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MINERAL & FINANCIAL INVESTMENTS LIMITED
REDCORP – EMPREENDIMENTOS MINEIROS, LDA
ASCENDANT RESOURCES INC.

TECHNICAL REPORT ON THE RESOURCE ESTIMATE UPDATE FOR THE LAGOA SALGADA PROJECT SETÚBAL DISTRICT PORTUGAL

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1.0 SUMMARY

1.1 AUTHORIZATION AND PURPOSE

Micon International Limited (Micon) has been retained by Mineral & Financial Investments Limited, Redcorp – Empreendimentos Mineiros, Lda (Redcorp) and Ascendant Resources Inc. (Ascendant) to update the mineral resource estimates for the Lagoa Salgada (LS) Project in the Setúbal District of Portugal, and to prepare an independent Technical Report in accordance with the requirements of Canadian National Instrument 43-101 (NI 43-101). Twenty-six (26) additional drill holes have been completed on the LS Project since the last mineral resource estimate in February 2019, culminating in the need for an updated resource estimate and Technical Report. The purpose of this report is to support the public disclosure of a mineral resource update of the LS Project in the light of added information arising from the latest drilling conducted between April and August 2019.

1.2 PROPERTY DESCRIPTION AND LOCATION

The LS Project is located approximately 80 km southeast of Lisbon, Portugal's capital; and approximately 120 km by road. It is located approximately 50 km southeast of Setúbal, the regional administration centre, 12 km northeast of the municipality of Grândola and approximately three km north of the village of Cilha do Pascoal.

1.3 OWNERSHIP

The LS Project is within a single exploration permit covering an area of approximately 10,700 hectares. The exploration permit, Contrato MN/PP/009/08, is held by a joint venture between Redcorp and Empresa de Desenvolvimento Mineiro, S.A. (EDM) which is a Portuguese Government owned company for the mining sector. Redcorp holds an 85% interest and EDM holds a 15% interest. The exploration permit was granted by the Direção Geral de Energia e Geologia (DGEG), or General Directorate for Energy and Geology. The exploration permit is registered in the Diário da República, Public Register, under Contrato (extrato) n.º 377/2015.

Redcorp is a 75% held subsidiary of TH Crestgate, a Swiss investment company and a 25% held subsidiary of Ascendant Resources Inc., a Canadian company listed on the Toronto Stock Exchange.

1.4 GEOLOGICAL OUTLINE

1.4.1 Regional Setting

The LS Project is located within the northwestern portion of the Iberian Pyrite Belt (IPB). The IPB is one of the most prolific European metallic provinces, hosting one of the largest concentrations of massive sulphides in the Earth's crust; it contains more than 1,600 million metric tons (Mt) of massive sulphide mineralization and about 250 Mt of stockwork mineralization (Oliveira et al., 2005, 2006; Tornos, 2006). The IPB hosts more than 90 massive sulphide deposits. Ten deposits are in Portugal where currently only Neves Corvo and Aljustrel are being exploited.

1.4.2 Property Geology and Mineralization

The entire property (exploration permit) is covered by a paleo-fluvial fan that ranges in thickness up to 200 m within the Tertiary Sado Basin and averages 135 m over the LS Project. The Tertiary sedimentary rocks unconformably overlie rocks of the Volcano-Sedimentary Complex of the IPB. This sequence of rocks ranges in age from Upper Famenian to Middle Visean and is represented on the property by a northwest-southeast lineament which is approximately 8.0 km long and over 1 km wide.

The LS Project currently has three known deposits; the North, Central and South deposits. The deposits are folded, faulted, and interpreted to occur mostly on the subvertical-overturned and intensely faulted limb of a southwest-verging anticline (Matos et al., 2003).

The North deposit is further offset by an east-west-trending Alpine-age fault in the north, with a 50-m downthrow of the northern block (Far North Target), but whose horizontal amount and sense of displacement is unknown (Matos et al., 2000).

The mineralization comprises massive sulphide and semi-massive sulphide lenses and sulphide veins and veinlets and is mainly hosted by a thick (up to 250 m) and strongly chloritized quartz-phyric rhyodacite unit. Currently, the mineralization is known to extent continuously over a cumulative strike length of 1.7 km in a north-northwesterly to south-southeasterly direction.

1.4.3 Deposit Types

The LS Project deposit is a polymetallic, volcanogenic, massive, sulphide (VMS) deposit. VMS deposits are a type of metal sulphide deposits which are associated with and created by volcanic-associated hydrothermal events in submarine environments. They occur within environments dominated by volcanic or volcanic derived volcano-sedimentary rocks, and the deposits are coeval and coincident with the formation of the volcanic rocks. Volcanogenic massive sulphide deposits form on the seafloor around undersea volcanoes along many mid ocean ridges, and within back-arc basins and forearc rifts.

These types of deposits consist of lenses of massive sulphide mineralization that were deposited at or near the sea floor as a result of precipitation from the venting of metalliferous hydrothermal fluids. These fluids typically exploit fault planes as fluid pathways and create a large zone of hydrothermal alteration in the rocks below the deposits. Commonly, these form in second and third order basins and are rapidly covered so they can be preserved.

VMS deposits are characterized by clusters of lenses occurring within a distinct stratigraphic layer. The extensive alteration zone observed on the LS Project suggests that hydrothermal activity was prolonged and that additional lenses associated with separate alteration zones may exist.

1.5 STATUS OF EXPLORATION

Due to the thick sedimentary cover, previous and current exploration programs have relied heavily on geophysical techniques, complemented by diamond drilling. Recent IP investigations conducted by Intelligent Exploration (I.E.) of Campbellford, Ontario, have successfully demonstrated that mineralization on the LS Project remains open in all directions but with a stronger signature on the eastern side of the currently drilled/known linear trend of about 1.7 km.

1.6 METALLURGY

Only preliminary metallurgical work has been completed to date. Plans are being made for more detailed investigations during 2019/20.

1.7 MINERAL RESOURCE ESTIMATE

The mineral resources estimated for the Lagoa Salgada Project are summarized in Table 1.1. All resource parameters are disclosed in Section 14.0. The effective date of the estimate is September 5, 2019.

Table 1.1
Summary of the Mineral Resource Estimate of the Lagoa Salgada Project as of September 5, 2019

Deposit	Category	Min Zones	Cut-off ZnEq%	Tonnes (kt)	Cu (%)	Zn (%)	Pb (%)	Sn (%)	Ag (g/t)	Au (g/t)	ZnEq (%)	AuEq (g/t)	Cu (kt)	Zn (kt)	Pb (kt)	Sn (kt)	Ag (k Oz)	Au (k Oz)
North	Measured(M)	GO	2.5	234	0.13	0.70	4.32	0.36	51	1.50	11.38	7.18	0.3	1.6	10.1	0.9	385.2	11.3
	Indicated(I)	GO	2.5	1,462	0.08	0.43	2.55	0.26	37	0.51	6.63	4.18	1.2	6.2	37.3	3.8	1,742.1	23.8
	M & I	**GO**	**2.5**	**1,696**	**0.09**	**0.47**	**2.79**	**0.27**	**39**	**0.64**	**7.28**	**4.60**	**1.5**	**7.9**	**47.4**	**4.6**	**2,127.2**	**35.1**
	Inferred	GO	2.5	831	0.08	0.48	2.62	0.17	27	0.37	5.66	3.57	0.7	4.0	21.8	1.4	727.6	9.9
	Measured(M)	MS	3.0	2,444	0.40	3.12	2.97	0.15	72	0.74	10.95	6.91	9.7	76.3	72.5	3.7	5,623.9	58.4
	Indicated(I)	MS	3.0	5,457	0.45	2.35	2.30	0.13	75	0.67	9.55	6.03	24.5	128.1	125.6	7.3	13,221.5	116.9
	M & I	**MS**	**3.0**	**7,902**	**0.43**	**2.59**	**2.51**	**0.14**	**74**	**0.69**	**9.98**	**6.30**	**34.2**	**204.4**	**198.1**	**10.9**	**18,845.5**	**175.2**
	Inferred	MS	3.0	1,529	0.23	1.96	1.32	0.09	45	0.49	6.36	4.01	3.6	30.0	20.2	1.4	2,219.7	24.0
	Measured(M)	Str	2.5	94	0.37	0.88	0.28	0.05	17	0.12	3.08	1.94	0.3	0.8	0.3	0.0	51.0	0.4
	Indicated(I)	Str	2.5	643	0.34	0.90	0.23	0.09	17	0.06	3.23	2.04	2.2	5.8	1.5	0.6	354.0	1.3
	M & I	**Str**	**2.5**	**737**	**0.34**	**0.90**	**0.24**	**0.09**	**17**	**0.07**	**3.21**	**2.03**	**2.5**	**6.6**	**1.7**	**0.6**	**405.0**	**1.7**
	Inferred	Str	2.5	142	0.24	1.12	0.39	0.04	17	0.09	2.95	1.86	0.3	1.6	0.6	0.1	75.6	0.4
North	**M & I**	**All zones**	**2.9**	**10,334**	**0.37**	**2.12**	**2.39**	**0.16**	**64**	**0.64**	**9.06**	**5.72**	**38.2**	**219.0**	**247.2**	**16.2**	**21,377.7**	**212.0**
North	**Inferred**	**All zones**	**2.8**	**2,502**	**0.18**	**1.42**	**1.70**	**0.12**	**38**	**0.43**	**5.93**	**3.74**	**4.6**	**35.6**	**42.6**	**2.9**	**3,022.8**	**34.3**
					Average Grade								**Contained Metal**					
Deposit	**Category**	**Min Zones**	**Cut-off CuEq%**	**Tonnes (kt)**	**Cu (%)**	**Zn (%)**	**Pb (%)**	**Sn (%)**	**Ag (g/t)**	**Au (g/t)**	**CuEq (%)**		**Cu (kt)**	**Zn (kt)**	**Pb (kt)**	**Sn (kt)**	**Ag (k Oz)**	**Au (k Oz)**
Central	Inferred	Str	0.9	1,707	0.15	0.16	0.06	0	12	2.22	1.66		2.5	2.7	1.0	-	635.2	121.9
South	Measured(M)	Str/Fr	0.9	0	—	—	—	—	—	—	—							
	Indicated(I)	Str/Fr	0.9	2,473	0.47	1.53	0.83	0.00	19	0.06	1.54		11.5	37.9	20.6	0.0	1,484.7	4.7
	M & I	**Str/Fr**	**0.9**	**2,473**	**0.47**	**1.53**	**0.83**	**0.00**	**19**	**0.06**	**1.54**		**11.5**	**37.9**	**20.6**	**0.0**	**1,484.7**	**4.7**
	Inferred	Str/Fr	0.9	6,085	0.40	1.34	0.80	0.00	17	0.05	1.37		24.6	81.6	48.7	0.0	3,285.2	10.0

Notes:

The mineral resources were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Definitions and Standards (2014).
Min(eralized) Zones: GO=Gossan, MS=Massive Sulphide, Str=Stringer, Str/Fr=Stockwork
ZnEq% = ((Zn Grade*25.35)+(Pb Grade*23.15)+(Cu Grade * 67.24)+(Au Grade*40.19)+(Ag Grade*0.62)+(Sn Grade*191.75))/25.35
CuEq% = ((Zn Grade*25.35)+(Pb Grade*23.15)+(Cu Grade * 67.24)+(Au Grade*40.19)+(Ag Grade*0.62))/67.24
AuEq g/t = ((Zn Grade*25.35)+(Pb Grade*23.15)+(Cu Grade * 67.24)+(Au Grade*40.19)+(Ag Grade*0.62)+(Sn Grade*191.75))/40.19
Metal Prices: Cu $6,724/t, Zn $2,535/t, Pb $2,315/t, Au $1,250/oz, Ag $19.40/oz, Sn $19,175/t
Densities: GO=3.12, MS=4.76, Str=2.88, Str/Fr=2.88

1.8 INTERPRETATION AND CONCLUSIONS

1.8.1 Geology and Mineralization

Geological reasoning suggests that the subdivision of the LS Project into the North, Central and South deposits is arbitrary, being based on the existing drill pattern. With further concerted systematic drilling, the three deposits are likely to coalesce into a single zinc-lead-copper VMS system, manifesting/displaying its macro-genetic features varying from secondary gossan to primary massive sulphide and ending with peripheral primary/secondary stringer/fissure type mineralization in the waning phases of volcanic activity. This interpretation is backed by geophysics which shows that all three deposits lie on a continuous coincidental Induced Polarization (IP) chargeability anomaly with an estimated geological strike length of 1.7 km in an SSE to NNW direction from the South deposit to beyond the North deposit and terminating against the Alpine fault.

The geometry of the MS domain of the North deposit appears to suggest that the main vent of the volcanic activity that gave rise to the LS deposit may be located at the northwestern end where the plunge swings westwards. However, this remains speculative until proven by additional drilling.

Drilling and geophysics results indicate that the mineralization remains open beyond the current limits of drilling, along strike in both directions and down plunge/dip. Geophysics results also indicate the potential to significantly increase mineral resources on the eastern flanks of all the deposits.

The massive sulphide intersections observed in drill holes LS 23 and LS-ST 12 on the eastern side of the South deposit suggest the possibility of another volcanic vent.

1.8.2 Mineral Resource Estimate

The significant growth in the mineral resources at the LS Project is attributed to the success of Ascendant/Redcorp's recent infill and step-out drilling directed mainly at the North deposit. The richest part of the LS Project coincides with the Measured resource area close to the northern extremity of the North deposit. This Measured resource area, in particular its GO (gossan) domain, could be brought into production early in the life of a future mine to boost the economics of the mining venture.

Currently, the greatest contribution to the mineral resources is from the North deposit. However, all deposits have the potential to delineate more resources with additional drilling. The stringer/fissure type mineralization of the South and Central deposits appears to be more amenable to metallurgical processing than the massive mineralization of the North deposit and future priority drilling will depend on progress in metallurgical testwork.

Micon's QP considers that the resource estimate for the LS Project has been reasonably prepared and conforms to the current CIM standards and definitions for estimating mineral resources. In summary, the goals of the infill drill program have been met resulting in an increase of 70% in the Measured and Indicated mineral resources.

1.8.3 Metallurgy

The metallurgical work completed to date is of a reconnaissance nature and no firm conclusions can be drawn therefrom. Detailed testwork is in progress.

1.9 RECOMMENDATIONS

The quantity and quality of the mineral resources are key factors in the development of the LS Project. Accordingly, Micon makes the following recommendations.

1.9.1 Geology and Mineral Resources

Redcorp should continue to expand the mineral resources systematically. The immediate focus in the short- to medium-term should be drilling directed at the northwest end of the North deposit to define the geometry/extent of the plunge and at the same time increase the resource. This northwest end is particularly attractive as it is underlain by a strong geophysical anomaly. The second priority should be the gaps separating the North and Central deposits and the gap separating the Central and South deposits. Models of the deposits should continue to be refined/updated as more information becomes available.

Micon understands that one of Redcorp's immediate exploration plans involves a continuation of geophysical investigations to the eastern and south-eastern areas of the Lagoa Salgada deposit. Micon endorses this undertaking and recommends that, subject to satisfactory results, the same exercise be implemented to the north of the North deposit, targeting the area immediately beyond the major east-west Alpine fault.

1.9.2 Metallurgy

Optimum metallurgical recoveries are key to the success of the LS Project. Thus, in Micon's view, detailed metallurgical investigations should be prioritized over additional drilling to expand the mineral resource.

1.9.3 Project Economics

A preliminary economic assessment (PEA) is recommended as the number 1 priority in advancing the LS Project to the next step. The PEA results will assist in establishing the minimum acceptable levels of metal recoveries.

1.9.4 Project Synergies

A basic survey of infrastructural requirements and exploring possible synergies of cooperation with other parties holding prospective mineral resources/business interests in southern Portugal will be beneficial to Ascendant/Redcorp.

1.9.5 Proposed 2020 Exploration/Development Program and Budget

In line with these recommendations, Ascendant/Redcorp will conduct follow up work to confirm the favourable geophysics results obtained during the 2019 exploration program in addition to detailed metallurgical testwork. The proposed follow up exploration program focuses on investigating the area between the North Zone and the South Zone along the 1.7 km strike length of the coincidental IP chargeability anomaly. In summary, the planned work program is as follows:

- Preliminary Economic Assessment.
- Ground and drill hole IP surveys.
- Diamond drilling (infill, step-out and metallurgical drill holes).
- Detailed metallurgical testwork.

To fulfil the planned 2020 exploration/development work, Ascendant/Redcorp has proposed a budget of USD 2.80 million broken down as summarized in Table 1.2.

Table 1.2
Proposed Work Program and Budget for the Lagoa Salgada Project for 2020

Program	Activity	Cost (US$)
Drill hole IP Survey (North, Central & South Deposits)	Interpretation/modelling	30,000
Preliminary Economic Assessment	NI 43-101 PEA	150,000
Metallurgical testwork drilling	4 drill holes (1,200 m)	240,000
Detailed metallurgical testwork	Optimizing recoveries	250,000
North deposit exploration drilling (expanding inferred)	4 drill holes (1,400 m) +assays+modelling	420,000
Central/South deposits + other targets exploration drilling	14 to 16 drill holes (5,700) +assays+modelling	1,710,000
All activities	**Grand Total**	**2,800,000**

Micon believes that the proposed budget is reasonable and justified and recommends that Ascendant/Redcorp conduct the planned activities subject to availability of funding and any other matters which may cause the objectives to be altered in the normal course of business activities.

2.0 INTRODUCTION

2.1 AUTHORIZATION, TERMS OF REFERENCE AND PURPOSE

Micon has been retained by Mineral & Financial Investments Limited, Redcorp and Ascendant to update the mineral resource estimates for the LS Project in the Setúbal District of Portugal, and to prepare an independent Technical Report in accordance with the requirements of Canadian National Instrument 43-101 (NI 43-101). Twenty-six (26) additional drill holes have been completed on the LS Project since the last mineral resource estimate in February 2019, culminating in the need for an updated resource estimate and Technical Report. The purpose of this report is to support the public disclosure of a mineral resource update of the LS Project in the light of added information arising from the latest drilling conducted between April and August 2019.

This report is intended to be used by Ascendant/Redcorp subject to the terms and conditions of its agreement with Micon. That agreement permits Ascendant/Redcorp to file this report as an NI 43-101 Technical Report with the Canadian Securities Administrators (CSA) pursuant to provincial securities legislation. Except for the purposes legislated under provincial securities laws, any other use of this report, by any third party, is at that party's sole risk.

The requirements of electronic document filing on SEDAR (System for Electronic Document Analysis and Retrieval, www.sedar.com) necessitate the submission of this report as an unlocked, editable pdf (portable document format) file. Micon accepts no responsibility for any changes made to the file after it leaves its control.

The conclusions and recommendations in this report reflect the authors' best judgment in light of the information available at the time of writing. The authors and Micon reserve the right, but will not be obliged, to revise this report and conclusions if additional information becomes known subsequent to the date of this report. Use of this report acknowledges acceptance of the foregoing conditions.

Micon does not have nor has it previously had any material interest in Redcorp or related entities. The relationship with Redcorp is solely a professional association between the client and the 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.

This report includes technical information, which requires subsequent calculations or estimates to derive sub-totals, totals and weighted averages. Such calculations or estimations inherently involve a degree of rounding and consequently introduce a margin of error. Where these occur, Micon does not consider them material.

2.2 SOURCES OF INFORMATION

The principal sources of information for this report are:

- Previous NI 43-101 Technical Reports on the LS Project filed on SEDAR, referenced in Sections 6 and 27, respectively.
- Drill hole databases supplied by Redcorp.
- Observations made during the site visits by Micon, represented by Mr. Charley Murahwi, P.Geo., FAusIMM.
- Redcorp internal exploration assessment reports and copies of reports submitted to the Government of Portugal.
- Geophysical reports prepared for Redcorp by Christopher J. Hale, P.Geo. of I.E.
- Discussions with Redcorp management and staff familiar with the property.
- Mineralogical and metallurgical reports supplied by Redcorp.

The authors are indebted to Mr. Joao Barros, Managing Director of Redcorp for his contribution to Sections 4.0 and 6.0, Mr. Robert Campbell, P. Geo., Director/VP Exploration of Ascendant, for his contribution to Section 7.0 and to Dr. Chris Hale, P. Eng., for his contribution to Section 9.3.

Micon is pleased to acknowledge the helpful cooperation of Redcorp's and Ascendant's management and staff who made all data requested available and responded openly and helpfully to all questions, queries and requests for material.

2.3 SCOPE OF PERSONAL INSPECTION

Micon (represented by Charley Murahwi, P.Geo.) conducted site visits to the property from 16 to 19 October 2018, from 13 to 17 November 2018 and from 28 to 31 May 2019. During its visits, Micon discussed the geologic model, verified some of the drill hole collar positions, witnessed down-hole survey measurements, examined drill cores, reviewed drill hole logs, reviewed mineralization types and reviewed/discussed the Quality Assurance/Quality Control (QA/QC) protocols/results of the on-going drilling programs.

2.4 UNITS OF MEASURE AND ABBREVIATIONS

All currency amounts are stated in US dollars (USD). Quantities are generally stated in metric units, the standard Canadian and international practice, including metric tons (tonnes, t) or kilograms (kg) for weight, kilometres (km) or metres (m) for distance, hectares (ha) for area, grams (g) and grams per metric tonne (g/t) for gold and silver grades (g/t Au, g/t Ag). Wherever applicable, Imperial units have been converted to Système International d'Unités SI) units for reporting consistency. Precious metal grades may be expressed in parts per million (ppm) or parts per billion (ppb) and their quantities may also be reported in troy ounces (ounces, oz), a common practice in the mining industry. A list of abbreviations is provided in Table 2.1. Appendix 1 contains a glossary of mining and other related terms.

Table 2.1
List of Abbreviations

Name	Abbreviation
Adsorption/desorption/reactivation	ADR
Canadian dollars	CAD
Canadian Institute of Mining, Metallurgy and Petroleum	CIM
Canadian National Instrument 43-101	NI 43-101
Canadian Securities Administrators	CSA
Centimetre(s)	cm
Degree(s), Degrees Celsius	°, °C
Digital elevation model	DEM
Direção Geral de Energia e Geologia	DGEG
Empresa Desenvolvimento Mineiro SA	EDM
Empresa de Perfuração e Desenvolvimento Mineiro, S.A.	EPDM
Grams per metric tonne	g/t
Hectare(s)	ha
Hour	h
Iberian Pyrite Belt	IPB
Inductively Coupled Plasma – Emission Spectrometry	ICP-ES
Instituto Geográfico e Cadastral de Portugal	IGCP
Internal diameter	ID
International Geophysical Technology	IGT
Kilogram(s)	kg
Kilometre(s)	km
Life of mine	LOM
Litre(s)	L
Lower Volcanic Unit	LVU
Metre(s)	m
Micon International Limited	Micon
micron	µ
Million (million tonnes, million ounces, million years)	M (Mt, Moz, Ma)
Milligram(s)	mg
Millimetre(s)	mm
Mineral Liberation Analysis (MLA	MLA
Not available/applicable	n.a.
Ounces (troy)/ounces per year	oz, oz/y
Parts per billion, part per million	ppb, ppm
Percent(age)	%
Redcorp – Empreedimentos Mineiros Lda.	Redcorp
Redcorp Ventures Ltd.	Redcorp Ventures
Quality Assurance/Quality Control	QA/QC
Qualified Person(s)	QP(s)
Specific gravity	SG
Square kilometre(s)	km^2
Standards Council of Canada	SCC
System for Electronic Document Analysis and Retrieval	SEDAR (www.sedar.com)
TH Crestgate GmbH	TH Crestgate
Three-dimensional	3-D
Tonne (metric), tonnes per day, tonnes per hour	t, t/d, t/h
Tonne-kilometre	t-km
Tonnes per cubic metre	t/m^3

Name	Abbreviation
United States	US
United States Dollar(s)	USD
United States Securities and Exchange Commission	SEC
Universal Transverse Mercator	UTM
Upper Volcanic Unit	UVU
Value Added Tax (or IVA)	VAT or IVA
Volcanogenic Massive Sulphide	VMS
Year	y

3.0 RELIANCE ON OTHER EXPERTS

In this report, discussions regarding royalties, permitting, taxation, and environmental matters are based on material provided by Redcorp. The QP and Micon are not qualified to comment on such matters and have relied on the representations and documentation provided by Redcorp.

All data used in this report were originally provided by Redcorp. Micon has reviewed and analyzed the data and has drawn its own conclusions therefrom. The Micon QP comments are augmented where applicable by his direct field examinations during his site visits.

The QP and Micon offer no legal opinion as to the validity of the title to the mineral concessions claimed by Redcorp and have relied on information provided by it.

4.0 PROPERTY DESCRIPTION AND LOCATION

4.1 LAGOA SALGADA PROJECT LOCATION

Geographically, the Lagoa Salgada Project is located as follows:

- Within the Instituto Geográfico e Cadastral de Portugal (IGCP) map sheets 39-C, 39-D, 42-A and 42-B (1:50,000 scale maps).
- At approximately 38°14’ North latitude and 8°28’ West longitude in southwestern Portugal.
- At approximately 548,000 E; 4,229,000 N, Zone 29 (European Datum 1950) Universal Transverse Mercator (UTM) coordinates.

The Project is located approximately 80 km southeast of Lisbon, Portugal’s capital; and approximately 120 km by road. It is located approximately 50 km southeast of Setúbal, the regional administration centre, 12 km northeast of the municipality of Grândola and approximately three km north of the village of Cilha do Pascoal. See Figure 4.1.

Figure 4.1
Location Map for the Lagoa Salgada Project

Source: Daigle (2012).

4.2 LAGOA SALGADA EXPLORATION PERMIT AND PORTUGUESE MINING LAWS

The Lagoa Salgada Project is contained in a single Contrato de Prospecção e Pesquisa (exploration permit) which originally covered a total area of approximately 13,400 ha. However, Redcorp renewed the permit, in 2017, at which time, the exploration permit was reduced by 20% to 10,700 ha, in accordance with Portuguese law.

The exploration permit, Contrato MN/PP/009/08, is held by a joint venture between Redcorp and Empresa de Desenvolvimento Mineiro, S.A. (EDM) which is a Portuguese Government owned company for the mining sector. Redcorp holds an 85% interest and EDM holds a 15% interest. The exploration permit was granted by the Direção Geral de Energia e Geologia (DGEG), or General Directorate for Energy and Geology. The exploration permit is registered in the Diário da República, Public Register, under Contrato (extrato) n.º 377/2015.

The original permit had an effective expiry date of 20 June 2017, but it was renewed to 20 June, 2019. Table 4.1 summarizes the original exploration permit information along with renewal information. Figure 4.2 shows the outline of the reduced exploration permit after its renewal. Note that this permit also encompasses the Rio de Moinhos Project which is yet to be fully explored and is not part of the resources declared in this Technical Report.

