Report to:

Panoro Minerals Ltd.

Technical Report and Resource Estimate of the Antilla Copper-Molybdenum Project, Peru

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TETRA TECH

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GLOSSARY

UNITS OF MEASURE

above mean sea level	amsl
acre	ac
ampere	A
annum (year)	a
billion	B
billion tonnes	Bt
billion years ago	Ga
British thermal unit	BTU
centimetre	cm
cubic centimetre	cm^3
cubic feet per minute	cfm
cubic feet per second	ft^3/s
cubic foot	ft^3
cubic inch	in^3
cubic metre	m^3
cubic yard	yd^3
Coefficients of Variation	CVs
day	d
days per week	d/wk
days per year (annum)	d/a
dead weight tonnes	DWT
decibel adjusted	dBa
decibel	dB
degree	°
degrees Celsius	°C
diameter	ø
dollar (American)	US$
dollar (Canadian)	Cdn$
dry metric ton	dmt
foot	ft

gallon	gal
gallons per minute (US)	gpm
Gigajoule	GJ
gigapascal	GPa
gigawatt	GW
gram	g
grams per litre	g/L
grams per tonne	g/t
greater than	>
hectare (10,000 m^2)	ha
hertz	Hz
horsepower	hp
hour	h
hours per day	h/d
hours per week	h/wk
hours per year	h/a
inch	in
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	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

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
short ton (2,000 lb)	st
short tons per day	st/d
short tons per year	st/y
specific gravity	SG
square centimetre	cm^2
square foot	ft^2
square inch	in^2
square kilometre	km^2
square metre	m^2
three-dimensional	3D
tonne (1,000 kg) (metric ton)	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

Abbreviations and Acronyms

acid-base accounting	ABA
Activation Laboratories Ltd.	Actlabs
AMEC (Peru) S.A.	AMEC
Anaconda Peru S.A.	Anaconda
Antofagasta Plc	Antofagasta
atomic absorption	AA
Canadian Institute of Mining, Metallurgy, and Petroleum	CIM
CERTIMIN S.A.	Certimin
Chancadora Centauro S.A.	CHC
CIMM Peru SA	CIMM
Companhia Vale de Rio	CVRD
Compañía Minera Andino-Brasilera	CMAB
Cordillera de las Minas S.A.	CDLM
global positioning system	GPS
induced coupled plasma-optical emission spectroscopy	ICP-OES
induced polarization	IP
International Organization for Standardization	ISO
inverse distance squared	ID^2
joint venture	JV
laboratory information management system	LIMS
Laurion Consulting Ltd	Laurion
National Instrument 43-101	NI 43-101
nearest neighbour	NN
net neutralization potential	NNP
neutralization potential	NP
ordinary kriging	OK
Panoro Minerals Ltd.	Panoro
preliminary economic assessment	PEA
potential acid generation	AP
Qualified Person	QP
quality assurance	QA
quality control	QC
rare earth oxide	REO
rock mass rating	RMR
rock quality designation	RQD
semi-autonomous grinding	SAG
South American Datum	SAD
Southern Peru Copper S.A.	SPCC
SRK Consulting Services	SRK
Toronto Stock Exchange Venture Exchange	TSX-V
uniaxial compressive strength	UCS

1.0 SUMMARY

1.1 INTRODUCTION AND PROPERTY DESCRIPTION

Panoro Minerals Ltd. (Panoro) is a Canadian-registered resource company, based in Vancouver, Canada and in Lima, Peru, and is publicly listed on the Toronto Stock Exchange Venture Exchange (TSX-V) as PML.V. Panoro is a mineral exploration company focused on exploring and developing its copper and copper-gold deposits in Peru.

This technical report and resource estimate covers the Antilla porphyry copper-molybdenum Property (the Property or the Project), in the Apurimac Region of southern Peru, situated approximately 140 km southwest of Cusco.

Panoro retained Tetra Tech to produce a new National Instrument 43-101 (NI 43-101) compliant resource estimate and technical report on the Property. This technical report conforms to the standards set out in NI 43-101 Standards of Disclosure for Mineral Projects and is in compliance with Form 43-101F1. The Qualified Person (QP) responsible for this report is Paul Daigle, P.Geo., a Senior Geologist for Tetra Tech.

Mr. Daigle conducted a site visit at the Property from June 3 to 7, 2013, inclusive. The Project site and drill core logging and sampling facilities were inspected for one day. Some drill core from the Property is also stored in a secure warehouse in Cusco. This warehouse was also inspected for one day. Mr. Daigle was accompanied on the site visit by Mr. Luis Vela Arellano, Vice President Exploration for Panoro; Mr. John Romero Villanueva, Chief Project Geologist for Panoro; and Mr. Edwin Mayte, Manager Technical Services for Panoro.

The Property is defined by the mineral rights to 12 mining concessions (Rosselo 2013) and are currently 100% held by Panoro Apurimac S.A., a 100% subsidiary of Panoro. The 12 mining concessions cover an area of approximately 7,500 ha.

1.2 GEOLOGY AND MINERALIZATION

The Antilla deposit is a copper-molybdenum porphyry deposit, located in the Andahuaylas-Yauri belt of the high Andes of southern Peru. The Andahuaylas-Yauri belt is located immediately south of the Abancay deflection of the cordillera where thrust faulting oriented dominantly north-south is deflected to strike north-west south-east. The geology of the Andahuaylas-Yauri belt is dominated by the Andahuaylas-Yauri batholith which is exposed for approximately 300 km between the towns of Yauri in the southeast and Andahuaylas in the northwest, and Mesozoic to Early Cenozoic clastic and marine sediment sequences.

Quartzite and quartz-arenite of the Soraya Formation outcrop over most of the central and eastern part of the Property and host the intrusive rocks and mineralization defined to date. The clastic sediments are fine- to medium-grained, well laminated on sub-centimetre to metre scale and occasionally show other primary depositional features such as cross-bedding. The quartzite and quartz-arenite units are can be intercalated with centimetre to ten centimetre scale siltstone or lutite beds.

Sediments are intruded by at least three intrusive rock types: altered and weakly-mineralized Main Porphyry stocks or aphophyses, narrow Porphyry diorite and narrow, unaltered Late Porphyry dykes. The altered, weakly-mineralized Main Porphyry is exposed as a prominent knob immediately to the west of the mineralized quartzites, and another, smaller diorite intrusive body is exposed to the northwest and southeast of the mineralization.

The main mineralization types or zones are similar to many other porphyry deposits. The zones found at Antilla are primary sulphides, secondary sulphides, and few oxides in the leached cap overlying the deposit. The secondary sulphide zone forms a relatively continuous, tabular blanket of chalcocite that generally ranges from 60 to 120 m thick. The secondary sulphide zone is overlain by the leached cap which has an average thickness of 55 m and generally ranges from 0 to 75 m thick.

1.3 EXPLORATION AND DRILLING

The Property has been explored since its discovery in 2002. Exploration consisted of geological mapping, geochemical sampling, and geophysical surveys. Most of this exploration work was conducted by Cordillera de las Minas S.A. (CDLM) between 2003 and 2005. The deposit was drilled by three different companies between 2003 and 2010. In total, 15,985 m of drilling was completed in 96 drillholes.

Tetra Tech reviewed the drill core to the drill logs and reviewed the sampling and logging protocols from the various drill programs and found that they meet or exceed industry standards. Assay analyses and quality assurance (QA)/quality control (QC) sampling was also reviewed and found to be adequate for this type of deposit. Tetra Tech found no significant errors in the database and that the data is acceptable for resource estimation.

In the central and eastern portions of the Property, a geochemical rock chip and soil survey has defined a 3 km by 5 km area over the of the known Antilla deposit. This area appears as part of a larger east-west structural trend. The geochemistry has defined several additional exploration targets: Chabuca, West Block and East Block. Geological mapping and geochemical sampling are ongoing.

The potential areas are named Chabuca and the West Block, centered by the East Block, and where the geology is formed by quartzites and arenite sediments intruded by mineralized-altered monzonites, diorites porphyries and late latite porphyry. A surface mapping and extended geochemistry survey are in progress, and Tetra Tech recommends a geophysics survey to define targets to drills. To the west extreme of the Property, new mineralization in porphyry-skarn type in the area named El Piste was discovered, where detailed mapping and sampling is in progress.

1.4 RESOURCE ESTIMATE

The block model and mineral resource for the Antilla deposit is classified as having both Indicated and Inferred Mineral Resources based on the number of drillholes, drillhole spacing, and sample data populations used in the estimation of the blocks.

The mineral resource estimate for the Antilla deposit, at a 0.2% copper equivalent (CuEQ) cut-off, is an Indicated Resource of 188.5 Mt at 0.40% copper, 0.009% molybdenum, and 0.42% CuEQ; and an Inferred Resource of 145.9 Mt at 0.28% copper, 0.009% molybdenum, and 0.30% CuEQ.

The mineral resource was estimated by the ordinary kriging (OK) interpolation method on capped composite copper and molybdenum grades. No recoveries have been applied to the interpolated grade estimates. The mineral resource was constrained within a conceptual optimized pit shell. Table 1.1 and Table 1.2 present the Indicated and Inferred Mineral Resources for the Antilla deposit in a range of cut-off grades within a conceptual pit shell.Table 1.3 and Table 1.4 present the mineral resource estimates by domain at a 0.2% CuEQ cut-off grade within the conceptual pit shell.

Table 1.1 Indicated Resource Estimate for the Antilla Deposit

CuEQ% Cut-off	Density	Tonnes ('000)	Cu (%)	Mo (%)	CuEQ (%)
0.40	2.68	84,097	0.54	0.010	0.57
0.375	2.68	95,498	0.52	0.009	0.54
0.35	2.68	108,604	0.50	0.009	0.52
0.325	2.67	122,626	0.48	0.009	0.50
0.30	2.67	138,384	0.46	0.009	0.48
0.275	2.67	155,069	0.44	0.009	0.46
0.25	2.67	170,189	0.42	0.009	0.44
0.225	2.66	180,844	0.41	0.009	0.43
0.20	2.66	188,468	0.40	0.009	0.42
0.175	2.65	194,254	0.39	0.009	0.41
0.15	2.65	199,746	0.39	0.009	0.41
0.125	2.64	206,160	0.38	0.009	0.40
0.10	2.63	215,022	0.37	0.009	0.39

Note: Inaccuracies may occur due to rounding.

Table 1.2 Inferred Resource Estimate for the Antilla Deposit

CuEQ% Cut-off	Density	Tonnes ('000)	Cu (%)	Mo (%)	CuEQ (%)
0.40	2.688	16,803	0.49	0.010	0.51
0.375	2.690	24,499	0.45	0.009	0.47
0.35	2.690	30,847	0.43	0.009	0.45
0.325	2.689	38,783	0.41	0.009	0.42
0.30	2.689	49,354	0.38	0.009	0.40
0.275	2.687	64,107	0.36	0.009	0.37
0.25	2.684	85,657	0.33	0.009	0.35
0.225	2.681	114,486	0.30	0.009	0.32
0.20	2.680	145,909	0.28	0.009	0.30
0.175	2.679	167,927	0.26	0.008	0.28
0.15	2.677	184,847	0.25	0.008	0.27
0.125	2.673	204,801	0.24	0.008	0.26
0.10	2.669	220,298	0.23	0.008	0.25

Note: Inaccuracies may occur due to rounding.

Table 1.3 Indicated Resource Estimate for the Antilla Deposit at a 0.2% CuEQ Cut-off

Domain	Density	Tonnes ('000)	Cu (%)	Mo (%)	CuEQ (%)
Overburden/Cover	2.06	4,546	0.27	0.010	0.30
Leach Cap	2.52	8,715	0.28	0.010	0.30
Supergene	2.68	132,593	0.45	0.008	0.46
Primary Sulphides	2.70	42,614	0.30	0.010	0.32

Note: Inaccuracies may occur due to rounding.

Table 1.4 Inferred Resource Estimate for the Antilla Deposit at a 0.2% CuEQ Cut-off

Domain	Density	Tonnes ('000)	Cu (%)	Mo (%)	CuEQ (%)
Overburden/ Cover	2.20	264	0.24	0.010	0.26
Leach Cap	2.51	8,453	0.22	0.011	0.24
Supergene	2.69	49,270	0.33	0.009	0.34
Primary Sulphides	2.70	87,923	0.26	0.008	0.27

Note: Inaccuracies may occur due to rounding.

1.5 RECOMMENDATIONS

Tetra Tech recommends that additional drilling is warranted to further investigate and develop the known Property. Additional drilling will determine, with greater confidence, both the continuity and extents of the copper and molybdenum mineralization. The recommended drilling includes infill drilling within the centre of the deposit where drillhole spacings are greater than 100 m, and areas along the edge of the known deposit where drillhole data is relatively thin and where the supergene enrichment zone is still open.

Tetra Tech recommends a minimum of 24 drillholes at a minimum depth of 200 m per drillhole, or a minimum of 4,800 m. The proposed minimum budget for such a drill program is approximately Cdn$1.4 million.

Tetra Tech recommends an extension of the current exploration grid to include the West Block and Chabuco exploration targets. Tetra Tech recommends continued geochemical sampling and geophysical surveys over these areas. As of the date of this report, Panoro has already planned three geophysical surveys consisting of induced polarization (IP)-resistivity, self-potential and ground magnetics. Each survey consists of 88 line km and the estimated cost of the three surveys is US$117,070.

Tetra Tech also recommends that a preliminary economic assessment (PEA) study be completed on the Property at this stage. The purpose of this study will determine the base economics of a possible mining operation. The proposed minimum budget for such a study is approximately Cdn$250,000.

2.0 INTRODUCTION

Panoro is a Canadian-registered resource company, based in Vancouver, Canada and in Lima, Peru, and is publicly listed on the TSX-V as PML.V. Panoro is a mineral exploration company focused on exploring and developing its copper and copper-gold deposits in Peru.

This technical report and resource estimate covers the Property in the Apurimac Region of southern Peru, situated approximately 140 km southwest of Cusco.

2.1 TERMS OF REFERENCE AND PURPOSE OF REPORT

Panoro retained Tetra Tech to produce a new NI 43-101 compliant resource estimate and technical report on the Property. This technical report conforms to the standards set out in NI 43-101 Standards of Disclosure for Mineral Projects and is in compliance with Form 43-101F1. The QP responsible for this report is Paul Daigle, P.Geo., a Senior Geologist for Tetra Tech.

All units of measurement used in this technical report and resource estimate are in metric, unless otherwise stated.

2.2 INFORMATION AND DATA SOURCES

The main sources of information in preparing this report are from internal reports from Panoro, previous NI 43-101 reports, and press releases from Panoro. A complete list of references is provided in Section 19.0.

2.3 TETRA TECH QP SITE VISIT

Mr. Daigle conducted a site visit to the Property from June 3 to 7, 2013, inclusive. The Project site and drill core logging and sampling facilities were inspected for one day during the site visit. Drill core from the Property are stored at site and in a secure warehouse in Cusco and was also inspected for one day. Mr. Daigle was accompanied on the site visit by Mr. Luis Vela Arellano, Vice President Exploration for Panoro and Mr. John Romero Villanueva, Chief Project Geologist for Panoro. Mr. Daigle also met with Mr. Edwin Mayta, Manager Technical Services for Panoro at the warehouse in Cusco and the office in Lima.

3.0 RELIANCE ON OTHER EXPERTS

In preparation of this report, Tetra Tech has relied upon Luis Vela Arellano, Edwin Mayta and John Villanueva Romero, employees of Panoro for information and for matters relating to property ownership, property titles, and environmental issues, including status tenure associated with the Property. The majority of the information has been sourced from Panoro internal reports, previous NI 43-101 reports, and press releases from Panoro. Third-party sources are disclosed in Section 19.0.

Tetra Tech has not conducted an independent examination of land titles or mineral rights for the Property. However, Panoro has provided Tetra Tech with a legal opinion on the Property from Rosselo Attorneys at Law, a Lima-based law firm (Rosselo 2013).

4.0 PROPERTY DESCRIPTION AND LOCATION

The Property is defined by the mineral rights to 12 mining concessions (Rosselo 2013) and are currently 100% held by Panoro Apurimac S.A., a 100% subsidiary of Panoro. The 12 mining concessions cover an area of approximately 7,500 ha.

4.1 LOCATION

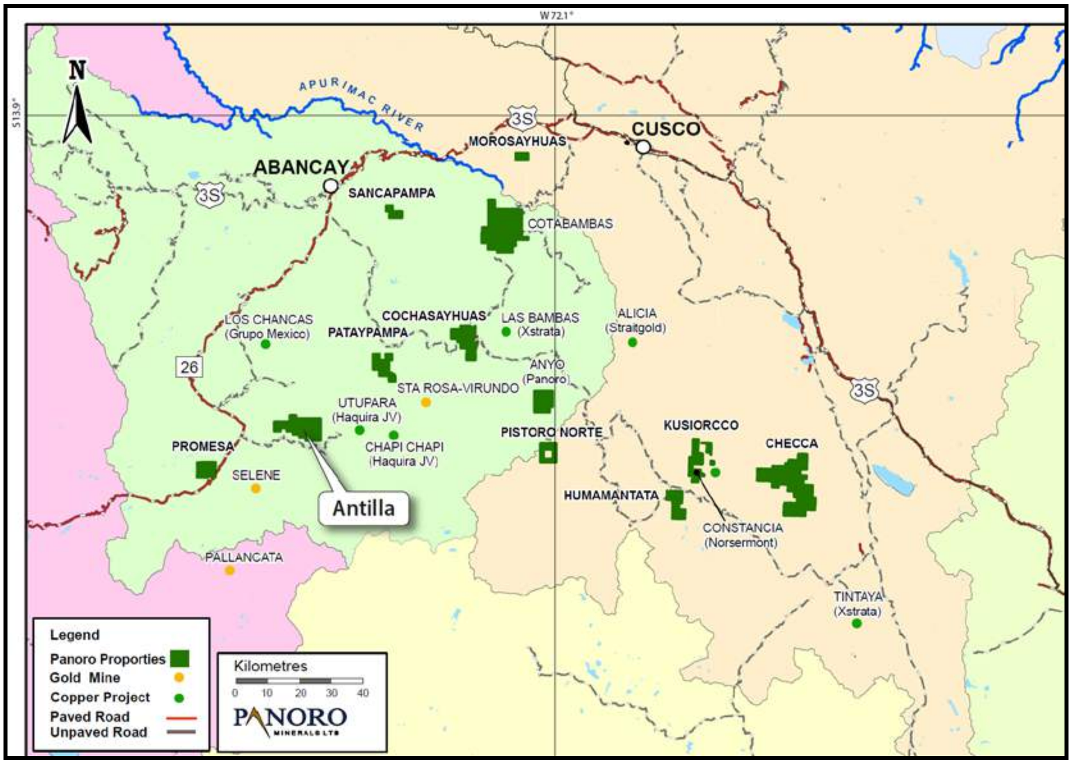
The Property is located:

- at approximately 14°21' south and 72°58' west in southeast Peru
- at approximately 719,600 mE and 8,413,000 mN (Zone 18L; South American Datum (SAD) 69)
- approximately 500 km southeast of Lima, capital city of Peru
- approximately 140 km southwest of Cusco
- approximately 80 km south of Abancay, capital of Apurimac Region
- approximately 5 km southwest of the village of Sabaina (Antabamba District) and adjacent to the village of Antilla
- in the Apurimac Region (*Departamento*) of southern Peru
- in the southeast of Aymaraes Province (*Provincia*)
- in the Huaquirca and Sabaino Districts (*Distritos*) roughly 2.3 km southwest of Rio Antabamba and Rio Mollebamba
- on the north slope of the Quebrada Huancaspaco valley.

The Property is situated as shown in Figure 4.1 and Figure 4.2.

Figure 4.1 Location Map

Figure 4.2 Property Location Map



4.2 PROPERTY DESCRIPTION

In March 2007, Panoro acquired all outstanding shares in CDLM on the Lima exchange for US$16.6 million, comprised of US$13 million in cash and the remaining amount in common shares. Through the deal Panoro acquired 13 properties including the Property.

The Property consists of 12 concessions (Table 4.1 and Figure 4.3), and covers a total land area of 7,500 ha. The mineral rights are held by Panoro Apurimac S.A., a wholly owned subsidiary of Panoro. The concessions cover the entire known Antilla deposit which is situated almost entirely in Concession 10170302, Aluno Cuatro 2002.

Panoro is currently operating under a Class B exploration permit. The Property is subject to annual payments to maintain concessions in good standing and the concessions are renewed on a yearly basis every June. As the time of writing this report, all concessions were in good standing (Rosselo 2013).

Table 4.1 Antilla Exploration Concessions

Concession No.	Concession Name	Area (ha)	Expiry Date
10170402	Aluno Cinco 2002	100	June 2014
10170302	Aluno Cuatro 2002	800	June 2014
10200202	Aluno Quince 2002	900	June 2014
10059709	Antilla Uno	200	June 2014
10344303	Antillana 2003	1,000	June 2014
10344203	Antillana Uno 2003	800	June 2014
10313306	Don Martin 1	300	June 2014
10002003	Macla 2003	300	June 2014
10043903	Valeria Dieciseis 2003	900	June 2014
10043803	Valeria Quince 2003	1,000	June 2014
10166404	Valeria Sesentaiuno 2004	400	June 2014
10329903	Valeria Treintaidos	800	June 2014
-	-	7,500	-

4.2.1 ANTILLA JV AGREEMENT, 2010

In April 2010, Panoro entered into a joint venture (Antilla JV) agreement with Chancadora Centauro S.A. (CHC), whereby CHC would make cash payments of US$8 million to Panoro and invest US$17 million into the Property to earn a 70% interest.

In September 2010, CHC was in breach of the Antilla JV agreement. The Property was under arbitration and an injunction was put in place on the Property. No further exploration activities were conducted during period.

On January 3, 2013, the Arbitration Tribunal decided in favour of Panoro and the injunction was officially lifted. On July 3, 2013, the decision was entered into the Register of Mining Rights. There are no contractual or judicial limitations on the Property.

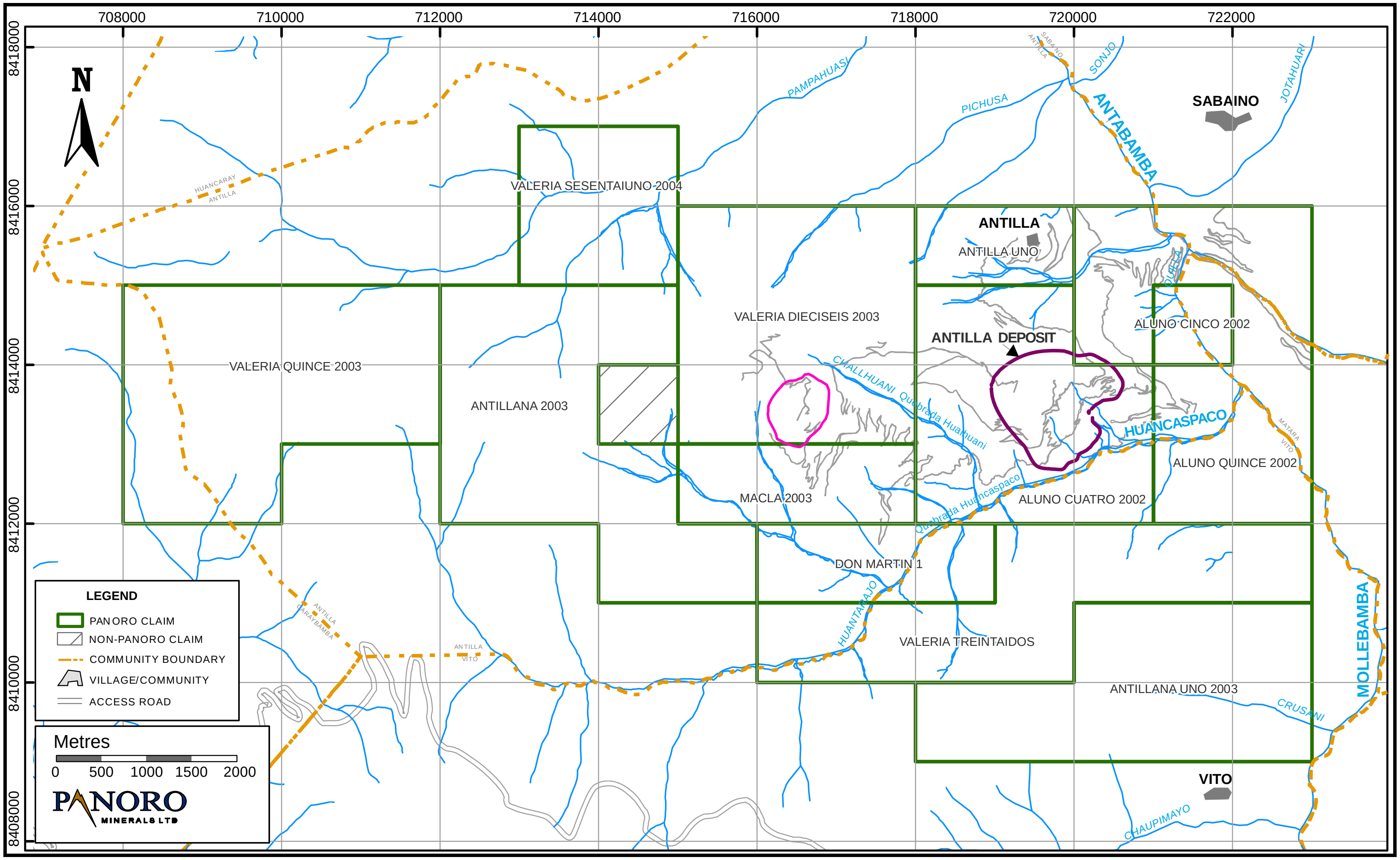
4.3 SURFACE RIGHTS

An agreement is set in place with the local community of Antilla (Comunidad Campesina de Antilla) to allow access to the Property for the purposes of carrying out mineral exploration activities.

4.4 ENVIRONMENTAL LIABILITIES

Tetra Tech is not aware of any environmental liabilities on the Property.

Figure 4.3 Antilla Concession Map



Source: Panoro (2013)

5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 ACCESSIBILITY

The Property is most easily accessed from Cusco by highway via Abancay. The Property is situated approximately 140 km southwest of Cusco (approximately 360 km by road). The Property may be accessed from Cusco via:

- Highway 3S west then southwest for approximately 200 km to Abancay continuing on
- Highway 3S south for approximately 16 km to join
- Highway 26 south (*Carretera Interoceánica*) for approximately 60 km to join
- an unpaved highway 70 km south and southeast towards the provincial capital of Antabamba to join
- an unpaved road 10 km west and up the western slope of the Antabamba valley to Panoro's base camp at the village of Antilla.

The Project site is a further 6.5 km along an access road from the base camp. Access around the Project site is limited to drill roads developed in the mid-2000s. These roads are in good condition but have not been maintained.

The main highways in this region of Peru are paved. The secondary highways are generally unpaved but are well maintained. The highways and roads through the mountains are subject to many switchbacks to overcome the high relief, therefore highway distances are longer than they appear. The drive from Cusco to the Property is typically eight hours.

There are regular scheduled flights to and from Cusco. Flight time from Lima to Cusco is typically one hour.

5.2 CLIMATE

The climate in this region is a temperate highland tropical climate climatic zone (Cwb; Köppen climate classification) and is characterized by dry winters and rainy summer seasons. Generally, the dry winter season between May to October is marked by very little precipitation and the wet summer season between November and April is marked with rain.

Daytime temperatures in the dry season range between 18 and 22°C with highs near 30°C. Night time temperatures tend to be cold. The wet season has moderate variations in temperature with the daytime average ranging between 15 and 18°C and night time lows between 5 and 8°C (Wright 2009).

Cusco shares the same climate as the Property and has the closest precipitation records. Average precipitation is 670 mm where June and July received a minimum rainfall of less than 4 mm per month. January receive a maximum of up to 150 mm.

Exploration activities may take place year-round.

5.3 LOCAL RESOURCES

Abancay, population 51,462 (2007), is the closest major town to the Property and can provide most supplies for the base camp. Basic supplies, food, and fuel can be found in the surrounding villages. Mining related equipment and skilled and professional services must be sourced elsewhere. Unskilled labor may be found in the nearby villages.

Panoro has set up a semi-permanent base camp with a fixed building for a kitchen, offices, and core logging and storage facilities. Weatherhaven tents are set up for accommodation.

The Property has sufficient land for exploration and development purposes.

5.4 INFRASTRUCTURE

The Property is relatively isolated from public infrastructure and is limited to a small network of access roads. There is cellular telephone coverage from the village of Antilla and on some portion of the Property.

There is no source of electricity on the Property except a low-voltage line which services the village of Antilla. There is a 220 kV substation (Cotaruse S.E.) located approximately 42 km west of the Property.

The nearest major airport is in Cusco and the nearest railhead is in Izcuchaca, a town roughly 20 km west of Cusco.

Water sources are found in the creeks and rivers in the valleys on and around the Property.

5.5 PHYSIOGRAPHY

The Property is located in the high altitudes of the Andean Cordillera where elevations vary between 2,500 to 4,500 masl. Relief on the Property varies from moderate slopes along ridge tops to very high along the flanks of the ridges. The region is characterized by deeply incised river valleys and canyons such as the Rio Antabamba, which lies 600 m below the village of Antilla (Wright 2009). The Antilla deposit is situated on the northern slope of the steeply eroded valley (Quebrada Huancaspaco) where elevations vary from the 3,100 to 4,200 masl.

The vegetation on the Property is sparse, limited to alpine grass and shrubs in the higher elevations. Eucalyptus trees have been planted along the access roads to and on the Property to strengthen the road cuts along the steep slopes.

6.0 HISTORY

The following is taken from Wright (2009).

6.1 SOUTHERN PERU COPPER S.A., 1999

In 1999, Southern Peru Copper S.A. (SPCC) carried out regional exploration work on the Property including drilling on an optioned property immediately to the east of what became the Property. Poor results caused SPCC to abandon the project.

6.2 CORDILLERA DE LAS MINAS S.A., 2002 TO 2005

In 2002, CDLM explored Peru for large copper deposits. Anaconda Peru S.A. (Anaconda), a Peruvian subsidiary of Antofagasta Plc (Antofagasta), transferred ownership of several groups of exploration concessions in southern Peru to CDLM. Companhia Vale do Rio (CVRD), through its subsidiary Compañía Minera Andino-Brasilera (CMAB) had the option to acquire a 50% interest in CDLM by spending US$6.7 million funding exploration over three years (Vale 2002).

In 2002, CDLM carried out geochemical exploration and followed up anomalous responses to the west of Calvario Hill, where SPCC had worked, and staked the first 2,800 ha of mineral concessions. In 2003, geological mapping and geophysical surveys led to a drilling program in September 2003 that extended into 2004. Ten holes totalling 1,991.91 m were drilled outlining the mineralized zone at Antilla. Three holes were abandoned after 20 to 50 m, re-collared, and subsequently drilled to their final depth.

In 2004, CDLM drilled eight holes testing targets that had been defined during mapping and geophysical surveys in 2003 on the western half of the Property. Results were generally disappointing and in 2005 the CDLM joint venture returned to the eastern part of the Property to drill five more holes totalling 821 m in an attempt to extend the known mineralization to the north and southwest. A mineral target estimate was prepared in-house by CDLM during 2005; that estimate is not compliant with CIM guidelines. Results of the 2005 campaign were disappointing and led to the dissolution of the joint venture.

Drillholes from the CDLM campaigns were logged for descriptive rock type and alteration using graphic logs and geotechnical data such as fracture density, recovery, and rock quality designation (RQD) were recorded. Samples were sent for analysis to the CIMM Peru SA (CIMM) laboratory in Lima. Analyses for total copper, arsenic, silver, gold, lead, zinc, and sequential soluble copper were carried out at CIMM. No independent QA/QC procedures were followed for this assaying. Density determinations were also made on a systematic basis, however details about the procedures and the original measurements are unknown.

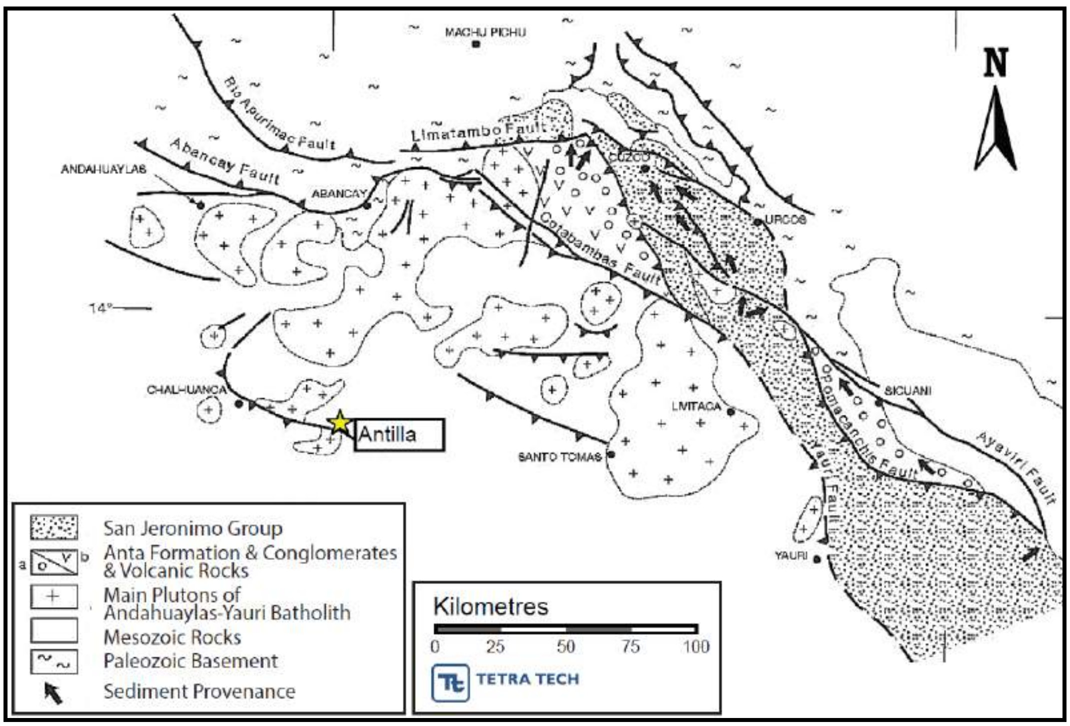
7.0 GEOLOGICAL SETTING AND MINERALIZATION

7.1 GEOLOGICAL SETTING

7.1.1 REGIONAL GEOLOGY

The Antilla deposit is located in the Andahuaylas-Yauri belt of the high Andes of southern Peru. The Andes are the second highest fold-thrust belt in the world after the Himalaya chain in Asia. The Andahuaylas-Yauri belt is located immediately south of the Abancay deflection of the cordillera where thrust faulting oriented dominantly north-south is deflected to strike north-west south-east (Figure 7.1). At the deflection the normal subduction of southern Peru and northern Chile changes to flatter subduction below central and northern Peru.

