @TOLERANC=0.001

!SELWF    &IN(xx3_tc-c),&WIRETR(low_grade_regtr),&WIREPT(low_grade_regpt),
        &OUT(xx7_tc-c),*X(X),*Y(Y),*Z(Z),@SELECT=3.0,@EXCLUDE=0.0,
        @TOLERANC=0.001
!SORTX    &IN(xx7_tc-c),&OUT(low_grade_tc-c),*KEY1(BHID),*KEY2(FROM),
        @BINS=5.0,@ORDER=1.0

######################################################################

#!END

!START ESTIMA

######################################################################
#
#         Estimation of Grade
############################

!ESTIMA   &PROTO(lg_dip-m),&IN(low_grade_tc-c),&SRCPARM(rio_spar),
        &ESTPARM(rio_epar),&MODEL(xx5-m),&VMODPARM(rio_vpar),
        *X(X),*Y(Y),*Z(Z),*KEY(BHID),@DISCMETH=1.0,@XPOINTS=3.0,
        @YPOINTS=3.0,@ZPOINTS=3.0,@XDSPACE=1.0,@YDSPACE=1.0,
        @ZDSPACE=1.0,@PARENT=1.0,@MINDISC=1.0,@COPYVAL=0.0,
        @FVALTYPE=1.0,@FSTEP=1.0,@XMIN=612000.0,@XMAX=617000.0,
        @YMIN=7229000.0,@YMAX=7232800.0,@ZMIN=3000.0,@ZMAX=5000.0,
        @XSUBCELL=1.0,@YSUBCELL=1.0,@ZSUBCELL=1.0,@LINKMODE=3.0,
        @UCSAMODE=2.0,@UCSBMODE=3.0,@UCSCMODE=2.0,@PLANE=1.0,
        @DYANKR=1.0,@TOLRNC=0.0,@GRMETHOD=3.0,@PGFIELDS=0.0,@ORDER=3.0

!EXTRA    &IN(xx5-m),&OUT(XX9-M)
                BV=1-F
                KE=(BV-KV)/BV*100
                ZZ=(BV-KV+abs(LG))/(BV-KV+2*abs(LG))
                GO

!SORTX    &IN(XX9-M),&OUT(reg_LG_2011-m),*KEY1(IJK),@BINS=5.0,@ORDER=1.0

##################################################
#
#         THIS MODEL IS ADDED ONTO THE HIGH GRADE MODEL
#         THE HIGH GRADE MODEL IS IN THE NEXT MACRO
```

```
#
####################################################

!LISTDR XX?,&OUT(XX)
!DELETE &IN(XX),@CONFIRM=0.0

!END

!START HGORE

#######################################################
#
#       DATAMINE MACRO (2 of 2) FOR BLOCK MODELLING
#       OF
#       THE RIO GRANDE DEPOSIT
#       NORTHWESTERN ARGENTINA
#       FOR
#       REGULUS RESOURCES LTD
#
#       THIS MACRO WAS CONSTRUCTED BY
#       ROBERT S. MORRISON P.GEO.
#       ON BEHALF OF
#       WARDROP ENGINEERING INCORPORATED
#       A TETRA TECH COMPANY
#
#       Version 1:
#       JUNE 2011 - TORONTO, ONTARIO, CANADA
#       Version 2:
#       JULY 2011 - TORONTO, ONTARIO, CANADA
#       Version 3:
#       NOVEMBER 2011 - TORONTO, ONTARIO, CANADA
#
#########################################################

####################################################
#
#       Rio Grande Block Modelling for High Grade Domain
#       RUN ME SECOND! AFTER the LOW grade macro...

####################################################
#
#       Cell size is 40 (X) by 10 (Y) by 40 (Z) - north
#       Cell size is 10 (X) by 40 (Y) by 40 (Z) - east & west
#
####################################################

!TRIFIL   &PROTO(proto_401040-m),&WIRETR(hg_northtr),
        &WIREPT(hg_northpt),&MODEL(xx1-m),@MODLTYPE=1.0,
        @MAXDIP=0.0,@SPLITS=0.0,@PLANE='YZ  ',@XSUBCELL=4.0,
        @YSUBCELL=2.0,@ZSUBCELL=4.0,@RESOL=4.0

!SORTX    &IN(xx1-m),&OUT(hg_north-m),*KEY1(IJK),@BINS=5.0,@ORDER=1.0
```

```
!TRIFIL   &PROTO(proto_104040-m),&WIRETR(hg_easttr),
        &WIREPT(hg_eastpt),&MODEL(xx1-m),@MODLTYPE=1.0,
        @MAXDIP=0.0,@SPLITS=0.0,@PLANE='YZ  ',@XSUBCELL=4.0,
        @YSUBCELL=2.0,@ZSUBCELL=4.0,@RESOL=4.0

!SORTX    &IN(xx1-m),&OUT(hg_east-m),*KEY1(IJK),@BINS=5.0,@ORDER=1.0

!TRIFIL   &PROTO(proto_104040-m),&WIRETR(hg_westtr),
        &WIREPT(hg_westpt),&MODEL(xx1-m),@MODLTYPE=1.0,
        @MAXDIP=0.0,@SPLITS=0.0,@PLANE='YZ  ',@XSUBCELL=4.0,
        @YSUBCELL=2.0,@ZSUBCELL=4.0,@RESOL=4.0

!SORTX    &IN(xx1-m),&OUT(hg_west-m),*KEY1(IJK),@BINS=5.0,@ORDER=1.0

!SLIMOD   &PROTO(block-m),&IN(hg_north-m),
        &OUT(xx1-m)

!SORTX    &IN(xx1-m),&OUT(xxnorth-m),*KEY1(IJK),@BINS=5.0,
        @ORDER=1.0

!SLIMOD   &PROTO(block-m),&IN(hg_east-m),
        &OUT(xx1-m)

!SORTX    &IN(xx1-m),&OUT(xxeast-m),*KEY1(IJK),@BINS=5.0,
        @ORDER=1.0

!SLIMOD   &PROTO(block-m),&IN(hg_west-m),
        &OUT(xx1-m)

!SORTX    &IN(xx1-m),&OUT(xxwest-m),*KEY1(IJK),@BINS=5.0,
        @ORDER=1.0



!ADDMOD   &IN1(xxeast-m),&IN2(xxwest-m),&OUT(xx1-m),@TOLERNCE=0.001
!ADDMOD   &IN1(xx1-m),&IN2(xxnorth-m),&OUT(xx2-m),@TOLERNCE=0.001

!SELWF    &IN(xx2-m),&WIRETR(topotr),&WIREPT(topopt),
        &OUT(xx3-m),*X(XC),*Y(YC),*Z(ZC),@SELECT=2.0,@PLANE='XY  ',
        @EXCLUDE=0.0,@TOLERANC=0.001

!SORTX    &IN(xx3-m),&OUT(xxhg-m),*KEY1(IJK),@BINS=5.0,@ORDER=1.0

##################################################################
#
#         Assign oxide density

!EXTRA    &IN(xxhg-m),&OUT(xx1-m),@APPROX=0.0
          rock=1
          density=2.41
          Cu_pct=absent()
          Mo_gt=absent()
          Au_gt=absent()
```

```
            Ag_gt=absent()
            GO

!SORTX    &IN(xx1-m),&OUT(xxoxide-m),*KEY1(IJK),@BINS=5.0,
          @ORDER=1.0

!SELWF    &IN(xxoxide-m),&WIRETR(oxi_tr),&WIREPT(oxi_pt),
          &OUT(xx6-m),*X(XC),*Y(YC),*Z(ZC),@SELECT=2.0,@PLANE='XY  ',
          @EXCLUDE=0.0,@TOLERANC=0.001

####################################################################
#
#           Assign transitional (mix) density

!EXTRA    &IN(xx6-m),&OUT(xx1-m),@APPROX=0.0
            rock=2
            density=2.49
            GO

!SORTX    &IN(xx1-m),&OUT(xxtrans-m),*KEY1(IJK),@BINS=5.0,
          @ORDER=1.0

!SELWF    &IN(xxtrans-m),&WIRETR(sul_tr),&WIREPT(sul_pt),
          &OUT(xx6-m),*X(XC),*Y(YC),*Z(ZC),@SELECT=2.0,@PLANE='XY  ',
          @EXCLUDE=0.0,@TOLERANC=0.001

####################################################################
#
#           Assign fresh (sulphide) density

!EXTRA    &IN(xx6-m),&OUT(xx1-m),@APPROX=0.0
            rock=3
            density=2.64
            GO

!SORTX    &IN(xx1-m),&OUT(xxfresh-m),*KEY1(IJK),@BINS=5.0,
          @ORDER=1.0

!ADDMOD   &IN1(xxoxide-m),&IN2(xxtrans-m),&OUT(xx2-m),
          @TOLERNCE=0.001

!ADDMOD   &IN1(xx2-m),&IN2(xxfresh-m),&OUT(xxbasic-m),
          @TOLERNCE=0.001

!SORTX    &IN(xxbasic-m),&OUT(hg_regulus-m),*KEY1(IJK),@BINS=5.0,
          @ORDER=1.0

!LISTDR XX?,&OUT(XX)
!DELETE &IN(XX),@CONFIRM=0.0
#!END

#################################################################
#
```

```
#         Application of Datamine Dynamic Anisotropy
#
################################################################

!START ANISO

!SELPER   &IN(hg_regulus-m),&PERIMIN(east_per-s),&OUT(xxeast-m),*X(XC),
        *Y(YC),*Z(ZC),@OUTSIDE=0.0,@CLIP=0.0,@DPLUS=3000.0,
        @DMINUS=3000.0

!SELPER   &IN(hg_regulus-m),&PERIMIN(east_per-s),&OUT(xxwest-m),*X(XC),
        *Y(YC),*Z(ZC),@OUTSIDE=1.0,@CLIP=0.0,@DPLUS=3000.0,
        @DMINUS=3000.0

!SELPER   &IN(hg_regulus-m),&PERIMIN(north_peri-s),&OUT(xxnorth-m),*X(XC),
        *Y(YC),*Z(ZC),@OUTSIDE=0.0,@CLIP=0.0,@DPLUS=3000.0,
        @DMINUS=3000.0

!ANISOANG &PLANSTR(dyn_east_plan-s),&SECTSTR(dyn_east_sect-s),
        &POINTS(east-p),@TRIPTS=0.0,@PLANMODE=1.0,@SECTMODE=1.0,
        @MINDIP=-90.0,@MAXDIP=90.0,@ADDSYMB=1.0,@PLANSYMB=216.0,
        @SECTSYMB=216.0,@WFSYMB=224.0,@PLANCOL=1.0,@SECTCOL=2.0,
        @WFCOL=3.0,@SYMSIZE=2.0

!ANISOANG &PLANSTR(dyn_west_plan-s),&SECTSTR(dyn_west_sect-s),
        &POINTS(west-p),@TRIPTS=0.0,@PLANMODE=1.0,@SECTMODE=1.0,
        @MINDIP=-90.0,@MAXDIP=90.0,@ADDSYMB=1.0,@PLANSYMB=216.0,
        @SECTSYMB=216.0,@WFSYMB=224.0,@PLANCOL=1.0,@SECTCOL=2.0,
        @WFCOL=3.0,@SYMSIZE=2.0

!ANISOANG &PLANSTR(north_plan-s),&SECTSTR(north_sect-s),
        &POINTS(north-p),@TRIPTS=0.0,@PLANMODE=1.0,@SECTMODE=1.0,
        @MINDIP=-90.0,@MAXDIP=90.0,@ADDSYMB=1.0,@PLANSYMB=216.0,
        @SECTSYMB=216.0,@WFSYMB=224.0,@PLANCOL=1.0,@SECTCOL=2.0,
        @WFCOL=3.0,@SYMSIZE=2.0

##################################################################
#
#         Dynamic Anisotropy estimation of cell orientations
###############################################################


!ESTIMA   &PROTO(xxeast-m),&IN(east-p),&SRCPARM(dyn_ani_spar),
        &ESTPARM(dip_epar),&MODEL(east1-m),*X(XPT),*Y(YPT),
        *Z(ZPT),@DISCMETH=1.0,@XPOINTS=3.0,@YPOINTS=3.0,
        @ZPOINTS=3.0,@XDSPACE=1.0,@YDSPACE=1.0,@ZDSPACE=1.0,
        @PARENT=1.0,@MINDISC=1.0,@COPYVAL=0.0,@FVALTYPE=1.0,
        @FSTEP=1.0,@XMIN=612000.0,@XMAX=617000.0,@YMIN=7229000.0,
        @YMAX=7232800.0,@ZMIN=3000.0,@ZMAX=5000.0,@XSUBCELL=1.0,
        @YSUBCELL=1.0,@ZSUBCELL=1.0,@LINKMODE=3.0,@UCSAMODE=2.0,
        @UCSBMODE=3.0,@UCSCMODE=2.0,@PLANE=1.0,@TOLRNC=0.0,
        @GRMETHOD=3.0,@PGFIELDS=0.0,@ORDER=3.0
```

```
!ESTIMA   &PROTO(xxwest-m),&IN(west-p),&SRCPARM(dyn_ani_spar),
        &ESTPARM(dip_epar),&MODEL(west1-m),*X(XPT),*Y(YPT),
        *Z(ZPT),@DISCMETH=1.0,@XPOINTS=3.0,@YPOINTS=3.0,
        @ZPOINTS=3.0,@XDSPACE=1.0,@YDSPACE=1.0,@ZDSPACE=1.0,
        @PARENT=1.0,@MINDISC=1.0,@COPYVAL=0.0,@FVALTYPE=1.0,
        @FSTEP=1.0,@XMIN=612000.0,@XMAX=617000.0,@YMIN=7229000.0,
        @YMAX=7232800.0,@ZMIN=3000.0,@ZMAX=5000.0,@XSUBCELL=1.0,
        @YSUBCELL=1.0,@ZSUBCELL=1.0,@LINKMODE=3.0,@UCSAMODE=2.0,
        @UCSBMODE=3.0,@UCSCMODE=2.0,@PLANE=1.0,@TOLRNC=0.0,
        @GRMETHOD=3.0,@PGFIELDS=0.0,@ORDER=3.0

!ESTIMA   &PROTO(xxnorth-m),&IN(north-p),&SRCPARM(dyn_ani_spar),
        &ESTPARM(dip_epar),&MODEL(north1-m),*X(XPT),*Y(YPT),
        *Z(ZPT),@DISCMETH=1.0,@XPOINTS=3.0,@YPOINTS=3.0,
        @ZPOINTS=3.0,@XDSPACE=1.0,@YDSPACE=1.0,@ZDSPACE=1.0,
        @PARENT=1.0,@MINDISC=1.0,@COPYVAL=0.0,@FVALTYPE=1.0,
        @FSTEP=1.0,@XMIN=612000.0,@XMAX=617000.0,@YMIN=7229000.0,
        @YMAX=7232800.0,@ZMIN=3000.0,@ZMAX=5000.0,@XSUBCELL=1.0,
        @YSUBCELL=1.0,@ZSUBCELL=1.0,@LINKMODE=3.0,@UCSAMODE=2.0,
        @UCSBMODE=3.0,@UCSCMODE=2.0,@PLANE=1.0,@TOLRNC=0.0,
        @GRMETHOD=3.0,@PGFIELDS=0.0,@ORDER=3.0

!APTOTRUE &IN(east1-m),&OUT(east2-m),*APDIP(APDIP),*TRDIPDIR(TRDIPDIR),
        *TRDIP(TRDIP),@APDIPDIR=0.0

!APTOTRUE &IN(west1-m),&OUT(west2-m),*APDIP(APDIP),*TRDIPDIR(TRDIPDIR),
        *TRDIP(TRDIP),@APDIPDIR=0.0

!APTOTRUE &IN(north1-m),&OUT(north2-m),*APDIP(APDIP),*TRDIPDIR(TRDIPDIR),
        *TRDIP(TRDIP),@APDIPDIR=0.0

!ADDMOD   &IN1(west2-m),&IN2(east2-m),&OUT(xxwe-m),
        @TOLERNCE=0.001

!ADDMOD   &IN1(xxwe-m),&IN2(north2-m),&OUT(xxtotal-m),
        @TOLERNCE=0.001

!SORTX    &IN(xxtotal-m),&OUT(hg_reg_dip-m),*KEY1(IJK),@BINS=5.0,
        @ORDER=1.0

!LISTDR XX?,&OUT(XX)
!DELETE &IN(XX),@CONFIRM=0.0
#!END


!START DRILL
######################################################################
#
#        Select the right drill holes for the estimation
######################################################################

!START HIGRADE
```

```
!SELWF    &IN(cu_eq_tc-c),&WIRETR(low_grade_regtr),&WIREPT(low_grade_regpt),
        &OUT(xx7_tc-c),*X(X),*Y(Y),*Z(Z),@SELECT=3.0,@EXCLUDE=0.0,
        @TOLERANC=0.001
!SORTX    &IN(xx7_tc-c),&OUT(HG_grade_tc-c),*KEY1(BHID),*KEY2(FROM),
        @BINS=5.0,@ORDER=1.0

####################################################################
#
#         Estimation of Grade
###########################

!START ESTIMA

!ESTIMA   &PROTO(hg_reg_dip-m),&IN(HG_grade_tc-c),&SRCPARM(rio_spar),
        &ESTPARM(rio_epar),&MODEL(xx5-m),&VMODPARM(rio_vpar),
        *X(X),*Y(Y),*Z(Z),*KEY(BHID),@DISCMETH=1.0,@XPOINTS=3.0,
        @YPOINTS=3.0,@ZPOINTS=3.0,@XDSPACE=1.0,@YDSPACE=1.0,
        @ZDSPACE=1.0,@PARENT=1.0,@MINDISC=1.0,@COPYVAL=0.0,
        @FVALTYPE=1.0,@FSTEP=1.0,@XMIN=612000.0,@XMAX=617000.0,
        @YMIN=7229000.0,@YMAX=7232800.0,@ZMIN=3000.0,@ZMAX=5000.0,
        @XSUBCELL=1.0,@YSUBCELL=1.0,@ZSUBCELL=1.0,@LINKMODE=3.0,
        @UCSAMODE=2.0,@UCSBMODE=3.0,@UCSCMODE=2.0,@PLANE=1.0,
        @DYANKR=1.0,@TOLRNC=0.0,@GRMETHOD=3.0,@PGFIELDS=0.0,@ORDER=3.0