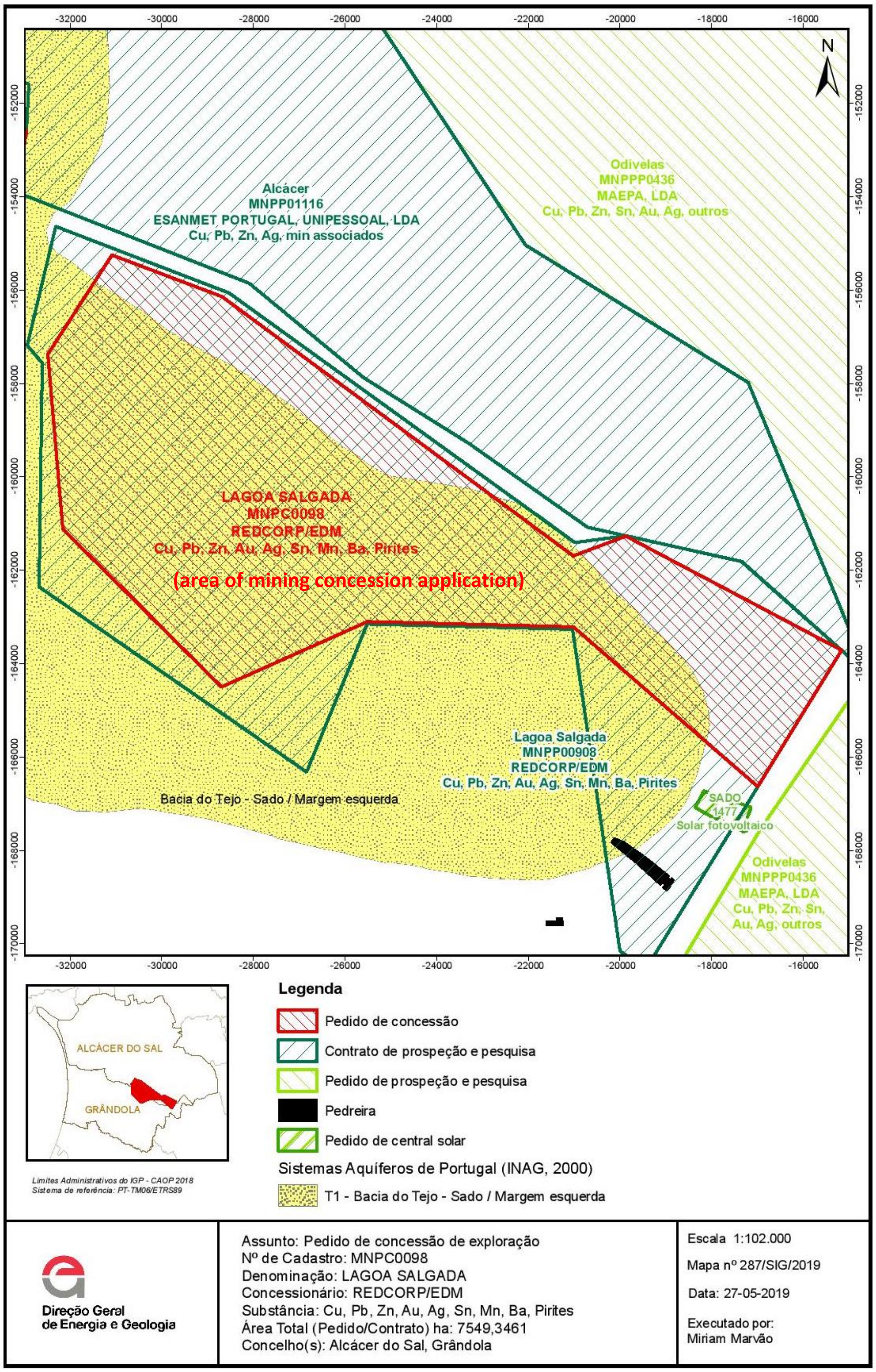
Table 4.1
Summary Information for the Lagoa Salgada Project Exploration Permit

Name	Exploration Permit	Expiry Date	Area (ha)
Lagoa Salgada	Contrato MN/PP/009/08	20 June, 2017	13,333.9
Lagoa Salgada	Contrato MN/PP/009/08	20 June, 2019	10,700.0

Exploration permits are granted for an initial period of three years. Upon the completion of the first three years, a company may apply for a prorogation, or renewal, for an additional two years and submit a reduction of the permit area of up to 20%. The exploration permit may be renewed a maximum of two times. During this time, a company is obliged to carry out exploration activities that include drilling, geophysical and geochemical surveys.

Sixty (60) days before the anniversary date of the exploration contract, Redcorp submitted (to the Direção Geral de Energia e Geologia) an application for a definitive mining concession, after fulfilling all of the approved work plans and investments in exploration. The application was publicized in the official gazette of Portugal – Diário da República 2ª Série dated 6th September 2019, under Aviso nº 13907/2019. The mining concession application covers an area as outlined in Figure 4.2.

Figure 4.2
Lagoa Salgada Property Exploration Permit Size, Shape and Projects



Map supplied by Ascendant/Redcorp, 2019.

4.3 PROPERTY OWNERSHIP AND AGREEMENTS

At the time the property exploration rights were extended, on 6 June 2015, Redcorp was in a joint-venture agreement with EDM.

In July, 2015, TH Crestgate GmbH (TH Crestgate) acquired a 100% stake in Redcorp. Redcorp and EDM hold respectively 85% and 15% interests in the exploration permit for the Lagoa Salgada Project and Redcorp remains the operator of the Project.

On August 1, 2018, Ascendant announced in a press release that it acquired from TH Crestgate a 25% interest in Redcorp, which holds an 85% interest in the polymetallic Lagoa Salgada Project and that Ascendant has an additional option to earn up to an 80% interest in Redcorp upon completion of the milestones highlighted below.

4.3.1 Transaction Summary – Key Option Terms (all amounts USD)

- Ascendant acquired an initial effective 25% interest in Redcorp for an upfront payment of $2.45 million, composed of $0.8 million in cash ($400,000 on closing of the transaction and $400,000 on July 15, 2018) and $1.65 million in Ascendant shares.
- Ascendant has the right to earn a further effective 25% interest via staged payments and funding obligations as outlined below:
    - Investing a minimum of $9.0 million directly in the operating company, Redcorp, within 48 months of the closing date, to fund exploration drilling, metallurgical testwork, economic studies and other customary activities for exploration and development, and
    - Making payments totaling $3.5 million to TH Crestgate according to the following schedule or earlier:
        - 6 months after the closing date: $0.25 million.
        - 12 months after the closing date: $0.25 million.
        - 18 months after the closing date: $0.5 million.
        - 24 months after the closing date: $0.5 million.
        - 36 months after the closing date: $ 1.0 million.
        - 48 months after the closing date: $ 1.0 million.
- Ascendant then has the option to earn an additional 30%, totaling an 80% interest in Redcorp, the operating subsidiary, by completing a feasibility study within 54 months and making a further payment of $2.5 million to TH Crestgate.
- Ascendant will fund all development and future construction costs and recoup TH Crestgate’s share of investment through cash flow until repaid.
- Ascendant will retain a Right of First Offer on the remaining equity held by TH Crestgate.

4.4 SURFACE RIGHTS, PERMITTING AND ENVIRONMENTAL LIABILITIES

4.4.1 Surface Rights

The surface rights covering the Lagoa Salgada property are held by two main landowners; Mr. Manuel Rocha and Mr. Carlos Caiado. The Lagoa Salgada Project is situated within the surface rights of Mr. Rocha. Relations with Mr. Rocha are favourable with an agreement made to conduct exploration activities on the property.

The core logging and sampling facility is located in a rented warehouse located approximately 10 km southwest (by road) of the North deposit (former LS-1 deposit).

4.4.2 Permitting

To the QP's knowledge, all of the required permits and permissions to access and conduct exploration activities have been obtained from the holders of the surface rights. All exploration activities conducted on the Lagoa Salgada property do not require additional permits; however, proposed exploration programs are subject to approval by the DGEG.

4.4.3 Environmental Liabilities

The QP is unaware of any environmental liabilities that would prevent Redcorp from conducting exploration activities on the property.

5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 ACCESSIBILITY

The Lagoa Salgada Project is located approximately 80 km southeast of Lisbon, capital of Portugal. By road, the distance from the Lisbon International Airport (LIS) to the property is approximately 120 km. The property is easily accessible by national highways and roads.

From LIS the drive to the Lagoa Salgada Project is via:

- Avenida Cidade do Porto and Highway E-1 for approximately 3 km north, to join.
- Auto-Estrada A-12, toll highway, going southeast for approximately 37 km to join.
- Auto-Estrada, Highway, A-2, BR-367 going south for approximately 70 km, to Exit 9 to join.
- N-120 going west for approximately 5 km to the roundabout to join.
- IC-1 going south into Grândola for approximately 3 km to join.
- EM-543 northeast for approximately 7 km to the turnoff to the village of Silha do Pascoal to join.
- an unmarked road north for approximately 4 km, via Silha do Pascoal, to arrive at the Lagoa Salgada Project.

Access to all parts of the property is conducted by truck/utility vehicle or 4 x 4 vehicle, through various unpaved all-weather dirt roads. The dirt roads are maintained, and some may be accessed by car.

The city of Lisbon is serviced by regular scheduled international and domestic flights with the drive from LIS to the Lagoa Salgada Project typically 1.5 hours in duration. Highway A-2 crosses through the western portion of the property.

5.2 PHYSIOGRAPHY

The Lagoa Salgada Project is relatively flat with gentle to moderate relief and with shallow valleys running through potions of the property. Topographic elevations range between 20 and 100 metres above sea level (masl).

Vegetation on the Lagoa Salgada Project is typical of dry Mediterranean climates, consisting of scrub brush, tall grass, and pine trees. The land on the which the Project operates is privately owned and used primarily for the cultivation of cork trees with some olive and pine nut tree plantations. The soil in the area of the Project is sandy with limited exposure of the Tertiary sedimentary bedrocks.

Figure 5.1 shows a general view of the nature of the soil and surrounding topography at the edge of one of the drill sites.

Figure 5.1
A View of the Topography Surrounding a Drill Site

Photo taken by Micon, November 2018.

5.3 CLIMATE

The Lagoa Salgada Project is located in a subtropical climatic zone (Csa; Köppen climate classification) where summers are hot and dry, and winters are moderately cool with changeable rainy weather.

July average minimum and maximum temperatures are 15.8°C and 29.3°C, respectively, and January average minimum and maximum temperatures are 4.7°C and 15.1°C, respectively (website: IPMA, Portugal). Annual average precipitation is roughly 700 mm (website: World Climate) with very little or no precipitation during the summer months.

Exploration activities can be conducted year-round with an occasional halt due to extreme weather conditions.

5.4 LOCAL RESOURCES AND INFRASTRUCTURE

The closest town of any size to the Project is Grândola, population 14,000, which serves the agricultural industry in the area. Setúbal, the district capital, has a population of approximately 90,000 and lies midway between the Project and Lisbon. Setúbal was once a manufacturing and fish canning centre, however, these industries are currently in decline. Most basic services and supplies may be sourced from either of these towns. Heavy equipment contractors are available in Grândola.

As the Lagoa Salgada Project is located 50 km from the Aljustrel Mine (zinc/lead) and 85 km from the Neves Corvo Mine (zinc/copper), there is access to experienced mining personnel. Unskilled labour may be sourced from the nearby towns and villages.

The Project has sufficient land holdings for exploration and development purposes.

The Lagoa Salgada Project is located near most major infrastructure including, roads, railway, electric power lines, ports, and airports.

There is power available from the national grid on the property. The Lagoa Salgada deposit is located approximately 7 km from the nearest 400 kVA high tension power lines, that power the electric railway.

The nearest deep-water port is in the town of Sines, located approximately 50 km southwest of the property with the closest airport being LIS in Lisbon. The railway is located roughly 7 km to the west with the nearest railhead located in Grândola, 12 km southwest of the Project.

Water sources are available on the property with current drill operations drawing water from a refurbished water well.

6.0 HISTORY

6.1 PRIOR OWNERSHIP/OWNERSHIP CHANGES

The prior ownership and ownership changes of the Lagoa Salgada project are summarized as follows:

1992-1993:	Discovery by the Portuguese government geological survey team.
1994-2000:	The project was held under a consortium consisting of Rio Tinto Zinc (RTZ) and Empresa De Desenvolvimento Mineiro, S.A. (EDM), a Portuguese government agency.
2001-2003:	The project was free for acquisition.
2004- 2008:	Redcorp Ventures Inc. was granted an exploration permit.
2009-2012:	Portex Minerals Inc. following 100% interest acquisition in Redcorp Ventures Inc.
2012-2014:	Redcorp was able to maintain the property in good standing through office work and marketing to find a new partner.
2015-…:	In July 2015, TH Crestgate GmbH (TH Crestgate) acquired a 100% stake in Redcorp. Redcorp then signed an addendum to the current contract for a period of 5 years in a joint venture with EDM (85% Redcorp and 15% EDM).

6.2 HISTORICAL EXPLORATION

6.2.1 Initial Discovery, 1992

In 1992, the Lagoa Salgada deposit was discovered by a team from the Portuguese government geological survey, then the Serviço de Fomento Mineiro (SFM). In 1993, the SFM became the Instituto Geológico e Mineiro (IGM); which later became incorporated into the Laboratório Nacional de Energia e Geologia (LNEG). The IGM completed 17 drill holes in and around the Lagoa Salgada Project for a total of 7,588 m; LS-01 to LS-17.

The deposit is completely covered by a thick sequence of Tertiary sedimentary rock, averaging 135 m thick; the discovery was made through diamond drill testing of a gravity geophysical anomaly. The discovery hole, LS-04, intersected massive sulphides from 126.8 to 203.7 m (Wardrop, 2007).

6.2.2 Rio Tinto Zinc, 1994-2000

In 1994, the area was awarded to a mining consortium composed of Rio Tinto Zinc (RTZ) and EDM, a Portuguese government agency, who held the property from 1994 to 2000.

The consortium completed an airborne magnetic survey of the property and completed several widely spaced diamond drill holes. In addition to the magnetic survey, RTZ performed limited downhole geophysics, electro-magnetic surveys, and limited soil sampling.

6.2.2.1 Drilling

Between 1994 and 1999, the consortium drilled 20 additional drill holes (LS-18 to LS-37) which were successful in defining the broad outlines of the North (formerly LS-1), Central, and South (formerly LS-1 Central) deposits.

The historic RTZ/EDM drill core is nowadays stored in the new LNEG facilities in Aljustrel village, located approximately 55 km south of Grândola and are easily accessible upon request at the Aljustrel office of the LNEG.

In Portugal, two years from the completion of a drill campaign, the drill core becomes the property of the government. It becomes the responsibility of the LNEG to collect the drill core and accompanying documents, drill logs and drill assays. Historic drill core, from southern Portugal, is stored at LNEG facilities in Aljustrel.

In 2016, Redcorp was given permission to transport and store some of the historic RTZ drill core on the property.

In 2005, Carmichael noted in his report that: *"No information is available regarding sample preparation or quality control measures for the historical sampling. The work was carried out by a major mining company, RTZ, and the author has no reason to assume that the sample results do not accurately reflect the true values of metals in the mineralized sections."*

6.2.2.2 Metallurgical Testwork, Anamet, 1995

In 1995, RTZ commissioned a preliminary metallurgical testwork program on a massive sulphide sample from the LS Project. The sample tested was a relatively high-grade composite from drill hole LS-22 containing 9.45% Zn, 6.7% Pb, 0.27% Cu, 62 ppm Ag and 1.47 ppm Au. The best results from a series of Pb-Zn differential flotation tests produced a Pb cleaner concentrate grade of 34.2 Pb% at a recovery of 38.5%. A Zn cleaner concentrate grade of 44.7 Zn% was achieved at a recovery of 23.1%. It was not possible to produce an acceptable bulk concentration in a one stage of flotation.

The sample from drill hole LS-22 is not representative of the deposit as it is currently defined by the 2017 mineralogical samples.

6.2.3 Redcorp Ventures Ltd, 2004-2008

In October 2004, the Lagoa Salgada Project was acquired by Redcorp Ventures Ltd. (Redcorp Ventures) of Vancouver, Canada. Redcorp Ventures established its Portuguese subsidiary, Redcorp – Empreendimentos Mineiros, Lda.

In 2005, Redcorp Ventures conducted a 3D inversion of existing geophysical data followed up by a diamond drilling program and the re-logging of the historic RTZ-EDM drill core. Most of this work covered the Rio de Moinhos Project to the southwest of the LS Project (see Figure 4.2) and therefore the results are not discussed in detail.

Lithogeochemical and petrographic samples were collected by Dr. Tim Barrett of Ore Systems Consulting (Wardrop, 2007) but the results are not available to Micon.

In 2005, Redcorp Ventures' drilling program consisted of six holes totalling of 2,286 m. Drilling continued in 2006, 2007 and 2008 for a total of 16 holes totalling 8,692 m. All but one (LS06043) of the drill holes intersected the Lagoa Salgada deposit.

6.2.4 Portex Minerals Inc., 2009-2012

In 2009, Portex Minerals Inc. (Portex) acquired a 100% interest in Redcorp Ventures to develop the North (formerly LS-1) deposit on the property. Portex's exploration activities included a drilling program and a downhole geophysical survey program.

6.2.4.1 Drilling Program

From May 2011 to August 2011, Portex completed five diamond drill holes on the Lagoa Salgada deposit totaling 1,138 m. This was followed by a further two drill holes in 2012 totalling 474 m.

The following information regarding the drilling programs was partly summarized from Daigle (2012).

Portex contracted Drillcon Iberia S.A. (Drillcon), a Portuguese subsidiary of the Drillcon Group, to conduct the drilling. Drillcon used one drill with a tri-cone bit to pre-collar the drill holes through the Tertiary sedimentary units. The drill holes were cased using a steel casing for the entire length of the drill hole within the Tertiary sedimentary units.

A second drill was then brought in to continue drilling with a diamond core drilling rig using HQ size core. Once the drill rods showed signs of stress, the drill core size was dropped to NQ. Most of the drill holes were cored using HQ.

Once the drill hole was completed acrylonitrile butadiene styrene (ABS) polyvinyl chloride (PVC) pipe (NQ) was inserted down the entire length of the drill holes. This was done in order to prevent the drill hole wall from collapsing in anticipation of conducting future down hole geophysical surveys.

The drill hole steel collars were cemented in place and a steel cap was welded to the collars to allow for a hinged cap to cover the drill hole and be locked with a padlock.

The diamond drill core was collected by Portex geologists at the drill site and brought to the drill core logging and sampling facility. The drill core was rough logged on paper and transcribed into a Microsoft Excel® spreadsheet.

Sample tags were inserted on 1.0 m sample intervals respecting the contacts between lithologies. The sample tags were standard tags from ALS Laboratories, with sample number and bar code, and were inserted into a small sealable plastic bag and stapled into the core box at the beginning of the sample interval.

Lead and zinc standards were inserted roughly every 15 samples within the gossan and massive sulphide lithologies. Gold and copper standards were inserted in roughly the same intervals in the stockwork lithologies. Duplicates were collected from the drill core by quartering the half core and submitting the sample.

6.2.4.2 Downhole TEM Geophysical Survey

In August 2012, Portex retained International Geophysical Technology (IGT) to conduct a downhole transient electromagnetic (TEM) geophysical survey in drill holes PX-02 and PX-05.

The results from PX-02 did not produce any significant anomaly and may not be part of the massive sulphide body. However, results from PX-05, where the massive sulphides were intersected, showed two independent anomalies, one which pertains to the intersected massive sulphide body, and a second anomaly, possibly 30 m to the west. This second anomaly may lie within the interpreted massive sulphides.

6.3 MINERAL RESOURCE ESTIMATES

There have been three previous NI 43-101 Technical Reports completed on the Lagoa Salgada Project, each of which contained mineral resource estimates on the LS-1 deposit. The previous Technical Reports are as follows:

- Wardrop, (September 2007), Redcorp Ventures Ltd., Resource Estimate for the Lagoa Salgada Project. Wardrop Engineering Inc. Document No. 0752760100-REP-R0001-01. 27, 46 pages.
- Daigle, Paul, (January 2012), Lagoa Salgada Project, Portugal – Resource Estimate Update Document No. 1296360100-REP-R0001-02, 92 pages.
- Daigle, Paul, (January 2018, Revised July, 2018), Technical Report for Redcorp Lda., Laoa Salgada Project, Setubal District, Portugal, 124 pages.

- Micon, February 2019. NI 43-101 Technical Report: Resource Estimate for the Lagoa Salgada Project, Setubal District, Portugal, 117 pages.

Other than the January 2018 and February 2019 reports, the prior mineral resources were conducted under previous versions of the CIM Definition Standards for mineral resources and mineral reserves and/or prior versions of the National Instrument NI 43-101, Standards of Disclosure for Mineral Projects. All the previous mineral resource estimates are superseded by the current estimate of the mineral resources contained in Section 14 of this Technical Report. As a result, they will not be further discussed herein.

6.4 HISTORICAL MINING

No historical mining has been conducted at the Lagoa Salgada Project.

7.0 GEOLOGICAL SETTING AND MINERALIZATION

7.1 PREAMBLE

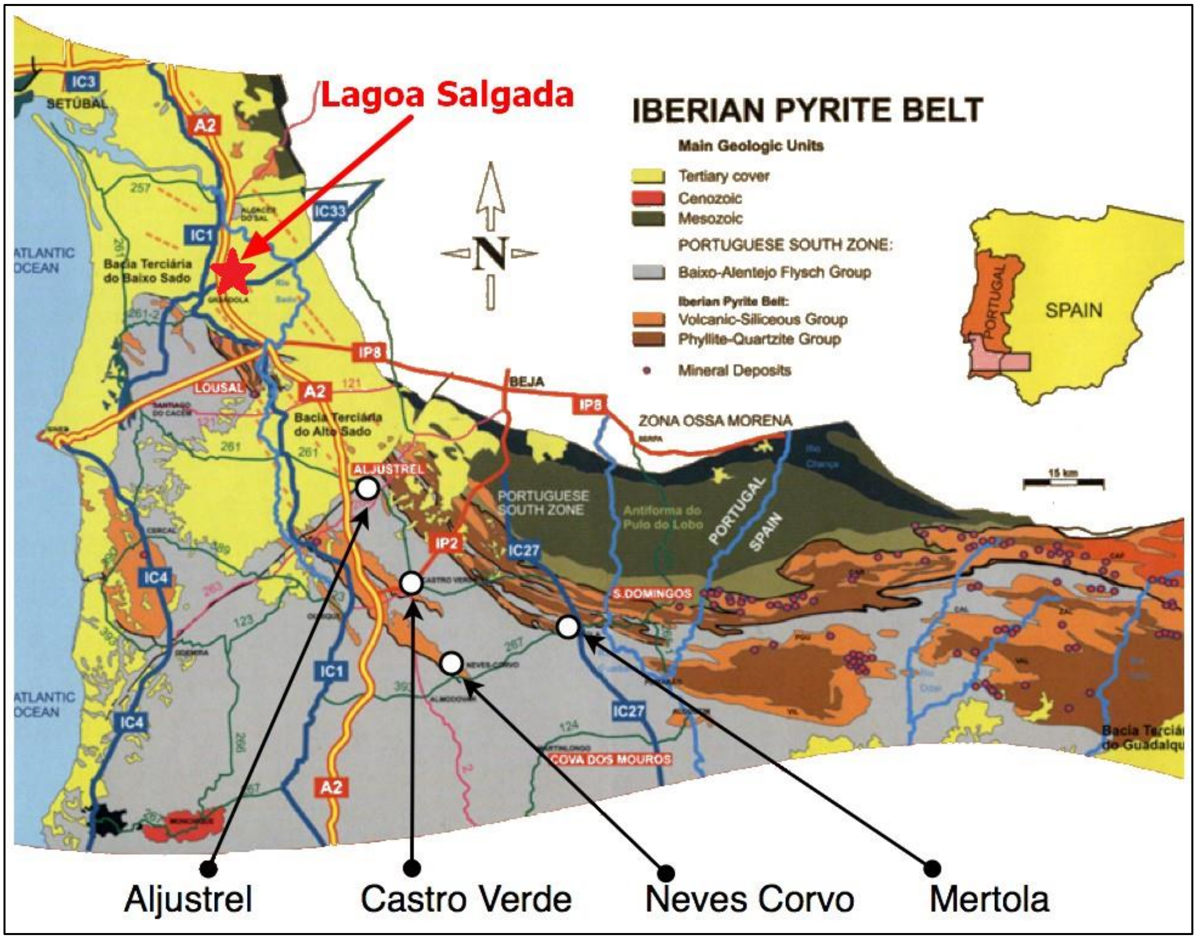
Lagoa Salgada Project is located within the northwestern portion of the Iberian Pyrite Belt (IPB). The IPB is one of the most prolithic European ore provinces, hosting one of the largest concentrations of massive sulphides in the Earth's crust; it contains more than 1,600 million metric tons (Mt) of massive sulphide ore and about 250 Mt of stockwork ore (Oliveira et al., 2005, 2006; Tornos, 2006). The IPB hosts more than 90 massive sulphide deposits. The dimensions of the deposits vary from 1 to >300 Mt (e.g., Neves Corvo, Rio Tinto, and Aljustrel), including 14 world-class (>32 Mt) volcanogenic massive sulphide (VMS) orebodies (Laznicka, 1999). Despite their large size (eight deposits with >100 Mt massive sulphides), most are particularly pyrite rich and only 11 deposits can be considered large regarding their Cu-Zn-Pb contents. Ten deposits are in Portugal where currently only Neves Corvo and Aljustrel are being exploited.

There have been a few reports written on Lagoa Salgada (Oliveira et al., 2009, 2011; Barros, 2013) and several more written on the Iberian Pyrite Belt (IPB) and the other deposits (Clarke, et al., 2004; Oliveira el al 2005, 2006; Tornos, 2006; Laznicka, 1999). This report will summarize the extensive work by others in the sections below.

7.2 REGIONAL GEOLOGY

Lagoa Salgada Project is located within the northwestern portion of the IPB which stretches from southern Spain into Portugal (Figure 7.1). This belt is one of the three domains of the south Portuguese zone, the southernmost terrane of the Variscan orogen in the Iberian Peninsula. This terrane collided obliquely with the Ossa Morena terrane during the Variscan orogeny, leading to strike-slip tectonism (Oliveira et al., 2006). The result of the collision was opening of pull-apart basins within the continental crust of the south Portuguese terrane, triggering submarine volcanism in the Iberian Pyrite Belt (Silva et al., 1990; Quesada, 1991; Tornos et al., 2002). The IPB has a relatively simple geologic record (Schermerhorn, 1971), with a sequence that includes about 1,000 to 5,000 m of late Paleozoic rocks. The oldest rocks found are grouped in the Phyllite-Quartzite Group Late Famennian; (Oliveira et al., 2005, 2006) that consists of a monotonous detrital sequence of alternating dark gray shales and quartz sandstone.

Figure 7.1
Regional Geologic Setting of the Lagoa Salgada Deposit in the Northwestern Region of the Iberian Pyrite Belt



The Volcano Sedimentary Complex overlies the Phyllite-Quartzite Group and hosts the volcanogenic massive sulphide (VMS). This belt is a thrust faulted sequence of sedimentary rocks spatially related to local sub-aqueous volcanic centres which host the VMS deposits. The stratigraphic sequence of the Volcano Sedimentary Complex was defined in the Pomarão area of Portugal and grouped into three felsic volcanic cycles separated by two mafic ones (van den Boogard, 1967). The volcanic sequence can reach a thickness of up to 1,300 m (true thickness) near the volcanic centres according to Tornos (2006) and is characterized by a large diversity of volcanic and sedimentary facies. The Volcano Sedimentary Complex includes a felsic-mafic volcanic sequence interbedded with shale (~75% shale and ~25% felsic and mafic volcanic rocks) and some chemical sediments (Oliveira, 1990; Barrie et al., 2002; Oliveira et al., 2005, 2006). The VMS deposits are generally interpreted to be syngenetic in origin; however, mineralization ranges from sulphide precipitates to re-worked sulphide/silicate sediments and local sulphide replacement mineralization located near the felsic submarine volcanic centres. The massive sulphide deposits are hosted by the felsic volcanic units and/or black shales. Recent detailed physical volcanology studies (Rosa, 2007; Rosa et al., 2008, 2010) show that the felsic volcanic centres of the Volcano Sedimentary

Complex were built up by a variable number of effusive and explosive volcanic episodes. The volcanic centres consist mainly of felsic lavas and domes and may have intercalated thick pyroclastic units that were sourced from the lavas and/or domes (Rosa, 2007; Rosa et al., 2008, 2010). Quartz and feldspar-phyric rhyolitic and dacitic compositions are dominant. The volcanic centres have marginal aprons of abundant bedded volcaniclastic units that gradually develop into shales with nonvolcanic origin that are the dominant rock type of the Volcano Sedimentary Complex. Regionally, the Iberian Pyrite Belt can be divided in northern and southern branches that are distinguishable by different tectonic styles (Oliveira et al., 2005, 2006) and by distinct characteristics of the massive sulphide deposits (Sáez et al., 1999; Tornos, 2006).