Figure 7.1 Regional Structural Geology of the Andahuaylas-Yauri Belt



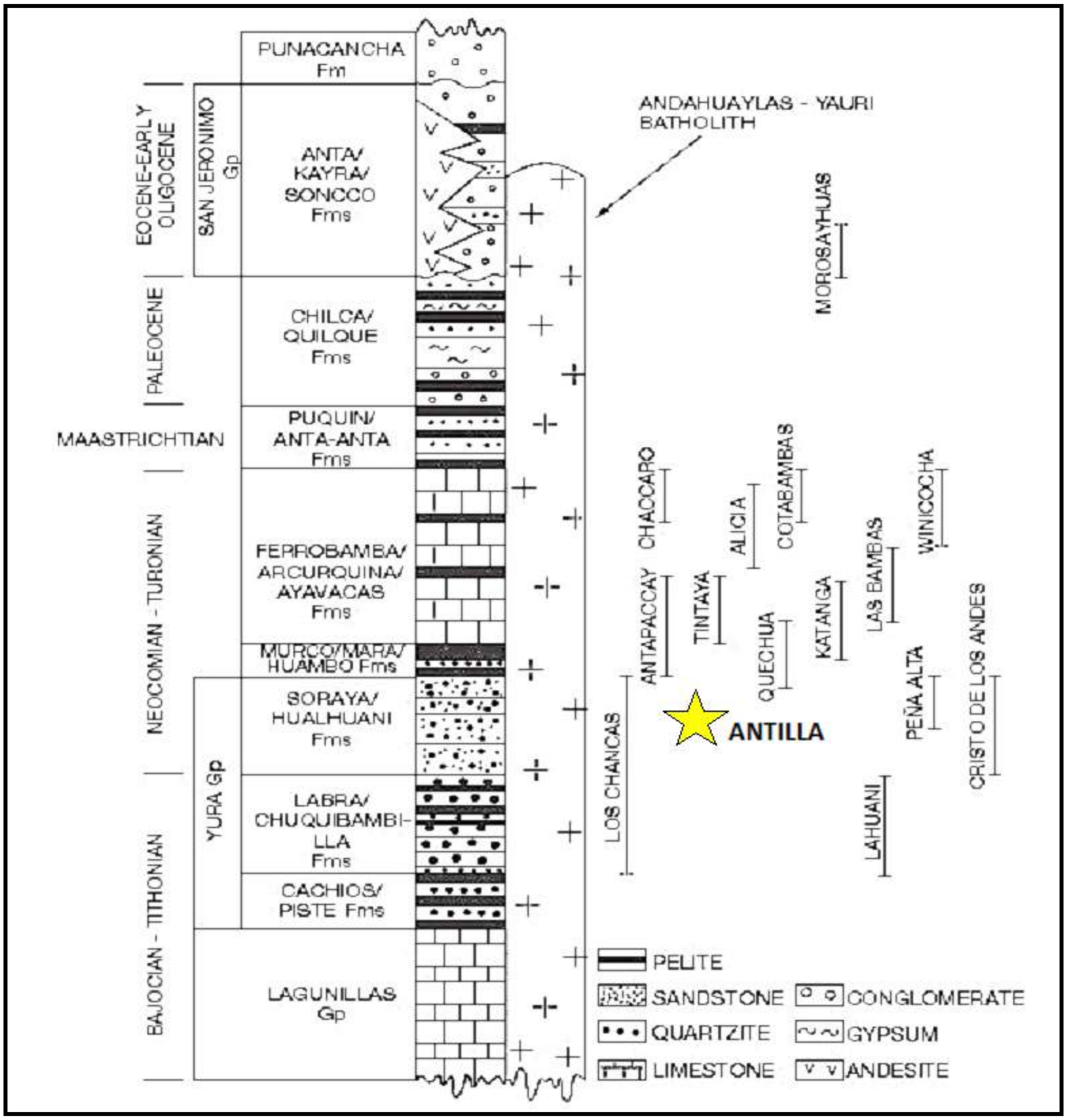
Note: Modified from Perelló et al. (2009)

The geology of the Andahuaylas-Yauri belt is dominated by the Andahuaylas-Yauri batholith which is exposed for approximately 300 km between the towns of Yauri in the southeast and Andahuaylas in the northwest, and Mesozoic to Early Cenozoic clastic and marine sediment sequences. The batholith is ranges from 25 km wide at the east end to 130 km wide near Abancay and is composed of early mafic to intermediate intrusives with cumulate textures, grading to intermediate intrusive rocks with equigranular to porphyritic textures. The batholith intrudes Precambrian to Palaeozoic basement rocks which are exposed to the northeast. The basement sequence culminates in Permian to Early Triassic age Mitu Group volcaniclastic and clastic rocks. The basement is overlain by Mesozoic and Cenozoic sediments deposited in the Eastern and Western Peruvian basins. The eastern basin is made up of marine clastic and carbonate rocks. The western basin, exposed in what is now the Western Cordillera or Cordillera Occidental where the Property is located, is a marine transgressional sequence grading from continental deep-water clastic sediments to limestones. The northeastern edge of the western basin is includes the Lagunilla and Yura Groups, made up of middle to late Jurassic quartz-arenite, quartzite, and shale grading upward to massive micritic limestone, shale, and chert of the Mara and Ferrobamba Formations. At the top of the Yura Group is the Soraya Formation, composed of arenites, quartz arenites, and quartzites, which hosts the Antilla deposit.

Eocene and Oligocene stratigraphy is dominated by the sedimentary San Jerónimo Group and the dominantly volcanic Anta Formation, which unconformably overlie the Mesozoic and Cenozoic sediments. Miocene and Pliocene volcanics and sediments overlie Oligocene sediments. A discontinuous veneer of Pleistocene fluvio-glacial sediments and re-worked gravels overlie the region.

Major mineralization styles in the region include porphyry copper (+molybdenum+gold), iron-copper skarn, and minor epithermal vein-style mineralization. Since the commissioning of the Tintaya mine by BHP in 1999 at the southeastern end of the belt, major copper deposits have been brought to feasibility at Antapaccay, Las Bambas, and Los Chancas. Fifteen to twenty other copper deposits, including Antilla, are currently being explored by Peruvian and multinational mining and exploration companies (Figure 7.2).

Figure 7.2 Regional Stratigraphy for the Antilla Deposit



Source: Modified from Perelló et al. (2003)

7.1.2 PROPERTY GEOLOGY

Quartzite and quartz-arenite of the Soraya Formation outcrop over most of the central and eastern part of the Property and host the intrusive rocks and mineralization defined to date. The clastic sediments are fine- to medium-grained, well laminated on sub-centimetre to metre scale and occasionally show other primary depositional features such as cross-bedding. The quartzite and quartz-arenite units are can be intercalated with centimetre to ten centimetre scale siltstone or lutite beds.

At the bottom of the canyon in road cuts on the road up to the town of Antilla from the valley floor, and behind Calvario Hill, the Chuquibambilla Formation is exposed, comprising outcrops of mudstone, lutite and arenite.

Sediments are intruded by at least two intrusive rock types: altered and weakly-mineralized Main Porphyry stocks or aphophyses and narrow, unaltered Late Porphyry dykes. The altered, weakly-mineralized Main Porphyry is exposed as a prominent knob immediately to the west of the mineralized quartzites, and another, smaller intrusive body is exposed to the southeast of the mineralization (Figure 7.3). The Main Porphyry has medium-grained porphyroblasts of euhedral plagioclase accounting for approximately 25% by volume. Coarse, corroded, or rounded quartz crystals are also common and constitute approximately 5% of the porphyry by volume. Medium- to coarse-grained biotite, hornblende, and orthoclase are also important porphyroblasts and collectively constitute approximately 10% by volume. The remaining 60% of the volume of the Main Porphyry is composed of a groundmass of fine to glassy quartz and feldspar. The composition of the Main Porphyry is granodioritic to quartz monzodioritic.

The Late Porphyry is fine grained, with fine- to medium-grained porphyroblasts and a dark grey glassy groundmass (Figure 7.4). Plagioclase porphyroblasts constitute approximately 25% of the volume of the rock, and biotite and amphibole porphyroblasts constitute an additional 15%. The Late Porphyry is distinguished from the Main Porphyry by its unaltered, dark-coloured groundmass, relatively low abundance of quartz porphyroblasts, and its tabular dyke-like form of emplacement. Late Porphyry dykes are general north-south-striking and are interpreted to be localized on normal faults that were active during the emplacement of the Andahuaylas-Yauri batholith. Potassium-argon dating indicates that the bulk of the batholith was emplaced during the middle Eocene to early Oligocene (approximately 40 to 32 Ma, Perelló et al. 2003).

At least two other porphyritic intrusive bodies have been mapped on the Property. A diorite porphyry with traces of copper mineralization is exposed on the western block of the property, and un-mineralized monzonitic sills are exposed to the north east of the mineralized zone.

Figure 7.3 Geology of the Panoro Antilla Property

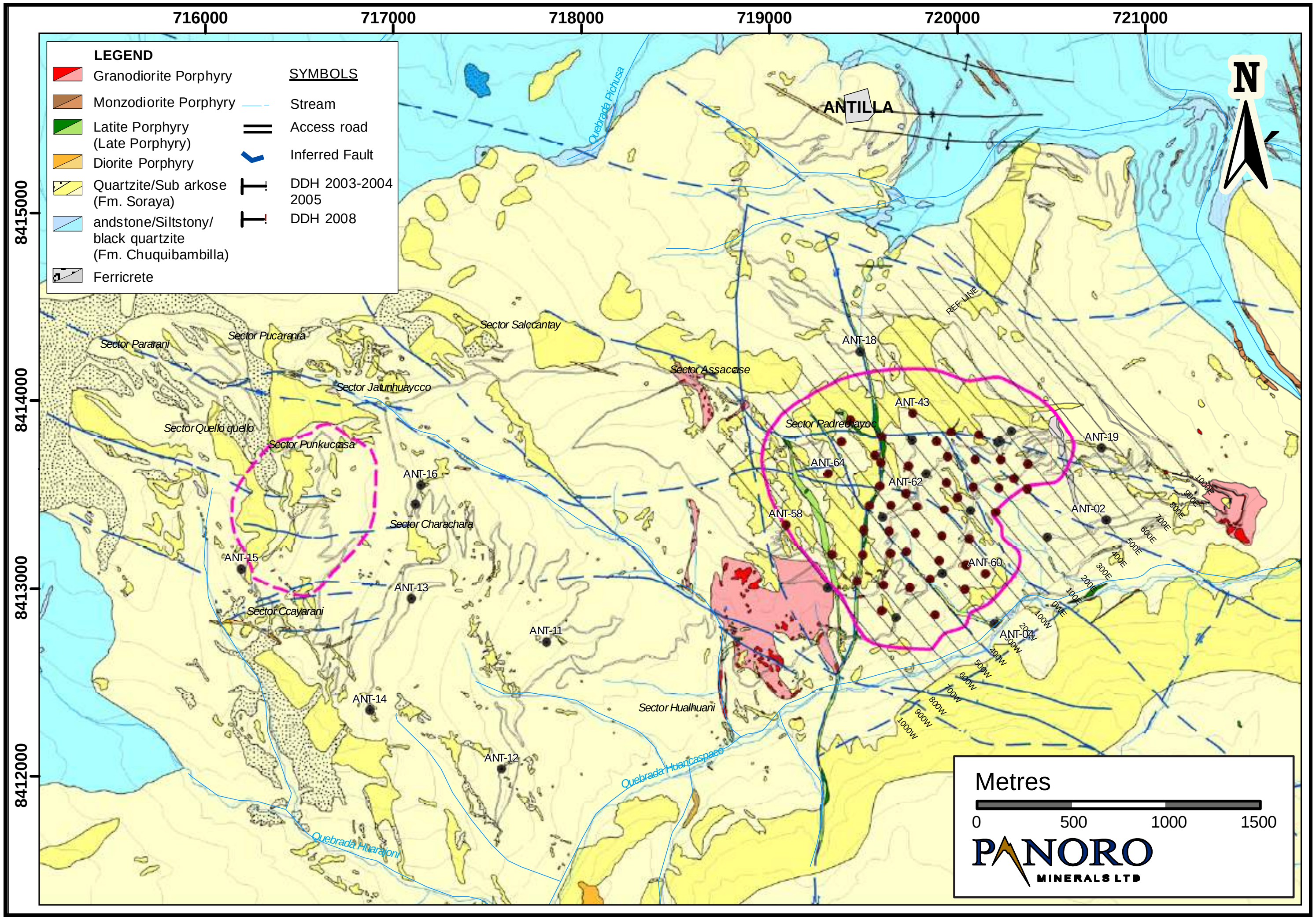


Figure 7.4 Photographs of Main Rock Types at Antilla

Note: Drill core is 8 cm wide. Clockwise from upper left: quartzite with bedding laminations at mm scale; delicate bedding features are offset along fractures; altered Main Porphyry with sulphide mineralization; quartz aphyric Late Porphyry; altered sediments (left) in contact with Main Porphyry (field of view is 4 m wide); fine grained lutite.

Source: Wright (2009)

7.1.3 STRUCTURAL GEOLOGY

The following is taken from Wright (2009).

Regional structural geology is dominated by the Andean Orogeny which, in the vicinity of13°S latitude at the Abancay deflection, is oriented approximately northwest-southeast. Tectonic activity was most active during the Eocene and Oligocene times, referred to as the Incaic pulse, and during an Oligocene to Miocene-age Quechua pulse (Pecho 1981). West-southwest-dipping thrust faults stack repeating packages of Mesozoic to Early Cenozoic sediments on top of each other to form a belt 300 km wide. The younger sediments are in turn thrust northeastward on top of Palaeozoic to Precambrian basement (refer to Figure 7.2). Deformation is most intense in the northeastern portion of the western cordillera where large north-verging folds are developed in the Ferrobamba formation.

At property scale, a series of steeply-dipping west-northwest-striking faults and conjugate north-northeast-striking normal faults with dextral offsets have been interpreted from outcrop mapping (Figure 7.4). The sense and throw of the faults is extremely difficult to determine due to the relatively monotonous sequence of clastic sediments. Reliable indicators of stratigraphic elevation such as marker beds have not been found.

7.2 MINERALIZATION

The following is taken from Wright (2009).

The most important mineralization encountered to date on the Property is a tabular body of fracture-controlled and disseminated chalcocite and chalcopyrite with minor molybdenite-coated fractures overlain by a barren, leached zone of variable thickness. The tabular zone strikes 050° and dips -20° to the east over an area 1.2 km long and 1.2 km wide. The supergene chalcocite mineralization has a true thickness of 40 to 80 m. Associated with the chalcocite mineralization is weak sericitization, chloritization, and silicification of arenite and quartzite. The strongest chalcocite mineralization is associated with brittle faults. Below the chalcocite mineralization, low-grade disseminated chalcopyrite, bornite, and molybdenite mineralization occurs. Altered, weakly-mineralized porphyritic felsic intrusives are associated with the hypogene mineralization. Unaltered, unmineralized porphyritic dykes cut mineralization.

7.2.1 MINERALIZATION STYLE

The most economically significant form of mineralization encountered to date on the Property is fracture-controlled and disseminated chalcocite. The chalcocite occurs as:

- sooty or scaly coatings on millimetre wide, filled to partially open fractures
- sooty coatings on rock fragments and rock flour encountered in intense fracture or fault zones over widths of one to ten metres
- selvages on sub-centimetre width quartz veinlets

- occasionally as disseminated grains or coating disseminated grains of primary chalcopyrite in zones of more intense fracturing and silicification (Figure 7.5).

Figure 7.5 Photographs of Mineralization at Antilla

Note: Drill core and core tray dividers are approximately 8 cm wide for scale. Clockwise from upper left: chalcocite and quartz filled fractures in quartzite; chalcocite coating a fine late fracture in weakly altered quartzite; intense fracturing and sooty chalcocite mineralization associated with faulting: primary chalcopyrite mineralization in fractures below the secondary sulphide zone; molybdenite mineralization on fine fractures; chalcocite on fracture surface and in quartz veins.

Source: Wright (2009)

Chalcocite is restricted to the secondary sulphide enrichment zone.

Molybdenite occurs in fine fractures and as grains within sub-centimetre wide quartz veinlets in the primary sulphide, secondary sulphide and Main Porphyry.

Chalcopyrite occurs as disseminated grains and surface coatings along fractures and within quartz veinlets. Disseminated grains are also observed. Chalcopyrite in concentrations of up to 1% occur in the Main Porphyry and primary hypogene sulphide zones.

7.2.2 Trace Elements Associated with Mineralization

Copper grades increase three-fold from the primary sulphide zone to the secondary sulphide zone. The leached zone has copper grades of approximately one third of those from the primary sulphide zone and an order of magnitude less than the secondary sulphide zone. The genetic model involving the removal of copper from primary mineralization in what is now the leached zone and re-deposition as chalcocite in the secondary sulphide zone is well supported, given the distribution of copper grades among the mineralization zones. The Main Porphyry is weakly mineralized with copper, and the Late Porphyry contains little or no copper.

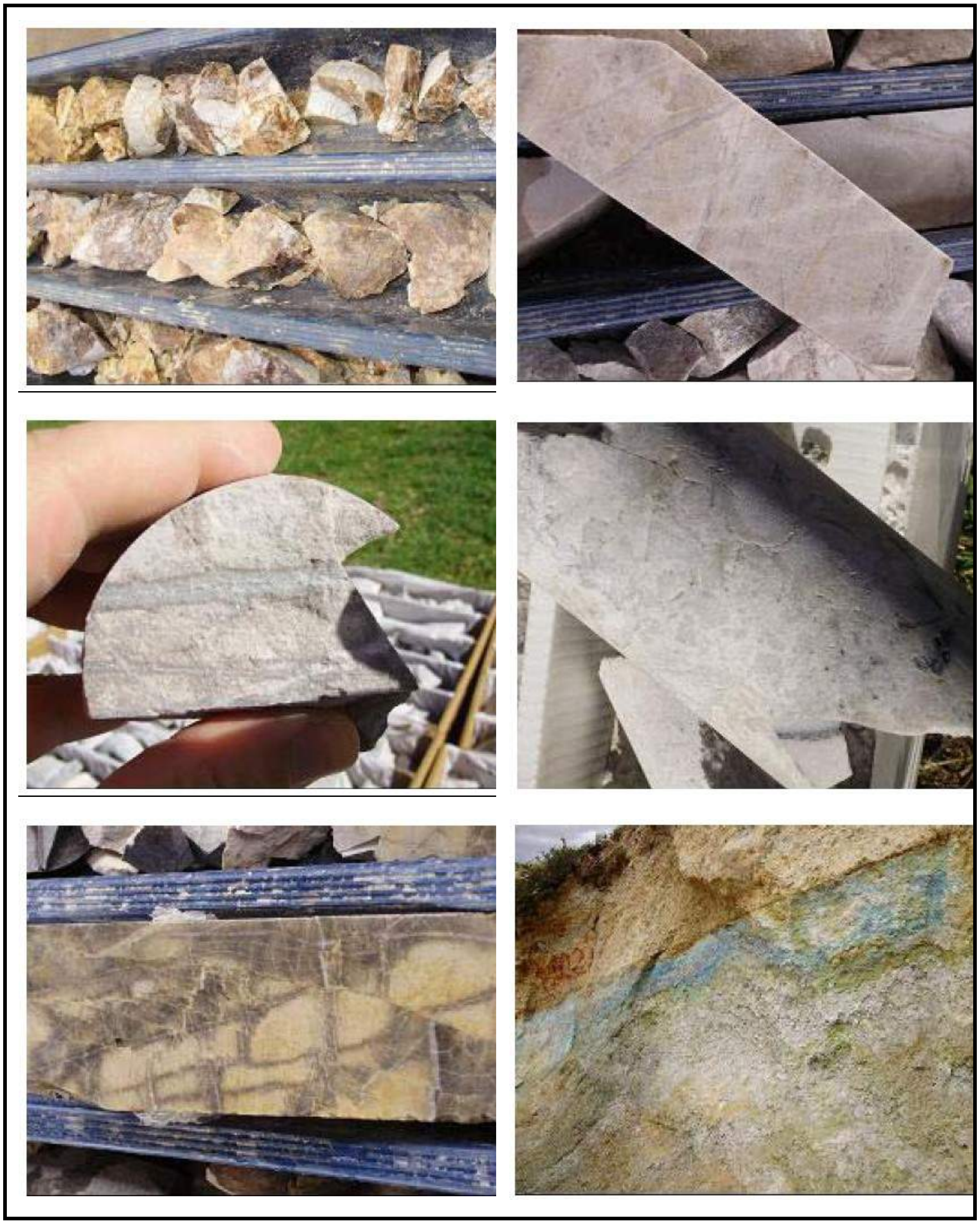
Molybdenum grades do not vary significantly between the primary sulphide, secondary sulphide, and leached zones, demonstrating the relative immobility of molybdenum in molybdenite during supergene processes. The highest concentrations of molybdenum occur in the Main Porphyry, a characteristic which is common to other porphyry and skarn deposits in the region.

In general, gold, silver, zinc, and lead concentrations are very low in all mineralization types. These metals do not show significant enrichment or depletion trends between the primary, secondary, and leached zones, and are not especially enriched or depleted in either of the porphyries.

7.2.3 Hydrothermal Alteration Associated with Mineralization

Hydrothermal alteration is restricted to the development of secondary sericite, biotite and quartz. It is interpreted that the relatively inert quartzite and low water to rock ration of alteration result in the subtle alteration observed at Antilla. Unaltered quartzite lacks significant quantities of primary aluminosilicates to alter to large quantities of sericite, chlorite, biotite, and clay typical of potassic, phyllic, propylitic, and advanced argillic alteration zones common in other porphyry zones (Figure 7.6).

Figure 7.6 Photographs of Hydrothermal Alteration at Antilla



Note: Drill core and core box dividers are approximately 8 cm wide for scale. Clockwise from upper left: blocky, oxidized quartzite from the leached cap; weak biotite, sericite and silica alteration and quartz veining of quartzite, quartzite breccia with quartz matnx; remobilized or exotic-style copper oxide mineralization in overburden at the bottom of the slope that hosts the Antilla deposit (road cut 1 to 3 m high); patchy textured hornfels metamorphism of arenite; quartz veins with silicified margins and fine primary sulphides at centre.

Source: Wright (2009)

7.2.4 Structural Controls on Mineralization

Due to the relatively early stage of exploration on the property and difficulties of stratigraphic correlation within the relatively monotonous quartzites and arenite of the Soraya Formation, a detailed understanding of the structural geology of the Antilla deposit is still under development. However, current genetic interpretations for the Antilla deposit place an emphasis on structural features at regional and local scale as mineralization controls.

The Antilla deposit occurs along the regional Mollobamba thrust fault in the south western part of the Andahuaylas-Yauri belt (Figure 7.1). Two important regional-scale reverse faults are associated with the Mollobamba fault, the north-east trending Piste Fault, west of the deposit, and the east trending Matara fault south of the deposit (Lee et al. 2003). These regional scale faults are interpreted to control the emplacement of the Main Porphyry, responsible for the hypogene mineralization on the Property, and the Late Porphyry which cuts the mineralization. Intrusives are interpreted to be located in zones of weakness caused by the intersection of faults in the case of the Main Porphyry, and along extensional or normal faults in the case of the Late Porphyry.

At deposit scale, fault or fracture zones containing relatively high-grade chalcocite mineralization have been intersected in diamond drillholes. Secondary sulphide mineralization is interpreted to be focused along fault zones that gave access to primary mineralization by meteoric fluids. The fine centimetre- to millimetre-width fractures that host chalcocite mineralization also tend to increase in frequency near wider property-scale faults.

7.2.5 Zonation of Mineralization

The main mineralization types or zones are similar to many other porphyry deposits. The zones found at Antilla are primary sulphides, secondary sulphides, and oxides in the leached cap overlying the deposit. The secondary sulphide zone forms a relatively continuous, tabular blanket of chalcocite that generally ranges from 60 to 120 m thick. Hole ANT-36-08 intersected a secondary sulphide zone 243 m thick before encountering primary sulphide-style mineralization at 278 m. The average thickness of the secondary sulphide zone is 92 m.

The secondary sulphide zone is overlain by the leached cap which has an average thickness of 55 m and generally ranges from 0 to 75 m thick. The leach cap appears to thicken to the north and to the west where hole ANT-64-08 encountered leached cap to a depth of 274 m. It is interpreted that much of the leached cap overlying the main and southeastern portion of the secondary sulphides has been eroded bringing the secondary sulphide mineralization nearly to surface in some locations.

The tabular secondary sulphide and leached cap zones are underlain by low-grade primary sulphide mineralization. The depth extent of the primary sulphide mineralization is not known as it has only been tested by five or six drillholes.

Main Porphyry is weakly mineralized and is known to flank the primary and secondary sulphides and oxide zone to the east and west and at the northwest corner (Figure 7.4). Hornfels alteration which may indicate proximity to another undiscovered porphyry body has been encountered in the deepest drill holes from the 2008 program. It is possible that a significant volume of Main Porphyry occurs below the primary and secondary sulphides with the primary and secondary zones occurring in sediments which remain as a roof pendant to a large intrusive body. Conclusive evidence of this interpretation has not been found.

The Late Porphyry occurs as barren dykes cutting mineralization.

Mineralization domains have been divided according to the parameters listed in Table 7.1.

Table 7.1 Mineralization Domains

Zone	Name	Alteration	Cu	Mo	Characteristics
1	Primary Sulphide	Silicification, biotitization, sericitization and hornfels metamorphism	Average = 0.12% up to 2%	Average = 0.009% up to 0.8%	Absence of chalcocite, minor chalcopyrite, pyrite in veins and fractures; soluble copper <10%
2	Secondary Sulphide	Silicification, sericitization, biotitization	Average = 0.37% up to 4.42%	Average = 0.009% up to 0.38%	Presence of chalcocite on fractures, soluble copper is >10% of total copper
3	Oxide/Leached Zone	Limonite staining, bleaching	Average = 0.04% up to 2%	Average = 0.075% up to 0.26%	Lack of sulphides, limonite on fracture surfaces
4	Main Porphyry	Silicification, sericitization, biotitization	Average = 0.08% up to 0.59%	Average = 0.012% up to 0.17%	Quartz prophyroblasts, minor sulphide mineralization
5	Late Porphyry	None	Average = 0.04%	Average = 0.001%	Quartz aphyric intrusive, no mineralization

A discontinuous veneer of gravel, sand, talus, and colluvium overlies the deposit. Overburden ranges in thickness from 0 to 53 m, averaging 12 m. In addition to the mineralization zones, a very small zone of weak exotic-type or remobilized copper oxide mineralization has been found in overburden exposed in a road cut at the bottom of the hill slope under which lies the secondary sulphide blanket.

Figure 7.7 to Figure 7.9 present a cross section of the Antilla deposit.

Figure 7.7 illustrates the mineralized zones, or domains, where:

- the distribution of mineralized, type B veinlets, carry chalcopyrite and molybdenite, in the near surface leached zones

- the distribution of chalcocite, digenite and covellite in the supergene enrichment zones
- the distribution of mineralized type D veinlets, carry pyrite, galena, sphalerite within the primary enrichment zones in the south end and base of the deposit.

Figure 7.8 presents copper distribution, by grade, where the copper grades mainly occur in the supergene zone but enter into the hypogene and leach cap zones.

Figure 7.9 presents copper and molybdenum distribution, by grade, where molybdenum grades show no differentiation over the domains but with higher grades in the leach cap zone.

Figure 7.7 Cross-section 250W Copper Grade Distribution (mainly below the leach cap); Looking Northeast

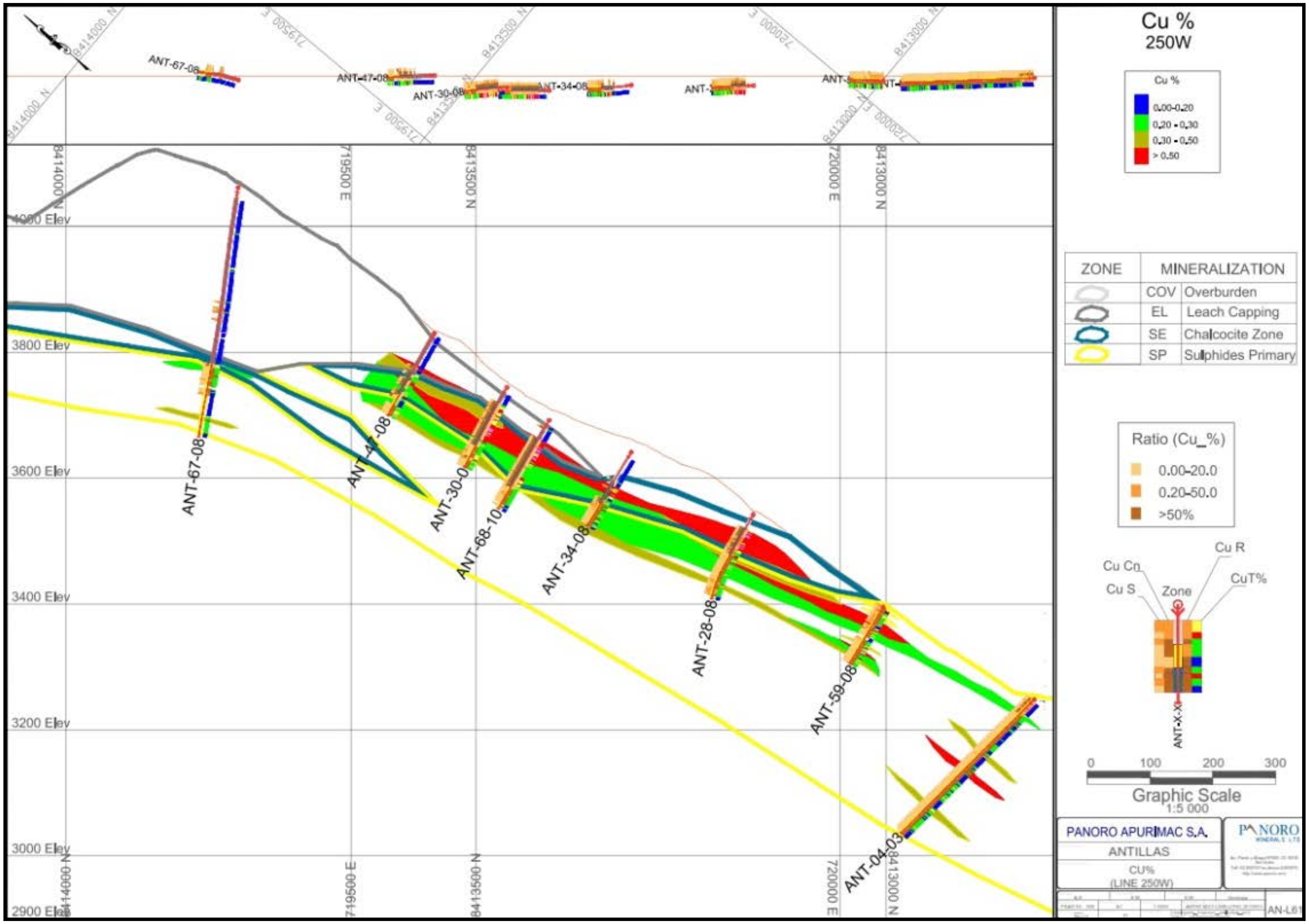


Figure 7.8 Cross-section 250W Molybdenum Grade Distribution (including near surface mineralization); Looking Northeast

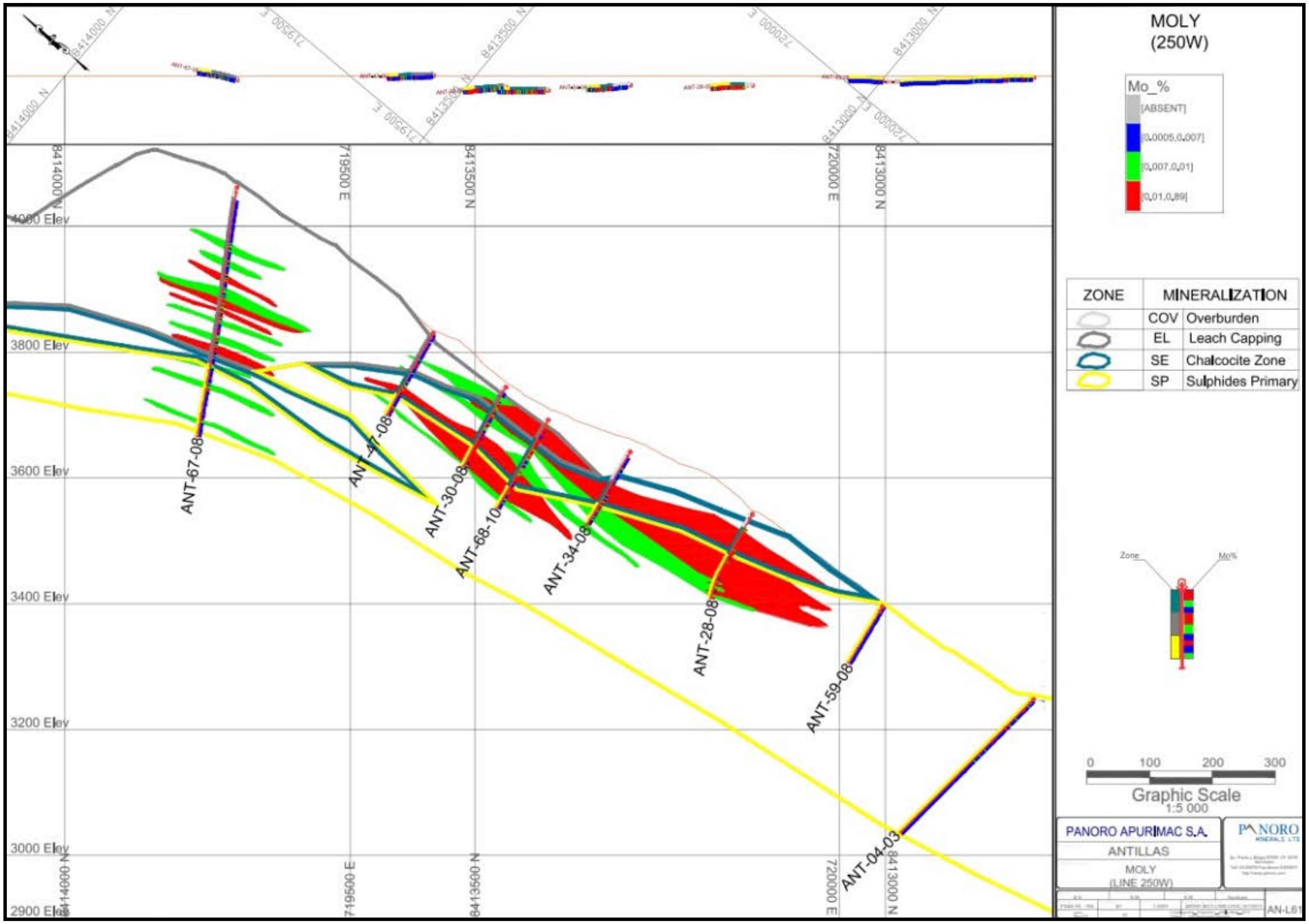
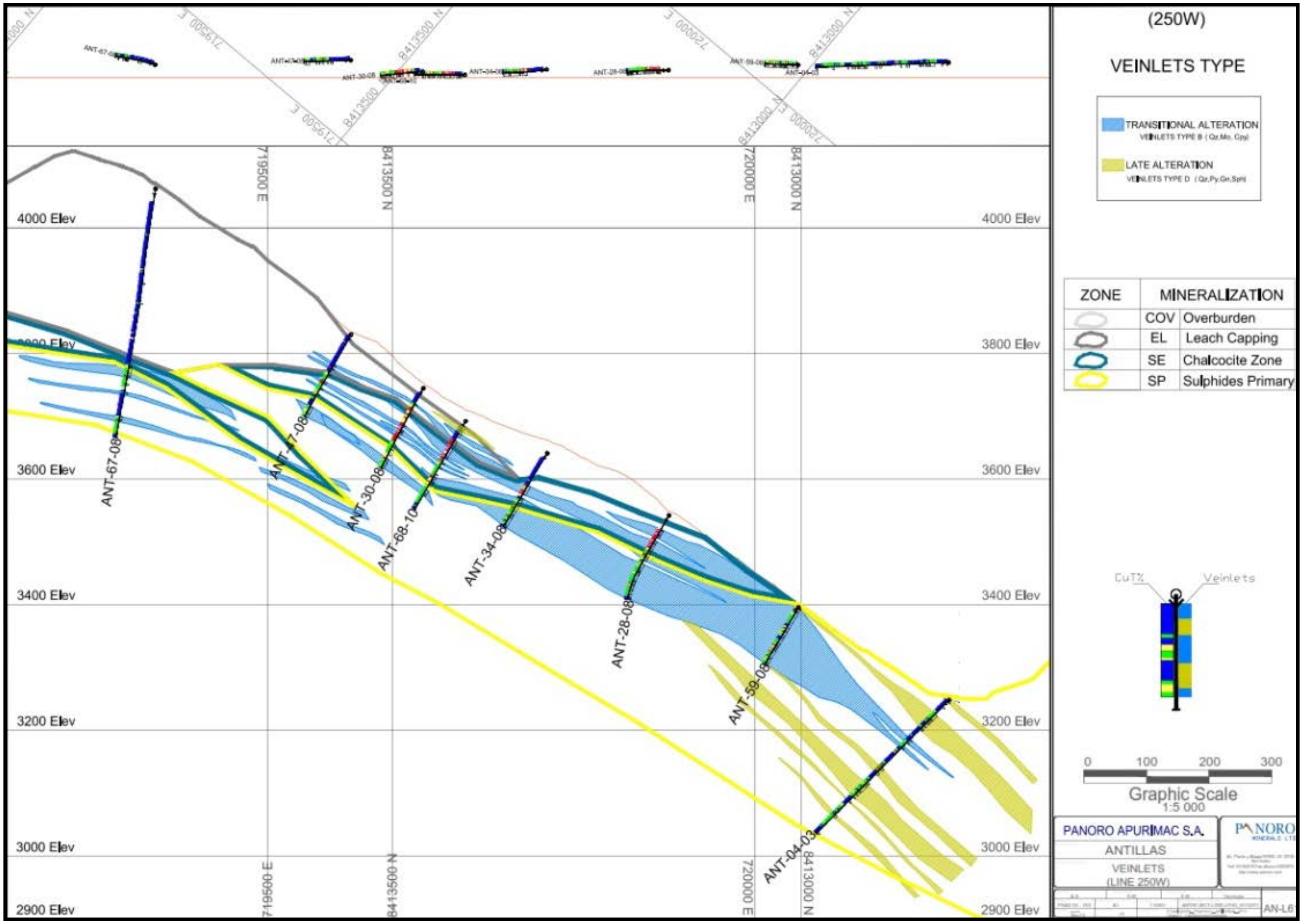


Figure 7.9 Cross-section 250W Showing Mineralized Domains; Looking Northeast



8.0 DEPOSIT TYPES

The following is taken from Wright (2009).

