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25 March 2011

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Dear Sir/Madam

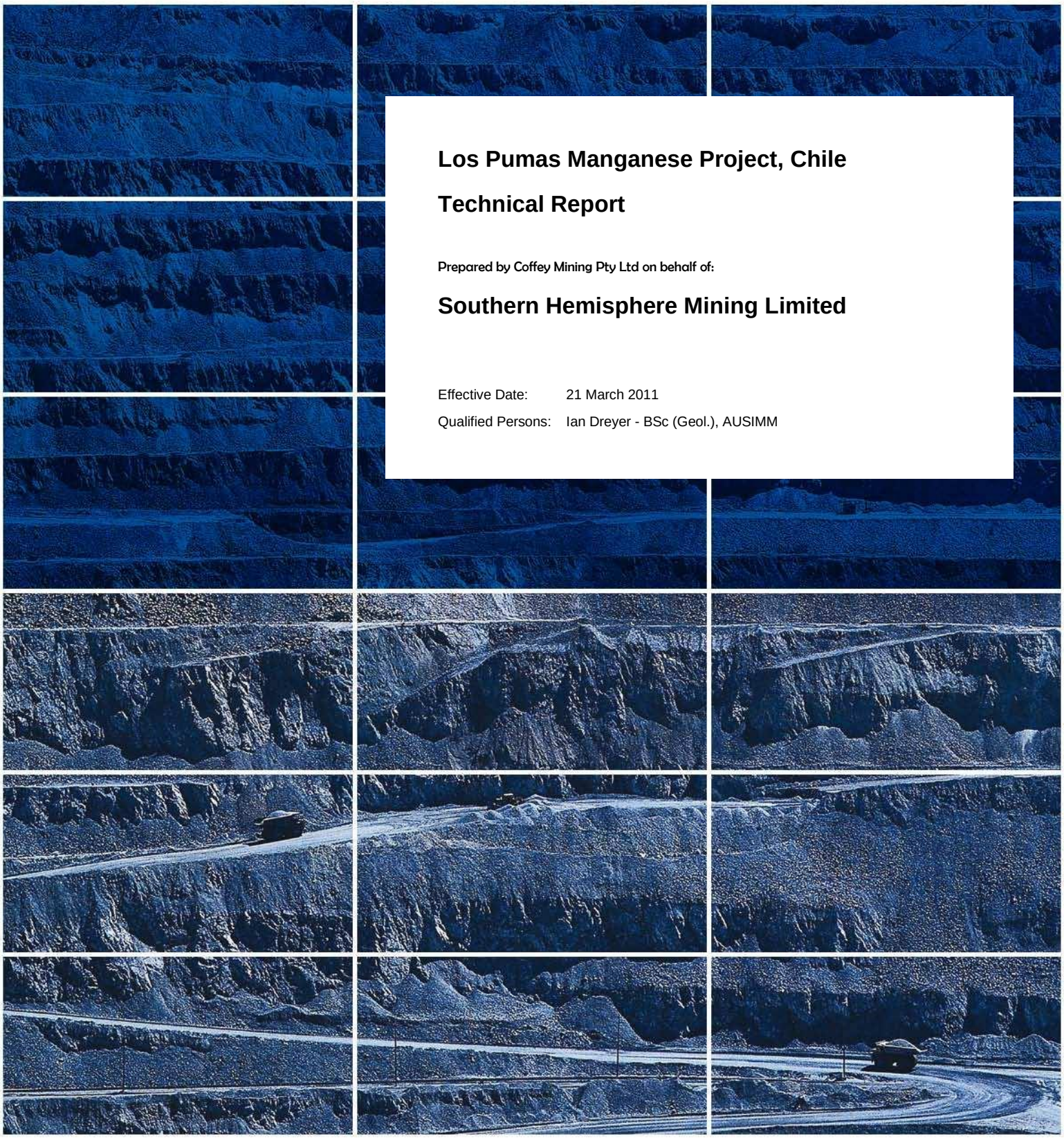
Technical Report – Los Pumas Manganese Project Chile

For disclosure purposes, please refer below for a Technical Report issued in Canada by the Company. The Technical Report is issued in support of the announcement 'Resource Upgrade - Los Pumas Manganese Project' lodged on 9 February 2011.

Yours faithfully
SOUTHERN HEMISPHERE MINING LIMITED

Derek Hall
Company Secretary

coffey mining
SPECIALISTS FROM BOARDROOM TO MINE FACE



Los Pumas Manganese Project, Chile

Technical Report

Prepared by Coffey Mining Pty Ltd on behalf of:

Southern Hemisphere Mining Limited

Effective Date: 21 March 2011

Qualified Persons: Ian Dreyer - BSc (Geol.), AUSIMM

DOCUMENT INFORMATION

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1 SUMMARY

Coffey Mining Pty Ltd (Coffey Mining) has been commissioned by Southern Hemisphere Mining Ltd. (SHM) to provide an updated resource estimate on SHM's Los Pumas manganese project, located in Northern Chile.

The Los Pumas Project is approximately 175km or 3 hours drive east of Arica, the major port city in Region XV of Chile.

The Los Pumas Project comprises 24 granted Exploration Licenses (plus 23 under exploration license application) and two Mining (exploitation) Licenses (plus four under exploitation license application). The tenements collectively cover an area of approximately 90km^2.

The Los Pumas manganese project is located immediately to the west of the Taapaca volcano in a geographical area called the "altiplano" (high plateau) area. It is adjacent to the north-south trending river Lluta, where several other minor manganese occurrences have been identified. The manganese mineralisation at Los Pumas is divided into the north and south targets and is separated by the Taapaca Volcanic dacitic-andesitic flow (approximately 1km apart). The north target is approximately 1.7km by 0.6km in aerial extent and approximately 1m to 10m in thickness, while the south target is 1km by 0.2km in area and approximately 1m to 10m thickness. Mineralogy completed by SHM indicates that of the predominant manganese mineral is Cryptomelane.

The Los Pumas Project was drilled between 2008 and 2010 with a total of 32 diamond drillholes (DD) for a total of 652.2m and 487 reverse circulation holes (RC) for a total of 14,204m. Holes were predominantly drilled vertically to approximately 5m below the ignimbrite into the volcanic sediments. Holes were drilled predominantly on a spacing of approximately 50m by 50m and varying up to 200m by 200m in the south. Some recent infill RC drilling to 25m by 25m has occurred in the northern target area. The drilling, sampling and analytical methods are appropriate for the style of mineralisation.

There has been a revision to the interpretation of the Los Pumas resource. This revision has been undertaken by both Coffey and SHM staff. The current resource interpretation is considered to be more reliable than in past estimates as it considers additional geological controls on the mineralisation. The previous resource models were generated using a strict cutoff grade approach of 4% Mn for the high grade domain and no grade constraint over the low grade domain; on further review and evaluation, this approach has been determined to not adequately honour all geological controls related to the mineralisation.

The previous high grade and low grade domains have been removed from this current resource interpretation. The primary control that is utilised in the current resource estimate are the 'manto' style zones which can be interpreted in three dimensions.

In this sense, the strict terminology for the resource is now either "manto style" mineralisation or "non-manto" style mineralisation. Manto style mineralisation that has interpreted controls and constraints has, by definition, more confidence than non-manto style mineralisation.

Feeder pipes are not included in this interpretation as they are difficult to locate with the current drilling orientation. They have been observed to exist at the site. This will require some follow up prior to the mining phase of this project as they may provide an additional resource.

Data and model have been validated by:

- A detailed site inspection.
- A review of all logging, both RC and DD hole types to ensure that interpreted zones have geological consistency, both down the hole and between holes.
- A review of 4 shafts that were sunk for bulk sampling.
- Close co-operation on the geological interpretations between Coffey Mining and SHM geological staff to ensure ownership of the new concepts by both parties.

The resource classification has been revised to more adequately reflect the confidence and limitations of the data, style of mineralisation and interpretations.

The new model is quoted at a nominal 4% Mn cutoff as this is considered the current economic cutoff grade. This grade cutoff has been used primarily for comparative purposes with previous resource estimates. Comprehensive work by Southern Hemisphere Mining has shown t hat the break even cutoff grade is 2.5% Mn.

The total Measured and Indicated Resource, at 4% Mn cutoff is 18.3Mt @ 7.58% Mn.

Table 1_1

Los Pumas Project – Southern Hemisphere Mining

Grade Tonnage Report
(In situ, as at February 9th 2011)

Resource Model Reported Using a 4% Mn Cutoff

Resource Category	Tonnes (Mt)	Mn (%)	SiO_2 (%)	Fe_2O_3 (%)	Al (%)	K (%)	P (%)
Measured	5.27	7.39	57.85	2.78	5.62	2.88	0.05
Indicated	13.06	7.65	55.00	2.96	5.64	2.92	0.05
Combined Measured and Indicated	**18.34**	**7.58**	**55.82**	**2.91**	**5.62**	**2.91**	**0.05**
Inferred	5.39	8.59	51.44	2.72	5.49	2.69	0.06

2 INTRODUCTION

2.1 Scope of the Report

Coffey Mining Pty Ltd (Coffey Mining) has been commissioned by Southern Hemisphere Mining Ltd. (SHM) to provide an updated resource estimation for SHM's Los Pumas manganese project, located in Northern Chile.

This report is prepared in accordance with disclosure and reporting requirements set forth in National Instrument 43-101, Companion Policy 43-101CP, and Form 43-101F1, and complies with Canadian National Instrument 43-101 for the 'Standards of Disclosure for Mineral Projects' of December 2005 (the Instrument), and the resource and reserve classifications adopted by CIM Council in November 2004.

All monetary amounts expressed in this report are in United States of America dollars (US$) unless otherwise stated.

2.2 Principal Sources of Information

In addition to site visits by Coffey Mining to the Los Pumas Project in March 2009 and December 2010, the authors of this report have relied extensively on information provided by SHM, discussions with SHM management and reports prepared by previous project operators and government agencies. A full listing of the principal sources of information is included in Section 21 of this report.

Coffey Mining has made all reasonable enquiries to establish the completeness and authenticity of the technical information provided and identified. A final draft of this report was provided to SHM, along with a written request to identify any material errors or omissions, prior to lodgement.

2.3 Qualifications and Experience

Coffey Mining is a part of Coffey International Limited (Coffey), which is a highly respected Australian-based international consulting firm specializing in the areas of geology, mining, metallurgy, geotechnical engineering, hydrogeology, hydrology, tailings disposal, environmental science and social and physical infrastructure.

Mr. Ian Dreyer, Principal Geologist for Coffey Mining, is a professional geologist with 23 years experience in the exploration and evaluation of mineral properties within Australia and elsewhere internationally. Mr. Dreyer is member of the Australasian Institute of Mining (AUSIMM - membership number 305241). Mr. Dreyer has the appropriate relevant qualifications, experience and independence as defined in the Canadian National Instrument 43-101 to act as the Qualified Person. Mr. Dreyer visited the Los Pumas project on December 15, 2010.

Mr. Tony Mason is a professional Metallurgist with 43 years experience in Mineral Processing. Mr. Mason is a Fellow of the Institute of Materials, Minerals and Mining, and has the appropriate relevant qualifications, experience and independence as defined in the Canadian National Instrument 43-101. Mr Mason has not visited the Los Pumas Project.

2.4 Independence

Neither Coffey Mining, nor the author of this report has previously had any material interest in Southern Hemisphere Mining Ltd, related entities or any of the properties in which SHM has an interest. Coffey Mining's relationship with SHM is solely one of professional association between client and independent consultant. This report is prepared in return for fees based upon agreed commercial rates and the payment of these fees is in no way contingent on the results of this report.

2.5 Abbreviations

A full listing of abbreviations used in this report is provided in Table 2.5_1 below.

Table 2.5_1
Los Pumas Project – Southern Hemisphere Mining
List of Abbreviations

	Description
$	United States of America dollars
µ	microns
3D	three dimensional
AAS	atomic absorption spectrometer
Au	gold
bcm	bank cubic metres
CC	correlation coefficient
cfm	cubic feet per minute
CIC	carbon in column
CIL	carbon-in-leach
cm	centimetre
cusum	cumulative sum of the deviations
CV	coefficient of variation
DDH	diamond drillhole
DTM	digital terrain model
E (X)	easting
EDM	electronic distance measuring
EV	expected value
g	gram
g/m³	grams per cubic metre
g/t	grams per tonne
GW	Gigawatt
GWh/y	Giggawatt hours per year
HARD	half the absolute relative difference
HDPE	high density poly ethylene
HQ_2	size of diamond drill rod/bit/core
h	hours
HRD	half relative difference
ICP-MS	inductivity coupled plasma mass spectroscopy
ID	Inverse Distance weighting
ID^2	Inverse Distance Squared
IPS	integrated pressure stripping
IRR	internal rate of return
ISO	International Standards Organisation
ITS	Inchcape Testing Services
Ka	thousand years
kg	kilogram
kg/t	kilogram per tonne
km	kilometres

	Description
km²	square kilometres
l/hr/m²	litres per hour per square metre
M	Million
m	Metres
MIK	Multiple Indicator Kriging
ml	Millilitre
Mm	Millimetres
Mn	Manganese
MMI	mobile metal ion
Moz	million ounces
Mtpa	million tonnes per annum
MW	Megawatt
N (Y)	Northing
NaCN	sodium cyanide
NATA	National Association of Testing Authorities
NPV	net present value
NQ_2	size of diamond drill rod/bit/core
ºC	degrees centigrade
OK	Ordinary Kriging
oz	troy ounce
P80 -75µ	80% passing 75 microns
PAL	pulverise and leach
ppb	parts per billion
ppm	parts per million
PSI	pounds per square inch
PVC	poly vinyl chloride
QC	quality control
Q-Q	quantile-quantile
RAB	rotary air blast
RC	reverse circulation
RL (Z)	reduced level
ROM	run of mine
RQD	rock quality designation
SD	standard deviation
SGS	Société Générale de Surveillance
SMU	selective mining unit
t	Tonnes
t/m³	tonnes per cubic metre

3 RELIANCE ON OTHER EXPERTS

Neither Coffey Mining, nor the author of this report, is qualified to provide comment on any legal issues associated with the mineral properties and tenure as documented in Section 4 of this report, in which SHM is understood to have an interest. Assessment and reporting of these aspects relies on information provided by SHM solicitors “Quinzio and Vegara”, located in Santiago, Chile.

4 PROPERTY DESCRIPTION AND LOCATION

4.1 Project Location

The Los Pumas Project is located in northern Chile, approximately 175km or 3 hours drive east of Arica, the major port city in the Region XV of Chile (approximately 1,700km north of the capital city Santiago). Arica is serviced by domestic flights between Santiago and a number of cities in Chile, and is located within 1 hours drive from Tacna, the southernmost city of Peru. Access from Arica to the Los Pumas Project is via the International Highway from Arica to La Paz (CH11) to the regional administrative centre of Putre, then via the all weather gravel road (A023) to the project area.

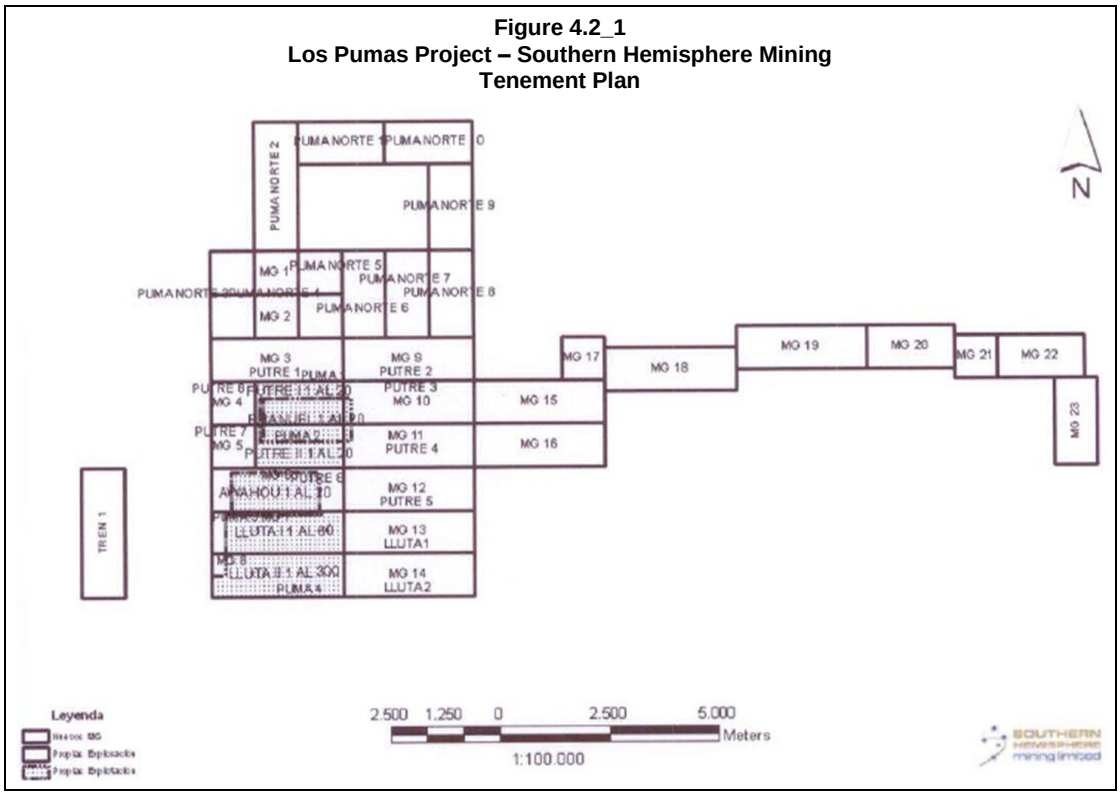
The geographic coordinates of the Los Pumas Manganese Project are Latitude -18.04, Longitude -69.63.

Figure 4.1_1
Los Pumas Project – Southern Hemisphere Mining
Project Location Plan

4.2 Land Area

The Los Pumas Project covers an aggregate area of 90km² as shown in Figure 4.2_1.

Figure 4.2_1
Los Pumas Project – Southern Hemisphere Mining
Tenement Plan



4.3 Mining Claim Description

The Los Pumas Manganese Project is owned 100% by Minera Hemisferio Sur SCM (MHS), a Chilean contractual mining company, which is 100% owned by Southern Hemisphere Mining (Aust) Pty Ltd (SHM), the Company's 100% owned subsidiary in Australia.

The project Mining Concessions comprises:

Two (2) Exploitation Concessions properly constituted which are in good standing and are registered under the domain of MHS. These concessions are named Awahou 1/20 and Emanuel 1/20 each of which total 200 ha, covering the initial years of exploitation. The project is based on the exploitation of the concedable resources located on such concessions

Twenty four Exploration Concessions properly constituted which are in good standing and are registered under the domain of MHS.

Four "Manifestaciones" and twenty three "Pedimentos" part of the Los Pumas Project, have until this date observed all the requirements contemplated in the Mining Code as procedural and formal requirements and all of them are registered in the name of MHS and therefore are of its sole and exclusive domain.

The tenement schedule is summarized in Table 4.3_1 below.

Table 4.3_1
Los Pumas Project – South Hemisphere Mining
Tenement Schedule

	Type	Name	Area (Ha)	Status	Date	Expiration Date	Initiation Date
1	Exploitation	Emanuel	200	Constituted	24-Aug-10		
2	Exploitation	Awahou	200	Constituted	14-Jul-10		
3	Exploitation	LLuta I 1/60	249	In Process			14-Oct-08
4	Exploitation	LLuta II 1/300	285	In Process			14-Oct-08
5	Exploitation	Putre I, 1/20	86	In Process			9-Oct-08
6	Exploitation	Putre II, 1/21	124	In Process			9-Oct-08
Subtotal			**1,144**				
1	Exploration	Lluta 1	300	Constituted	2-Jul-09	2-Jul-11	
2	Exploration	Lluta 2	300	Constituted	2-Jul-09	2-Jul-11	
3	Exploration	Puma 1	200	Constituted	18-May-09	18-May-11	
4	Exploration	Puma 2	200	Constituted	18-May-09	18-May-11	
5	Exploration	Puma 3	300	Constituted	18-May-09	18-May-11	
6	Exploration	Puma 4	300	Constituted	18-May-09	18-May-11	
7	Exploration	Puma Norte 1	200	Constituted	16-May-10	16-May-12	
8	Exploration	Puma Norte 2	300	Constituted	6-Jul-09	6-Jul-11	
9	Exploration	Puma Norte 3	200	Constituted	28-Nov-09	28-Nov-11	
10	Exploration	Puma Norte 5	200	Constituted	7-Jul-09	7-Jul-11	
11	Exploration	Puma Norte 6	200	Constituted	16-Mar-10	16-Mar-12	
12	Exploration	Puma Norte 7	200	Constituted	17-Mar-10	17-Mar-12	
13	Exploration	Puma Norte 8	200	Constituted	17-Mar-10	17-Mar-12	
14	Exploration	Puma Norte 9	200	Constituted	16-Mar-10	16-Mar-12	
15	Exploration	Puma Norte 10	200	Constituted	27-May-10	27-May-12	
16	Exploration	Putre 1	300	Constituted	15-May-09	15-May-11	
17	Exploration	Putre 2	300	Constituted	15-May-09	15-May-11	
18	Exploration	Putre 3	300	Constituted	15-Jul-09	15-Jul-11	
19	Exploration	Putre 4	300	Constituted	15-Jul-09	15-Jul-11	
20	Exploration	Putre 5	300	Constituted	15-Jul-09	15-Jul-11	
21	Exploration	Putre 6	300	Constituted	15-Jul-09	15-Jul-11	
22	Exploration	Putre 7	100	Constituted	15-Jul-09	15-Jul-11	
23	Exploration	Putre 8	100	Constituted	15-Jul-09	15-Jul-11	
24	Exploration	Tren 1	300	Constituted	11-Mar-10	11-Mar-12	
Subtotal			**5,800**				
	Pedimentos						
1	Exploration	MG 1	300	In Process			5-Jul-10
2	Exploration	MG 2	300	In Process			5-Jul-10
3	Exploration	MG 3	300	In Process			5-Jul-10
4	Exploration	MG 4	300	In Process			5-Jul-10
5	Exploration	MG 5	300	In Process			5-Jul-10
6	Exploration	MG 6	300	In Process			5-Jul-10
7	Exploration	MG 7	300	In Process			5-Jul-10
8	Exploration	MG 8	300	In Process			5-Jul-10
9	Exploration	MG 9	300	In Process			5-Jul-10
10	Exploration	MG 10	300	In Process			5-Jul-10
11	Exploration	MG 11	300	In Process			5-Jul-10
12	Exploration	MG 12	300	In Process			5-Jul-10
13	Exploration	MG 13	300	In Process			5-Jul-10
14	Exploration	MG 14	300	In Process			5-Jul-10
15	Exploration	MG 15	300	In Process			1-Oct-10
16	Exploration	MG 16	300	In Process			1-Oct-10
17	Exploration	MG 17	100	In Process			1-Oct-10
18	Exploration	MG 18	300	In Process			1-Oct-10
19	Exploration	MG 19	300	In Process			1-Oct-10
20	Exploration	MG 20	200	In Process			1-Oct-10
21	Exploration	MG 21	200	In Process			1-Oct-10
22	Exploration	MG 22	200	In Process			1-Oct-10
23	Exploration	MG 23	200	In Process			1-Oct-10
Subtotal			**6,300**				
Total			**13,244**				

The annual claim fees for each mining concession – whether in process or already granted - that is part of the Los Pumas Project has been paid on due time. On the other hand the Specific Tax to the Mining Activities is not applicable to the mining concessions because its titleholder currently does not carry any mining exploitation activity.