The Volcano Sedimentary Complex is overlain by the Baixo Alentejo Flysch Group, a turbiditic sequence that comprises shales, litharenites, and rare conglomerates (Oliveira, 1990). The Baixo Alentejo Flysch Group is up to 3,000 m thick, ranges in age from Late Visean to Middle-Upper Pennsylvanian (Oliveira et al. 2005, 2006; Tornos, 2006), and represents the synorogenic foreland flysch associated with Variscan collision and tectonic inversion (Moreno, 1993).

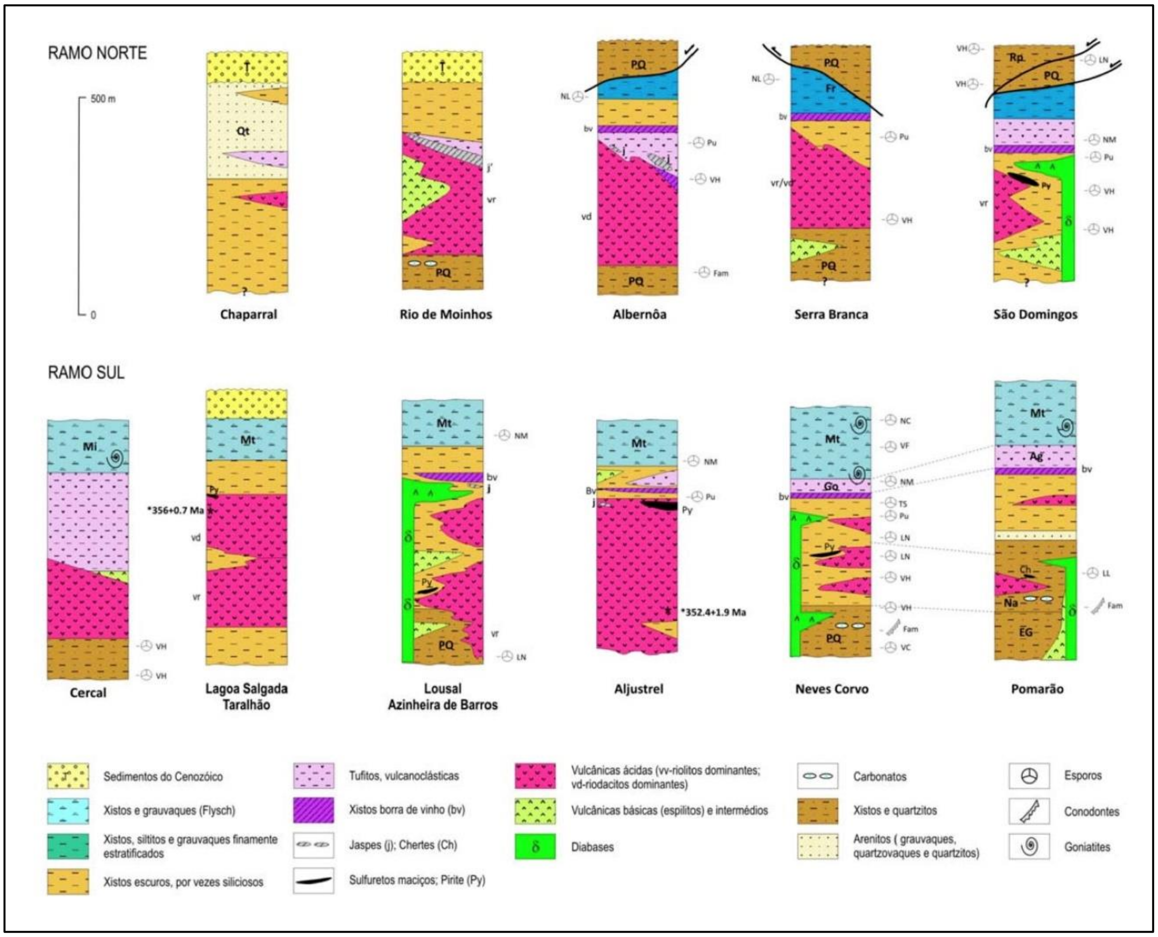
Deformation of the Iberian Pyrite Belt stratigraphic sequence during the Variscan orogeny is characterized by south- to southwest-verging folds, corresponding to a thin-skinned foreland fold and thrust belt (Silva et al., 1990). Low-grade regional metamorphism displays a northward increase from zeolite facies in the south to greenschist facies in the north (Munhá, 1990).

7.3 PROPERTY GEOLOGY

The entire Lagoa Salgada property is covered by a paleo-fluvial fan that ranges in thickness up to 200 m within the Tertiary Sado Basin and averages 135 m over the Lagoa Salgada deposit (Figure 7.2). The Tertiary sedimentary rocks unconformably overlie rocks of the Volcano-Sedimentary Complex of the IPB. This sequence of rocks ranges in age from Upper Famenian to Middle Visean and are represented on the property by a northwest-southeast lineament which is approximately 8.0 km long and over 1 km wide.

The deposit is folded, faulted, and interpreted to occur mostly on the subvertical-overturned and intensely faulted limb of a southwest-verging anticline (Matos et al., 2003).

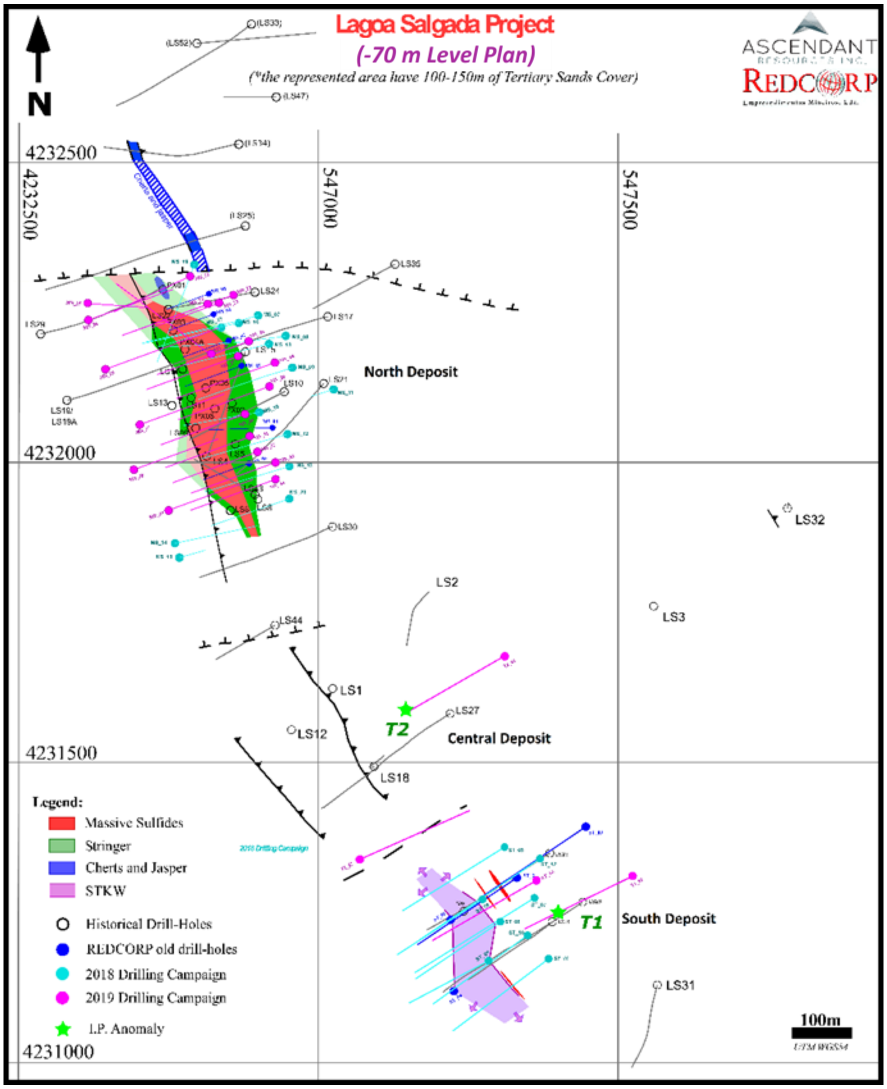
Figure 7.2
Stratigraphy and Physical Vulcanogeny, Geochemistry and Mineralizations of the Iberian Pyrite Belt



Lagoa Salgada is further offset by an east-west−trending Alpine-age fault in the north, with a 50-m downthrow of the northern block (Figure 7.3), but whose horizontal amount and sense of displacement is unknown (Matos et al., 2000).

The Lagoa Salgada deposits (Figure 7.3) were intersected in drill holes and occur within a thick (>700 m) Volcano Sedimentary Complex sequence made up of feldspar- and quartz-phyric rhyodacite, and quartz-phyric rhyodacite with intercalations of siltstone, the base of which has not been intersected (Matos et al., 2000). Lagoa Salgada is not associated with sedimentary rocks in close proximity to the massive sulphides, contrasting with some of the other massive sulphide deposits within the IPB, for example, Neves Corvo and Lousal. True thickness of the stratigraphic sequence is difficult to determine, due to disruption and repetition of the volcaniclastic units by several thrust faults.

Figure 7.3
Lagoa Salgada Project – Alpine Fault in the North



The mineralization comprises massive sulphide and semi-massive sulphide lenses and sulphide veins and veinlets and is mainly hosted by a thick (up to 250 m) and strongly chloritized quartz-phyric rhyodacite unit.

These two rhyodacites are clearly distinguished by their phenocryst content, and, geochemically, the former corresponds to a more evolved series than the latter. These rhyodacites plot in the andesite field of the diagram after Winchester and Floyd (1977), in contrast with their phenocryst content. This anomalous geochemical classification is interpreted to be caused by low- temperature crustal fusion, which affects the melting of refractory phases (such as zircon) where high field strength elements reside and was previously identified in volcanic rocks from other areas of the IPB by Rosa et al. 2004, 2006. Chloritization by the addition of Mg and Fe has affected most samples, causing the results to plot along a trend toward the chlorite and/or pyrite corner of the alteration box plot. This is interpreted as being typical of chlorite-dominated footwall alteration either in felsic or mafic volcanic rocks (Large et al., 2001).

The architecture of the volcanic and sedimentary units that host the massive sulphide mineralization was defined by detailed logging and inspection of slabs and thin sections from core of the Lagoa Salgada area. Original volcanic and sedimentary textures are typically destroyed or modified in proximity to the zones of more intense hydrothermal alteration and deformation (near the thrust zones). However, primary rock textures are preserved in the lessdeformed and altered zones.

The quartz-phyric rhyodacite is dominated by coherent facies that is intercalated and grades to overlying monomictic rhyodacitic breccia facies. Intervals of the coherent rhyodacite facies are up to 150 m thick. These facies are evenly quartz-phyric, with ~7 modal percent of embayed euhedral to subhedral, 5-mm-long quartz phenocrysts. The rhyodacite groundmass is flow banded, characterized by 1-mm to 1-cm-thick alternating dark and pale bands that may contain abundant chlorite wisps. Pale bands are mainly composed of microcrystalline sericite, with accessory quartz and feldspar, whereas dark bands are composed of microcrystalline quartz, feldspar, and chlorite with accessory sericite. These bands also show abundant relics of recrystallized spherulites (e.g., drill hole LS-1). The coherent facies may show dark (chlorite-rich) and pale (sericite-rich) irregular domains that are probably the result of hydrothermal alteration. The monomictic rhyodacitic breccia facies consists of massive, clast-supported intervals of irregular and polyhedral rhyodacite clasts. These clasts have similar textures to the coherent rhyodacite facies, and their shapes and groundmass textures suggest that fragmentation of the rhyodacite is probably a consequence of autobrecciation. The upper part of the quartz-phyric rhyodacitic unit consists of an interval (up to 50 m thick) of monomictic rhyodacitic breccia facies that encloses the most well-developed sulphide stockwork of the central stockwork zone. This breccia interval has a fault contact with the overlying shale that shows moderate sericitic alteration. The great thickness of coherent facies suggests that the central stockwork zone of Lagoa Salgada corresponds to the proximal setting of a felsic volcanic centre (McPhie et al., 1993).

The sequence hosting the massive sulphide lens in the northwest comprises a thick (up to 100 m) feldspar- and quartz-phyric rhyodacitic unit that overlies and is laterally equivalent to the quartz-phyric rhyodacitic unit in the southeast. The feldspar- and quartz-phyric rhyodacite is typically sericite and chlorite altered and comprises thin intervals of coherent rhyodacite that grade to much thicker intervals (up to 50 m) of monomictic feldspar- and quartz-phyric rhyodacitic breccia. The coherent facies are evenly feldspar-phyric, with ~20 modal percent of feldspar phenocrysts and ~5 modal percent of quartz phenocrysts. The monomictic feldspar- and quartzphyric rhyodacitic breccia is dominated by thick clast-supported intervals, characterized by jigsaw-fit and clast-rotated arrangement of the clasts. The clasts have planar to curviplanar or ragged margins and some are dominantly sericite altered, whereas others are chlorite altered. The monomictic breccia typically hosts a well-developed sulphide stockwork, with the veins occurring preferentially in the matrix of the breccia. Overlying this stockwork occur a massive sulphide lens (e.g. drill hole LS5).

Remobilization of clastic components from the feldspar and quartz-phyric rhyodacitic unit defines relatively small (up to 30 m thick × 200 m long) volcaniclastic units. The shapes of the clasts in the monomictic feldspar- and quartz-phyric rhyodacitic breccia and the thick intervals of jigsaw-fit textures suggest that they have formed by quenching of the rhyodacite in contact with water, and that the breccia corresponds to hyaloclastite (Pichler, 1965). The great thickness of monomictic feldspar- and quartz-phyric rhyodacitic breccia and the abundant intervals of remobilized rhyodacitic clasts suggest that the rhyodacitic unit probably corresponds to a massive lava (McPhie et al., 1993).

The volcanic units and massive sulphide lens are overlain by an irregular and discontinuous layer up to 50 cm thick of hydrothermal chert (e.g., drill holes LS-14 and LS-22; Matos et al. 2000), or a thick interval of shale, locally displaying strong chlorite-sericite alteration. Away from the deposit this shale may host millimetre- to centimetre-sized intercalations of siltstone and graywackes while the cherts probably give way to jaspers, which were recognized to the north of the east-west Alpine-age fault (Matos et al., 2000; Figure 7.2).

The volcanic sequence has been separated into two units: The Upper Volcanic Unit (UVU) and the Lower Volcanic Unit (LVU) which are described below.

7.3.1 Upper Volcanic Unit (UVU)

The UVU consists of intermediate to felsic porphyritic tuffs with coarse feldspar phenocrysts, locally including lava facies with porphyritic and auto-breccia textures and fine-grained chlorite-sericite tuffs. Lithogeochemical assays carried out in 2005 classified this rock type as andesite. Hydrothermal alteration of the rock, to chlorite-quartz with disseminated sulphide, is intense close to the massive sulphide body where replacement textures are common in the footwall of the sulphide body. Alteration minerals transition gradually to less altered zones composed of chlorite + sericite + carbonates + quartz + sulphides and quartz + carbonates away from the sulphide body.

7.3.2 Lower Volcanic Unit (LVU)

The LVU is comprised of felsic porphyritic tuffs with abundant quartz phenocrysts (quartz-eye meta-volcanic rock) with metre-scaled intercalations of volcano-sedimentary breccias. Whole rock geochemical assays carried out in 2005 classified this unit as dacite. The predominant hydrothermal alteration minerals are sericite + quartz + carbonates + sulphides. Near the sulphide body footwall, the intensity of the alteration increases and is defined by chlorite ± pyrophyllite (Matos et al. 2000).

7.1.1.1. Mineralization

There are four types of mineralization at Lagoa Salgada: primary massive sulphide mineralization, gossan mineralization resulting from weathering of the primary mineralization, copper-rich stringer/fissure/stockwork mineralization, and gold-rich silicified zones which appear to be structurally controlled. To date, the mineralized system of the

North deposit has been drill tested over a strike extent of approximately 500 m and appears to be open to the south and east. Recent geophysical surveys have found three anomalies, similar in signature to that of the North deposit (former LS-1), continuing to the southeast along strike, over a distance of 900 m. The furthest of these anomalies has been drill tested and it is the South deposit (former LS-1 Central deposit).

The massive sulphide mineralization occurs in steeply dipping to vertical isoclinal folded volcanic rocks. Primary massive sulphide mineralization has been intersected in several diamond drill holes. This mineralization has variable, but significant, base and precious metal values. The best example of this style of mineralization was intersected in drill hole PX-04 and, most recently, in drill holes LS_MS_01 and LS_MS_02. The massive sulphide body appears to be cut by post-mineral faults and its relationship to the surrounding stratigraphy is not well understood. The faulting has likely caused a displacement of the continuation of the deposit. The thick overburden cover and the depth of the mineralized body precludes drilling the deposit with a shallow dipping drill hole. For this reason, most of the drilling on the deposit has been either with vertical or steeply dipping drill holes. This has resulted in drill hole intersections that are less than ideal and almost parallel to the primary stratigraphy of the sulphide body. The true thickness of the deposit therefore cannot be determined from single vertical drill hole intersections. The 2017 drill holes were all angled, which helped in the interpretation of the deposit. The thickness of the deposit is inferred as being somewhere between holes that intersected the massive sulphide and those that have intersected the footwall or hanging wall rocks. Additional drilling is required to determine the size of the known massive sulphide deposit.

Gossan mineralization results from the weathering of primary massive sulphide mineralization. It is preserved at Lagoa Salgada as a result of the Tertiary sedimentary rocks covering the palaeosurface, in a situation analogous to the Las Cruces copper deposit in Spain. Gossan mineralization at Lagoa Salgada seems to be comprised of a lead-rich leached cap, underlain by a precious metal-rich supergene enrichment zone. This is well displayed in hole LS-09.

Copper-rich stringer/fissure stockwork mineralization consists of sulphide veins and stringers in chloritic volcanic rocks, and represents alteration associated with the feeder system to the massive sulphide mineralization. This type of mineralization is well-developed in other IPB deposits such as Feitais (Aljustrel) and Neves Corvo and is best typified by the intersections in drill hole LS-20.

8.0 DEPOSIT TYPES

The Lagoa Salgada deposit is a polymetallic, volcanogenic, massive, sulphide (VMS) deposit. VMS ore deposits are a type of metal sulphide deposits which are associated with and created by volcanic-associated hydrothermal events in submarine environments. They occur within environments dominated by volcanic or volcanic derived volcano-sedimentary rocks, and the deposits are coeval and coincident with the formation of the volcanic rocks. Volcanogenic massive sulfide deposits form on the seafloor around undersea volcanoes along many mid ocean ridges, and within back-arc basins and forearc rifts.

These types of deposits consist of lenses of massive sulphide mineralization that were deposited at or near the sea floor as a result of precipitation from the venting of metalliferous hydrothermal fluids. These fluids typically exploit fault planes as fluid pathways and create a large zone of hydrothermal alteration in the rocks below the deposits. Commonly these form in second and third order basins and are rapidly covered so they can be preserved.

VMS deposits are characterized by clusters of lenses occurring within a distinct stratigraphic layer. The extensive alteration zone on the property suggests that hydrothermal activity was prolonged and that additional lenses associated with separate alteration zones may exist.

9.0 EXPLORATION

From the discovery period to the present, exploration on the LS Project has been conducted using geophysical techniques (gravity and IP). Much of the earlier exploration work up to 2015 is described in Section 6. This section focuses on the more recent work.

9.1 2016 PETROGRAPHIC STUDY FROM PORTO UNIVERSITY

In early 2016, Redcorp submitted 20 samples from the four of the 2010 to 2012 drill holes to the Porto University Science Faculty, DGAOT – FCUP laboratory for petrographic analysis study. The petrographic study consisted of microscope studies on polished sections using stereo-binocular microscopy and conventional reflected polarized microscopy. A number of polished sections were selected for examination using scanning electron microscopy and x-ray microanalysis (MEV-EDS) to confirm the identities of certain minerals; while others were selected to perform quantitative microanalysis at the electron microprobe.

The 20 samples were from representative sections of the stratigraphy that included the following: gossan, supergene, chert/jasper, massive sulphide and stockwork. The study report details the mineral suite, textural relationships, primary microstructures, recrystallization textures and chemistries (mineral and whole rock) for the samples. Textural information and association notes are useful here as the samples were noted to be extremely fine-grained and it was concluded as being highly probable that other valuable minerals would also be present in minor to trace amounts, but their characterization was beyond the scope of the study.

The individual fragments consisted predominantly of sulphide minerals with non-sulphide gangue minerals being present only in relatively small amounts. Of the sulphides, pyrite was noted to be the most common phase. Both sphalerite and galena were observed in subordinate amounts together with subordinate amounts of arsenopyrite and minor chalcopyrite. Other minerals including tetrahedrite-tennantite and related sulphosalt minerals were noted to be present in very small amounts.

Pyrite and arsenopyrite were both noted to be in the form of granular masses with a wide grain size distribution (<1 micron (µ) to >150 µ for pyrite and 5 µ to >150 µ for arsenopyrite). An intimate association of pyrite with arsenopyrite intergrowth was noted, with pyrite with pyrite patches within larger arsenopyrite grains, and arsenopyrite intergrowth as inclusions within larger pyrite grains.

Larger sphalerite grains (>20 µ in size) commonly show the presence of fine chalcopyrite, inclusions, but also, less commonly, those of galena and pyrite. Small amounts of sphalerite were noted to occur as very fine (<1 µ) inclusions in pyrite.

Galena was also observed to have a wide distribution of grain sizes, from <1 µ to >150 µ, although the majority of particles were observed to be in the <25 µ range. The associations with pyrite, arsenopyrite, sphalerite and other sulphides are similar to those observed for sphalerite. Galena is commonly intergrown with sulphosalt minerals and chalcopyrite.

Chalcopyrite grains were noted to rarely exceed 25 µ in size, tending to occur either along grain boundaries of larger pyrite grains, or as components of fracture filling assemblages. Most of the chalcopyrite appeared to be fresh or unaltered, although some occurences of secondary minerals were noted.

Fine cassiterite (<5 µ) was noted as inclusions or intergrowths with sphalerite.

9.2 2017 Mise à la Masse Downhole Survey

In September and October 2017, IGT was contracted to complete a downhole geophysical survey in three drill holes: LS_MS_01, LS_MS_03 AND LS_MS_06.

The following is taken from IGT (2017]:

> "The main conclusion to be drawn from the results of this study is that the anomalies produced by the semi-massive sulphide deposit are as sharp as we could expect looking at the theoretical model……."
>
> "The Tertiary cover may relax the potential values at the surface, but this effect does not mask the influence of the conductive orebodies where electrode A was earthed in the surveyed drill holes."
>
> "From the potential maps we interpret that the conductors intersected by LS_MS_01, LS_MS_03 and LS_MS_06 drill holes look the same one. Drill hole LS_MS_01 has intersected it close to its SE end, LS_MS_03 has hit it at its central section, where the orebody shows its maximum thickness and LS_MS_06 shows it at its NW end. This conductive body (semi-massive sulphide deposit) extends with N160 E azimuth along o 500 metres approximately, it is centred in the study area along stations 400 m from line L-2 to line L-7."

9.3 2018-2019 Exploration Geophysics

This Section 9.3 is an extract from a detailed report by Christopher J. Hale, PhD, P.Geo. (of Intelligent Exploration), who has been Redcorp's geophysics consultant for the past three to four years:

Since its discovery by the Portuguese Geological Survey as a gravity anomaly in 1992 (Oliveira et al, 1998) the Lagoa Salgada property has been explored in a succession of geophysical campaigns. Exploration rights were assigned to a consortium including Rio Tinto Zinc (RTZ) and government agencies in 1994. Historically both Gravity and Induced Polarization Surveys have been used at Lagoa Salgada. The exploration history of the property has been summarized in Section 6 of this Technical Report. All previous Technical Reports on the LS Project recommended additional geophysical exploration, particularly in the area separating the North and South deposits.

In 2018, Intelligent Exploration (IE) selected a suite of samples from the Lagoa Salgada drill core to measure physical properties including Specific Gravity, electrical and magnetic characteristics.

The physical properties data were summarized by Hale (2018). The conclusions of that work led to a re-examination of historical Gravity data and the choice of Induced Polarization/Resistivity surveys (IP/Resistivity) to continue exploration in 2018-2019. Significant properties for exploration are summarized below.

9.3.1 Physical Characteristics of the Lagoa Salgada Core Samples

The massive sulphide mineralization is dense (Specific gravity up to 4.6), highly conductive (~ 1 Ohm-m resistivity), and Chargeable (~100 mV/V).

The altered volcanic host is moderately dense (SG ~2.8), less conductive (~1,000 Ohm-m), and not chargeable but becomes much less resistive as it is altered to clay.

Stringer or stockwork mineralization is intermediate between these two types. The Specific gravity increases above 3.0 as sulphide mineralization increases. Conductivity presents a variable picture depending on the “connectedness” of the sulphide grains but all samples with sulphide mineralization are chargeable.

The Tertiary cover is much less dense (S.G. ~2.2) The basal conglomerate appears to be fairly conductive over the known deposit, grading to higher resistivity away from the massive sulphide. Chargeability is associated with the Tertiary cover rocks, particularly over the deposit.

Some weak magnetic susceptibility was noted in the case of a few samples, but this was generally not far above the detection limit for the probe. Magnetic surveys will not be able to detect this target.