Panoro is of the opinion that the mineralization identified to date on the Property is consistent with a supergene enrichment blanket associated with an Andean-type copper-molybdenum porphyry system.

Common features of copper-molybdenum porphyries include stockworks of quartz veinlets, quartz veins, closely spaced fractures and breccias containing pyrite and chalcopyrite with lesser molybdenite, bornite and magnetite occur in large zones of economically bulk-mineable mineralization in or adjoining porphyritic intrusions and related breccia bodies. Disseminated sulphide minerals are present, generally in subordinate amounts. The mineralization is typically spatially, temporally and genetically associated with hydrothermal alteration of the host rock intrusions and wallrocks. Andean-type examples include Antapaccay, Las Bambas and Los Chancas.

Mineralization on the Property consists of a tabular body of fracture-controlled and disseminated chalcocite and chalcopyrite with minor molybdenite-coated fractures overlain by a barren, leached zone of variable thickness. Associated with the chalcocite mineralization is silicification, sericitization, biotitization and chloritization of arenite, quartzite, and sandstone. The strongest chalcocite mineralization is associated with brittle faults. Below the chalcocite mineralization, low-grade disseminated chalcopyrite, bornite, and molybdenite mineralization occurs. Altered, weakly–mineralized, porphyritic felsic intrusives are associated with the mineralization. The general geometric and mineralogical characteristics of the deposit are consistent with a supergene enrichment blanket associated with an Andean-type copper-molybdenum porphyry system.

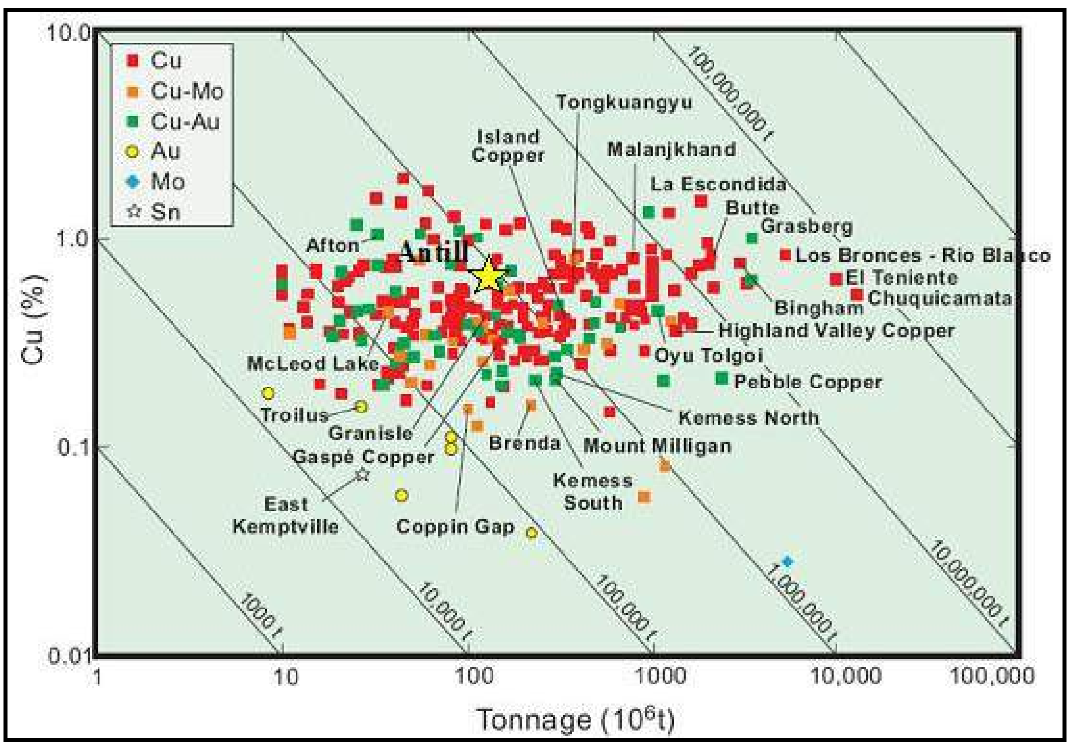
Porphyry deposits are defined in general as being large, low-to medium-grade deposits in which primary ore minerals are dominantly structurally controlled and which are spatially and genetically related to felsic to intermediate porphyritic intrusions (Figure 8.1, Sinclair 2007). Porphyry deposits generally contain economic concentrations of one or more of copper, gold, molybdenum, and can also contain silver, tin tungsten and rare earth elements. Skarn deposits also occur in the region and are associated with porphyritic intrusions, but the mineralization on Antilla lacks the intense fluid-dominated calc-silicate alteration, intense iron metasomatism, and reactive carbonate host rocks of skarn systems (Figure 8.2).

The Antilla deposit has a number of characteristics which are not common in other porphyry systems in the region or in typical porphyry models (such as those discussed by Lowel and Guilbert 1970; Kirkham and Sinclair 1975):

- Alteration at Antilla is limited to weak sericitic or phyllic, weak chlorite or propylitic and weak silicification. The well-defined potassic, phyllic, propylitic and argillic alteration assemblages typical of porphyry copper deposits are not well developed at Antilla. The relatively weak alteration characteristics are interpreted to be a result of the lack of aluminous mineral phases of the quartzite hosting the mineralization.

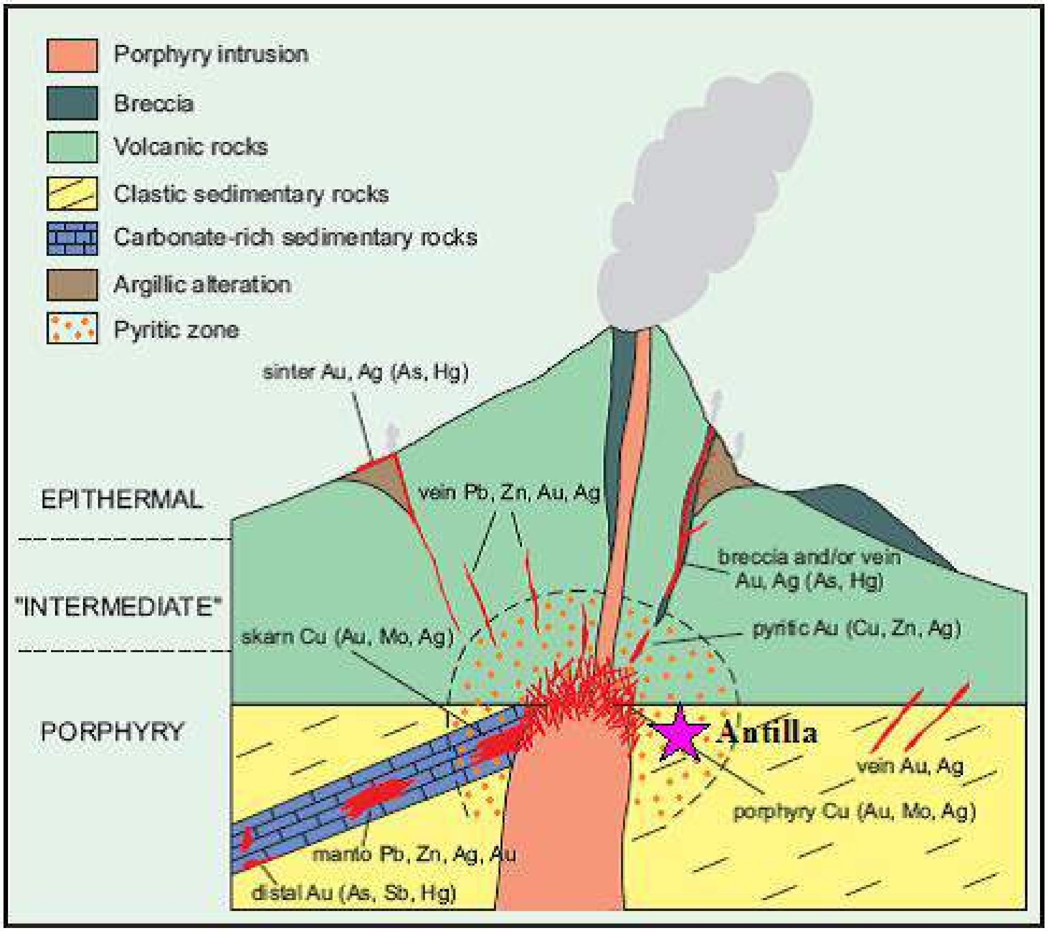
- A well-developed hypogene or primary sulphide mineralization zone has not been encountered at Antilla. Assays of the primary sulphide zone at Antilla grade approximately 0.12% copper and 0.009% molybdenum. The Main Porphyry contains approximately 0.08% copper on average. No higher-grade hypogene chalcopyrite mineralization has been encountered on the property. To date, Panoro has not located a higher grade primary porphyry system with which it believes the Antilla mineralization is associated.
- A characteristic of the Antilla deposit, and of the other deposits in the Andahuaylas-Yauri belt is the lack of typical oxide-style mineralization. Only minor chrysocolla, tenorite and malachite are found. Supergene mineralization consists entirely of secondary sulphides. Two interpretations have been made to explain the lack of oxide mineralization: the lack of pyrite in hypogene mineralization and subsequently the inability to generate sufficient acid to generate oxide mineralization duringsupergene mineralization, and the relative abundance of carbonate stratigraphy to neutralize acid during supergene enrichment. Carbonates are not locally important at Antilla, but, a relatively low quantity of pyrite in hypogene mineralization may support the hypothesis that the low pH required to generate oxide mineralization during supergene enrichment was not attained.

Figure 8.1 Grade-Tonnage Profile of Selected Porphyry Copper Deposits (Wright 2009)



Note: Modified from Sinclair (2007)

Figure 8.2 Geological Environment of Porphyry Copper Deposits (Wright 2009)



Note: After Kirkham and Sinclair (1995)

9.0 EXPLORATION

In September 2006, Panoro requested John Fox of Laurion Consulting Ltd., Vancouver, Canada, undertake a review of assay data from the CDLM programs, and consider process options for the Property. The potential amenability of the mineralization to acid leach and flotation was reviewed and some initial operating costs, capital costs, and smelter returns were discussed for the concentrator and heap leach scenarios.

In 2008, Eagle Mapping Peru S.A.C was contracted to prepare a topographic map for CDLM from a series of 1:45,000 scale ortho-photos from the Carta Nacional (Peru). A digital elevation or digital topographic surface was created from the data and has meter-scale resolution.

In 2013, Seggistem I.R.L. was contracted to perform a topographic survey at detailed, 1 m, resolution. This topography was used for the resource estimate.

9.1 GEOLOGICAL MAPPING

Geological mapping at 1:5,000 scale has been concentrated on the central 4,000 ha of the Property. Mapping was completed by CDLM between 2002 and 2004 and was updated in 2008 by Panoro. Outcrop is reasonably good and exposures of the porphyritic intrusives and the Soraya Group sediments are common. Road cuts provide additional exposure in areas that are covered by talus and quaternary gravel, sand and silt.

Reconnaissance-scale mapping has been carried out on the remainder of the property at 1:5,000 scale. Panoro is currently undertaking more detailed geological mapping both around the resource area and on other exploration targets on the Property.

9.2 GEOCHEMISTRY

In 2002 and 2003, systematic rock and soil geochemical sampling was carried out on a 100 m by 50 m grid across the western part of the Property. A total of 2,461 samples were taken, including 734 rock samples and 1,727 soil samples. The results of the soil and rock samples were not promising and failed to generate additional targets for drill testing.

In 2013, Panoro initiated a systematic geochemical rock-chip sampling and soil sampling programs. To date, a total of 3,224 samples been collected consisting of 1,497 rock samples and 1,727 soil samples. The program is ongoing. Results to date have delineated the known Antilla deposit, in the East Block, and that geochemical sampling show that the deposit is part of an east-west trending structure where anomalous copper, molybdenum and gold occur. Based on this program, two exploration target areas have been prioritized: Chabuca and the West Block (Figure 9.1).

Panoro is continuing to investigate the Property investigating areas outside of the resource area.

9.3 GEOPHYSICS

A 214.2 km magnetometer survey and 43.6 km IP and resistivity survey was carried out by CLDM in 2003. The survey was executed by Val d'Or Geophysics of Peru. Examples of the magnetometer, IP, and resistivity surveys are shown in Figure 9.2 to Figure 9.4.

Figure 9.1 Exploration Target Location Map Showing the Antilla Deposit (East Block)

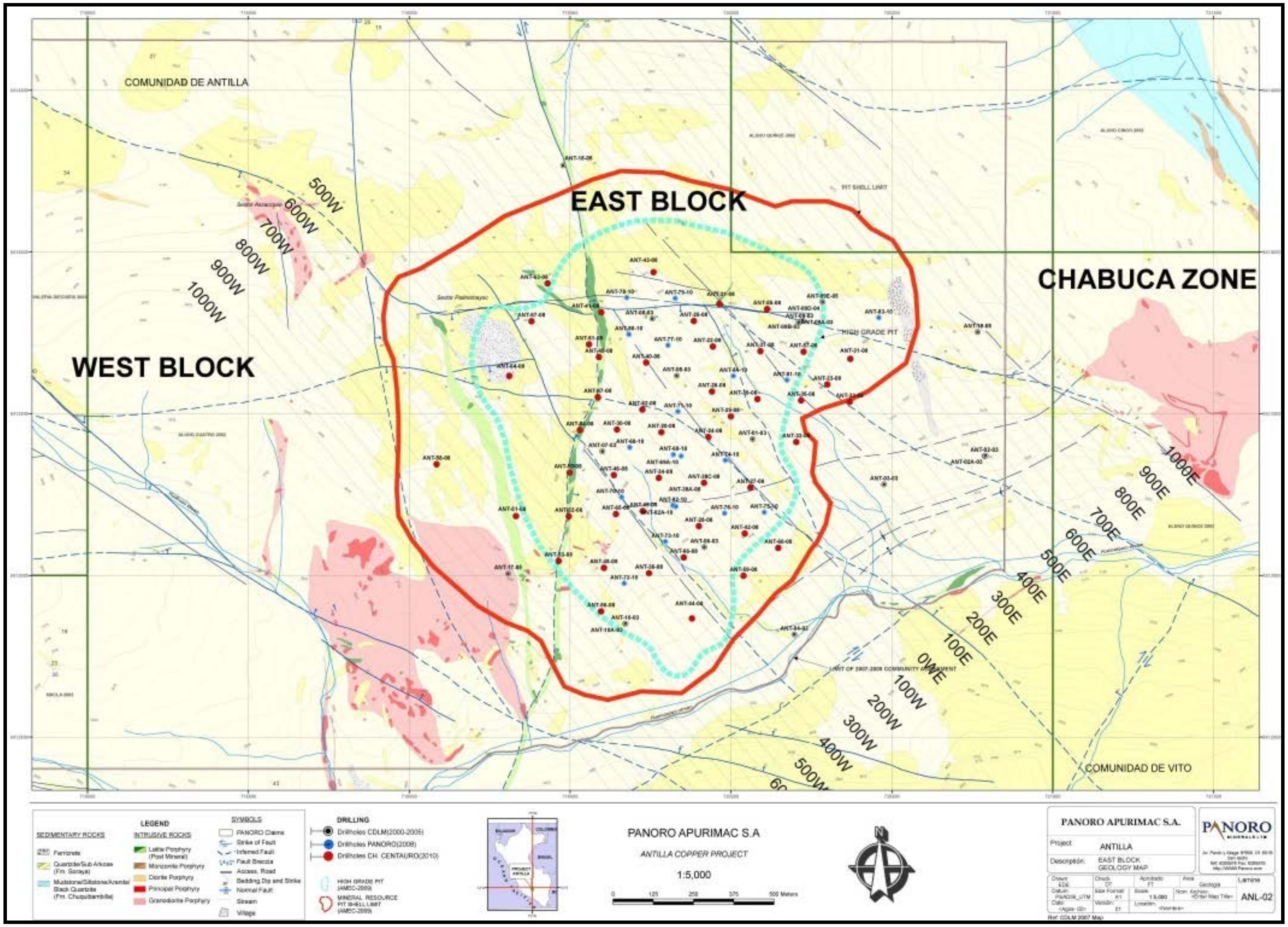


Figure 9.2 Magnetometer Survey

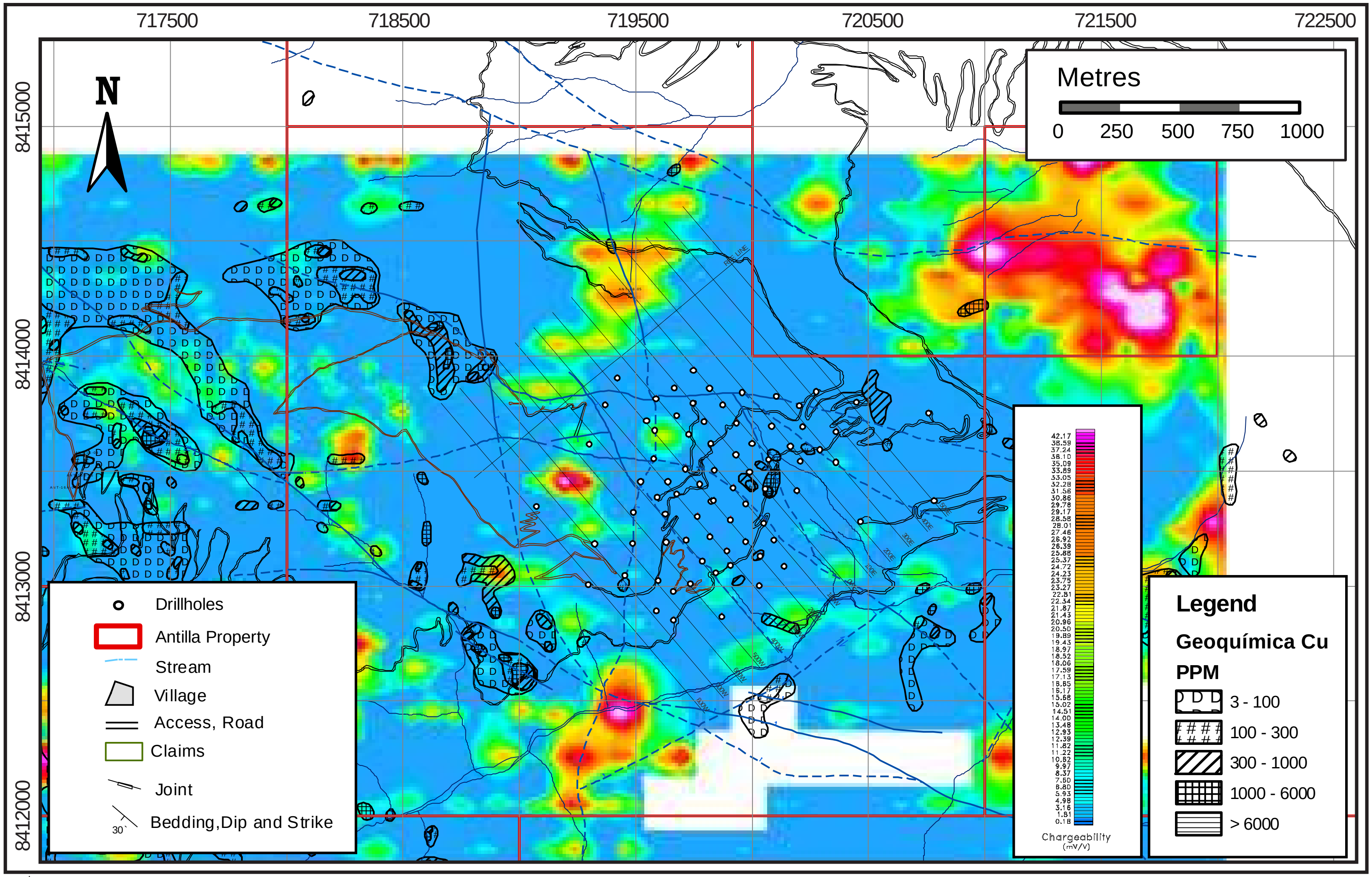


Figure 9.3 IP Survey

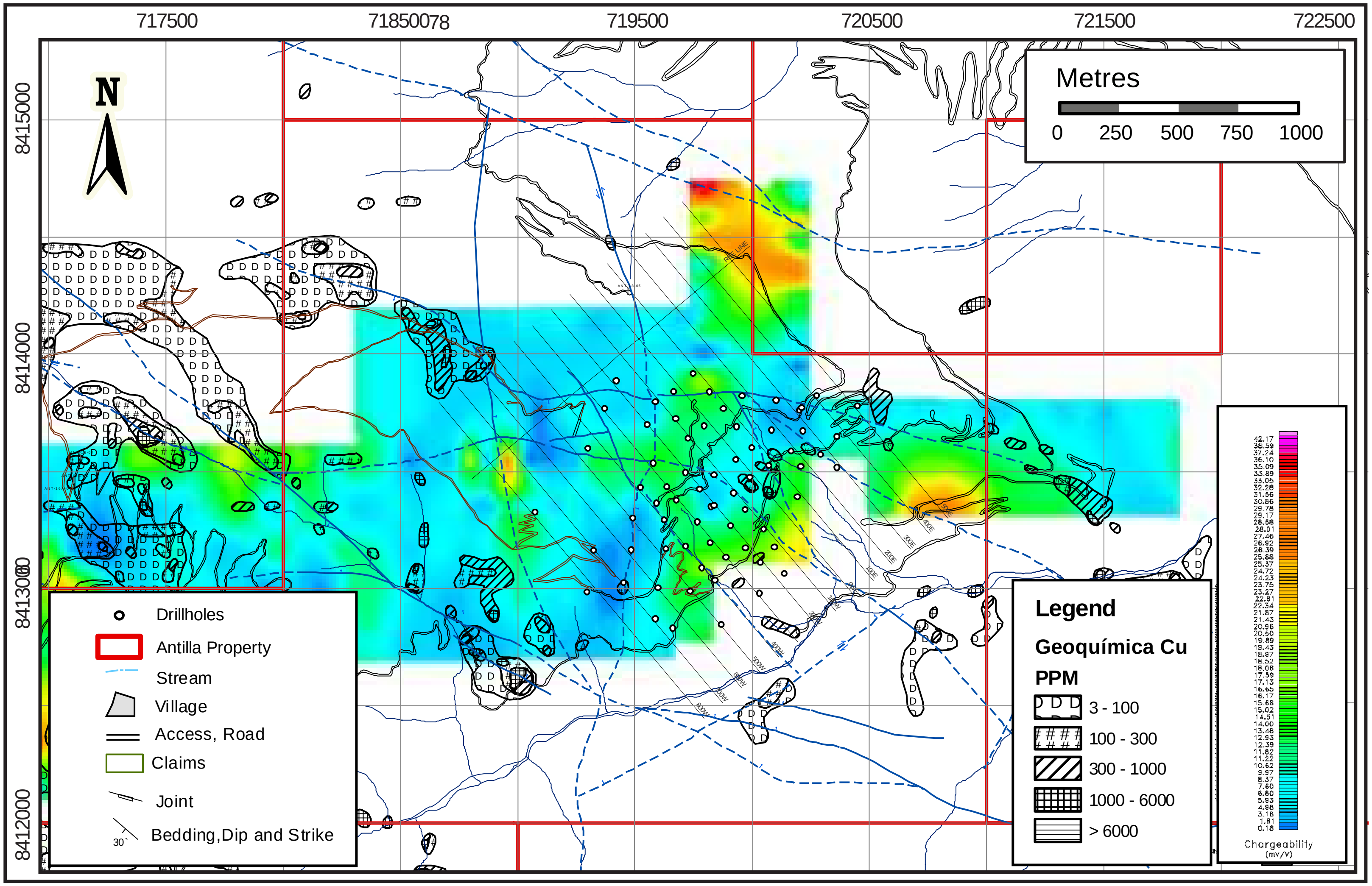
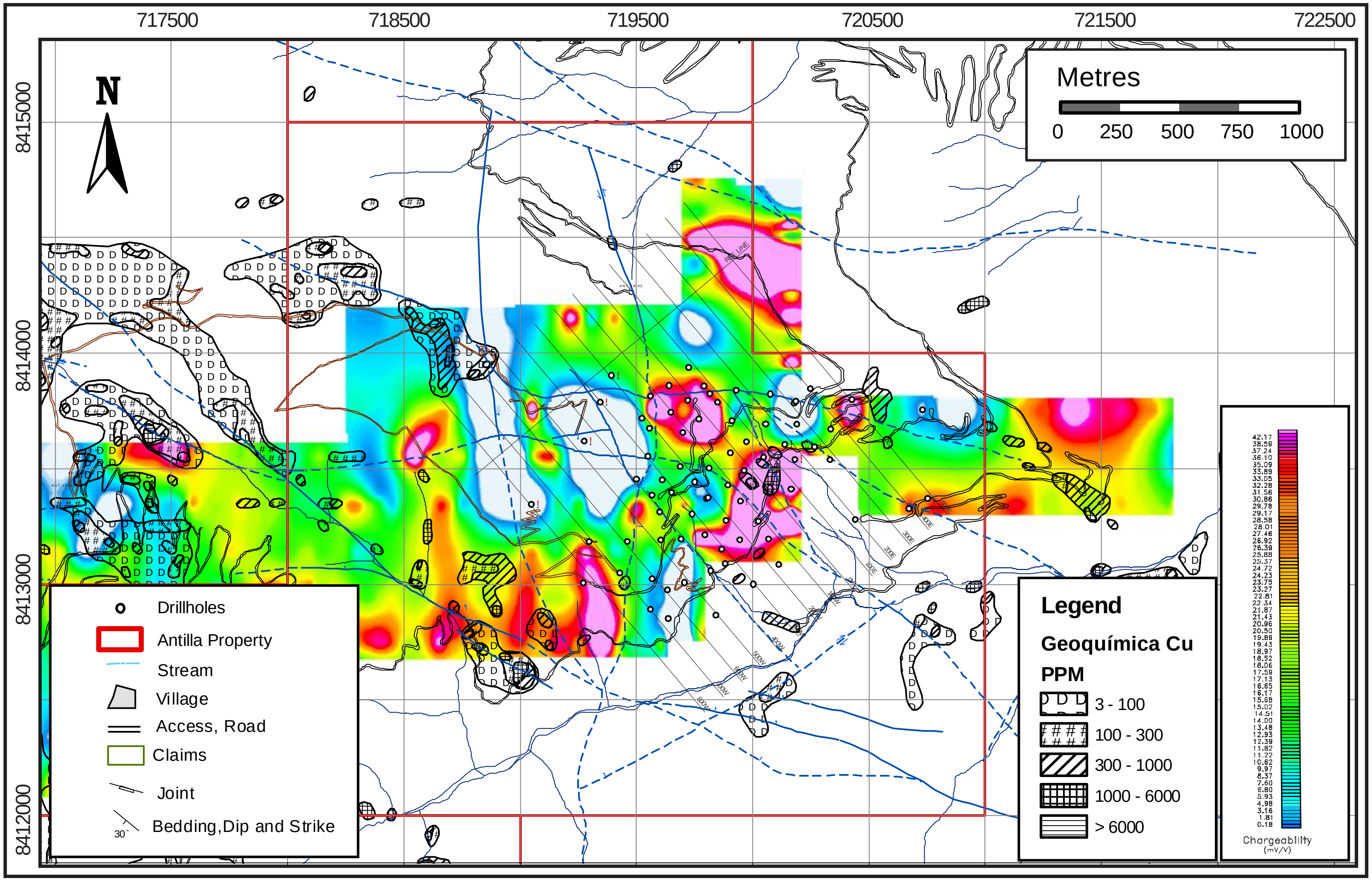


Figure 9.4 Resistivity Survey



9.4 OTHER EXPLORATION TARGETS, 2013

In mid-2013, Panoro restarted their exploration activities on the western portion of the Property. Exploration included geological mapping and soil and rock geochemical sampling. The exploration focused on Antilla West, situated adjacent to the west of the known Antilla deposit on the Aluno Cuatro 2002 concession; and Piste, situated adjacent again to the west of Antilla West on the Valeria Dieciseis 2002 concession.

The Antilla West Block, Chabuco and Piste exploration targets are not subject to this report and have been included here for completeness.

Figure 9.5 shows all exploration targets on the Property. Figure 9.6 and Figure 9.7 illustrate soil geochemistry results to date on Piste. Results on Antilla West are pending.