!EXTRA    &IN(xx5-m),&OUT(XX9-M)
                BV=1-F
                KE=(BV-KV)/BV*100
                ZZ=(BV-KV+abs(LG))/(BV-KV+2*abs(LG))
                GO

!SORTX    &IN(XX9-M),&OUT(reg_hg_2011-m),*KEY1(IJK),@BINS=5.0,@ORDER=1.0

!LISTDR XX?,&OUT(XX)
!DELETE &IN(XX),@CONFIRM=0.0
#!END

################################################
#         last thing to do... Resource Classification
#
###################################################

!START rescat

!ADDMOD   &IN1(reg_LG_2011-m),&IN2(reg_hg_2011-m),
        &OUT(xx1-m),@TOLERNCE=0.001

!SORTX    &IN(xx1-m),&OUT(xx2-m),*KEY1(IJK),@BINS=5.0,@ORDER=1.0

!EXTRA    &IN(xx2-m),&OUT(xx5-m),@APPROX=0.0
          rescat=3
          GO

!SELWF    &IN(xx5-m),&WIRETR(indicated_novtr),&WIREPT(indicated_novpt),
```

```
        &OUT(xx3-m),*X(XC),*Y(YC),*Z(ZC),@SELECT=3.0,@EXCLUDE=0.0,
        @TOLERANC=0.001

!EXTRA    &IN(xx3-m),&OUT(xx4-m),@APPROX=0.0
          rescat=2
          GO

!ADDMOD   &IN1(xx5-m),&IN2(xx4-m),&OUT(xx8-m),@TOLERNCE=0.001

!SORTX    &IN(xx8-m),&OUT(reg_ore1_2011-m),*KEY1(IJK),*KEY2(recat),
        @BINS=5.0,@ORDER=1.0

!EXTRA    &IN(reg_ore1_2011-m),&OUT(xx1-m),@APPROX=0.0
          if(Ag_gt==absent())
          Ag_gt=0
          end
          if(Ag_id==absent())
          Ag_id=0
          end
          if(Ag_nn==absent())
          Ag_nn=0
          end
          if(Au_gt==absent())
          Au_gt=0
          end
          if(Au_id==absent())
          Au_id=0
          end
          if(Au_nn==absent())
          Au_nn=0
          end
          if(Cu_pct==absent())
          Cu_pct=0
          end
          if(Cu_id==absent())
          Cu_id=0
          end
          if(Cu_nn==absent())
          Cu_nn=0
          end
          if(Mo_gt==absent())
          Mo_gt=0
          end
          if(Mo_id==absent())
          Mo_id=0
          end
          if(Mo_nn==absent())
          Mo_nn=0
          end
          GO

!SORTX    &IN(xx1-m),&OUT(xx6-m),*KEY1(IJK),@BINS=5.0,
        @ORDER=1.0
```

```
!EXTRA    &IN(xx6-m),&OUT(xx7-m),@APPROX=0.0
          xx1=(Cu_pct*3.00*22.04622)
          xx2=(Au_gt*1100.00/31.1035)
          xx3=(Ag_gt*20.00/31.1035)
          GO
!EXTRA    &IN(xx7-m),&OUT(xx9-m),@APPROX=0.0
          cu1=xx1+xx2+xx3
          CuEQ=cu1/3/22.04622
          erase(xx1)
          erase(xx2)
          erase(xx3)
          erase(cu1)
          erase(SV_CU)
          erase(SV_MO)
          erase(SV_AU)
          erase(SV_AG)
          GO

!SORTX    &IN(xx9-m),&OUT(reg_181206_4-m),*KEY1(IJK),
        @BINS=5.0,@ORDER=1.0