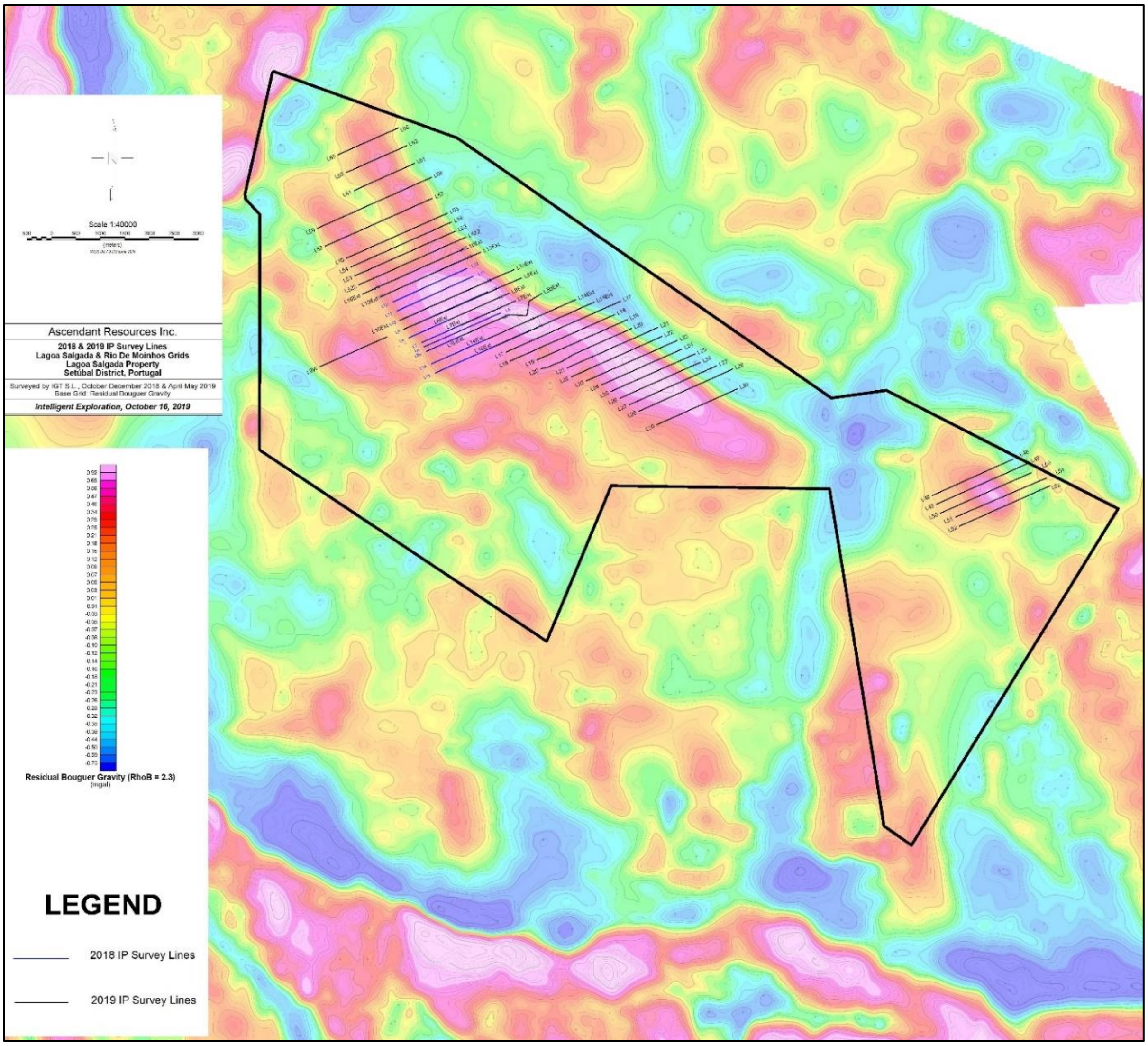
9.3.2 Gravity at Lagoa Salgada

The deposit was originally discovered during the drilling of a gravity anomaly, detected at a regional scale by the government geological survey. This was followed up by more detailed gravity work (down to 50m spacing of stations over the deposit) and additional drilling by RTZ. In 2018, IE replotted a residual Bouguer Gravity map using the residual gravity tabulated by Wright (2007) for a Bouguer density of 2.3.

Figure 9.1 shows the detailed map of the Bouguer Gravity for the Lagoa Salgada property and the position of the 2019 and earlier IP/Resistivity lines.

The gravity data highlight an anomaly over Lagoa Salgada that is not limited to the ~400 m length of the known massive sulphide deposit. It extends to the south, reaching a maximum in the central zone. The azimuth of the gravity anomaly appears to trend farther east than the projection of the LS-North mineralization, more parallel to the regional gravity trend.

Figure 9.1
2019 IP/Resistivity Survey Coverage



There is a good agreement between the location of the known massive and stringer/stockwork mineralization and elevated residual Bouguer Gravity. These gravity anomalies also correspond to enhanced chargeability measured in 2018 (Hale and Gilliatt, 2018).

Reconnaissance IP/Resistivity surveys were recommended (Hale, 2019) to provide the necessary penetration through the ~100 m of Tertiary cover, imaging chargeable targets to depths over 300 m. Lines were also planned to extend coverage to the east of the 2018 lines and to survey the gravity maxima between LS North and Rio de Moinhos.

9.3.3 2019 IP/Resistivity Surveys

9.3.3.1 Survey Methods and Procedures

IP/Resistivity surveys were carried out by International Geophysical Technology (IGT) Inc. using an IRIS Instruments (IRIS) ELREC-PRO Receiver and an IRIS VIP 10,000 W transmitter. The surveys were completed during April and May 2019.

The surveys employed a pole-dipole array. This configuration was chosen because it provides a good balance between depth of penetration and lateral resolution. At each station, 10 dipoles of 75 m were recorded ("a" = 75 m and n=1 to 10, ~200 m line separation) to achieve a penetration depth over 350 m. Data before 2018 that had been collected with shorter dipoles resulted in very low point-to-point primary voltages and correspondingly noisy profiles. This problem was addressed by increasing the dipole size and using fewer dipoles and a higher power (10 kW vs. 4 kW) transmitter. The reduced resolution due to the larger dipole size was not significant given that the volume of interest lay under about 120 m of Tertiary sedimentary cover. This cover required emphasis to be placed more on depth penetration and signal strength (Vp) than high resolution.

A transmitting pulse width of 2 seconds was used with alternating polarity, separated by a 2 second "off time" during which the chargeability data were collected.

The receiver recorded in 20 channel Semi-Logarithmic domain mode. This mode provided enough samples early in each decay cycle for calculation of an initial chargeability MIP in addition to the Mx bulk chargeability. Multiple readings were averaged at each station until the standard deviation of the average was less than a specified tolerance. The entire reading and averaging process was repeated for a station if the data failed to reach the quality specified.

Stainless steel rods and ~20L of brine were used for current electrodes at each station and potentials were measured using $CuSO_4$ porous pot electrodes. Lines were surveyed from the southwest to northeast with the local current electrode(s) trailing the receiver electrodes. The "infinity" current electrodes were placed in dug and salted pits lined with aluminum foil and irrigated with several hundred litres of water supplied by a tractor and tank-trailer.

The total survey coverage was 74.4 km. The IP/Resistivity survey coverage is shown in Figure 9.1 above with survey details listed in Table 9.1.

Figure 9.1 above shows the extent of 2019 IP/Resistivity coverage (black lines). The 2018 and earlier lines are shown in blue. The black outline is the Lagoa-Salgada property boundary. The colour grid displayed as a base map is the Bouguer Gravity map after Wright's 2007 re-calculation using a density of 2,300 kg/m^3 for the Bouguer correction.

Table 9.1 is compiled from the data provided to IE by International Geophysical Technologies for daily QA/QC and processing.

Table 9.1
Lagoa Salgada IP/Resistivity Survey Coverage

	Coordinates (UTM – WGS 84)				Length (m)
	Start		End		
	X	Y	X	Y	
LS West & North					
L5bExt	547366	4231036	548999	4231898	2,025
L7Ext	547376	4231260	548460	4231260	1,200
L8Ext	547112	4231362	548336	4231907	1,350
L9Ext	546186	4231167	548591	4232217	2,625
L10Ext	546105	4231350	548434	4232387	2,550
L13Ext	545701	4231828	547756	4232743	2,250
L14Ext	547844	4230948	549694	4231772	2,025
L15Ext	548016	4230806	550072	4231721	2,250
L16Ext	545345	4231888	547401	4232803	2,250
L522	545264	4232071	547453	4233046	2,400
L53	545182	4232254	547238	4233169	2,250
L54	545102	4232437	547157	4233352	2,250
L55	545020	4232619	547075	4233534	2,250
L57	544583	4232863	546771	4233842	2,400
L59	544420	4233228	546749	4234265	2,550
L61	545171	4234000	546404	4234549	1,350
L63	545008	4234365	546240	4234912	1,350
L65	544846	4234730	546080	4235279	1,350
L9W	544473	4230405	545843	4231015	1,500
				Total	**38,175**
Rio De Moinhos					
L48	556968	4227780	558616	4228522	1,800
L49	557050	4227604	558900	4228426	2,025
L50	557131	4227420	558981	4228244	2,025
L51	557440	4227340	559298	4228137	2,025
L52	557522	4227156	559372	4227980	2,025
				Total	**9,900**
LS East					
L17	548280	4230705	550610	4231742	2,550
L18	548362	4230522	550486	4231467	2,325
L19	548900	4230543	550750	4231366	2,025
L20	548981	4230360	550831	4231184	2,025
L21	549519	4230380	551369	4231204	2,025
L22	549600	4230198	551450	4231021	2,025
L23	549911	4230117	551761	4230940	2,025
L24	550220	4230036	551864	4230768	1,800
L25	550416	4229904	552129	4230667	1,875
L26	550588	4229762	552233	4230494	1,800
L27	550784	4229630	552563	4230421	1,950
L28	550979	4229498	552895	4230353	2,100
L30	551348	4229224	552992	429956	1,800
				Total	**26,325**

	Coordinates (UTM – WGS 84)				Length (m)
	Start		End		
	X	Y	X	Y	
Rio De Moinhos					
L48	556968	4227780	558616	4228522	1,800
L49	557050	4227604	558900	4228426	2,025
L50	557131	4227420	558981	4228244	2,025
L51	557440	4227340	559298	4228137	2,025
L52	557522	4227156	559372	4227980	2,025
				Total	**9,900**
				Total	**74,400**

9.3.4 Data Processing and Presentation

The IP/Resistivity data were downloaded daily from the Elrec Pro receiver to a portable computer using PROSYS II software from IRIS. The resulting instrument dump file (*.bin) was edited (spurious readings removed) by IGT field personnel. The clean .bin files were sent to IE for QA/QC review as each line was completed and Cole-Cole parameters were calculated by IE. The edited *.bin data were then exported to a Geosoft format (.dat) file.

Data files were imported into Geosoft Oasis Montaj® databases (.gdb). Separate data channels were created to store the apparent Resistivity and average IP value (Mx Chargeability) of the middle time slices (~500 to 1,000 msec). Four panel pseudosections with Apparent Resistivity, Chargeability (Mx), Initial Chargeability (Mip) and Decay Time Constant (Tau) were calculated for each line for quality assessment and correlation from line to line.

DCIP2D software developed by the Geophysical Inversion Facility at the University of British Columbia was used to calculate an inverse model for each line. These 2D inverse models were corelated and re-gridded in 3-dimensional blocks to produce the final 2.5D models of resistivity and chargeability.

9.3.5 Surface IP/Resistivity Results

Figure 9.2 and Figure 9.3 show the chargeability and resistivity models respectively, composed from the 2D inverse models calculated for each surface line. The block model has been sectioned at an altitude of -50 m (relative to sea level), approximately 140 m below the surface. This level plan indicates chargeability just below the unconformity that separates the volcanic-sedimentary complex from the overlying Tertiary sedimentary rocks. A clear chargeability maximum corresponds to the known position of the LS North deposit. At this shallow depth a clear Mx peak is also associated with the LS South zone.

Figure 9.2
Mx Model Chargeability at -50 m
(relative to Sea Level, about 140 m below the surface)

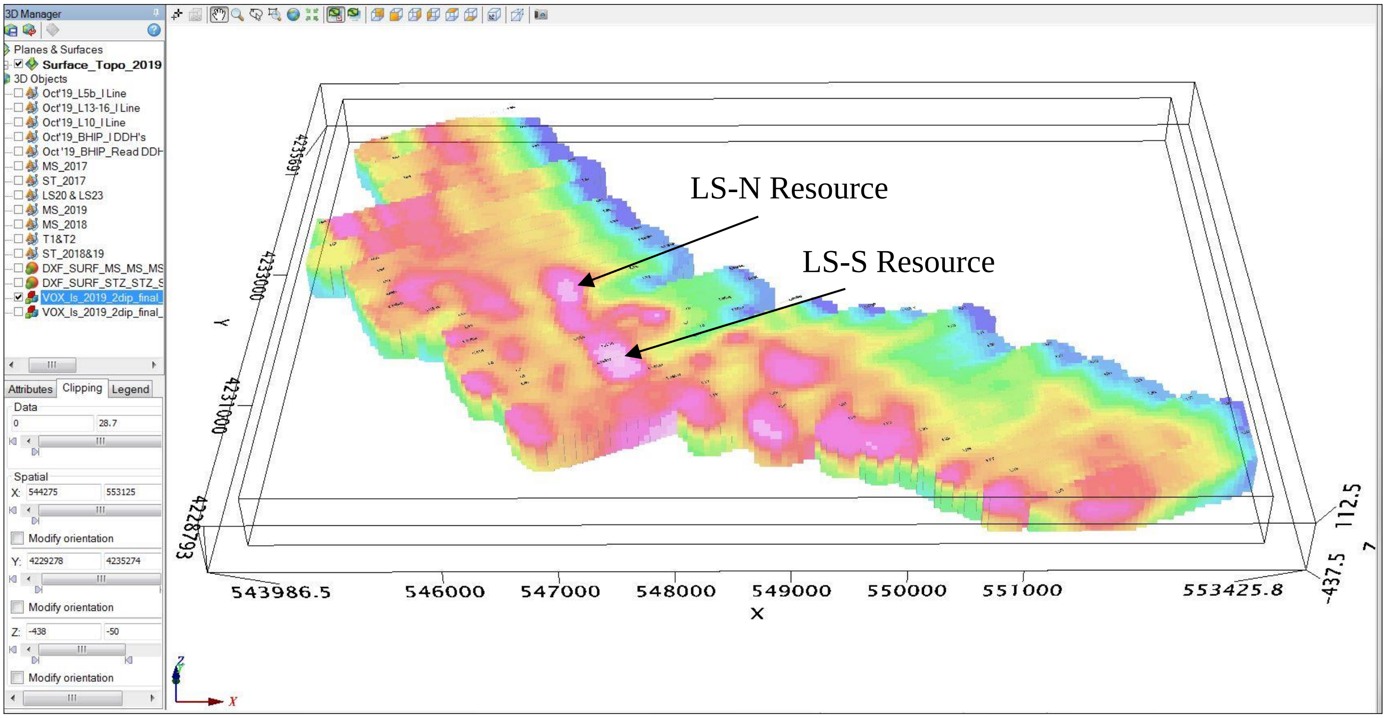


Figure 9.3
Model Resistivity at -50 m
(relative to Sea Level, about 140 m below the surface)

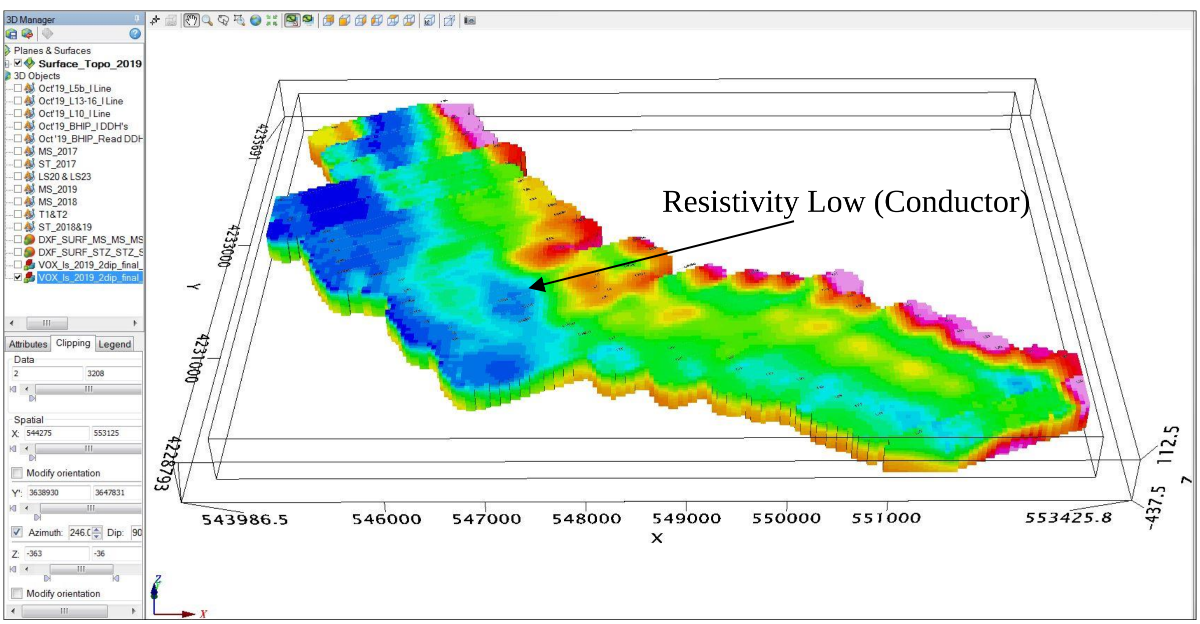


Figure 9.4 shows a closer view of the central part of the IP model, looking toward the north-east, with the depth of the model top adjusted to -108 m, about 200 m below the surface. The IP model can be compared to the drilling in 2019 and earlier years as well as the position of the LS North resource calculated early in 2019, also displayed.

A clear anomaly extends southward from the North Resource, but it appears to be displaced approximately 100 m to the east and 100 m deeper than the known mineralization of the North Resource.

In the LS South (stockwork) zone, the maximum anomaly lies east of most of the drilling that has taken place to date. East to west drill trajectories would have passed above the volume where the maximum chargeability occurs, deeper on the east side of the LS-South deposit. It is not clear that the maximum chargeability corresponds to the greatest concentration of economic mineralization (particularly because pyrite is much more potent than sphalerite in causing chargeability anomalies) but this eastward and deeper extension of the chargeability anomaly should be drill tested.

A chargeability anomaly on the apparent east limb of the LS-Rio do Moinhos folded structure, was recommended for drill follow-up early in 2019. This recommendation is still valid in view of the clearer anomaly presented by the 2019 data.

Data from the Rio do Moinhos anomaly were not of the same quality as the remainder of the survey and failed to provide a convincing target for drill follow-up.

9.3.6 Bore Hole Induced Polarization Results

Bore Hole Induced Polarization (BHIP) was used to increase the resolution of the chargeability models at depth, particularly in the vicinity of the LS North and LS South Resources when drill step-outs were planned in the spring of 2019. Figure 9.5 shows a view (looking north) of two BHIP three-dimensional chargeability models superimposed on the broader 2.5D surface chargeability model. The BHIP models used a fully 3-dimensional array of data combining cross-hole measurements from several drill holes in each area of interest following the methodology of Hale and Webster, 2006. Current was injected at depth in the holes, eliminating the de-focussing effect of the Tertiary cover and readings were generally taken with 25 and 50 m dipoles, read every 10 m. An expanding dipole was also measured from the base of the Tertiary (at the end of the steel casing) to the end of each hole to provide a wider search radius around the hole. The BHIP models are shown with a finer (X = 25 m x Y = 25 m x Z = 12.5 m) block size than the surface data. DCIP3D software from the Geophysical Inversion Facility at the University of British Columbia was used to calculate the 3D BHIP models.

Figure 9.4
Model Chargeability at -108 m
(about 200 m below the surface)

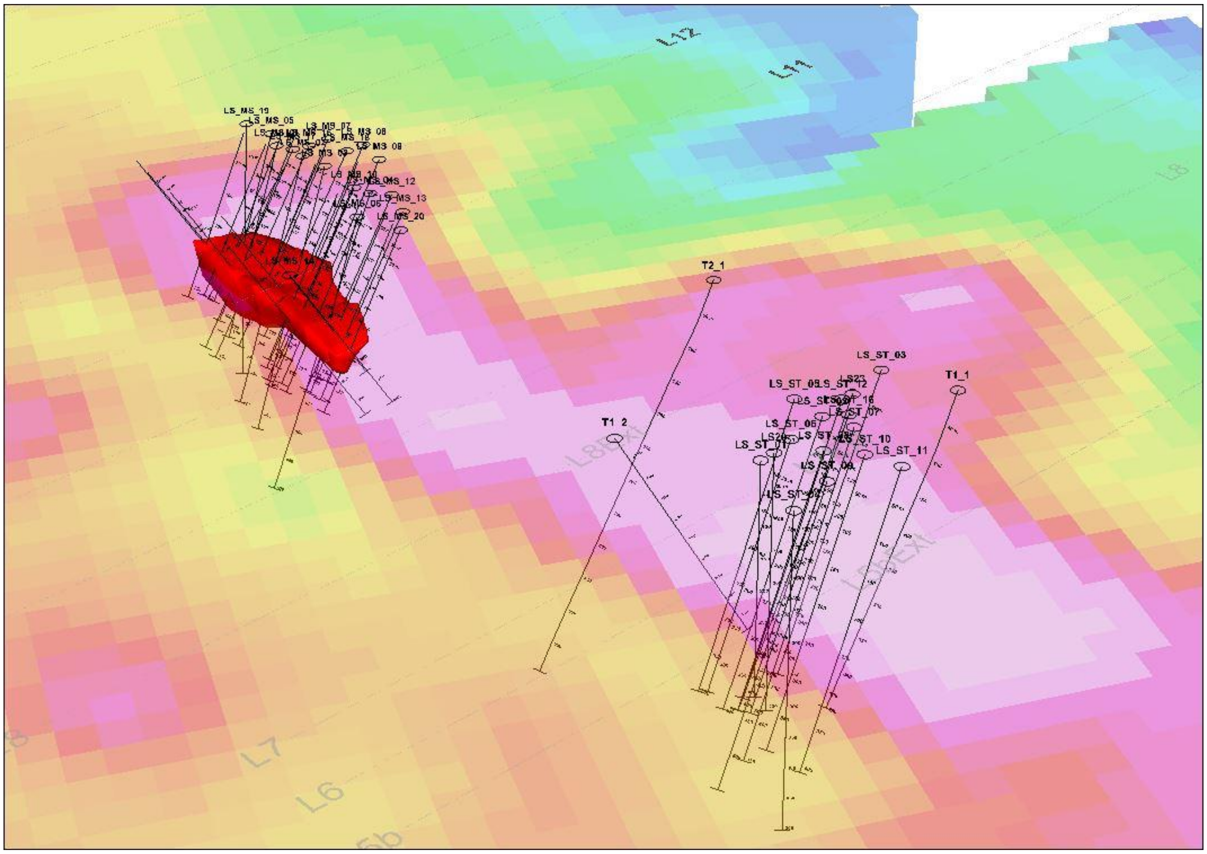


Figure 9.5 shows that the spatial correlation between the chargeability model and the mineralization known from drilling is very good for the North Resource but that the maximum chargeability associated with the South Resource occurs to the east and deeper than the drilling to date. Agreement is good between the surface IP models and the BHIP, suggesting that both the North and South Resources are part of a single anomalous zone. The Central Zone remains largely untested by drilling, so the source of this anomaly remains to be identified.

Figure 9.6 shows a closer view of the BHIP model for the North Resource, looking toward the northeast. The top of both the surface IP model and the BHIP has been set to roughly the top of the volcano-sedimentary rocks, about 140 m below the surface. The chargeability determined from BHIP measurements in LS-MS-21 through LS-MS-24 shows that the anomalous chargeability recognized from the surface work extends farther north than the present limit of drilling. The BHIP demonstrated that a continuous volume of massive sulphide mineralization extends to the north west linking LS-MS-21 to the mineralization in the LS-MS-22 to 24 section.

Figure 9.5
BHIP Chargeability Models for N and S Resource

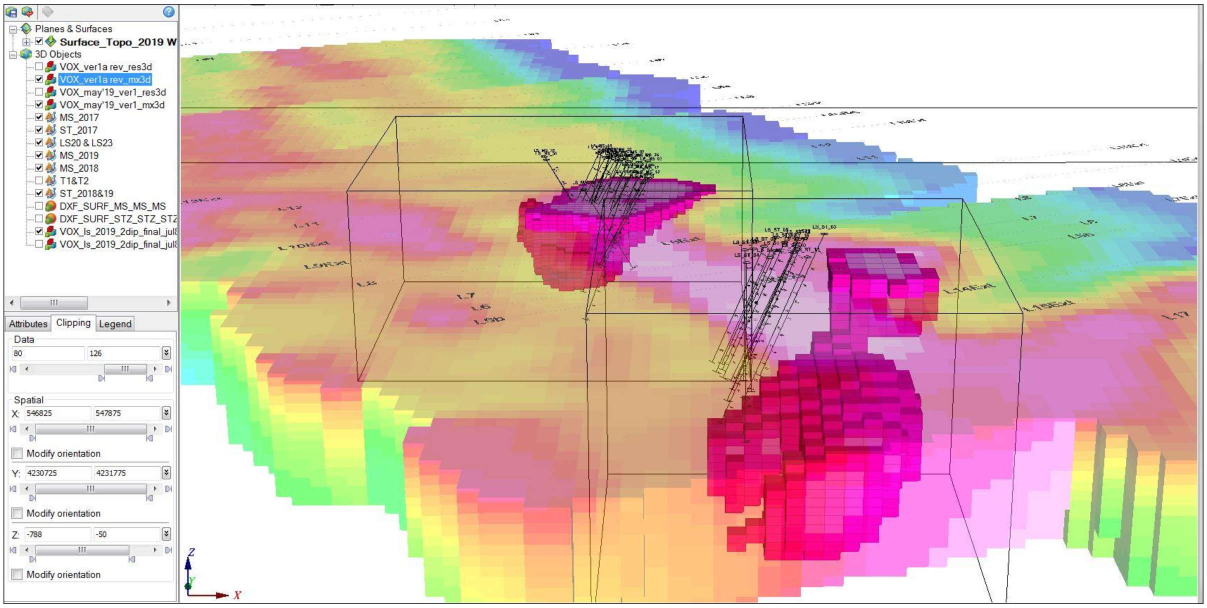


Figure 9.6
BHIP Chargeability Model for North Resource
(Looking NE)

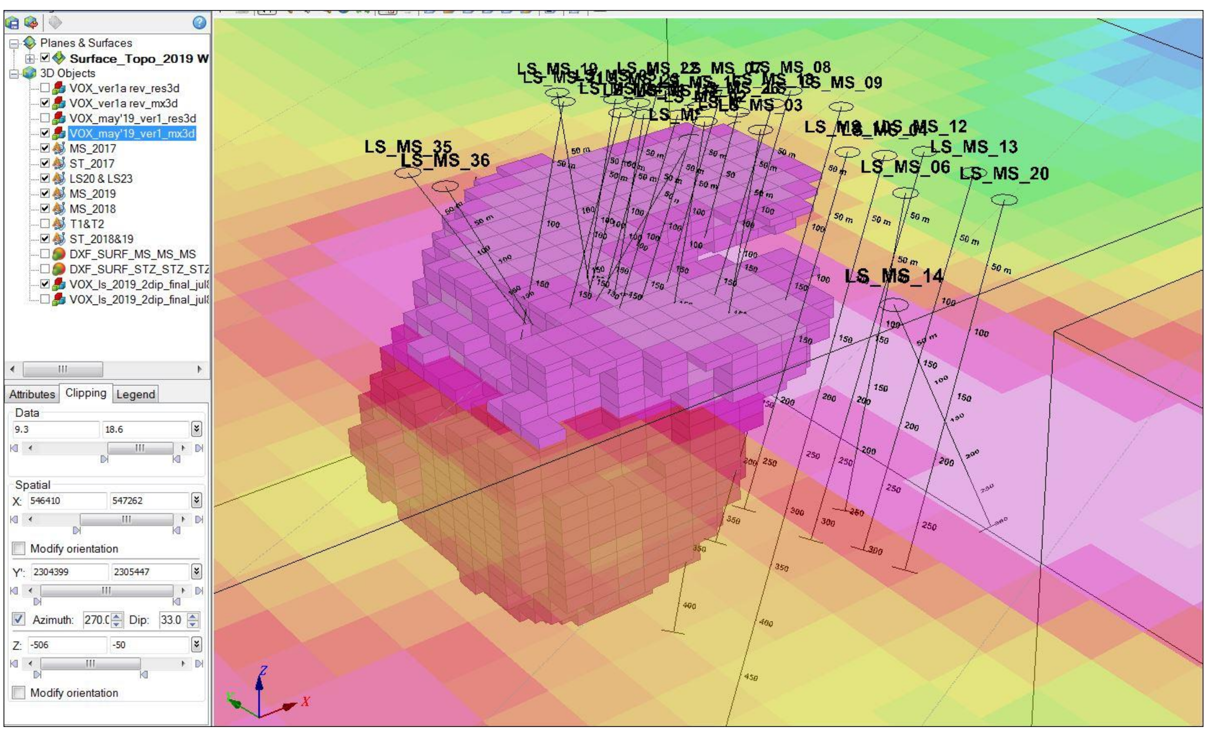
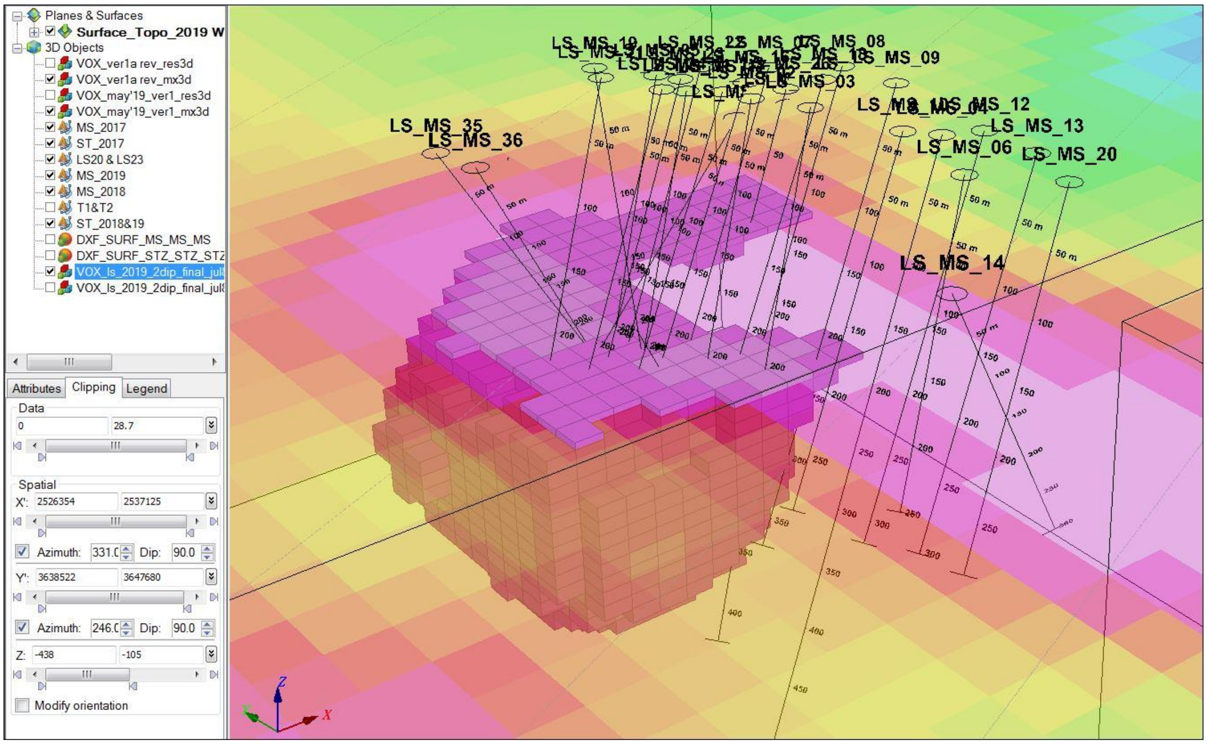


Figure 9.7 shows the same model as Figure 9.6, but this time the top has been adjusted to present a level plan at -105 m, about 200 m below the surface. At this level the extension of

the mineralization to the northwest of the most recent drilling here (LS-MS-35 and -36) is clear. The extent of this mineralization can not be known because of the non-uniqueness of the BHIP models but the possibility is suggested that additional mineralization may be drilled with a step-out to the northwest. In the short term it would be useful to refine the BHIP model with measurements from the recent holes in this part of the property.