Neither of such Mining Properties is subject to liens, prohibitions, embargoes or lawsuit of any kind.

4.4 Agreements and Encumbrances

SHM's wholly-owned Chilean subsidiary, Minera Hemisferio Sur SCM (MHS) entered in an option agreement with Kaiora International Limitada to purchase the exploration tenements named Emanuel and Awahou for a total payment of USD 2 million. All requirements of this agreement had been met by SHM at the time of this report.

Coffey Mining has not independently verified, nor is it qualified to independently verify, the legal status of the Los Pumas Project tenements, and has relied on information provided by SHM solicitors "Quinzio and Vegara", located in Santiago, Chile. In preparing this report Coffey Mining has assumed that the tenements are, or will prove to be, lawfully accessible for evaluation.

4.5 Environmental Liabilities and Permits

Coffey Mining is not aware of any environmental liabilities associated with the Los Pumas Project.

The title documents include no specific environmental requirements beyond those required under the Mining Act and associated regulations.

5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 Access

The Los Pumas Project is located in northern Chile, approximately 175km or 3 hours drive east of Arica, the major port city in Region XV of Chile (approximately 1,700km north of the capital city Santiago). Arica is serviced by domestic flights between Santiago and a number of cities in Chile, and is located within 1 hours drive from Tacna, the southernmost city of Peru. Access from Arica to the Los Pumas Project is via the International Highway from Arica to La Paz (CH11) to the regional administrative centre of Putre, then via the all weather gravel road (A023) to the project area.

5.2 Physiography and Climate

The Los Pumas Project is located in the High Andes, on the edge of the Gorge Allan Lluta River, with elevations ranging from 3,500m to 5,000m above sea level. The project elevation is at 3,500m.

The temperature ranges between -15° to -5°C at night and 5° to 20°C during the day, with an annual rainfall of between 100 and 440mm.

5.3 Local Resources and Infrastructure

Approximately 1km from the Los Pumas manganese project is a disused railway line between La Paz and Arica. Figure 5.3_1 below shows the railway passing approximately 20m from the "Railway target" (which is one of the early stage exploration prospects of SHM located 1km from Los Pumas).

It is important to highlight in this section the infrastructure given that manganese is a bulk commodity and infrastructure becomes very important to a projects economics when considering the transport to the nearest market.

The project is located 175km by a very good sealed road which is the major road between Bolivia and the port facilities in Arica. Figure 5.3_2 below is the current port facilities in Arica which handle all the base metal and tin concentrate products currently transported by trucks on the main road to Arica.

Coffey Mining reviewed the Arica port, which at the time of the visit was loading lead concentrate from Bolivia for export. The containment shed was negatively ventilated and well sealed with new equipment as would be expected from the main export port for Bolivia. The port storage facility has a capacity of approximately 25,000t and would require shuttling of material from a designated storage stockpile to the port during the loading of larger vessels. It is expected that the manganese concentrate would be handled in a similar fashion.

Figure 5.3_1
Los Pumas Project – Southern Hemisphere Mining
Existing La Paz – Arica Railway Line (Not Operational)

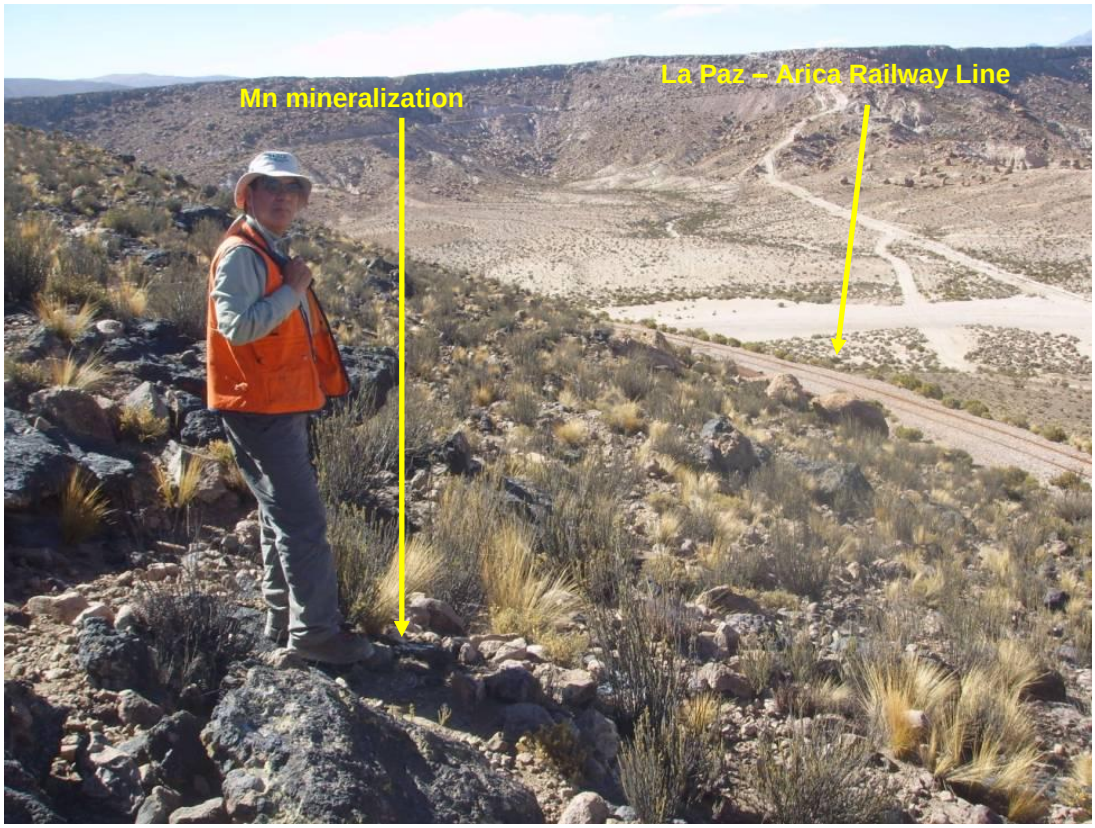
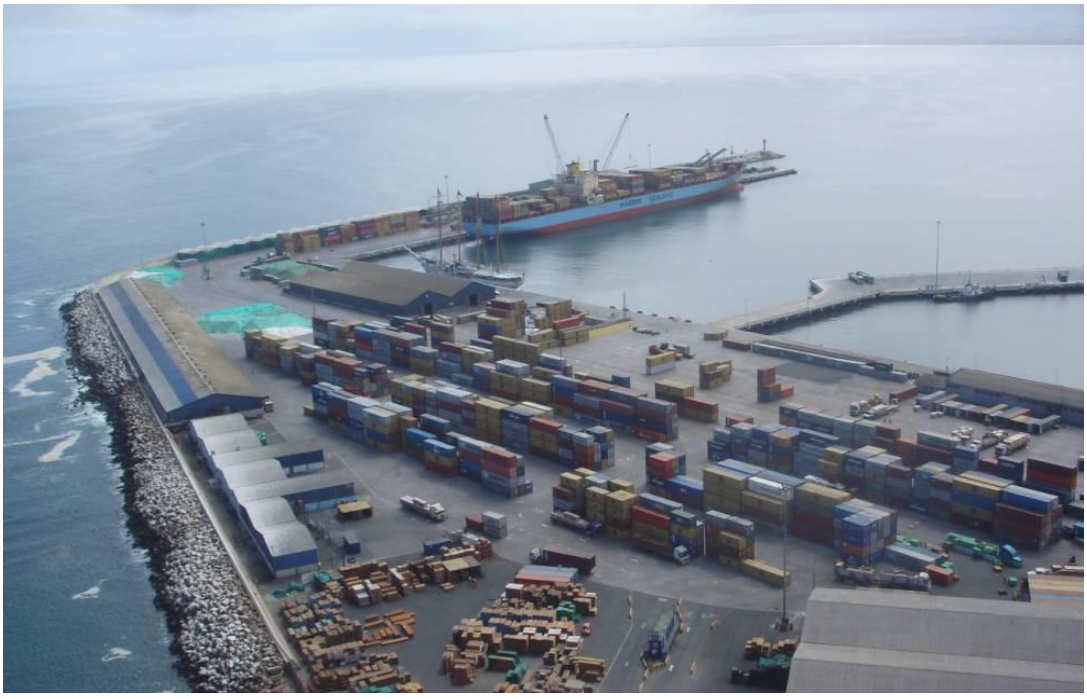


Figure 5.3_2
Los Pumas Project – Southern Hemisphere Mining
Arica Port Facilities



The city of Arica has a population of over 300,000. There is limited industry in the region that is not associated with farming and the import and export industry. A suitable workforce would be available in Arica and the local town of Putre as required for developing a mine. Professional mining personnel would possibly not be available in the city as no mining culture is evident, although Chile has many mining professionals that can easily access the project via numerous weekly domestic flights to Arica.

6 HISTORY

6.1 Ownership History

No information on the ownership history of the Los Pumas Project has been sourced or provided.

6.2 Exploration History

The Los Pumas Project was first identified during World War II when a German company excavated a number of small trenches and underground openings in both the manto and vein mineralisation. The result of this work is not available, nor is there any record of additional exploration up until the work commenced by SHM in September 2008.

6.3 Resource History

Mineral Resources have been previously quantified for the Los Pumas Project in May 2010 and October 2010 by Coffey Mining. The approach taken was different to the current resource estimate. The previous resources had both high grade and low grade domains and less geological control over the key grade ranges of mineralisation. The quoted Measured and Indicated Mineral Resources above the 4% cutoff were:

- May 2010: 13.21Mt @ 8.24% Mn
- October 2010: 14.30Mt @ 7.89% Mn

6.4 Production History

Mineral production appears to be confined to limited artisanal activity associated with the early German activity.

7 GEOLOGICAL SETTING

7.1 Regional Geology

The Los Pumas Project is part of the Tertiary and Quaternary volcanic sequences that forms the Andes Mountains in northern Chile.

The oldest rocks are of Oligocene – Miocene age, comprising volcano-sedimentary sequences including basaltic to dacitic flows and pyroclastic rocks. The rocks can be found outcropping to the south, west and east of the Los Pumas Project.

The Lower Miocene to Middle volcanic complex is represented by partially eroded lava flows, and pyroclastic rocks of andesitic composition, basaltic to dacitic and sedimentary sequences. These later units have been variously called the Atacama Gravels and Altos de Pica Formation.

The Upper Miocene - Pliocene is characterized by volcanic sequences (domes, lava flow and pyroclastic deposits) of andesitic to dacitic composition with intercalated alluvial material.

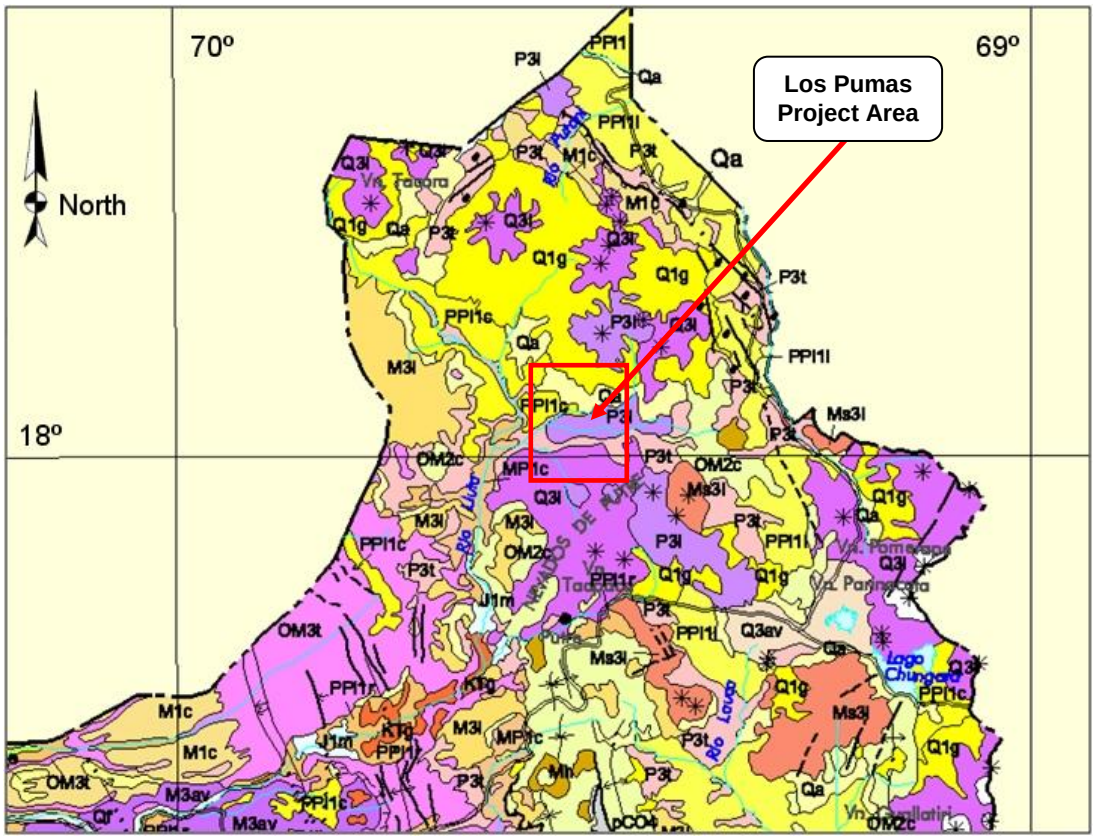
The Pliocene - Pleistocene volcanic complex consists of lava flows and pyroclastic rocks of variable composition from rhyolites to andesites.

The Pleistocene - Holocene and Quaternary sequences are again represented by strata volcanoes and volcanic complexes of basaltic to rhyolitic composition. This includes the Taapacá, Parinacota and Lascar volcanoes which are found in the region.

The main river system that exposes the Los Pumas mineralisation runs in a north-south direction and possibly represents a major shear structure that potentially has a strong control on the location of manganese mineralisation in the region.

Figure 7.1_1 below shows the regional geology for the northern part of Chile (figure supplied by SHM).

Figure 7.1_1
Los Pumas Project – Southern Hemisphere Mining
Regional Geology Map of Northern Chile



Qa
Pleistoceno-Holoceno
Depósitos aluviales, subordinadamente coluviales o lacustres: gravas, arenas y limos. En la Depresión Central, regiones I a III: abanicos aluviales.

Q1g
Pleistoceno-Holoceno
Depósitos morrénicos, fluvioglaciales y glacilacustres: diamictos de bloques y matriz de limo/arcilla, gravas, arenas y limos. En la Cordillera Principal, regiones I a IV. En la Depresión Central, regiones IX y X: en

PPl1c
Plioceno-Pleistoceno
Conglomerados, areniscas, limolitas y arcillolitas, generalmente consolidados, de facies principalmente aluviales, subordinadamente lacustres y eólicas. En las regiones I a III forman abanicos aluviales inactivos

MP1c
Mioceno Superior-Plioceno
Secuencias sedimentarias clásticas de piedemonte, aluviales, coluviales o fluviales: conglomerados, areniscas y limolitas. En las regiones I a IV: formaciones Huaylas, Lauca y Pastos Chicos, Gravas del Copiapó; en la región XI: Formación Galeras.

M1c
Mioceno Inferior-Medio
Secuencias sedimentarias de abanicos aluviales, pedimento o fluviales: gravas, arenas y limos con ignimbritas intercaladas. En las regiones I a III: formaciones Diablo, Chucal, Altos de Pica (superior) y Gravas de Atacama; en las regiones VIII a IX: Formación Cura-Mallín (superior); en la región XI: Formación Las Dunas.

OM2c
Oligoceno-Mioceno
Secuencias volcanosedimentarias: lavas basálticas a dacíticas, rocas epiclásticas y piroclásticas. En la Cordillera Principal, regiones I a IX: formaciones Lupica, Escabroso, Abanico, Coya-Machalí, Cura-Mallín (inferior).

Q3i
Cuaternario
Estratovolcanes y complejos volcánicos: lavas basáticas a riolíticas, domos y depósitos piroclásticos andesítico-basálticos a dacíticos; principalmente calcoalcalinos; adakíticos al sur de los 47°S. En la Cordillera Principal, regiones I a III: volcanes Taapaca, Parinacota, Láscar y Ojos del Salado. Principalmente

P3t
Plioceno
Depósitos piroclásticos dacíticos a riolíticos parcialmente soldados. Principalmente en la Cordillera Principal, regiones I a III: ignimbritas Lauca, Puripicar, Atana, Tucúcaro, Patao y Laguna Verde.

P3i
Plioceno
Centros volcánicos: lavas, domos y depósitos piroclásticos andesíticos a dacíticos, conos de piroclastos y lavas basálticas a andesítico-basálticas. En la Cordillera Principal, regiones I a III: volcanes Larancagua, Miño, Peñas Blancas y Laguna Escondida; en la región XI: centros volcánicos de la península de Taitao.

Ms3i
Mioceno Superior
Centros y secuencias volcánicas: lavas, domos y depósitos piroclásticos, andesíticos a dacíticos, con intercalaciones aluviales, asociados a depósitos epitermales de Au-Ag. En la Cordillera Principal, regiones I a IV: volcanes Choquelimpie, Copiapó, Wheelwright y Formación Vacas Heladas.

M3i
Mioceno Inferior-Medio
Complejos volcánicos parcialmente erosionados y secuencias volcánicas: lavas, brechas, domos y rocas piroclásticas andesítico-basálticas a dacíticas. En la Cordillera Principal, regiones I a VIII: complejos volcánicos Doña Inés y Ojos de Maricunga; formaciones Cerro Las Tórtolas y Farellones.

7.2 Project Geology

The Los Pumas manganese project is located immediately to the west of the Taapaca volcano in a geographical area called the “altiplano” (high plateau). It is adjacent to the north-south trending Lluta River, where several other minor manganese occurrences have been identified.

The geology of the Los Pumas Project is dominated by volcanic rocks of the Huaylas Formation (Upper Miocene age) and the Lauca Ignimbrite (Upper Pliocene) as shown in Figure 7.2_1. These have been subsequently overlain by Pleistocene pyroclastics, andesites and dacites and sedimentary units including primarily pumice, ignimbrites and a mixture of acid volcanic rocks (dacites and rhyodacites). Six major volcanic centres are clearly visible from the Los Pumas Project with the closest being approximately 4km to the east.