!LISTDR XX?,&OUT(XX)
!DELETE &IN(XX),@CONFIRM=0.0
!END
```

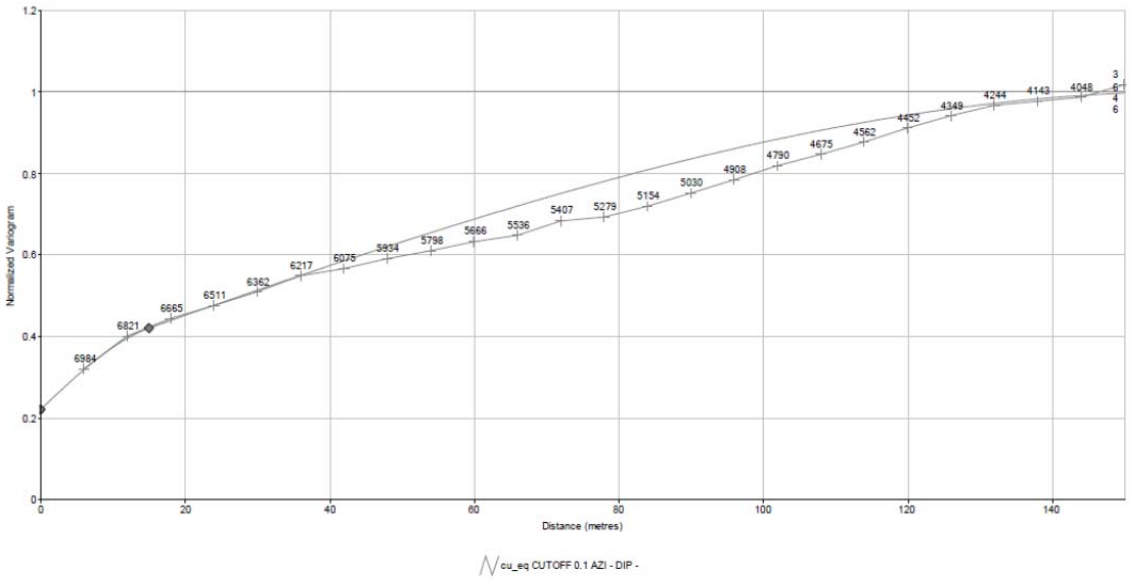
APPENDIX B

Rio Grande Variography from Datamine

Indicator Downhole Variogram – @ 0.1% CuEQ

Variogram Cu Eq Downhole

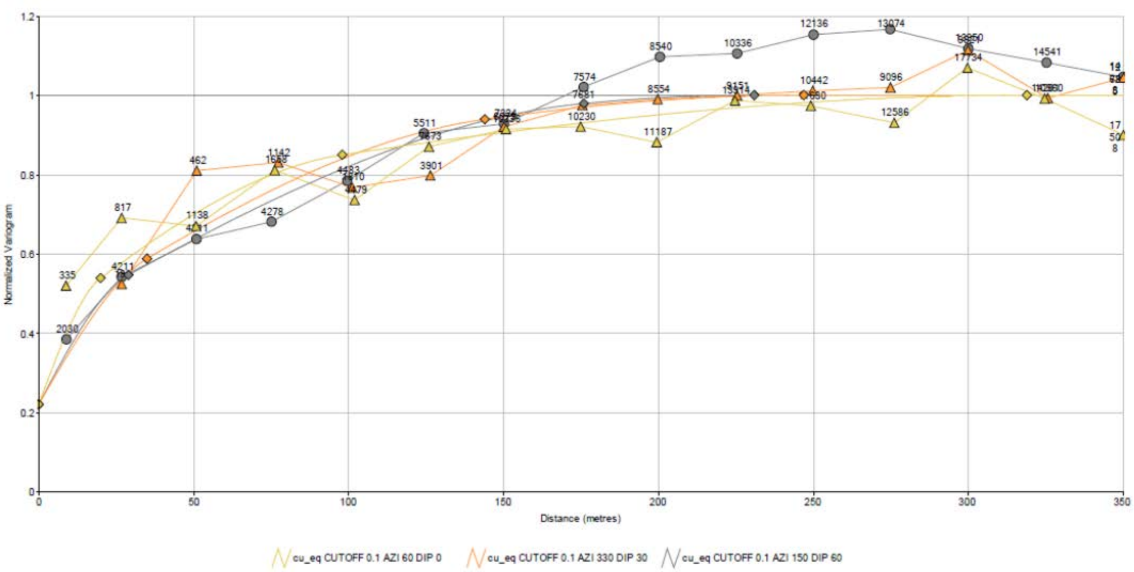
Type	Variance	Range
Nugget	0.22	-
Spherical	0.105	15
Spherical	0.675	160



Indicator Variogram – @ 0.1% CuEQ

Variogram Cu Eq Indicator 0.1%

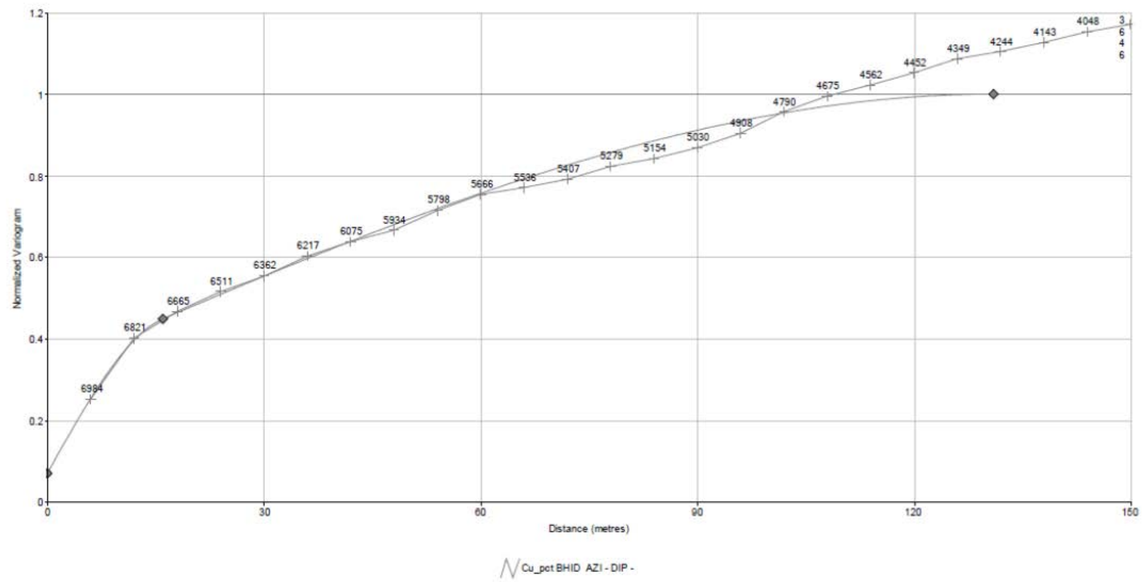
Type	Variance	60/0	330/30	150/60
Nugget	0.22	-	-	-
Spherical	0.2	20	35	29
Spherical	0.308	98	144	176
Spherical	0.272	319	247	231



Downhole Variogram – Cu%

Variogram Cu Downhole

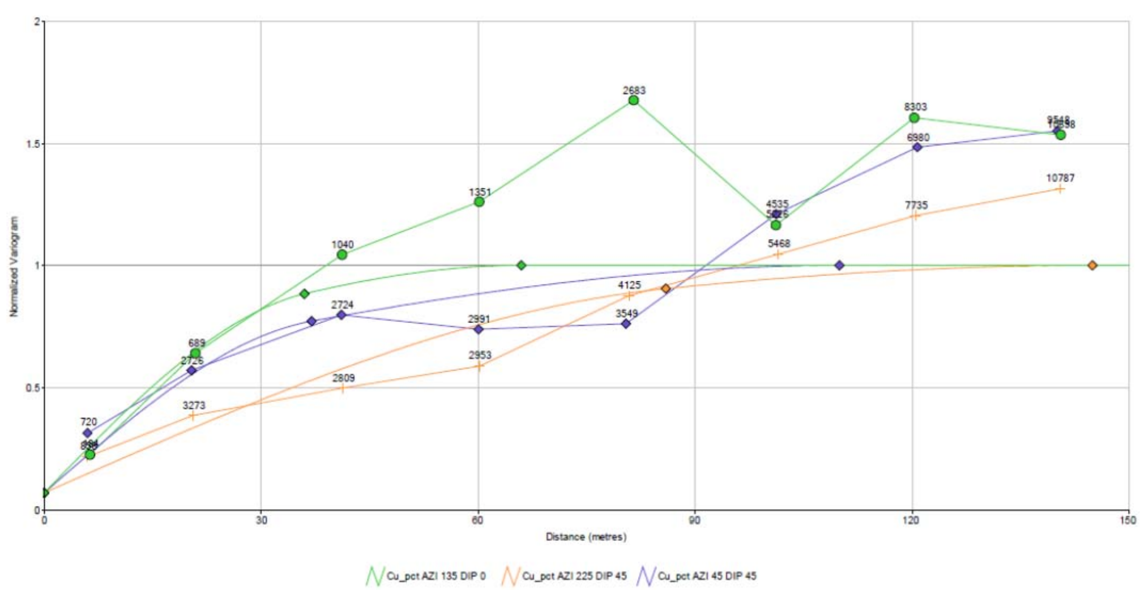
Type	Variance	Range
Nugget	0.07	-
Spherical	0.256	16
Spherical	0.674	131



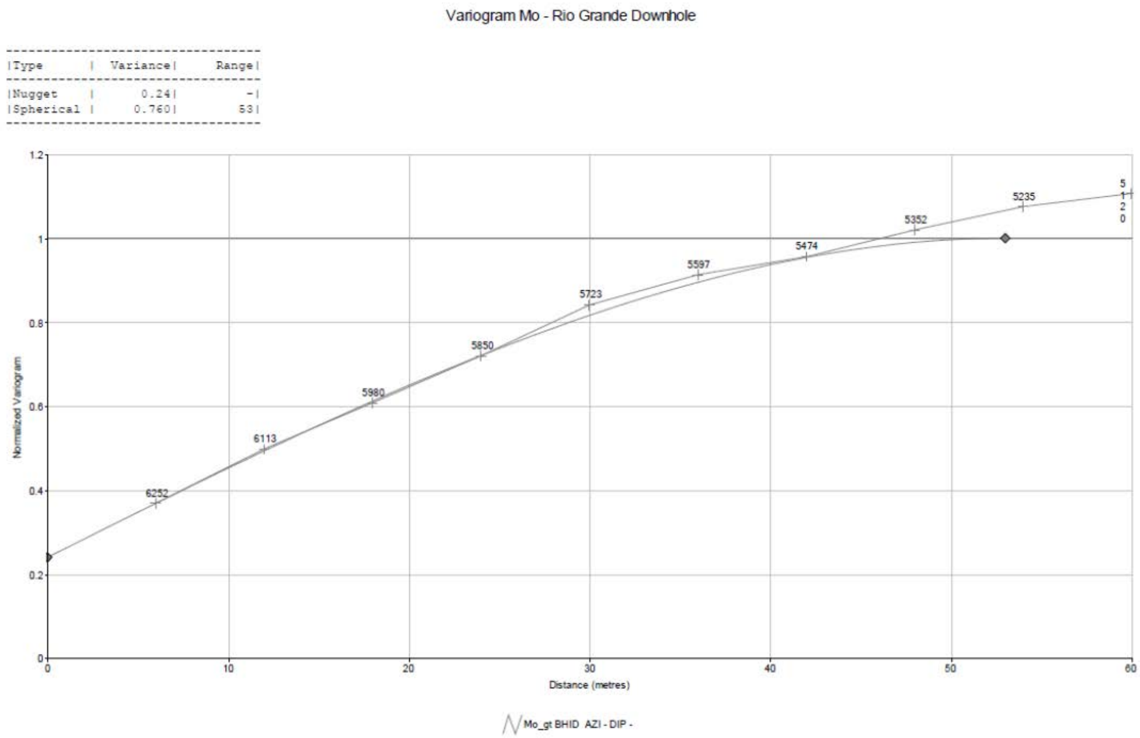
Variogram – Cu%

Variogram Cu

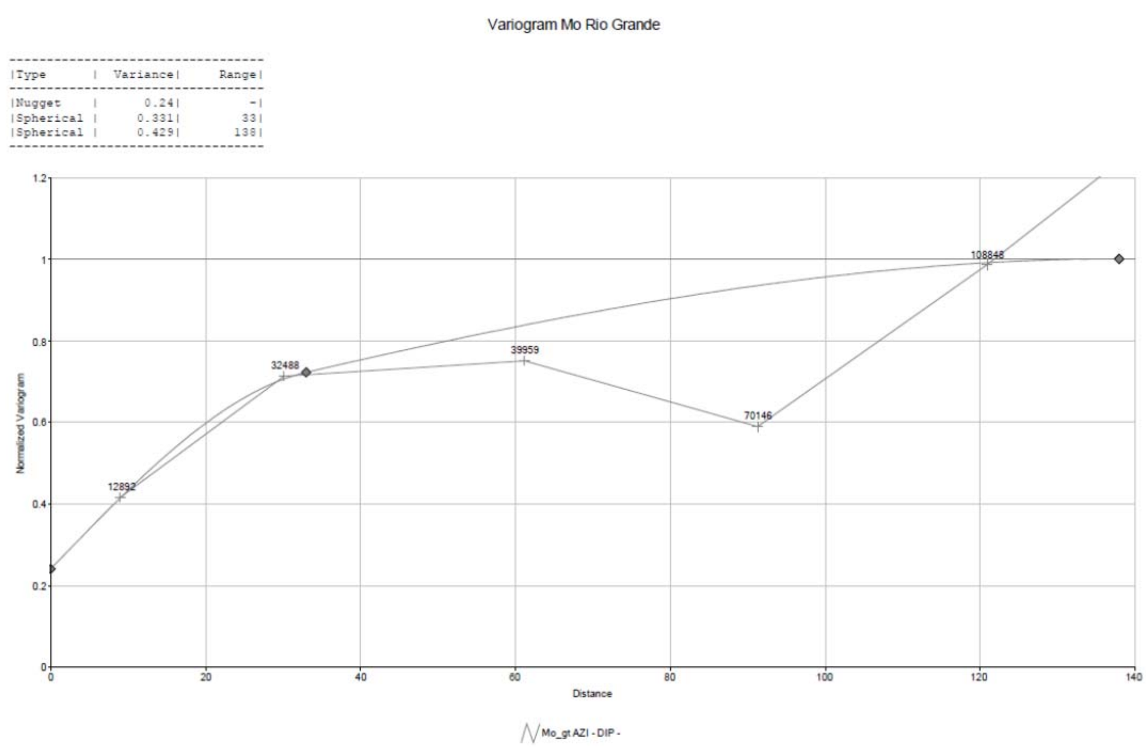
Type	Variance	135/0	225/45	45/45
Nugget	0.07	-	-	-
Spherical	0.487	36	86	37
Spherical	0.443	66	145	110



Downhole Variogram – Mo ppm



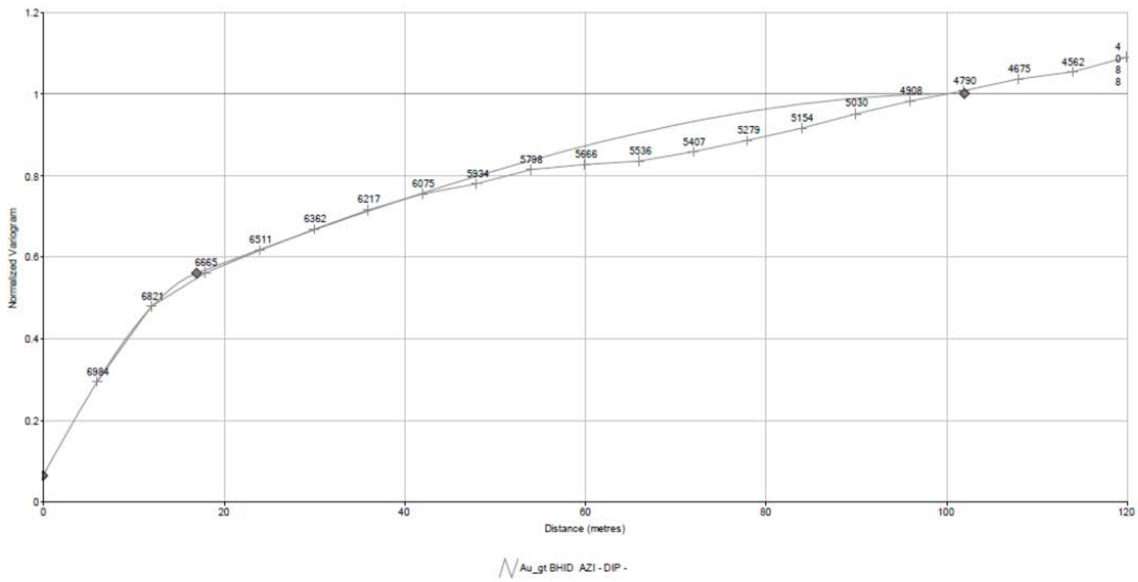
Variogram – Mo ppm



Downhole Variogram – Au g/t

Variogram Au Rio Grande Downhole

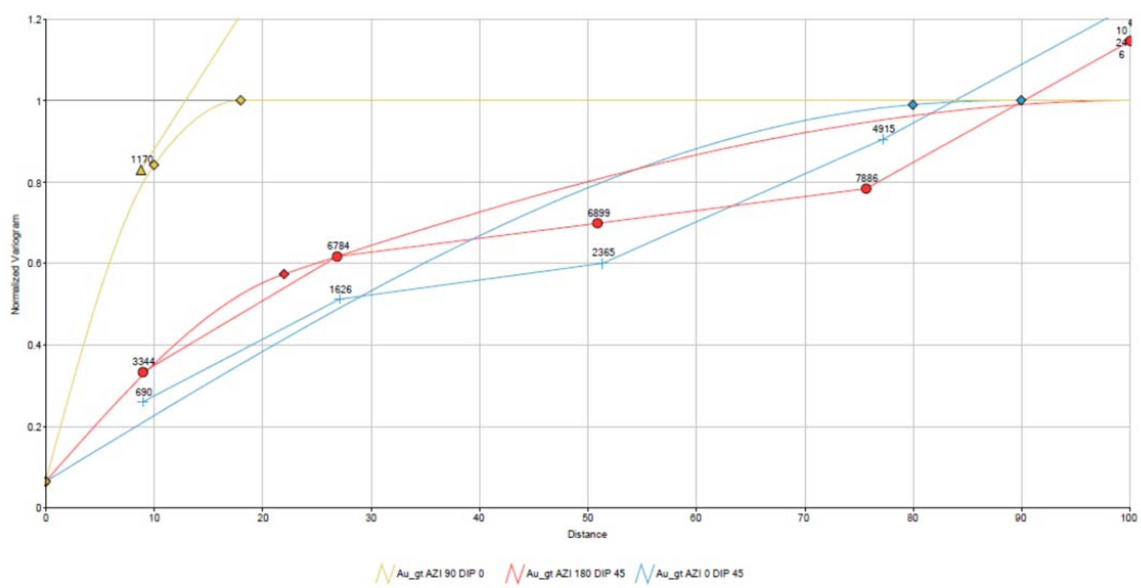
Type	Variance	Range
Nugget	0.064	-
Spherical	0.351	17
Spherical	0.585	102



Variogram – Au g/t

Variogram

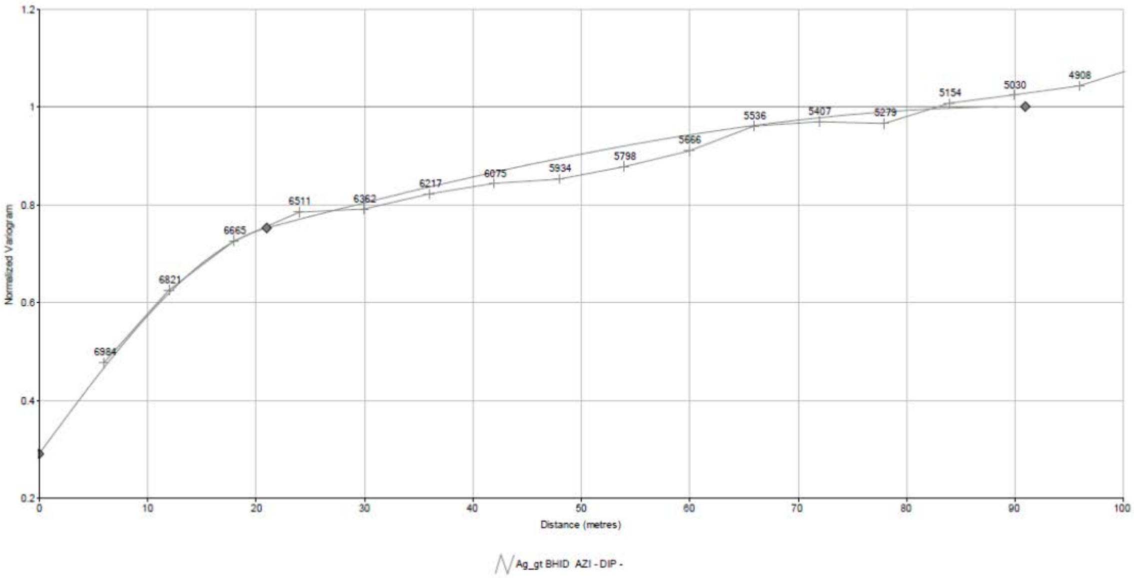
Type	Variance	90/0	180/45	0/45
Nugget	0.064	-	-	-
Spherical	0.307	10	22	80
Spherical	0.629	18	101	90



Downhole Variogram – Ag g/t

Variogram Ag Rio Grande Downhole

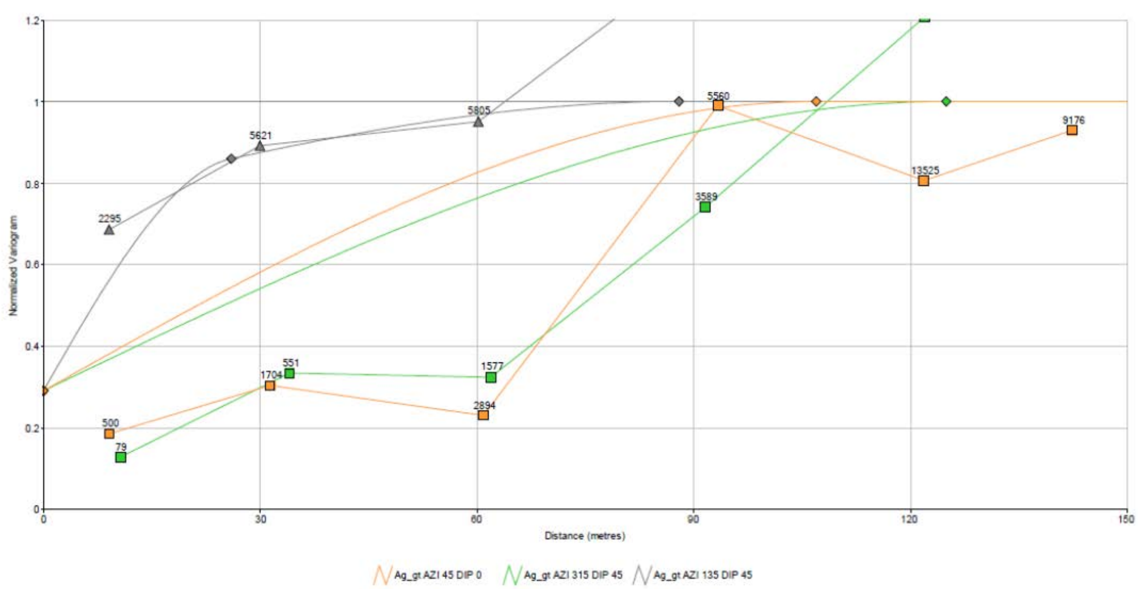
Type	Variance	Range
Nugget	0.29	-
Spherical	0.334	21
Spherical	0.376	91



Variogram – Ag g/t

Variogram Ag Rio Grande

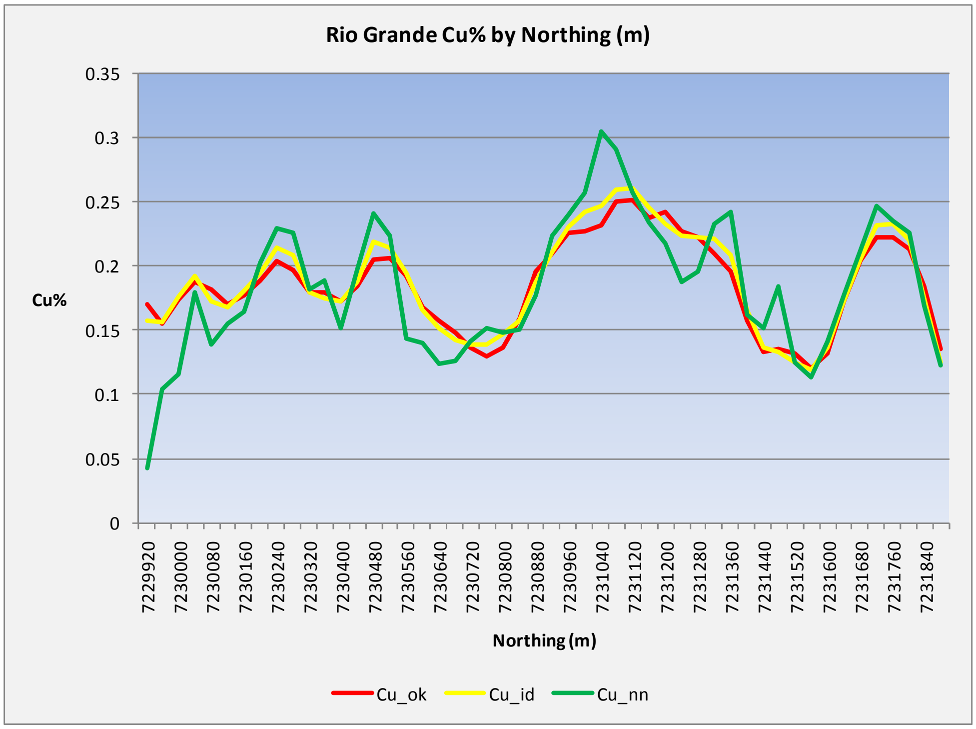
Type	Variance	45/0	315/45	135/45
Nugget	0.29	-	-	-
Spherical	0.463	107	125	26
Spherical	0.247	107	125	88



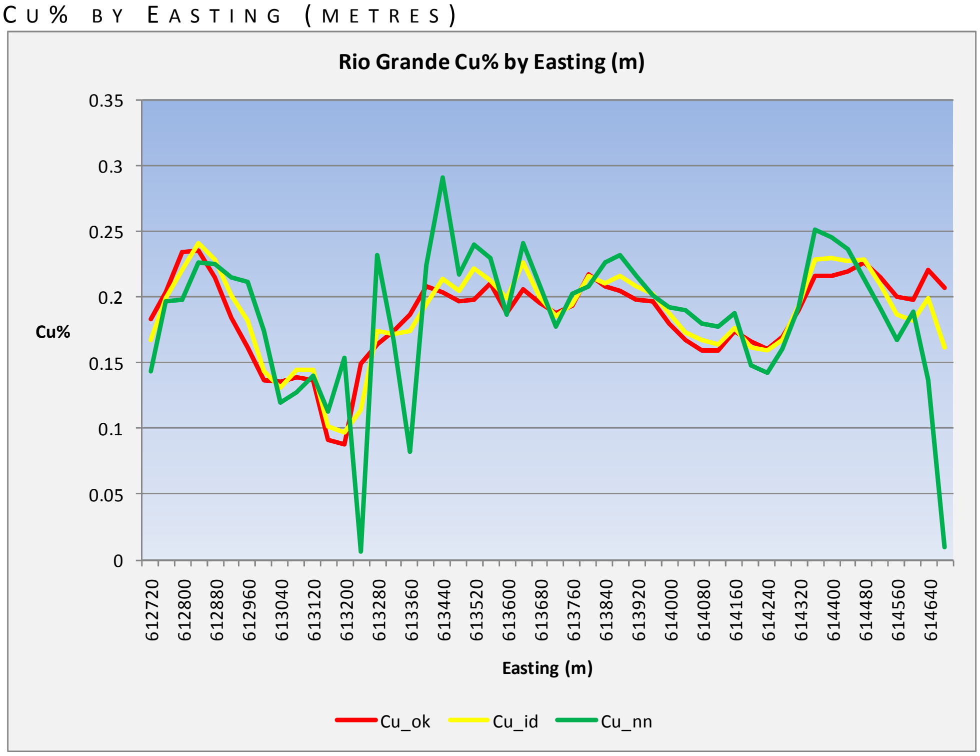
APPENDIX C

RIO GRANDE SWATH PLOTS

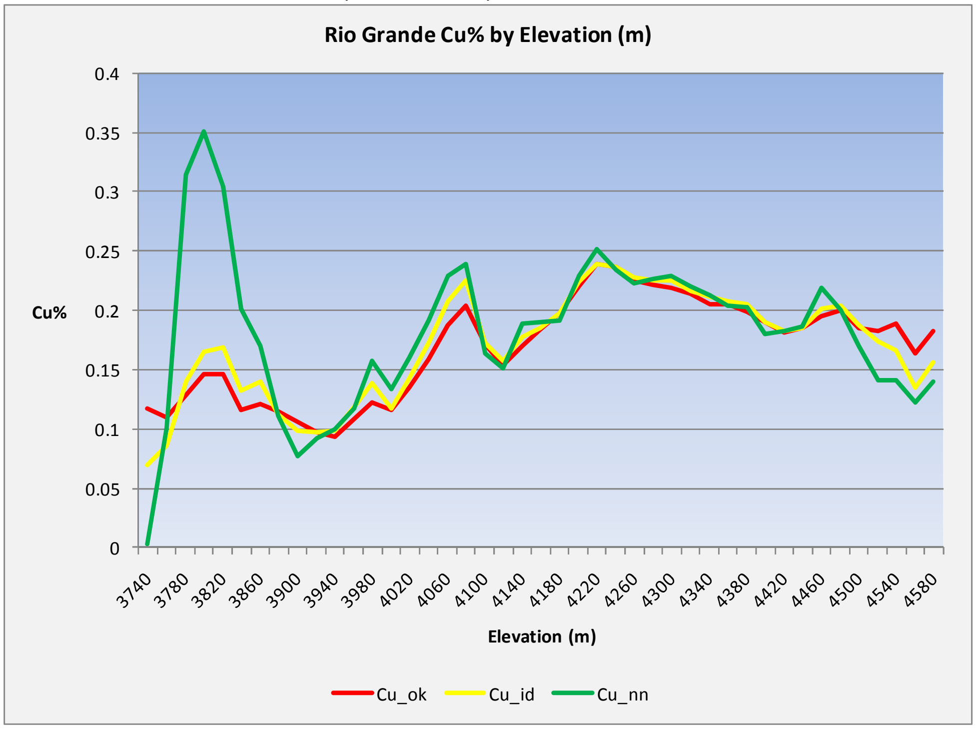