Figure 9.7
BHIP Chargeability Model for North Resource
(Looking NE, 200 m below surface)



9.3.7 Conclusions

The 2019 geophysical exploration program has clarified the picture offered by the 2018 data with cleaner, more reliable data from both surface and borehole surveys. The principal conclusions to be drawn from this work are the following:

- Both the LS North Resource and LS South Resource appear to be parts of a single band of anomalous chargeability that links them in the surface results. Additional support for the continuity of mineralization is provided by the conductive zone seen in the surface resistivity model and its elevated gravity.
- The chargeability anomaly extends southward from the LS-North Resource, but it appears to be located about 100 m east and 100 m deeper than the North Resource as it is now located. This chargeability may result from either an offset in the LS-North mineralization or the presence of a parallel mineralized structure at this depth, or a non-economic formational source like an underlying sulphidized black shale. There is

no way to resolve this uncertainty without drilling a step-out to test this anomaly at depth.

- The main anomaly at the LS South Resource appears to be located to the east and deeper than much of the present drilling. Again, a step-out to the east is necessary to test this anomaly.
- BHIP has been helpful in improving the local definition of the chargeability anomalies, showing that mineralization is linked between the northwestern holes in the North Resource. Surface and BHIP models agree well and provide good targets for drill testing.
- Surface IP data indicate several chargeability maxima that are peripheral to the main resource volumes. Where these coincide with low resistivity and elevated gravity, they present good targets for follow-up drilling.

9.3.8 Recommendations from the 2018-2019 Geophysical Results

Recommendations pertaining to the North and Central zones, LS West:

- Chargeability, resistivity and gravity data all suggest the possibility of a larger tonnage in the stockwork zone in the central and southern parts of the deposit. Some more aggressive step-outs to test the idea of additional tonnage to the east in the central zone may be useful.
- Recently drilled holes should be surveyed with BHIP, especially those in the Central Zone and extensions of the LS North Resource to the northwest and southeast. A program of 10-15 BHIP holes should be carried out prior to drilling in the Central zone or extending LS North Resource drilling toward the northwest, to optimize future drilling.

Recommendations for the property as a whole:

- Chargeability anomalies are indicated on both the western (Lagoa Salgada) and eastern limbs of an apparent anticline indicated on the regional Bouguer gravity map. The anomaly extends from Line 7-9 at the east end of these lines (Figure 9.1) and possibly south to L14 on the eastern limb of the inferred anticline where it has not been drilled. A target could be tested at 4231900N, 548000E, -300 m. This recommendation from the 2018 program is carried forward and validated by the 2019 results.
- Other surface IP/Res chargeability anomalies from the 2019 survey should be considered for follow-up drilling, especially when they are spatially correlated with conductivity and elevated gravity.

9.4 STRUCTURAL MODELLING

Consulting de Geologia y Mineria, S.L. of Spain was contracted by Redcorp in 2018 to produce a 3 D structural model of the LS Project deposits. This work is still in progress.

9.5 QP COMMENTS

The QP has reviewed the exploration programs to date and find that the work conducted is consistent with the work that should be conducted for the mineralization and deposit type that is indicated to be present on the Lagoa Salgada property.

10.0 DRILLING

10.1 LAGOA SALGADA PROJECT DRILLING SUMMARY

The Lagoa Salgada (LS) Project has been explored by drilling from 1995 to the present. Redcorp has conducted drilling programs at the LS Project since 2005; including 2005-2009 under the direction of Redcorp Ventures and 2011-2012 under the direction of Portex. The focus of drilling since 2007 has been on the North deposit (formerly LS-1 deposit) and the South deposit (formerly LS-1) areas.

Table 10.1 summarizes the drilling on the property and on the Lagoa Salgada deposits. Figure 10.1 illustrates the locations of the drill holes on the property.

Table 10.1
Summary of Exploration Drill Programs at the Lagoa Salgada Project Since 1995

Company	Period	Total Holes	Total Length (m)	Core Diameter
RTZ/EDM	1995	38	17,992	HQ
Redcorp Ventures	2005 to 2008	24	11,220	HQ
Portex	2011 to 2012	7	1,602	HQ
Redcorp	2015 to 2017	10	3,464	HQ
Ascendant/Redcorp	2017 to 2018	20	7,077	HQ
Ascendant/Redcorp	2019	26	8,164	HQ
Total	**1995 to 2019**	**125**	**49,519**	**HQ**

Of the total, 61 drill holes intersect the North deposit, 4 drill holes intersect the Central Deposit and 13 drill holes intersect the South deposit.

10.2 ASCENDANT/REDCORP DRILLING PROGRAM

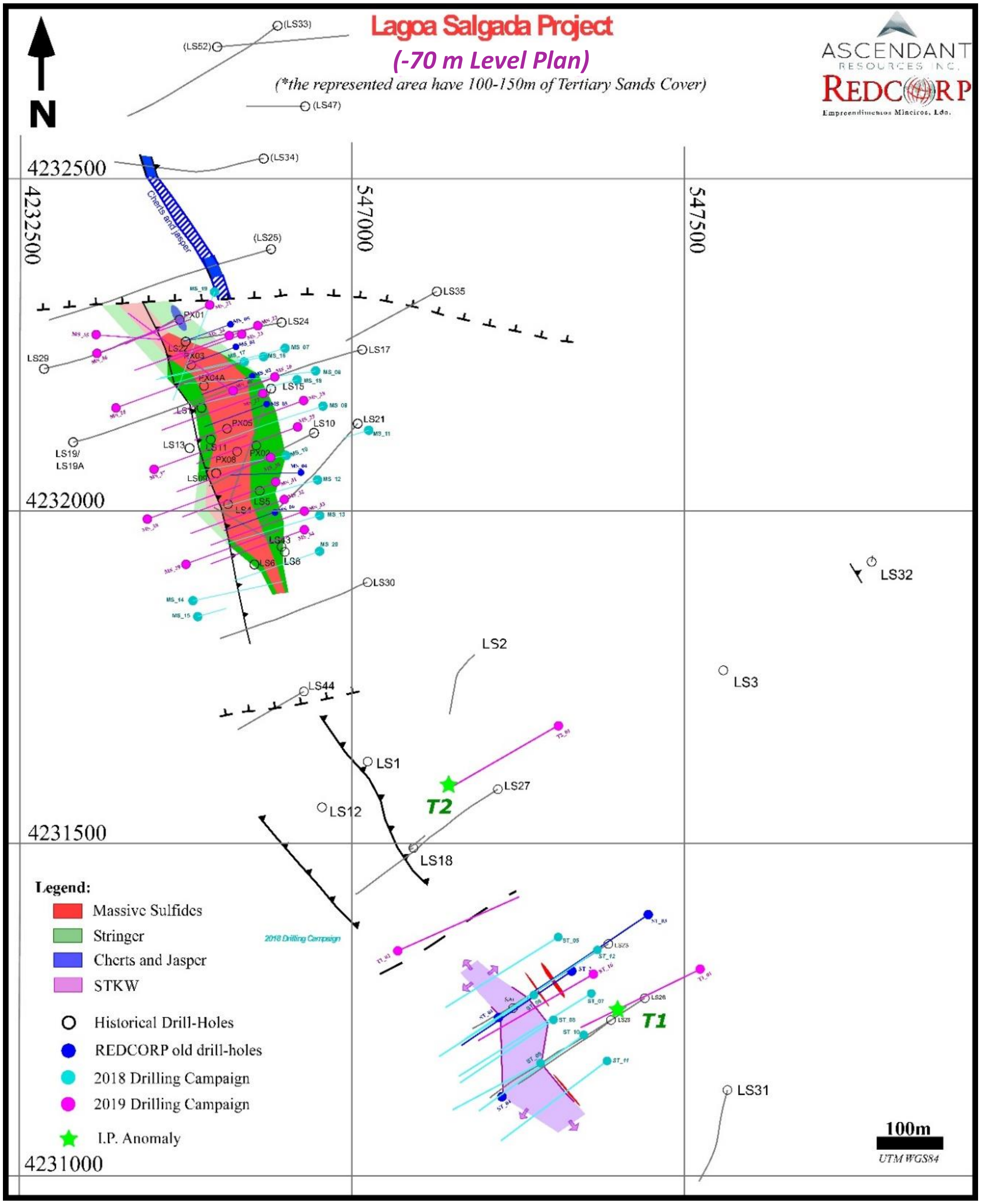
Ascendant/Redcorp have so far conducted two drilling campaigns on the LS Project as shown in Table 10.1 above. In both instances, Drillcon was contracted to undertake the drilling.

Drillcon used one drill with a tri-cone bit to pre-collar the drill holes through the Tertiary sedimentary units. The drill holes were cased using a steel casing for the entire length of the hole within the Tertiary sedimentary units.

A second drill, comprised of a diamond core drilling rig using HQ size core, was then brought in to continue drilling. Once the drill rods showed signs of stress, the drill core size was reduced to NQ. Most of the core drilling was conducted using HQ.

The drillers used a black marker to label the core boxes and, as the drilling progressed, they also used the black marker to denote the depth of the drill hole on wooden blocks within the core boxes. Once the core boxes were filled, they were transported by Redcorp personnel to the core logging and storage facility. The boxes and metre markers were subsequently retagged by Redcorp with Dymo plastic tags.

Figure 10.1
Drill hole Location Map



Map provided by Ascendant, 2019.

Once the drill hole was completed, acrylonitrile butadiene styrene (ABS) polyvinyl chloride (PVC) pipe (NQ) was inserted down the entire length of the drill hole. This was conducted in order to prevent the walls of the drill hole from collapsing prior to carrying out downhole geophysical surveys such as the Mise-a-la-Masse surveys.

The drill hole steel collar was retained in-situ and a steel cap was placed on the top of the collars to allow for a hinged cap to cover the drill hole and be locked with a padlock. To keep the drill collars more visible, a 4” blue ABS pipe was used as a collar marker.

10.2.1 Ascendant/Redcorp Core Logging Procedures

The diamond drill core was collected by Redcorp geologists at the drill site and conveyed to the core logging and sampling facility. The drill core was rough logged onto paper logs prior to being transcribed into a Microsoft Excel spreadsheet.

Sampling was conducted in 1.0 m intervals respecting the contacts between different lithologies. The sample tags were inserted into the core box at the beginning of the sample interval.

Lead and zinc standards were inserted roughly every 15 samples within the gossan and massive sulphide lithologies. Gold and copper standards were inserted in roughly the same intervals in the stockwork lithologies. Duplicates were collected from the drill core by quartering the half core and submitting it as a new sample.

Upon arrival at the core shed, the drill core went through the following steps:

- core was reassembled in the box and if necessary, cleaned.
- core was photographed.
- The following information was recorded in a digital spreadsheet:
    - core recovery.
    - rock quality designation (RQD).

Geological logging protocols record lithology, structures, alteration, mineralization and oxidation in descriptive columns. Logs are first recorded on paper logging sheets, and later transcribed into a computer database by Redcorp geologists.

10.2.2 2017-2018 Summary of Drilling Results

The 2017-2018 drilling focused on the North and South deposits. Analytical results confirmed the presence of tin mineralization in the massive sulphide zone of the North deposit in addition to zinc, lead, copper, silver and gold. The South deposit appears to be enriched in copper at the expense of zinc and lead; however, the massive zone of the North deposit contains higher grade copper as compared to the stockwork zone of the South deposit.

Drill hole LS-ST-12 intersected massive sulphide on the eastern part of the South deposit. This intersection correlates well with the massive sulphide previously intersected in drill hole LS 23. Thus, there appears to be a massive sulphide zone associated with the South deposit which implies that the VMS system at the LS Project likely has more than one vent.

Interpreted drill sections of the North and South deposits are shown in Figure 10.2 and Figure 10.3, respectively.

The Central deposit profile/mineralization style is similar to the South deposit.

10.2.3 2019 Summary of Drilling Results

The 2019 drill program objectives were to upgrade the resources from the Inferred category to the Indicated/Measured categories and to expand the tonnages. Sectional interpretation of the drill intersections shows that the objectives were met, as demonstrated in Figure 10.4.

10.3 MICON COMMENTS

The drilling results summarized on the above sections demonstrate that the drilling campaigns have progressively yielded encouraging results. However, down dip and lateral extensions still remain to be fully tested for each of the three deposits.

Redcorp's drilling and sampling protocols are in line with the CIM best practice guidelines. Core recoveries beneath the overburden are excellent (+95%) and this ensures good quality samples. The restriction of sample intervals to lithological and mineralization boundaries yields a representativeness of the mineralization types encountered and facilitates geological modelling of the deposits. Micon has not identified any drilling, sampling or recovery factors that could result in sampling bias or otherwise materially impact the accuracy and reliability of the assays and, hence, the resource database.

Figure 10.2
Drill Section Through the North Deposit

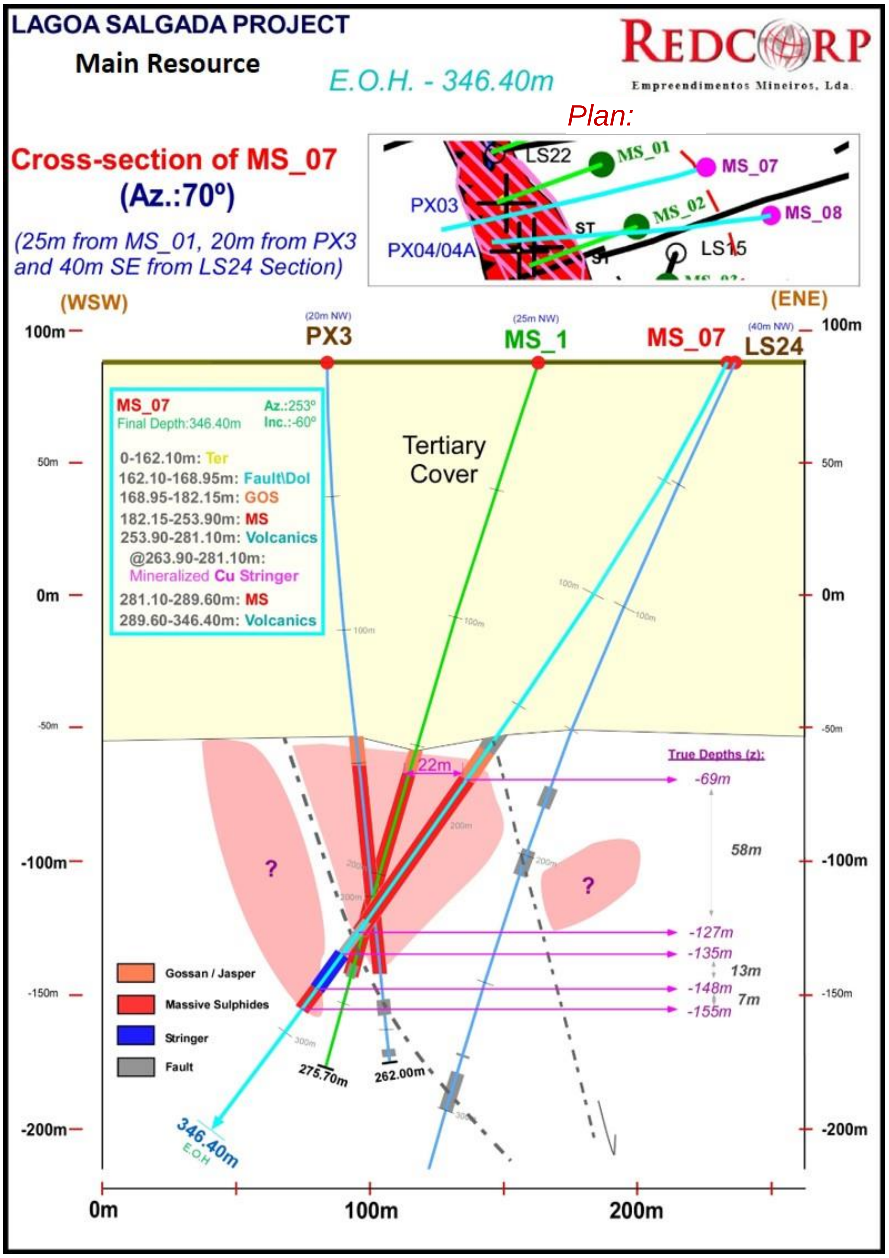


Figure 10.3
Drill Section Through the South Deposit

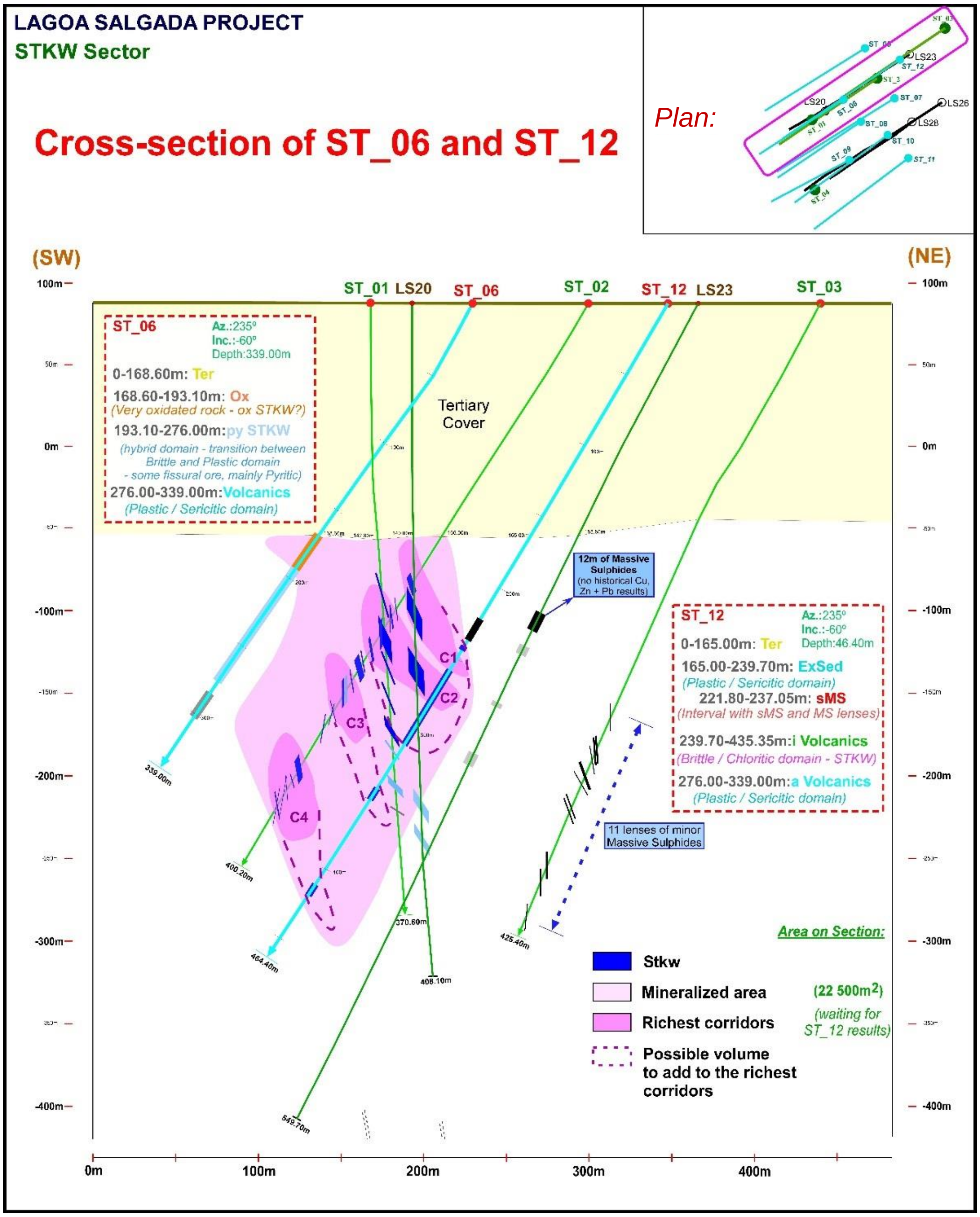
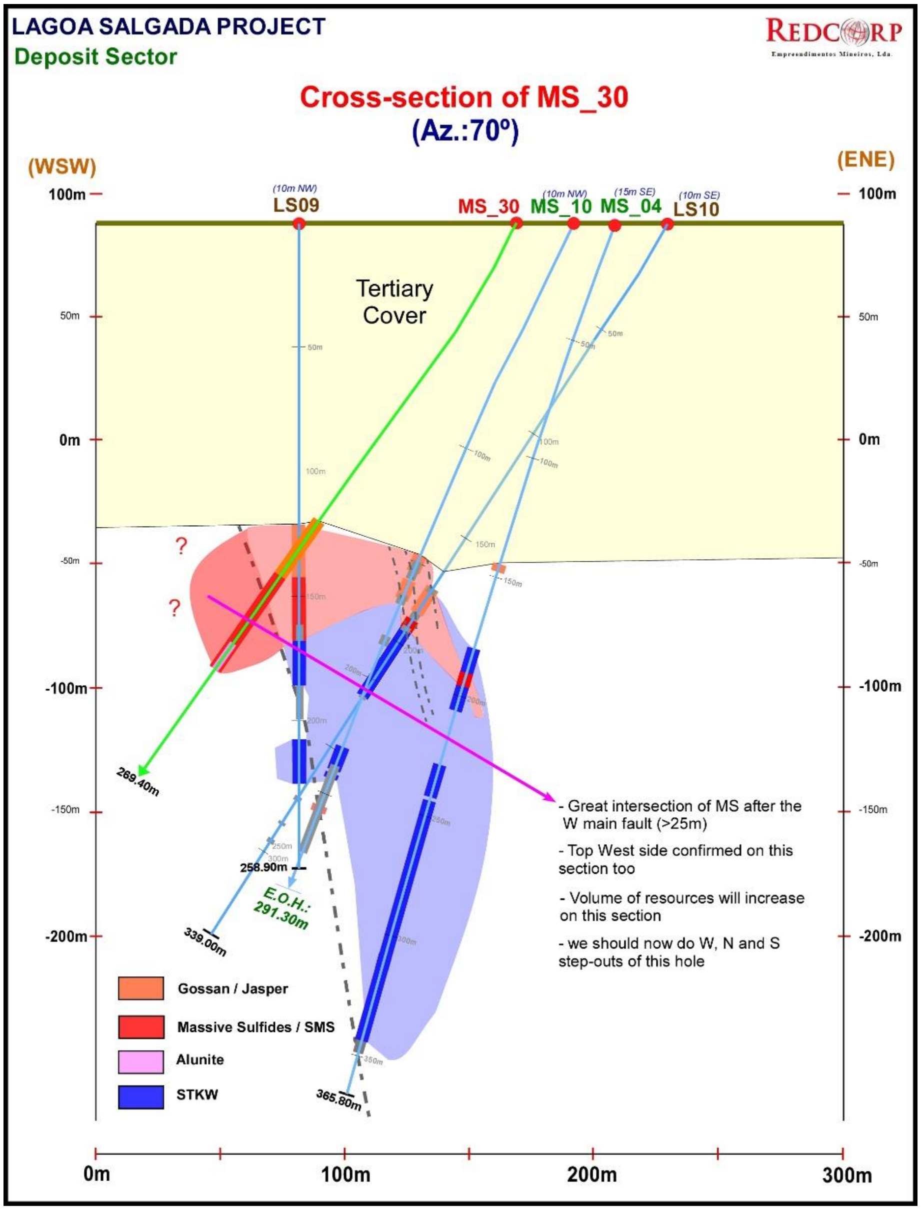


Figure 10.4
Section Demonstrating the Effects of Infill Drill Hole MS_30



11.0 SAMPLE PREPARATION, ANALYSES AND SECURITY

11.1 SAMPLE PREPARATION AND ANALYSES

11.1.1 Protocols Before Dispatch of Samples

11.1.1.1 Sample Preparation at Site

Drill core in core trays is inspected to ensure that depth markers are in place, photographed, measured for core loss and RQD, then logged and marked for sampling. The sampling aspect involves cutting/splitting the drill core longitudinally into symmetrical halves followed by sampling. The samples are taken at 1 m intervals terminated at lithological or alteration contacts within the mineralized zones, and, sometimes at longer intervals outside the mineralized zones, as determined by the project geologist. The entire length of the drill hole is sampled. A tag with the sample identification (ID) number is placed in each sample bag before being sealed. The position of the sample on the remaining half core in the core box is marked with a corresponding ID tag for reference.