Figure 7.2_1
Los Pumas Project – Southern Hemisphere Mining
Panoramic View of the Major Geological Features
Looking East

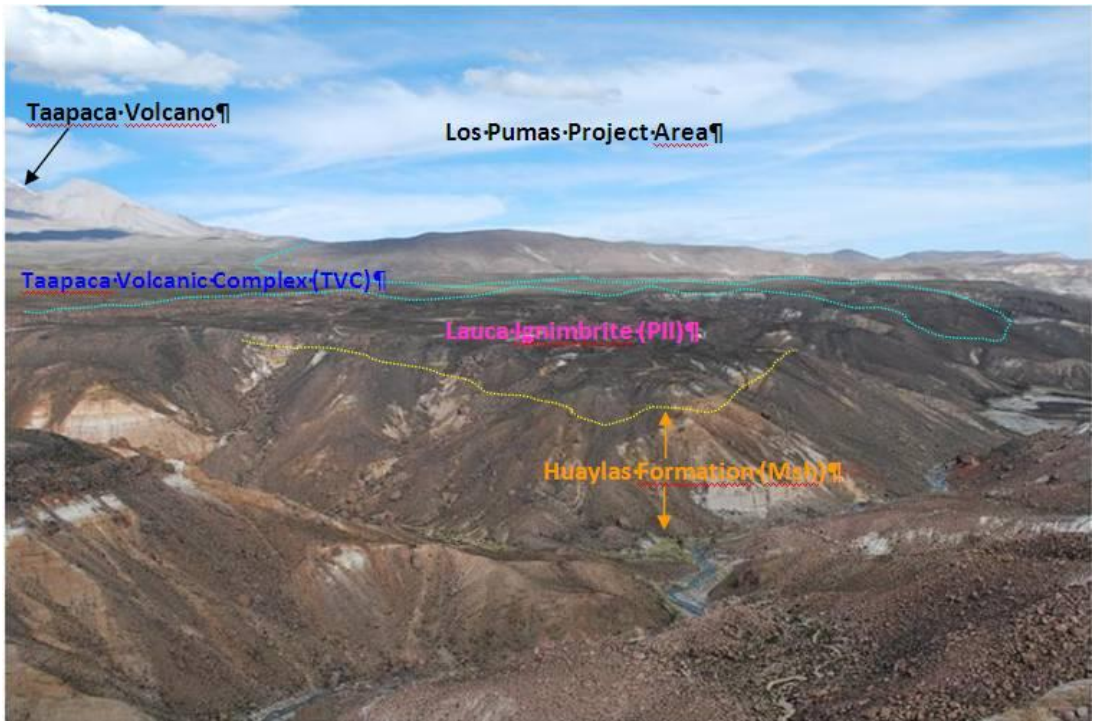
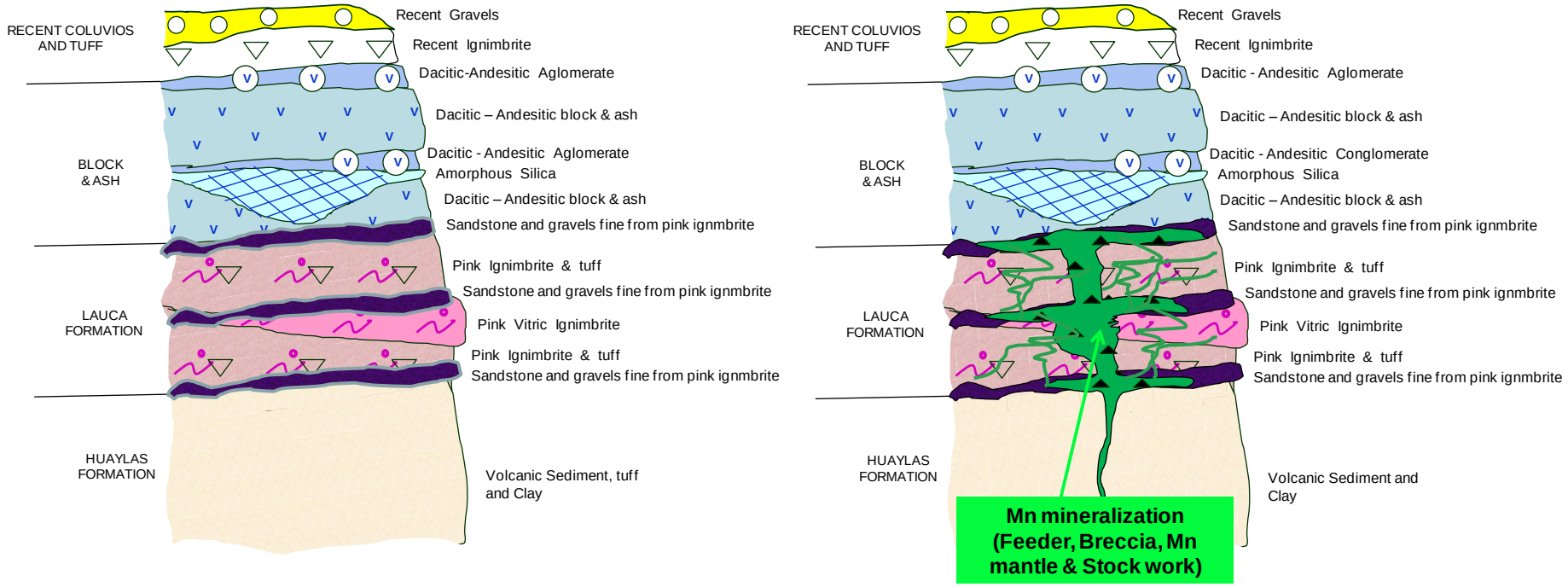


Figure 7.2_2 below shows a schematic stratigraphic column with the manganese mineralisation shown in green.

Figure 7.2_2
Los Pumas Project – Southern Hemisphere Mining
Schematic Stratigraphic Column with the Typical Manganese Mineralisation



The major formations are summarized below:

7.2.1 Huaylas Formation (MSH)

This is Miocene in age, as defined by Salas (1966), comprising sedimentary and sub-horizontal volcanics, which fill depressions in the Precordillera and high Andes Mountains.

At the Los Pumas Project the footwall to the mineralisation is semi-consolidated gravel, sandstone and limonitic volcanic sediments, moderately stratified, in continuous layers that are centimetres to 10's of metres in thickness.

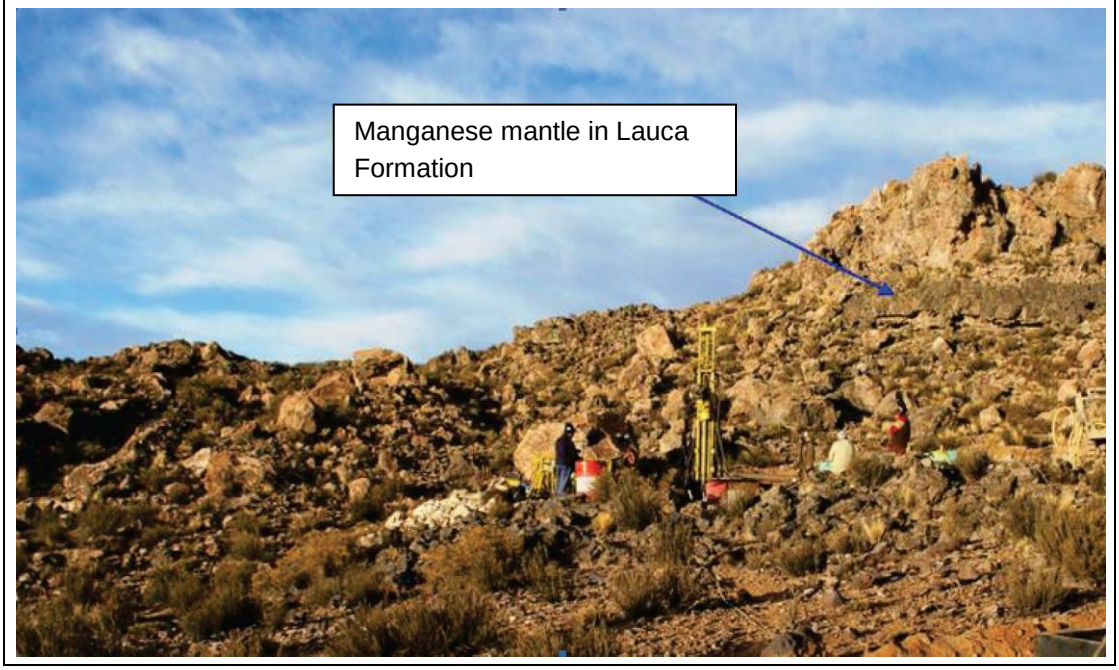
7.2.2 Lauca Formation (PlPl)

The Lauca Formation (Pliocene - Pleistocene) was defined by Munoz (1988) as a continental sub-horizontal sedimentary sequence.

In the Los Pumas Project, the Lauca Formation is represented by a subunit called the Lauca Ignimbrite, which consists of a pyroclastic flow deposit, composed of mainly rhyolite (Figure 7.2.2_1).

There are two pyroclastic flow units in the Los Pumas area, each about 5m to 10m thick. The lower unit is strongly pink in colour, rich in ash and pumice, while the upper level is less pink in colour.

Figure 7.2.2_1
Los Pumas Project – Southern Hemisphere Mining
Drilling DDHLP006: Lauca Formation - Pink Ignimbrite



The Lauca Ignimbrite is important in that this unit hosts the majority of the manganese mineralisation at Los Pumas. The manganese has formed manto style mineralisation, having been hydrothermally injected into the flat ignimbrite layer along paths of weakness associated

with subvertical faults, preferentially orientated NNW, with subordinate structures oriented N-S and ENE.

In the Los Pumas area, the Lauca Ignimbrite is interrupted by a dacitic to andesitic ignimbrite flow derived from the Taapaca Volcanic Complex (TVC).

7.2.3 Taapaca Volcanic Complex (TVC)

The Taapaca Volcano is a large dacitic to andesitic volcano located to the east of the Los Pumas Project. The main products of this volcano are block flow and ash flow rocks, with a dacitic-andesitic composition.

8 DEPOSIT TYPES

The primary exploration model associated with the Los Pumas Project is 'manto' style mineralisation comprising sub-horizontal, stratabound deposits (or mantos) and their postulated sub-vertical feeder zones.

The manto model involves the introduction of mineralised hydrothermal solutions via steeply dipping feeder zones usually expressed as faults or breccia zones. These solutions then selectively invade and mineralize relatively porous and permeable horizons within the adjacent stratigraphic profile. Where a feeder zone successively intersects a series of permeable horizons within the stratigraphy, stacked mineralised mantos may be developed. These stacked mantos are often characterized by a vertical metal zonation.

The feeder structures are characteristically higher grade than the mantos, especially immediately below the manto horizon. However, the manto deposits themselves are frequently of significantly greater dimensions. The deposit size is usually a function of the size, number and frequency of feeder structures, the volume of mineralising hydrothermal fluids, and the width and permeability of the manto horizon.

9 MINERALISATION

The manganese mineralisation at Los Pumas is divided into the north and south targets and is separated by the Taapaca volcanic dacitic-andesitic flow (approximately 1km). The north target is approximately 1.7km by 0.6km in area and with multiple mineralised zones having approximately 1m to 10m in thickness, while the south target is 1km by 0.2km in area and has similar multiple zones and thicknesses.

Mineralisation outcrops from surface in most cases, extending up to a maximum depth of 30m below surface.

The Lauca Ignimbrite is important in that this unit hosts the majority of the manganese mineralisation identified at Los Pumas. The manganese has formed manto style mineralisation having been hydrothermally injected into the flat lying ignimbrite layer along paths of weakness associated with subvertical faults, preferentially oriented N-NW, with subordinate structures oriented N-S and ENE as shown in Figures 9_1 and 9_2.

Figure 9_1
Los Pumas Project – Southern Hemisphere Mining
Manto Style Manganese Mineralisation (Cryptomelane)

The metallurgical testwork completed by SHM indicates that Cryptomelane ($K(Mn^{4+},Mn^{2+})_8O_{16}$) is the predominant manganese mineral represented.

The volcanic sediments located in the footwall of the mineralisation are more ductile in nature and have not been as pervasively mineralised, but still contain narrow, high grade manganese veinlets and stockwork mineralisation. This style of mineralisation is also observed in the andesite flow that separates the north and south targets. This narrow, high grade mineralisation was the focus of small underground mining activity undertaken by the Germans during World War II.

Figure 9_2
Los Pumas Project – Southern Hemisphere Mining
EW Schematic View of the Mineralised Stratigraphy with Manganese shown in Green

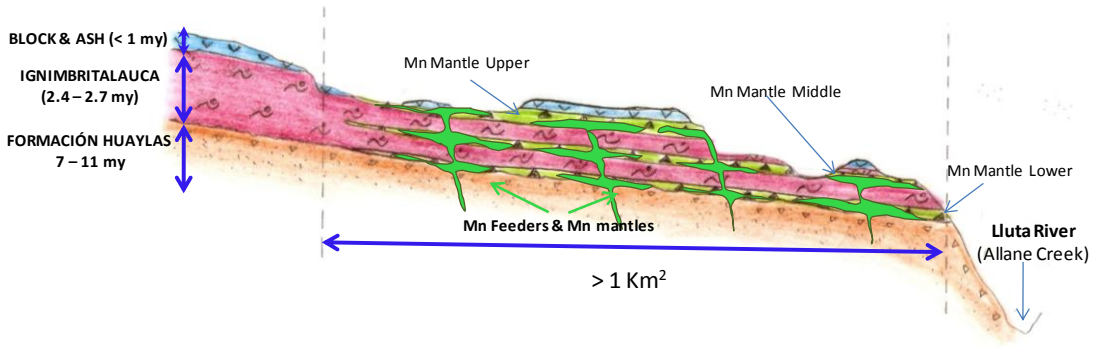
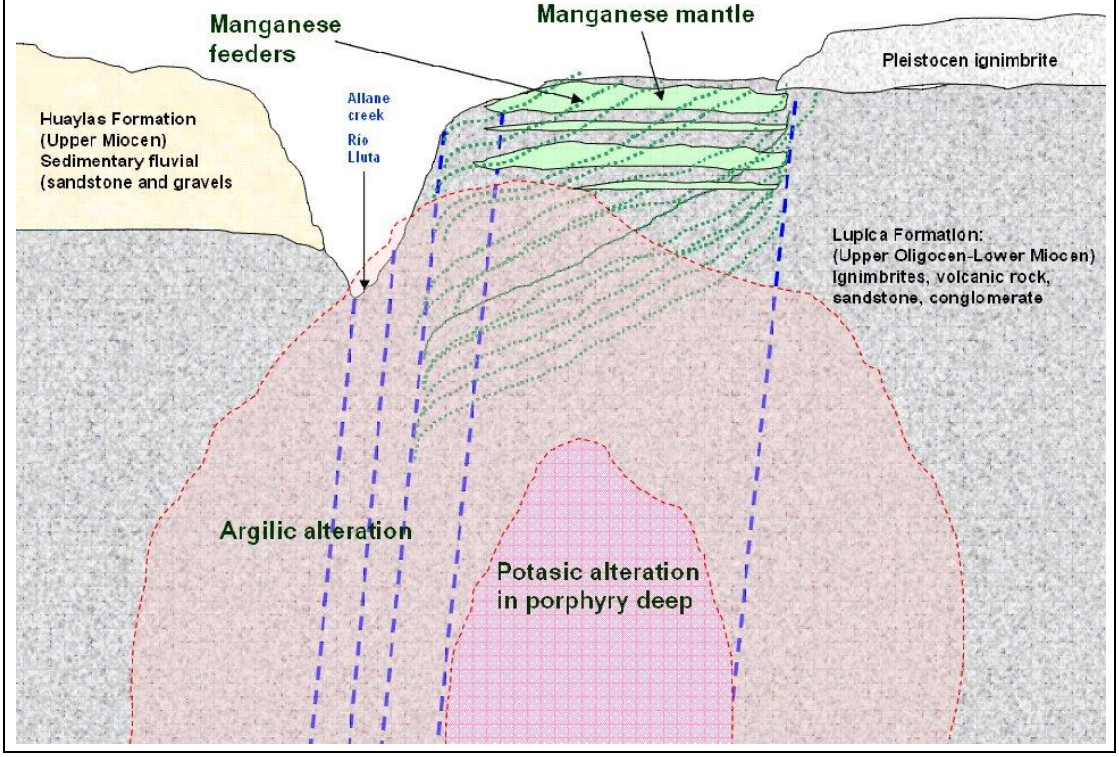


Figure 9_3 below is a schematic representation of the possible genesis of the manganese mineralisation with the source potentially being a deeper porphyry body.

Figure 9_3
Los Pumas Project
Genetic Model



10 EXPLORATION

The project opportunity was identified by the SHM Exploration Manager, Mr. Igor Collado, who has been responsible for initially identifying the potential and for all exploration work completed to date. The work completed by SHM to date has included:

- Regional reconnaissance mainly in the form of travelling to various farming areas and asking if people have seen “black rock”.
- Project scale mapping of the Los Pumas Project.
- 32 diamond drilling (DD) holes for a total of 652.2m.
- 487 reverse circulation (RC) holes for a total of 14,204m.
- 203 surface channel samples of exposed manto style mineralisation for a total of 203m.
- 240 assays of coarse rejects from samples that were not previously assayed in the resource estimates prior to this one, targeting what was perceived from past drilling campaigns to be lower grade mantle style mineralisation.

All exploration has been undertaken by SHM personnel with the use of an independent drilling contractor as required.

11 DRILLING

The Los Pumas project was drilled in early 2009 with the first hole commencing on the 16th December 2008. A total of 487 holes of RC were completed for 14,204m by July 2010. The company contracted to undertake the drilling was AC Perforations, utilising an Ingersoll Rand reverse circulation drill rig with a 5½" face sampling hammer.

Holes were mostly drilled to an average 25m depth. Holes were drilled on a spacing of approximately 50m by 50m in north area varying to 200m by 200m in south area. Recent drilling has infilled some pockets of the northern area to 25m x 25m. The manganese mineralisation is predominantly horizontal so the mineralised intercepts represent close to the true thickness of mineralisation.

Additional drilling was undertaken by SHM using diamond core (DC) to allow for metallurgical samples along with bulk density and where applicable infill resource drilling to be completed. 32 diamond drilling (DD) holes were completed for a total of 652.2m. Core was drilled to HQ and NQ size using standard wireline drilling.

Coffey Mining considers the drilling type and methodology appropriate for the project and style of mineralisation although would recommend angled holes to try to define the sub vertical manganese feeder zones associated with the regional faults.

The drillholes were not surveyed downhole but given the short length and the fact that the holes are vertical, Coffey Mining does not consider this a material issue.

Drill collars have been recorded using a total station to +/- 3cm accuracy. All drill collars have been labelled and preserved.

240 coarse reject samples from RC drilling have been assayed to assist in determining the grade of the unsampled manto style material from recent drilling campaigns. This is typically from intervals that did not appear to be well mineralised, but upon further drilling and cross-correlation, now appear to have potential to be mineralised in places.

12 SAMPLING METHOD AND APPROACH

The RC samples were taken on 1m downhole intervals and split to 5kg using a riffle splitter. The 5kg samples were then sieved with the residual coarse RC chips stored in a chip tray for later reference. The chip trays were photographed. The chips were then logged by SHM taking note of the manganese mineralisation and lithology. The bulk reject samples have been retained at the Los Pumas Project. Samples were not weighed by SHM but Coffey Mining noted that the sample bags (shown in the Figure 12_1 below) are of relatively equal size, suggesting good (or at least consistent) recoveries from the RC drilling.

Figure 12_1
Los Pumas Project – Southern Hemisphere Mining
RC Bulk Reject Bag Farm

Drill core was marked up on geological intervals, but with intervals not exceeding 1m in length. The core was then cut in half using a diamond core saw. Half the core sample was taken and broken up and submitted to the laboratory for analysis, whilst the remaining ½ core has been stored for future reference.

All logging has been completed in a multi-paged spreadsheet. The method is one of a graphic log with comments. There is a mixing of lithology and mineralisation in one field only that makes it difficult to separate depositional events from mineralising events, at times.

Some core has been used for metallurgical and bulk density testwork. In these cases ¼ core remains. The core is stored in a warehouse at Hotel Vicuñas in Putre, near the Los Pumas Project, and a few boxes, are stored in Andes Analytical Assay Limitada (AAA) Lab at Arica City.

13 SAMPLE PREPARATION, ANALYSES AND SECURITY

5kg samples were transported to the AAA laboratory located at Arica airport for sample preparation only. 5kg samples were crushed to 80% passing 10# (1.7mm) and then split using a Jones riffle splitter to generate a 1kg fraction. This was then pulverised using an LM2 pulveriser to 90% passing 75 microns and sub-sampled to produce a 50g sub-sample for analysis.

Coffey Mining considers this sampling and sample preparation methodology to be of industry standard. The chain of custody noted by Coffey Mining is also to accepted industry standards, with little room for error and sample mixing given the procedures in place.

14 DATA VERIFICATION

14.1 Assay

After sample preparation, 50g pulps were sent by air to the AAA laboratory in Santiago. This laboratory has an ISO 9001:2008 certification for quality management systems. The samples were then analysed by four acid digest and ICP AES (analysing for 34 elements). The laboratory certificates for all samples have been obtained from SHM and random checks have been completed on 10 holes to ensure the veracity of the data upload procedures.

14.2 QAQC

14.2.1 Standard Data

No independent or client generated certified standards have been included in the assay methodology by SHM. Coffey Mining recommends that in future SHM submit certified manganese standards at a rate of 5% of the total samples to ensure laboratory accuracy.

14.2.2 Field Duplicate Data

Field duplicates were prepared in the field (1 in 20 or 5%) by passing the bulk RC 1m sample through the splitter to produce a second 5kg sample. This was then sent to the laboratory to be prepared and analysed in the same manner described. The results were analysed by Coffey Mining and are presented in Figure 14.2.2_1 below and show excellent precision which suggests that the current sample reduction methodology is adequate.

14.2.3 Laboratory Duplicate Data

No laboratory pulp duplicate data are available from AAA laboratory.

14.2.4 Blanks

A total of 22 blank samples were sent to AAA laboratory. The results were reviewed by Coffey Mining and are presented in Figure 14.2.4_1 below. Coffey Mining recommends that in future an increased number of blanks are submitted to assess laboratory processes at a submission rate of 1 in 20 samples.

14.2.5 Umpire Assays

A total of 58 pulp samples were sent to ALS Chemex in La Serena for analysis by four acid ICP-AES (and by AAS for Mn >10%). These are pulps that have been processed by AAA laboratory and then forwarded to ALS Chemex.