Figure 9.5 Exploration Map, West Block (Copper)

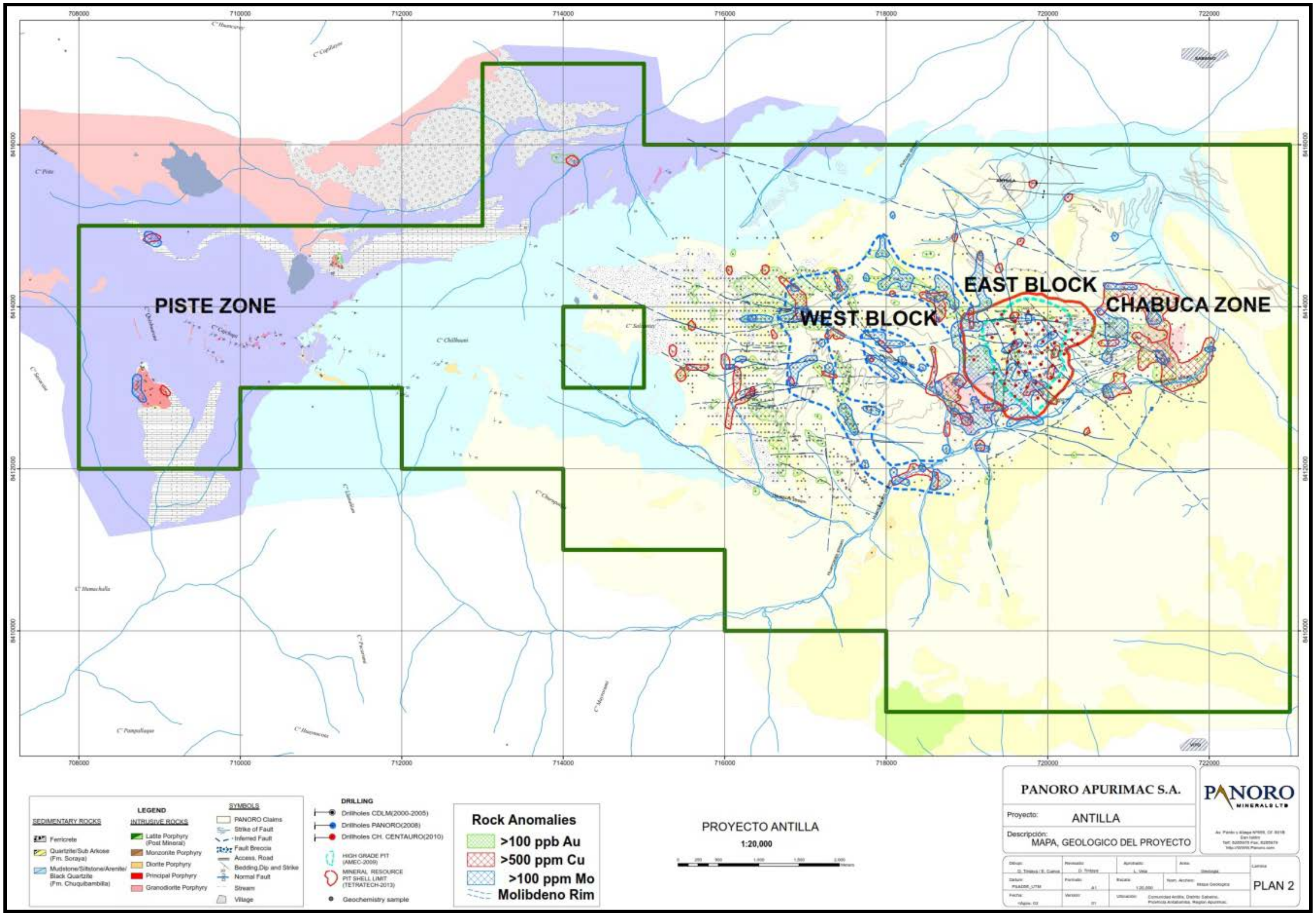
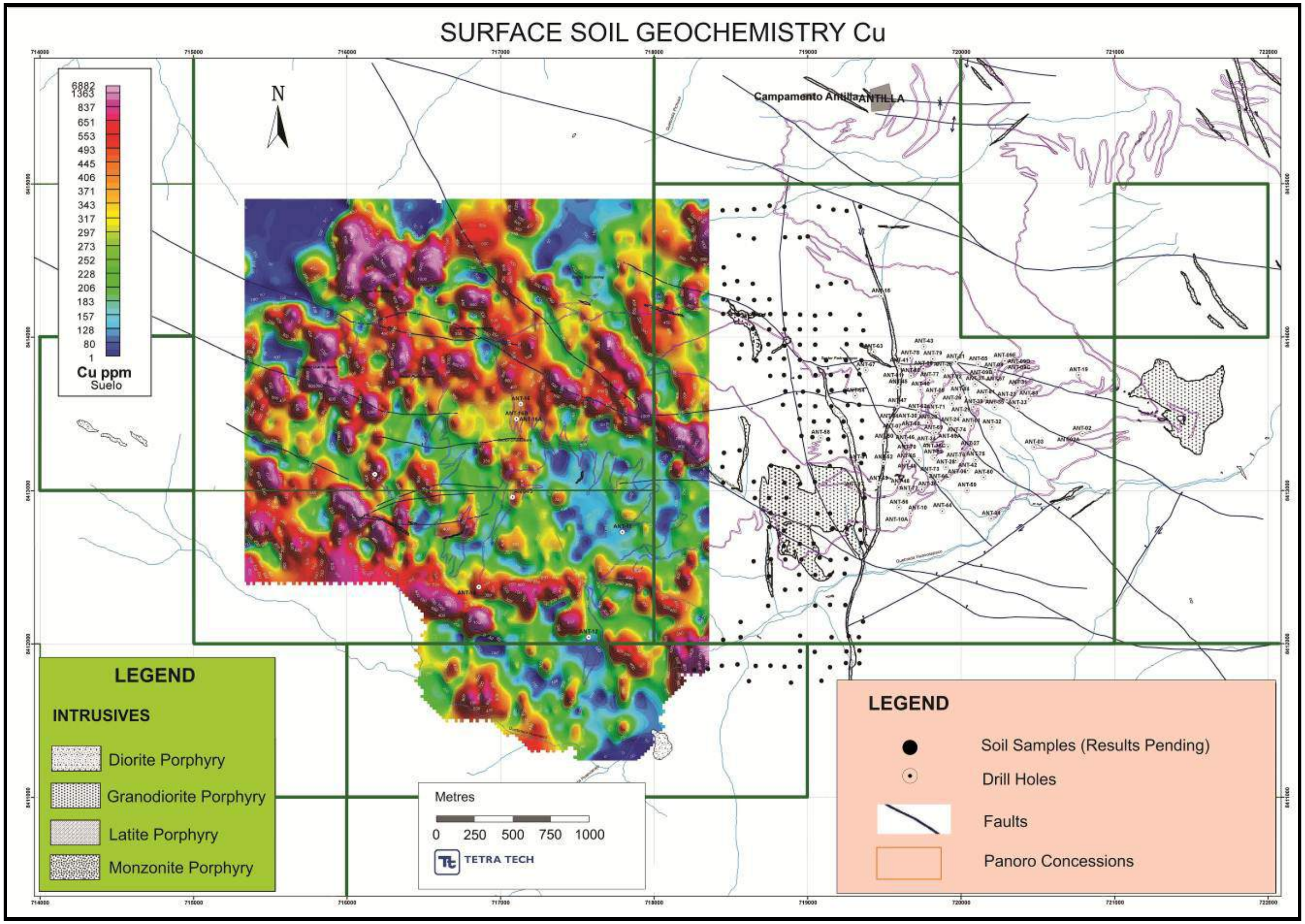
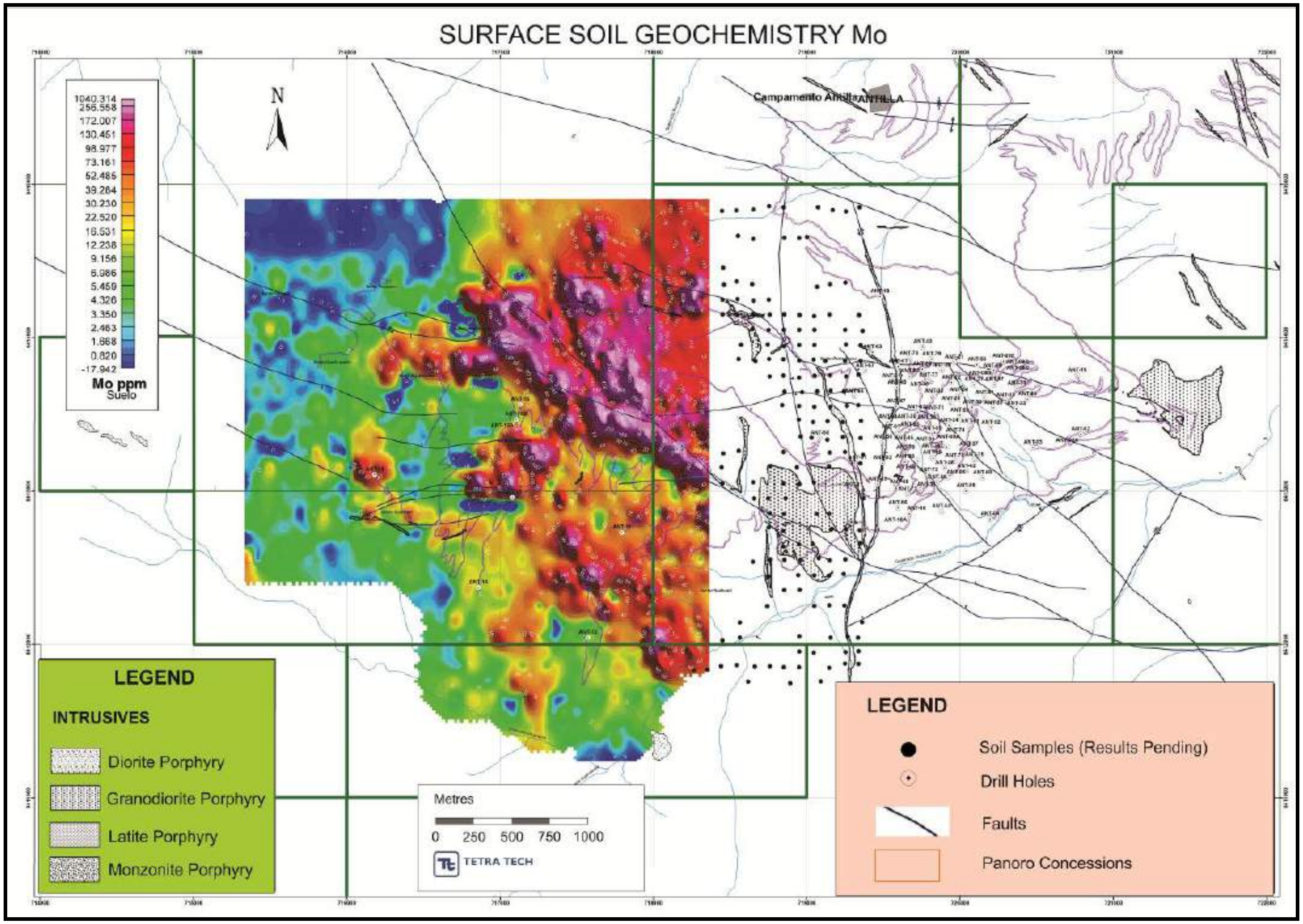


Figure 9.6 Soil Geochemistry Map, West Block (Copper)



Source: Panoro (2013)

Figure 9.7 Soil Geochemistry Map, West Block (Molybdenum)



Source: Panoro (2013)

10.0 DRILLING

Panoro successfully acquired permits and transferred the surface rights agreement for the Property from CDLM in December 2007 and acquired exploration permits to allow drilling to begin in June 2008. The 2008 drill program focused on defining the mineralization encountered by CDLM on the eastern part of the Property. During the 2008 drill program, Panoro re-logged the drillholes drilled by CDLM and carried out surface mapping of outcrops and road cuts on the Property. Since 2008, Panoro has not undertaken any drill programs. The latest drill program on the Property was carried out in 2010 by CHC under the Antilla JV agreement.

As of August 2010, 96 drillholes had been completed on the Property, totalling 15,386 m. Table 10.1 presents a summary of all drilling conducted on the Property.

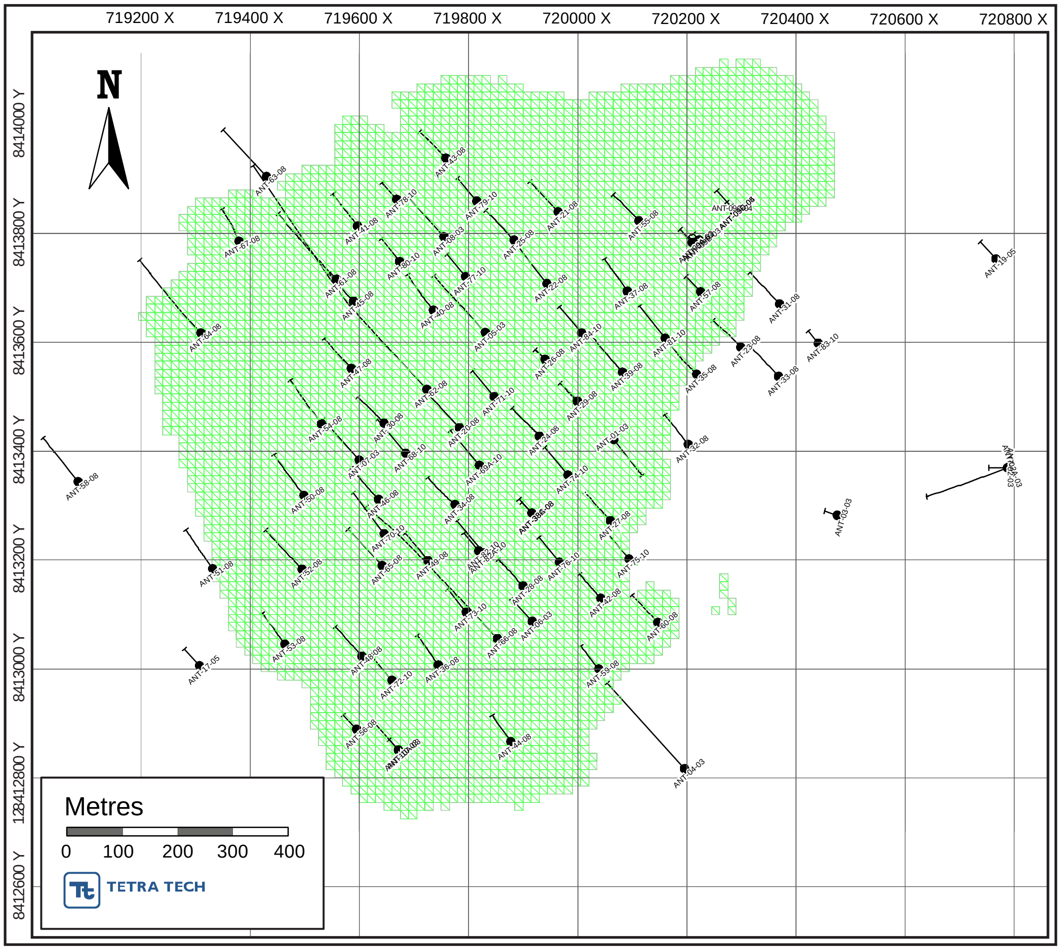
Table 10.1 Summary of Drilling Programs on the Property

Year	No. of Holes	Metres	Targets
2003	12	1,983.1	Reconnaissance of main mineralized zone, holes collared 500 m apart
2004	12	1,378.9	Reconnaissance of Punkuccasa, Carachara, Cayarani, and Hualhuani areas, 3 km west of the main mineralized zone
2005	4	650.1	Reconnaissance holes at the edge of the zone defined in 2003
2008	49	9,130.6	Drilling on 100 m centers to define mineralization in the main zone
2010	19	2,242.8	Infill drilling on the Antilla deposit
Total	**96**	**15,385.5**	-

10.1 DRILLING, 2003 TO 2010

Drilling on the Property has been undertaken through five drill programs between 2003 and 2010, inclusive, comprising 96 diamond drill core drillholes totalling 15,385 m. Drillhole collar locations are shown in Figure 10.1.

Figure 10.1 Drillhole Location Map



Only the drill programs by CDLM in 2003, Panoro in 2008 and CHC in 2010, intersected copper mineralization. Selected intersect s from these drill holes are shown in Table 10.2.

Table 10.2 Selected Drillhole Intersections

Hole	From (m)	To (m)	Length (m)	Cu (%)	Mo (%)	Au (ppm)	Ag (ppm)	Mineralization Type
CDLM Campaigns								
ANT-01-03	2	54	52	0.793	0.0030	0.01	1.0	Secondary Sulphides
ANT-05-03	18	84	66	0.672	0.0078	0.01	0.9	Secondary Sulphides
ANT-06-03	10	76	66	0.894	0.0136	0.01	0.7	Secondary Sulphides
ANT-06-03	150	165	15	0.258	0.0268	0.01	0.4	Primary Sulphides
ANT-07-03	18	98	80	0.681	0.0083	0.01	0.9	Secondary Sulphides
ANT-09E-05	139	166	30	0.721	0.0013	0.01	0.8	Secondary Sulphides
ANT-10-03	20	48	28	0.390	0.0227	0.00	0.9	Primary Sulphides

table continues…

Hole	From (m)	To (m)	Length (m)	Cu (%)	Mo (%)	Au (ppm)	Ag (ppm)	Mineralization Type
ANT-16-04B	80	106	26	0.385	0.0200	0.09	1.1	Secondary Sulphides
Panoro 2008 Campaign								
ANT-20-08	60	94	34	0.745	0.0066	0.01	0.6	Secondary Sulphides
ANT-22-08	56	98	42	0.795	0.0051	0.01	1.2	Secondary Sulphides
ANT-24-08	18	74	56	0.704	0.0171	0.01	0.6	Secondary Sulphides
ANT-25-08	26	64	38	0.5553	0.0043	0.01	0.9	Secondary Sulphides
ANT-26-08	6	68	62	0.631	0.0118	0.01	0.7	Secondary Sulphides
ANT-28-08	26	86	60	0.853	0.0231	0.01	3.2	Secondary Sulphides
ANT-30-08	32	96	64	0.753	0.0015	0.01	0.5	Secondary Sulphides
ANT-34-08	60	82	22	0.51	0.0385	0.01	0.5	Secondary Sulphides
ANT-37-08	62	136	74	0.543	0.0012	0.01	0.5	Secondary Sulphides
ANT-38A-08	37	67	30	0.753	0.0293	0.01	1.1	Primary Sulphides
ANT-38C-08	34	130	96	0.723	0.0291	0.01	0.8	Secondary Sulphides
ANT-39-08	6	82	76	0.569	0.0017	0.01	0.9	Secondary Sulphides
ANT-41-08	58	149	91	0.558	0.0126	0.01	0.5	Secondary Sulphides
ANT-43-08	44	62	18	0.671	0.0109	0.01	1.1	Secondary Sulphides
ANT-46-08	76	102	26	0.633	0.0059	0.01	0.5	Secondary Sulphides
ANT-49-08	28	70	42	0.934	0.0166	0.01	0.8	Secondary Sulphides
ANT-51-80	66	99	33	0.488	0.0157	0.01	0.6	Secondary Sulphides
ANT-61-08	196	226	30	0.649	0.0088	0.01	1.0	Secondary Sulphides
ANT-62-08	60	102	42	0.521	0.0120	0.01	1.0	Secondary Sulphides
ANT-65-08	46	90	44	0.510	0.0062	0.01	1.1	Secondary Sulphides
ANT-66-08	9	64	55	0.419	0.0326	0.01	0.5	Secondary Sulphides

Source: Wright (2009)

Details of the drill programs by operator are outlined in the following subsections.

10.1.1 CDLM Drill Campaigns from 2003, 2004 and 2005

The 2003, 2004 and 2005 drill campaigns by CDLM were reconnaissance exploration programs intended to test for large porphyry-type targets carried out by contract drill companies and supervised by CDLM staff geologists. Drill spacing was wide, collar surveying was limited to a hand-held GPS, and logging was largely descriptive featuring graphic logs for rock type, texture, structure, alteration and mineralization and focused on regional stratigraphic context. QA practices relied on internal laboratory duplicates and do not meet industry best practices. Drillholes were surveyed with a Sperry Sun or Flexit downhole directional survey instrument.

10.1.2 2008 Panoro Drill Campaign

Panoro contracted Bradley MDH to perform the drilling for the 2008 drill campaign, supervised by Panoro personnel. Two rigs, a Bradley MDH LF-70 and LD-250 diamond drill were used to drill conventional NQ holes. NQ diameter holes are 75 mm wide and regular-kerf bits give a 49 mm core diameter. Core was drilled from surface platforms that were located with a hand-held GPS on 100 m spaced grid lines with azimuth 150°

dipping 45 to 75° to the north west to provide high-angle intersections with the secondary sulphide zone. Drills were aligned with a compass. Due to the difficult topography of the property, the LF40 drill was moved manually by a team of men and women from the Antilla community where road access was not possible as shown in Figure 10.2.

Drillholes generally range from 95 to 200 m long; however, during the 2008 Panoro campaign hole ANT-62-08 and ANT-66-08 were drilled to just over 750 m depth to test primary mineralization and hornfels alteration at depth.

The drill contractor performed downhole surveys using a Sperry Sun instrument at 30 m intervals. Following drilling, casings were pulled and a cast concrete monument was set on the drillhole collar. Panoro contracted Global Mapping Peru (Global Mapping) to survey diamond drill collars using a total station global positioning system (GPS). Global Mapping visited the property twice to survey completed holes during the 2008 campaign.

Figure 10.2 LF-70 Drill being Moved by Workers from the Community of Antilla

Source: Wright (2009)

10.2 GEOTECHNICAL LOGGING

The following is taken from Wright (2009).

During the CDLM drill programs in 2003, 2004, 2005 geotechnical logging was restricted to the collection of RQD and core recovery data. Recovery averaged 88% and RQD averaged 18%. The criteria and methodology for the collection of these data are not known; however, the average values are similar to those obtained from the current drill campaign.

At the beginning of the 2008 drill campaign Panoro contracted Knight Piésold of Lima to develop and train Panoro staff in geotechnical logging procedures. During the drill program, Knight Piésold staff visited the Property to review data and logging and maintain logging standards for the program. Geotechnical logging was carried out prior to geological logging and sampling for all holes drilled during the 2008 campaign. Logging was recorded on a standardized paper log sheet. A geotechnical database of 22 logged parameters consisting of measurements or scores and calculated values for RQD, recovery (%), rock mass rating (RMR).

Core recovery in all campaigns is good for all zones, averaging greater than 87% for each of the Primary Sulphide, Secondary Sulphide, Leached/Oxidized zones and averaging 93% for all zones (Table 10.3). RQD is relatively low. The Primary Sulphide and Secondary Sulphide Zones have RQDs of approximately 20, the Leached/Oxidized zone is 10. RQD in the intrusive domains is higher, ranging from 29 to 63. Uniaxial compressive strength (UCS) is reasonably consistent ranging from 32.4 MPa in the Leached/Oxide Zone to 42.8 MPa in the Main Porphyry.

Table 10.3 Geotechnical Summary for the 2008 Panoro Drill Campaign

Domain	Core Recovery (%)	UCS (MPa)
Primary Sulphide	95.4	37.8
Secondary Sulphide	98.3	38.2
Leached/Oxidized	87.3	32.4
Main Porphyry	100.0	42.8
Late Porphyry	95.3	42.1
Total	**93.2**	**36.0**

10.3 GEOLOGICAL LOGGING

The following is taken from Wright (2009).

Geological logging during the 2003, 2004, and 2005 drill campaigns by CDLM was recorded on graphic log sheets. Intensities of structural features, mineralization and alteration were marked by coloured pencil lines in columns down the drillhole. Rock types were marked with graphic figures for clay, sand, bedding or intrusive symbols. It is difficult to translate graphic geological logs to database records to plot sections for geological modelling and resource estimation. As a result, at the end of 2008, Panoro relogged the CDLM holes from the 2003 and 2005 campaigns in the vicinity of the mineralized zone with their own core logging legend and standardized log sheets.

Geological logging for the 2008 Panoro program was recorded on standardized log sheets with fields for interval depths, mineralization zone type (primary, secondary-sulphide, leached and oxidized), texture, brecciation and veining, structure filling, alteration intensity by mineral (sericite, silica, clay, biotite, K-spar, albite, calcite, magnetite, chlorite, epidote), iron and copper oxide and sulphide mineral intensity, and mineralization style. A field for observations and a graphic strip log and rock code field were also recorded.

11.0 SAMPLE PREPARATION, ANALYSES AND SECURITY

11.1 CDLM DRILL CAMPAIGNS FROM 2003, 2004 AND 2005

Core sampling for the CDLM campaigns as noted by SRK is described in Lee et al. (2007). The authors report that core was sampled at continuous 2 m downhole intervals, independent of logging for mineralization intensity or rock type. Sample intervals were marked by the logging geologist and core was split with a rotary diamond-carbide saw. Half of the core was placed into pre-numbered sample bags; the other half was transferred into corrugated plastic boxes for storage.

AMEC reviewed holes ANT-05-03 and ANT-01-03 and found that the SRK description of sampling methodology appeared to be accurate. The corrugated plastic boxes used to archive the drill core were not ideal for long-term storage or transport. Shifting and disruption of the core and sample tags and blocks made validation of the sampling intervals difficult.

11.2 PANORO 2008 DRILL CAMPAIGN

Diamond drilling was supervised by Panoro staff on night shift and day shift at each drill. Drill core was transferred from the core tube metal trough by the drill helper. Drill intervals and recovered core lengths were measured and noted and core blocks were prepared. Core was broken at meter intervals and placed into plastic core boxes with core blocks glued into the core box to mark the down-hole depth and location of the drill run ends. Fines and fractured core were transferred from the core trough to the core box using a curved metal scoop. Once core boxes were filled a plastic top was placed on the box.

Drill core was picked up at the drill by Panoro geologists and taken back by pickup truck to the core processing facility in the camp. At the core facility, boxes were opened and placed on waist-high racks for marking and logging. A geologist marked sample intervals and sample splitting lines on the core. Sample tags, including those for control samples and core twin samples, were taped to the inside of the core boxes. Control samples were inserted at pre-determined intervals in the sample series. The sample intervals and sample numbers were hand-entered in a sample register.

Once samples were marked, core boxes were transferred to the core splitting area. Intact core pieces were split using a hydraulic core splitter. More consolidated core, in lengths of 15 to 30 cm or more, particularly in intrusive rocks were cut in half with a rotary diamond carbide saw. Split core was collected in bread pans on either side of the splitter; the split sample from one pan was transferred to pre-numbered, pre-tagged double sample bag with a scoop and brush, the other half was returned to the core box.

Fractured core was sampled by splitting the sample interval with a metal scraper and transferring one-half of the interval to a sample bag, the other half was retained in the core box as a reference sample.

11.3 CDLM Assaying

During the CDLM drill campaigns in 2003, 2004, and 2005, samples were prepared and analyzed at the independent, International Organization for Standardization (ISO) certified CIMM laboratory in Lima Results for total copper, cyanide soluble copper, sulphuric acid soluble copper, residual copper, molybdenum, silver, lead, zinc and arsenic by atomic absorption (AA) and gold by fire assay were reported.

All core, pulps and coarse crushed rejects from the CDLM drill programs at Antilla was transported to what is now the Panoro core logging and storage facility at Cotabambas where they have been stored in a secure building.

11.4 Panoro 2008 Drill Campaign Assaying

For the 2008 drill campaign, Panoro maintained a chain-of-custody of drill core and samples from the core tube at the drill site to the ALS Chemex, an independent laboratory with certifications ISO 9001:2000 and ISO 17025, sample preparation facility in Cusco. Panoro staff supervised drilling at both drills on two shifts, transported core to the core handling facility, logged, and sampled all core. Bagged samples were stored in a locked container beside the core shed until a batch could be dispatched by pickup-truck to Cusco.

Samples were prepared by ALS Chemex sample preparation facility in Lima with the PREP-31 package. Samples were registered and assigned a laboratory information management system (LIMS) code upon reception. Samples were transferred from bags to steel pans and dried in racks in a large gas-fired oven for several hours at 100-105°C. Dry samples were crushed to better than 70% passing -2 mm. A 250 g sub-sample of the crushed sample was taken and pulverized to better than 85% passing 75 µm. The pulps were sent to the ALS Chemex chemical laboratory for analysis.

Samples were analyzed at the ALS Chemex chemical laboratory in Lima by AA with the AA62 package for total copper, molybdenum, lead, zinc, arsenic, and silver, and fire assay for gold. A 2 g split of the prepared pulp was digested with a HF-HNO3-HClO4 solution, leached with HCl, and read by AA for each of the six elements. Gold was assayed using the Au-AA23 package where a 30 g sample aliquot is fused, undergoes cupellation and the bead digested in aqua regia. The final solution is analyzed by AA.

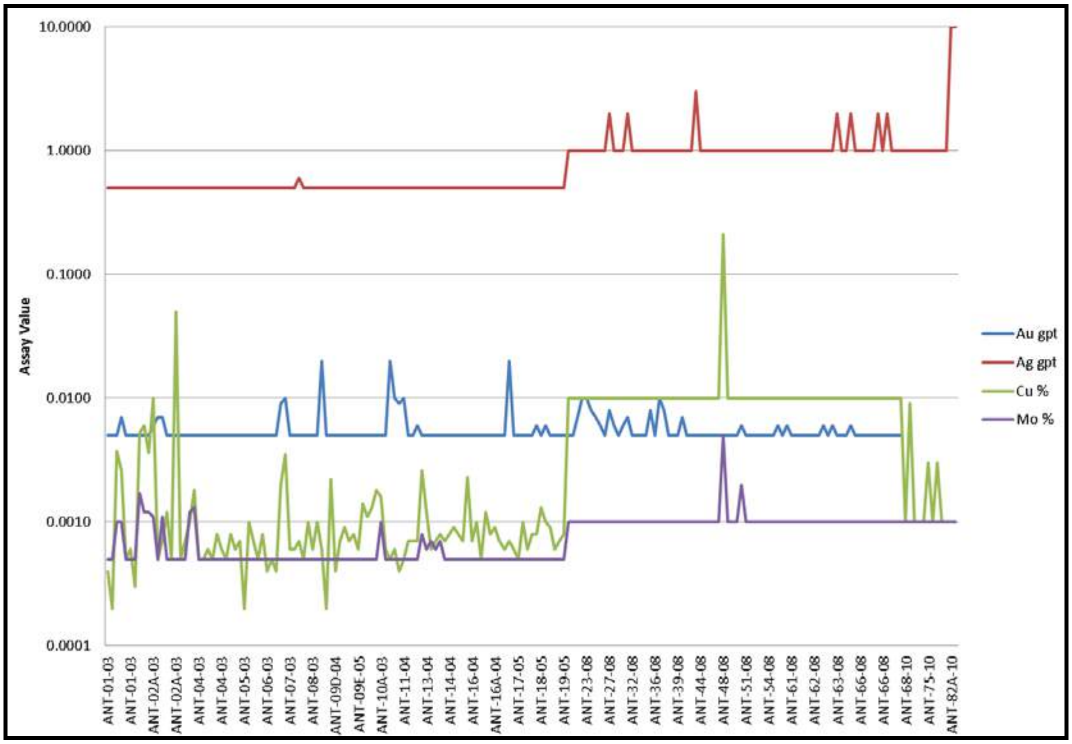
At the conclusion of the 2008 Panoro drill campaign 2,715 reject samples from mineralized intersections were combined into 140 composite samples and analyzed for sequential copper and total copper at the Inspectorate S.A. analytical laboratory in Lima using the Sp-135 package. Samples are digested and analyzed from a sulphuric acid solution, a cyanide solution, and then the residual, undigested copper is digested using a four acid attack and read by AA.

11.4.1 QUALITY ASSURANCE/QUALITY CONTROL DATA

BLANKS

Crushed quartz samples (external source) were used by Panoro as blank reference material. Performance of the blank samples was adequate, with a couple of anomalous samples returning higher than background values for copper and silver. Although these anomalies represent less than 1% of the samples, it is recommended that any failures be re-assayed by the lab. Figure 11.1 displays the blank performance.

Figure 11.1 Blank Performance



DUPLICATES

Three duplicate types were used by Panoro for reference material: split core duplicates, reject duplicates, and pulp duplicates. All three performed well, with less than 6% of the samples falling outside of 2x the standard error for each type. Figure 11.2 through Figure 11.4 display the duplicate control graphs.