Cu% by Northing (metres)



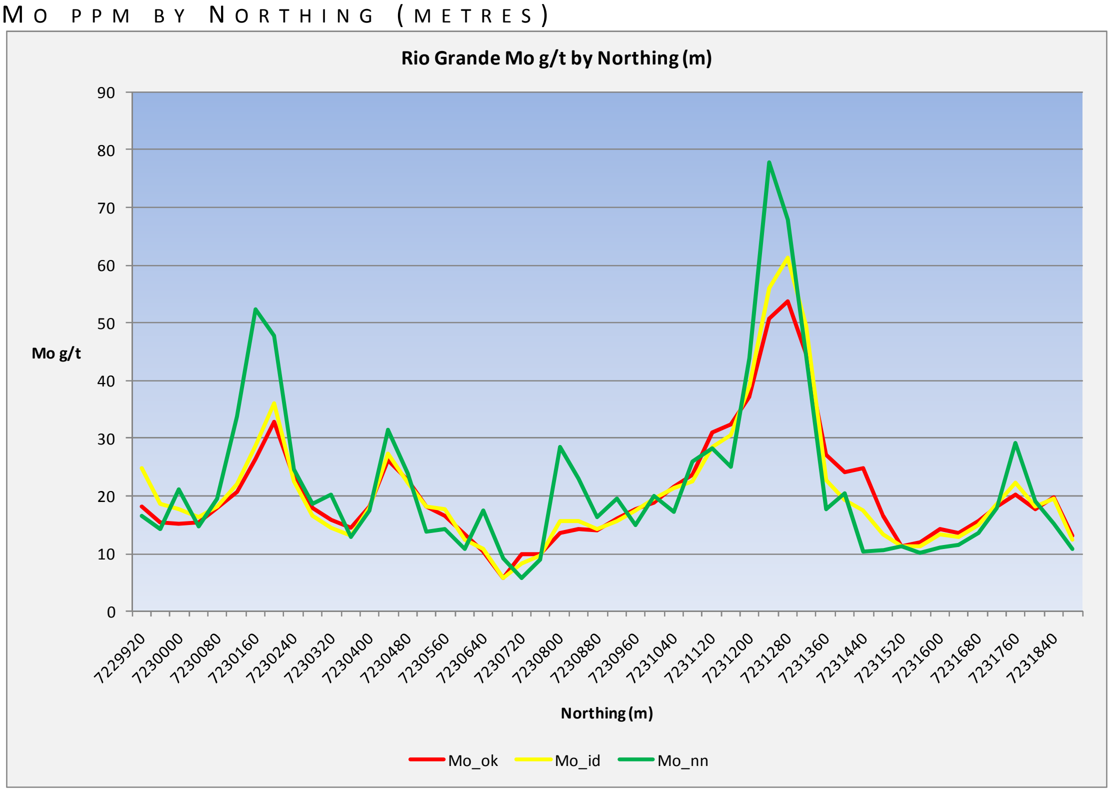
Cu% by Easting (metres)



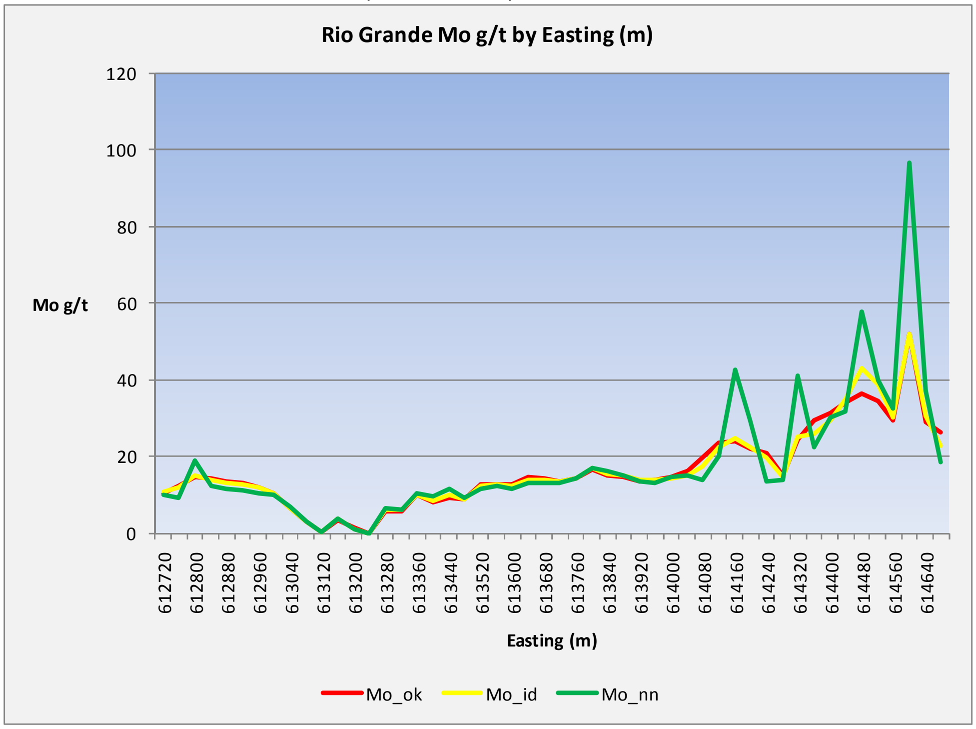
Cu% by Elevation (metres)



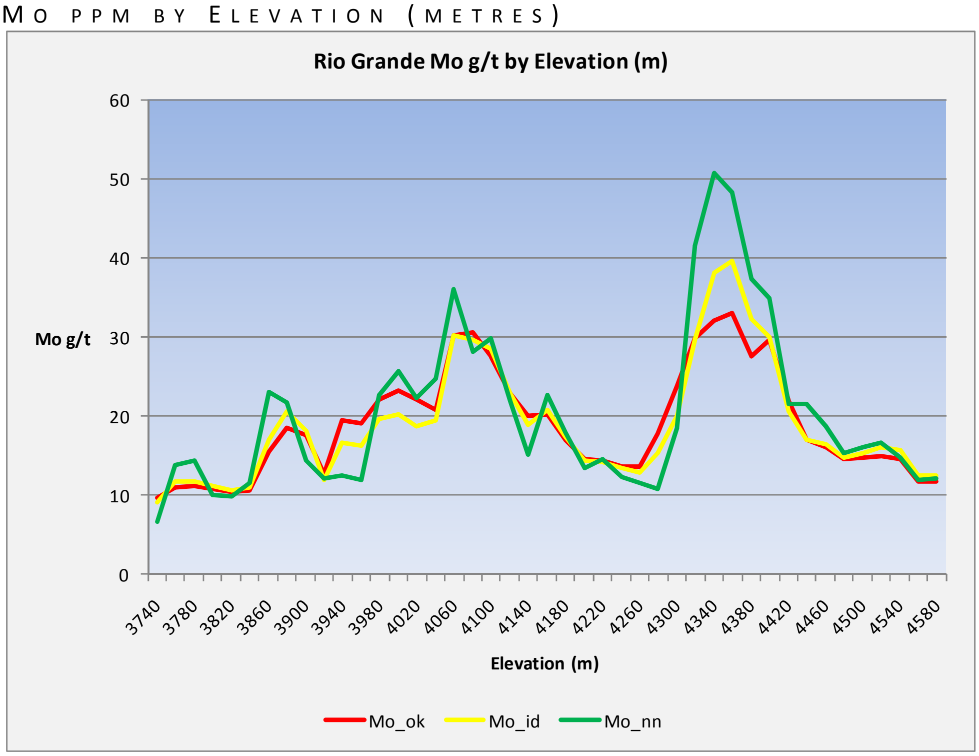
Mo ppm by Northing (metres)



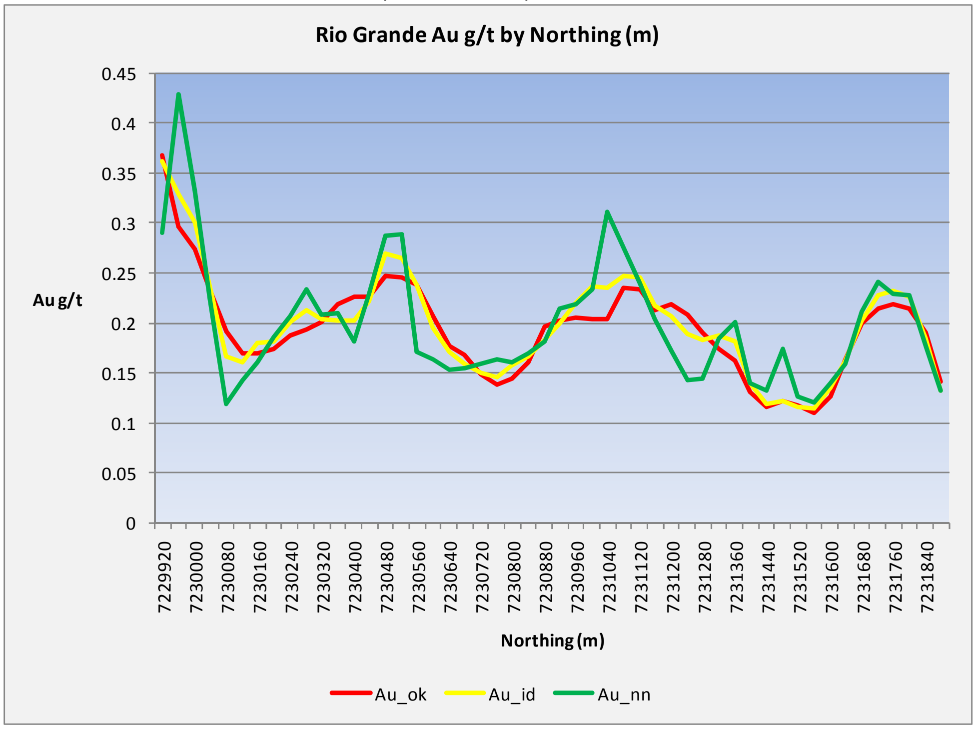
MO PPM BY EASTING (METRES)



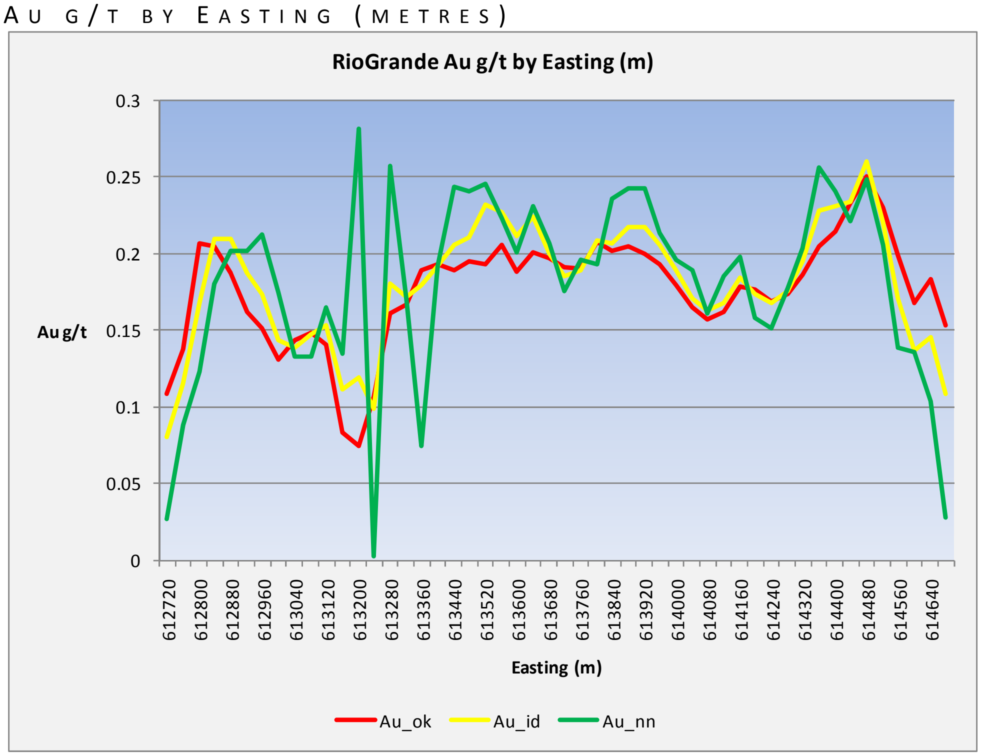
MO PPM BY ELEVATION (METRES)



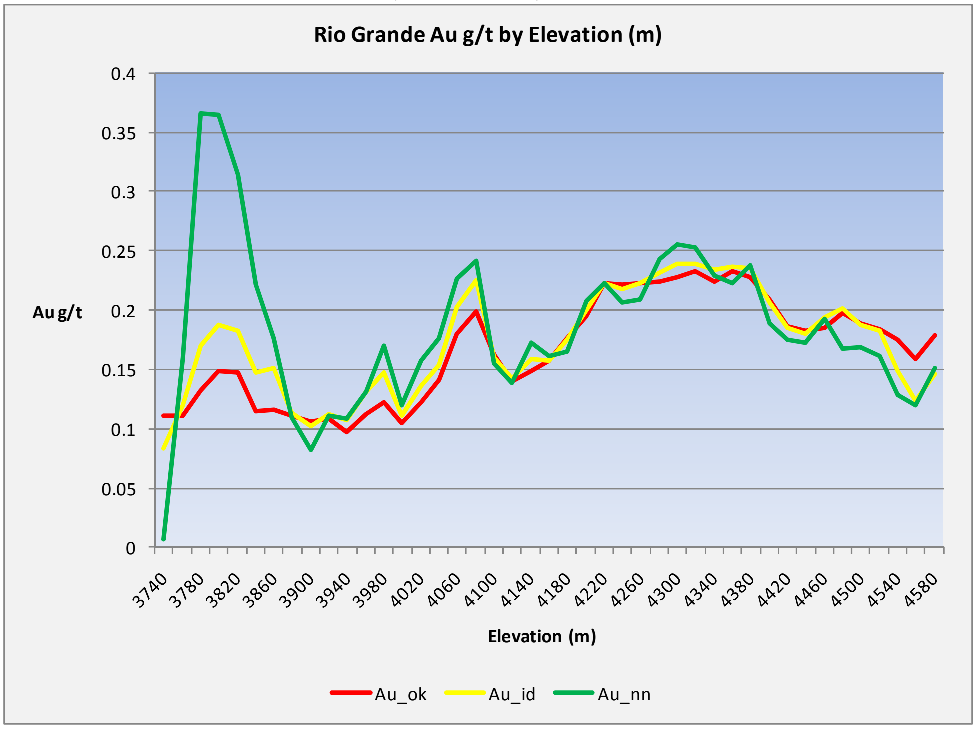
Au g/t by Northing (metres)



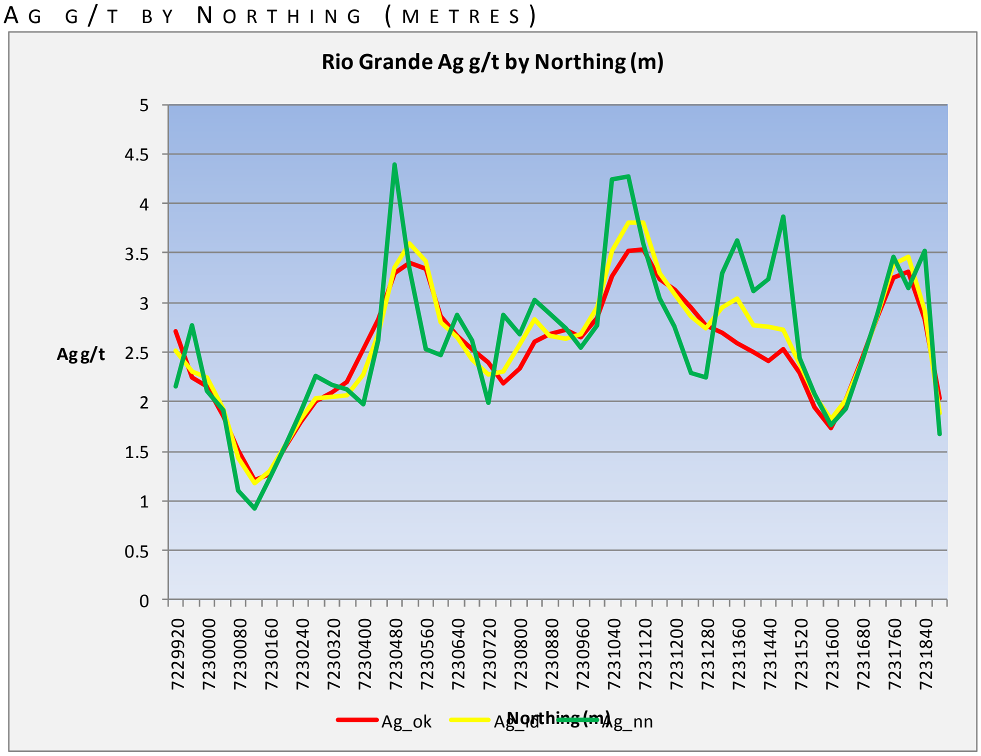
Au g/t by Easting (metres)



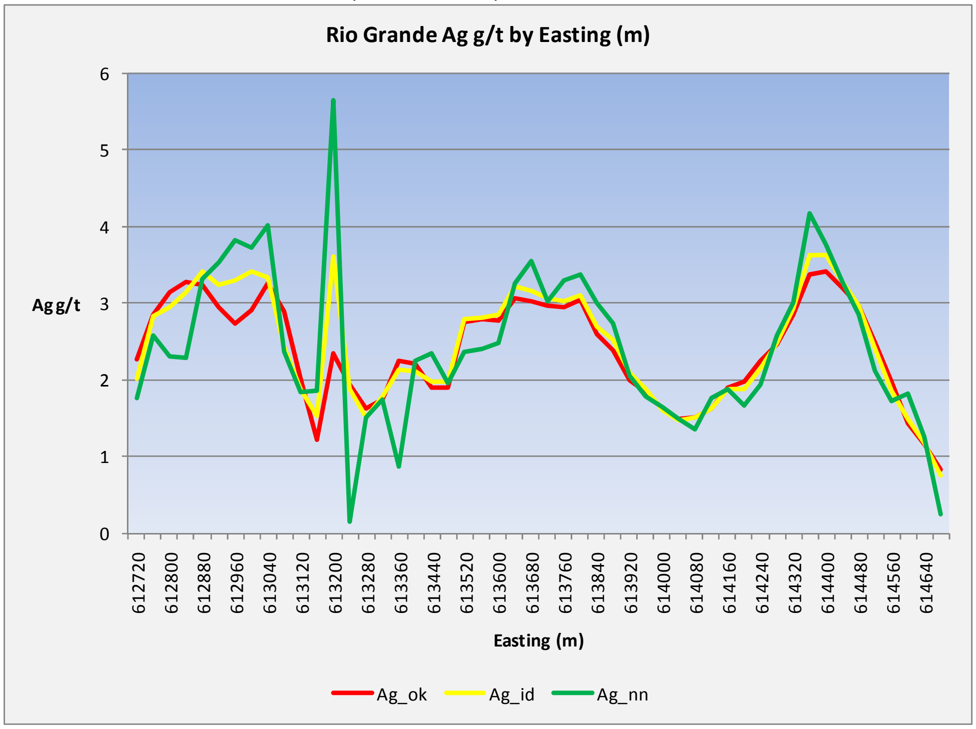
AU G/T BY ELEVATION (METRES)



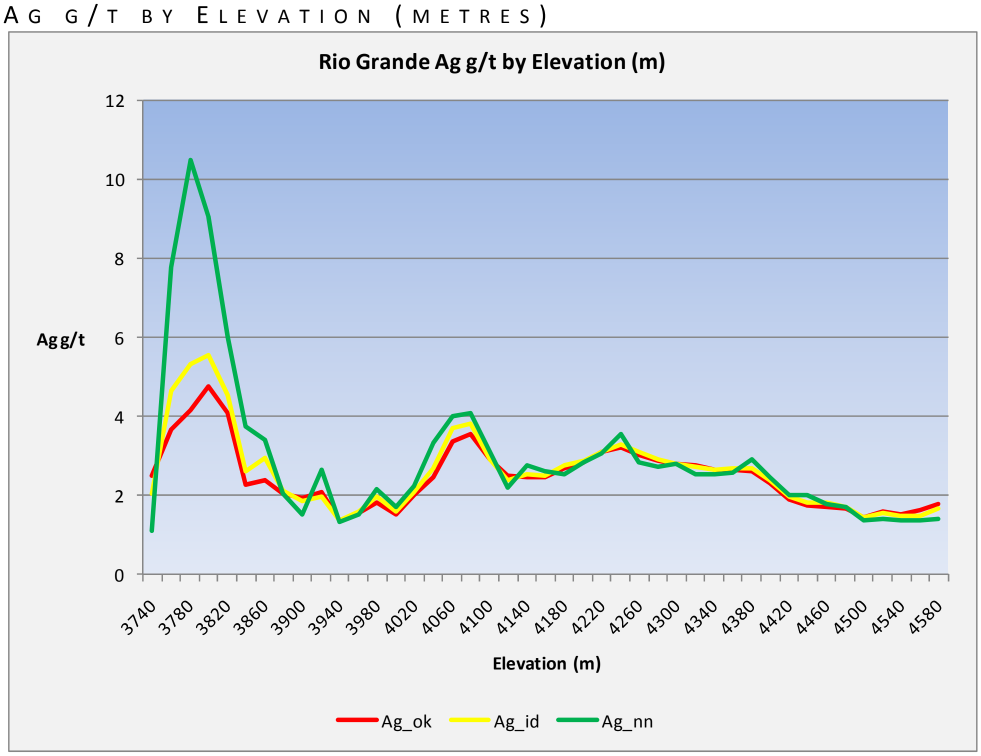
AG G/T BY NORTHING (METRES)



Ag g/t by Easting (metres)



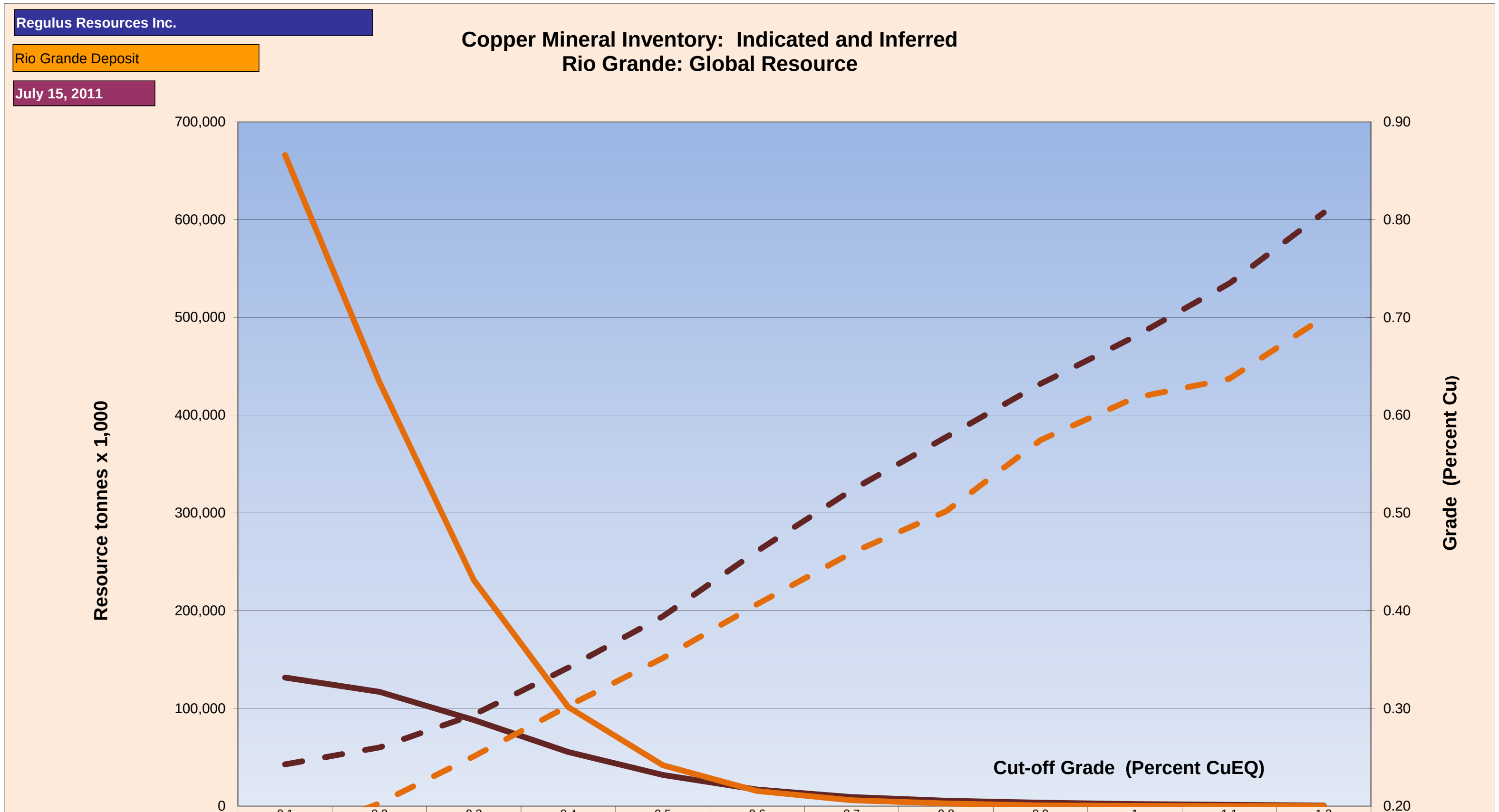
Ag g/t by Elevation (metres)



APPENDIX D

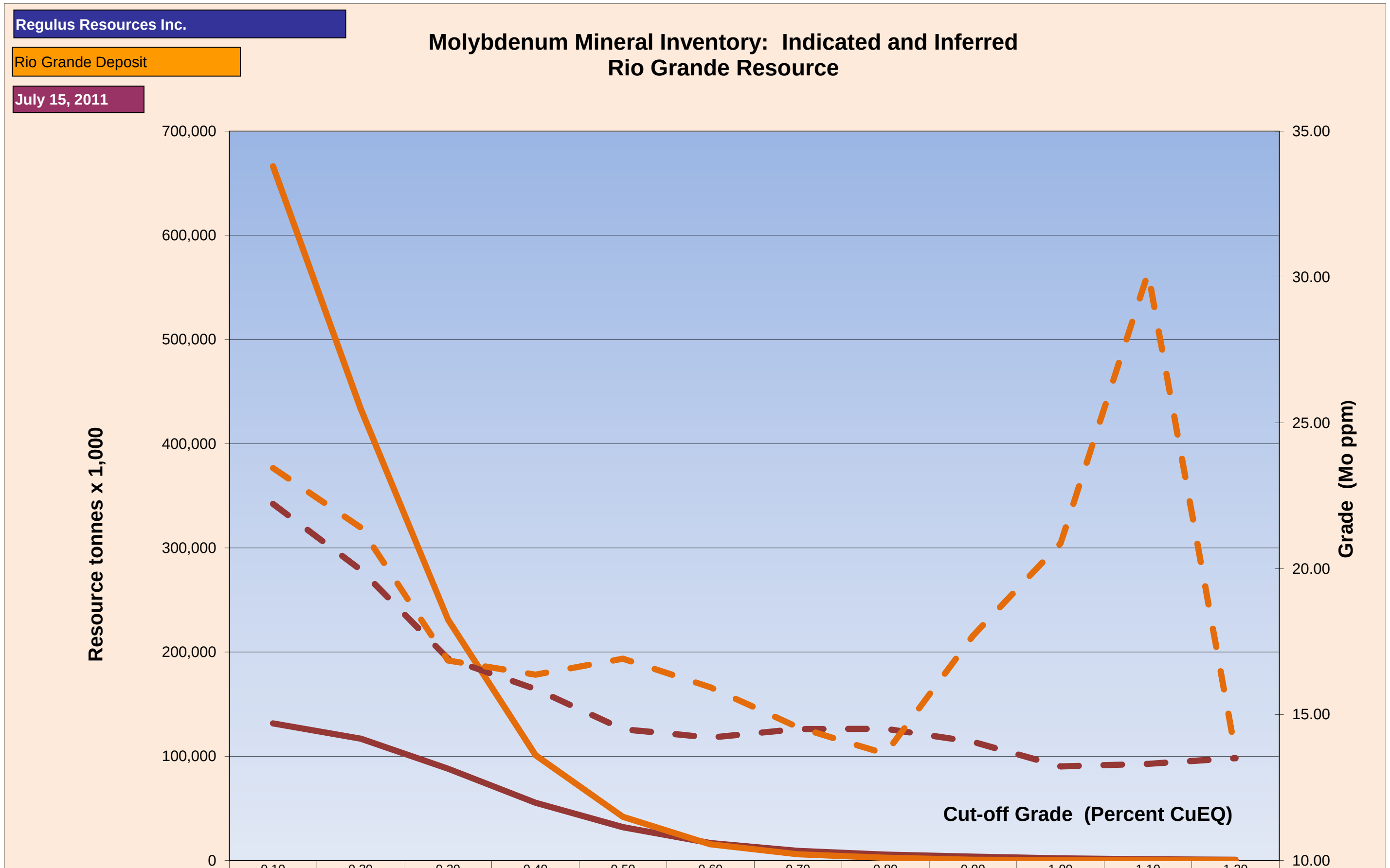
RIO GRANDE GRADE-TONNAGE CURVES

Global Cu% Indicated and Inferred by CuEQ% Cut-Off



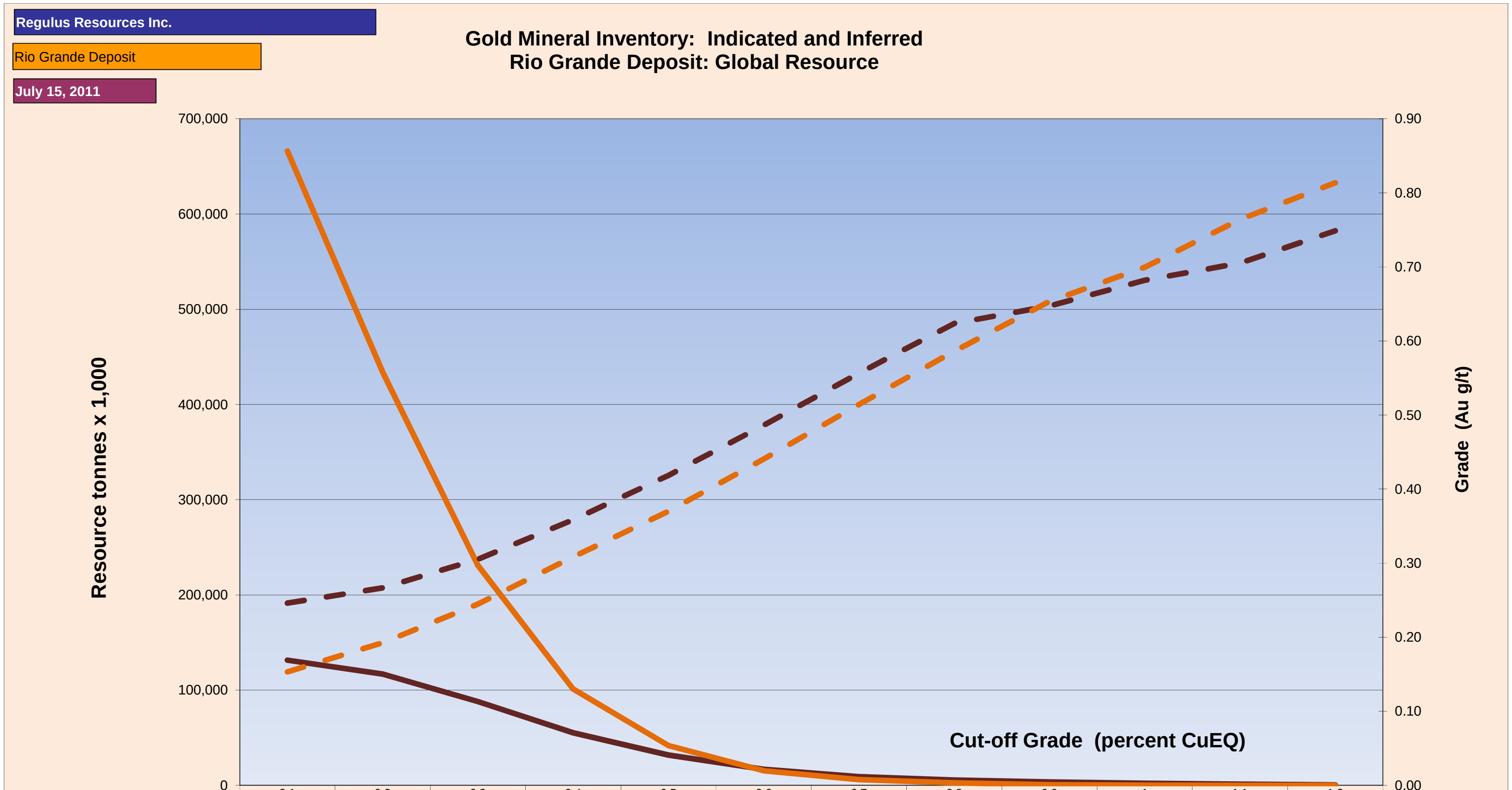
	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1	1.1	1.2
Indicated Tonnes	131,511.4	116,923.2	88,007.0	55,257.9	31,812.7	16,776.3	9,218.5	5,547.3	3,572.1	2,035.4	1,156.1	565.5
Inferred Tonnes	666,236.0	433,902.6	231,141.5	101,088.2	41,814.7	15,425.7	5,955.3	2,613.5	599.9	271.5	105.8	31.4
Indicated Grade Cu%	0.243	0.260	0.294	0.342	0.394	0.461	0.523	0.577	0.632	0.680	0.735	0.807
Inferred Grade Cu%	0.165	0.203	0.251	0.303	0.351	0.407	0.459	0.502	0.575	0.618	0.637	0.700

G L O B A L M O P P M I N D I C A T E D A N D I N F E R R E D B Y C U E Q % C U T - O F F



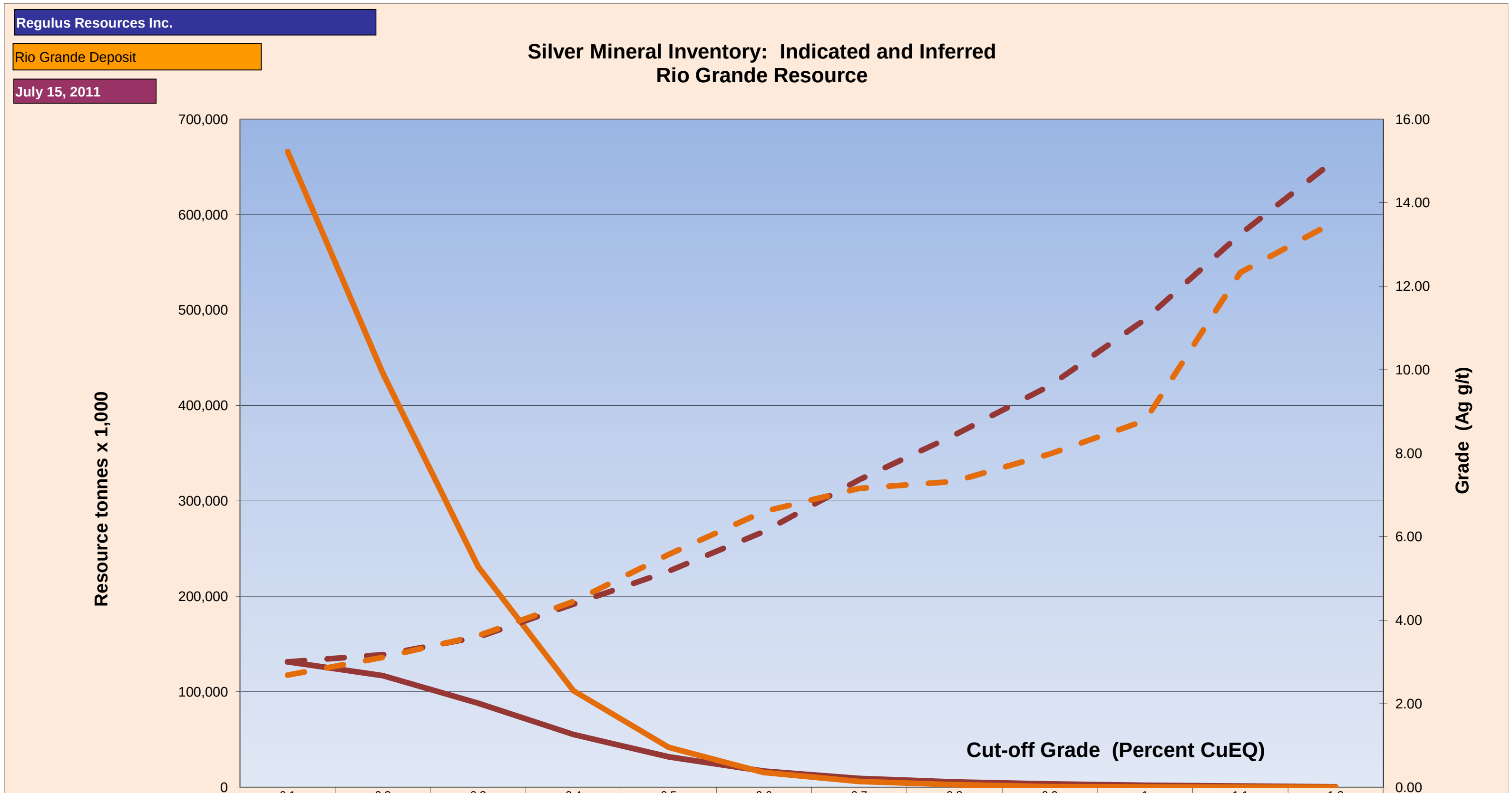
	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20
Mo Indicated Quantity (t)	131,511.4	116,923.2	88,007.0	55,257.9	31,812.7	16,776.3	9,218.5	5,547.3	3,572.1	2,035.4	1,156.1	565.5
Mo Inferred Quantity (t)	666,236.0	433,902.6	231,141.5	101,088.2	41,814.7	15,425.7	5,955.3	2,613.5	599.9	271.5	105.8	31.4