ALS submitted 1 standard, one blank and one pulp duplicate as part of the ALS internal QAQC program. Coffey Mining reviewed the ALS QAQC report and noted no issues with the internal QAQC.

The umpire assay results were analysed by Coffey Mining and are presented in Figure 14.2.5_1 below. The results are that AAA show a low relative bias to the ALS results. Coffey recommends that client standards are submitted to both ALS and AAA in sufficient quantities that a comparison can be completed between the results of each laboratory. Coffey recommends that the insertion rate of standards to the umpire laboratory be significantly increased from the rate recommended in Section 14.2.1 so that a statistically robust dataset is gathered (ideally, more than 100 standards through the umpire laboratory).

Figure 14.2.2_1
Los Pumas Project – Southern Hemisphere Mining
Comparative Analysis of Field Duplicate Data

Summary (All Data)

	Mn_ori	Mn_dup	Units			Result
No. Pairs:	513	513			Pearson CC:	0.99
Minimum:	0.00	0.00	%		Spearman CC:	0.70
Maximum:	28.32	26.43	%		Mean HARD:	2.28
Mean:	1.69	1.67	%		Median HARD:	0.00
Median	0.00	0.00	%			
Std. Deviation:	3.75	3.75	%		Mean HRD:	0.23
Coefficient of Variation:	2.22	2.24			Median HRD	0.00

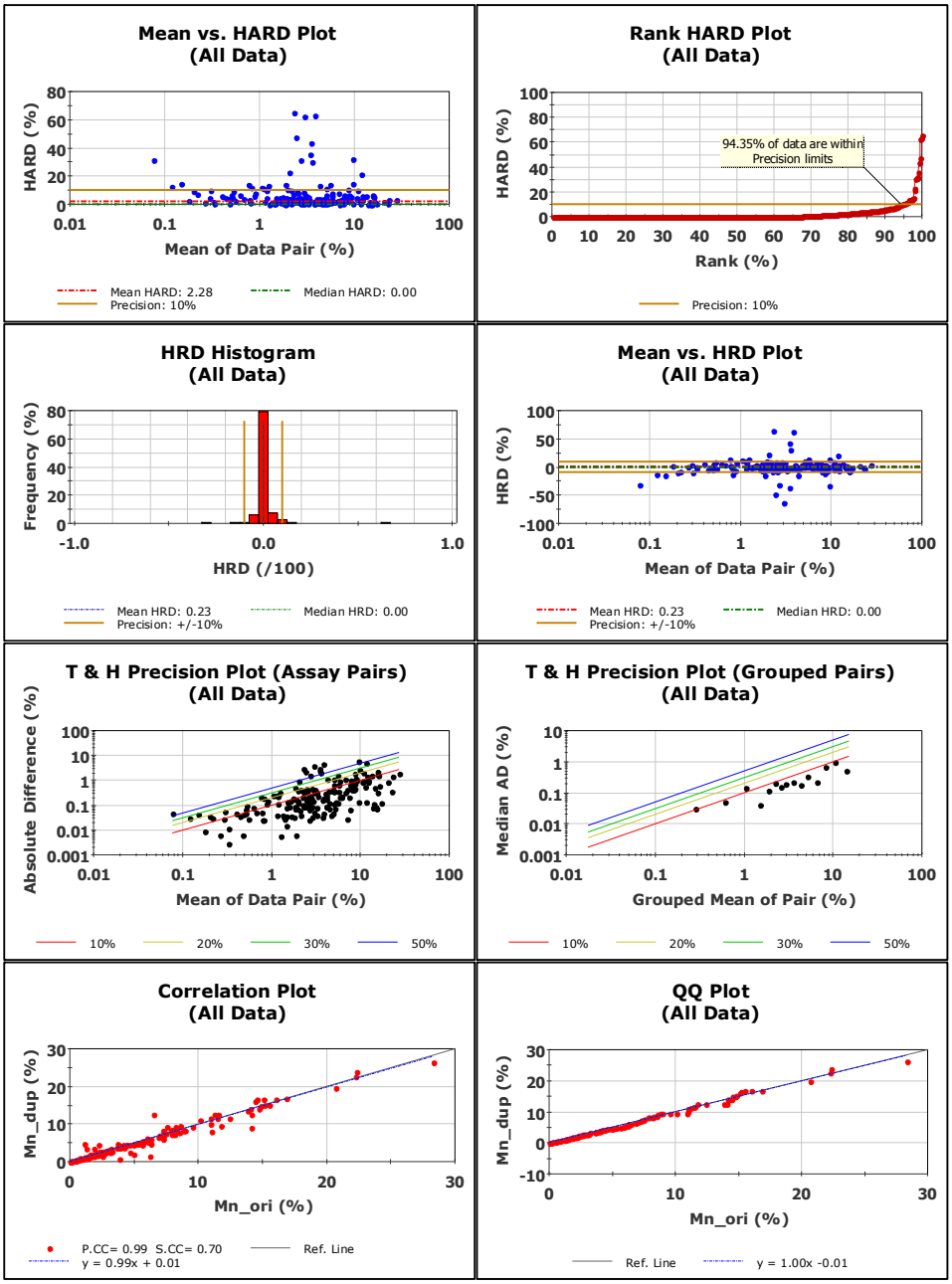


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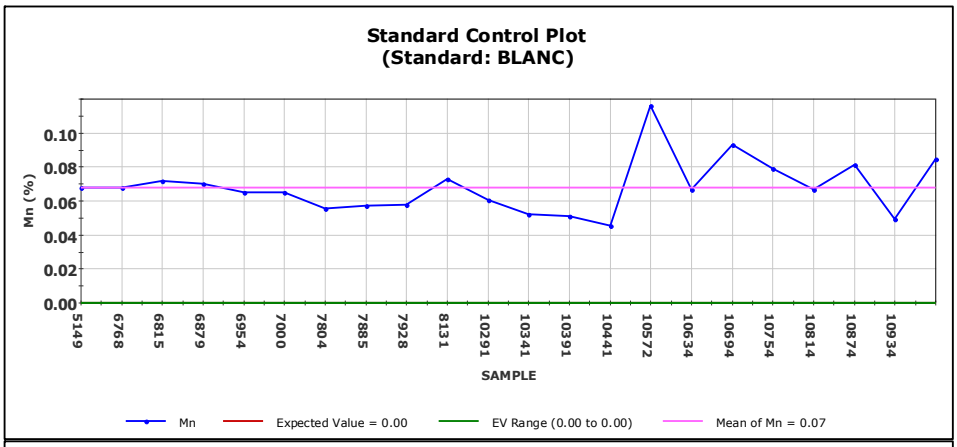
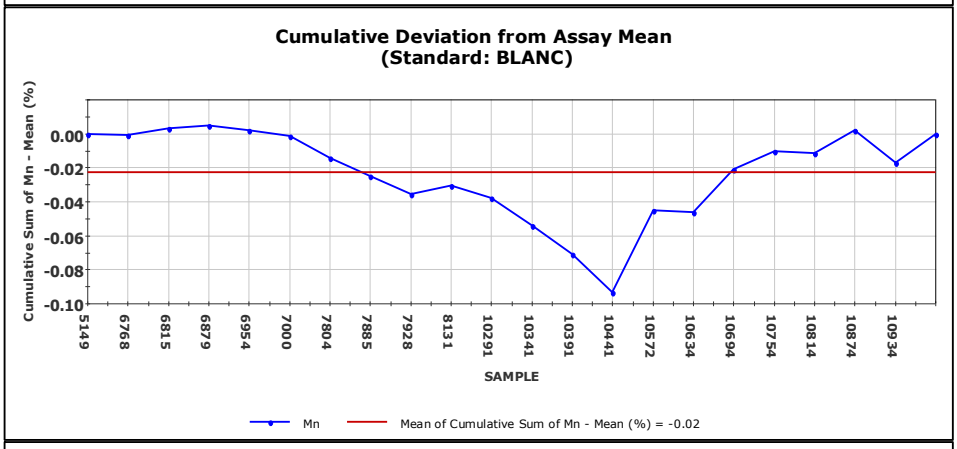
Figure 14.2.4_1
Los Pumas Project – Southern Hemisphere Mining
Blank Analysis

Summary
(Standard: BLANC)

Standard:	BLANC		No of Analyses:	22
Element:	Mn		Minimum:	0.05
Units:	%		Maximum:	0.12
Detection Limit:	-		Mean:	0.07
Expected Value (EV):	0.00		Std Deviation:	0.02
E.V. Range:	0.00 to 0.00		% in Tolerance	0.00 %
			% Bias	0.00 %
			% RSD	23.07 %





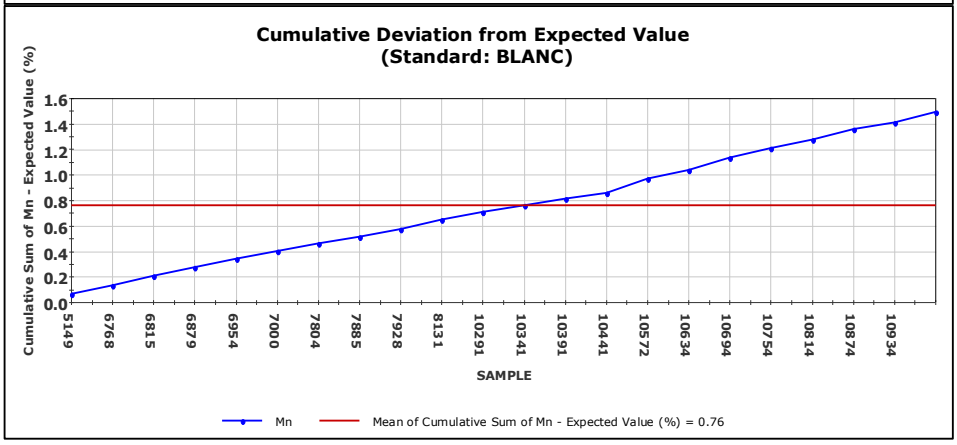


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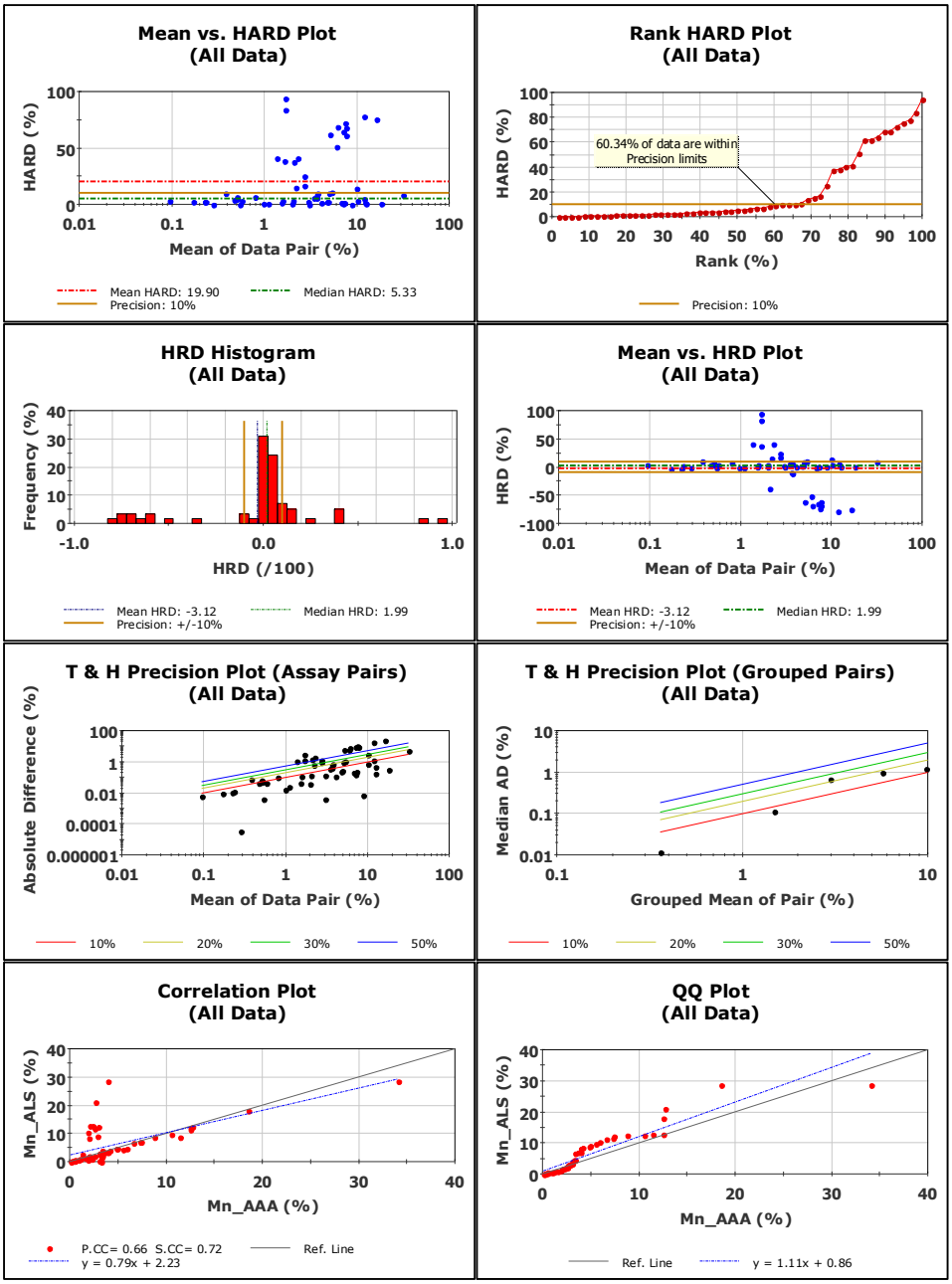
Figure 14.2.5_1
Los Pumas Project – Southern Hemisphere Mining
Comparative Analysis of Umpire Assays

Umpire Assay AAA x ALS Chemex (All Data)

	Mn_AAA	Mn_ALS	Units			Result
No. Pairs:	58	58			Pearson CC:	0.66
Minimum:	0.10	0.09	%		Spearman CC:	0.72
Maximum:	34.11	28.60	%		Mean HARD:	19.90
Mean:	4.31	5.64	%		Median HARD:	5.33
Median	2.92	3.15	%			
Std. Deviation:	5.45	6.54	%		Mean HRD:	-3.12
Coefficient of Variation:	1.27	1.16			Median HRD	1.99



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14.2.6 Twinned DDH and RC Holes

Coffey Mining carried out a basic comparative study of the samples from RC and DC twin holes to confirm if there was any sample bias. Eleven holes were twinned. The review showed a reasonable level of comparison (Table 14.2.6_1), and, therefore, the different drill types have been combined for estimation purposes. Only Manganese was reviewed and no upper cuts were applied to the data.

Table 14.2.6_1
Los Pumas Project – Southern Hemisphere Mining
Twin Holes - RC versus DDH Drilling

Statistical Analysis	RC	DC
Holes--number		
Samples--number	158	158
Minimum Grade Mn %	0.05	0.32
Maximum Grade Mn %	42.24	35.33
Mean Grade Mn %	8.81	7.87
Std. Deviation Mn % Grades	6.70	6.42
Variance Mn % Grades	44.90	41.29

14.2.7 Conclusions and Recommendations

Coffey Mining considers the sample preparation and analytical method to be appropriate for Los Pumas and the data suitable for resource estimation, but strongly recommends that certified standards be utilised in future to be able SHM to monitor assay accuracy.

14.3 Bulk Densities

Coffey Mining used the bulk density data provided by SHM to determine the average densities for each lithology modelled.

SHM determined the bulk density by undertaking physical measurements of core billets using the Archimedes method. A total of 157 bulk density measurements were undertaken. This is a low amount of measurements for the size of this deposit. Table 14.3_1 presents the average bulk densities values for each lithology applied at the resource model.

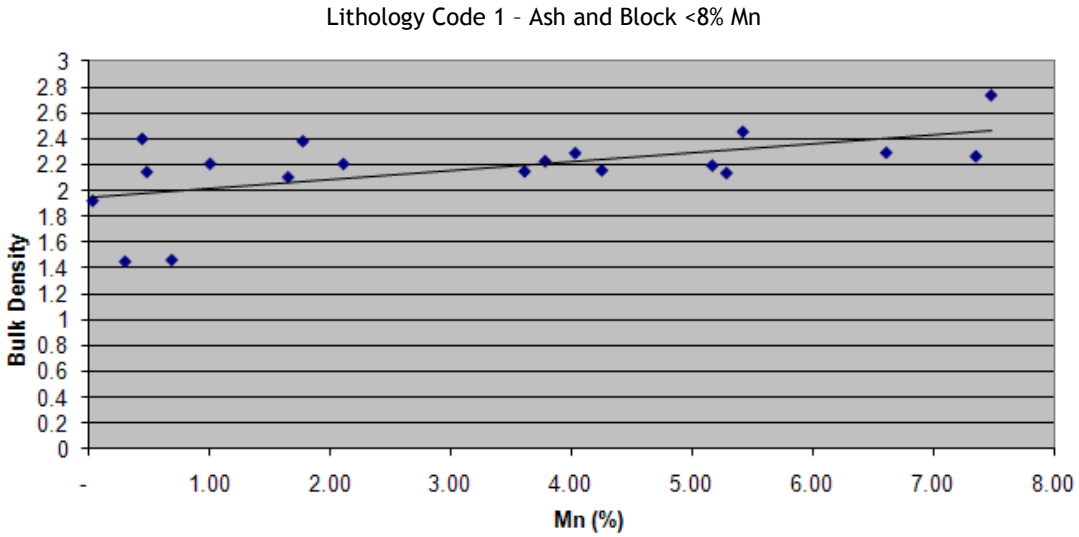
Table 14.3_1
Los Pumas Project – Southern Hemisphere Mining
Average Bulk Densities for Lithologies

Lithology	Mn (%) Limits	Average Bulk Densities (t/m^3)
1-Block and Ash	< 8.0% Mn	2.16
	> 8.0% Mn	2.36
3-Ignimbrite	< 10.0% Mn	2.04
	> 10.0% Mn	2.39
4-Volcanic Sediment	< 8.0% Mn	2.18
	> 8.0% Mn and <=16% Mn	2.61
	>16% Mn	2.75

Coffey Mining considers that more bulk density data needs to be generated for the various lithologies and mineralised zones.

Bulk densities were subset into manganese grade ranges as there is a reasonable trend of higher bulk density with higher manganese grade. Source data points are presented in Figures 14.3_1 to 14.3_3.