Figure 11.2 Split Core Duplicate Control Graph

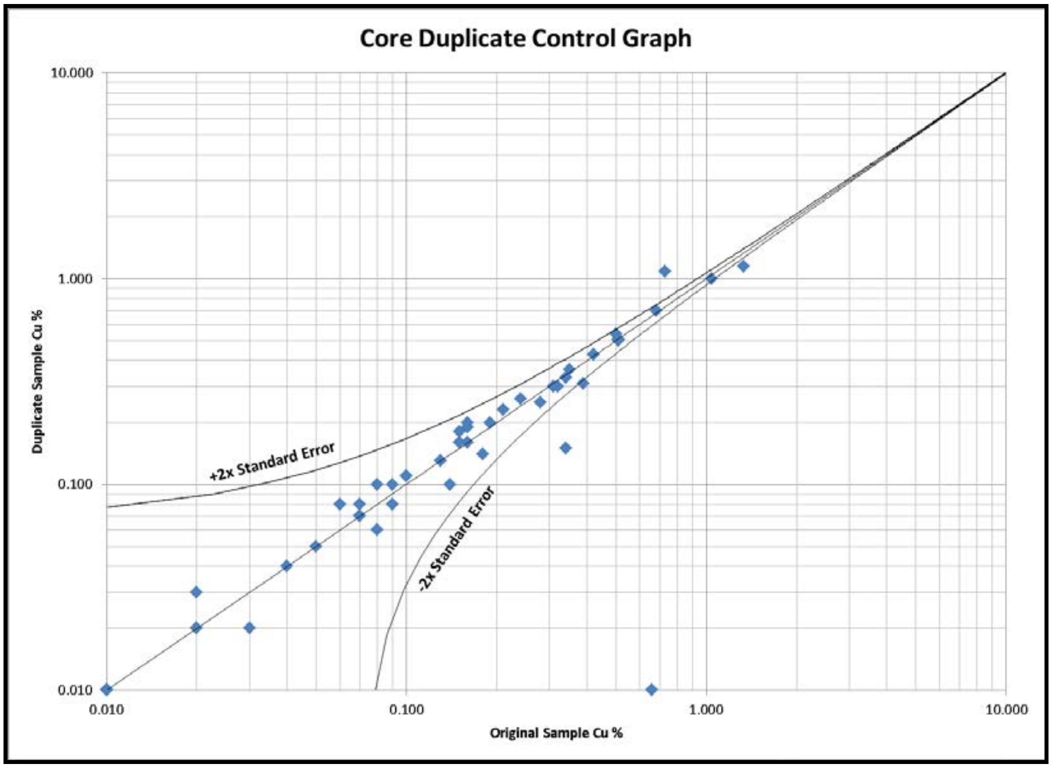


Figure 11.3 Reject Duplicate Control Graph

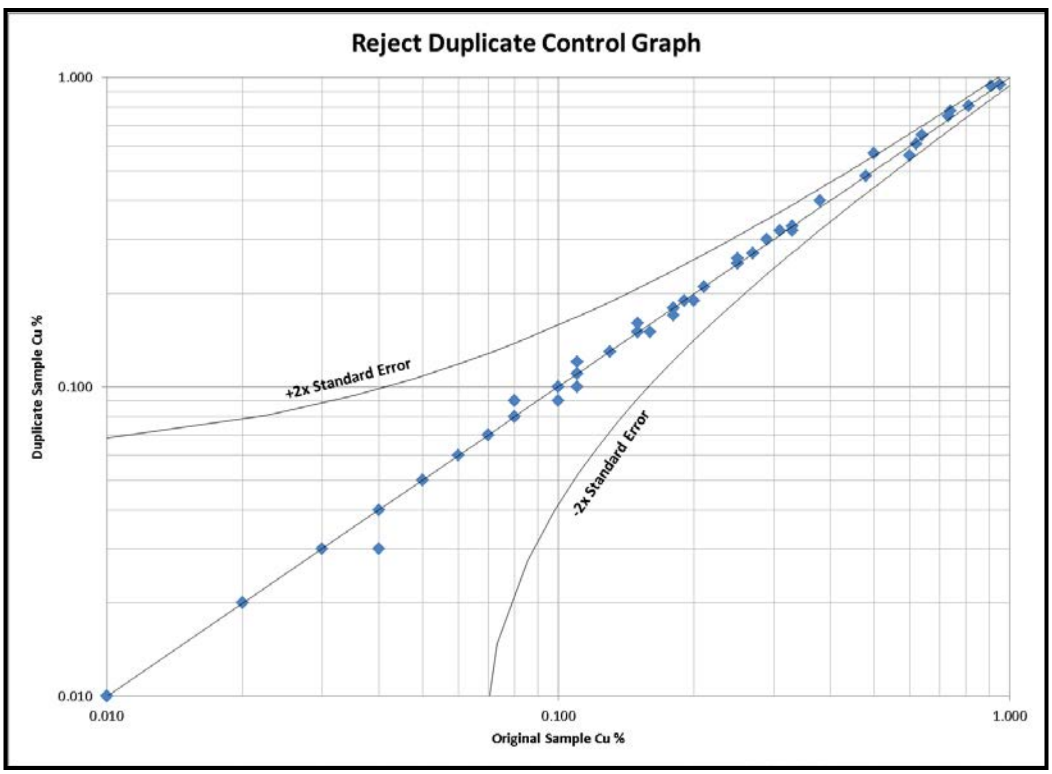
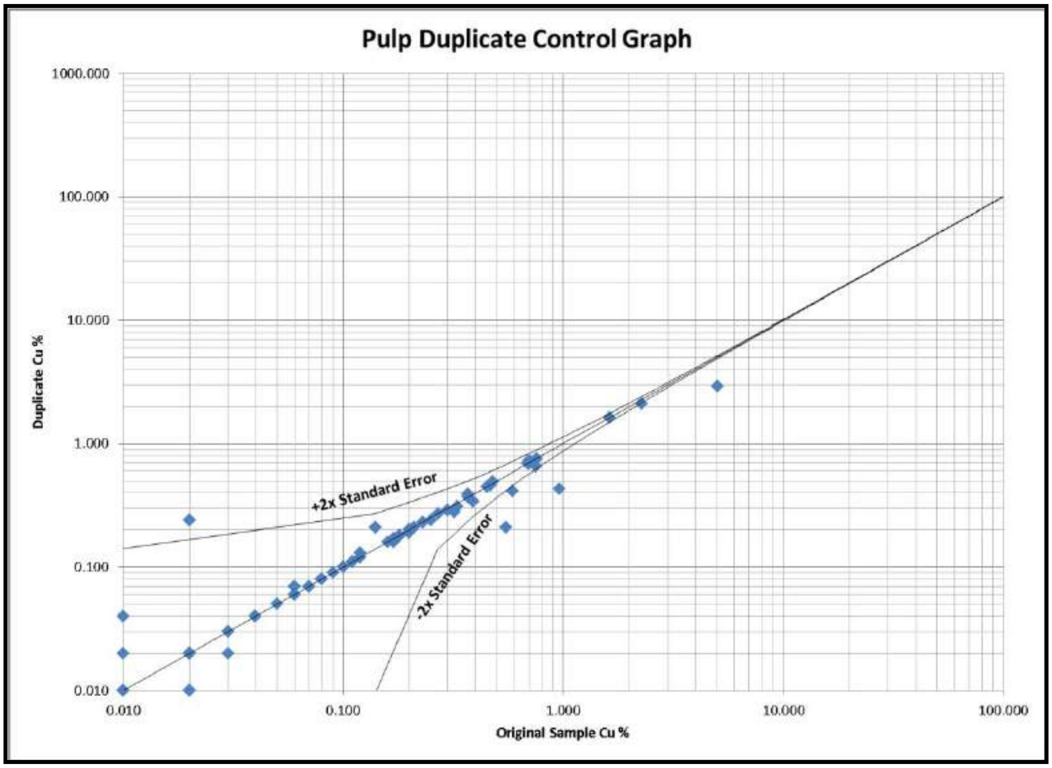


Figure 11.4 Pulp Duplicate Control Graph



11.4.2 PETROGRAPHIC STUDY, 2008

In October and November 2008 a petrographic study of 19 drill core samples and 2 hand samples was completed by Katherine Dunn of Salmon Arm, British Columbia. The study was of arkose, mudstone, quartzite, hornfels, and intrusive samples. The modal mineralogy and alteration mineralogy were reviewed and documented in a final report (Dunn 2008).

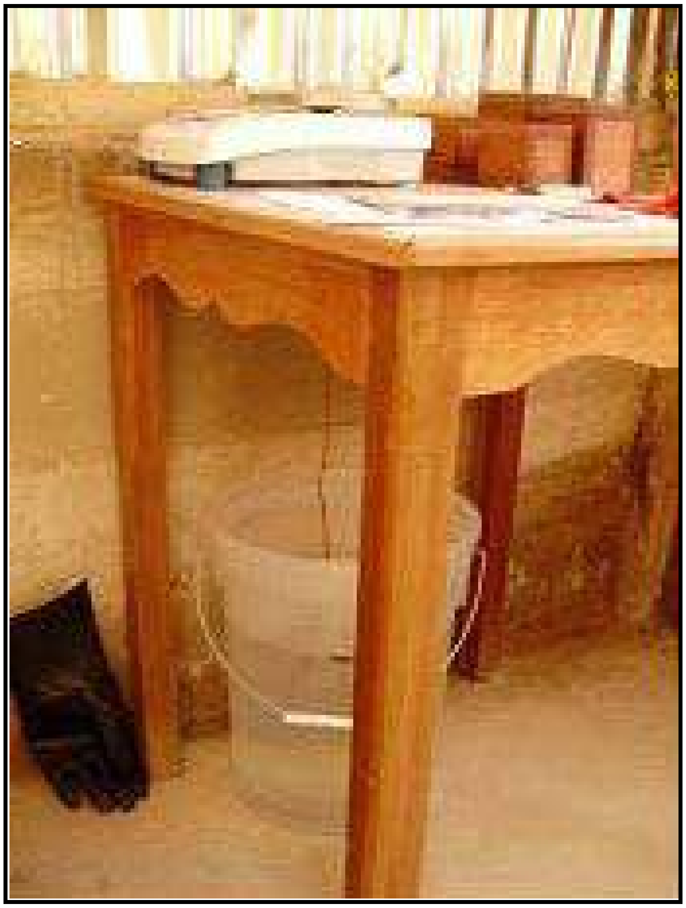
11.5 DENSITY DETERMINATIONS

Two density determinations were made from each 2 m interval drilled during the CLDM 2003, 2004 and 2005 drill campaigns. Over 3,600 density determinations were made and give an average of 2.53 g/cm^3; however, the method and procedures are unknown. Negative density values and values up to 14.5 g/cm^3 are included in the density tables and the reliability of the determinations is unclear. Density determinations from the CLDM drill campaigns were not used for the current resource estimate.

During the 2008 Panoro drill campaign, 283 density determinations were carried out by project staff following two variations of the water displacement method to determine two different densities. Both determinations were carried out on 10 to 15 cm long pieces of diamond drill core taken at 20 m interval down each drillhole. Sample weights were measured in air and suspended in water in the project density determination laboratory in the core shed at Antilla (Figure 11.5). When AMEC visited the Property in November

2008, the worker responsible for density determinations was not on site, so it was not possible to observe density determinations being carried out.

Figure 11.5 Panoro Project Density Determination Apparatus



The first determination was that of bulk water-saturated in situ density. The procedure involved the measurement of the sample's saturated weight on an electronic balance after being soaked in water to allow all pore space to be filled with water. The sample was then suspended from a wire hanger from the bottom of the balance and the weight of the submersed, water-saturated sample was measured.

The second density determination was for a dry in situ bulk density. Samples were dried in a small electric oven and weighed on the digital balance. Samples were then wrapped in clear plastic wrap to keep water from infiltrating pore spaces, and weighed while submersed in water.

AMEC reviewed the two density determination methods and the data. The paired density data showed that for low porosity samples, the results for the dry density were approximately 7% lower than those for the water-saturated density. The samples with low porosity should have a dry density very close to the water-saturated density so it was reasoned that excessive cellophane and air pockets trapped while wrapping the samples for dry density determination had led to a bias in the overall density determinations.

A suite of 22 check samples were sent to ALS Chemex in Lima for validation of the two methods. The check samples were weighed in air, coated in paraffin, weighed in air with paraffin, then submersed and weighed in water. Density was calculated by the differential of the sample weight in air and water with the influence of the weight and density of the wax used to seal the sample removed. The resulting check determinations were quite close to the water-saturated in situ bulk density method. Results from the water-saturated in situ bulk density program were selected for use in resource estimation (Table 11.1).

Table 11.1 Bulk In Situ Density Determinations for the Antilla Project

Zone	n	Average (g/cm)	Maximum (g/cm³)	Minimum (g/cm³)
Primary	41	2.46	2.83	2.15
Secondary	132	2.43	2.79	2.13
Oxide	78	2.42	2.73	2.07
PFP	3	2.40	2.44	2.38
Late Dyke	8	2.41	2.53	2.28
Total	**262**	**2.43**	**2.83**	**2.07**

12.0 DATA VERIFICATION

12.1 TETRA TECH DATA VERIFICATION

Upon receipt of Panoro's database for the Project, all relevant data underwent extensive data verification. Of the 96 drillholes included, 23 were chosen for validation, representing approximately 24% of the drillholes in the database. Seventeen of these holes represent the most recent drilling on the Property (2010 drill campaign), which also coincides with all the available density data and were chosen for this reason. The remaining six holes were chosen at random from the earlier drill campaigns.

12.1.1 COLLAR DATA

Collar data was provided in "csv" (comma-separated values) spreadsheet format. No original survey information for the collar locations was provided, and therefore no verification was possible.

12.1.2 LITHOLOGY DATA

Lithological data was provided in csv spreadsheet format. The lithologies of the 23 chosen holes represent 14% of the lithological database. Where possible, this data was compared to the scanned paper logs, and for more recent data, the original Excel spreadsheet logs. There were discrepancies between the originals and the database, however all of these differences are attributable to recent updating, relogging, and consolidation of lithological data. When these changes are factored out, 100% of the data verified matched the originals.

12.1.3 ASSAY DATA

Assay data was provided in csv spreadsheet format. The assay results for the 23 chosen holes represent 20% of the assay database. These results were verified against the original lab certificates and lab-issued excel spreadsheets. One hundred percent of the verified samples matched the original data. The only discrepancies were in the handling of "ldl" (lower detection limit) samples, where in some cases these were set at the ldl, and in other cases set at half the ldl. It is recommended that this practice, one way or the other, be consistent throughout the database.

12.1.4 DOWNHOLE SURVEY DATA

Downhole survey data was provided in .csv spreadsheet format. No original downhole survey information was provided and therefore no verification was possible.

12.2 SITE VISIT

The QP responsible for this report is Paul Daigle, P.Geo., Senior Geologist with Tetra Tech. Mr. Daigle conducted the site visit to the Property between June 4 and June 7, 2013, for two days. One day was spent on the Property and one day at Panoro's core storage warehouse in Cusco. Mr. Daigle was accompanied on the site visit by Mr. Luis Vela Arellano, Vice President Exploration for Panoro; Mr. John Romero Villanueva, Chief Project Geologist for Panoro; and Mr. Edwin Mayta, Manager Technical Services, for Panoro.

12.2.1 PROJECT SITE AND DRILLHOLE LOCATIONS

The Antilla base camp and project site were visited on June 5, 2013. The base camp is located adjacent to the village of Antilla and is made up of several permanent cinder block buildings (kitchen and office), semi-permanent wood and corrugated tin structure (drill logging, sampling, and storage facility) and weatherhaven tents (accommodation). The base camp is clean and well-maintained.

The core logging and sampling facility is clean and well-maintained. Core boxes are stacked by drillhole. The plastic core boxes are sturdy and made to be stackable. The core boxes are marked in black text marker showing drillhole number, box number, and sample interval. Sawhorses and beams are set up for core logging and review of core. The author was able to review drillholes ANT-48-08 and ANT-69-08 (Panoro drill program) that are still stored on site. Figure 12.1 to Figure 12.3 illustrate the drill core logging and storage facility.

Figure 12.1 Drill Core Logging and Storage Facility (outside)

Figure 12.2 Drill Core Logging and Storage Facility (inside)

Figure 12.3 Drill Core Logging and Storage Facility, Core Boxes

A 6 km access road allows passage for 4x4 vehicles from base camp to the project site. The access road was originally established by CDLM in 2003 and is in relatively good condition, albeit narrow in several sections. The access road is reinforced against erosion by planted eucalyptus trees along the road's edge (Figure 12.4).

Figure 12.4 Access Road as seen from the Antilla Base Camp; Looking South

Note: The Project site is located on the opposite side of this ridge, Cerro Calvario.

The Project site is situated on the northern slope of the Quebrada (ravine) Huancapaco. The slope is relatively steep sided with drill roads for access above and below the main access road. One access road, not inspected on this visit, winds up the opposite side of the summit (Cerro Calvario) where drillhole ANT-66-08 was completed (shown in Figure 12.4).

Eleven drillhole collars were sited in by handheld GPS. All checked drillhole collars were consistent with the drillhole coordinates in the drill logs and in the database. The Project site was clean of drilling debris.

Drill collars are clearly marked on the ground. The collar is fitted with PVC pipe and cemented into place. The drillhole number is engraved in the cement and, at some drillhole locations, marked on a nearby boulder or outcrop. Figure 12.5 illustrates drillhole ANT-62-08.

Figure 12.5 Drillhole ANT-62-08

12.2.2 Core Storage Warehouse, Cusco

The Antilla drill core is stored either at the Antilla base camp or in one of three warehouses in Cusco. The author visited one of these warehouses in Cusco prior to visiting the Property. The warehouse is secured under lock and has its own watchman. The warehouse contained some of the Antilla drill core and most of the drill core from Panoro's Cotabambas project.

The warehouse also serves as a storage depot for exploration, field and camp supplies and equipment for the various projects. The warehouse is kept clean and has a wooden drill core tables along its length for viewing drill core (Figure 12.6).

Figure 12.6 Panoro's Drill Core Storage Facility, Cusco

12.2.3 CHECK SAMPLES

Independent check samples were collected during the site visit by Tetra Tech. Three samples were collected from the available drill core at the core storage site at Panoro's core storage warehouse in Cusco.

The check sample intervals were selected randomly within the mineralized lithologies and collected from the same sample intervals as Panoro. As no core saw was available, Tetra Tech selected alternating pieces of half core. The samples were collected by the author, placed in labeled sample bags and sealed. Sample tags were inserted in the core box and in the sample bag. The samples were kept with the author at all times during the site visit. Upon returning to Toronto, the author shipped the samples to Activation Laboratories Ltd. (Actlabs) for analysis. Figure 12.7 below presents a check sample taken from drillhole ANT-01-03

Figure 12.7 Drillhole ANT-01-03

At Actlabs, the samples were prepared and analyzed as close to Panoro's method as possible. In sample preparation, the sample was crushed to up to 90% of the sample passing a 2 mm screen, split to 250 g and pulverized where 90% passed 105 µm screen (Actlabs Code RX-1). Analysis was conducted using four acid digestion (Actlabs Code 8 – Cu, Mo, Ag)) and induced coupled plasma–optical emission spectroscopy (ICP-OES). For gold, fire assay and atomic absorption was employed (Actlabs Code 1A1).

The purpose of the check sample assays are to confirm indications of mineralization are not intended as duplicate or QA/QC samples. Tetra Tech check sample analysis correlates with Panoro's assay results, for the same sample intervals. Results of the check assay sample analysis and corresponding sample analysis by Panoro are shown in Table 12.1 and Table 12.2.

Table 12.1 Summary of Check Samples Collected by Tetra Tech

Tetra Tech Sample No.	Panoro Sample No.	Drillhole	Sample Interval (m)	Core Boxes	Mineralization
626478	66456	ANT-01	14.0 – 16.0	5	Supergene
626479	66492	ANT-01	80.0 – 82.0	33, 34	Primary Sulphides
626480	69580	ANT-05	56.0 – 58.0	19, 20	Supergene

Table 12.2 Summary of Check Sample Results Collected by Tetra Tech

	Drillhole	Cu%	Mo%	Au (g/t)	Ag (g/t)
Tetra Tech Sample No.					
626478	ANT-01	0.303	0.003	0.004	<3
626479	ANT-01	0.188	<0.003	<0.001	<3
626480	ANT-05	0.707	0.004	0.007	<3
Panoro Sample No.					
66457	ANT-01	0.39	0.001	0.008	0.5
66492	ANT-01	0.446	0.001	0.005	0.6
69580	ANT-05	0.907	0.008	0.013	0.7
Difference	-	-0.087	0.002	-0.004	-
	-	-0.258	-	-	-
	-	-0.200	-0.004	-0.006	-

13.0 MINERAL PROCESSING AND METALLURGICAL TESTING

13.1 LAURION, 2006

The following was taken from (Wright, 2009).

A preliminary assessment of flotation and two acid heap leach process options for the Property were carried out by Laurion Consulting Ltd. (Laurion) in 2005/2006 (Fox 2006). The assessment was based on drill core logging and total and soluble copper assays from the 2003, 2004, and 2005 CDLM drill campaigns.

Froth flotation of sulphide minerals in ground ore was considered as the most favourable process option for the Property (Fox 2006). Laurion identified several advantages of flotation including the recovery of molybdenum and silver, and the suitability of the method for recovering the transitional sulphide-secondary sulphide mineralization that is observed at the Property. Laurion point out that typical porphyry copper mineralization can be treated with a coarse primary grind and rougher scavenger to achieve a final recovery of 90% for copper. A 30,000 t/d concentrator could be configured with a primary gyratory crusher, and a semi-autonomous grinding (SAG) or ball mill circuit and hydro-cyclones. Large tank cells can be used in rougher/scavenger flotation and a ball mill Vertimill™ used to regrind concentrate. Tank cells and column cells can be used for cleaner flotation. Thickening and pressure filtration of the concentrates could also be used to increase copper grade and decrease impurities in the final concentrate. In the preliminary assessment recovery of 90% of copper and 40% of molybdenum by flotation were given as reasonable targets for metallurgical recovery.

Conventional, or Cuprochlo, heap leach with solvent extraction and electrowinning (SX-EW) are often used on lower-grade oxide and chalcocite ores. They have the advantage of lower capital costs and often have lower operating costs than flotation (Fox 2006). The major down-side of the leach methods is the low recoveries anticipated for chalcocite and chalcocite-chalcopyrite mineralization and the inability to recover molybdenum and other by-product credits.

13.2 INSPECTORATE, 2011

In 2011, Panoro retained Inspectorate, a Bureau Veritas Company (Inspectorate), based in Vancouver, Canada, to conduct several preliminary bench scale flotation tests on samples from the Antilla deposit. A series of six flotation tests were carried out on samples of roughly 2 kg. There are limited descriptions of these tests; however, summary results show an approximate 90% for copper recovery.

13.3 CERTIMIN, 2013

13.3.1 INTRODUCTION

In June 2013, Panoro retained CERTIMIN S.A. (Certimin), a laboratory in Lima, to undertake metallurgical test work on the main mineralization of the Antilla deposit. In June 2013, Certimin received two composite samples from the Antilla deposit. Sample A was taken from the primary sulphide zone and Sample B was taken from the supergene enrichment zone. The composite samples were mostly made up of sample rejects from the drill core sample analyses.

The metallurgical test work included comminution (grindability) tests and flotation tests. The flotation test work consisted of copper-molybdenum bulk flotation condition optimization tests, copper-molybdenum separation tests, bulk flotation locked cycle tests.

Characterization of the head samples, concentrates, and tailings was also determined. The results discussed in this section are summarized from the report prepared by Certimin (Certimin 2013).

13.3.2 HEAD ASSAY

Table 13.1 summarizes the assay results of the two samples. Sample A from the primary sulphide zone contained 0.29% copper and 115 ppm molybdenum. Sample B from the supergene zone had a higher copper content, assaying at 0.56% copper. The copper chemical analysis results show that Sample B contained a significant amount of secondary copper minerals. The acid soluble copper (copper in oxide forms) represents approximately 10% and 25% of the total copper in Samples A and B, respectively. Gold and silver contents are low.

Table 13.1 Summary of Head Assay of Metallurgical Samples

Sample	Zone	Weight (kg)	Cu (%)	CuCN- (%)	CuRes (%)	CuSolH+ (%)	Mo (ppm)	Ag (g/t)	Au (g/t)	Fe (%)	Stotal (%)
Sample A	Primary Sulphides	1,245	0.29	0.05	0.21	0.03	115.4	0.60	0.02	1.08	0.73
Sample B	Supergene	1,145	0.56	0.32	0.10	0.14	97.4	0.97	<0.01	0.98	0.73

Note: Cu_{CN-} = cyanide leachable copper; Cu_{Res} = residual copper; Cu_{SolH+} = acid soluble copper

13.3.3 PRELIMINARY COMMINUTION TEST WORK

The results of the grindability tests show that both the samples are low in grinding resistance. The Bond ball mill work index is 10.4 kWh/t for Sample A and 8.9 kWh/t for Sample B. The hardness should be confirmed with further testing on fresh samples.

13.3.4 FLOTATION TEST WORK

OPEN CIRCUIT BULK FLOTATION

Certimin conducted preliminary flotation test work to investigate the effects of various process conditions on copper and molybdenum recoveries. The process conditions tested for rougher and cleaner flotation included primary grind size, pulp pH, reagent regime, and regrind size. The tested primary grind size varied from 80% passing 94 to 121 µm for Sample A and from 80% passing 76 to 115 µm for Sample B.

A total of ten rougher flotation tests were run on each sample. For Sample A, the rougher flotation recoveries varied between 86.5% and 91.0% for copper and between 77.6% and 89.4% for molybdenum.

For Sample B, the rougher flotation recoveries varied between 83.3 and 86.9% for copper and 83.7 to 87.8% for molybdenum.

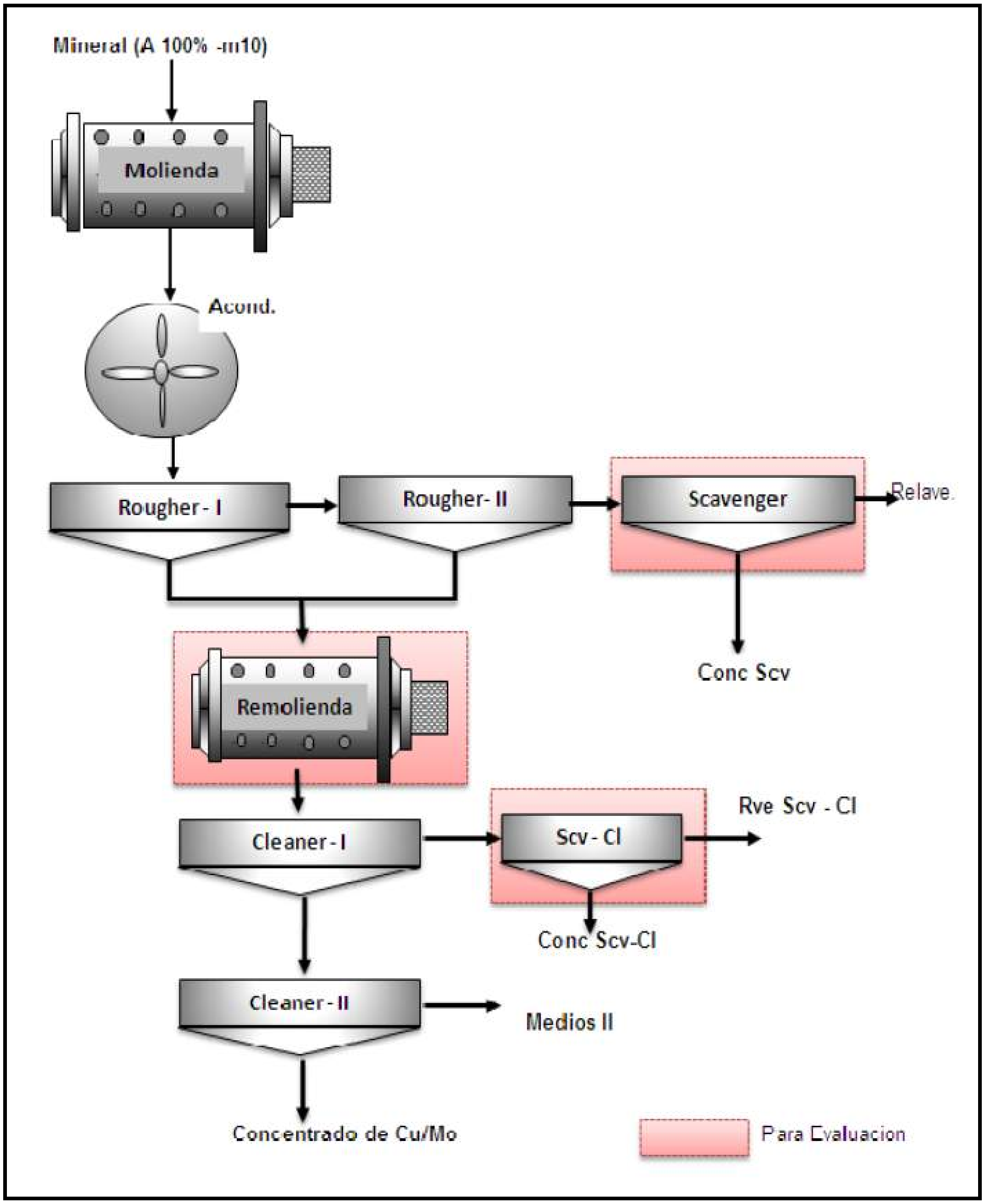
The regrinding tests showed that the concentrate grades of the cleaner flotation improved after the bulk rougher concentrates were reground. Further tests are required to determine the optimum regrind size for the mineralization.

The test results from the open circuit flotation tests conducted at a primary grind size of 80% passing approximately 100 µm are summarized in Table 13.2. The flowsheet used for the tests is plotted in Figure 13.1.

Table 13.2 Open Circuit Flotation Test Results

Sample	Test ID	Product	Grade				Recovery				
			Cu (%)	Mo (ppm)	Au (ppm)	Ag (ppm)	Mass (%)	Cu (%)	Mo (%)	Au (%)	Ag (%)
Sample A	M.A.-P17	Cleaner Concentrate	25.30	7,968	0.4	37.6	0.96	81.1	71.2	37.3	37.2
		Rougher Concentrate	3.94	1,275	0.1	7.3	6.90	91.0	82.2	58.1	51.8
Sample A	M.A.-P18	Cleaner Concentrate	25.80	8,739	0.4	37.9	0.96	81.1	74.4	37.5	36.7
		Rougher Concentrate	4.36	1,484	0.1	8.3	6.29	90.1	83.1	53.1	52.7
Sample B	M.B.-P20	Cleaner Concentrate	40.30	5,936	0.3	38.7	1.06	74.5	73.5	36.1	41.6
		Rougher Concentrate	8.86	1,343	0.1	9.4	5.49	84.7	86.1	48.7	52.1
Sample B	M.B.-P21	Cleaner Concentrate	45.90	3,899	0.4	39.2	0.87	69.5	41.1	30.9	36.0
		Rougher Concentrate	8.04	1,040	0.1	7.8	6.08	85.5	77.0	60.2	50.1

Figure 13.1 Batch Open Circuit Flotation Flowsheet



The results appear to show that the copper and molybdenum sulphides are amenable to flotation processing. The test results are summarized below:

- For Sample A, approximately 90.5% of the copper and 82.6% of the molybdenum were recovered to the bulk rougher flotation concentrate. On average the cleaner concentrate contained 25.6% copper and 8,354 ppm molybdenum. The copper and molybdenum recoveries to the cleaner concentrate were 81.1% and 72.8%, respectively.

- For Sample B, the copper and molybdenum reporting to the bulk rougher flotation concentrate were 85.1% and 81.6%, respectively. On average the bulk cleaner concentrate contained 43.1% copper and 4,918 ppm molybdenum. The copper and molybdenum recoveries to the cleaner concentrate were reduced to 72.0% and 57.3%, respectively.

BULK FLOTATION LOCKED CYCLE TESTS

Two different flowsheets were tested using locked cycle test procedures to investigate metallurgical responses of the two samples:

- One Tailings Flowsheet (Flowsheet One): recirculating the first cleaner tailings to the rougher flotation feed (Figure 13.2)
- Two Tailings Flowsheet (Flowsheet Two): adding cleaner scavenger flotation; the cleaner scavenger flotation tailings was directly discharged as the final tailings while the cleaner scavenger flotation concentrate was returned to the first cleaner flotation feed (Figure 13.3).

The locked cycle test results produced by Flowsheet One are shown in Table 13.3 and Table 13.4.

Table 13.3 One Tailings Flowsheet (Sample A; Locked Cycle Test 1)

	Grade				Recovery				
Products	Cu (%)	Mo (ppm)	Au (ppm)	Ag (ppm)	Mass (%)	Cu (%)	Mo (%)	Au (%)	Ag (%)
Cu-Mo Bulk Concentrate	20.00	6,032	1.12	34.3	1.24	85.3	77.6	73.1	46.3
Rougher Tailings	0.04	22	0.01	0.5	98.76	14.7	22.4	26.9	53.7
Calculated Head	0.29	97	0.02	0.9	100.00	100.0	100.0	100.0	100.0

Table 13.4 One Tailings Flowsheet (Sample B; Locked Cycle Test 1)

	Grade				Recovery				
Products	Cu (%)	Mo (ppm)	Au (ppm)	Ag (ppm)	Mass (%)	Cu (%)	Mo (%)	Au (%)	Ag (%)
Cu-Mo Bulk Concentrate	36.3	6,527	0.51	37.9	1.25	79.4	83.3	54.2	49.0
Tailings	0.12	17	0.01	0.5	98.75	20.6	16.7	45.8	51.0
Calculated Head	0.57	98	0.01	1.0	100.00	100.0	100.0	100.0	100.0

Figure 13.2 Locked Cycle Flotation - One Tailings Flowsheet (Flowsheet One)

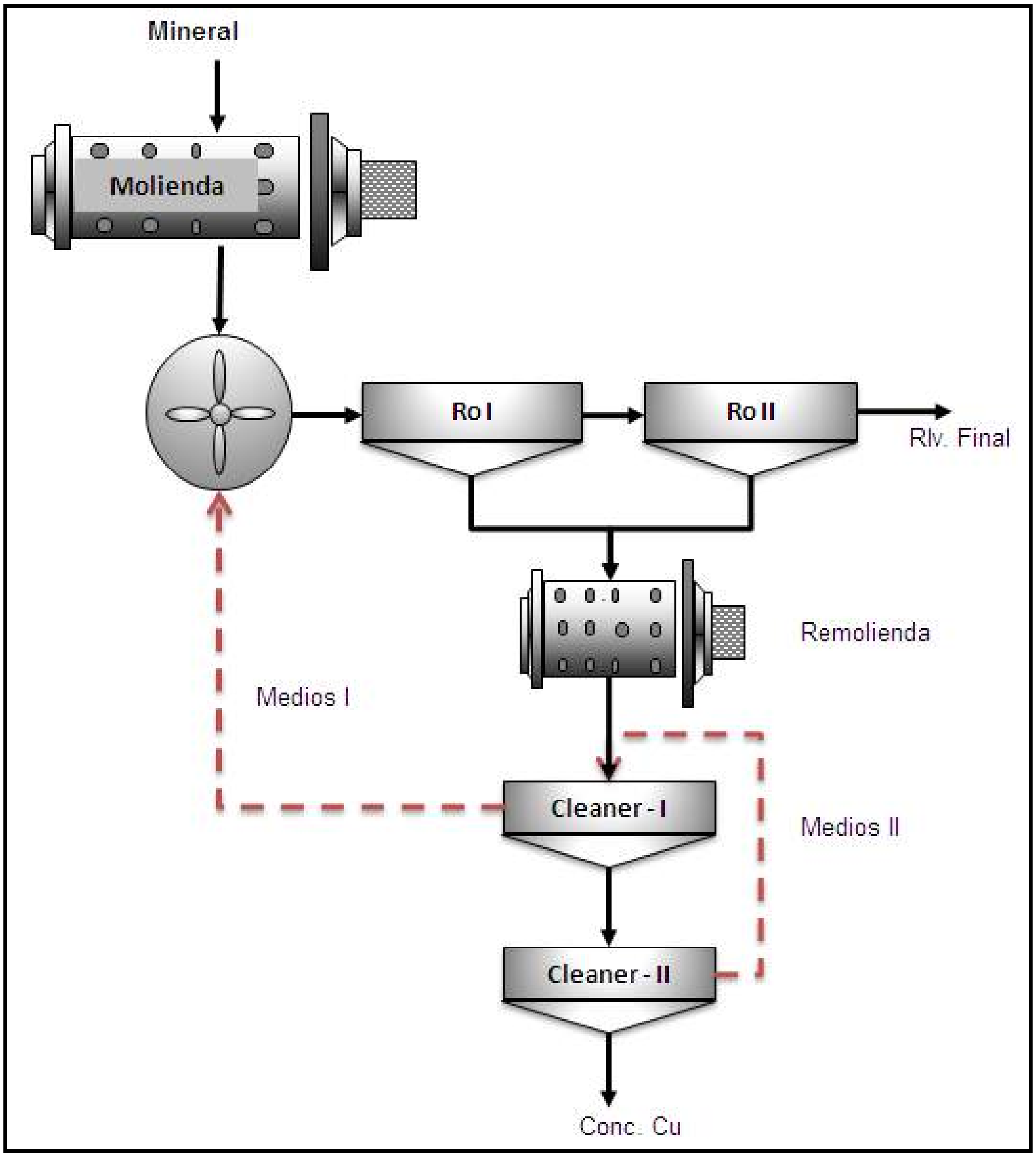
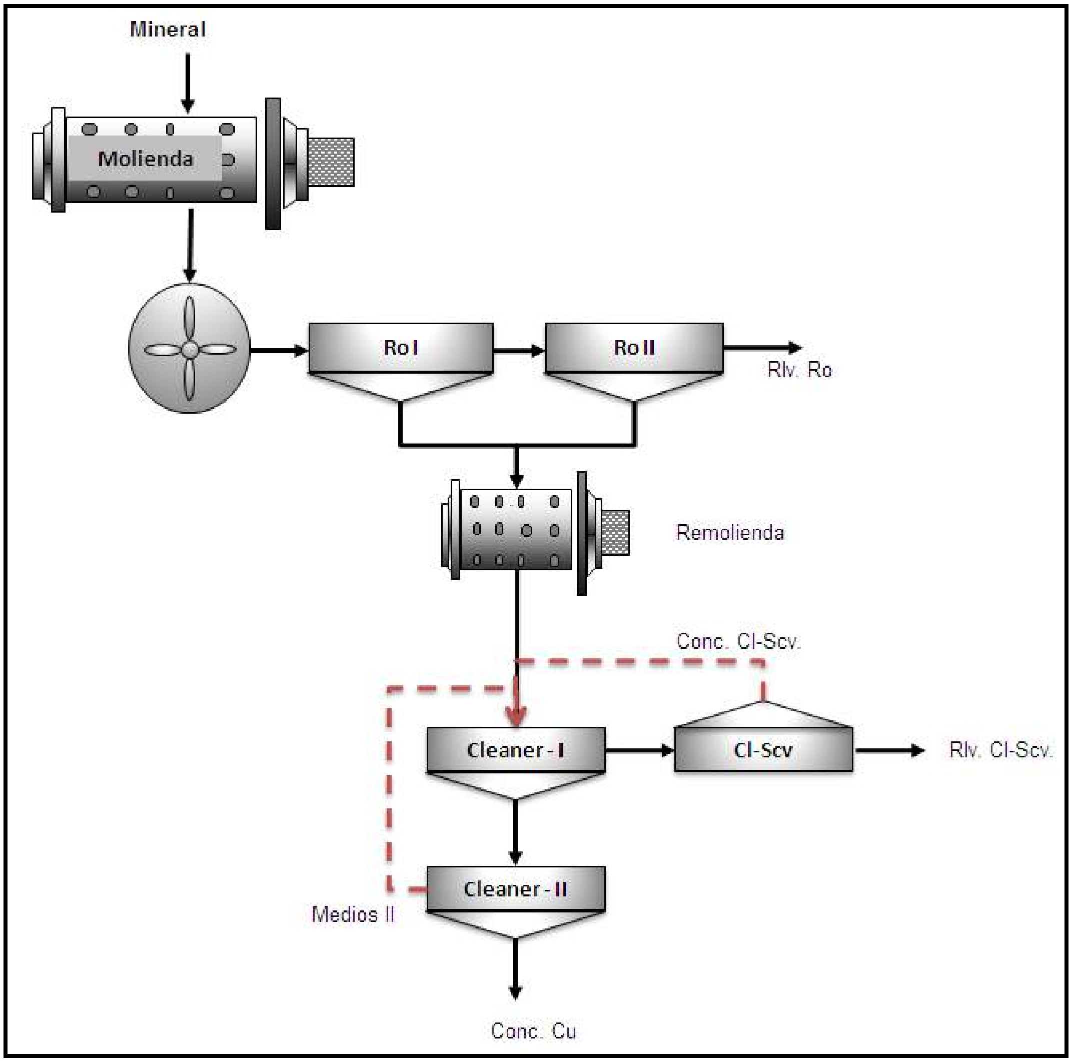


Figure 13.3 Locked Cycle Flotation - Two Tailings Flowsheet (Flowsheet Two)



The results indicate that Sample A produced a higher copper recovery, averaging 85.3%, compared to Sample B from which only 79.4% of the copper was recovered to the bulk concentrate. However, the concentrate grade produced from Sample B contained 36.3% copper, much higher than the 20% copper generated from Sample A. Molybdenum recoveries from the samples were 77.6% for Sample A and 83.3% for Sample B.