Mo Indicated Grade (ppm)	22.222	19.968	16.922	15.875	14.495	14.211	14.503	14.509	14.061	13.222	13.311	13.508
Mo Inferred Grade (ppm)	23.446	21.415	16.854	16.368	16.916	15.936	14.564	13.654	17.705	20.868	30.143	13.680

GLOBAL AU G/T INDICATED AND INFERRED BY CUEQ% CUT-OFF



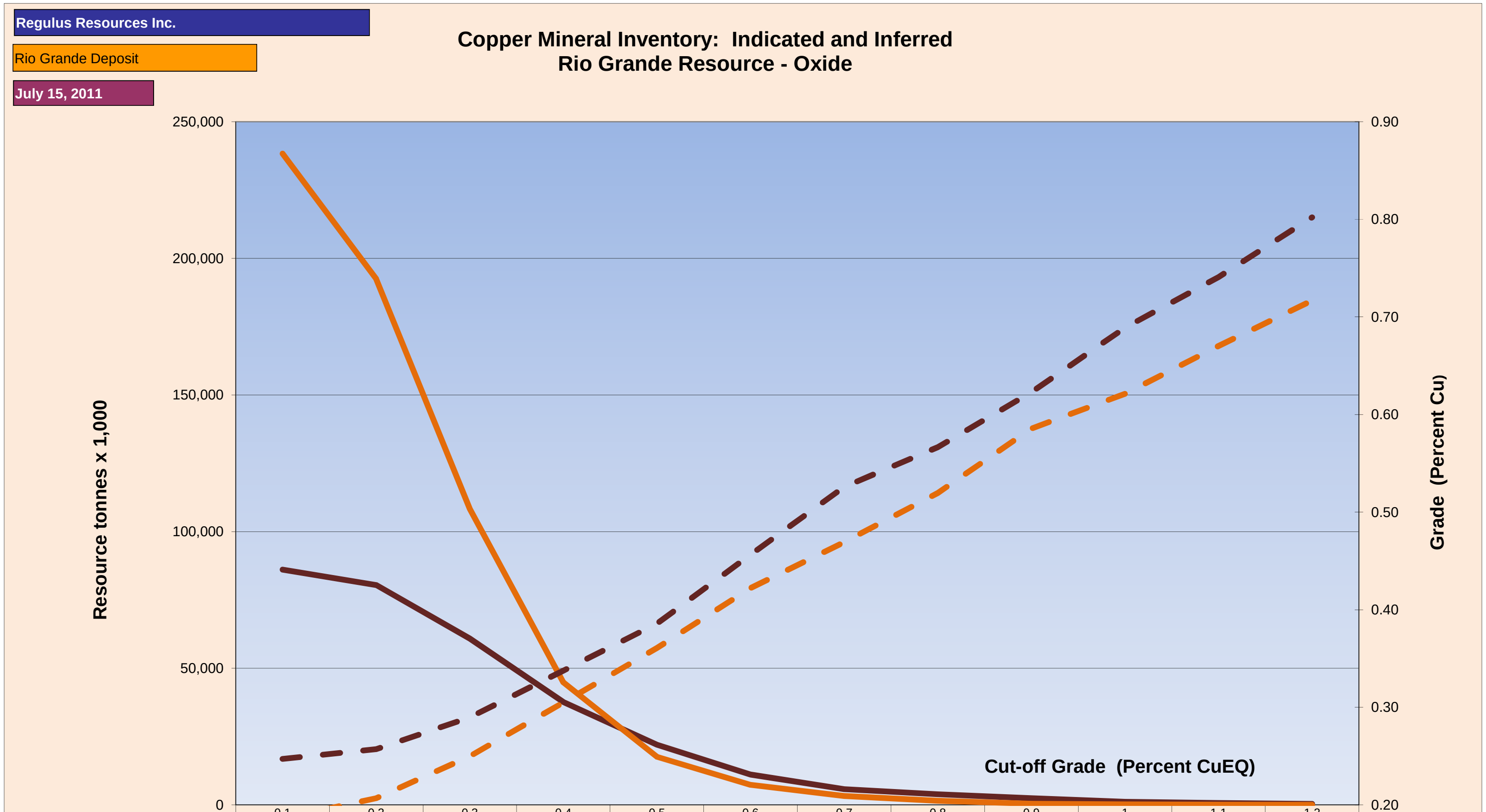
	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1	1.1	1.2
Indicated Tonnes	131,511.4	116,923.2	88,007.0	55,257.9	31,812.7	16,776.3	9,218.5	5,547.3	3,572.1	2,035.4	1,156.1	565.5
Inferred Tonnes	666,236.0	433,902.6	231,141.5	101,088.2	41,814.7	15,425.7	5,955.3	2,613.5	599.9	271.5	105.8	31.4
Indicated Grade Au g/t	0.246	0.267	0.305	0.359	0.419	0.486	0.556	0.624	0.647	0.682	0.705	0.749
Inferred Grade Au g/t	0.153	0.193	0.245	0.308	0.370	0.441	0.514	0.586	0.653	0.700	0.764	0.814

Global Ag g/t Indicated and Inferred by CuEQ% Cut-Off



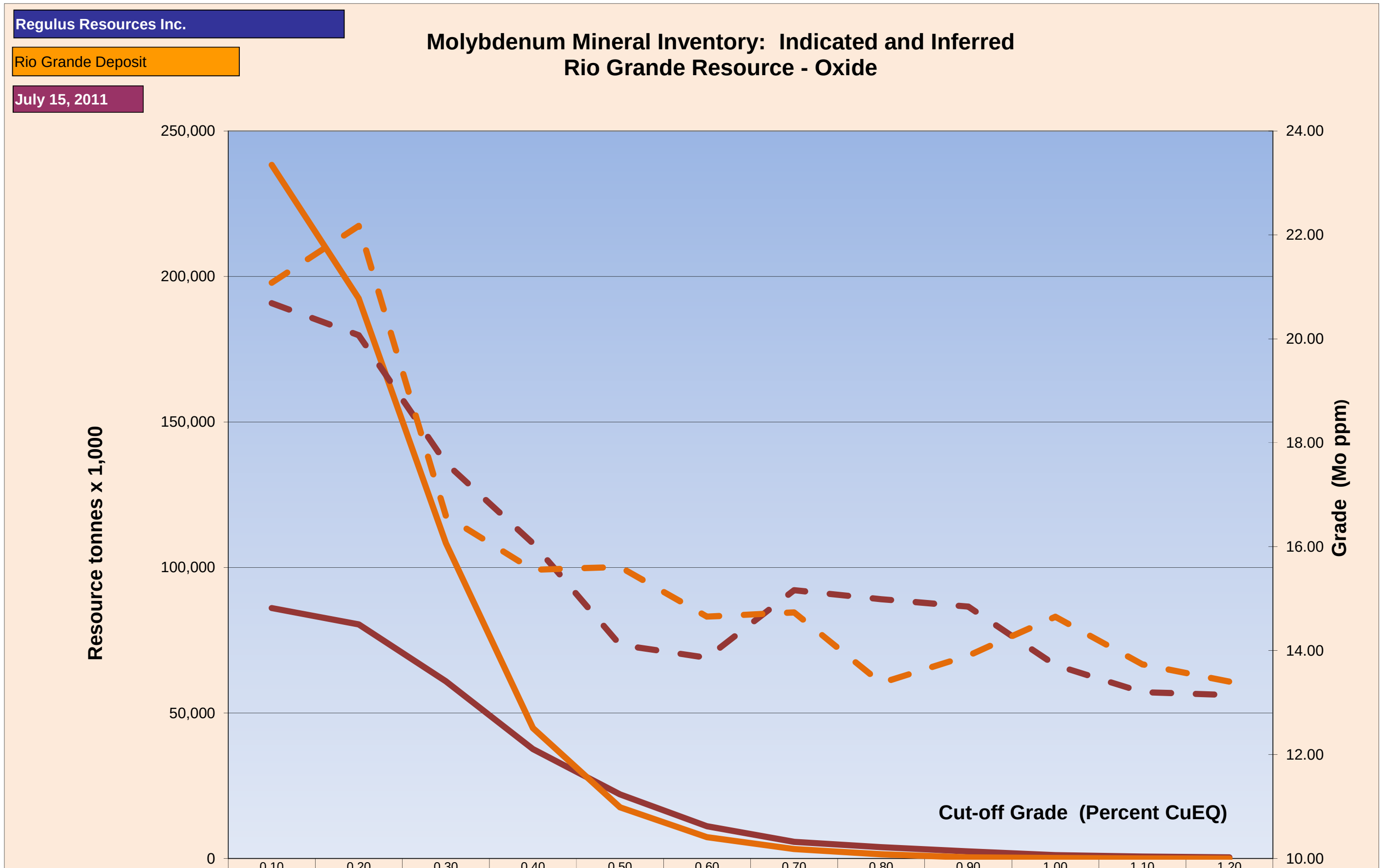
	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1	1.1	1.2
Ag Indicated tonnes	131,511.4	116,923.2	88,007.0	55,257.9	31,812.7	16,776.3	9,218.5	5,547.3	3,572.1	2,035.4	1,156.1	565.5
Ag Inferred tonnes	666,236.0	433,902.6	231,141.5	101,088.2	41,814.7	15,425.7	5,955.3	2,613.5	599.9	271.5	105.8	31.4
Indicated Grade (Ag g/t)	3.001	3.175	3.595	4.383	5.174	6.125	7.364	8.433	9.619	11.204	13.250	15.035
Inferred Grade (Ag g/t)	2.683	3.111	3.630	4.446	5.576	6.605	7.158	7.326	7.983	8.782	12.330	13.556

OXIDE ROCK CU% INDICATED AND INFERRED BY CUEQ% CUT-OFF



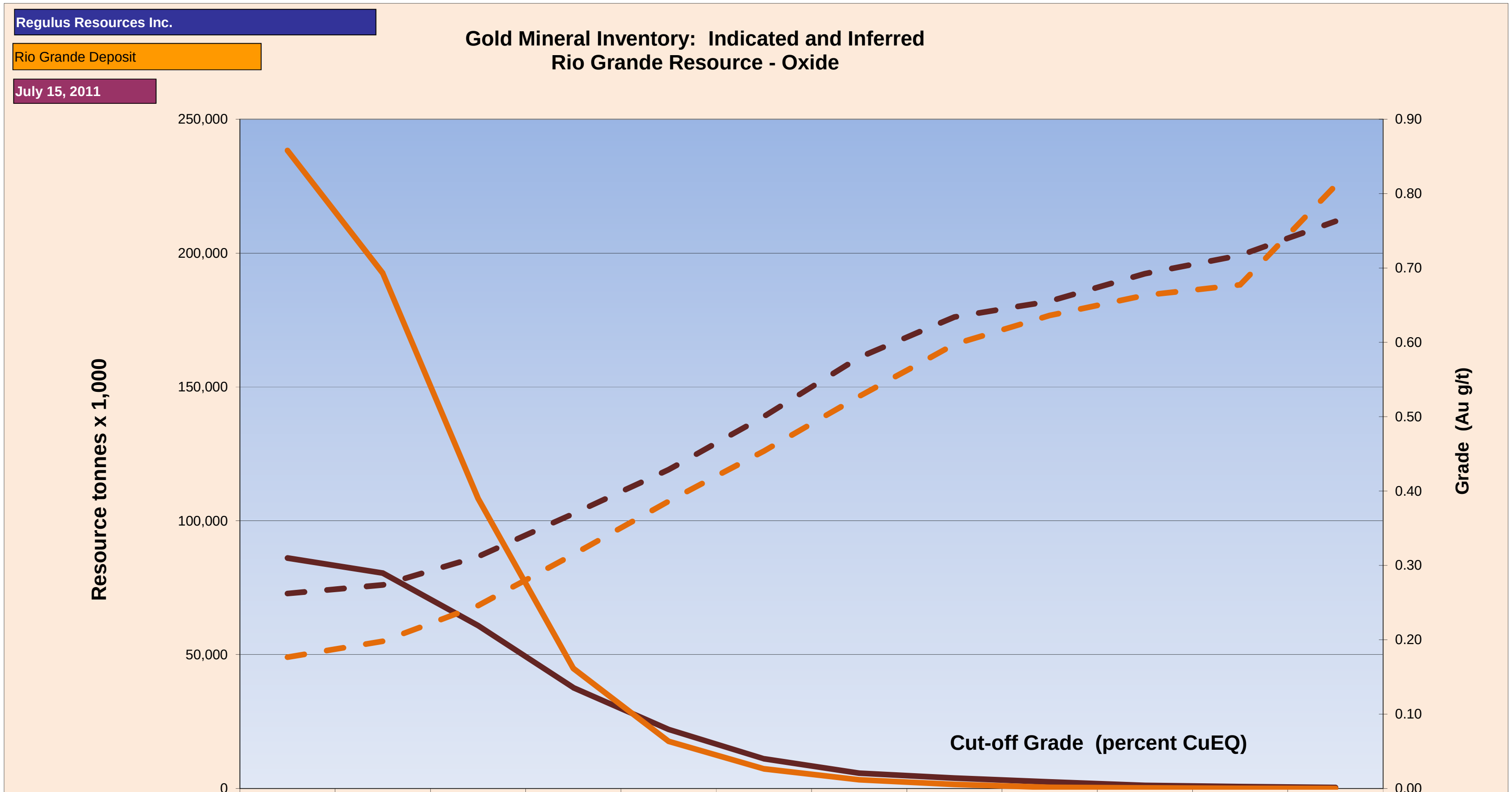
	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1	1.1	1.2
Indicated Tonnes	86,072.4	80,463.1	60,879.8	37,658.2	22,055.9	11,126.2	5,761.6	3,903.1	2,447.4	1,181.4	686.7	386.2
Inferred Tonnes	238,312.5	192,468.3	108,333.4	44,852.2	17,618.5	7,348.5	3,295.5	1,494.0	409.7	218.9	53.2	11.4
Indicated Grade Cu%	0.247	0.257	0.290	0.338	0.386	0.456	0.526	0.567	0.623	0.689	0.741	0.802