Figure 14.3_1
Los Pumas Project – Southern Hemisphere Mining
Bulk Densities for Ash and Block



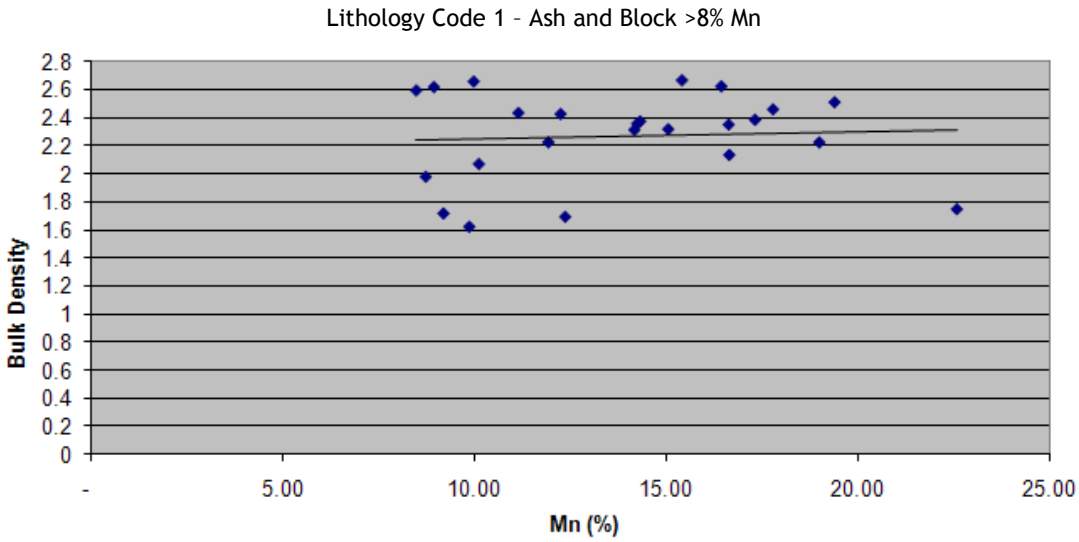


Figure 14.3_2
Los Pumas Project – Southern Hemisphere Mining
Bulk Densities for Ignimbrite

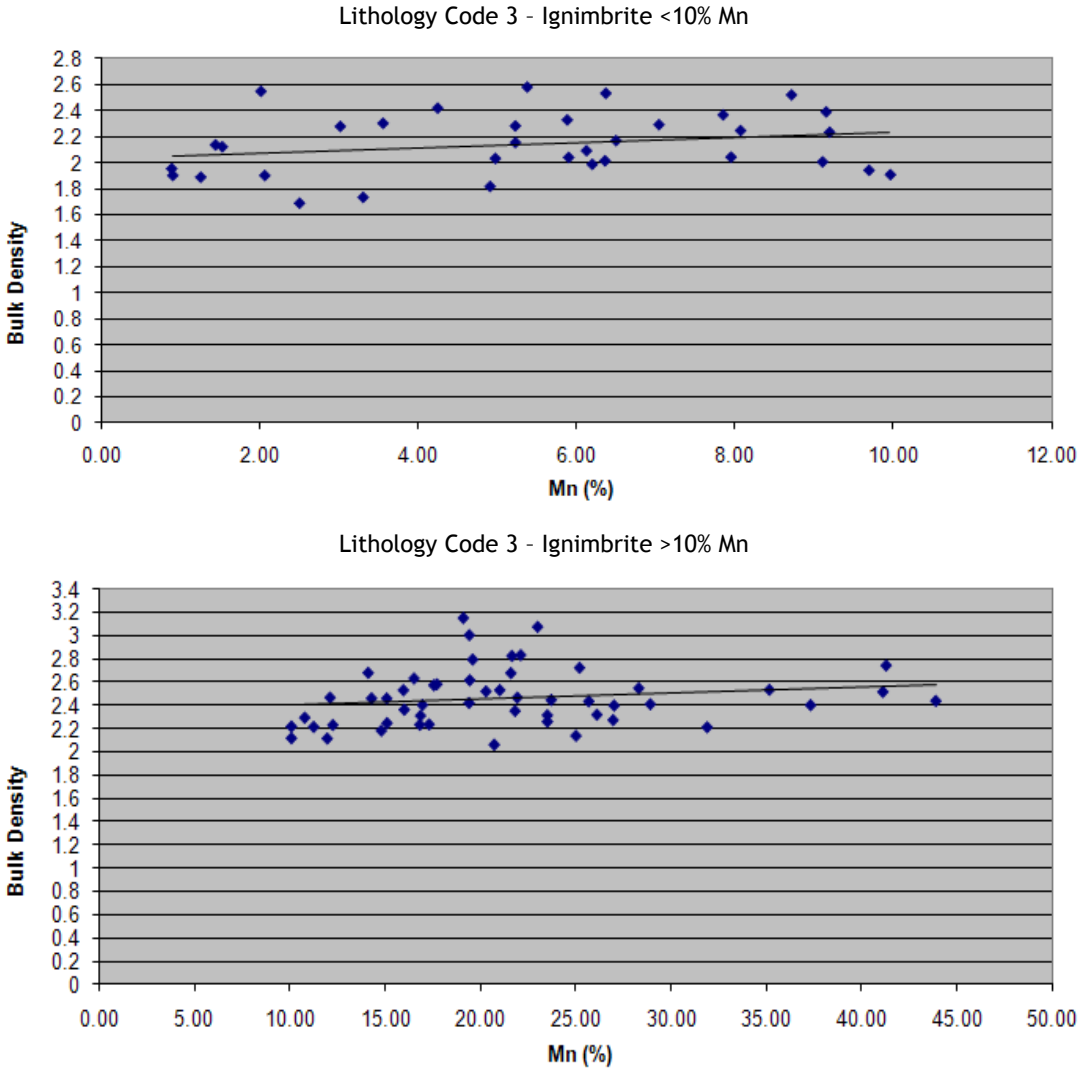
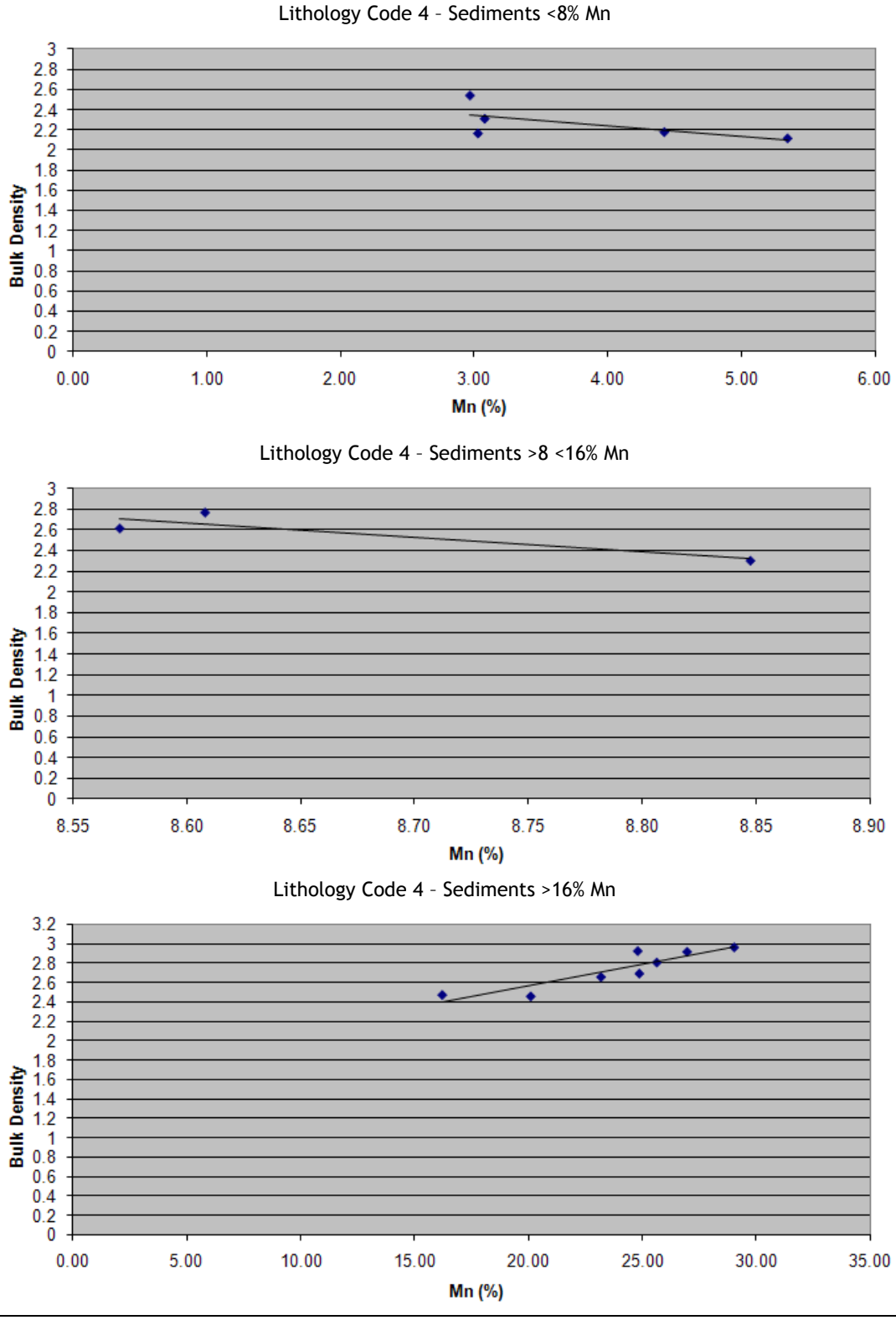


Figure 14.3_3
Los Pumas Project – Southern Hemisphere Mining
Bulk Densities for Sediments



15 ADJACENT PROPERTIES

There are no adjacent advanced manganese properties in the region.

16 MINERAL PROCESSING AND METALLURGICAL TESTING

Mineral Processors (WA) Pty Ltd (Mineral Processors) was engaged by the Company to provide metallurgical consulting services. Mineral Processors has 22 years experience in the use of heavy media separation techniques in the upgrading of manganese resources sourced from major producers.

Mineral Processors has overseen the metallurgical testing of the Los Pumas manganese mineralisation, to determine its suitability for upgrading by means of a dense media plant.

Testing was carried out by Transmin Laboratory in Lima, Peru, and Mintek in Randburg, Gauteng, South Africa.

The Transmin work was carried out initially on surface samples, subsequently on drill chips from the reverse circulation drilling programs and finally on splits from diamond drill core. A total of 87 samples were analysed. Samples were subjected to heavy liquid separation (HLS) tests to provide an indication of the amenability of the mineralisation to upgrading through dense media separation.

Further testing was undertaken by Mintek on 11 larger samples collected from four winzes at Los Pumas. They undertook numerous tests on the samples delivered to them which included crushed particle size and grade analyses, HLS testing, dense media pilot plant testing and comminution tests.

The object of the later stages of the Transmin testing and the Mintek testing was to provide further information about the processing characteristics of the Los Pumas mineralisation.

The proposed metallurgical process was selected on the basis of the initial HLS testwork and focused on a conventional Dense Media Separation (DMS) circuit for proven ease of operation and reliable results. It was recognized from the HLS testwork that the particle top size that would be presented to the plant would need to be reduced from a standard DMS configuration which, if the properties of the resource allow, consists of a lump and a fines circuit catering for a particle top size of 75mm to 80mm.

It was deduced that a top size of 10mm was needed to ensure reasonable liberation of the manganese units without generating excessive fines below the cutoff limit for product sales. The cutoff limit adopted was 0.5mm; hence a product size range of minus 10mm plus 0.5mm was selected.

The proposed plant is designed to treat 2.5 million tonnes of resource feed per annum. It consists of a three stage crushing circuit, screening facilities, and two stage dense media separation.

In order to minimize the generation of minus 0.5mm particles, which would report to rejects and slimes, the crushing circuit was specified to consist of mineral sizers for primary and secondary crushing and a toothed roll crusher for tertiary crushing, with the aim of producing no more than 10% of particles less than 0.5mm in size.

The DMS plant is split into a coarse (10mm x 2mm feed particle size) and a fine (2mm x 0.5mm feed particle size) circuits in order to achieve the maximum efficiency from cyclones with diameters suited to the size ranges.

At Los Pumas there are a number of different lithological units, each of which exhibit very different densimetric characteristics.

From the data presented by SHM, with respect to the proportions of each lithology within the estimated resource, the grade, yield and recovery estimates that have been assigned to these as shown on the following table.

Table 16_1
Los Pumas Project – South Hemisphere Mining
Lithology, % of Resource, Recovery & Manganese Concentrate Grade

Lithology	% of Resource	Recovery %	Conc. Grade % Mn
UG1	29.0	60.0	38.0
UG2/3	49.0	63.0	41.5
UG4	22.0	55.0	30.0
Total	**100**	**60.4**	**38.0**

It appears entirely reasonable that the Block and Ash and ignimbrite resources (UG-1 and UG-2/3) resource types identified above can achieve or exceed these manganese recovery and concentrate grades while the UG-4 resource only demonstrates two examples of beneficiation performance from the testwork undertaken to date than can justify the expectation of 55% recovery at a grade of 30% Mn in concentrate.

The performance for UG-1 and UG-2/3 used in the above overall table are conservative figures from the data available and whilst the UG-4 performance cannot be substantiated there is reasonable expectation it can be achieved.

The concept of blending of concentrates from the optimum densimetric beneficiation of each individual resource type and based upon the characterisation of resource blocks within those resource types is entirely legitimate.

The details of which resources can be “creamed” to produce high grade concentrate without significant reduction in recovery and which resources should be processed to give acceptable recovery, albeit at a low grade, requires refining based upon further testwork programs.

17 MINERAL RESOURCE ESTIMATES AND MINERAL RESERVE ESTIMATES

17.1 Introduction

Coffey Mining completed the geological modelling for the Los Pumas deposit, with the close co-operation of the SHM exploration manager, Mr. Igor Collado.

This iteration of the resource model involved a fundamental decision to change the style of interpretation from the previous high grade and low grade domain style to a strongly geological derived interpretation. The decision was made jointly between Coffey and SHM on the basis that the primary control on the manganese (Mn) mineralisation was the manto style geology which was not well described by considering only nominal Mn grade thresholds. This is supported by field inspections, review of winze geology, review of core, and review of RC drilling logging.

Coffey Mining used the Ordinary Kriging (OK) method to estimate Mn (%), MnO (%), SiO_2 (%), Fe_2O_3 (%), Al (%), K (%) and P (%) grades within the defined mineralised zones for the resource model. The model has been designed and classified considering an open pit mining scenario.

No Mineral Reserves have been calculated for any of the Los Pumas deposits.

17.2 Database Review

Coffey Mining was provided with an updated digital database, a new topographic surface, and digital copies of the assay certificates for all assaying on the project.

The major changes from the October 2010 database are:

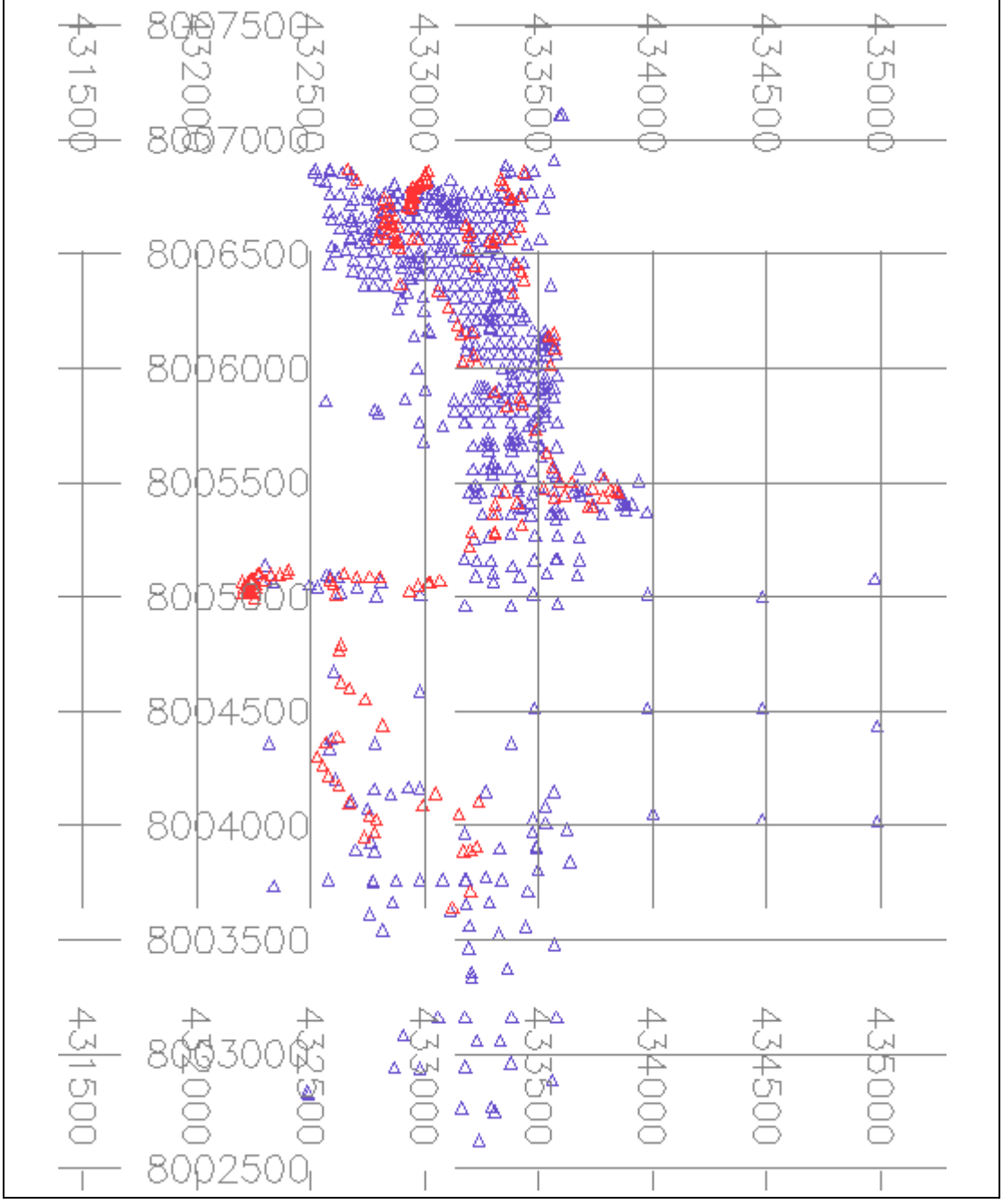
- The addition of 178 surface channel samples of manto style mineralisation as displayed in Figure 17.2_1.
- The addition of 240 bulk reject sample assays from areas, both within manto zones, and immediately proximal to manto zones.

The collection of the surface grab samples was useful in areas of low drill density and as an additional check on areas that were reviewed in the site inspection. The majority of these samples are relatively high grade in Manganese; field inspection supports these results.

The use of ‘default’ grades for the unsampled/unassayed portions of the drillholes has been problematic in the past--this has been partially addressed in this resource update with the selection of some coarse reject samples from pre-existing drillholes for assaying.

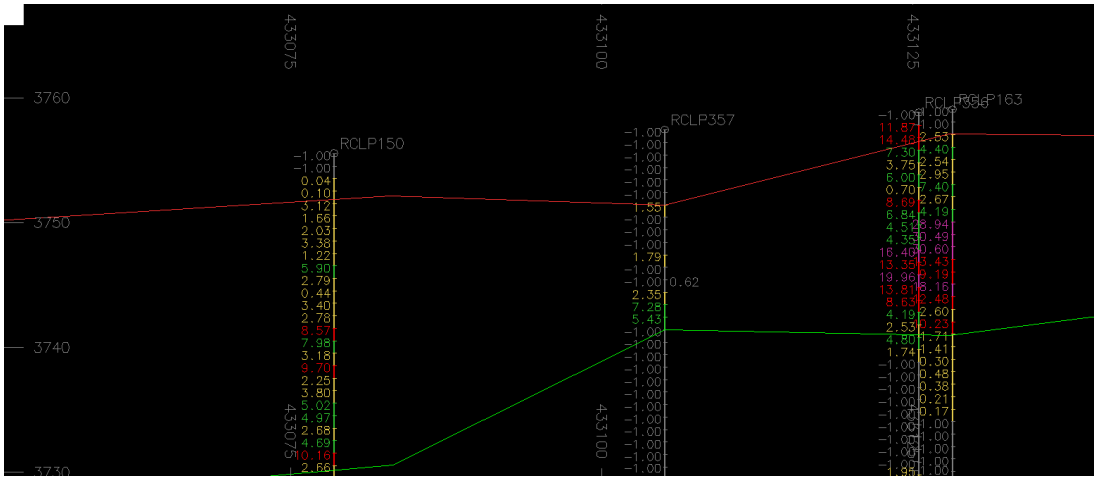
The sampling of the coarse rejects is sporadic, as displayed, for example, in Figure 17.2_2. Hole RCLP357 displays the older sampled and unsampled portions of the hole on the left hand side of the trace. The Mn = -1 annotation next to the drillhole trace is where a sample was not taken for assay in the first pass of drilling and assaying. A sample is shown on the right hand side of the hole trace with a grade of 0.62% Mn. This is a resampled interval. The sampling was completed prior to the new interpretation.

Figure 17.2_1
Los Pumas Project – Southern Hemisphere Mining
Plan View Showing Locations of Additional Surface Grab Sampling (In Red)



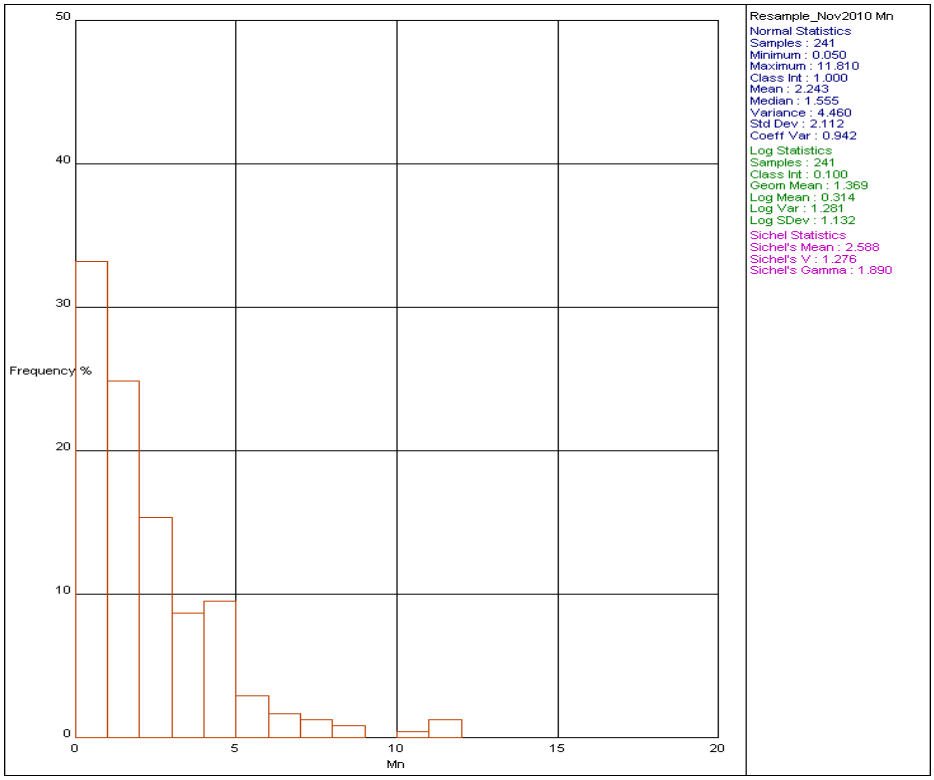
The mineralisation lying outside the manto zones contains a significant proportion of unassayed samples, as also displayed in Figure 17.2_2. These samples have been assumed to be weakly mineralised and have set to a default grade of 0.25% Mn to minimise any 'hot spot' effect in the modelled grade. The unsampled contaminant grades were set to missing data to ensure reasonably realistic contaminant grades were estimated. This non-manto material is not being classified for resource reporting purposes.

Figure 17.2_2
Los Pumas Project – Southern Hemisphere Mining
Cross Section Showing Mn Assay of Sampling of Coarse Reject (8006662N) in Hole RCLP357



The results of the new data have been averaged, with a geometric mean grade applied to any unsampled portions of the interpreted manto zones for Mn only. The nominal grades applied to the unsampled portions of the drillholes within the manto zones is assumed by Coffey Mining to be a conservative approach, as the nominal grades are well below the likely cutoff grade for mining of this deposit and lower than other typical manto mineralisation. This is also evident in the histogram as displayed in Figure 17.2_3.