Compared to Flowsheet One, copper grades of the bulk concentrates produced from the alternative flowsheet (Flowsheet Two) were higher, especially for Sample A. However, the copper and molybdenum recoveries from the alternative flowsheet were lower. The test results are shown in Table 13.5 and Table 13.6.

Table 13.5 Two Tailings Flowsheet (Sample A; Locked Cycle Test 2)

Products	Concentrate Grade				Recovery				
	Cu (%)	Mo (ppm)	Au (ppm)	Ag (ppm)	Mass (%)	Cu (%)	Mo (%)	Au (%)	Ag (%)
Cu Concentrate	25.20	8,044	0.55	42.1	0.96	81.5	75.8	35.7	41.4
Cleaner Scavenger Tailings	0.42	87	0.10	1.8	5.78	8.3	4.9	32.6	10.8
Rougher Tailings	0.03	21	0.01	0.5	93.26	10.2	19.3	31.7	47.8
Calculated Head	0.30	102	0.02	1.0	100.00	100.0	100.0	100.0	100.0

Table 13.6 Two Tailings Flowsheet (Sample B; Locked Cycle Test 2)

Products	Concentrate Grade				Recovery				
	Cu (%)	Mo (ppm)	Au (ppm)	Ag (ppm)	Mass (%)	Cu (%)	Mo (%)	Au (%)	Ag (%)
Cu Concentrate	37.50	6,058	0.39	38.2	1.20	78.3	82.1	44.4	47.1
Cleaner Scavenger Tailings	0.83	112	0.03	1.0	4.47	6.4	5.7	10.6	4.5
Tailings	0.09	11	0.01	0.5	94.33	15.3	12.2	45.0	48.4
Calculated Head	0.58	89	0.01	1.0	100.00	100.0	100.0	100.0	100.0

These locked cycle test results indicated that gold and silver grades of the bulk concentrates were low.

The bulk concentrates produced from the locked cycle tests were subjected to multi-element analysis. As shown in Table 13.7, the assay results indicate that the impurity levels in the copper concentrates produced from the mineralization should not attract smelting penalties as set out by most smelters.

Table 13.7 Bulk Concentrate Multi-Element Analysis Results

Element	Unit	Sample A – Flowsheet One	Sample A – Flowsheet Two	Sample B – Flowsheet One	Sample B – Flowsheet Two
Ag	ppm	33.4	40.3	36.8	35.5
Al	%	2.74	2.4	1.64	1.51
As	ppm	366	421	465	473
Ba	ppm	103	100	100	96
Be	ppm	0.6	0.6	<0.5	<0.5
Bi	ppm	<5	<5	<5	<5
Ca	%	0.7	0.67	0.57	0.5
Cd	ppm	8	10	10	10
Co	ppm	85	38	72	75
Cr	ppm	496	335	1,070	827

table continues...

Element	Unit	Sample A – Flowsheet One	Sample A – Flowsheet Two	Sample B – Flowsheet One	Sample B – Flowsheet Two
Cu	ppm	>10,000	>10,000	>10,000	>10,000
Fe	%	>15.0	>15.0	>15.0	>15.0
Ga	ppm	<10	<10	<10	<10
K	%	1.39	1.25	0.85	0.78
La	ppm	12.1	8.5	13	11.8
Mg	ppm	0.17	0.17	0.09	0.08
Mn	ppm	418	467	173	138
Mo	ppm	6,337	9,081	6,828	7,041
Na	%	0.18	0.19	0.07	0.07
Nb	ppm	<1	<1	<1	<1
Ni	ppm	250	148	410	439
P	%	<0.01	<0.01	<0.01	<0.01
Pb	ppm	177	219	125	115
S	%	>10.0	>10.0	>10.0	>10.0
Sb	ppm	65	82	36	34
Sc	ppm	7.1	7.4	8.3	8.1
Sn	ppm	22	28	19	21
Sr	ppm	48	46.9	41.9	39.5
Ti	%	0.1	0.09	0.08	0.08
Tl	ppm	<2	<2	<2	<2
V	ppm	49	46	34	30
W	ppm	<10	<10	<10	<10
Y	ppm	8.1	6.6	6.5	6
Zn	ppm	1,200	1,380	1,880	1,840
Zr	ppm	24.3	18.5	12.2	8.7

COPPER-MOLYBDENUM SEPARATION FLOTATION

Preliminary test work was conducted to investigate molybdenum separation from the copper-molybdenum bulk concentrates that were produced from batch open circuit tests. The separation flotation used the procedure of floating molybdenum and suppressing copper minerals by sodium hydrosulphide (NaSH). The molybdenum rougher flotation concentrates were upgraded by three stages of cleaner flotation, excluding Test Sep No.01 which the molybdenum flotation concentrate was upgraded by four stages of cleaner flotation. The test results are summarized in Table 13.8. The test results showed that the molybdenum concentrates produced contained approximately 32% molybdenum for Sample A and 40% molybdenum for Sample B. The results indicated that the molybdite could be separated from the copper-molybdenum bulk concentrate by the conventional flotation process. However, further test work is required to improve molybdenum concentrate grade, including optimizing reagent regime and regrinding arrangement for intermediate molybdenum concentrate(s).

Table 13.8 Copper and Molybdenum Separation Test Results

Sample	Test ID	Product	Grade (%)		Recovery (%)	
			Cu	Mo	Cu	Mo
Sample A	Sep No 01	Mo Cleaner Concentrate	3.57	32.2	0.3	74.0
		Mo Rougher Concentrate	22.9	2.96	24.3	95.9
		Mo Rougher Tailings	25.4	0.05	75.7	4.1
	Sep No 02	Mo Cleaner Concentrate	4.2	32.5	0.4	93.8
		Mo Rougher Concentrate	21.0	6.28	11.4	98.8
		Mo Rougher Tailings	24.9	0.01	88.6	1.2
Sample B	Sep No 03	Mo Cleaner Concentrate	3.7	38.6	0.1	85.4
		Mo Rougher Concentrate	30.4	4.06	11.9	98.5
		Mo Rougher Tailings	42.3	0.01	88.1	1.5
	Sep No 04	Mo Cleaner Concentrate	3.3	41.5	0.1	84.4
		Mo Rougher Concentrate	31.1	3.47	16.6	98.9
		Mo Rougher Tailings	42.8	0.01	83.4	1.1

13.3.5 Other Test Work

Acid-Base Accounting Tests

Certimin conducted acid-base accounting (ABA) tests on the flotation tailings samples generated from the locked cycle tests. As shown in Table 13.9, the test results indicated that the tailings from the two mineralization samples may present a high-acid generation potential.

Table 13.9 ABA Test Results (Flotation Tailings)

Sample – Flotation Tailings		AP (kg $CaCO_3$/t)	Pulp (pH)	NP (kg $CaCO_3$/t)	NP/AP	NNP (kg $CaCO_3$/t)	S(t) %	S(SO_4^{-2}) (%)	S($^{-2}$) (%)
Sample A	Locked Cycle Test 1	4.48	8.46	2.03	0.45	-2.45	0.20	0.05	0.14
	Locked Cycle Test 2	2.33	8.58	2.13	0.92	-0.19	0.11	0.03	0.07
Sample B	Locked Cycle Test 1	10.8	8.63	1.92	0.18	-8.88	0.40	0.05	0.35
	Locked Cycle Test 2	2.73	8.43	1.57	0.58	-1.16	0.12	0.03	0.09

Note: AP – potential acid generation; NP – neutralization potential; NNP – net neutralization potential; S(t) – total sulphur; S(SO_4^{-2}) – sulphate sulphur; S($^{-2}$) – sulphide sulphur

Solubility Tests

The content of solubles in the head samples was determined to be 0.839 kg/t for Sample A and 0.755 kg/t for Sample B. It appeared that the dissolution did not have a negative effect on the process of flotation.

13.3.6 Discussions

In general the preliminary flotation tests indicate that the mineralization is amenable to conventional flotation process. The mineralization from the primary sulphide zone should produce a higher copper recovery, compared to the mineralization from the supergene zone. However, on average copper concentrate from the supergene zone mineralization should have a much higher copper grade, compared to the mineralization from the primary sulphide zone. Molybdenum from both the mineralization zones responded well to the tested procedures. The impurity levels of the copper concentrates should not attract smelting penalties as set out by most smelters.

Further test work is required to optimize process conditions and flowsheet to improve metal recovery and to better understand the metallurgical performance of the mineralization. Market study should be conducted to investigate smelting terms, especially the terms for gold and silver because on average low gold and silver contents in copper concentrate are anticipated.

14.0 MINERAL RESOURCE ESTIMATES

This section discloses a new resource estimate for the Antilla gold deposit, prepared in accordance with the CIM Best Practices and disclosed in accordance with NI 43-101. The effective date of this resource estimate is September 27, 2013.

This resource estimate has been prepared using interpreted mineralized domains and includes a country rock domain.

A cut-off grade of 0.2% CuEQ was chosen for the Antilla deposit. This cut-off grade reflects current cut-off grades for similar deposits in there region. Tetra Tech considers this CuEQ% cut-off to be reasonable for this deposit.

14.1 DATABASE

Panoro supplied all of the digital data for the resource estimate update. This data was compiled from assay analyses and other drill programs that have been conducted on the Property since 2003. The data was verified and imported into Gemcom GEMS™ version 6.5 Resource Evaluation Edition.

The entire drillhole dataset included the header, survey, assay, and lithology files for 96 drillholes totalling 15,385 m of diamond drill core drilling. Table 14.1 summarizes the number of drillholes and lengths on the Property. Out of the total number of drilling on the Property, only 88 drillholes, 14,292.55 m of drilling, occur within the deposit area and were used in the resource estimate.

Table 14.1 Summary of Drillholes

Company	Year	No. of Drillholes	Total Lengths (m)
CDLM	2003-2005	20	2,919.20
Panoro	2008	49	9,130.55
CHC	2010	19	2,242.80
Total	-	**88**	**14,292.55**

14.1.1 SPECIFIC GRAVITY

There have been no previous systematic measurements of densities of the different lithologies that make up the deposit. Average densities for the specific rock types were assigned to the lithological domains. Table 14.2 summarizes the densities used for the various lithologies and rock type domains

Table 14.2 Summary of Densities

Lithology Domain	Rock Code	Density
Cover/Overburden [COV]	100	2.000
Leach Cap [LC]	200	2.507
Supergene [SE]	300	2.687
Primary Sulphides [PS]	400	2.695
Country Rock [CR]	99	2.680

14.2 Exploratory Data Analysis

Exploratory data analysis is the application of various statistical tools to explain the characteristics of the data set. In this case, the objective is to understand the population distribution of the grade elements through the use of such tools as histograms, descriptive statistics, and probability plots.

14.2.1 Raw Assays

Raw assay statistics for the grades which intersect the deposit are shown in Table 14.3. Only those values greater than zero were used in the statistical analysis. It was noted that the gold and silver grades are relatively low and approach the detection limits of the assay results. Since these metals do not contribute significantly to the deposit they have been omitted from mineral resource.

Table 14.3 Raw Assay Statistics by Domain (No Zeroes)

	Cu (%)	Mo (%)	Au (g/t)	Ag (g/t)
Covertura [100]				
Count	69	69	69	69
Minimum	0.004	0.001	0.005	0.500
Maximum	0.860	0.050	0.030	2.000
Mean	0.047	0.004	0.007	0.925
Standard Deviation	0.123	0.006	0.004	0.310
Variance	0.015	0.000	0.000	0.096
Coefficient of Variance	2.609	1.443	0.572	0.335
Leach Cap [200]				
Count	1,674	1,674	1,588	1,674
Minimum	0.001	0.001	0.005	0.500
Maximum	2.030	0.260	0.170	74.000
Mean	0.036	0.007	0.008	1.489
Standard Deviation	0.123	0.011	0.007	2.910
Variance	0.015	0.000	0.000	8.467
Coefficient of Variance	3.432	1.616	0.980	1.955

table continues...

	Cu (%)	Mo (%)	Au (g/t)	Ag (g/t)
Supergene [300]				
Count	2,153	2,153	1,568	2,153
Minimum	0.003	0.001	0.005	0.500
Maximum	5.090	0.260	0.080	95.000
Mean	0.454	0.009	0.008	1.183
Standard Deviation	0.471	0.015	0.006	2.613
Variance	0.222	0.000	0.000	6.828
Coefficient of Variance	1.037	1.736	0.723	2.209
Primary Sulphides [400]				
Count	2,706	2,706	2,417	2,706
Minimum	0.001	0.001	0.005	0.080
Maximum	2.270	0.790	1.210	55.000
Mean	0.156	0.009	0.009	1.117
Standard Deviation	0.184	0.025	0.035	1.415
Variance	0.034	0.001	0.001	2.001
Coefficient of Variance	1.178	2.874	3.732	1.266

14.2.2 CAPPING

Cumulative probability plots, Parrish decile analysis and descriptive statistics were used to assess the need for capping of the assay grades for the Antilla deposit. Typically, a step-change in the profile or a separation of the data points is present if there are different populations in the dataset. High value outliers will show up in the last few percent of a cumulative probability plot (typically in the 97 to 100% range) and the break in the probability distribution may be selected to set a capping level.

Tetra Tech found that capping of raw data was deemed necessary for the assay data for all elements. Table 14.4 presents the statistics for the capped grades.

Table 14.4 Summary of Capping of Grades

Metal	Capped Grade	Number of Samples Affected
Cu (%)	1.9	40
Mo (%)	0.1	23

14.2.3 COMPOSITES

The raw uncapped data within the Antilla deposit was composited on 4 m, 6 m, and 8 m composites. Statistics between the various composite datasets showed little change in the mean but a lowering of the coefficient of variation. The 6 m composites were selected as the most reasonable for the interpolation of the Antilla deposit.

In the Geovia GEMS™ project, the table "COMP_6M" was created for composite data. Composite data, once calculated, is tagged with their associated rock code and rock type. The composites were then extracted into a point area named "6m_Comp". A total of 2,124 composite data points were extracted from the drillhole data. All composite data was used in the interpolation of the Antilla deposit. Table 14.5 presents the comparison between the capped data 6 m composite data (no zeroes) for the mineralized domains.

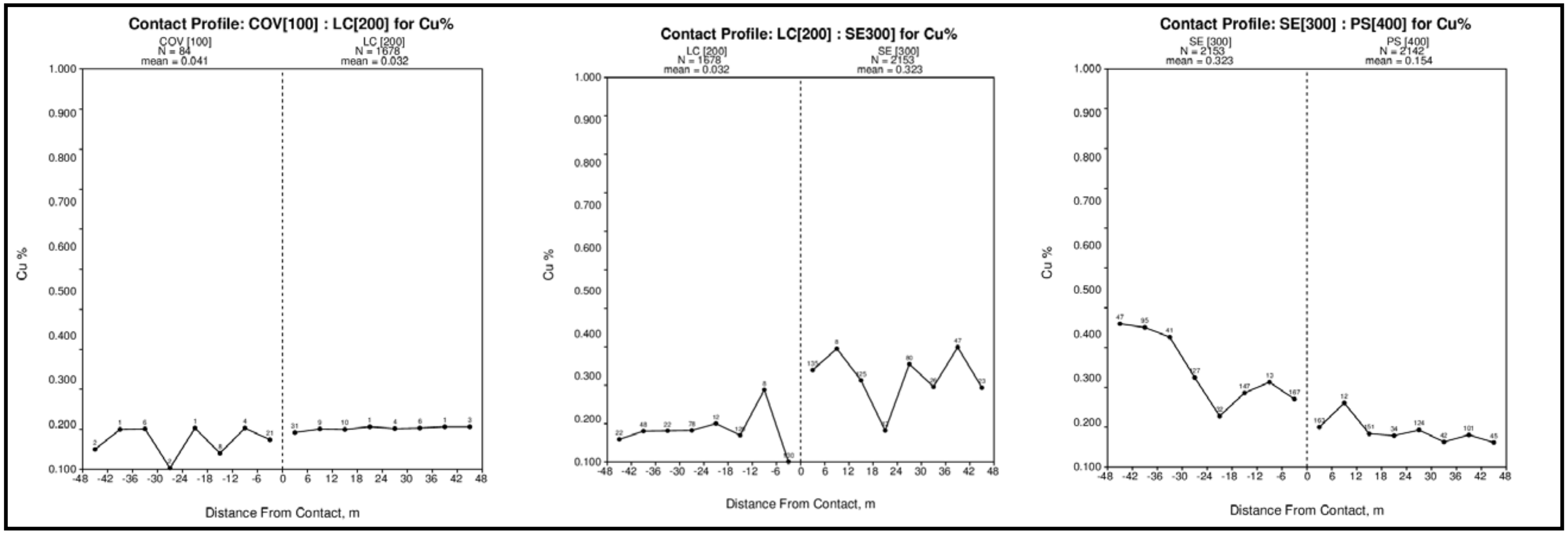
Table 14.5 Statistics for Capped 6 m Composite Data (no zeroes)

	Cu (%)	Mo (%)
Covertura [100]		
Count	38	38
Minimum	0.005	0.001
Maximum	0.800	0.050
Mean	0.093	0.006
Standard Deviation	0.189	0.009
Variance	0.036	0.000
Coefficient of Variance	2.037	1.472
Leach Cap [200]		
Count	600	600
Minimum	0.003	0.001
Maximum	0.800	0.038
Mean	0.038	0.006
Standard Deviation	0.088	0.006
Variance	0.008	0.000
Coefficient of Variance	2.287	0.973
Supergene [300]		
Count	747	747
Minimum	0.006	0.001
Maximum	1.633	0.087
Mean	0.434	0.009
Standard Deviation	0.303	0.010
Variance	0.092	0.000
Coefficient of Variance	0.698	1.112
Primary Sulphides [400]		
Count	739	739
Minimum	0.001	0.001
Maximum	1.069	0.059
Mean	0.178	0.008
Standard Deviation	0.141	0.008
Variance	0.020	0.000
Coefficient of Variance	0.790	1.034

14.2.4 CONTACT PLOTS

Contact plots were run over each lithological boundary with the mineralized domains. The contact plots illustrate a soft boundary exists between the coverture and leach cap domains; and the supergene and primary sulphide domains show a gradual contact with regards to copper, where higher copper grades in the supergene diminish into the primary sulphide domain. Figure 14.1 presents the contact plots for each of these domains using Cu% grades.

Figure 14.1 Contact Plots for Lithological Boundaries for Cu% Grades



14.3 GEOLOGICAL INTERPRETATION

14.3.1 ANTILLA DEPOSIT

The wireframes for the Antilla deposit were developed to constrain the interpreted mineralized zones.

Tetra Tech used Panoro's initial wireframes as a guide to build the final mineralized wireframes. The wireframes were built by creating surfaces from drillhole intercepts. The resulting 3D wireframe was created between each set of surfaces and clipped to topography. The topographic surface was supplied by Panoro. The lateral extent of the wireframes was to a nominal 200 m beyond the limit for the drillholes.

A country rock wireframe was built surrounding the mineralized wireframes and below the topographic surface.

Figure 14.2 to Figure 14.7 illustrate the various 3D wireframes for the mineralized domains in plan view and perspective view.