Inferred Grade Cu%	0.186	0.207	0.250	0.305	0.361	0.422	0.469	0.520	0.586	0.621	0.670	0.717

Oxide Rock Mo ppm Indicated and Inferred by CuEq% Cut-Off



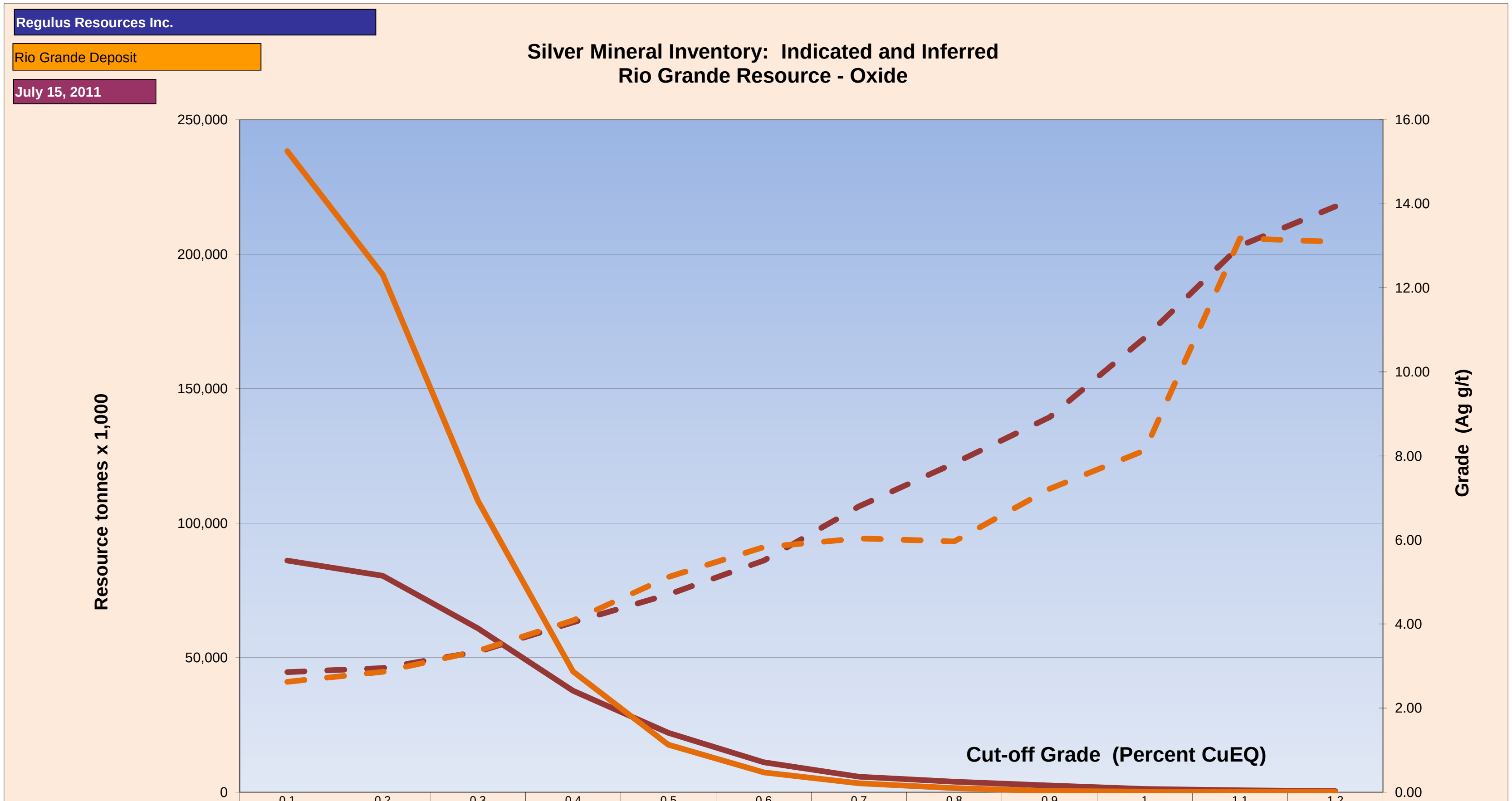
	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20
Mo Indicated Quantity (t)	86,072.4	80,463.1	60,879.8	37,658.2	22,055.9	11,126.2	5,761.6	3,903.1	2,447.4	1,181.4	686.7	386.2
Mo Inferred Quantity (t)	238,312.5	192,468.3	108,333.4	44,852.2	17,618.5	7,348.5	3,295.5	1,494.0	409.7	218.9	53.2	11.4
Mo Indicated Grade (ppm)	20.684	20.068	17.608	16.068	14.110	13.864	15.162	14.991	14.848	13.723	13.202	13.146
Mo Inferred Grade (ppm)	21.077	22.173	16.593	15.555	15.612	14.656	14.736	13.377	13.903	14.652	13.737	13.405

Oxide Rock Au g/t Indicated and Inferred by CuEQ% Cut-Off



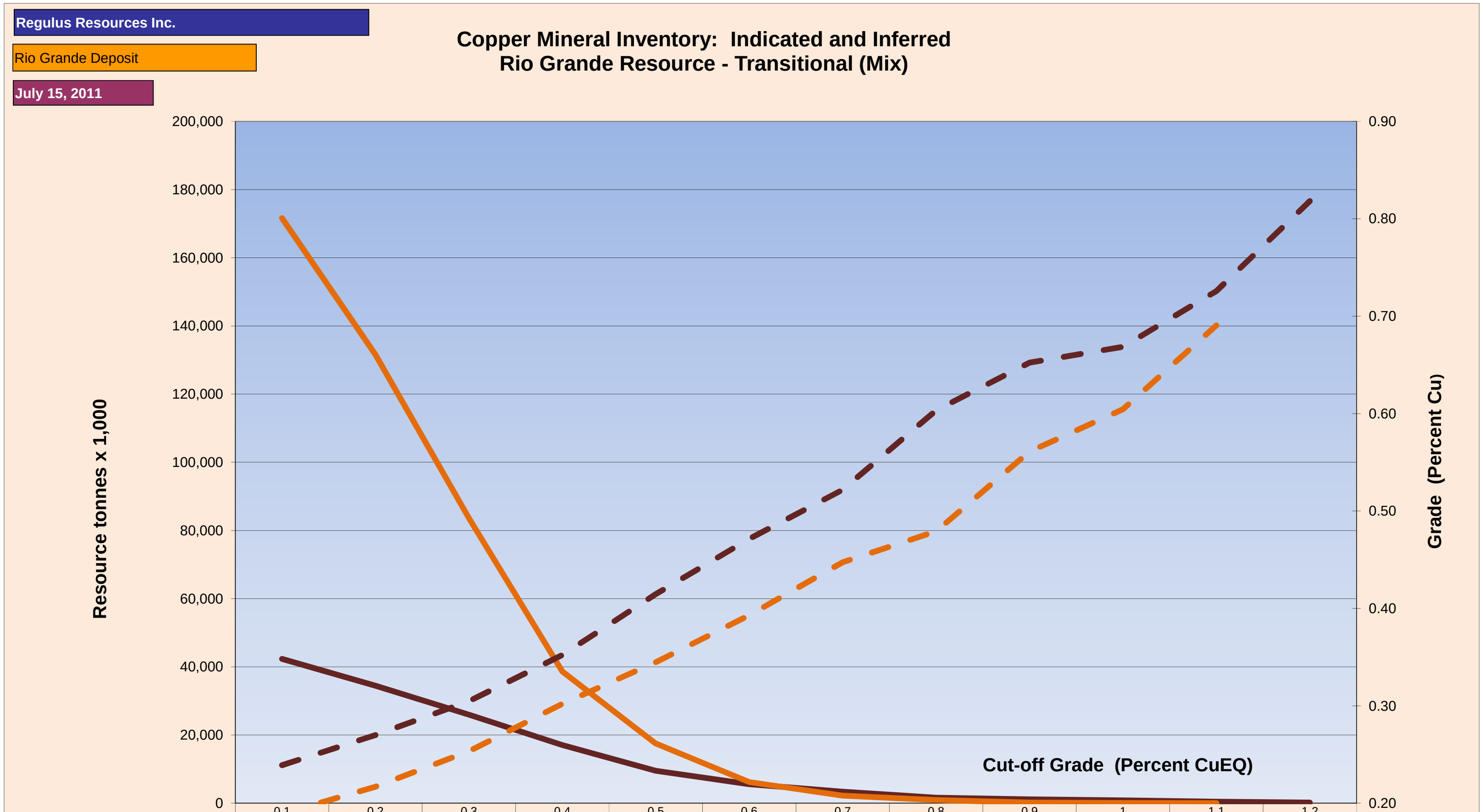
	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1	1.1	1.2
Indicated Tonnes	86,072.4	80,463.1	60,879.8	37,658.2	22,055.9	11,126.2	5,761.6	3,903.1	2,447.4	1,181.4	686.7	386.2
Inferred Tonnes	238,312.5	192,468.3	108,333.4	44,852.2	17,618.5	7,348.5	3,295.5	1,494.0	409.7	218.9	53.2	11.4
Indicated Grade Au g/t	0.262	0.274	0.312	0.370	0.429	0.500	0.580	0.634	0.655	0.692	0.717	0.763
Inferred Grade Au g/t	0.177	0.198	0.246	0.315	0.386	0.454	0.527	0.597	0.636	0.663	0.677	0.811

Oxide Rock Ag g/t Indicated and Inferred by CuEQ% Cut-Off



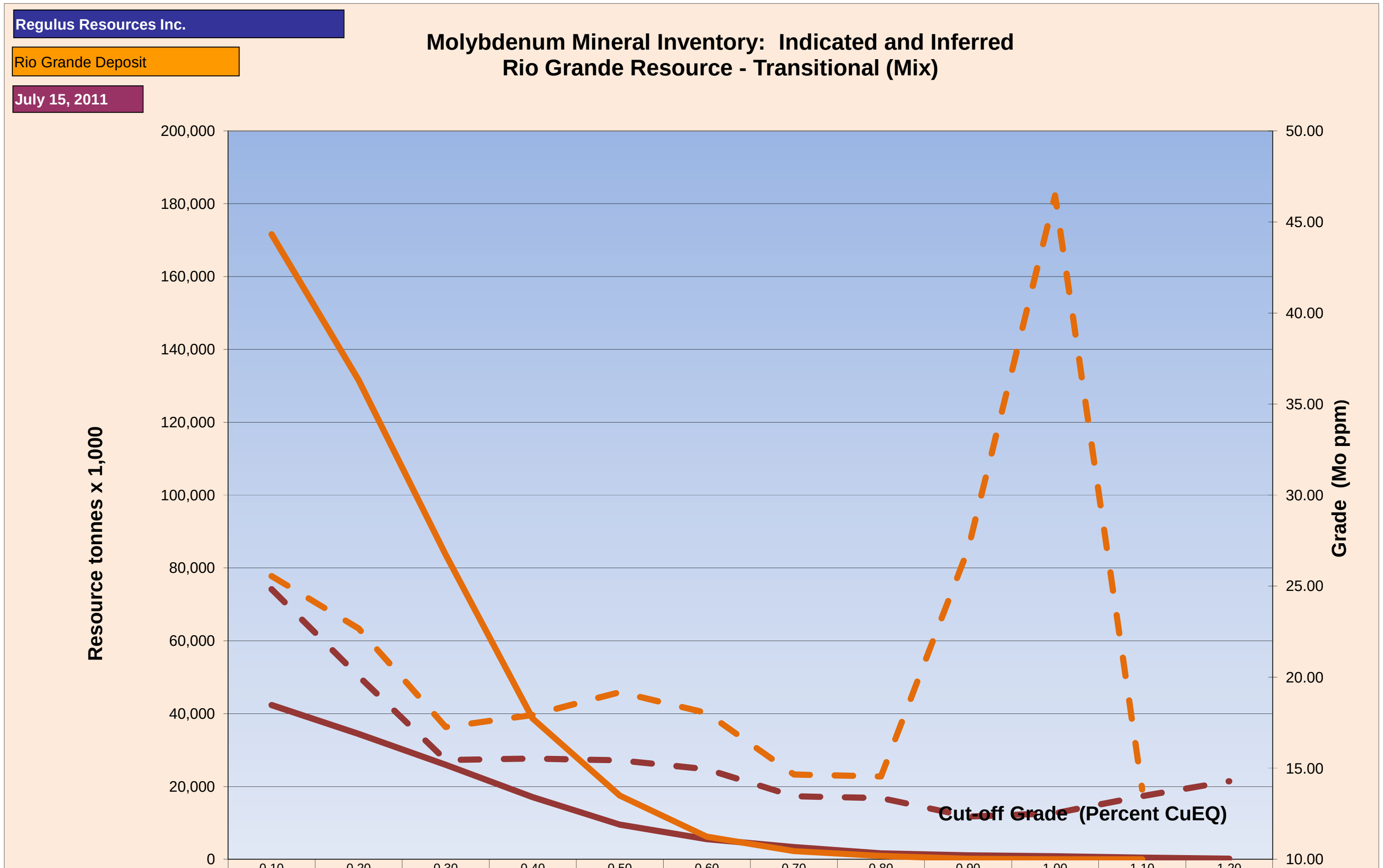
	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1	1.1	1.2
Ag Indicated tonnes	86,072.4	80,463.1	60,879.8	37,658.2	22,055.9	11,126.2	5,761.6	3,903.1	2,447.4	1,181.4	686.7	386.2
Ag Inferred tonnes	238,312.5	192,468.3	108,333.4	44,852.2	17,618.5	7,348.5	3,295.5	1,494.0	409.7	218.9	53.2	11.4
Indicated Grade (Ag g/t)	2.856	2.953	3.343	4.040	4.705	5.510	6.802	7.826	8.918	10.815	13.000	13.938
Inferred Grade (Ag g/t)	2.625	2.862	3.362	4.089	5.121	5.831	6.039	5.966	7.218	8.134	13.176	13.098

Transitional (Mix) Rock Cu% Indicated and Inferred by CuEQ% Cut-Off