Figure 17.2_3
Los Pumas Project – Southern Hemisphere Mining
Statistical Data of Coarse Reject Sampling Exercise



The geometric mean of the recently sampled coarse reject data is 1.38% Mn.

17.3 Geological Modelling

Coffey Mining reviewed the logged lithological intervals and made some minor adjustments to lithological wireframes when compared to previous resource estimates. Some erosional features like clay zones were interpreted in this resource update that better explained the sudden and irregular changes in the geological sequence.

Coffey Mining has modelled cross sections on approximately 25m spacing in the north target and approximately 50-100m spacing in the south target (Figure 17.3_1).

The lithological model was based on the logging and interpretation and was separated into three lithologies, (Figure 17.3_2), as presented below:

- Code 1 – Block and Ash Geological Unit: includes andesite / dacite tuffs, ignimbrites, pumice, sandstone and agglomerate of andesitic composition, amorphous silica and eventually manganese manto.
- Code 3 – Undifferentiated Ignimbrite and Lauca Geological Unit (Pink Ignimbrite): Includes Ignimbrite Pink, Pink Vitric ignimbrite, ignimbrite, Sandstone with pink composition of eroded ignimbrite, manganese manto.
- Code 4 – Huaylas Geological Unit (Volcanic Sediment): Includes undifferentiated volcanic sediment, sandstone, ignimbrite, clay areas, manganese manto, etc.

Logged manto style mineralisation in the drilling was honoured in the current interpretation without exception. There is no strict grade cutoff applied to the interpretation of the manto zones; however a nominal 2% Mn cutoff was considered, particularly where there were spurious runs of 1% Mn material logged as manto style mineralisation that did not correlate well with intercepts up and down dip and along strike. The emphasis of the interpretation was the three dimensional consistency of the manto, where possible. It was difficult in localised areas to be entirely consistent, due partly to the logging from the RC holes and partly due to the nature of the mineralisation. The site inspection clearly shows the lateral consistency of the manto zones, with individual mantos being traceable over kilometres of strike length.

The style of interpretation is presented at two different scales in Figures 17.3_3 and 17.3_4.

Feeder zones were observed in the field. The vertical drilling orientation does not facilitate adequate definition of these zones to define width or grade, and so they were not able to be included in the resource interpretation.

Material outside the manto mineralisation has little geological control evident in winze exposures, diamond core, or RC chip logging. The majority of the grades occurring in these areas are < 1% Mn.

Figure 17.3_1
Los Pumas Project – Southern Hemisphere Mining
Isometric View of Manto Interpretations and Drilling, Looking North West

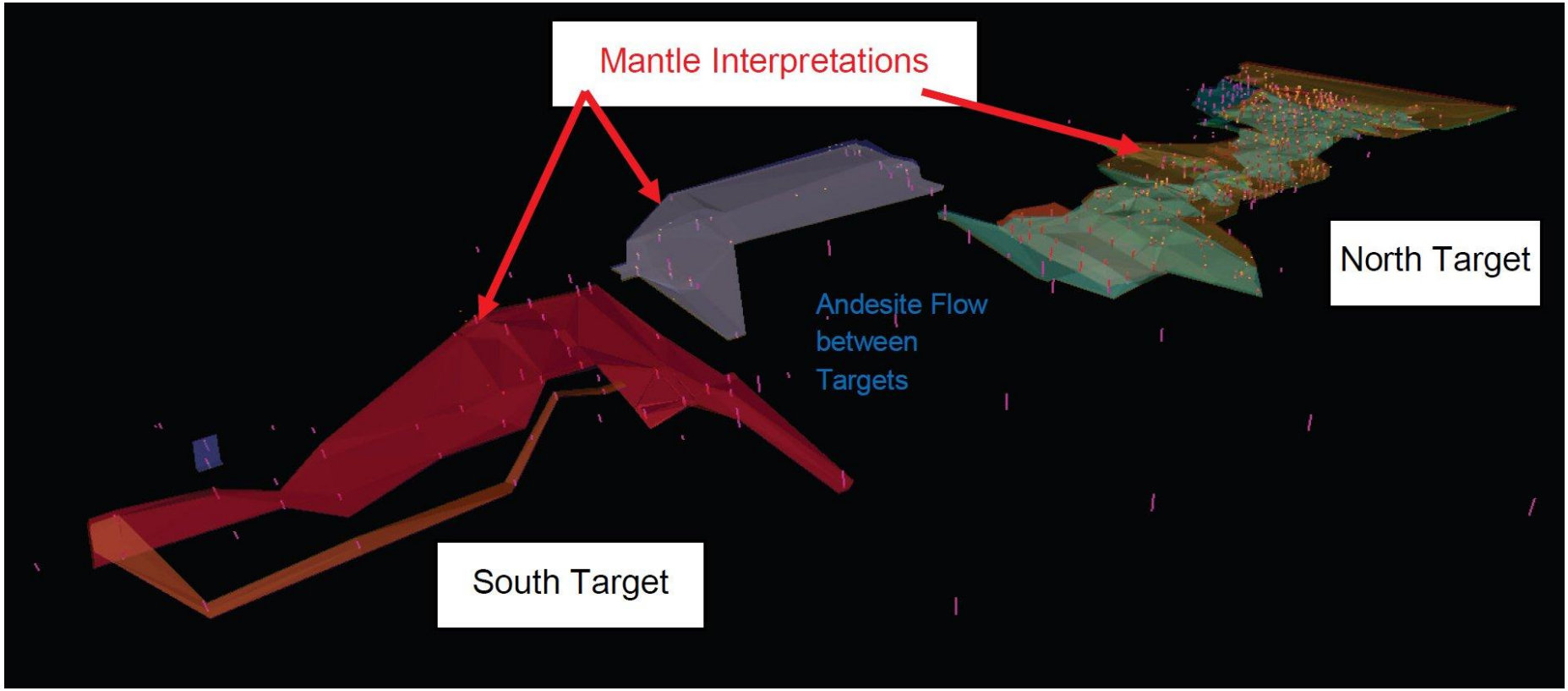


Figure 17.3_2
Los Pumas Project – Southern Hemisphere Mining
Cross Section – Geological Units-(8005358N)

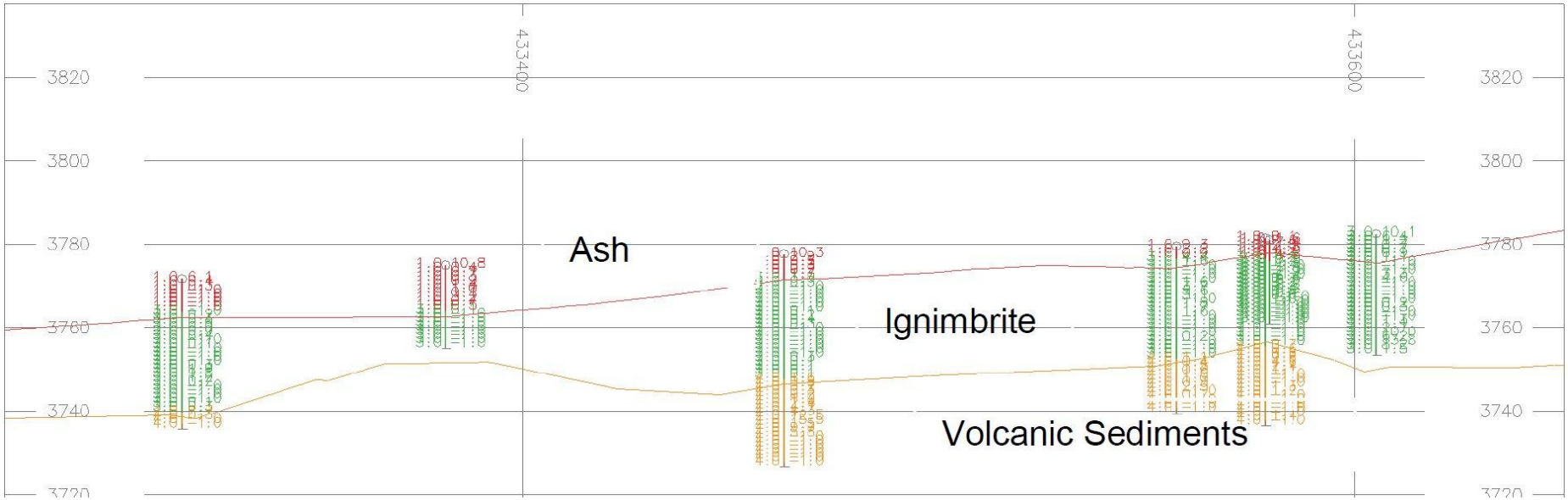


Figure 17.3_3
Los Pumas Project – Southern Hemisphere Mining
Cross Section – Manto Zones-(8005358N)

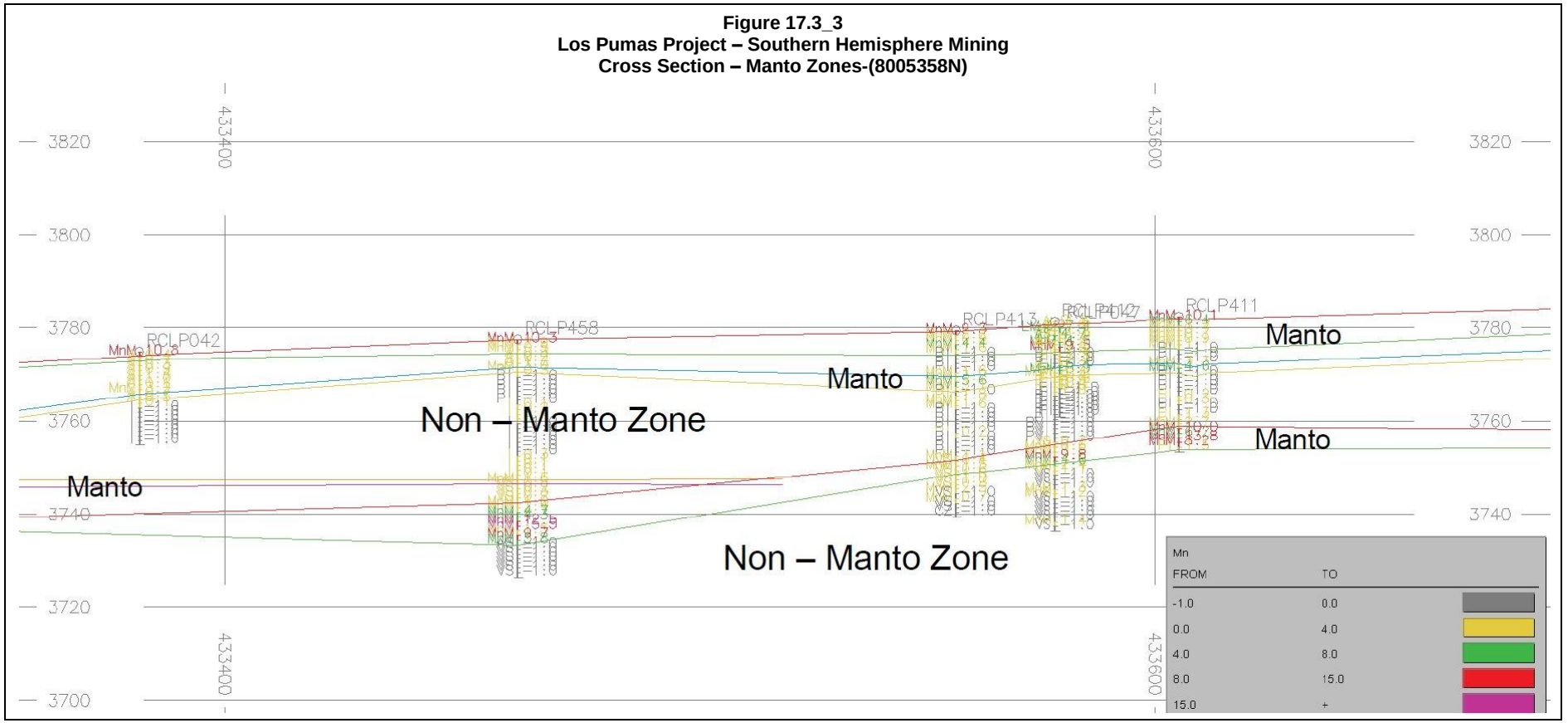
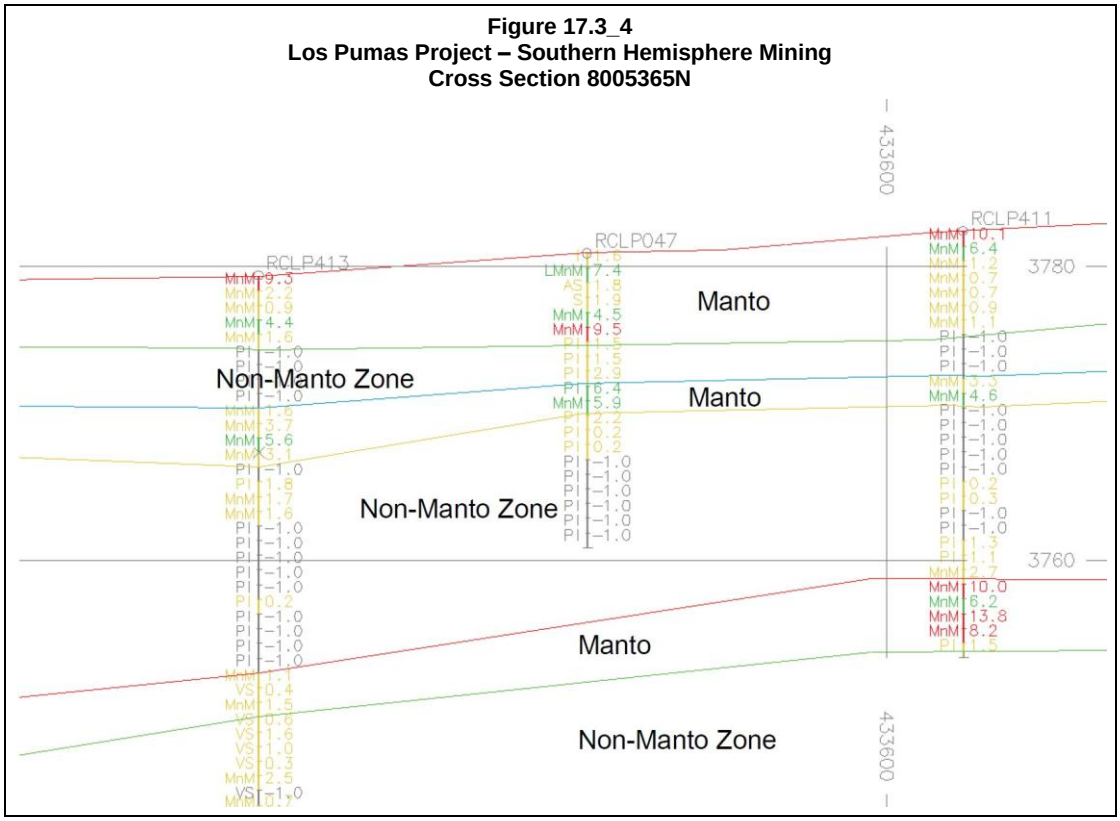


Figure 17.3_4
Los Pumas Project – Southern Hemisphere Mining
Cross Section 8005365N



Within each lithological unit there, are a series of relatively consistent zones logged as 'manto'. The logging is predominantly a description about how black the RC chips or diamond core appears. The minimum downhole length used for interpretation of the manto mineralised zones is 1m; there has been no strict criteria for maximum length of internal waste. The key issue was to define consistent and realistic zones, based on field mapping, winze exposures.

The mantos follow bedding planes and zones of competency contrast, in general terms. These are zones of structural weakness, with bedding planes being predominantly sub-horizontal. The site visit confirmed this orientation and also the extensive lateral continuity of each manto. It is also apparent that the differentiation between lower grade Mn and higher grade Mn zones within each manto is extremely difficult to ascertain visually, in any direction, with the exception of the situations where weaker 'stockwork' mineralisation is more predominant. This kind of mineralisation appears to be erratic.

There are two main manto zones in the Ash unit; four main manto zones in the Ignimbrite unit, and two main zones in the Volcanic Sedimentary unit. There are some very short scale localised zones (generally less than 300m long) that have also been modelled as manto style zones.

Interpretations were completed in cross section and then wireframes were made from these interpretations. Strings were snapped to drillholes in three dimensions. Manto zones were generally extrapolated 25m east/west from the limits of the drilling and were extended north-south between drilled sections as far as reasonable, considering the observed significant lateral continuity in the field. The Manto zones were extrapolated either 25m or 50m north/south of the last section of drilling, depending upon the local data density.

Any Mn mineralised material outside of the interpreted mantos is considered to be of very low local confidence with respect to its possible size, shape, and orientation.

The contaminant elements have been modelled utilising the manto and non-manto domain boundaries as hard boundaries.

The topographic limit was used to constrain the top of the block model. The base of the block model is a copy of the topographic wireframe projected down to a point approximately 20m below the contact between the ignimbrite and the sediments.

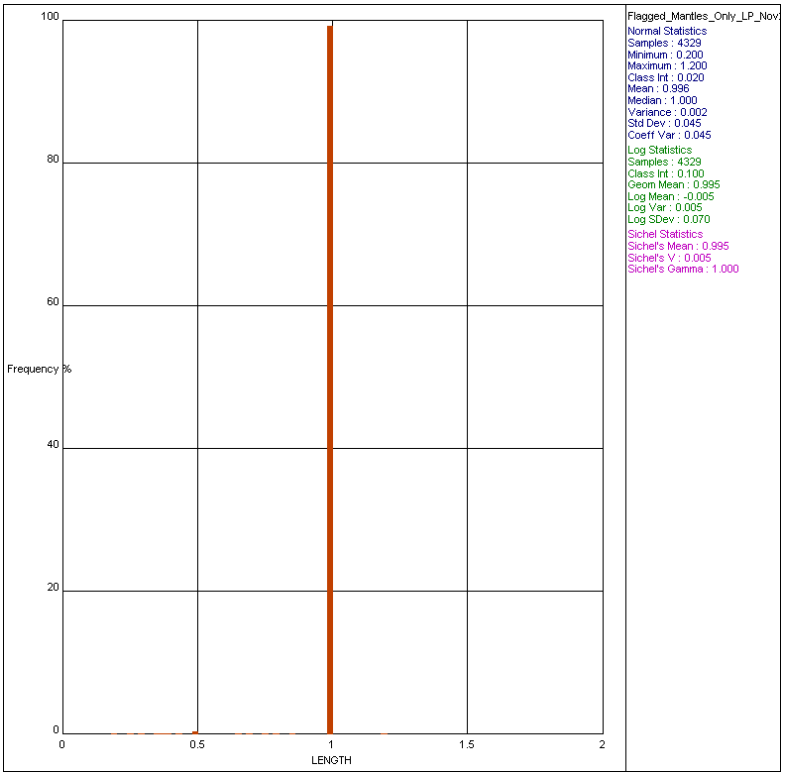
17.4 Sample Selection and Compositing

Samples were selected for the resource estimate by:

- Selecting the samples within the manto domains based on the wireframes constructed from the cross sectional strings
- The remaining samples outside of the manto domains are flagged as part of the non-manto domain.

The common raw sample length in the data is 1m as displayed in Figure 17.4_1. Missing data was set to the default grade prior to compositing for Mn. Missing data for all contaminants was left as missing data. Samples were composited to 2m lengths, as this reflects the likely bench height for mining. A minimum composite length of 0.75m was applied.

Figure 17.4_1
Los Pumas Project – Southern Hemisphere Mining
Sample Length Histogram- Manto Zones



17.5 Basic Statistics

The statistical analysis was undertaken based on 2m composites separated into the manto and non-manto domains. Coffey Mining reviewed data for Mn (%), SiO_2 (%), Fe_2O_3 (%), Al (%), K (%) and P (%).

Table 17.5_1 presents the statistical summary for the manto and non-manto domains. Figures 17.5_1 and 17.5_2 present basic statistics for manto and non-manto domains respectively.

The figures show spikes at 1.38% Mn for the unsampled manto domains and 0.25% Mn for the unsampled Non-Manto Domains. This reflects the default grades used.

Table 17.5_1
Los Pumas Project – Southern Hemisphere Mining
Basic Statistics Summary

Variable	Mean	Variance	Std Dev	CV	Composites	Minimum Value	Maximum Value
Manto Domains							
Mn (%)	6.60	35.92	5.99	0.91	2569	0.07	49.34
SiO_2 (%)	55.07	309.9	17.6	0.32	2569	-	88.56
Fe_2O_3 (%)	2.57	3.48	1.89	0.72	2569	-	14.16
Al (%)	5.35	5.07	2.31	0.42	2569	-	9.76
K (%)	2.83	1.94	1.39	0.49	2569	-	5.48
P (%)	0.05	0.07	0.27	0.89	2569	-	0.35
Non-Manto Domains							
Mn (%)	0.49	0.71	0.84	1.73	5549	0.25	16.34
SiO_2 (%)	53.21	288.3	16.98	0.32	1763	15.16	88.7
Fe_2O_3 (%)	2.34	2.72	1.65	0.70	1763	0.003	9.45
Al (%)	5.46	5.10	2.26	0.41	1763	0.056	10.48
K (%)	2.25	1.59	1.26	0.56	1763	0.013	5.17
P (%)	0.21	0.05	0.22	1.03	1763	0	1.0

The populations appear well behaved and no high grade cuts have been made to the composited data.