Figure 14.2 Solid Wireframes for the Covertura [100] Domain

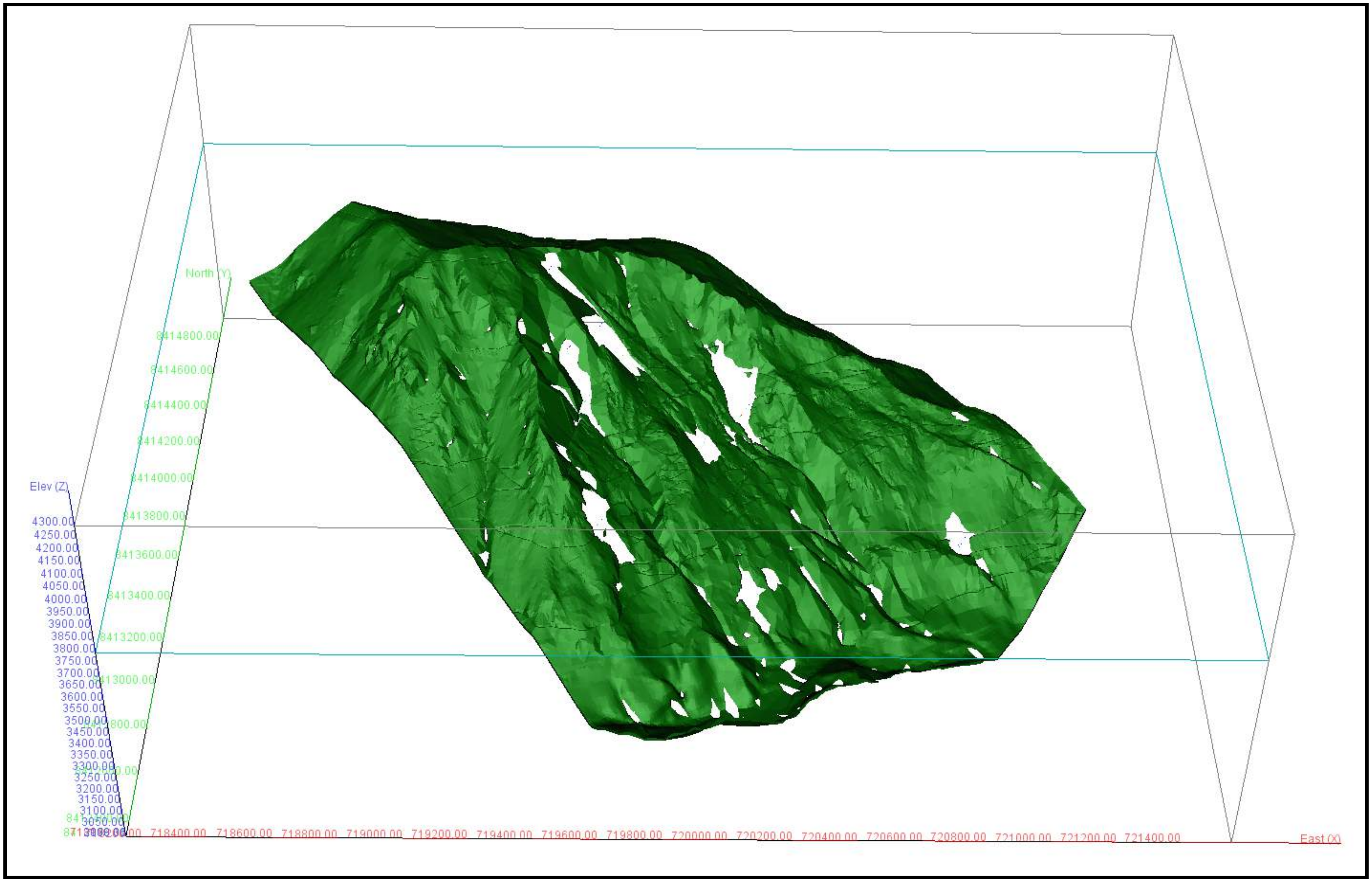


Figure 14.3 Solid Wireframes for the Leach Cap [200] Domain

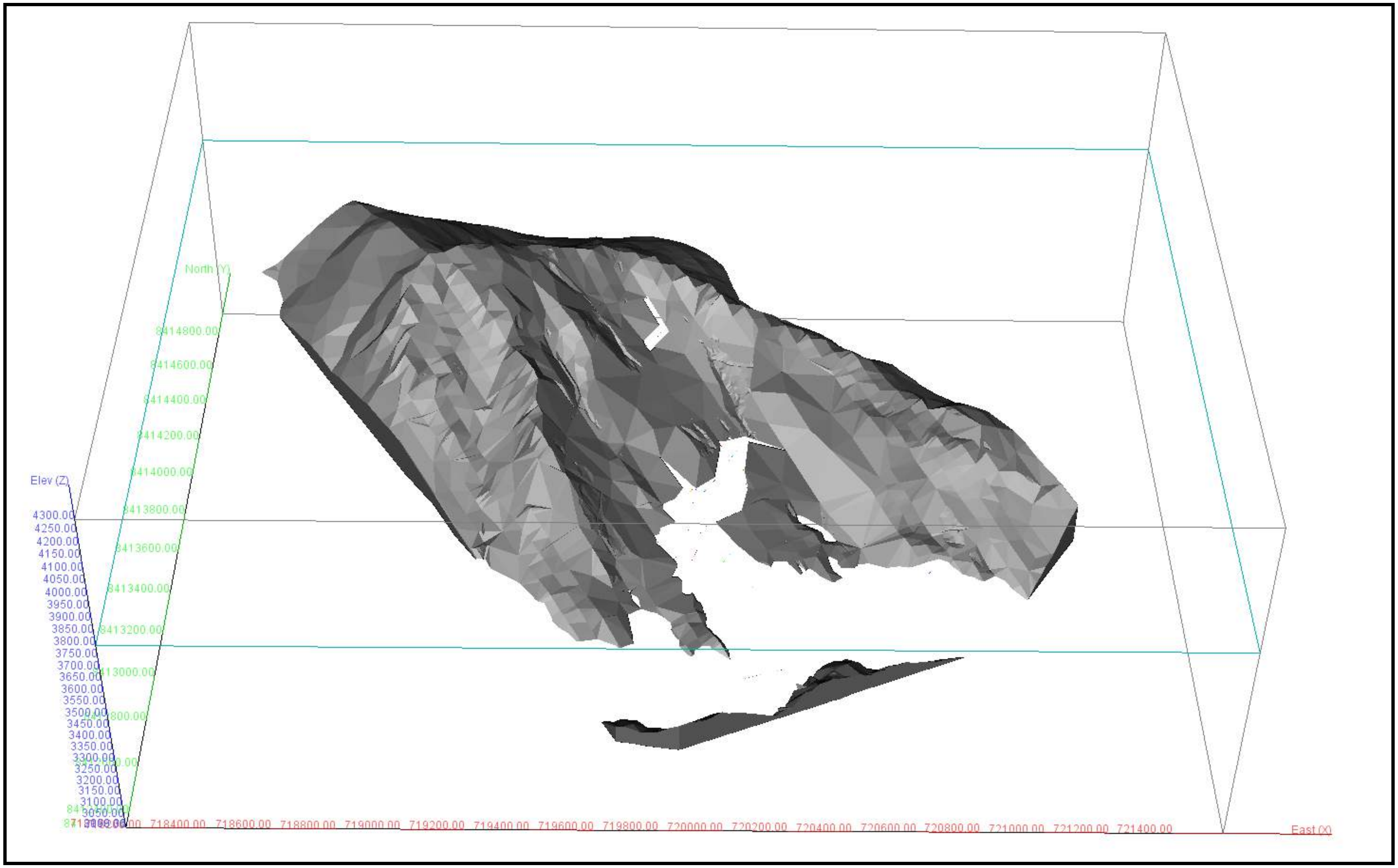


Figure 14.4 Solid Wireframe for the Supergene [300] Domain

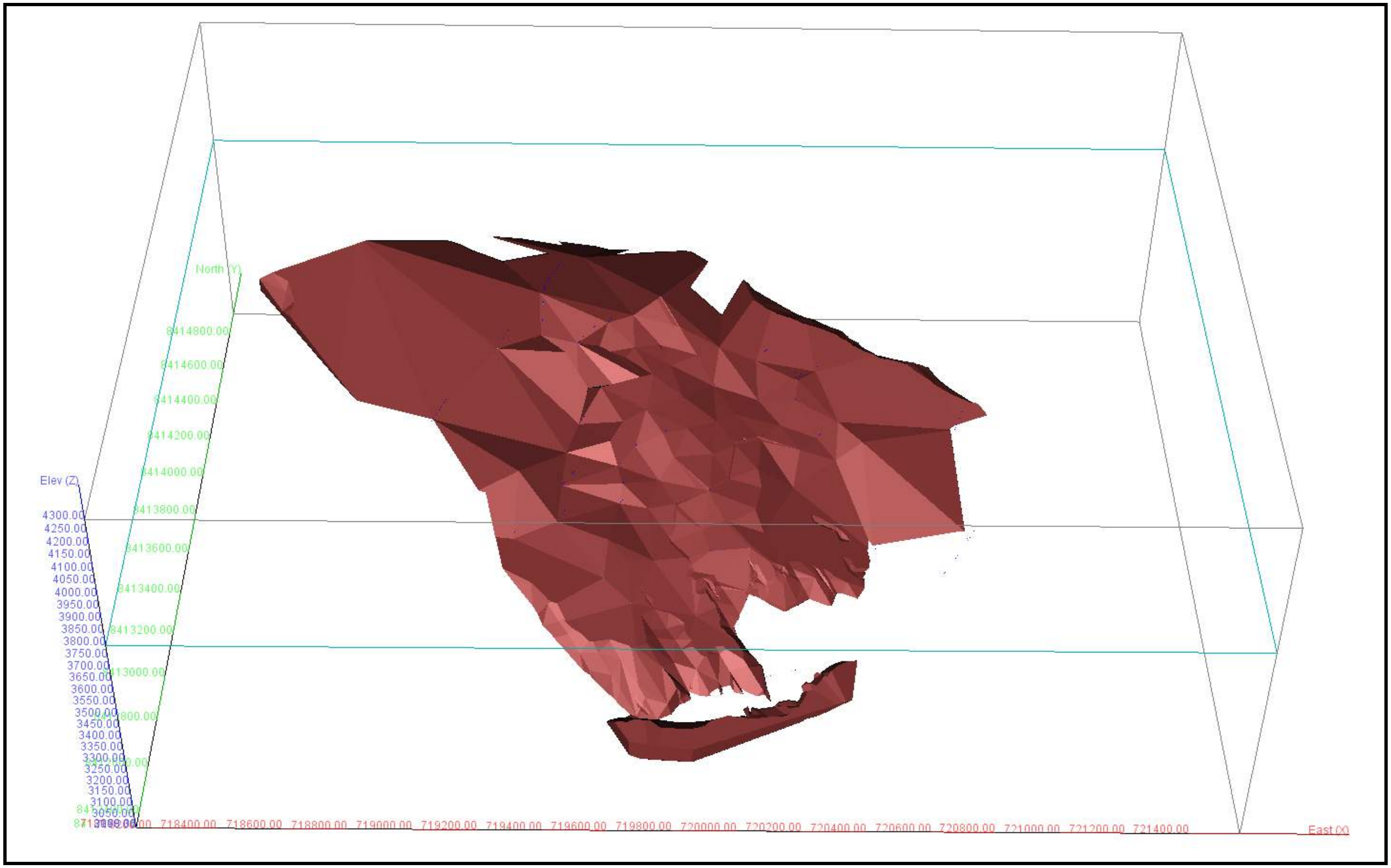


Figure 14.5 Solid Wireframe for the Primary Sulphide [400] Domain

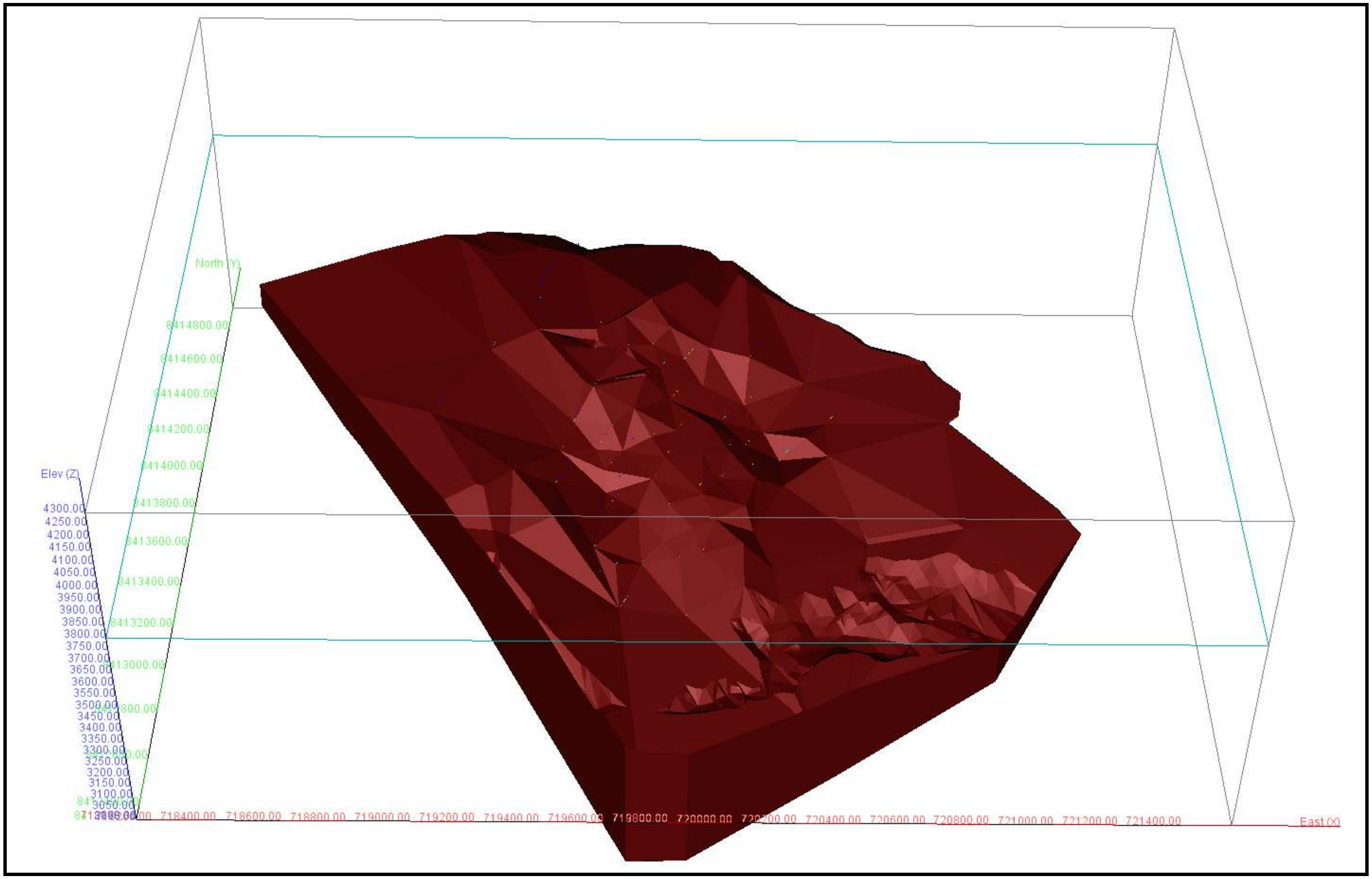


Figure 14.6 Solid Wireframes for the All Mineralized Domains

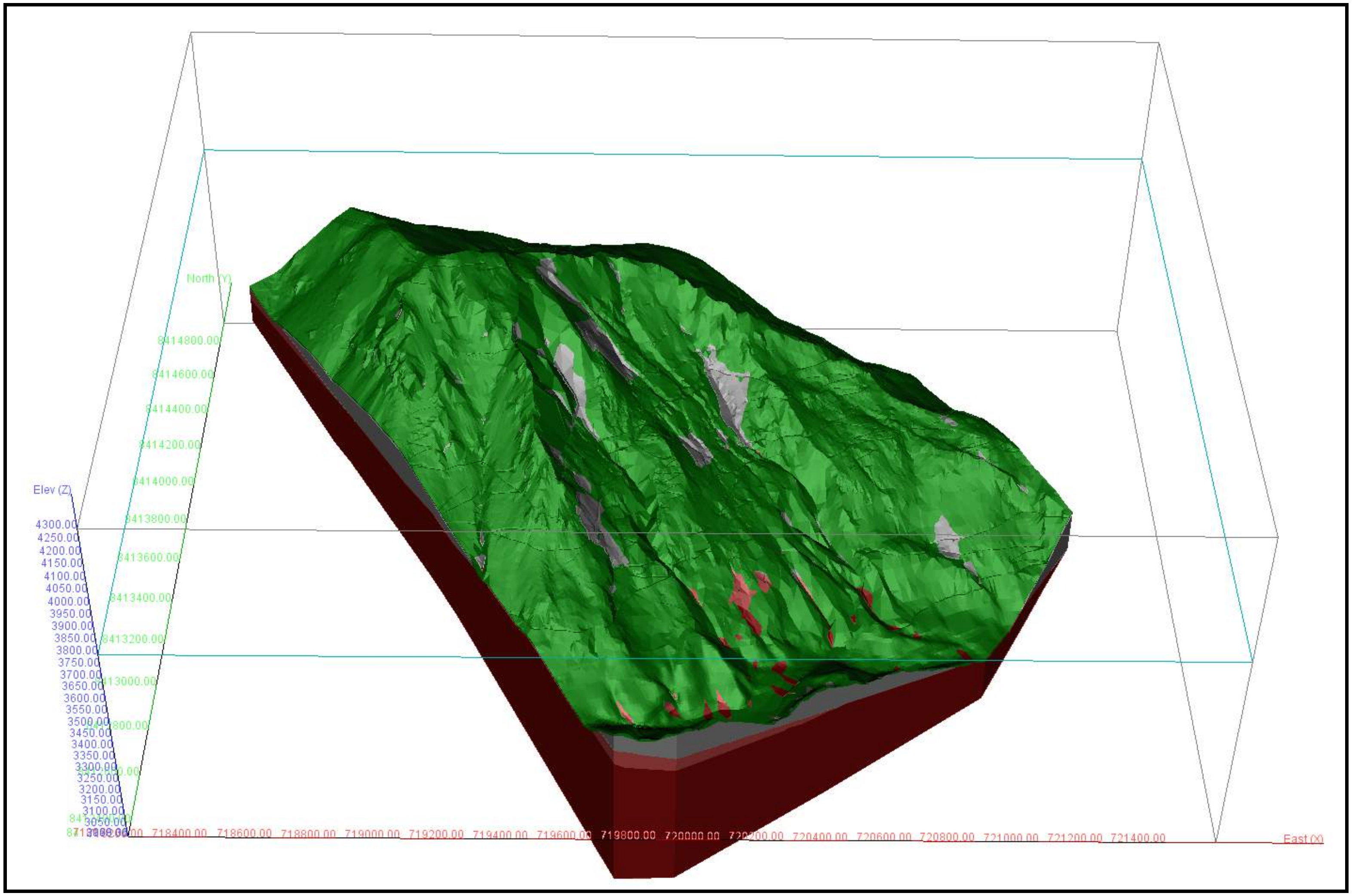
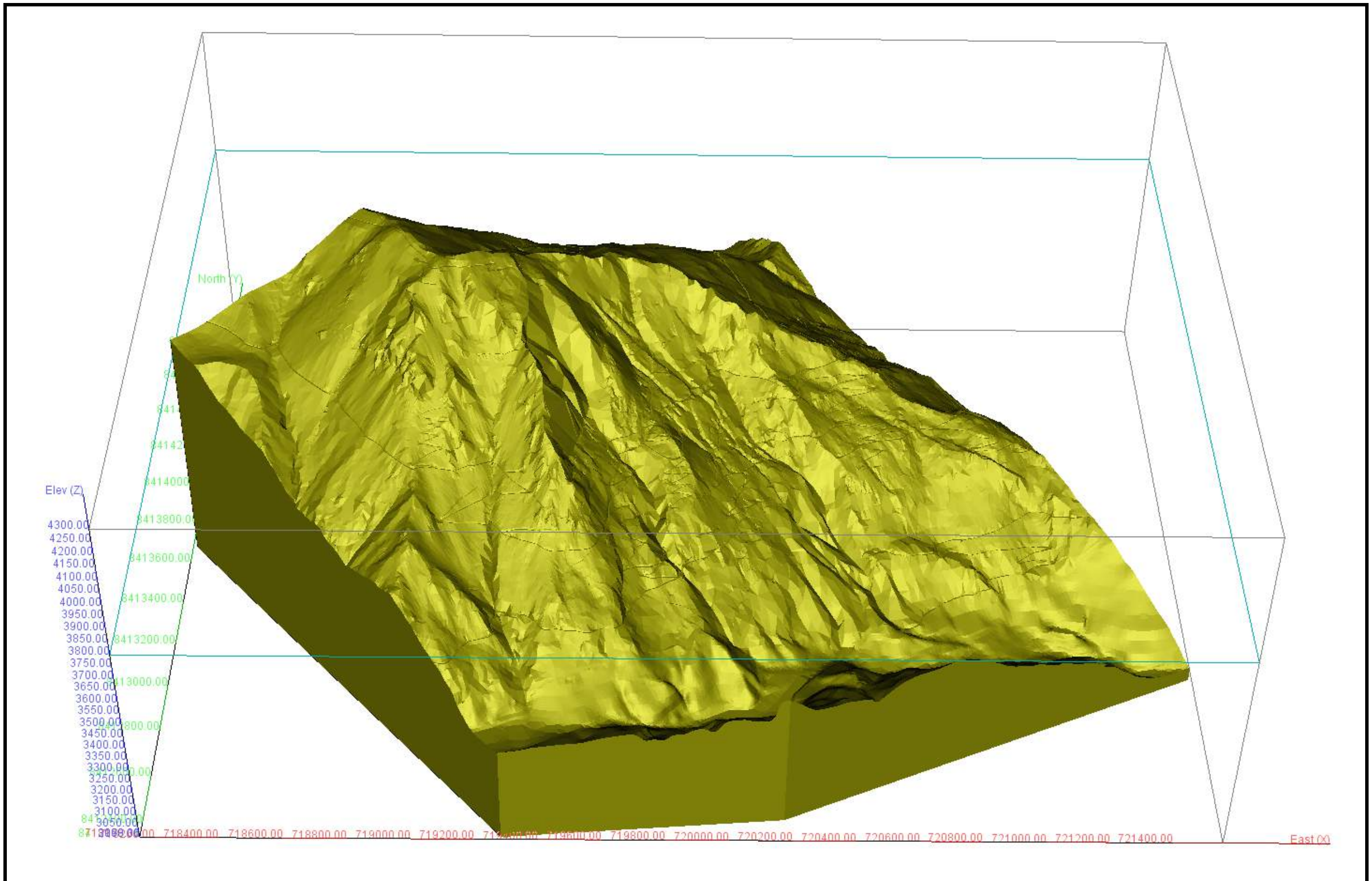


Figure 14.7 Solid Wireframes for the Country Rock [99] Domain



14.4 BLOCK MODELS

14.4.1 ANTILLA BLOCK MODEL

A single block model was created to cover the Antilla deposit. Table 14.6 and Figure 14.8 show the Gemcom GEMS™ coordinates for the block model origins. A block size of 15 m by 15 m by 6 m was used for block model and resource estimate. The block size is considered reasonable where distances between drillholes vary between 70 and 100 m. Figure 14.9 illustrates the block model over the Antilla deposit.

Table 14.6 Block Coordinates for the Antilla Block Model

	Minimum	Maximum	Number
Easting	718400	721175	185 columns
Northing	8412500	8414600	140 rows
Elevation	3100	4300	200 levels

Figure 14.8 Block Model Origin for the Antilla Block Model

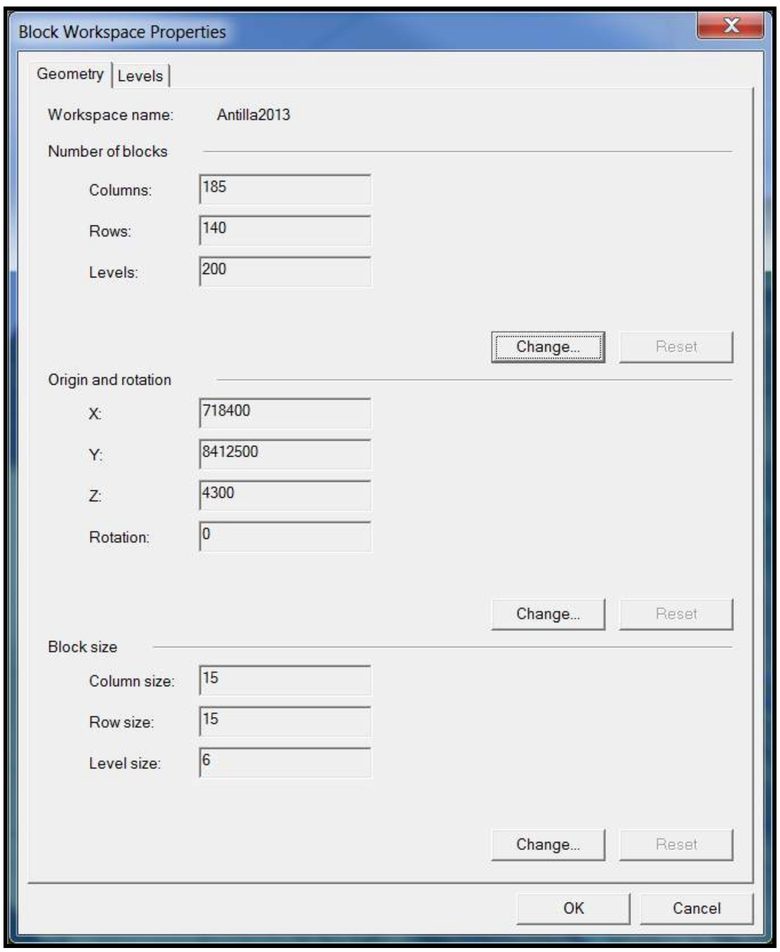
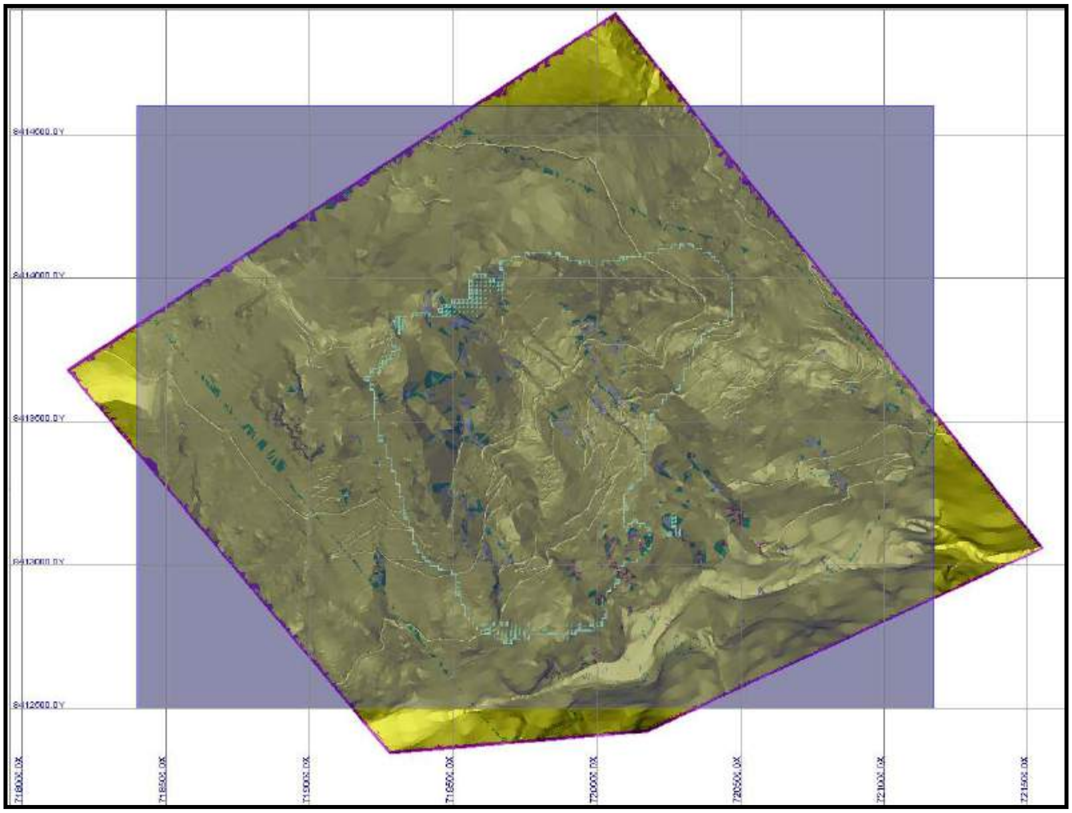


Figure 14.9 Block Model Area over the Antilla Deposit Deposit; Plan View



Note: Lines are 500 m by 500 m; north is up.

14.4.2 VARIOGRAPHY

Samples used for variography are a function of geological interpretation and sample populations. For the Antilla deposit, all composite data within the mineralized wireframes, were used in determining variograms. Variograms were established using the 6 m composite samples within the combined Covertura and Leach Cap domains; and combined Supergene and Primary Sulphide domains.

The variography was generated in variogram analysis in Gemcom GEMS™.

Experimental variograms were developed on 50 m to 100 m lag distances for copper, molybdenum and gold. The ranges of the experimental variograms appear to reach the sill at approximately 100 to 250 m. Either one or two spherical structures were used for spatial modelling and orientations for each grade group and were oriented on an azimuth, dip, azimuth rotation.

Table 14.7 and Table 14.9 summarize the variography parameters used for OK interpolation for each domain in the Antilla deposit.

Table 14.7 Variography Parameters for Copper

Profile Name	Sill	Search Anisotropy	Azimuth (°)	Dip (°)	Azimuth (°)	X Range (m)	Y Range (m)	Z Range (m)	Search Type
Domains 100 and 200; Sill = 0.0127									
C_0 (nugget)	0.0038	-	-	-	-	-	-	-	-
C_1	0.0027	Az, Dip, Az	130	-30	47.6	228.0	188.2	136.9	Spherical
C_2	0.0062	Az, Dip, Az	130	-30	47.6	346.2	285.8	207.9	Spherical
Domain 300; Sill = 0.0849									
C_0 (nugget)	0.0170	-	-	-	-	-	-	-	-
C_1	0.0212	Az, Dip, Az	188.3	-18.8	93.4	155.0	94.3	36.9	Spherical
C_2	0.0467	Az, Dip, Az	188.3	-18.8	93.4	255.0	155.3	60.7	Spherical
Domain 400; Sill = 0.0345									
C_0 (nugget)	0.0104	-	-	-	-	-	-	-	-
C_1	0.0090	Az, Dip, Az	219.3	-5.4	123.8	175	80.1	51.2	Spherical
C_2	0.0152	Az, Dip, Az	219.3	-5.4	123.8	215	98.4	62.9	Spherical

Table 14.8 Variography Parameters for Molybdenum

Profile Name	Sill	Search Anisotropy	Azimuth (°)	Dip (°)	Azimuth (°)	X Range (m)	Y Range (m)	Z Range (m)	Search Type
Domains 100 and 200; Sill = 0.00004									
C_0 (nugget)	0.000002	-	-	-	-	-	-	-	-
C_1	0.000011	Az, Dip, Az	234.0	7.9	330.1	147.2	147.2	36.5	Spherical
C_2	0.000027	Az, Dip, Az	234.0	7.9	330.1	304.5	304.5	75.4	Spherical
Domain 300; Sill = 0.000076									
C_0 (nugget)	0.000023	-	-	-	-	-	-	-	-
C_1	0.000013	Az, Dip, Az	188.3	-18.7	92.9	240	166.4	78.6	Spherical
C_2	0.000040	Az, Dip, Az	188.3	-18.7	92.9	275	190	90	Spherical
Domain 400; Sill = 0.000074									
C_0 (nugget)	0.000022	-	-	-	-	-	-	-	-
C_1	0.000052	Az, Dip, Az	214.8	-7.6	115.5	177	162.9	81.3	Spherical

Figure 14.10 and Figure 14.11 illustrate examples of the copper and molybdenum variograms for the Supergene domain 300.

Figure 14.10 Copper Variogram for the Supergene Domain [300]

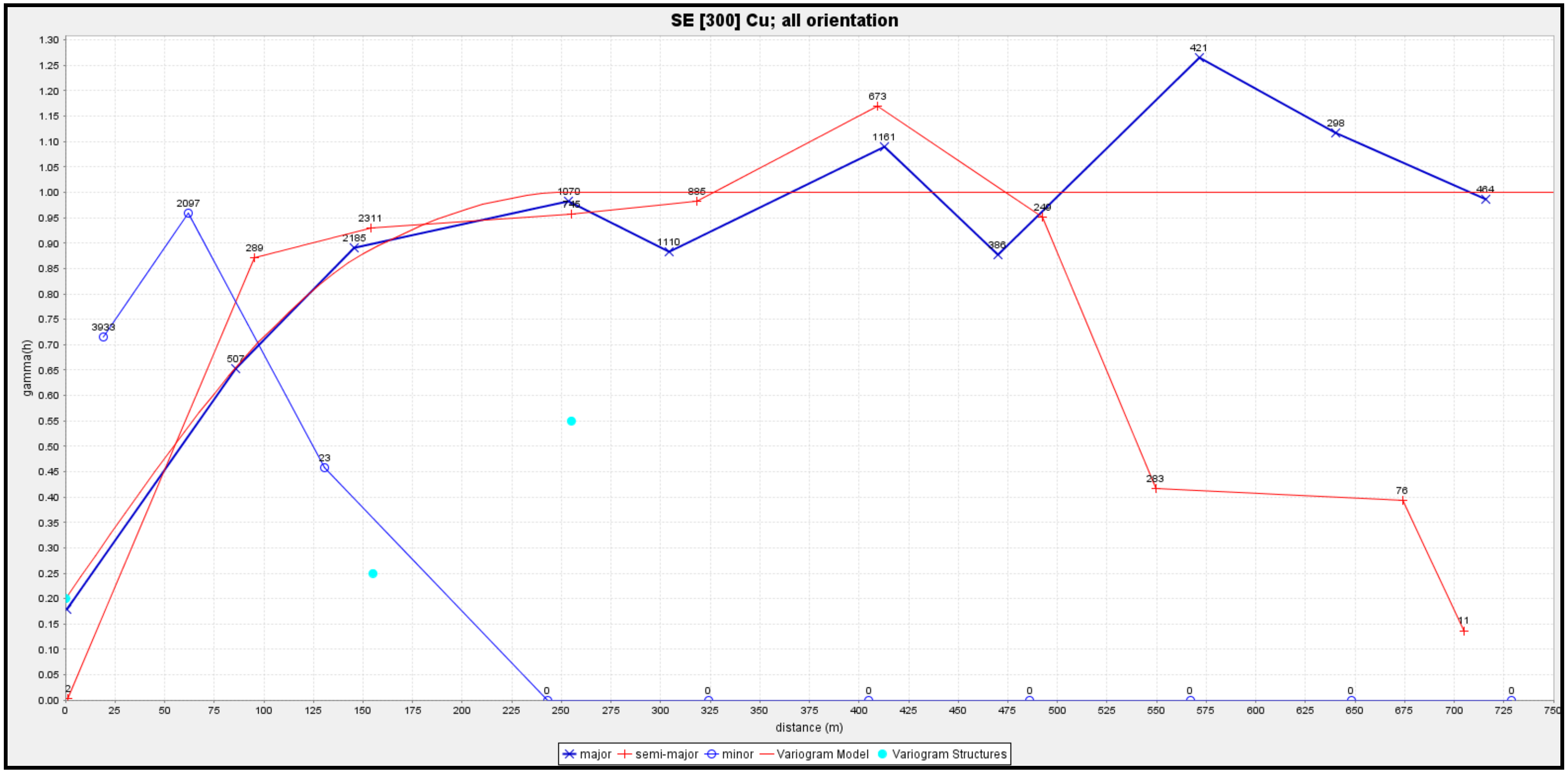
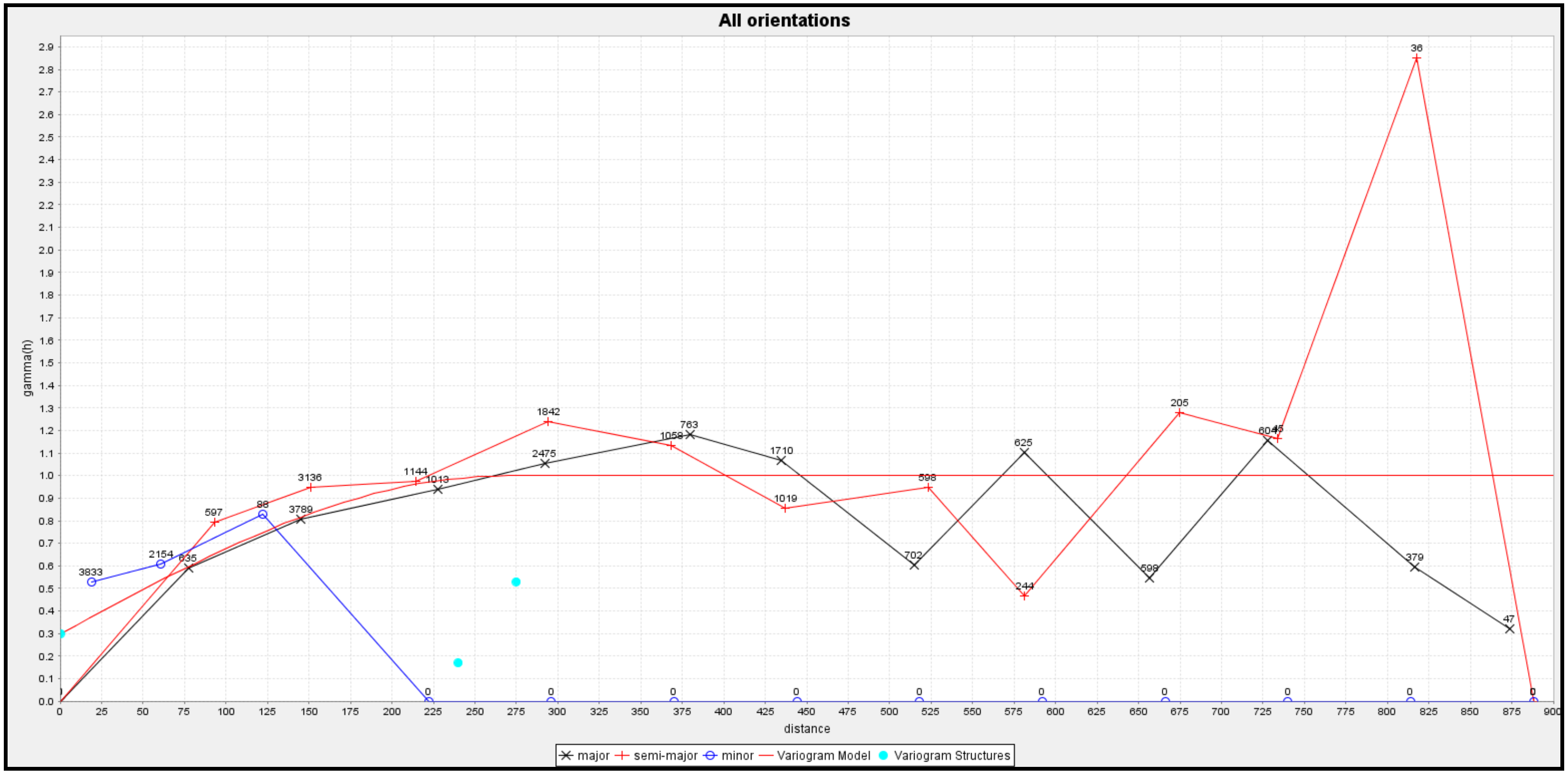


Figure 14.11 Molybdenum Variogram for the Supergene Domain [300]



14.4.3 INTERPOLATION PLAN AND SPATIAL ANALYSIS

The interpolation methods used for populating the block model were: OK, inverse distance squared (ID^2) and nearest neighbour (NN) on capped composited data. For validation purposes, OK, ID^2 and NN interpolation methods were also carried out on uncapped composited data.

For all interpolations two passes were employed. For each domain, a minimum of 3 and a maximum of 16 composite samples were used to interpolate a block for copper and molybdenum. This allows the grade for each block to be interpolated by using composite assay values from at least one drillhole to a maximum of five drillholes. Separate interpolation runs were carried out each of the four domains. A summary of the interpolation passes and profiles are described in Table 14.9.

Table 14.9 Description of Interpolation Passes

Domain	Profile Name	Number of Composite Samples Used	Maximum Samples per Drillhole	Maximum Number of Drillholes
100	OKxx1_P1	Minimum 7; Maximum 16	3	5
	OKxx1_P2	Minimum 3; Maximum 16	3	5
200	OKxx2_P1	Minimum 7; Maximum 16	3	5
	OKxx2_P2	Minimum 3; Maximum 16	3	5
300	OKxx3_P1	Minimum 7; Maximum 15	3	5
	OKxx3_P2	Minimum 3; Maximum 15	3	5
400	OKxx4_P1	Minimum 7; Maximum 15	3	5
	OKxx4_P2	Minimum 3; Maximum 15	3	5
100	NNxx1	Minimum 1; Maximum 1	1	1
200	NNxx2	Minimum 1; Maximum 1	1	1
300	NNxx3	Minimum 1; Maximum 1	1	1
400	NNxx4	Minimum 1; Maximum 1	1	1
100	IDxx1_P1	Minimum 7; Maximum 16	3	5
	IDxx1_P2	Minimum 3; Maximum 16	3	5
200	IDxx1_P1	Minimum 7; Maximum 16	3	5
	IDxx1_P2	Minimum 3; Maximum 16	3	5
300	IDxx1_P1	Minimum 7; Maximum 15	3	5
	IDxx1_P2	Minimum 3; Maximum 15	3	5
400	IDxx1_P1	Minimum 7; Maximum 15	3	5
	IDxx1_P2	Minimum 3; Maximum 15	3	5

Note: 'xx' – denotes metal (copper and molybdenum)

As the transition between the Supergene (300) and Primary Sulphide (400) domains was found to be gradual a different sample support strategy was employed. Three composite samples on either side of the boundary, that is, approximately 18 m to either side of the boundary, were coded as Rock Type 350. During the interpolation of blocks with the Rock Type 300 and 400 were allowed to include Rock Type 350 as part of the sample selection. Therefore, the grades at the interface of the two domains were allowed to be influenced up to 18 m into the other domain.

SEARCH ELLIPSES

Search ellipses are generated in GEMS™ based on orientation of the variograms. Therefore, the search ellipses for the upper domains differ from those of the lower domains. In the lower domains, the first pass search ellipses used half the ranges of the second pass ellipse. This was used to constrain data in the core of the deposit over the transition between the supergene and the primary sulphide domain.

A list of parameters for each search ellipse used for each pass is shown in Table 14.10 which illustrates the orientations of the search ellipses used in the interpolation of the Antilla block model.

Table 14.10 Search Ellipse Parameters for the Antilla Deposit

Profile Name	Search Anisotropy	Azimuth (°)	Dip (°)	Azimuth (°)	X Range (m)	Y Range (m)	Z Range (m)	Search Type
CU12	Az., Dip, Az.	130	-30	47.6	346.2	285.8	207.9	Ellipsoidal
17CU300_P1	Az., Dip, Az.	188.3	-18.8	93.4	170	103	40	Ellipsoidal
17CU300	Az., Dip, Az.	188.3	-18.8	93.4	255	155	60	Ellipsoidal
17CU400_P1	Az., Dip, Az.	219.3	-5.4	123.8	143	66	41	Ellipsoidal
17CU400	Az., Dip, Az.	219.3	-5.4	123.8	215	98	63	Ellipsoidal
MO12	Az., Dip, Az.	233.9	7.9	330.1	304.5	304.5	75.4	Ellipsoidal
17MO300_P1	Az., Dip, Az.	188.3	-18.7	92.9	183	1247	60	Ellipsoidal
17MO300	Az., Dip, Az.	188.3	-18.7	92.9	275	190	90	Ellipsoidal
17MO400_P1	Az., Dip, Az.	214.8	-7.6	115.5	115	108	54	Ellipsoidal
17MO300	Az., Dip, Az.	214.8	-7.6	115.5	177	163	81	Ellipsoidal

Note: Az - azimuth

14.5 MINERAL RESOURCE ESTIMATE

14.5.1 CUEQ% CALCULATION

The cut-off grade for the Property was based on a copper equivalent using the primary metals within the deposit. The CuEQ% was calculated using a script in the Gemcom GEMS™ block model on the interpolated copper and molybdenum grades. The equation used to derive the CuEQ% is as follows:

CuEQ%= ((Cu Price * Cu Grade * 22.04622) + (Mo Price * Mo Grade * 22.04622 * Mo Recovery) / Cu Price) / 22.04622

The parameters used in the above formula are listed in Table 14.11.

Table 14.11 Metal Price and Recovery Parameters for CuEQ% Calculation

Metal	Metal Price (US$)	Assumed Recovery (%)
Copper	$3.25/lb	90
Molybdenum	$9.00/lb	80

Since current metal prices have fallen below the three year trailing average, the metal prices listed above were adjusted from the spot prices as of August 27, 2013.

14.5.2 MINERAL RESOURCE CLASSIFICATION

Tetra Tech has completed a new mineral resource estimate for the Antilla deposit in accordance with CIM Best Practices and disclosed in accordance with NI 43-101. The effective date of the Antilla mineral resource estimate is September 27, 2013.

The mineral resources for the Antilla deposit are classified as Indicated and Inferred Resources based on the number of samples and drill holes, drill hole spacing and continuity of the grade. The mineral resource is constrained by a conceptual pit shell as described below.

14.5.3 ASSESSMENT OF REASONABLE PROSPECTS FOR ECONOMIC EXTRACTION

In developing the current resource an assessment to determine reasonable prospects for economic extraction was carried out. A conceptual optimized pit shell was created over the Antilla block model using Gemcom Whittle™ 4.5. The pit optimization input parameters are shown in Table 14.12.