Sample reference sheets summarizing all the samples taken from each hole are provided during the core cutting process. These sheets are used to identify where the quality control samples will be added into the sample stream and for preparing the requisition and shipment forms.

11.1.1.2 Quality Control Measures

Redcorp has maintained well documented QA/QC measures since the inception of their drilling programs, in 2014. Certified standard samples are inserted every 15th sample through the series and field duplicates every 40th sample. Two blanks are also placed in every assay batch.

All standards and blanks are obtained from an independent third-party provider (CDN Resource Laboratories Ltd). Field duplicates consist of cutting the remaining half core into two with the diamond core saw, resulting in a quarter core being submitted to the laboratory as the field duplicate and a quarter core being retained for reference.

11.1.1.3 Packaging and Security

All activities pertaining to data collection, namely sampling, insertion of control samples, packaging and transportation are conducted under the supervision of the project geologist.

Other than the insertion of control samples, there is no other action taken at site. Thus, no aspect of the sample preparation for analysis is conducted by an employee, officer, director or associate of the issuer.

Samples are placed in sequence into rice bags which are labelled with company code and sample series included in the bag. Requisition forms are compiled using the sample reference sheets that were generated since the previous shipment. Sample bags are sealed and then stored in a locked sample dispatch room. When a shipment is ready, the sealed rice bags are dispatched to the ALS (Seville) laboratory via courier. Laboratory personnel check to ensure that no seal has been tampered with and acknowledge receipt of samples in good order via e-mail.

11.1.2 Laboratory Details

Redcorp uses the ALS (Seville) facility as their sample preparation laboratory and ALS (Sudbury) for the analytical work. The analysing laboratory (ALS Sudbury) is ISO/IEC 17025:2005 accredited and both branches (ALS Seville and Sudbury) are independent of Redcorp. The ALS laboratory is among several laboratories that regularly participate in the PTP-MAL (Proficiency Testing Program for Mineral Analysis Laboratories) round robin laboratory program provided by Natural Resources, Canada, for minerals containing gold, platinum, palladium, silver, copper, lead, zinc, cobalt.

11.1.3 Laboratory Sample Preparation and Analysis

Redcorp’s samples were prepared by crushing the sample with up to 70% of the material passing a 2 mm screen, split to 250 g, and pulverized under hardened steel to 85% passing a 75 µ screen.

ALS (Seville) then sent the prepared sample to their sister laboratory in Sudbury, Ontario, for analysis. The remaining sample pulps and sample rejects are sent back to Redcorp.

The core samples are analyzed for gold (ppm) by fire assay (Au-AA25), and for the other elements by multi-element analysis using optical emission spectrometry and the Varian Vista inductively coupled plasma spectrometer (ME-ICPORE). Samples from the North deposit massive sulphide zone are also assayed for tin (Sn) by ICP-AES after Sodium Peroxide Fusion (Sn-ICP81x).

11.2 BULK DENSITY

Bulk density measurements were collected on roughly alternate drill holes. The bulk density measurement used the instantaneous water immersion method which records the dry weight immediately followed by the weight in water which is used to calculate the bulk density. The results were entered into the database to correspond with the drill hole number, depth, grade and rock and alteration types.

11.3 QUALITY CONTROL RESULTS

All assays are reported directly to Redcorp via e-mail to designated personnel. Signed assay certificates are sent via courier or post. The monitoring of the performance of the QA/QC samples is conducted immediately after the assay results are received. The assay results for control samples were plotted upon receipt of the initial assays. Certified refence materials (CRF)/standards were considered a failure if the assay was close to or outside 3 standard deviations and the whole batch would be re-analyzed. Blanks were considered a failure if they reported values three times above the detection limit. On the whole, the performance of all control samples (blanks and standards) for analytical work has been satisfactory. As examples the performance CRM CDN-ME-1804 is demonstrated in Figure 11.1, Figure 11.2 and Figure 11.3.

Figure 11.1
Summary of Performance of CRM CDN-ME-1804: Au ppm

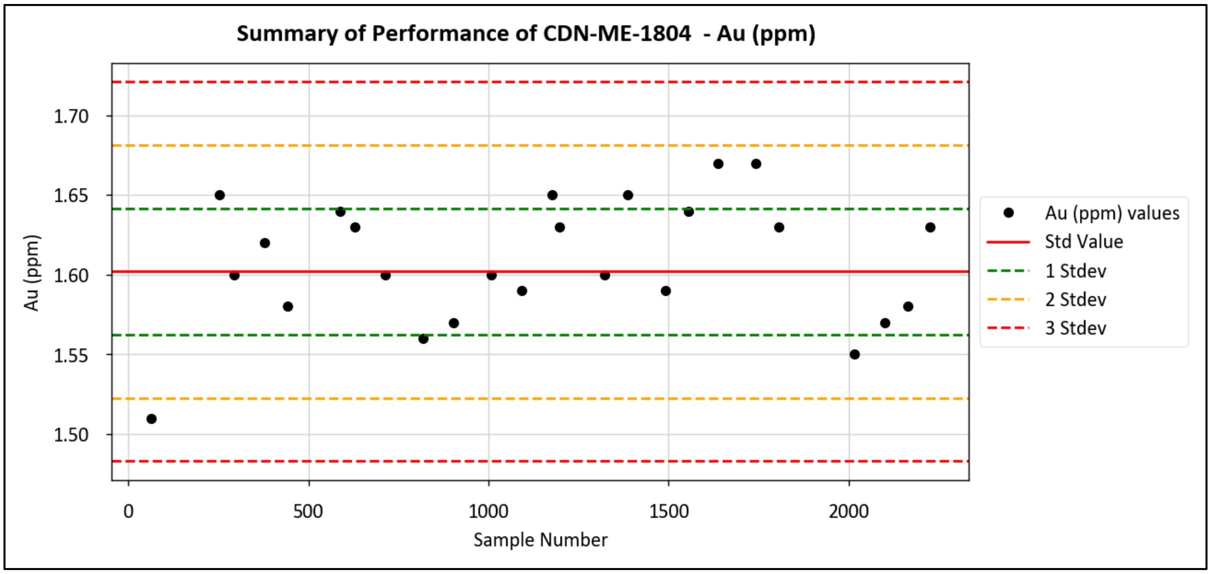


Figure 11.2
Summary of Performance of CRM CDN-ME-1804: Cu (%)

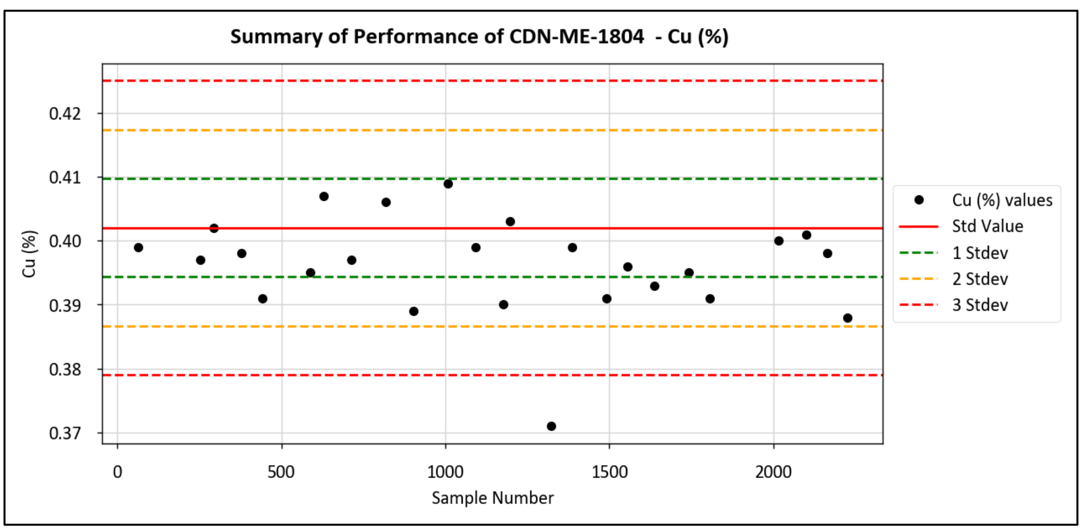
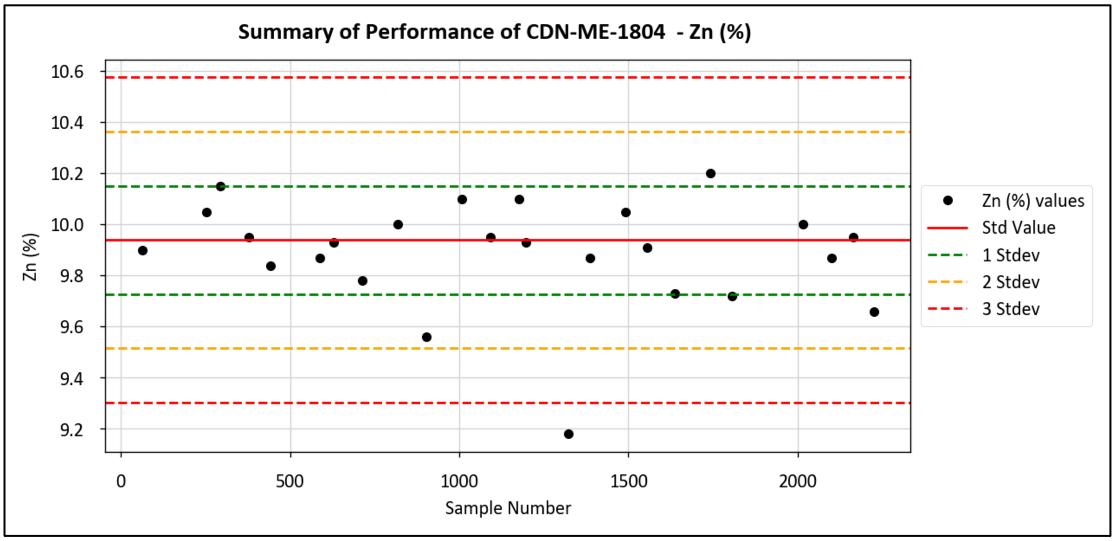
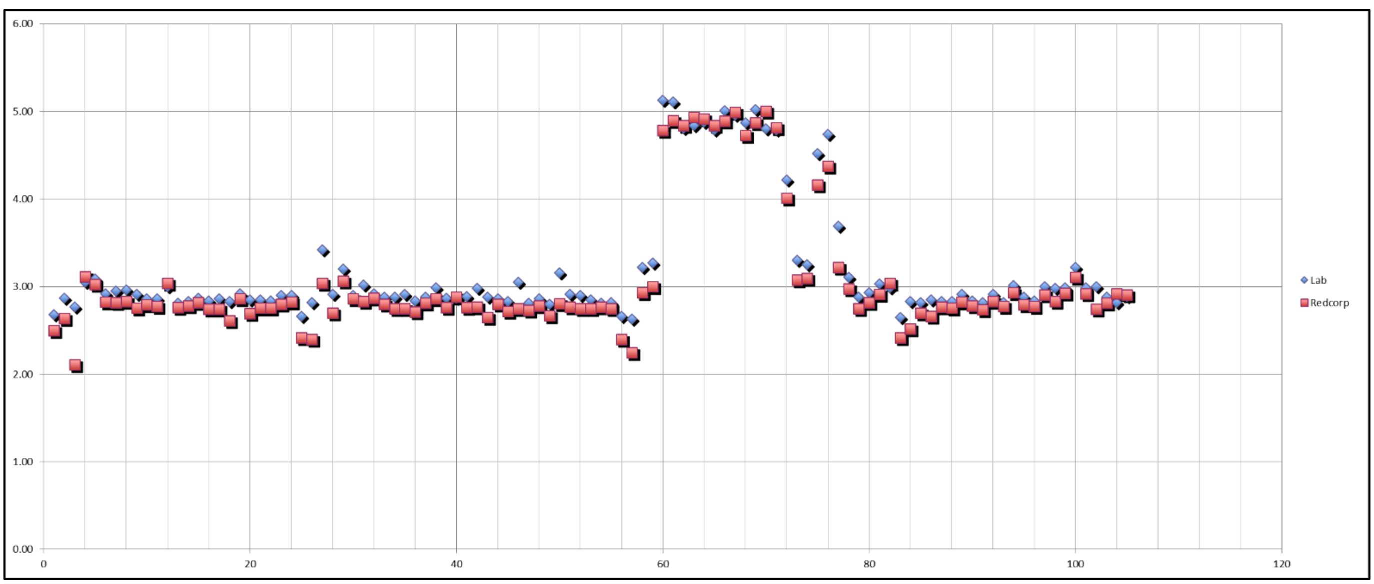


Figure 11.3
Summary of Performance of CRM CDN-ME-1804: Zn (%)



Bulk density checks by the laboratory showed that the in-house determinations were marginally lower, as shown in Figure 11.4 below.

Figure 11.4
Redcorp Bulk Density Vs ALS Laboratory Bulk Density



Notes: Blue = ALS; Red = Redcorp

The final bulk density used for each lithology/domain in estimating the mineral resource tonnages was taken as the average of the ALS Laboratory determinations.

11.4 MICON COMMENTS

Micon considers the sample preparation, security and analytical procedures to be adequate to ensure the credibility of the analytical results used for mineral resource estimation. The monitoring of the laboratory's performance on a real time basis ensures that corrective measures, if needed, are taken at the relevant time and gives confidence in the validity of the assay data.

12.0 DATA VERIFICATION

The steps undertaken by Micon to verify the data in this Technical Report include three site visits to the LS Project area, analyzing monitoring reports on the performance of control samples and conducting a resource database validation.

Micon did not take any samples to verify the mineralization at the LS Project during the site visits, as the mineralization is easily identified in drill cores with the unaided eye.

12.1 SITE VISIT

Micon senior geologist, Charley Murahwi, P.Geo., FAusIMM, visited the LS Project from 16 to 19 October 2018, from 13 to 17 November 2018 and from 28 to 31 May 2019. The Redcorp staff in attendance were Joao Barros (Redcorp Managing Director) and Vitor Arezes (senior project geologist). The data verification activities and results achieved are summarized below.

12.1.1 Discussions on Geological Attributes

Discussions held with Redcorp staff centred on the genetic model/attributes of the LS Project deposits, including mineralization trends and the role of structures and lithology.

The general consensus is that the subdivision of the LS Project into the North, Central and South deposits is arbitrary, being based on the existing drill pattern. In reality, all three deposits coalesce into a single zinc-rich VMS system manifesting/displaying its macro-genetic features from secondary gossan to primary massive to primary and primary/secondary stringer/fissure type mineralization in the waning phases of volcanic activity. This interpretation is supported by geophysics which shows that all zones lie on a continuous coincidental Induced Polarization (IP) chargeability anomaly with an estimated geological strike length of 1.7 km in an SSE to NNW direction from the South deposit to beyond the North deposit and terminating against the Alpine fault. The massive sulphide intersections observed in drill holes LS 23 and LS-ST 12 on the eastern side of the South deposit suggest the possibility of another volcanic vent.

The overall controlling structure and continuity of the mineralization follow a linear trend in a northwesterly direction over a distance of about 1.7 km. Both lithological and structural control appears to be significant, with the mineralization exhibiting both global and local trends.

Micon has incorporated these attributes in the modelling of the deposits.

12.1.2 Field Examination of Project Area and Drilling

The North deposit was visited to examine the landscape features and diamond drilling techniques, including down-the-hole surveys. Observations on the ground confirm a monotonous flat topography that conforms to the DTM provided by Redcorp with the database. Thick sequences of alluvium necessitate 4-wheel drive vehicles in wet conditions.

Drilling is conducted to industry standards with very minimal core losses. Down-hole surveys are conducted using a Reflex Ez-Shot high precision magnetic and gravimetric instrument. Micon witnessed some of the down-hole measurements being conducted and is satisfied that industry standards were upheld. In addition, Micon checked the calibration of the down-hole survey instrument and found it to be in good standing as evidenced in Figure 12.1.

Figure 12.1
Calibration Details for Reflex Ez-Sot Used at the LS Project

REFLEX® intelligence on demand

Unit 4/5, Upper Stalls
IFORD, Nr Lewes
East Sussex, BN73EJ
UK
+44(0) 1273 483700
www.reflexnow.com

CERTIFICATE OF CALIBRATION

Product Information

Product Type: **Reflex EZ-Shot** Product SN: **0592**

Calibration Information

Calibrated for and on behalf of: **Reflex Instruments Europe Lt**
Issued on: **13 December 2017**
Reference Magnetometer Serial Number: **12EJB121772**

Calibration Test Data

Tool Serial Number	0592
Accelerometer S/N (X,Y,Z)	2018116, 2018115, 2018117
Calibration Temperature	13°C

OFFSET	X	Y	Z
ACCELS	3.85	-117.90	4.20
MAGS	-8.89	-16.51	1.70

Error Levels

ACCELS	RMS DIP ERROR	RMS ROLL ERROR
	0.03° ≤ 0.25°	**0.04°** ≤ 0.25°

MAGS	MAX DIR ERROR	MAX M% ERROR
	0.15° ≤ 0.25°	**0.15%** ≤ 0.25%

Confidence Check

Position 1

Roll	Total [nT]	AZI [°]	DIP [°]
Ref.	49890	168.7	26.6
0°	49860	169.0	26.7
90°	49870	168.8	26.6
180°	49820	169.0	26.7
270°	49870	168.9	26.7

Position 2

Roll	Total [nT]	AZI [°]	DIP [°]
Ref.	48090	99.7	39.4
0°	48120	99.3	39.5
90°	48090	99.3	39.5
180°	48090	99.3	39.5
270°	48120	99.3	39.4

Recalibration recommended no later than: **13 December 2019**

CAL IMD 21 FQC

Reflex Instruments Europe Ltd certifies that this instrument has been calibrated in accordance with REFLEX Quality System procedures and conforms to product performance specifications. This certificate provides traceability of measurement to recognized national standards or to accepted values of natural physical constants.

12.1.3 Examination of Drill Cores

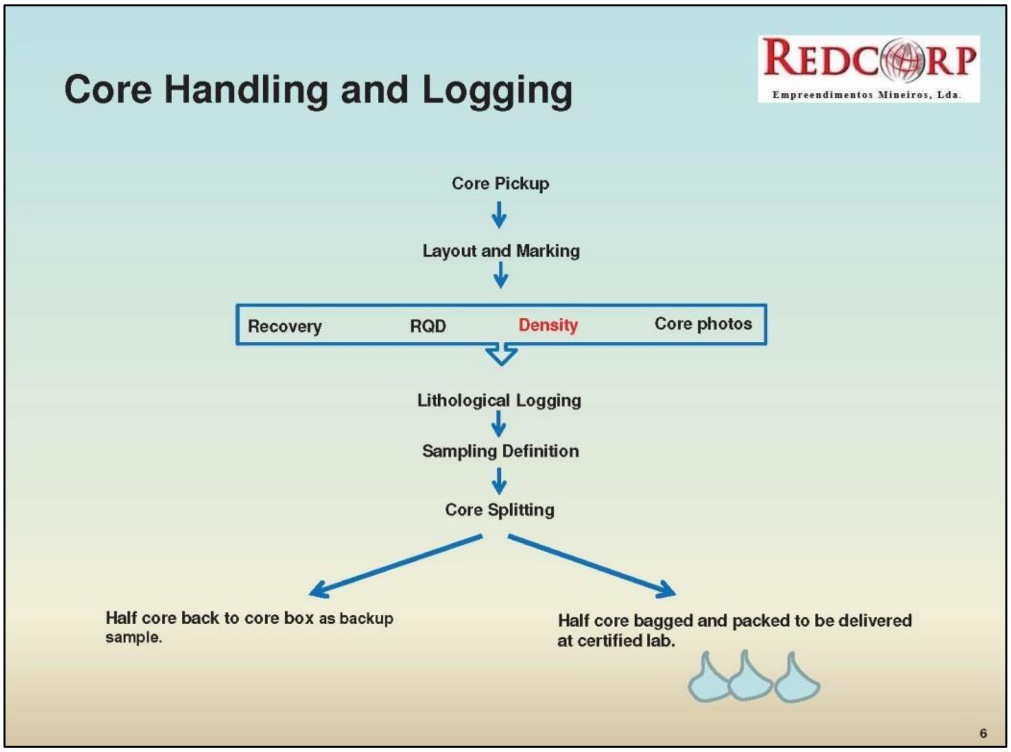
Most of the drilling on the LS Project was conducted using HQ-size core, yielding good core recoveries, and in turn, representative samples. Micon examined diamond drill cores from 6 holes of the North deposit and three holes of the South deposit. All the major mineralization and alteration styles described in the geology section of this report were confirmed.

In a number of cases, it is difficult to identify the best mineralized zones visually but, overall, assay results generally match the mineralized intercepts observed in drill cores.

12.1.4 Data Collection Techniques

Micon reviewed the drill core logging procedures and sample collection methods and found them to be in line with the CIM best practice guidelines. Drill core is cut with a diamond saw to attain symmetrical halves. Wherever core is friable or heavily weathered, splitting is done manually. The protocols are summarized in Figure 12.2.

Figure 12.2
Redcorp Protocols for Core Handling and Logging



Samples are dispatched to the laboratory in secure containers. This minimizes damage to sample bags during transportation that may result in contamination between samples.

12.2 ANALYSIS OF QA/QC PROTOCOLS

Redcorp QA/QC protocols conform to CIM best practice guidelines. The monitoring of the laboratory's performance was conducted on a real time basis and ensured that corrective measures, where needed, were taken at the relevant time, giving confidence in the validity of the assay data.

12.3 BULK DENSITY

Bulk density measurements were conducted at site by Redcorp technicians using the Archimedes principle technique. Validation of bulk density measurements was conducted by the ALS laboratory.

Micon reviewed the measurement procedure and found it to be acceptable. However, the in-house site measurements are slightly lower than ALS laboratory measurements. For the mineral resource tonnages, Micon adopted the average values as determined by the ALS Laboratory, as seen in Table 12.1.

Table 12.1
Summary of ALS Laboratory Bulk Density Measurements

Domain	No. of Samples	Average Density
GO_N	100	3.12
MS_N	70	4.76
Str_N	150	2.88
Str_C&S	150	2.88

12.4 DATABASE VALIDATION

Redcorp provided Micon with a complete updated mineral resource database comprising collar, survey, assay, lithology, alteration and structure tables in csv and excel file formats. In addition, DTM and tertiary cover contacts were provided in DXF file format. The resource database review and validation were performed in Micon's Toronto offices, and involved the following steps:

- Comparing the database assays and intervals against the original assay certificates and drill logs.
- Checking for any non-conforming assay information such as duplicate samples and missing sample numbers.
- Verifying the collar elevations to ensure a satisfactory match with the DTM/topo map.

No major errors were found.

12.5 DATA VERIFICATION CONCLUSIONS

Micon has not found any issues with Redcorp's data collection techniques and QA/QC protocols. Based on the verification procedures described above, Micon considers the database of the LS Project to have been generated in a credible manner and to be sufficiently error-free to support mineral resource estimates.

13.0 MINERAL PROCESSING AND METALLURGICAL TESTING

Sub-sections 13.1 and 13.2 are copied from the February, 2019 Technical Report by Micon. Metallurgical work completed since February, 2019 is summarized in sub-section 13.3.

13.1 HISTORICAL METALLURGICAL TESTWORK

Historic metallurgical testwork, completed in 1995, by Anamet Services is summarized in Section 6.2.1. The work was very preliminary in nature and was completed on one heavily mineralized sample composited from a continuous interval of approximately 8 m taken from drill hole LS-22. The sample from drill hole LS-22 does not constitute a representative sample of the mineralogy or potential recoveries for the deposit.

13.2 2017 REDCORP

In 2017, Redcorp arranged for a comprehensive mineralogical definition program to be conducted at the Empresa de Perfuração e Desenvolvimento Mineiro, S.A. (EPDM) laboratory in Portugal. The work was completed using Mineral Liberation Analysis (MLA) equipment to provide modal mineralogy, mineral association and liberation data on selected samples from the Lagoa Salgada Project.

The samples submitted were from six drill holes and were selected from the Gossan, Massive Sulphide and Stringer domains of the North deposit, and from the Stockwork domain of the South deposit. The information for each sample is summarized in Table 13.1.

Table 13.1
Redcorp Samples Sent for Comprehensive Mineralogical Definition

Drill hole ID	Sample No.	From	To	Interval (m)	Domain
LS_MS_01	MS_01/159	159	160	1.0	Gossan
LS_MS_01	MS_01/169	169	170	1.0	MS
LS_MS_01	MS_01/227	227	228	1.0	MS
LS_MS_01	MS_01/238	238	239	1.0	MS
LS_MS_02	MS_02/171	171	172	1.0	MS
LS_MS_02	MS_02/208	159	160	1.0	MS
LS_MS_02	MS_02/219	219	220	1.0	MS
LS_MS_03	MS_03/177	177	178	1.0	MS
LS_MS_03	MS_03/179	179	180	1.0	MS
LS_MS_03	MS_03/231	231	232	1.0	Stringer
LS_MS_03	MS_03/249	249	250	1.0	Stringer
LS_ST_01	ST_01/200	200	201	1.0	Stockwork
LS_ST_01	ST_01/211	211	212	1.0	Stockwork
LS_ST_02	ST_02/329	229	229	1.0	Stockwork
LS_ST_04	ST_04/385	385	386	1.0	Stockwork

Table taken from 2018 Technical Report.

The samples submitted were assay rejects and had been pulverized to 95% passing 75 µ prior to mineralogical measurement. The samples were collected and delivered to the laboratory by Redcorp.

A comprehensive mineralogical characterisation of each sample was carried out, to give modal mineralogy, liberation data and mineral associations. A summary of the modal mineralogy is given in Table 13.2.

Table 13.2 highlights the key mineral content variability between samples, with some general observations regarding the work as follows:

- Chalcopyrite is the most common copper mineral, found predominantly in the LS-1 Central zone but also within the stockwork domain.
- Sphalerite is the main zinc bearing mineral, with minor occurrences of smithsonite (zinc carbonate).
- Galena is the main lead-bearing mineral, carrying approximately 99% of the lead in all samples.
- Sphalerite content within the massive sulphide and LS-1 Central domains varies from relatively minor (1.3%) to significant (22.7%).
- Sphalerite and chalcopyrite are present in modest amounts (2% to 8%) in the stockwork domain, while galena is largely absent.
- Pyrite content is a significant component of the massive sulphide domain with close to 90% concentration by weight in most massive samples. In one instance, the concentration of arsenopyrite exceeded 10% and was generally less than 6% in others.
- Sphalerite and galena are both quite fine grained (galena considerably more so than sphalerite) yet are reasonably well-liberated in the pulverized samples.
- Stockwork sulphides are contained within a chlorite host and thus grades are lower. Chlorite concentration within the stockwork samples was approximately 60%. Because of the large difference in density between chlorites and sulphides, it is reasonable to expect that chlorite could be rejected using some type of preconcentration technology prior to grinding in the process plant.

Both galena and sphalerite are fine-grained, and the process flowsheet for this mineralization will, as is quite common for mineral deposits of this nature, include fine grinding in the circuit. Figure 13.1 and Figure 13.2 show the grain size distributions of sphalerite and galena.

Sphalerite average size of grind (80% passing size) for the massive sulphide domain falls between 20 and 50 µ, whilst the galena average size of grind (80% passing size) for the massive sulphide domain falls between 8 and 15 µ.