Figure 17.5_1
Los Pumas Project – Southern Hemisphere Mining
Basic Statistics Mn (%) Manto Domains

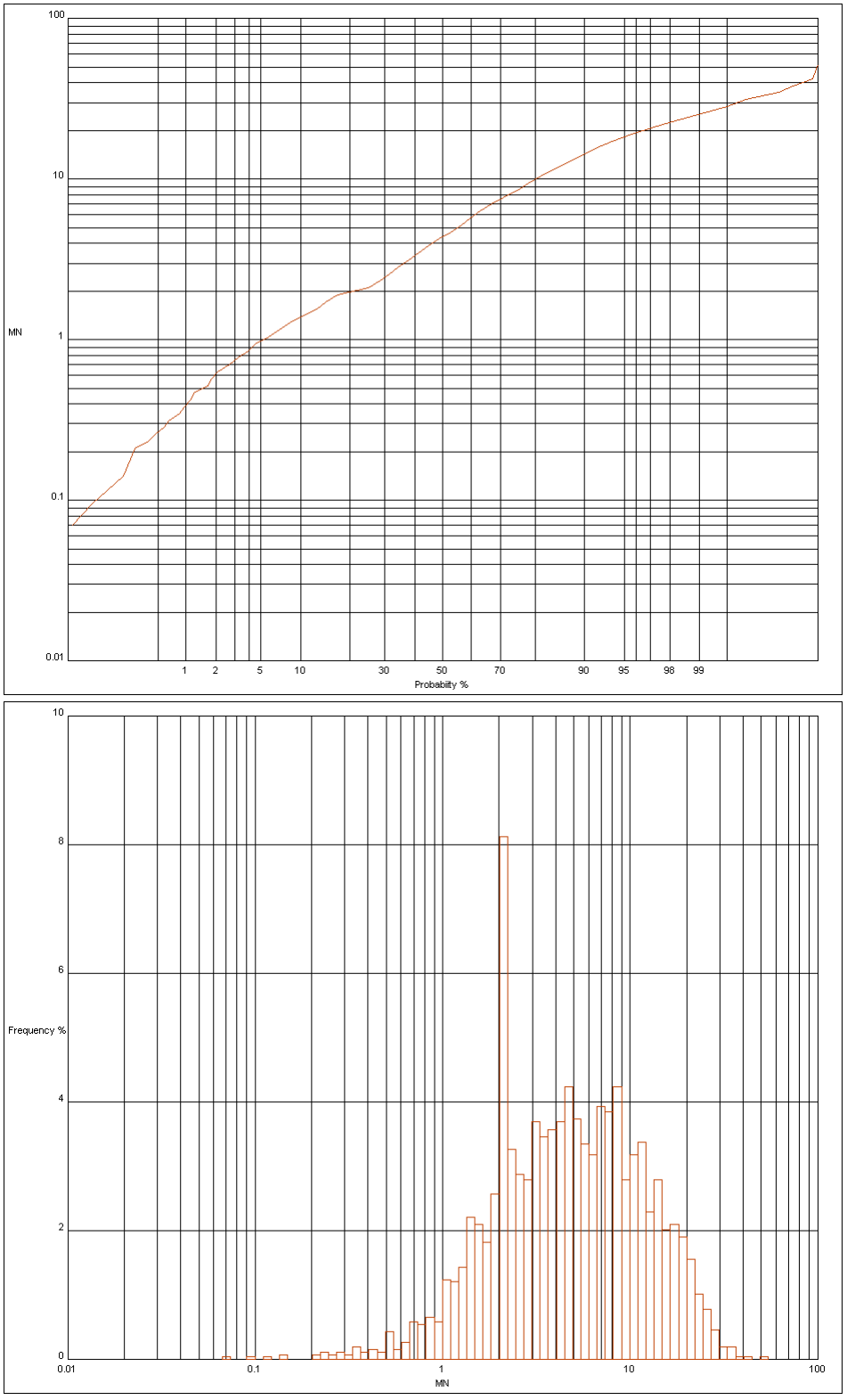
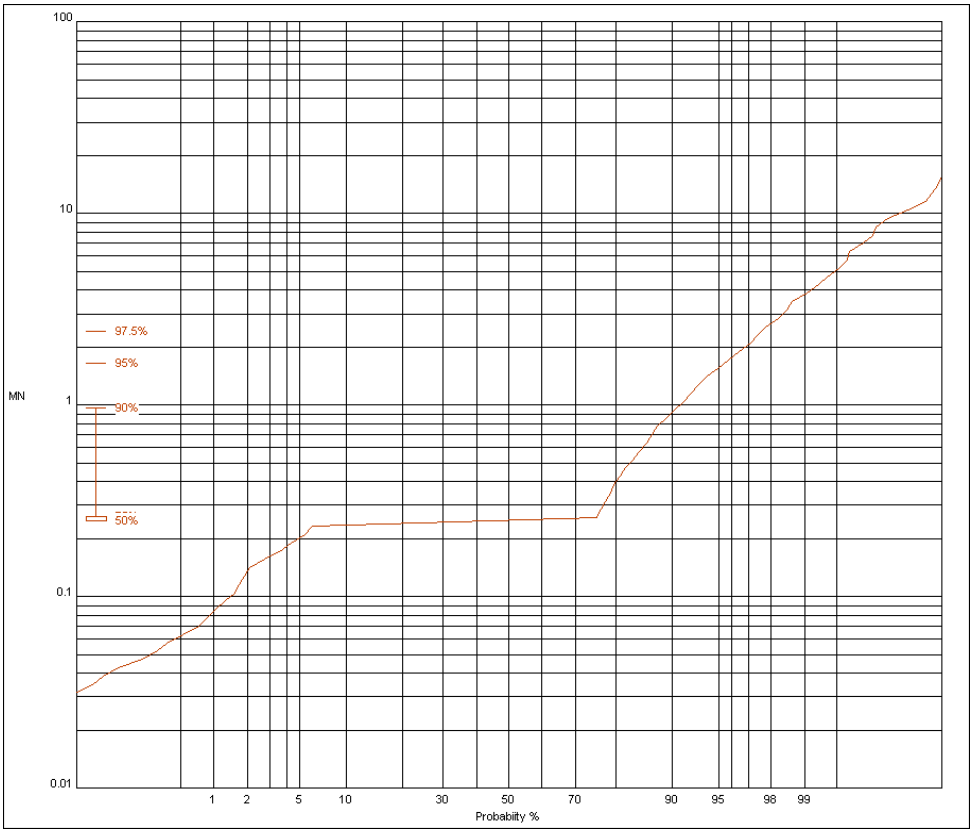
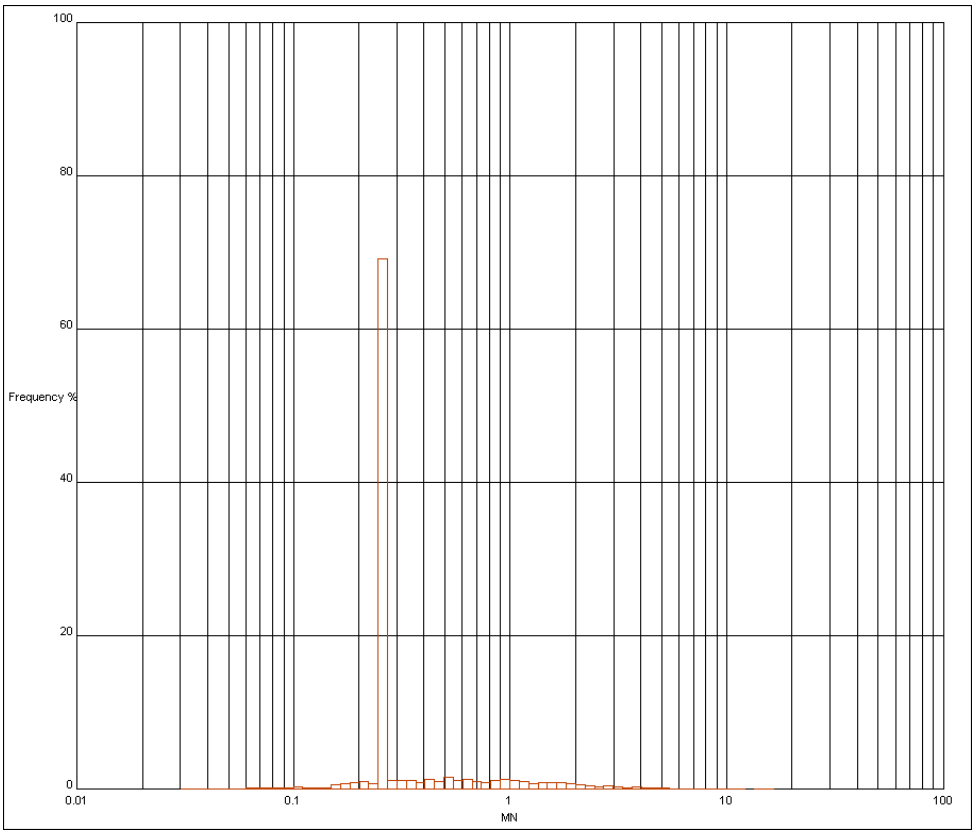


Figure 17.5_2
Los Pumas Project – Southern Hemisphere Mining
Basic Statistics Mn (%) Non-Manto Domains





17.6 Variography

Variography is used to describe the spatial variability or correlation of an attribute (manganese grades, etc). The spatial variability is traditionally measured by means of a variogram, which is generated by determining the averaged squared difference of data points at a nominated distance (h), or lag. The averaged squared difference (variogram or γ(h)) for each lag distance is plotted on a bivariate plot, where the X-axis is the lag distance and the Y-axis represents the average squared differences (γ(h)) for the nominated lag distance.

In this document, the term "variogram" is used as a generic word to designate the function characterising the variability of variables versus the distance between two samples. Fitted to the determined experimental variography is a series of mathematical models which, when used in the kriging algorithm, will recreate the spatial continuity observed in the variography.

The variography generated for the Los Pumas deposit was based on the 2 metre composite data coded with the mineralisation interpretation. Drillhole data is on variable 50m x 50m nominal spacings. Variography was generated using Isatis software. The correlogram was selected as the best spatial measure to deal with the heteroscedastic characteristics of the data (clustering of data and zonal anisotropy in grades).

Two structure spherical models were used to model the correlograms for Mn. Variogram orientations and anisotropies reflect obvious geological and visible data trends. Anisotropic variograms for most variables were oriented with no plunge for the major axis and shallow west dip for the semi-major axis reflecting both known mineralisation trends.

Variogram quality was generally moderate to good for variables and mineralised zones having reasonable distribution and quantity of data. Nugget effects were well defined. The majority of variance was commonly described by at least the first four lags of the experimental variogram.

Note that for variography for the contaminants (SiO_2, Fe_2O_3, Al, K and P) was borrowed from Mn variography. This was due to the variables' marginal to poor quality variogram results related to data quantity, domaining (primarily for Mn), and spatial distribution issues.

The Mn grade variograms were generally well structured with a well defined nugget variance at around 25 to 30% in both manto and non-manto domains. The ranges observed vary from 120 to 160m in the manto domains to 350m in the non-manto domains. (Figures 17.6_1 and 17.6_2).The variography for ZONECODE 3 was applied to all Manto domains as the domain has the most data and produced a reliable correlogram.

Figure 17.6_1
Los Pumas Project - Southern Hemisphere Mining Limited
Modelled Experimental Correlogram
Non-Manto Domains – Mn > 0

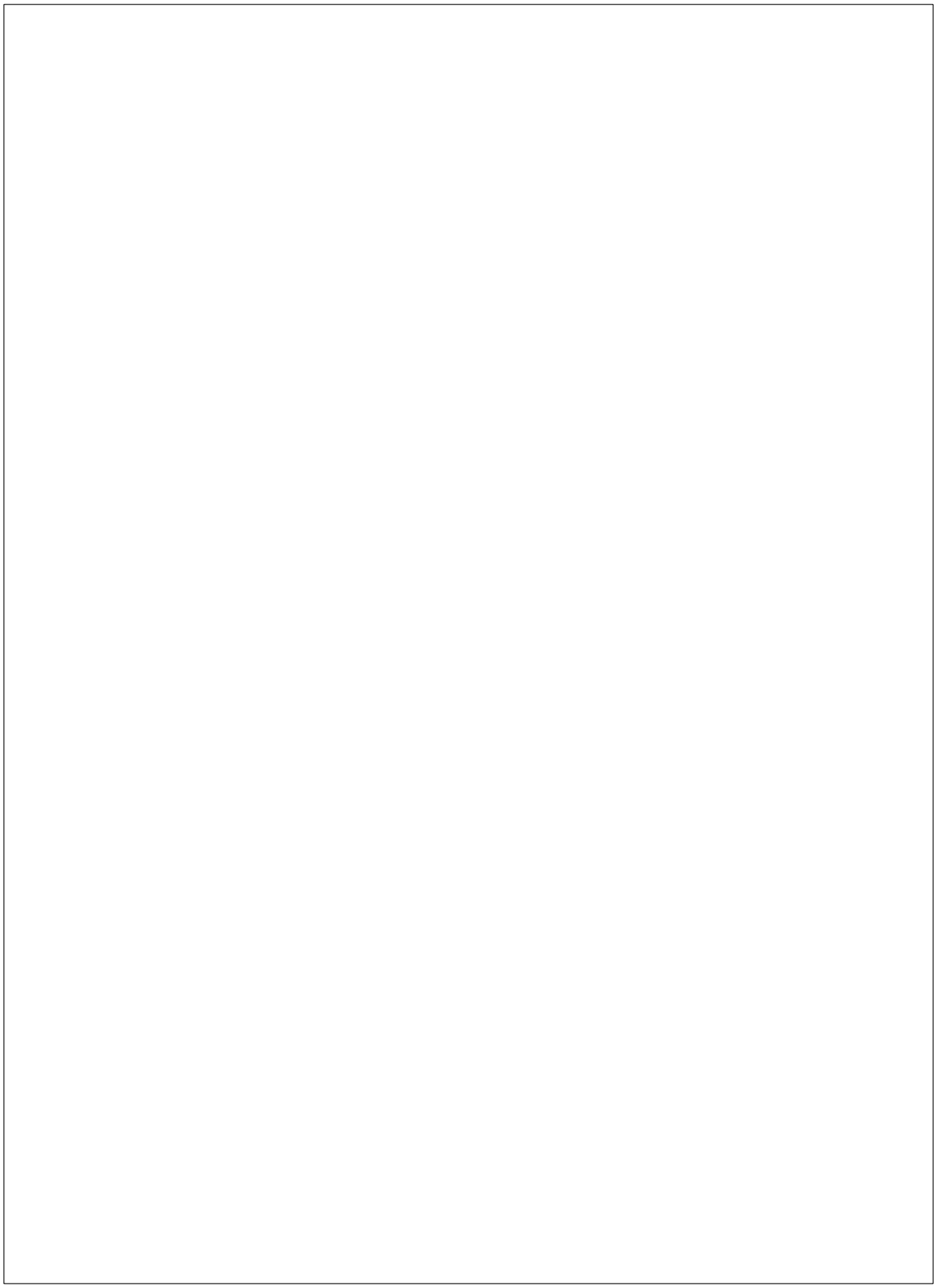


Figure 17.6_2
Los Pumas Project - Southern Hemisphere Mining Limited
Modelled Experimental Correlogram
ZONECODE 3 – Mn > 0

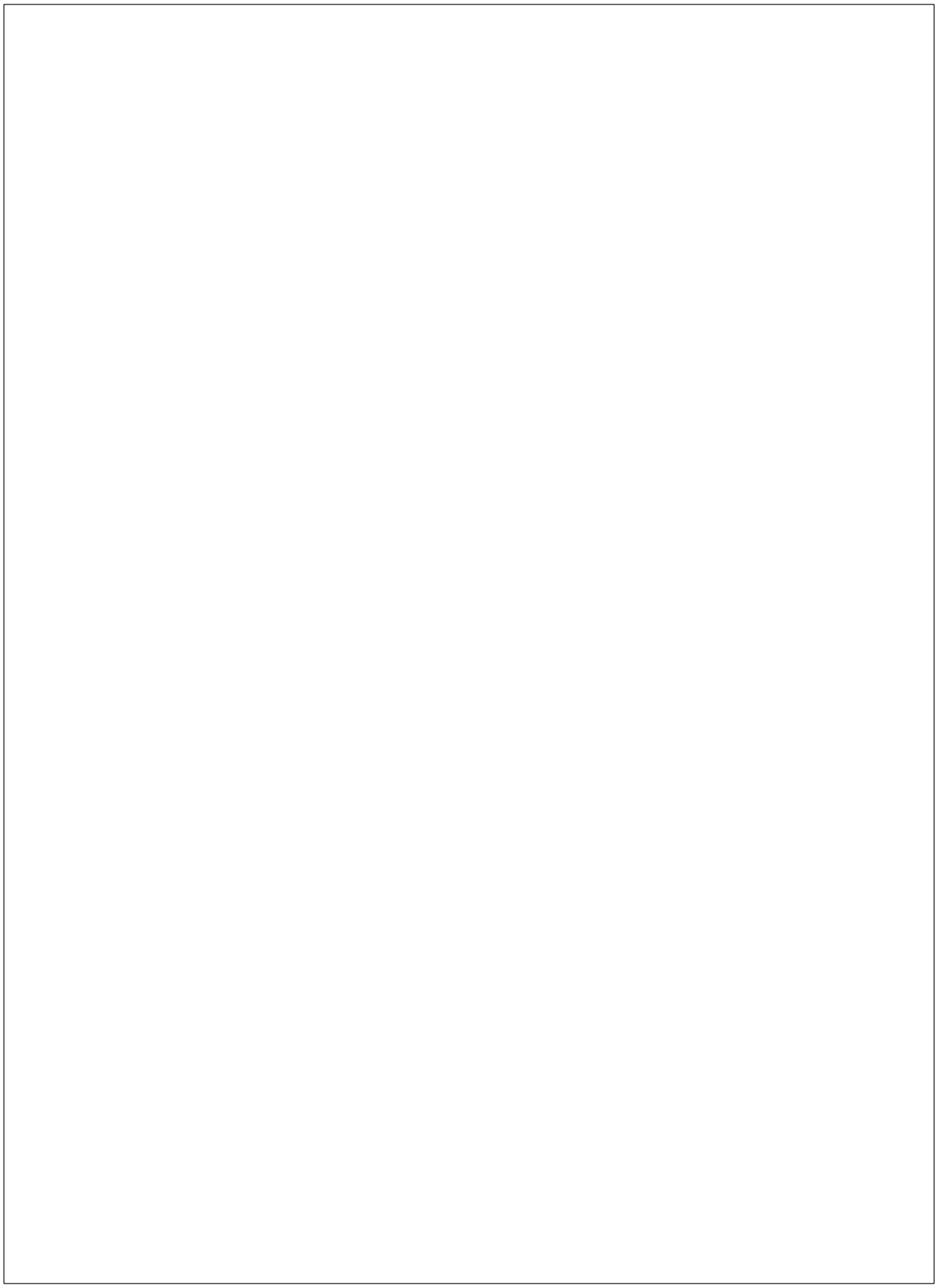


Table 17.6_1
Los Pumas Project
Semi-Variogram Models

Domain	Variable	Major Axis		Semi Major Axis		Minor Axis		Relative Nugget (C_0%)	Sill 1 (C_1%)	Range Structure 1 (m)			Sill 2 (C_2%)	Range Structure 2 (m)		
		Dip (º)	Azimuth (º)	Dip (º)	Azimuth (º)	Dip (º)	Azimuth (º)			Major Axis	Semi Major Axis	Minor Axis		Major Axis	Semi Major Axis	Minor Axis
Manto	Mn	0	200	-5	290	-85	110	30	33	70	30	3	37	120	70	9
	SiO_2	0	200	-5	290	-85	110	30	33	70	30	3	37	120	70	9
	Fe_2O_3	0	200	-5	290	-85	110	30	33	70	30	3	37	120	70	9
	Al	0	200	-5	290	-85	110	30	33	70	30	3	37	120	70	9
	K	0	200	-5	290	-85	110	30	33	70	30	3	37	120	70	9
	P	0	200	-5	290	-85	110	30	33	70	30	3	37	120	70	9
Non-Manto	Mn	0	200	-5	290	-85	110	30	60	120	80	6	10	450	350	25
	SiO_2	0	200	-5	290	-85	110	30	60	120	80	6	10	450	350	25
	Fe_2O_3	0	200	-5	290	-85	110	30	60	120	80	6	10	450	350	25
	Al	0	200	-5	290	-85	110	30	60	120	80	6	10	450	350	25
	K	0	200	-5	290	-85	110	30	60	120	80	6	10	450	350	25
	P	0	200	-5	290	-85	110	30	60	120	80	6	10	450	350	25

17.7 Block Modelling

The block model was generated using the Datamine mining software. A parent block size of 25mE x 25mN x 2mRL was selected with sub-blocking to 6.25mE x 6.25mN cell size to improve volume representation of the interpreted wireframe models. An 'infinite splitting" facility was used generate sub-cells in the Z direction to achieve a good volume fit inside the thinner, and very flat manto zones. The average cell size in the Z direction is 1.3m. The block model parameters are shown in Table 17.7_1. Each block was characterized by a series of attributes, as described in the Table 17.7_2.