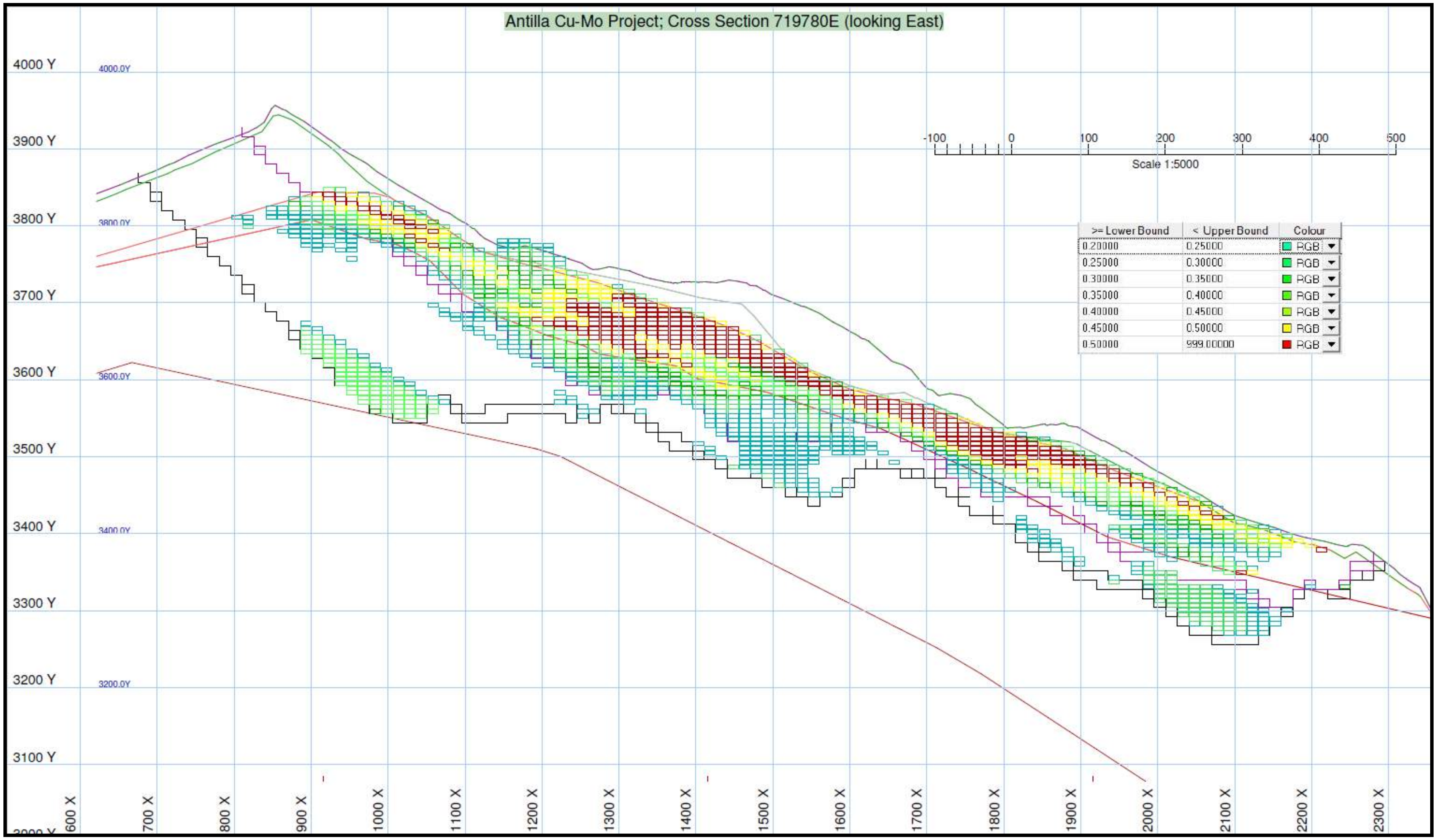
Two pit shells were selected to constrain the current mineral resource. The first pit shell was chosen based on maximum net present value to constrain Indicated and Inferred Resources. The second pit shell was based on a conceptual, break-even pit. This break-even pit shell was used to constrain any resources between this pit shell and the maximum net present value pit shell. All material between these two pit shells was classified as Inferred. It should be noted, that the stripping ratio for the second optimized pit shell was 1.0.

Figure 14.12 presents a cross-section of the Antilla deposit showing both pit shell outlines and block grades for copper greater than 0.2% copper.

Table 14.12 Table of Pit Optimization Input Parameters

Parameters	Amount	Units
Metal Prices		
Copper	3.25	US$/lb
Molybdenum	9.00	US$/lb
Metal Recoveries		
Copper	90	%
Molybdenum	80	%
Selling Cost	5	% of selling price includes concentrate transportation, smelter and refinery charges
Mining Parameters		
Mining Recovery Rate	97	%
Mining Dilution Rate	3	%
Pit Slope Angle	45	degrees
Mining Cost	1.90	US$/t
Total Mining Cost	**1.90**	US$/t
Processing Parameters		
Mill Throughput	30,000	t/d
Mill Throughput	10.5	Mt/a
Mill Costs	7.25	-
Additional Cost for Mineral Resource	0.15	Control blasted size and longer hauling to mill
General and Administration	1.10	-
Ore Handling Cost	0.50	-
Environmental Cost	1.00	-
Total Processing Cost	**10.00**	-

Figure 14.12 Cross-section of the Antilla Deposit 719780E; Looking East (Copper Grades)



14.5.4 Antilla Deposit Mineral Resources

The mineral resource estimate for the Antilla deposit, at a 0.2% CuEQ cut-off, is an Indicated Resource of 188.5 Mt at 0.40% copper, 0.009% molybdenum, and 0.42% CuEQ; and an Inferred Resource of 145.9 Mt at 0.28% copper, 0.009% molybdenum, and 0.30% CuEQ.

The mineral resource was estimated by the OK interpolation method on capped composite copper and molybdenum. No recoveries have been applied to the interpolated grade estimates.

Table 14.13 and Table 14.14 present the Indicated and Inferred mineral resources on the Antilla deposit in a range of cut-off grades within an optimized pit shell. Table 14.15 and Table 14.16 present the mineral resource estimates by domain at a 0.2 %CuEQ cut-off grade within the optimized pit shell.

Table 14.13 Indicated Resource Estimate for the Antilla Deposit

CuEQ% Cut-off	Density	Tonnes ('000)	Cu (%)	Mo (%)	CuEQ (%)
0.40	2.68	84,097	0.54	0.010	0.57
0.375	2.68	95,498	0.52	0.009	0.54
0.35	2.68	108,604	0.50	0.009	0.52
0.325	2.67	122,626	0.48	0.009	0.50
0.30	2.67	138,384	0.46	0.009	0.48
0.275	2.67	155,069	0.44	0.009	0.46
0.25	2.67	170,189	0.42	0.009	0.44
0.225	2.66	180,844	0.41	0.009	0.43
0.20	2.66	188,468	0.40	0.009	0.42
0.175	2.65	194,254	0.39	0.009	0.41
0.15	2.65	199,746	0.39	0.009	0.41
0.125	2.64	206,160	0.38	0.009	0.40
0.10	2.63	215,022	0.37	0.009	0.39

Note: Inaccuracies may occur due to rounding

Table 14.14 Inferred Resource Estimate for the Antilla Deposit

CuEQ% Cut-off	Density	Tonnes ('000)	Cu (%)	Mo (%)	CuEQ (%)
0.40	2.688	16,803	0.49	0.010	0.51
0.375	2.690	24,499	0.45	0.009	0.47
0.35	2.690	30,847	0.43	0.009	0.45
0.325	2.689	38,783	0.41	0.009	0.42
0.30	2.689	49,354	0.38	0.009	0.40
0.275	2.687	64,107	0.36	0.009	0.37
0.25	2.684	85,657	0.33	0.009	0.35
0.225	2.681	114,486	0.30	0.009	0.32
0.20	2.680	145,909	0.28	0.009	0.30
0.175	2.679	167,927	0.26	0.008	0.28
0.15	2.677	184,847	0.25	0.008	0.27
0.125	2.673	204,801	0.24	0.008	0.26
0.10	2.669	220,298	0.23	0.008	0.25

Note: Inaccuracies may occur due to rounding

Table 14.15 Indicated Resource Estimate for the Antilla Deposit at a 0.2%CuEQ Cut-off

Domain	Density	Tonnes ('000)	Cu (%)	Mo (%)	CuEQ (%)
Overburden/Cover	2.06	4,546	0.27	0.010	0.30
Leach Cap	2.52	8,715	0.28	0.010	0.30
Supergene	2.68	132,593	0.45	0.008	0.46
Primary Sulphides	2.70	42,614	0.30	0.010	0.32

Note: Inaccuracies may occur due to rounding

Table 14.16 Inferred Resource Estimate for the Antilla Deposit at a 0.2%CuEQ Cut-off

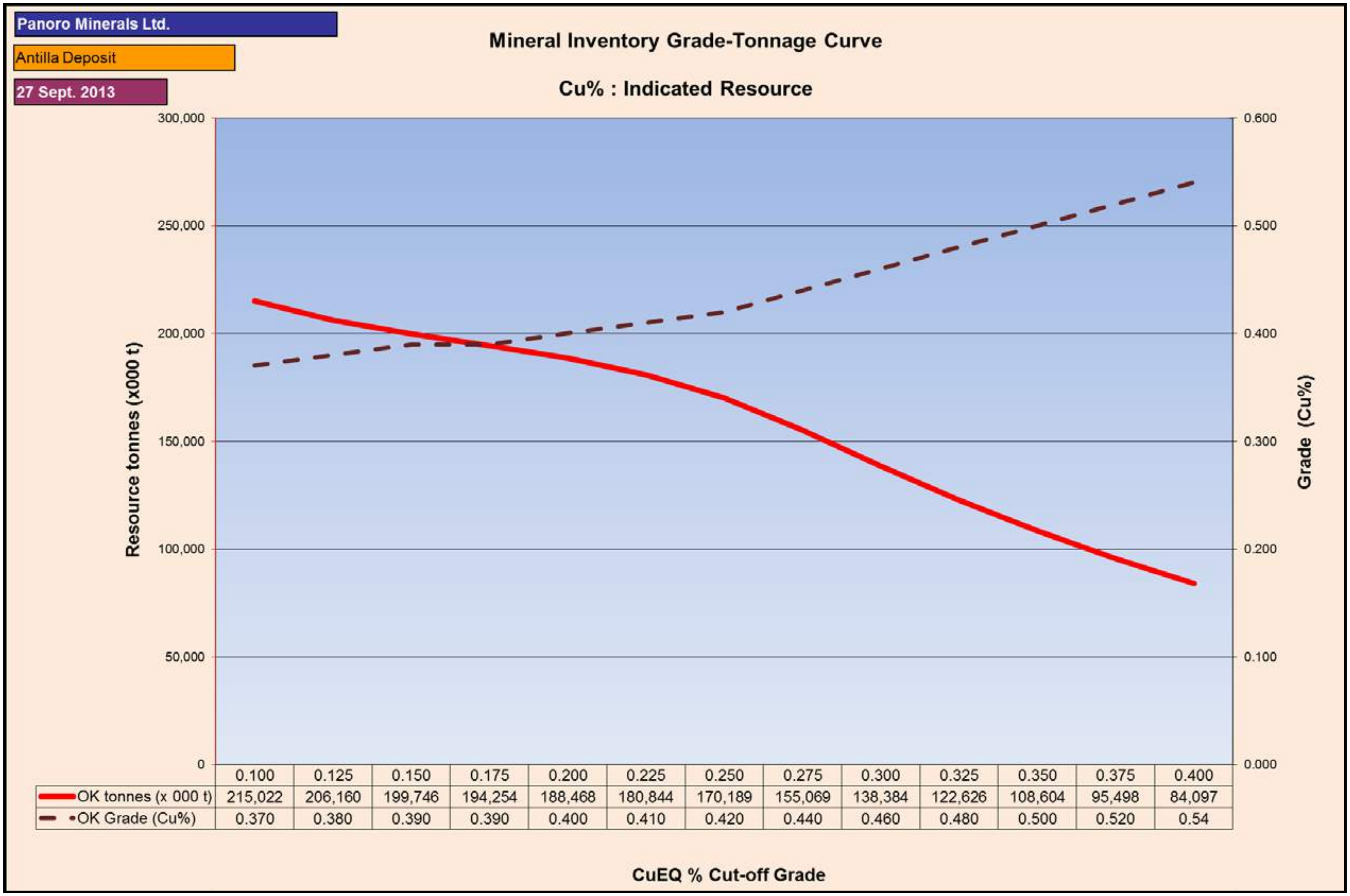
Domain	Density	Tonnes ('000)	Cu (%)	Mo (%)	CuEQ (%)
Overburden/Cover	2.20	264	0.24	0.010	0.26
Leach Cap	2.51	8,453	0.22	0.011	0.24
Supergene	2.69	49,270	0.33	0.009	0.34
Primary Sulphides	2.70	87,923	0.26	0.008	0.27

Note: Inaccuracies may occur due to rounding

14.5.5 GRADE AND TONNAGE CURVES

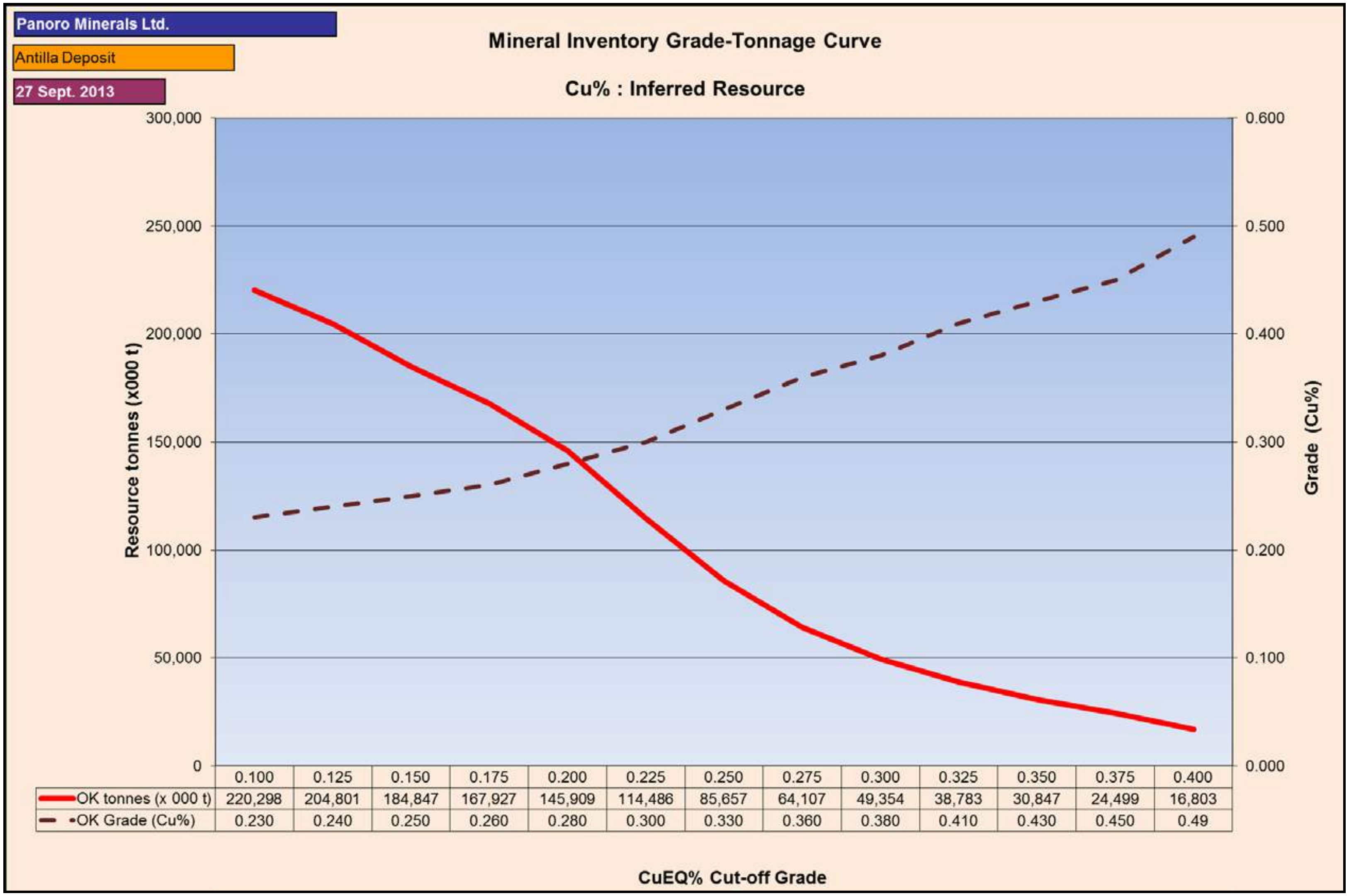
Figure 14.13 and Figure 14.14 illustrate the grade-tonnage curves for the Antilla deposit.

Figure 14.13 Grade-Tonnage Curve for the Antilla Deposit Indicated Resources



	0.100	0.125	0.150	0.175	0.200	0.225	0.250	0.275	0.300	0.325	0.350	0.375	0.400
OK tonnes (x 000 t)	215,022	206,160	199,746	194,254	188,468	180,844	170,189	155,069	138,384	122,626	108,604	95,498	84,097
OK Grade (Cu%)	0.370	0.380	0.390	0.390	0.400	0.410	0.420	0.440	0.460	0.480	0.500	0.520	0.54

Figure 14.14 Grade-Tonnage Curve for the Antilla Deposit Inferred Resources



	0.100	0.125	0.150	0.175	0.200	0.225	0.250	0.275	0.300	0.325	0.350	0.375	0.400
OK tonnes (x 000 t)	220,298	204,801	184,847	167,927	145,909	114,486	85,657	64,107	49,354	38,783	30,847	24,499	16,803
OK Grade (Cu%)	0.230	0.240	0.250	0.260	0.280	0.300	0.330	0.360	0.380	0.410	0.430	0.450	0.49

14.6 VALIDATION

14.6.1 MODEL VOLUME VALIDATION

The block model volumes were validated against the solid wireframe volumes and all differences were found to be within a tolerance of less than 1.00%. The results of the comparisons are shown in Table 14.17.

14.6.2 SUMMARY STATISTICS

Table 14.17 Summary Block Model Statistics

	OK	ID	NN	6 m
Cu (%)	0.137	0.137	0.138	0.227
Mo (%)	0.007	0.007	0.007	0.008

14.6.3 SWATH PLOTS

Swath plots were created for the Antilla block model copper grades by bench, by column (easting) and by row (northing) and compared to each interpolation method as a visual comparison of the precision of the interpolation methods.

Figure 14.15, Figure 14.16 and Figure 14.17 illustrates the swath plots for Cu% in the Antilla deposit. Variations in the NN grades, particularly at the ends of the graphs (i.e. the limits of the block model), denotes areas where sample populations used for estimation are no longer similar.

Figure 14.15 Swath Plots for Antilla by Elevation

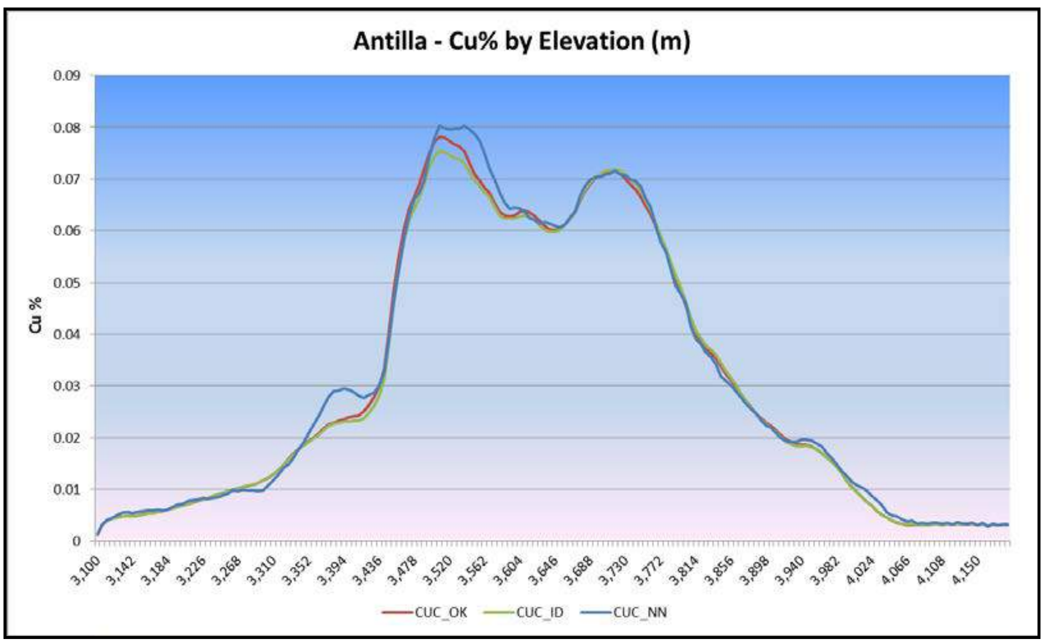


Figure 14.16 Swath Plots for Antilla by Northing

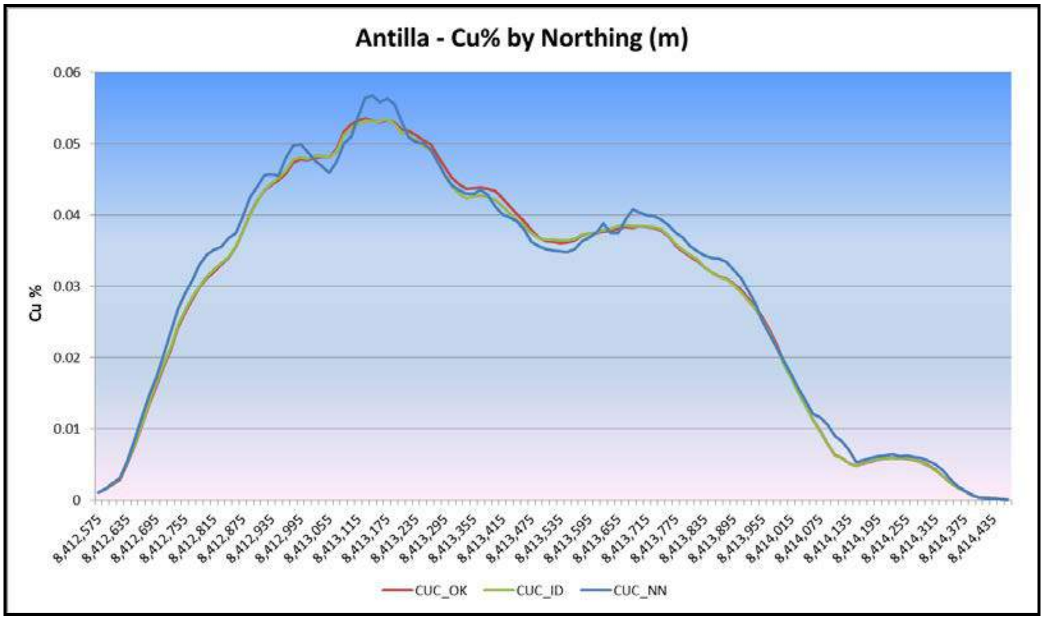
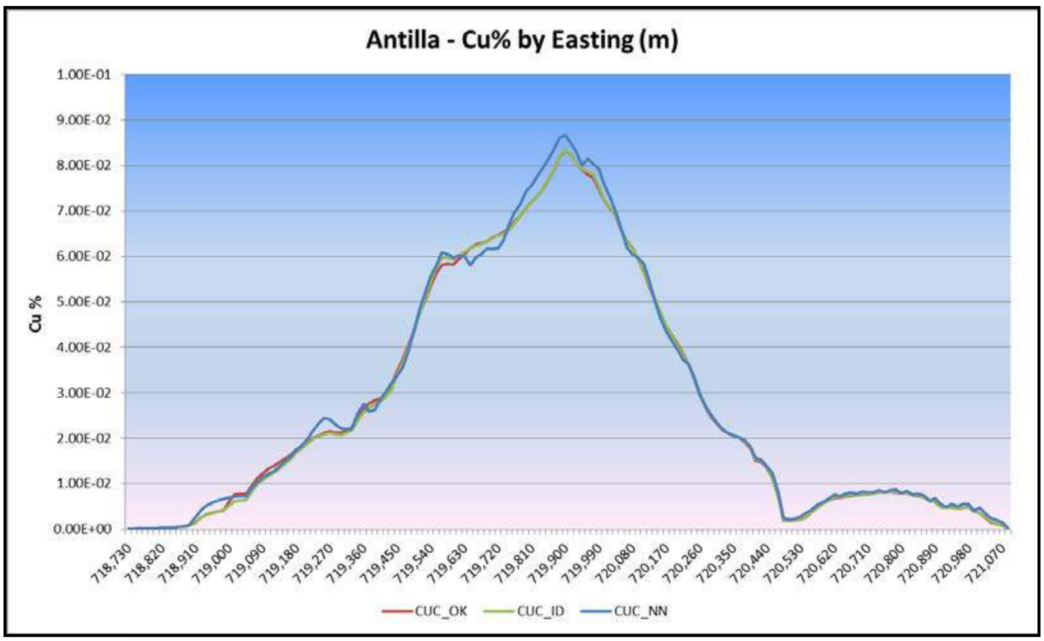


Figure 14.17 Swath Plots for Antilla by Easting



14.7 PREVIOUS RESOURCE ESTIMATES

During the acquisition of the CDLM land package by Panoro, a technical report was compiled and published by SRK of Vancouver, Canada (Lee 2007). The report included the Property and twelve other properties in the region. The report estimated a potential mineral deposit on the Property that was based on nine drill holes, and recommended additional drilling.

In 2009, Panoro retained AMEC to prepare an NI 43-101 compliant resource estimate and technical report on the Antilla deposit. Table 14.18 shows a historical NI 43-101 compliant mineral resource on the Antilla deposit. This report supersedes this resource statement.

Table 14.18 2009 Resource Estimate

Resource Classification	Copper Cut-off (%)	Tonnes ('000)	Cu (%)	Mo (%)
Inferred	0.25	154,400	0.47	0.009

Source: Wright (2009)

15.0 ADJACENT PROPERTIES

There are no significant mining properties adjacent to the Property.

16.0 OTHER RELEVANT DATA AND INFORMATION

There is not further data or information relevant to this report.

17.0 INTERPRETATIONS AND CONCLUSIONS

Tetra Tech has estimated a new mineral resource estimate for the Antilla copper deposit in accordance with CIM Best Practices and disclosed in accordance with NI 43-101. The effective date of the Antilla mineral resource estimate is September 27, 2013.

The block model and mineral resource for the Antilla deposit is classified as having both Indicated and Inferred Mineral Resources based on the number of drillholes, drillhole spacing, and sample data populations used in the estimation of the blocks. The mineral resource estimate for the Antilla deposit, at a 0.2% CuEQ cut-off, is an Indicated Resource of 188.5 Mt at 0.40% copper, 0.009% molybdenum, and 0.42% CuEQ; and an Inferred Resource of 145.9 Mt at 0.28% copper, 0.009% molybdenum, and 0.30% CuEQ.

The mineral resource was estimated by the OK interpolation method on capped composite copper and molybdenum grades. No recoveries have been applied to the interpolated grade estimates. The mineral resource was constrained within a conceptual optimized pit shell. Table 17.1 and Table 17.2 present the Indicated and Inferred Mineral Resources on the Antilla deposit in a range of cut-off grades within the optimized pit shell. Table 17.3 and Table 17.4 present the mineral resource estimates by domain at a 0.2% CuEQ cut-off grade within the optimized pit shell.

Table 17.1 Indicated Resource Estimate for the Antilla Deposit

CuEQ% Cut-off	Density	Tonnes ('000)	Cu (%)	Mo (%)	CuEQ (%)
0.40	2.68	84,097	0.54	0.010	0.57
0.375	2.68	95,498	0.52	0.009	0.54
0.35	2.68	108,604	0.50	0.009	0.52
0.325	2.67	122,626	0.48	0.009	0.50
0.30	2.67	138,384	0.46	0.009	0.48
0.275	2.67	155,069	0.44	0.009	0.46
0.25	2.67	170,189	0.42	0.009	0.44
0.225	2.66	180,844	0.41	0.009	0.43
0.20	**2.66**	**188,468**	**0.40**	**0.009**	**0.42**
0.175	2.65	194,254	0.39	0.009	0.41
0.15	2.65	199,746	0.39	0.009	0.41
0.125	2.64	206,160	0.38	0.009	0.40
0.10	2.63	215,022	0.37	0.009	0.39

Note: Inaccuracies may occur due to rounding

Table 17.2 Inferred Resource Estimate for the Antilla Deposit

CuEQ% Cut-off	Density	Tonnes ('000)	Cu (%)	Mo (%)	CuEQ (%)
0.40	2.688	16,803	0.49	0.010	0.51
0.375	2.690	24,499	0.45	0.009	0.47
0.35	2.690	30,847	0.43	0.009	0.45
0.325	2.689	38,783	0.41	0.009	0.42
0.30	2.689	49,354	0.38	0.009	0.40
0.275	2.687	64,107	0.36	0.009	0.37
0.25	2.684	85,657	0.33	0.009	0.35
0.225	2.681	114,486	0.30	0.009	0.32
0.20	2.680	145,909	0.28	0.009	0.30
0.175	2.679	167,927	0.26	0.008	0.28
0.15	2.677	184,847	0.25	0.008	0.27
0.125	2.673	204,801	0.24	0.008	0.26
0.10	2.669	220,298	0.23	0.008	0.25

Note: Inaccuracies may occur due to rounding

Table 17.3 Indicated Resource Estimate for the Antilla Deposit at a 0.2%CuEQ Cut-off

Domain	Density	Tonnes ('000)	Cu (%)	Mo (%)	CuEQ (%)
Overburden/Cover	2.06	4,546	0.27	0.010	0.30
Leach Cap	2.52	8,715	0.28	0.010	0.30
Supergene	2.68	132,593	0.45	0.008	0.46
Primary Sulphides	2.70	42,614	0.30	0.010	0.32

Note: Inaccuracies may occur due to rounding

Table 17.4 Inferred Resource Estimate for the Antilla Deposit at a 0.2%CuEQ Cut-off

Domain	Density	Tonnes ('000)	Cu (%)	Mo (%)	CuEQ (%)
Overburden/Cover	2.20	264	0.24	0.010	0.26
Leach Cap	2.51	8,453	0.22	0.011	0.24
Supergene	2.69	49,270	0.33	0.009	0.34
Primary Sulphides	2.70	87,923	0.26	0.008	0.27

Note: Inaccuracies may occur due to rounding

18.0 RECOMMENDATIONS

Tetra Tech recommends that further investigation of the Antilla deposit is warranted and necessary. Tetra Tech recommends that additional drilling be carried out to reduce the drill spacing where distances are greater than 100 m. Additional drilling will determine, with greater confidence, both the continuity and extents of copper mineralization within the known deposit.

18.1.1 DRILLING

Tetra Tech recommends that additional drilling is warranted to further investigate and develop the known Property. Additional drilling will determine, with greater confidence, both the continuity and extents of the copper and molybdenum mineralization. The recommended drilling includes infill drilling within the centre of the deposit where drillhole spacings are greater than 100 m, and areas along the edge of the know deposit where drill hole data is relatively thin.

Tetra Tech recommends a minimum of 24 drillholes at a minimum depth of 200 m per drillhole, or a minimum of 4,800 m. The proposed minimum budget for such a drill program is approximately Cdn$1.4 million.

18.1.2 PRELIMINARY ECONOMIC ASSESSMENT

Tetra Tech also recommends that a PEA study be completed on the Property at this stage. The purpose of this study will determine the base economics of a possible mining operation. The proposed minimum budget for such a study is approximately Cdn$250,000.

18.1.3 EXPLORATION

Tetra Tech recommends an extension of the current exploration grid to include the West Block and Chabuco exploration targets. Tetra Tech recommends continued geochemical sampling and geophysical surveys over these areas. As of the date of this report, Panoro has already planned three geophysical surveys consisting of IP-resistivity, self-potential and ground magnetics. Each survey consists of 88 line km and the estimated cost of the three surveys is US$117,070.

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WEBSITES

Panoro Minerals Ltd. – Company Website
http://www.panoro.com/s/Home.asp

World Climate – Cusco
http://www.worldclimate.com/cgi-bin/grid.pl?gr=S13W071

20.0 CERTIFICATE OF QUALIFIED PERSON

20.1 PAUL DAIGLE, P.GEO.

I, Paul Daigle, P.Geo., of Toronto, Ontario, do hereby certify:

- I am a Senior Geologist with Tetra Tech WEI Inc. with a business address at 200-350 Bay Street, Toronto, Ontario, M5H 2S8.
- This certificate applies to the technical report entitled "Technical Report and Resource Estimate of the Antilla Copper-Molybdenum Project, Peru" dated December 16, 2013 (the "Technical Report").
- I am a graduate of Concordia University, (B.Sc. Geology, 1989). I am a member in good standing of the Association of Professional Geoscientists of Ontario (Registration #1592). My relevant experience with respect to porphyry copper deposits includes over 24 years of mineral exploration and evaluation of such deposits including: Sheslay copper-gold projects, British Columbia; the Meriguna and Ballyorlo copper-molybdenum-gold deposits, Solomon Islands; the Tucumã copper-gold deposit, Pará, Brazil and, most recently, the Cotabambas copper-gold deposit, Apurimac, Peru. I am a "Qualified Person" for purposes of National Instrument 43-101 (the "Instrument").
- My most recent personal inspection of the Property was between June 3 and 7, 2013, for one day.
- I am responsible for Sections 1.0 to 19.0 (except 13.3) and 20.1 of the Technical Report.
- I am independent of Panoro Minerals Ltd. 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 sections of the Technical Report that I am responsible for have been prepared in compliance with the Instrument.
- As of the date of this certificate, to the best of my knowledge, information and belief, the sections of the Technical Report that I am responsible for contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Signed and dated this 7th day of July, 2014 at Toronto, Ontario.

Original document signed and sealed by
Paul Daigle, P.Geo.

Paul Daigle, P.Geo.
Senior Geologist
Tetra Tech WEI Inc.

20.2 JIANHUI (JOHN) HUANG, PH.D., P.ENG.

I, Jianhui (John) Huang, Ph.D., P.Eng., of Burnaby, British Columbia, do hereby certify:

- I am a Senior Metallurgist 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 "Technical Report and Resource Estimate of the Antilla Copper-Molybdenum Project, Peru", dated December 16, 2013 (the "Technical Report").
- I am a graduate of North-East University (B.Eng., 1982), Beijing General Research Institute for Non-ferrous Metals (M.Eng., 1988), and Birmingham University (Ph.D., 2000). I am a member in good standing of the Association of Professional Engineers and Geoscientists of British Columbia (License #30898). My relevant experience with respect to mineral engineering includes more than 30 years of involvement in mineral process for metal recovery from various, gold, silver, base metals, and rare metal ores. I have relevant experience in gold and silver recovery from various ores. Projects include the Brucejack project (FS), the Courageous Lake project (PFS), the Kerr-Sulphuret-Mitchell project (PFS) and the Jinchen Gold project. I am a "Qualified Person" for the purposes of National Instrument 43-101 (the "Instrument").
- I did not complete a personal inspection the Property.
- I am responsible for Sections 13.3 and 20.2 of the Technical Report.
- I am independent of Panoro Minerals Ltd. 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 sections of the Technical Report that I am responsible for have been prepared in compliance with the Instrument.
- As of the date of this certificate, to the best of my knowledge, information and belief, the sections of the Technical Report that I am responsible for contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Signed and dated this 7th day of July, 2014 at Vancouver, British Columbia.

Original document signed and sealed by
Jianhui (John) Huang, Ph.D., P.Eng.

Jianhui (John) Huang, Ph.D., P.Eng.
Senior Metallurgist
Tetra Tech WEI Inc.