Table 13.2
2017 Samples, Modal Mineralogy

Modal Data	Weight %														
	MS-01/159	**MS-01/169**	**MS-01/227**	**MS-01/238**	**MS-02/171**	**MS-02/208**	**MS-02/219**	**MS-03/177**	**MS-03/179**	**MS-03/231**	**MS-03/249**	**ST-01/200**	**ST-01/211**	**ST-02/329**	**ST-04/385**
Domain	**Gossan**	**Massive**								**Stockwork**		**LS-1 Central**			
Sphalerite	0.0	4.0	5.8	22.7	3.6	20.1	8.5	3.9	3.1	2.1	4.6	10.1	19.7	16.6	6.0
Chalcopyrite	0.0	0.2	0.2	0.1	0.2	0.1	0.2	0.0	0.0	7.8	2.7	2.2	1.3	15.3	5.4
Galena	0.2	3.0	9.8	11.3	4.3	17.2	4.2	5.1	3.9	0.2	0.0	4.9	3.1	12.1	5.0
Pyrite	0.7	78.6	78.5	63.0	84.5	54.5	81.4	87.6	86.3	25.1	9.1	26.0	4.1	4.9	5.7
Tetrahedrite	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Enargite		0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.2	1.3	0.0	0.0	0.0	0.0
Arsenopyrite		10.9	1.8	0.1	5.4	6.5	2.7	1.1	3.7	0.3	0.0	0.0	0.0	0.0	0.0
Chalcocite	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	1.2	1.2	0.9	0.1	0.0
Quartz	37.8	2.1	0.6	1.0	0.6	0.3	0.6	0.7	1.2	1.7	14.1	4.5	3.0	17.6	29.7
Smithsonite	6.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.5	0.6	23.4	3.2	3.2	2.3
Dolomite		0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.4	2.8	20.0
Chlorites	12.8	0.2	0.2	0.4	0.4	0.4	0.7	0.2	0.4	59.8	62.7	25.5	61.0	21.8	22.7
Phyllosilicates	0.9	0.2	0.4	0.5	0.4	0.2	0.8	0.4	0.6	0.3	2.6	0.8	1.4	4.7	1.5
Other Silicates	0.5	0.1	2.1	0.2	0.2	0.1	0.5	0.5	0.4	0.2	0.3	0.4	0.9	0.5	0.9
Rutile	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.9	0.3	0.2	0.6	0.2	0.4
Cassiterite	2.3	0.3	0.1	0.3	0.1	0.3	0.2	0.1	0.2	0.0	0.1	0.0	0.0	0.0	0.0
Goethite	37.3	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.0	0.1
Phosphates	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.1	0.1
Others	1.3	0.2	0.2	0.0	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.1	0.2
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Table taken from 2018 Technical Report.

Figure 13.1
Sphalerite Grain Size Distributions

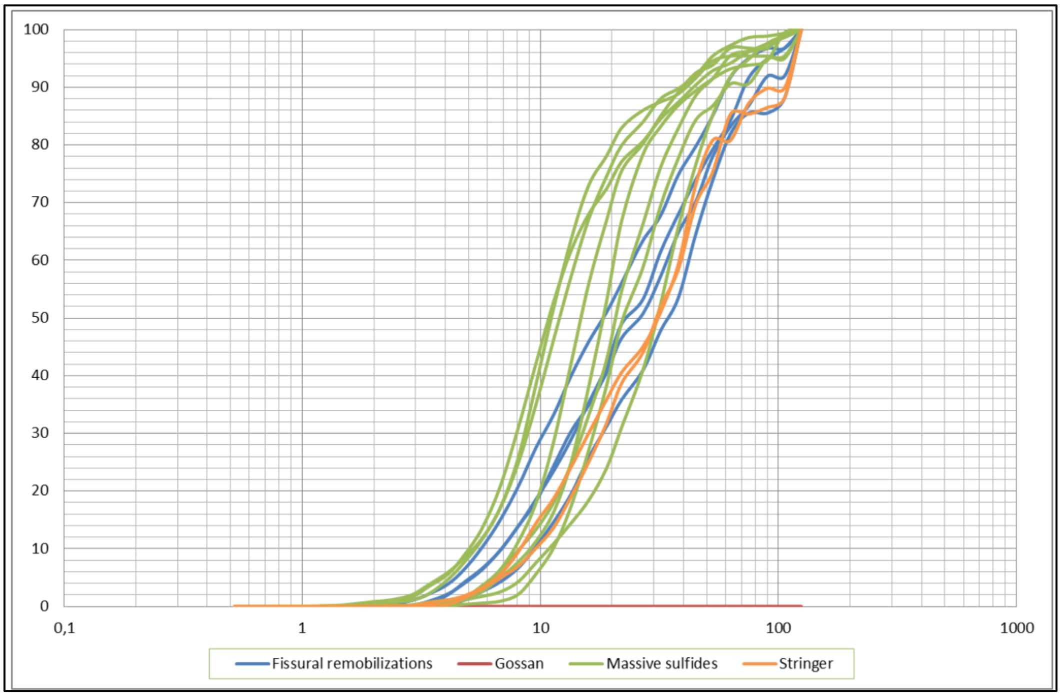


Figure taken from 2018 Technical Report.

Figure 13.2
Galena Grain Size Distributions

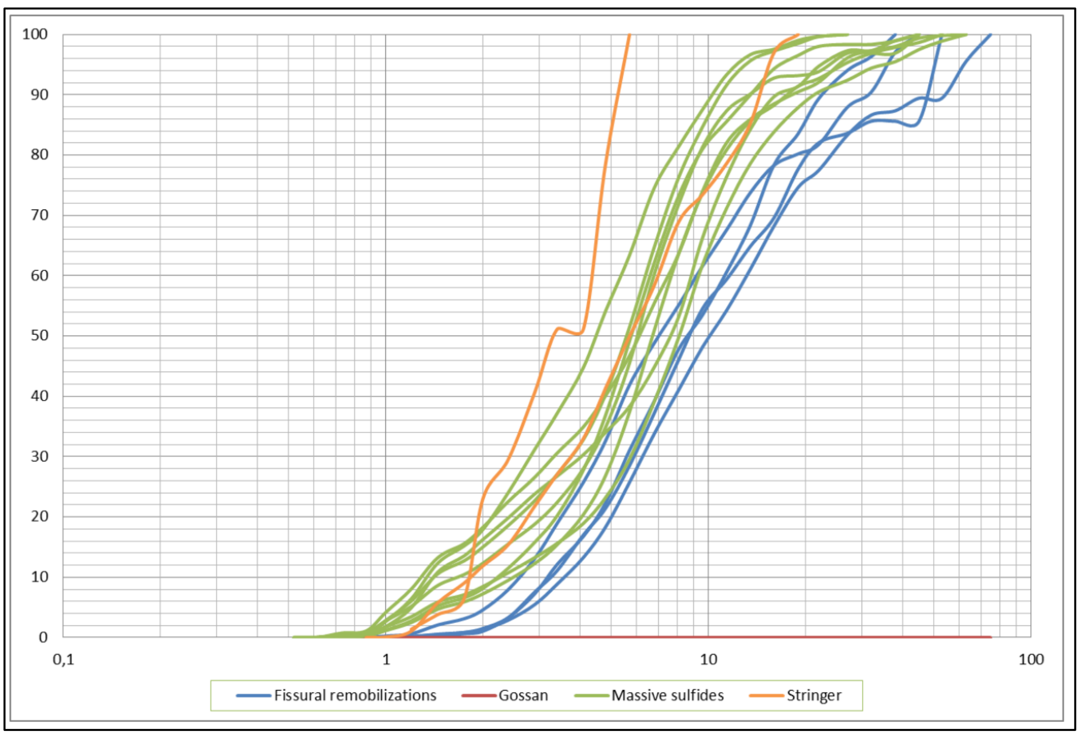


Figure taken from 2018 Technical Report.

The degree of liberation of sphalerite and galena in these samples is quite high on average, but it is worth noting that the standard process (PUL-31) used by ALS for geochemical assay sample preparation is a ring and puck pulverizing process that is quite dissimilar to the industrial ball mill grinding process. It should be anticipated that the degree of sulphide mineral liberation will be lower in an industrial circuit as a result of closed-circuit classification.

13.3 2019 Ascendant/Redcorp Metallurgical Testwork

13.3.1 Massive Sulphide Metallurgical Testwork

The recent program of scoping metallurgical testwork was undertaken by Grinding Solutions Ltd (GSL), UK. GSL completed a program of scoping level flotation tests using four separate samples, comprising the two major ore types; massive sulphide (MS) and stockwork (SW2). The samples received by GSL included a sample of fresh and oxidised material for both material types.

13.3.1.1 Massive Sulphide Sample Mineralogy

The dominant phase in the massive sulphide sample was pyrite with minor amounts of target minerals sphalerite, galena and traces of chalcopyrite, cassiterite, tetrahedrite and secondary Cu sulphides. Besides pyrite, the main gangue minerals were minor arsenopyrite and quartz with trace gangue phases comprising carbonates, micas and feldspars.

The grade of the non-oxidized massive sulphide sample was 0.33% Cu, 3.35% Pb, 3.13% Zn and 48% S, which, although a bit higher, corresponds pretty well with the average mineral resource grade of the North deposit. Mineralogical investigation showed the following:

- The theoretical mineral-recovery curves for all target phases suggest very poor liberation in coarse particle size classes (>53 µm).
- Sphalerite shows moderate to good theoretical mineral-recovery curves below 26 µm, with poor liberation above this particle size.
- For galena the liberation also improves below 26 um, but the degree of liberation isn't as good. Chalcopyrite shows poor theoretical mineral-recovery curves throughout, but there is a slight improvement below 12 µm.
- For cassiterite the liberation substantially improves below 18 µm.

13.3.1.2 Massive Sulphide Flotation Test Results

At a primary grind 80% passing size (P_{80}) of 29 µm, the locked cycle test (LCT) results gave Pb recoveries to the Pb concentrate of only 37% at a grade of 33.4% Pb (10.8% Zn and 314 g/t Ag) and Zn recoveries to the Zn concentrate of 60.7% at a grade of 42.4% Zn (5.3% Pb and 144 g/t). Approximately 94% Sn, 90% Au and 77% Ag reported to the final tailings.

13.3.2 Stockwork Metallurgical Testwork

13.3.2.1 Stockwork Sample Mineralogy

The dominant phase in the stockwork sample was mica group minerals. The main ore minerals identified were sphalerite, galena, chalcopyrite and trace secondary Cu sulphides. There was only an ultra-trace of cassiterite. Besides micas, the main gangue minerals were major to minor iron oxides, quartz, pyrite and carbonates with trace accessory phases.

The grade of the non-oxidized stockwork sample was 2.01% Cu, 5.16% Pb, 7.79% Zn and 9.78% S which is significantly higher than the average mineral resource grade for the South deposit, which corresponds to the stockwork ore-type. Mineralogical investigation showed the following:

- In terms of liberation, sphalerite has good or very good theoretical grade recovery, even at +53 µm.
- Chalcopyrite and galena have good theoretical grade-recovery and liberation in the -53 µm +20 µm and -20 µm size fractions, though with moderate liberation above 53 µm.

13.3.2.2 Stockwork Flotation Test Results

At a primary grind of 37 µm the flotation LCT results showed the following:

- Cu recovery to the Cu concentrate of 62% at a grade of 24.7% Cu, 16.4% Pb, 12.1% Zn and 322 g/t Ag.
- Pb recovery to the Pb concentrate of 75% at a grade of 49.0% Pb, 6.9% Cu, 15.8% Zn and 461 g/t Ag.
- Zn recovery to the Zn concentrate of 60.5% at a grade of 53.2% Zn, 1.0% Cu, 1.8% Pb and 84 g/t Ag.

Gold distribution was poor with grades in concentrates below payable levels and 64% reporting to tailings.

13.3.3 Conclusions Based on 2019 Work

13.3.3.1 Massive Sulphide Mineralization

Mineralogical and metallurgical testswork has shown that the massive sulphide mineralization at Lagoa Salgada is very fine grained, similar to most other Iberian Pyrite Belt deposits.

The Cu contained within the deposit is extremely fine, and a saleable copper product will be uneconomic and probably impractical to produce using conventional beneficiation technologies.

Pb mineralization is also very fine and only a low-grade product (32% Pb) was produced with a low recovery of around 38%.

Zn mineralization is coarser and a low-grade concentrate (42% Zn) was produced with a recovery of 61%.

Potential deleterious elements that may affect the saleability of the products include mercury, antimony and arsenic.

Approximately 94% of the cassiterite reported to the tailings and was mainly liberated. It is unlikely that gravity separation will be effective at the fine primary grind, but flotation of the Sn is worth considering.

13.3.3.2 Stockwork Mineralization

Mineralization tends to be coarser than the massive sulphides and although still low, reasonable Cu, Pb and Zn grade concentrates were produced by GSL. However, both the Cu and Pb concentrates contained relatively high Zn, the Cu con had high Pb and the Pb con contained high Cu.

GSL noted that the Pb/Zn separation was difficult; possibly due to the solubilisation of secondary Cu minerals during grinding, causing for the pre-activation of sphalerite and maybe galena.

Silver recovery for the Stockwork material was significantly higher than for the massive sulphide mineralization.

13.3.4 Recommendations for Further Work

The recommendations included in the GSL testwork report are as follows:

13.3.4.1 Massive Sulphide

On a composite representing the whole massive sulphide component of the deposit, conduct the following:

1. Conduct mineralogy on the LCT products as an interim phase to understand the deportment of deleterious elements and diluents in the final concentrates, as well as the reasons for the loss of Pb and Zn in the tailings.
2. Review further the primary grind size in conjunction with a range of Zn depressant dosages.
3. Review the regrind sizes for both the Pb and Zn.
4. Investigate a range of collectors and lower molecular weight frothers to improve froth mobility and drainage.

5. Review the flowsheet configuration for the Pb and Zn cleaning circuits.
6. Conduct a Sn and Au gravity recovery testwork programme.
7. Investigate Sn flotation programme.
8. Conduct bond work indices for primary milling power requirements.
9. Conduct signature plots for stirred media mill regrind energy requirements.
10. Conduct tailings flocculant screening and settling rate tests.
11. Conduct baseline environmental tests, acid-base accounting, net acid generation and basic water aging tests.

Micon agrees with items 1 to 5 which is basically improving and optimizing the Pb and Zn flotation flowsheet and associated processing parameters. In addition to this work Micon suggests that a marketing study be undertaken to assess the Pb and Zn concentrate quality constraints and potential terms.

Micon also concurs with the investigation into tin recovery using gravity and flotation. Also, enhanced gold recovery using gravity separation is a good idea. (Items 6 and 7).

Only once the Pb and Zn flotation flowsheet is optimized, then items 8 to 11 should be done. The data derived from these tests will be required to complete a preliminary design and cost estimates used for a conceptual economic study.

The selection of the composite sample is extremely important. This sample should represent the mineral resources spatially as well as in terms of mineralogy and grade. The selection of additional composites should also be considered that would represent an area of distinctly different mineralogy/lithology or an area of higher grade that could be selectively mined.

13.3.4.2 Stockwork

On a composite representing the whole stockwork component of the deposit, conduct the following:

1. Conduct mineralogy on the LCT products as an interim phase to understand the deportment of deleterious elements and diluents in the final concentrates, as well as the reasons for the loss of Zn in the tailings.
2. Review further the primary grind size in conjunction with a range of Pb / Zn depressants.
3. Review the regrind sizes for Cu, Pb and Zn.
4. Investigate a range of collectors for all three commodities.
5. Review pulp chemistry conditions for the cleaning circuits.
6. Conduct a gold gravity recovery testwork programme.
7. Conduct bond work indices for primary milling power requirements.

8. Conduct signature plots for stirred media mill regrind energy requirements.
9. Conduct heavy liquid tests as a proxy for pre-concentration potential.
10. Conduct tailings flocculant screening and settling rate tests.
11. Conduct baseline environmental tests, acid-base accounting, net acid generation and basic water aging tests.

Micon agrees with the recommendations for work on the stockwork mineralization. Micon also suggests preliminary ore-sorting testing as an alternative pre-concentration method (see item 9).

As with the massive sulphides the sample selection to form a representative composite is very important. Also, consideration should be made to the potential of compiling other composites that represent distinctly different zones within the mineral resources.

13.3.4.3 Other

Micon recommends that preliminary mineralogical and metallurgical testwork be considered using samples representing the gossan mineralization and representative samples from the central zone, which appears to be relatively gold-rich.

13.4 OVERALL CONCLUSION

Insufficient metallurgical testwork has been completed to date to allow accurate forecasts of metallurgical performance for this Project, although the 2019 testwork information reported recently does provide opportunity for comparison to nearby operations, such as Almina’s Aljustrel Mine (private) and Lundin Mining's Neves Corvo Mine (public).

From the 2019 metallurgical testwork, it is apparent that recoveries will be higher for the stringer type mineralization and this needs to be taken into account in the cut-off grades used for the mineral resources.

14.0 MINERAL RESOURCE ESTIMATES

14.1 EXPLORATORY DATA ANALYSIS

14.1.1 Database Description

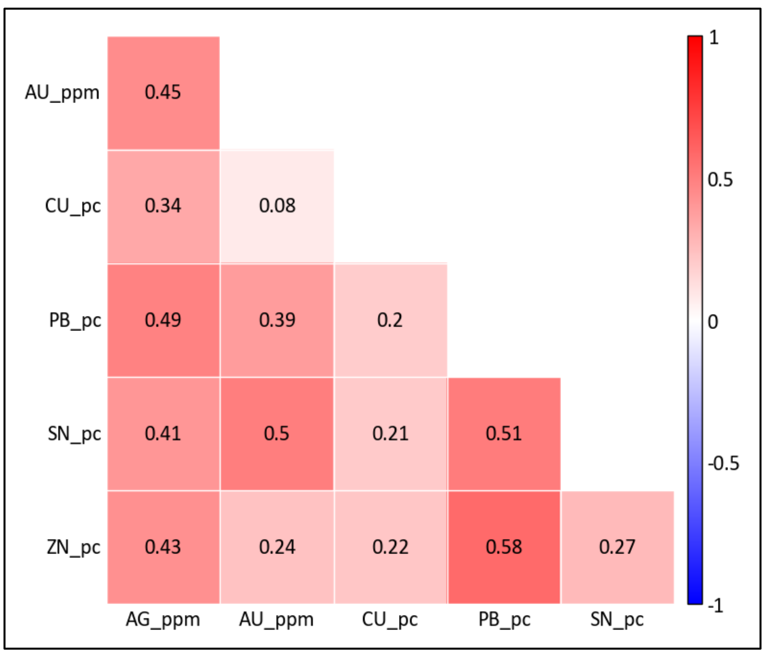
The LS Project deposits have been tested by diamond drilling over a cumulative strike length of approximately 1.6 km and down to a vertical depth of about 600 m. The resource database is derived from 76 surface diamond drill holes, all of which were utilized in the resource estimation. Original assay certificates from the laboratory were provided as csv documents. A detailed digital terrain model (DTM) and overburden depth model were provided as dxf surfaces.

The average drill hole spacing in the best drilled areas of the Project is about 20 m; the spacing in the more poorly drilled areas is between 40 and 150 m.

14.1.2 Deposit Components

The LS Project is comprised of multi-metal deposits whose chief components are zinc, lead, copper, gold, silver and tin. The global correlation matrix (Figure 14.1) shows that, save for zinc and lead, the coefficients of correlation between the deposit components are generally poor despite these elements occurring together within the deposits. This poor correlation is partly attributed to post mineralization processes such as metamorphism and remobilization which affected the metals differently.

Figure 14.1
Global Correlation Matrix for the Lagoa Salgada Deposits



14.2 OVERVIEW OF ESTIMATION METHODOLOGY

Following the completion of the database validation as outlined in Section 12.0 above, Micon has estimated the LS Project mineral resources following a logical sequence involving:

- Geological interpretation.
- Determination and modelling of estimation domains.
- Compositing and grade capping.
- Statistics within domains.
- Variography.
- Definition of resource parameters and block model.
- Grade interpolation and resource definition.
- Mineral resource classification.

The estimation was conducted using the ED50 co-ordinate reference system (CRS) and projection to UTM Zone 37N.

14.3 GEOLOGICAL INTERPRETATION:

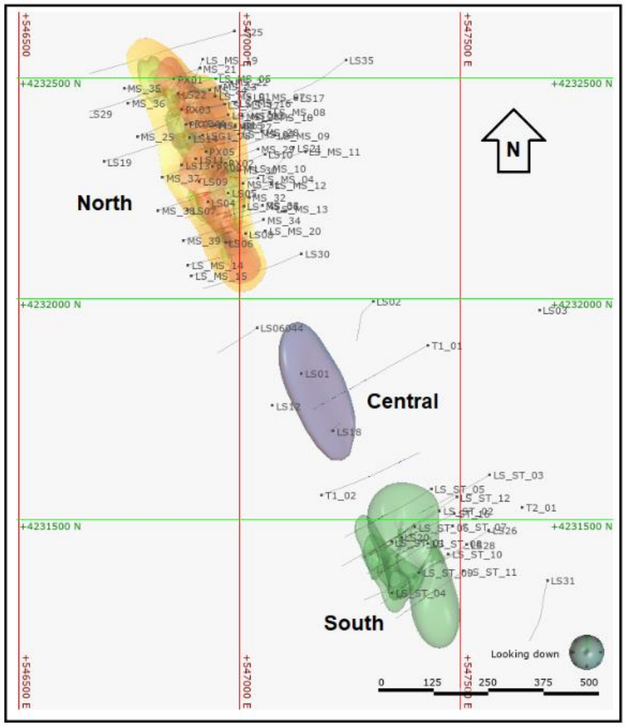
The mineralization extends continuously beneath Tertiary cover rocks over the entire drilled strike length of about 1.6 km. However, three deposits are recognized; these are the North deposit (formerly LS-1 deposit), the Central deposit and the South deposit (formerly LS-1 Central deposit). The respective locations are shown in Figure 14.2.

The North deposit is complex in that it hosts three types of mineralization: gossan mineralization, primary sulphide mineralization and stringer mineralization beneath, and on the periphery of, the primary sulphide zone. The gossan mineralization resulted from the weathering of the underlying primary sulphide mineralization

In contrast, the Central and South deposits are characterized by stringer/fissure/stockwork type mineralization.

Appreciable tin mineralization is restricted to the primary sulphide zone of the North deposit whereas zinc, lead, copper, gold and silver are common to all the deposits. However, copper is apparently dominant over zinc, lead, gold and silver in the South deposit.

Figure 14.2
Map Showing the Location of the Currently Known Deposits on the LS Project



14.4 SELECTION AND MODELLING OF ESTIMATION DOMAINS

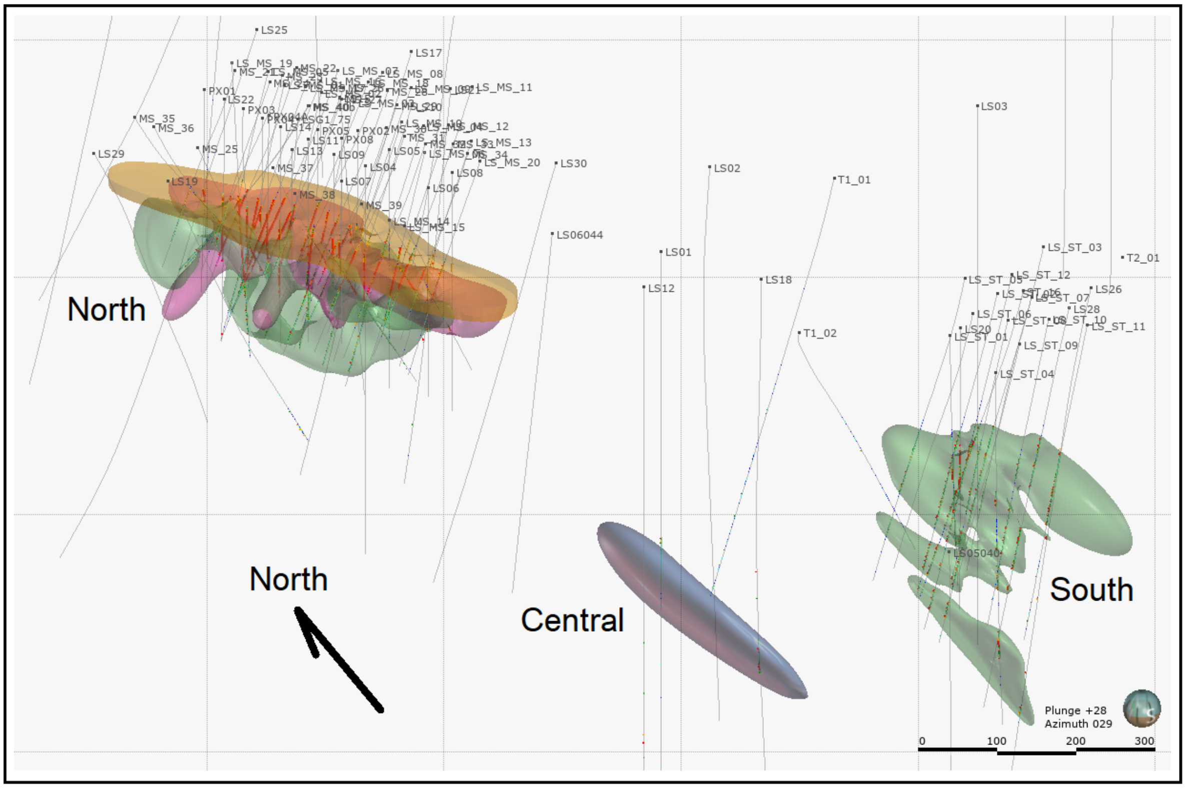
Micon's estimation domain selection criterion is based purely on geology for the Gossan and Massive Sulphide domains and on the zinc equivalent (ZnEq) threshold value for the stringer/fissure/stockwork domains. To obtain the ZnEq% threshold value for modelling, the threshold grade for each metal in the stringer zones was obtained from probability/log-probability plots; thereafter, the threshold grades for each metal were combined into a ZnEq% threshold value using the following formula:

$$ZnEq\% = ((Zn\ Grade*25.35)+(Pb\ Grade*23.15)+(Cu\ Grade * 67.24)+(Au\ Grade*40.19)+(Ag\ Grade*0.62)+(Sn\ Grade * 191.75))/25.35$$

The ZnEq threshold value for the stringer zone North deposit was established as 1.53% while that for the South and Central was established as 0.95% ZnEq.

Drill hole intercepts were coded using the geological and ZnEq criteria described above. Following coding, domain wireframes were created by implicit modelling using the Leapfrog mining software. The modelled domain wireframes are shown in Figure 14.3.

Figure 14.3
3D Perspective of the LS Project Deposit Domains



Source: Micon 2019.

In summary, the selected domains are as follows:

Gossan (brown/yellow) – North deposit.

Massive Sulphide (purple) – North deposit.