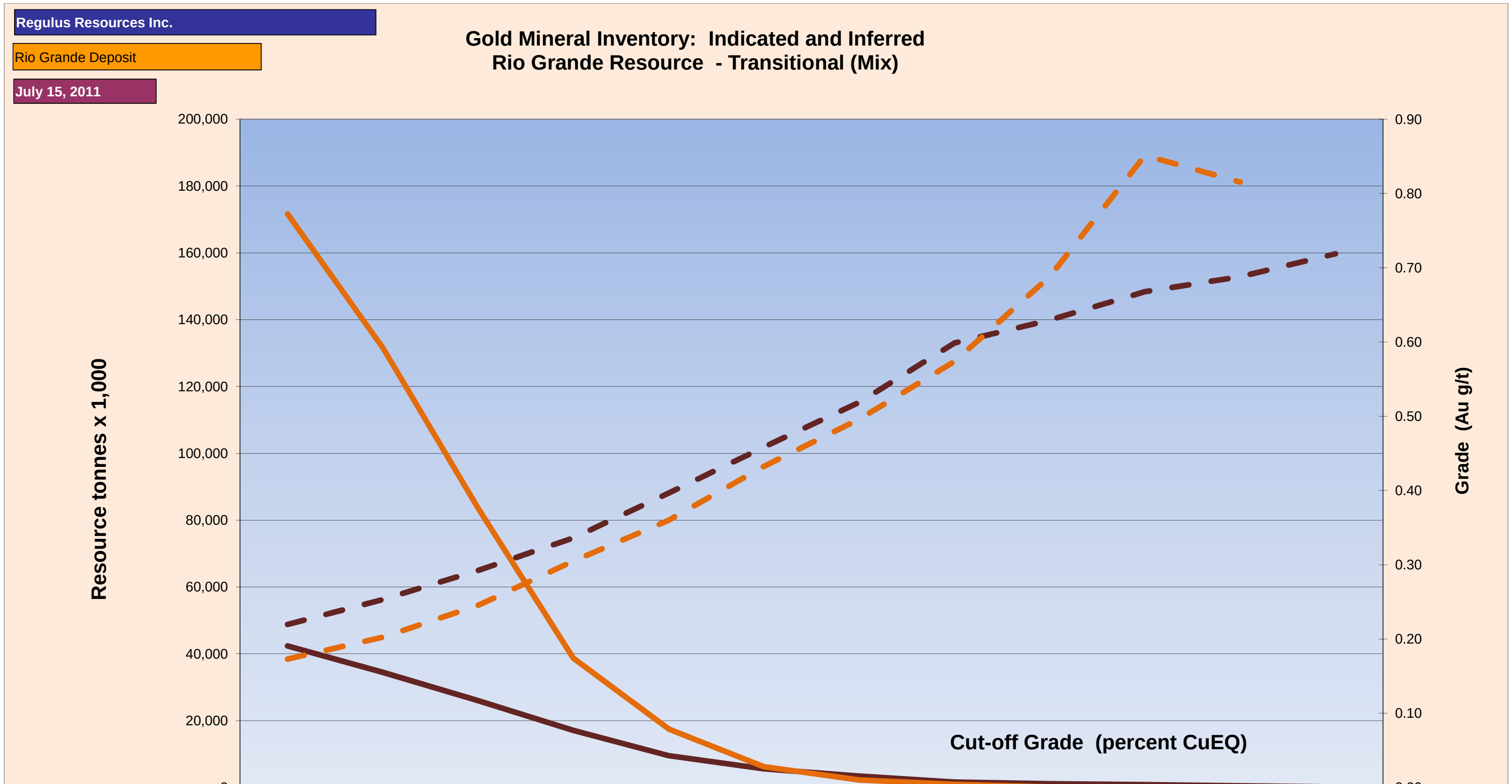
	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1	1.1	1.2
Indicated Tonnes	42,353.3	34,450.4	25,951.1	17,062.4	9,524.6	5,576.2	3,383.0	1,644.2	1,124.7	854.1	469.4	179.3
Inferred Tonnes	171,629.3	131,604.0	83,615.3	38,663.6	17,501.9	6,225.2	2,258.1	938.0	169.8	52.0	19.9	
Indicated Grade Cu%	0.239	0.270	0.305	0.352	0.415	0.471	0.522	0.603	0.652	0.669	0.726	0.818
Inferred Grade Cu%	0.189	0.217	0.253	0.302	0.345	0.393	0.447	0.479	0.561	0.605	0.691	

Transitional (Mix) Rock Mo ppm Indicated and Inferred by CuEQ% Cut-Off



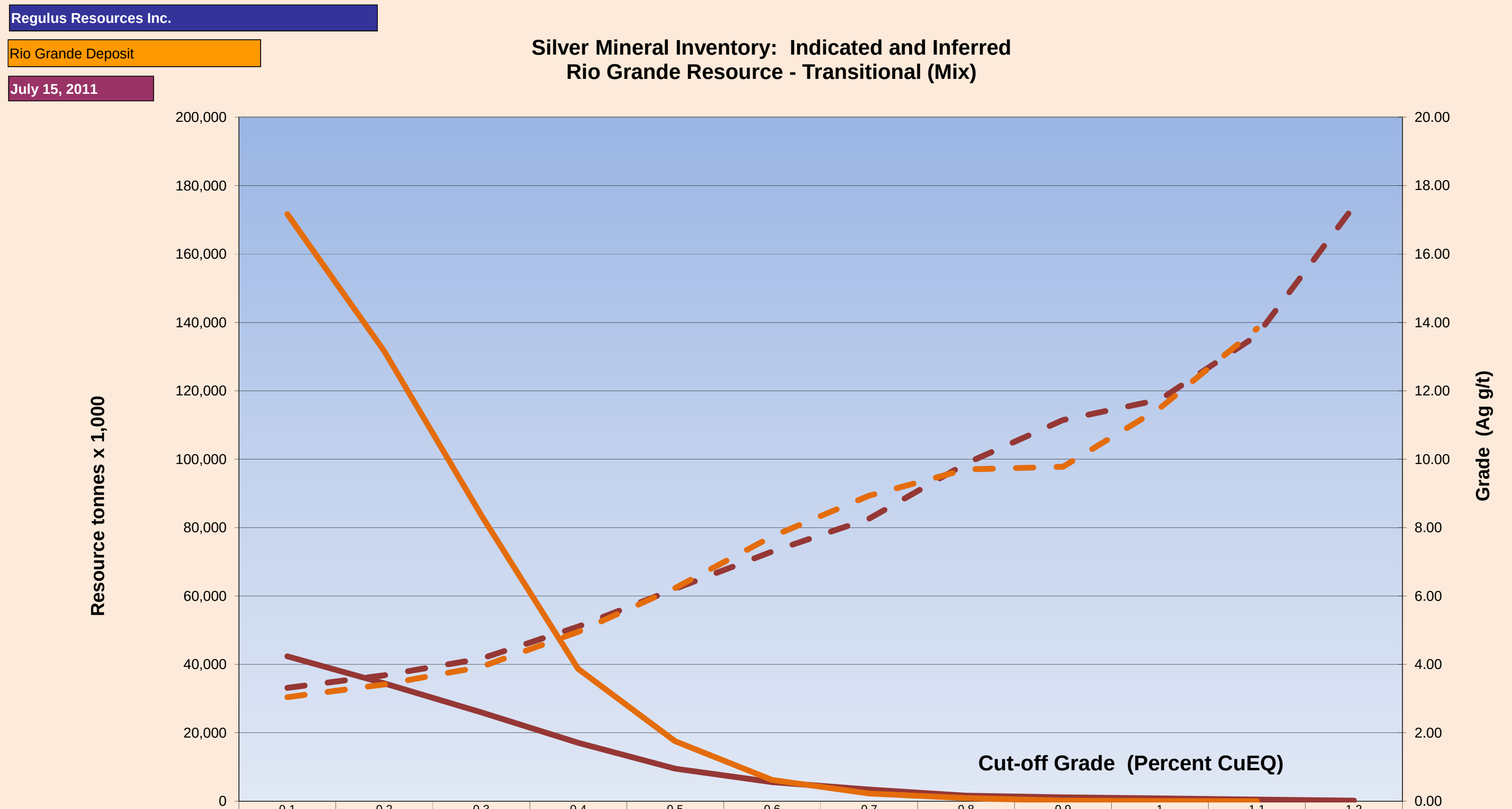
	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20
Mo Indicated Quantity (t)	42,353.3	34,450.4	25,951.1	17,062.4	9,524.6	5,576.2	3,383.0	1,644.2	1,124.7	854.1	469.4	179.3
Mo Inferred Quantity (t)	171,629.3	131,604.0	83,615.3	38,663.6	17,501.9	6,225.2	2,258.1	938.0	169.8	52.0	19.9	
Mo Indicated Grade (ppm)	24.835	20.057	15.450	15.534	15.439	14.950	13.464	13.364	12.347	12.530	13.471	14.289
Mo Inferred Grade (ppm)	25.554	22.682	17.268	17.932	19.180	18.034	14.659	14.551	27.025	46.461	13.838	

Transitional (Mix) Rock Au g/t Indicated and Inferred by CuEQ% Cut-Off



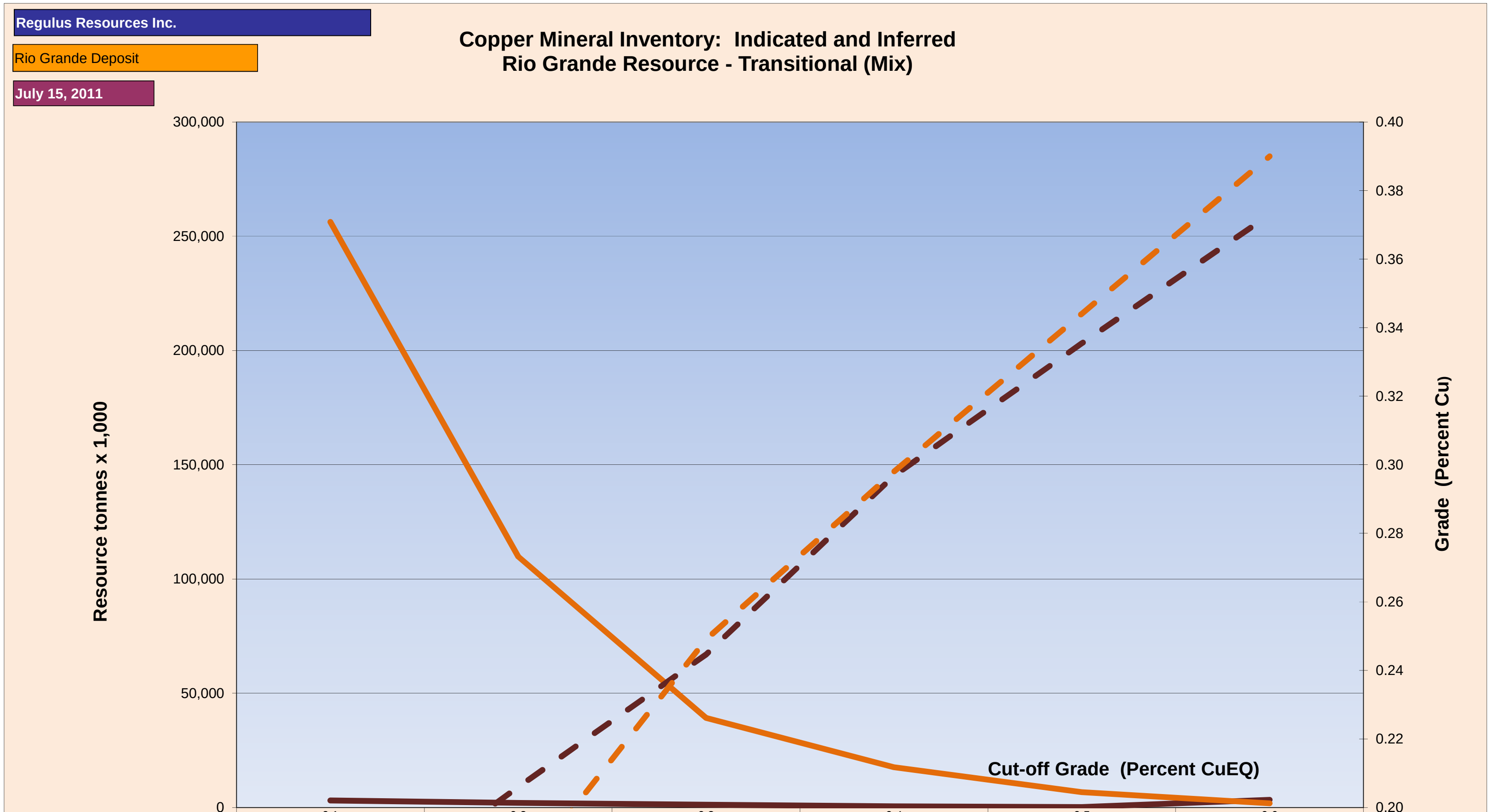
	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1	1.1	1.2
Indicated Tonnes	42,353.3	34,450.4	25,951.1	17,062.4	9,524.6	5,576.2	3,383.0	1,644.2	1,124.7	854.1	469.4	179.3
Inferred Tonnes	171,629.3	131,604.0	83,615.3	38,663.6	17,501.9	6,225.2	2,258.1	938.0	169.8	52.0	19.9	
Indicated Grade Au g/t	0.220	0.253	0.292	0.336	0.397	0.459	0.519	0.599	0.629	0.668	0.688	0.719
Inferred Grade Au g/t	0.173	0.202	0.245	0.305	0.360	0.432	0.496	0.574	0.688	0.851	0.815	

TRANSITIONAL (MIX) ROCK AG G/T INDICATED AND INFERRED BY CUEQ% CUT-OFF



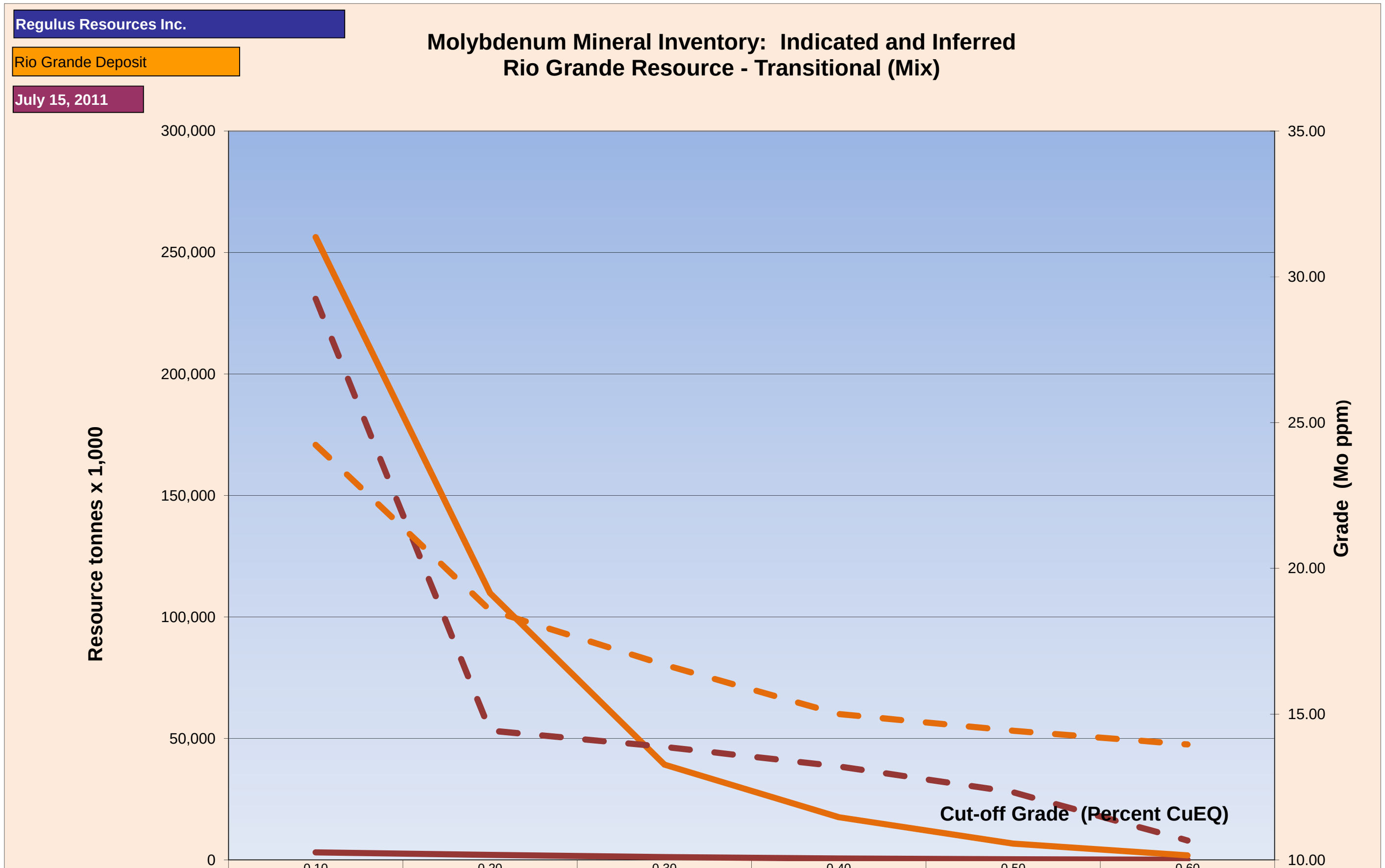
	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1	1.1	1.2