Table 17.7_1
Los Pumas Project – Southern Hemisphere Mining
Block Model Parameters

	East	North	Elevation
Minimum Coordinates	432,200	8,002,700	3660
Maximum Coordinates	435,200	8,007,700	3890
Parent Block size (m)	25	25	2
Minimum Sub-Block Size (m)	6.25	6.25	0.002

Table 17.7_2
Los Pumas Project – Southern Hemisphere Mining
Datamine Block Model Attributes List

Attribute	Type	Description
IJK	Numeric	Parent Cell Identifier
XC	Numeric	Centroid of cell easting
YC	Numeric	Centroid of cell northing
ZC	Numeric	Centroid of cell RL
XINC	Numeric	Cell easting dimension
YINC	Numeric	Cell northing dimension
ZINC	Numeric	Cell RL dimension
ROCKTYPE	Numeric	1=Ash, 3=Ignimbrite, 4=Volcanic Sediments
RESCODE	Numeric	1=Measured, 2=Indicated, 3=Inferred,4=Unclassified
DENSITY	Numeric	Bulk Density
ZONECODE	Numeric	1-32=Manto Domains; 999=Non-Manto Domains
MNOK	Numeric	Mn (%) grade estimated by Ordinary Kriging
NSOK	Numeric	Number of composites used in grade interpolation for Mn estimate
PASSOK	Numeric	Interpolation Pass for Mn estimate
DISTOK	Numeric	Distance to the nearest Mn composite
VAROK	Numeric	Kriging Variance for Mn estimate
SiO_2	Numeric	SiO_2(%) grade estimated by Ordinary Kriging
Fe_2O_3	Numeric	Fe_2O_3 (%) grade estimated by Ordinary Kriging
Al	Numeric	Al (%) grade estimated by Ordinary Kriging
K	Numeric	K (%) grade estimated by Ordinary Kriging
P	Numeric	P (%) grade estimated by Ordinary Kriging

17.8 Grade Estimation

Grade estimation for Los Pumas was completed using Ordinary Kriging. The search and estimation parameters are shown in Table 17.8_1

The non-manto domain was estimated as one unit. The three rock types were combined to ensure sufficient data was available for interpolation.

Manto style mineralisation was estimated by hard boundaries for each individual mantle. This is controlled by the ZONECODE field in Datamine.

The Manto Domains used a 3 pass strategy for each ZONECCODE. The search strategy used in the model is as follows:

- First pass searches used a maximum anisotropic range of 60 metres for all grade variables.
- If a block was not estimated in the first pass, a second pass search utilized a maximum range of twice the initial search radius.
- If a block was not estimated in the second pass, a third pass search utilized a maximum range of three times the initial search radius.
- The orientation of the search axes was identical to the variogram model orientations.
- The maximum number of composites used for any estimate was restricted to 24:

The Non-Manto Domains used a 3 pass strategy. The search strategy used in the model is as follows:

- First pass searches used a maximum anisotropic range of 300 metres for all grade variables.
- If a block was not estimated in the first pass, a second pass search utilized a maximum range of 1.5 times the initial search radius.
- If a block was not estimated in the second pass, a third pass search utilized a maximum range of two times the initial search radius.
- The orientation of the search axes was identical to the variogram model orientations.
- The maximum number of composites used for any estimate was restricted to 24.

All manto wireframes were checked visually to ensure that there was adequate filling, particularly in the Z direction on the thinner flatter zones. The top manto was projected above the topographic surface to ensure that there were no edge effects in volume filling and this was then cut with the surface topography.

Table 17.8_1

Los Pumas Project

Search Neighbourhood Parameters Used for Resource Model Estimation

Domain	Variable	Search Ellipse Ranges			Search Ellipse Orientation			First Pass		Second Pass			Third Pass			Max. No. of Comps From Any Drillhole
		Major Axis	Semi-Major Axis	Minor Axis	Major Axis	Semi-Major Axis	Minor Axis	Min. No. of Comps Used	Max. No. of Comps Used	Search Volume Factor	Min. No. of Comps Used	Max. No. of Comps Used	Search Volume Factor	Min. No. of Comps Used	Max. No. of Comps Used	
Manto	All	60	60	15	$-0^{o} \rightarrow 200^{o}$	$-5^{o} \rightarrow 290^{o}$	$-85^{o} \rightarrow 110^{o}$	10	24	2	6	24	3	4	24	2
Non-Manto	All	300	240	16	$-0^{o} \rightarrow 200^{o}$	$-5^{o} \rightarrow 290^{o}$	$-85^{o} \rightarrow 110^{o}$	8	24	1.5	4	24	2	2	24	2

Figures 17.8_1 and 17.8_2 display the comparison of the drilling and the block model and the adequate reflection of the drill assay results in the model in both a vertical and a lateral sense, at both the moderate and local scale.

Figure 17.8_1
Los Pumas Project – Southern Hemisphere Mining
Mn Block Model – Cross Section 8005362N

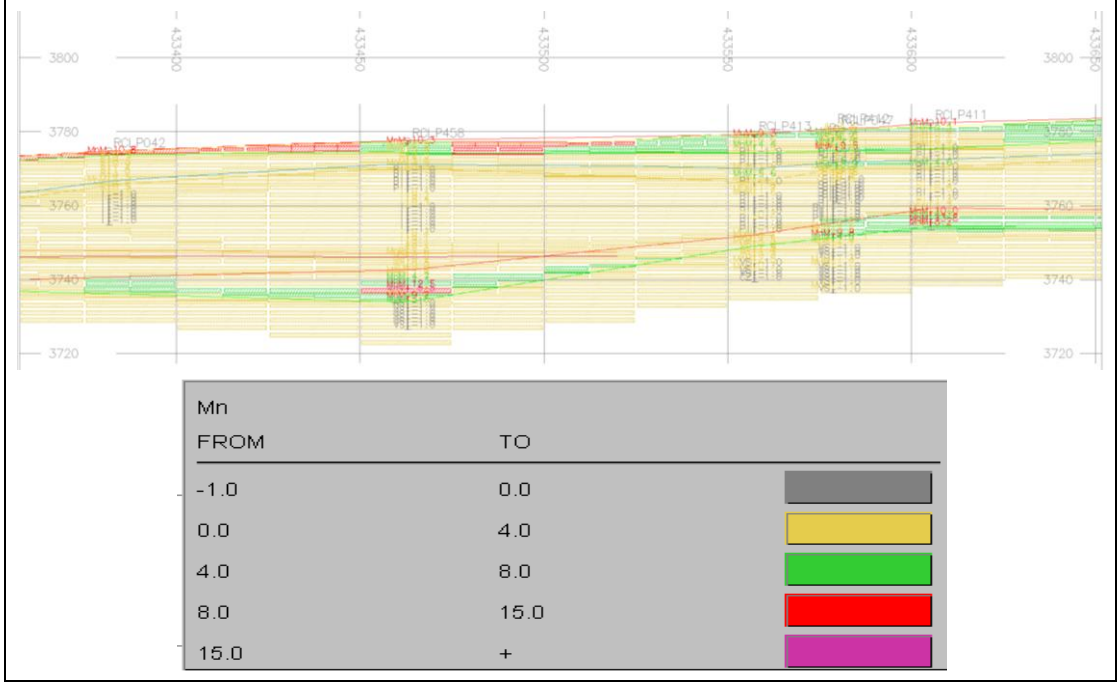
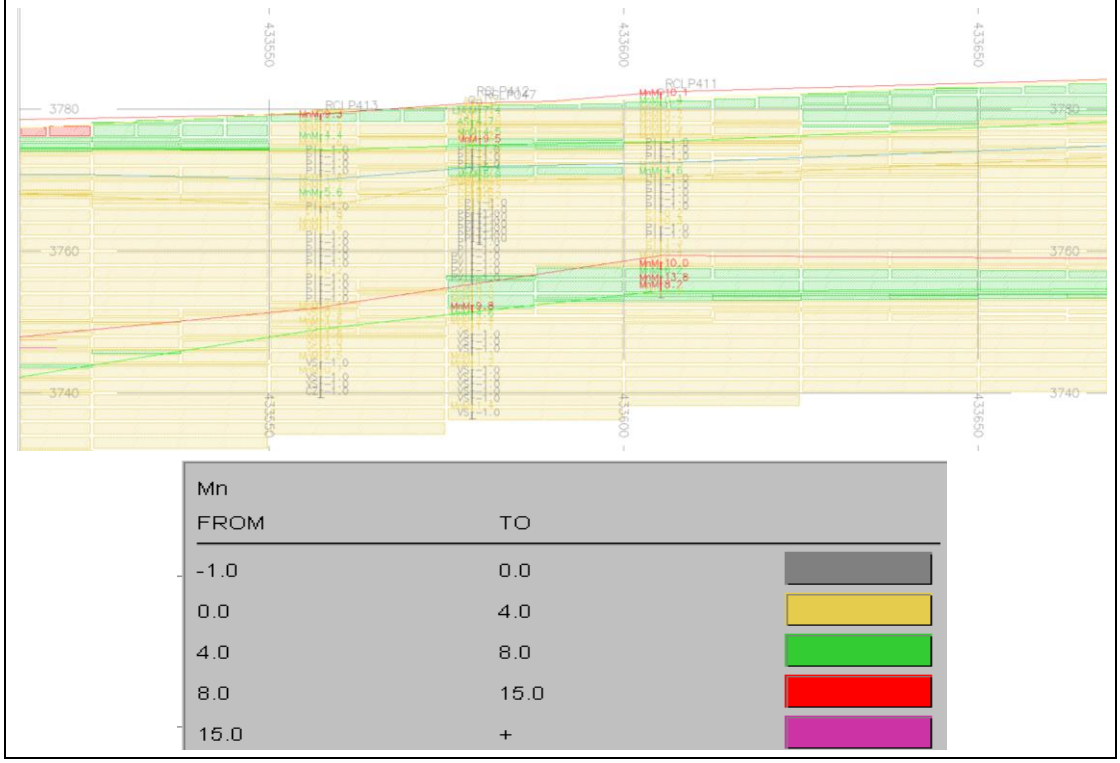


Figure 17.8_3
Los Pumas Project – Southern Hemisphere Mining
Mn Block Model – Cross Section 8005362N



17.9 Ancillary Fields

There has been no depletion applied to this model as no significant mining has occurred.

The mean bulk densities for lithologies and Mn grade ranges have been applied as per Table 14.3_1.

17.10 Resource Classification

The resource estimate has been classified as Measured, Indicated, and Inferred Mineral Resources based on the confidence of the input data, geological interpretation, and grade estimation. This is summarised in Table 17.10_1 as confidence levels of key criteria. An example of the classification is given in Figure 17.10_1.

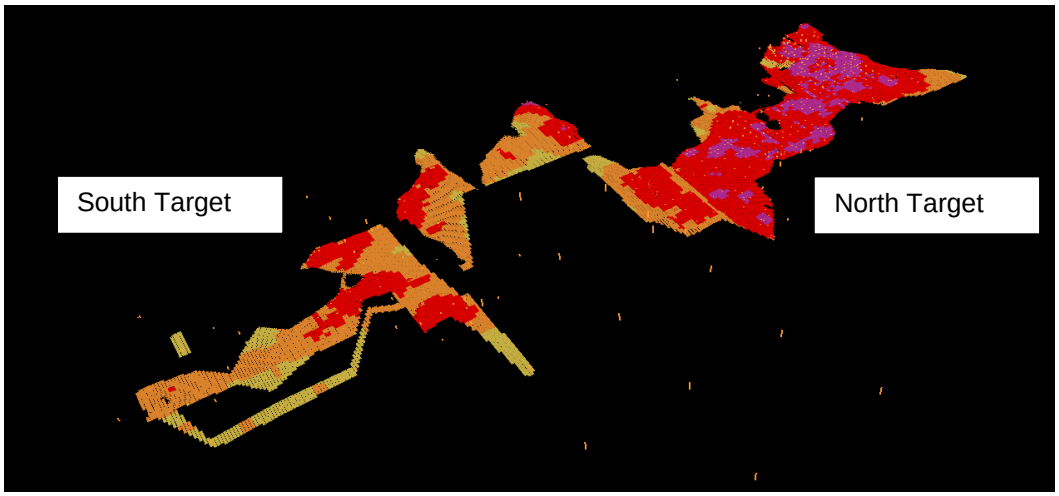
Table 17.10_1
Los Pumas Project – Southern Hemisphere Mining
Confidence Levels of Key Criteria

Items	Discussion	Confidence
Drilling Techniques	RC and DDH – Good quality with good sample return	High
Logging	Standard nomenclature adopted. Mixed mineralisation and lithology codes.	Moderate
Drill Sample Recovery	Good for RC	Moderate to high
Sub-sampling Techniques and Sample Preparation	RC does not always allow sampling to geology	Moderate
Quality of Assay Data	Data available is good; quantity is lacking	Moderate
Verification of Sampling and Assaying	Assessment of sampling and assaying been completed by SWRPA.	High
Location of Sampling Points	Survey of all collars conducted with DGPS by professional surveyors. No downhole survey due to shallow depth of holes; topography is of very low quality – edges of plateaus need to be better defined to improve volume definition.	Moderate - High
Data Density and Distribution	Drilling on a notional 50m x 50m to 100m x 100m spacing consisting of RC and DDH drilling to establish continuity.	Moderate to High
Audits or Reviews	Logging etc assessed by Coffey Mining.	Moderate
Database Integrity	Checking against assay certificates completed by Coffey Mining.	Moderate to High
Geological Interpretation	Mineralisation interpretations are considered as robust.	High
Estimation and Modelling Techniques	Ordinary Kriging is industry standard method.	High
Cutoff Grades	Reasonable cutoff grades applied for the proposed mining method	High
Mining Factors or Assumptions	Assumed open pit mining with low to moderate selectivity.	NA
Metallurgical Factors or Assumptions	Not applied	NA
Tonnage Factors (Insitu Bulk Densities)	Insufficient quantity of bulk density data collected by industry standard methodologies.	Medium

The Resource Statement has been prepared and reported in accordance with Canadian National Instrument 43-101, Standards of Disclosure for Mineral Projects of February 2001 (the Instrument) and the classifications adopted by CIM Council in December 2005.

Furthermore, the resource classification is also consistent with the Australasian Code for the Reporting of Mineral Resources and Ore Reserves of December 2004 (the Code) as prepared by the Joint Ore Reserves Committee of the Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Mineral Council of Australia (JORC).

Figure 17.10_1
Los Pumas Project – Southern Hemisphere Mining
Isometric View of Manto Interpretations Looking North- West Displaying Drillholes and Resource Codes



RESCODE NAME	FROM	TO
MEAS	1.0	1.0
IND	2.0	2.0
INF	3.0	3.0
UNCL	4.0	4.0

The incorporation of a significant number of drillholes in block estimates is considered to contribute to high confidence in those estimates where blocks are fully informed by data.

The resource classification for manto domains is displayed in Figure 17.10_1.

17.11 Mineral Resource

The Mineral Resource for the Los Pumas Manganese Project is shown in Table 17.11_1 for the manto domains.

Table 17.11_1
Los Pumas Project – Southern Hemisphere Mining
Grade Tonnage Report
(In Situ as at February 9th 2011)
Resource Model at 4% Mn cutoff; Manto Domains Only

Resource	Tonnes (Mt)	Mn (%)	SiO_2 (%)	Fe_2O_3 (%)	Al (%)	K (%)	P (%)
Measured	5.27	7.39	57.85	2.78	5.62	2.88	0.05
Indicated	13.06	7.65	55.00	2.96	5.64	2.92	0.05
Measured and Indicated	**18.34**	**7.58**	**55.82**	**2.91**	**5.62**	**2.91**	**0.05**
Inferred	5.39	8.59	51.44	2.72	5.49	2.69	0.06

The mineral resource has been quoted at a nominal 4.0% manganese cutoff grade. This is used on the basis that semi-bulk to bulk open pit mining of this resource is carried out.

Work carried out by SHM validates that this cutoff grade is economically justifiable.

Break even cutoff grade is 2.5% Mn.

18 OTHER RELEVANT DATA AND INFORMATION

There is no other known data or information on the Los Pumas Project relevant to this report that has not been disclosed elsewhere in the document.

19 INTERPRETATION AND CONCLUSIONS

- The change in style of interpretation from a grade based approach in October 2010 to a geological based approach now adds confidence to accuracy of the current the resource estimate.
- The approach taken with interpretation has been a joint one between Coffey and SHM. This promotes greater ownership of the resource by SHM.
- The removal of non-manto style mineralisation adds confidence to the resource estimate. To some degree the old low grade domain has been incorporated in the new manto domains; however the robustness of the interpretation and estimate has increased.
- The increase in Indicated Resource is mainly the result of the increased overall thickness of the new interpretation and to a lesser extent the slightly increased search radii. This is offset by increasing the requirements for the minimum number of composites from previous estimates.
- The use of a nominal low grade value (1.38% Mn) for unsampled intervals within manto domains is likely to be conservative.

20 RECOMMENDATIONS

- Attempt to define feeder zones in three dimensions with additional angled drilling.
- Assay all remaining unassayed samples within the manto domains.
- Increase the frequency of blanks and standards to industry standard in the analytical process, and furthermore, implement an appropriate QAQC program.
- The resource classification should be continued to be refined to ensure issues such as geological uncertainty are taken into account.
- Collect more bulk density data. It is considered that approximately 500 bulk density measurements are required to make an adequate tonnage estimate for this deposit, particularly if tonnage is grade dependent in each major lithology.

21 REFERENCES

AusIMM. 1995. Code and Guidelines for Assessment and Valuation of Mineral Assets and Mineral Securities for Independent Expert Reports (The Valmin Code) Issued April 1995.

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Coffey Mining Pty Ltd. (16 October 2009) Los Pumas Manganese Project, Chile Technical Report.

Coffey Mining Pty Ltd. (10 May 2010) Los Pumas Manganese Project, Chile Technical Report.

Coffey Mining Pty Ltd. (14 October 2010) Los Pumas Manganese Project, Chile Technical Report.

Southern Hemisphere Mining. Various internal data and reports.

22 DATE AND SIGNATURE PAGE

The effective date of this Report is 21st March 2011

[signed]

B.Sc Geol. MAUSIMM

I Dreyer
Principal Consultant
Coffey Mining Pty Ltd

21st March 2011

23 CERTIFICATES

Certificate of Qualified Person

Coffey Mining

As author of the report entitled "Los Pumas Manganese Project, Chile, Technical Report" (the "Report"), dated 21 March 2011, I hereby state:

1. My name is Ian Dreyer and I am a Principal Consultant of Coffey Mining Pty Ltd of 1162 Hay Street, West Perth, 6005, Australia.
2. I am a practicing geologist with 23 years of Mining and Exploration geological experience. I have worked in Australia, Africa, Indonesia and currently Peru. I am a member of the Australian Institute of Mining and Metallurgy ("MAUSIMM")
3. I am a graduate of Curtin University of Western Australia and hold a Bachelor of Applied Science Degree in Mineral Exploration and Mining Geology (1994). I have practiced my profession continuously since 1988.
4. I am a Qualified Person as that term is defined in National Instrument 43-101 (Standards of Disclosure for Mineral Projects) (the Instrument).
5. I have personally visited the Los Pumas Project on 15th December 2010.
6. I have prepared and take responsibility for all Sections of this report, except for Section 3 and 16.
7. I hereby consent to the use of this Report and my name in the preparation of documents for a public filing including a prospectus, an annual information filing,, brokered or non-brokered financing(s), or for the submission to any Provincial or Federal regulatory authority.
8. I am not aware of any material fact or material change with respect to the subject matter of the Report that is not reflected in the Report, or the omission to disclose which makes the Report misleading and that as of the date of this certificate, to the best of my knowledge, information and belief, the Report contains all scientific and technical information that is required to be disclosed to make the Report not misleading.
9. I have read and understand National Instrument 43-101 and am independent of the issuer as defined in Section 1.4 and prior to visiting Los Pumas Project I had no involvement in or knowledge of the property that is the subject of this Report.
10. I have read the National Instrument and Form 43-101F1 (the "Form") and the Report has been prepared in compliance with the Instrument and the Form.
11. I have not received, nor do I expect to receive, any interest, directly or indirectly, in the Property that is the subject of this report and do not hold nor expect to receive securities of Southern Hemisphere Mining Limited or any associate or affiliate of such company.

Dated at Lima, Peru, on 21 March 2011.

[signed]

B.Sc Geol MASUIMM

Ian Dreyer
Principal Consultant
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Date: 21 March 2011
Ref: J343\SHM

CERTIFICATE OF AUTHOR

I, Tony Frank Mason, Ph.D., C.Eng., F.I.M.M.M., do hereby certify that:

I am the principal metallurgist for Mineral Processors (WA) Pty Ltd, of 83A Wheatley Street, Gosnells, Western Australia 6110

I graduated with a Ph.D./B.Sc. (Engineering) in Metallurgy from Imperial College of Science & Technology, University of London on 7 August 1973.

I am a Fellow of the Institute of Materials, Minerals and Mining.

I have worked as a metallurgist for a total of 43 years in the mineral processing operations at numerous mining operations in many parts of Africa, South America, Australia, India, China and Indonesia.

I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfil the requirements to be a "qualified person" for the purposes of NI 43-101.

I am responsible for section 16 of the NI 43-101 Technical Report titled Los Pumas Project, Chile Technical Report and dated 21 March 2011 that have been prepared in compliance with NI 43-101 and consent to the inclusion of this section in the Technical Report.

I have not visited the site and have had no prior involvement with the property that is the subject of this Technical Report.

I am not aware of any material fact or material change with respect to the subject matter of this Technical Report that is not reflected in this Technical Report, the omission to disclose which makes this Technical Report misleading.

I am independent of the issuer applying all of the tests in section 1.4 of National Instrument 43-101.

T F Mason .

Tony F. Mason