Ag Indicated tonnes	42,353.3	34,450.4	25,951.1	17,062.4	9,524.6	5,576.2	3,383.0	1,644.2	1,124.7	854.1	469.4	179.3
Ag Inferred tonnes	171,629.3	131,604.0	83,615.3	38,663.6	17,501.9	6,225.2	2,258.1	938.0	169.8	52.0	19.9	
Indicated Grade (Ag g/t)	3.313	3.684	4.169	5.104	6.213	7.299	8.260	9.874	11.146	11.743	13.616	17.398
Inferred Grade (Ag g/t)	3.042	3.416	3.928	4.951	6.237	7.741	8.932	9.702	9.782	11.494	13.819	

SULPHIDE ROCK CU% INDICATED AND INFERRED BY CUEQ% CUT-OFF



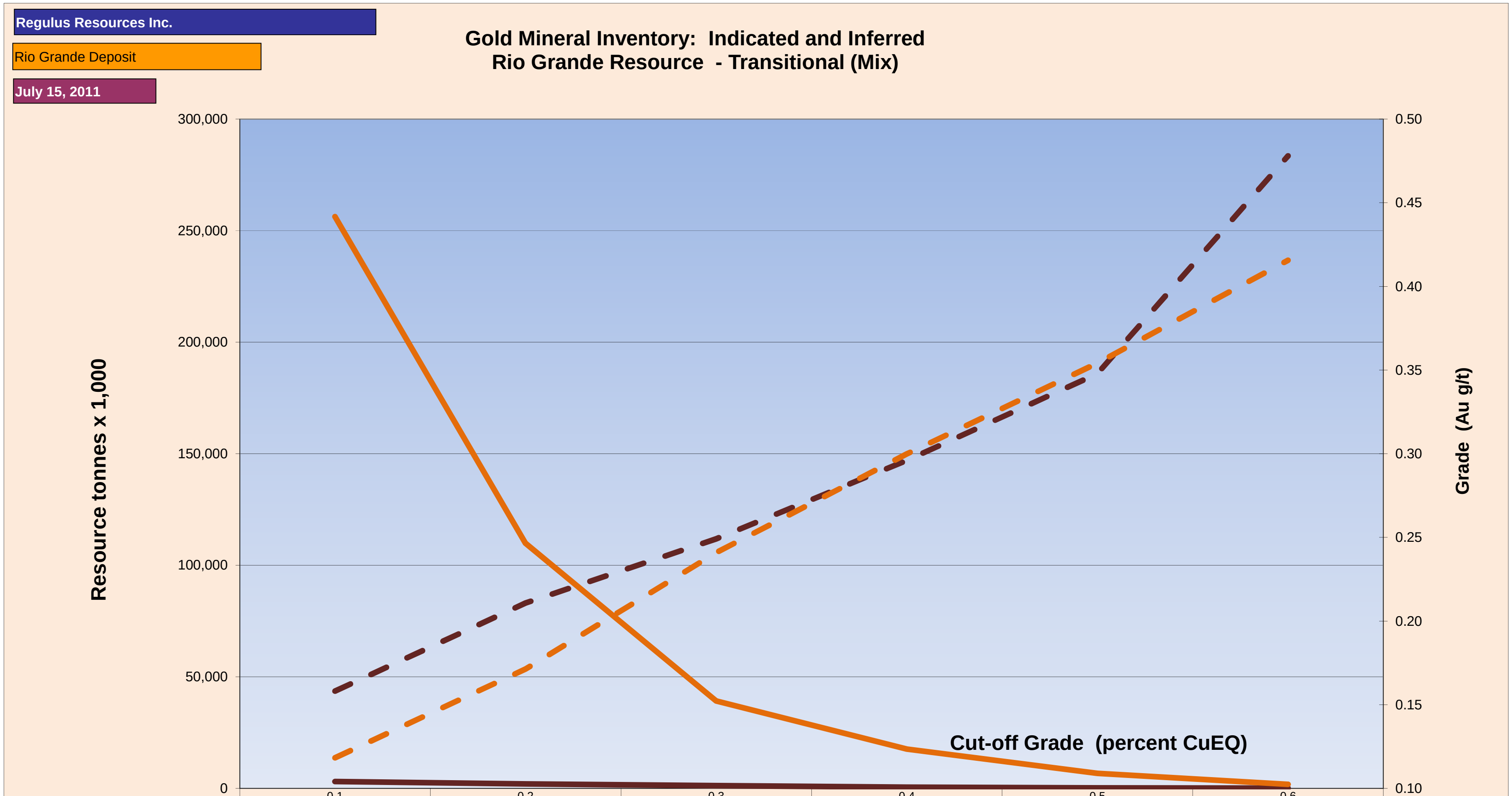
	0.1	0.2	0.3	0.4	0.5	0.6
Indicated Tonnes	3,085.7	2,009.7	1,176.1	537.2	232.3	3,383.0
Inferred Tonnes	256,294.17	109,830.27	39,192.78	17,572.34	6,694.38	1,851.96
Indicated Grade Cu%	0.166	0.206	0.245	0.297	0.335	0.373
Inferred Grade Cu%	0.129	0.179	0.249	0.298	0.344	0.390

Sulphide Rock Mo ppm Indicated and Inferred by CuEQ% Cut-Off



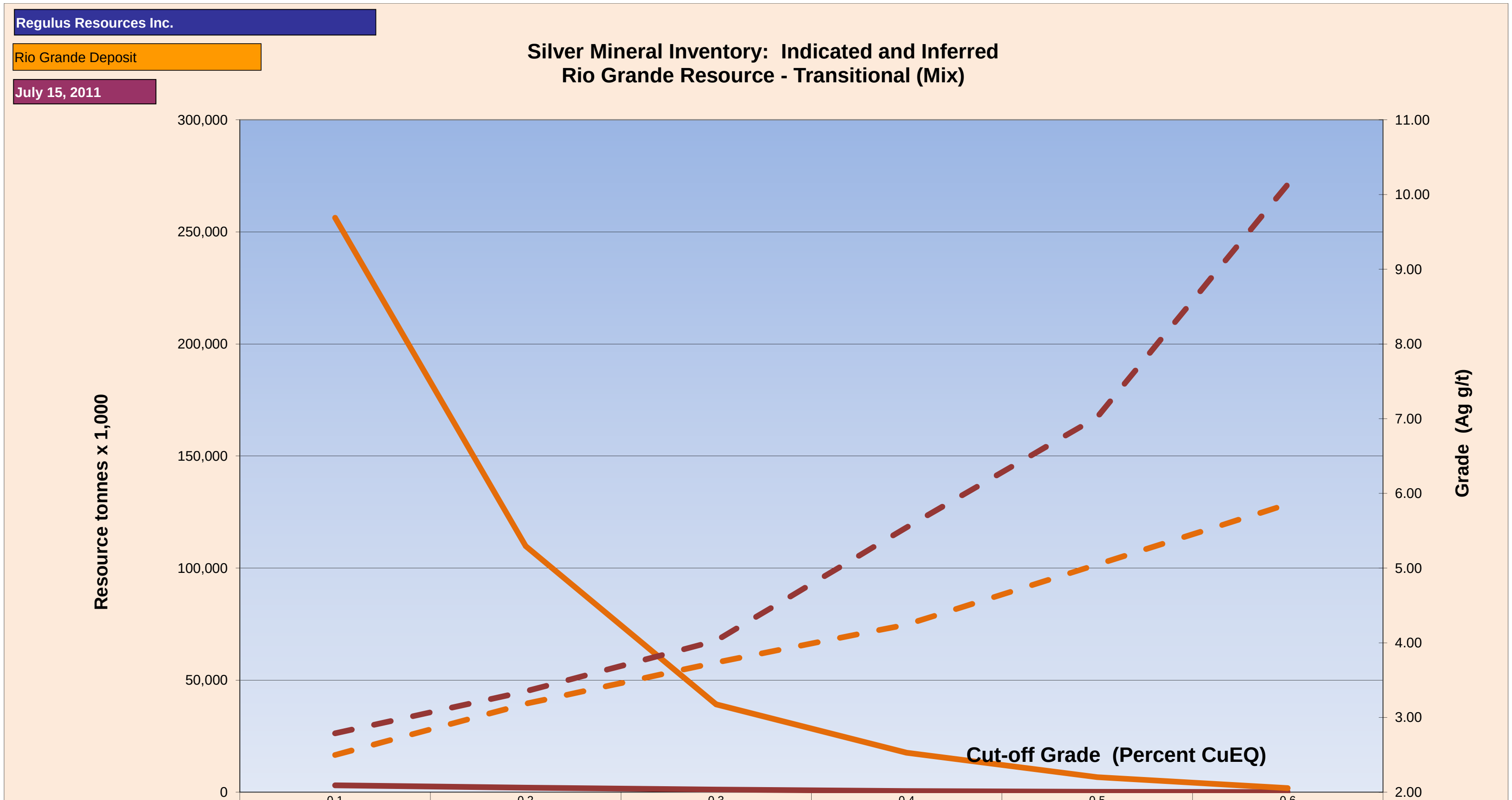
	0.10	0.20	0.30	0.40	0.50	0.60
Mo Indicated Quantity (t)	3,085.7	2,009.7	1,176.1	537.2	232.3	73.9
Mo Inferred Quantity (t)	256,294.17	109,830.27	39,192.78	17,572.34	6,694.38	1,851.96
Mo Indicated Grade (ppm)	29.243	14.433	13.878	13.205	12.321	10.666
Mo Inferred Grade (ppm)	24.239	18.566	16.691	15.003	14.427	13.961

SULPHIDE ROCK AU G/T INDICATED AND INFERRED BY CUEQ% CUT-OFF



	0.1	0.2	0.3	0.4	0.5	0.6
Indicated Tonnes	3,085.7	2,009.7	1,176.1	537.2	232.3	73.9
Inferred Tonnes	256,294.17	109,830.27	39,192.78	17,572.34	6,694.38	1,851.96
Indicated Grade Au g/t	0.158	0.211	0.249	0.296	0.348	0.478
Inferred Grade Au g/t	0.118	0.171	0.241	0.300	0.354	0.416

Sulphide Rock Ag g/t Indicated and Inferred by CuEQ% Cut-Off



	0.1	0.2	0.3	0.4	0.5	0.6
Ag Indicated tonnes	3,085.7	2,009.7	1,176.1	537.2	232.3	73.9
Ag Inferred tonnes	256,294.17	109,830.27	39,192.78	17,572.34	6,694.38	1,851.96
Indicated Grade (Ag g/t)	2.787	3.351	4.028	5.545	7.020	10.136
Inferred Grade (Ag g/t)	2.498	3.184	3.737	4.244	5.048	5.856