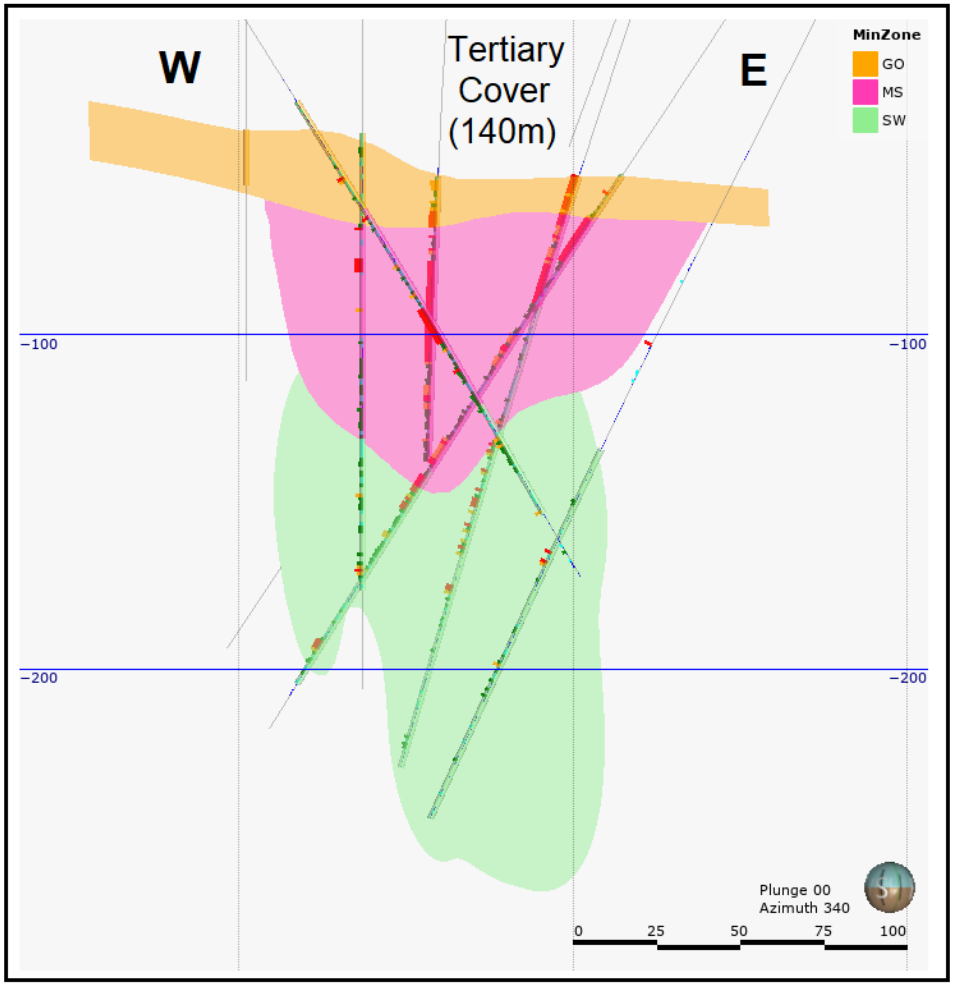
Stringer zone (green) – North deposit.

Stringer/fissure/stockwork (grey) – Central deposit.

Stringer/fissure/stockwork (green) – South deposit

A section through the North deposit which has three domains, namely gossan (GO), massive sulphide (MS) and stringer zone (SW) is shown in Figure 14.4.

Figure 14.4
East-West Section Through the North Deposit Estimation Domains



The stockwork domains of the Central and South deposits, although currently separated, may eventually merge into one body with further infill drilling.

14.5 Grade Capping, Compositing, Statistics and Variography

14.5.1 Grade Capping and Compositing

Micon investigated the relationship between sample length and grade and established that a considerable number of high grades were associated with lengths greater than the mode of the sample lengths of 1 m as illustrated in Figure 14.5. Thus, the determination of grade capping threshold values was conducted on raw samples using population histograms and probability/log-probability plots. The summary statistics and log-probability plots for the MS domain (i.e. the best mineralized domain) are shown in Figure 14.6 to Figure 14.11. Grade capping values are indicated in red on the plots for each element. The same procedure was followed for the other domains.

Figure 14.5
Grade versus Sample Length in the Massive Sulphide Domain

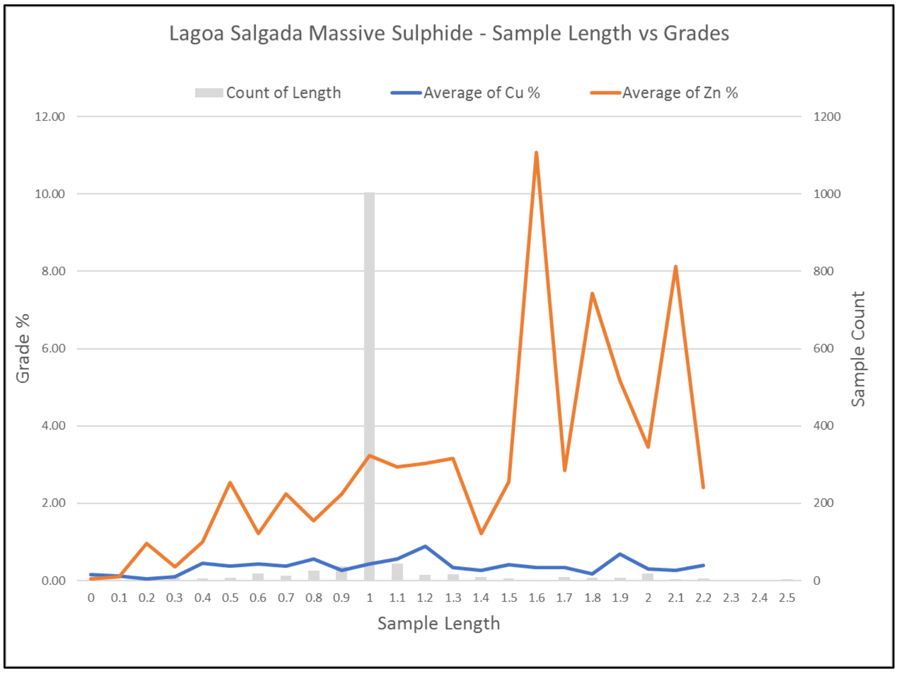


Figure 14.6
Domain MS Summary Statistics and Probability/Log-Probability Plot for Zn

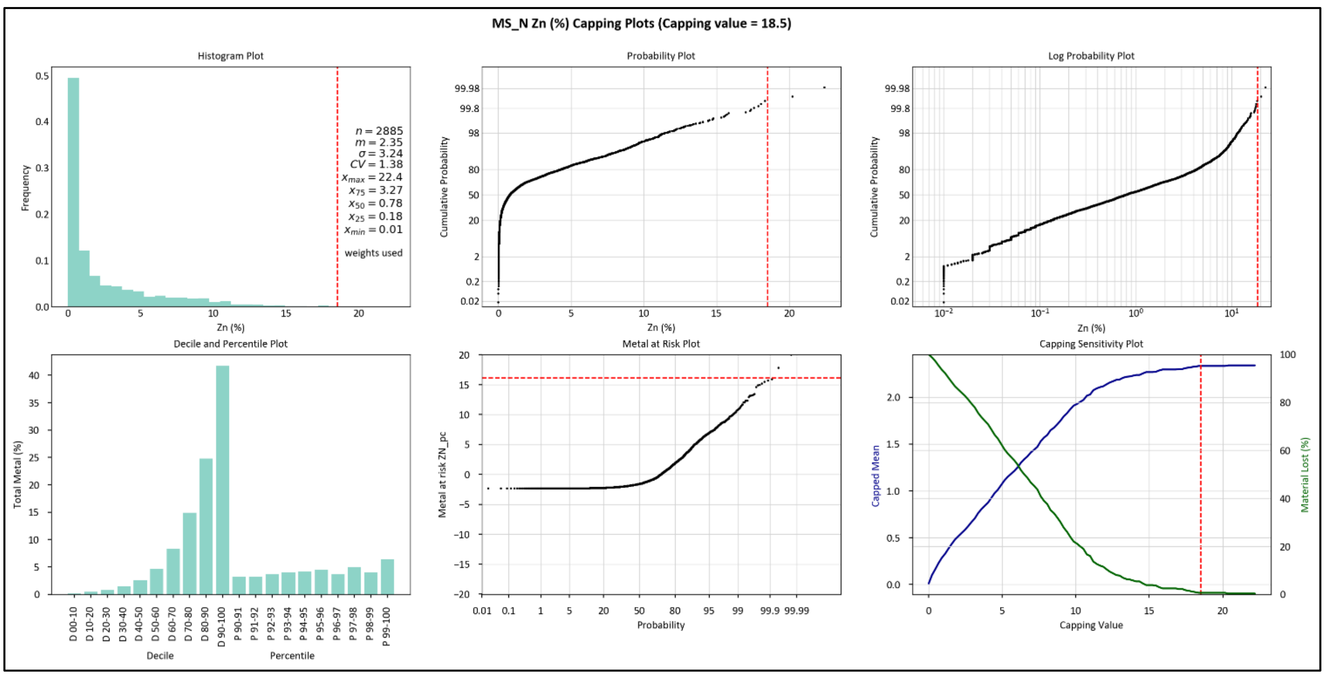


Figure 14.7
Domain MS Summary Statistics and Log-Probability Plot for Pb

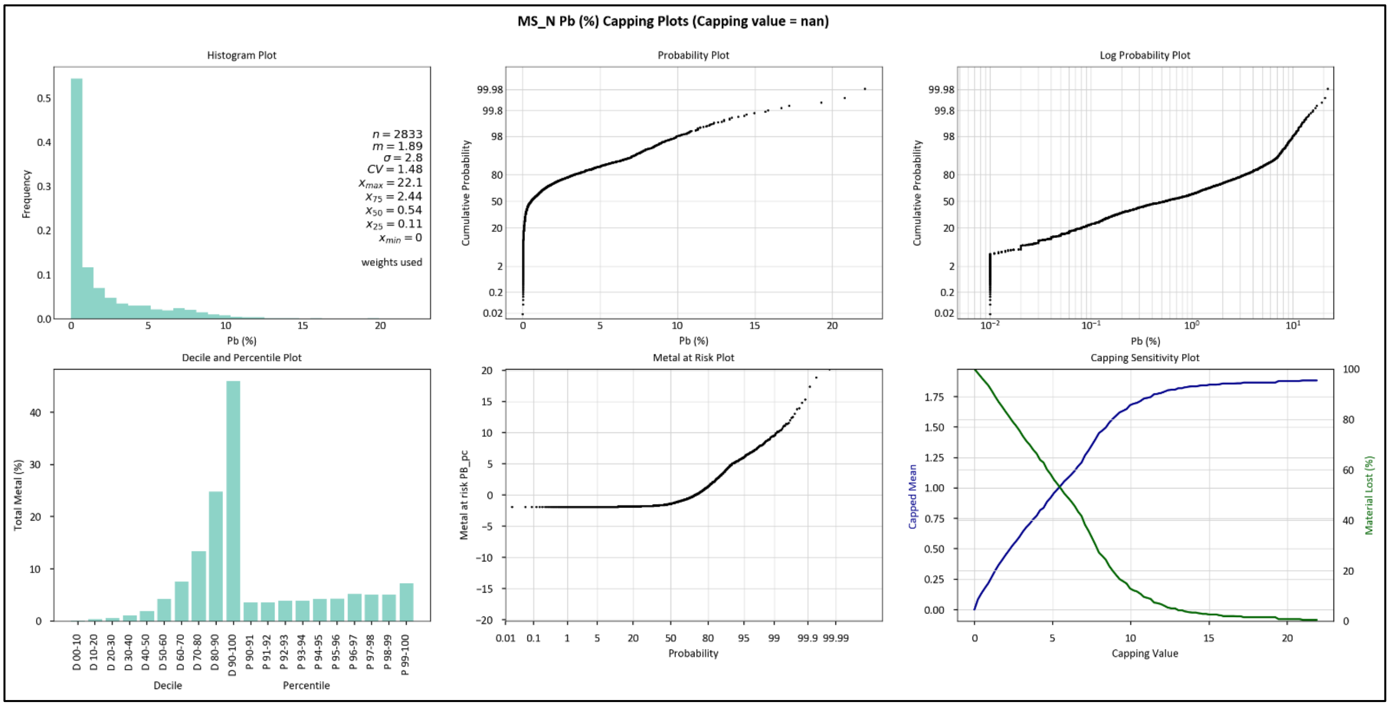


Figure 14.8
Domain MS Summary Statistics and Log-Probability Plot for Cu

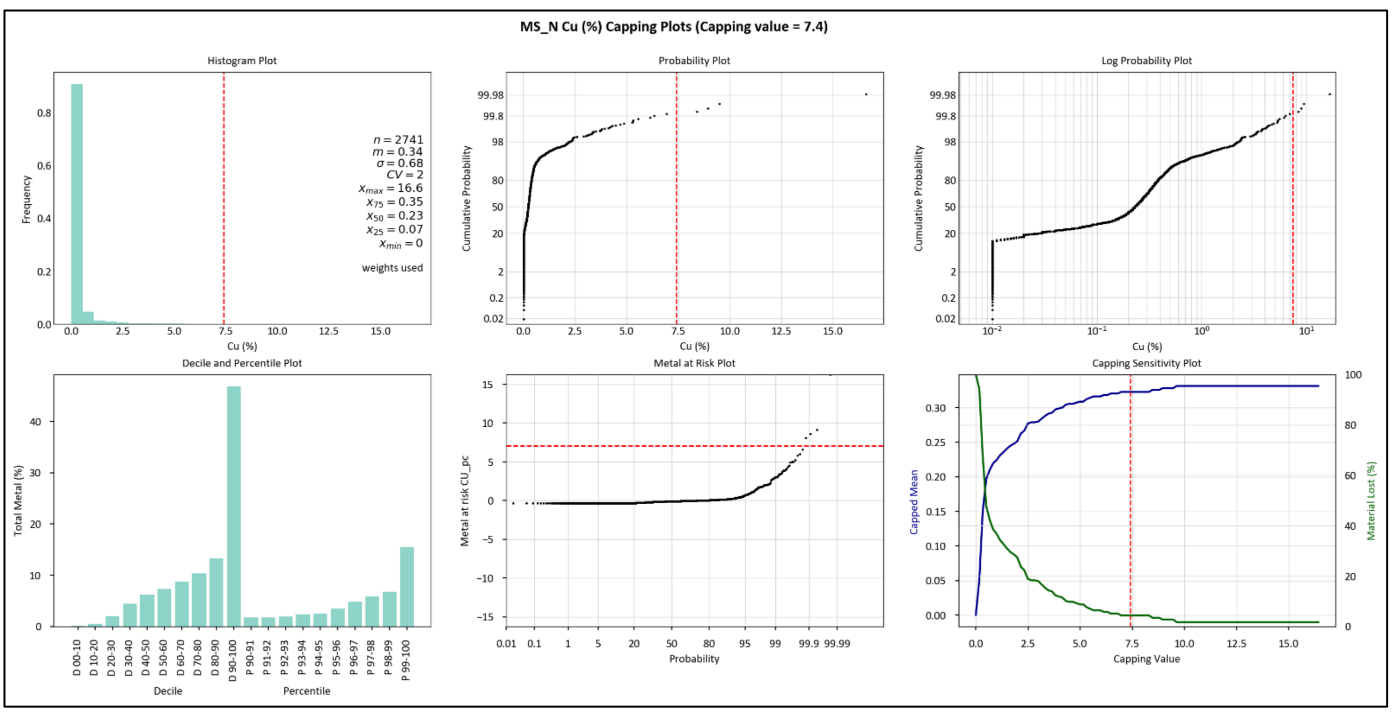


Figure 14.9
Domain MS Summary Statistics and Log-Probability Plot for Au

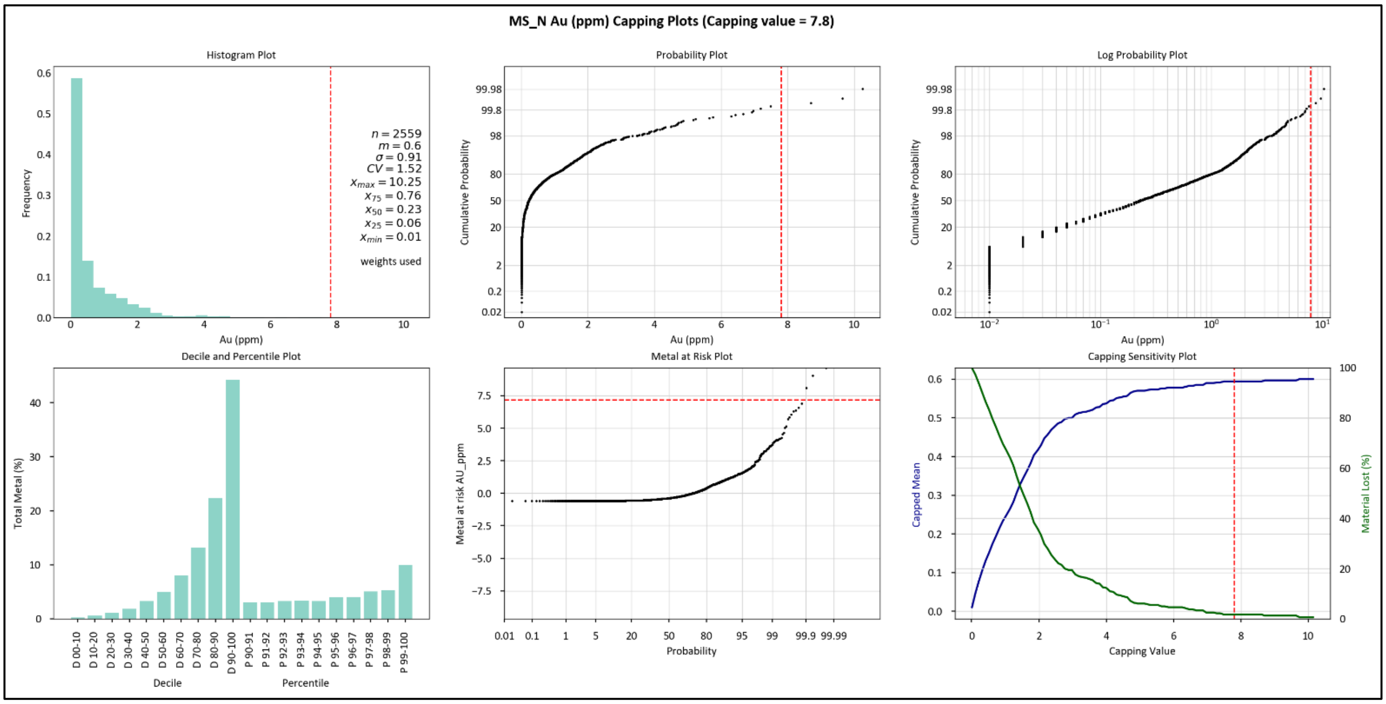


Figure 14.10
Domain MS Summary Statistics and Log-Probability Plot for Ag

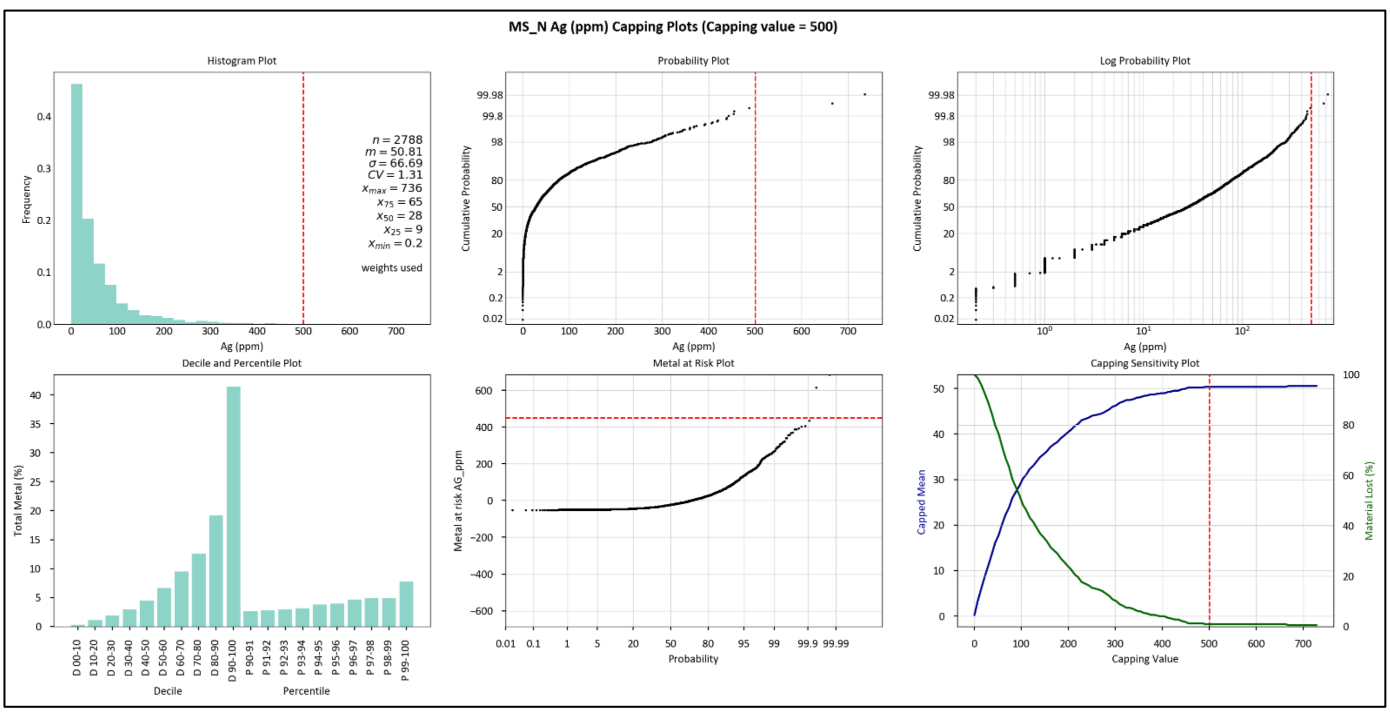
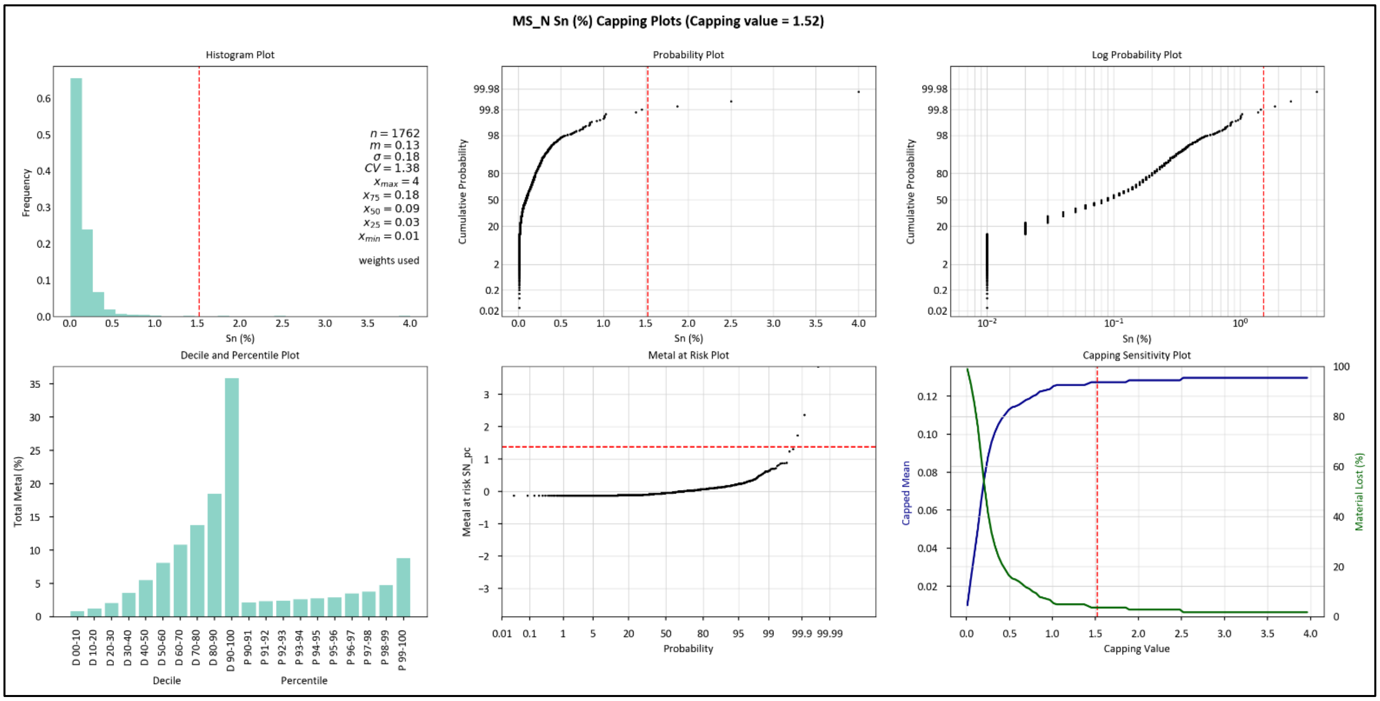


Figure 14.11
Domain MS Summary Statistics and Log-Probability Plot for Sn



The capping was applied after compositing to 2 m to give equal weighting to the values prior to variography. The mode (average) of the sample lengths within the modelled estimation domains is 1 m and the standard practice would be to use this as the composite length. However, given the significant number of samples greater than 1.0 m in the LS-series drill holes (Figure 14.5), Micon's view is that 2 m is the best option. By taking this option, Micon does not believe the choice of 1 m versus 2 m would make a material difference to the estimation process, providing that the estimation searches are optimised.

The summary statistics of the capped and un-capped composites are shown in Table 14.1.

14.5.2 Variography

Precision in spatial analysis/variography is directly proportional to the quality of the sampling pattern. Due to the subvertical/steeply dipping nature of the LS Project deposits, all drill holes from surface intersect the mineralization at high oblique angles, culminating in an unrepresentative sampling pattern. Thus, variographic results are not truly representative of the spatial continuity/distribution patterns of the mineralization at the LS Project. Nonetheless, Micon completed a geostatistical analysis of all domains in an attempt to potentially determine the optimum grade interpolation parameters. The variograms for the GO and MS domains, which constitute the bulk of the resource, are provided in Appendix 2.

Table 14.1
Summary Statistics of the Capped and Un-capped Composites

		AG_CAP	AG_ppm	AU_CAP	AU_ppm	CU_CAP	CU_pc	PB_CAP	PB_pc	SN_CAP	SN_pc	ZN_CAP	ZN_pc
Gossan	Count	373	373	373	373	373	373	373	373	250	250	373	373
	Length	733.62	733.62	733.62	733.62	733.62	733.62	733.62	733.62	490.03	490.03	733.62	733.62
	Capped Comps	2	0	1	0	2	0	1	0	0	0	2	0
	Mean	30.65	31.45	0.58	0.60	0.10	0.10	2.14	2.15	0.16	0.16	0.48	0.48
	Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
	Median	6.12	6.12	0.10	0.10	0.04	0.04	0.54	0.54	0.02	0.02	0.36	0.36
	Max	520.00	740.50	20.00	27.58	1.50	3.55	30.50	35.67	1.92	1.92	2.40	4.56
	CoV	2.33	2.47	2.78	3.11	1.88	2.53	1.72	1.77	2.02	2.02	0.83	0.90
Massive	Count	1146	1146	1146	1146	1146	1146	1146	1146	795	795	1146	1146
	Length	2283.45	2283.45	2283.45	2283.45	2283.45	2283.45	2283.45	2283.45	1583.41	1583.41	2283.45	2283.45
	Capped Comps	1	0	1	0	0.00	0	0	0	2	0	0	1
	Mean	62.71	62.72	0.68	0.68	0.40	0.40	2.42	2.42	0.14	0.15	2.90	2.90
	Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
	Median	40.59	40.59	0.34	0.34	0.28	0.28	1.23	1.23	0.11	0.11	1.52	1.52
	Max	500.00	510.21	7.80	8.68	6.85	6.85	20.98	20.98	1.52	2.64	18.50	19.71
	CoV	1.07	1.07	1.31	1.32	1.53	1.53	1.17	1.17	1.04	1.17	1.15	1.15
Stringer (North)	Count	1215	1215	1215	1215	1215	1215	1215	1215	925	925	1215	1215
	Length	2408.12	2408.12	2408.12	2408.12	2408.12	2408.12	2408.12	2408.12	1831.52	1831.52	2408.12	2408.12
	Capped Comps	1	0	0	0	0	0	2	0	2	0	3	0
	Mean	9.54	9.57	0.07	0.07	0.14	0.14	0.17	0.17	0.02	0.02	0.59	0.60
	Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
	Median	6.33	6.33	0.03	0.03	0.04	0.04	0.08	0.08	0.01	0.01	0.44	0.44
	Max	175.00	202.91	2.17	2.17	3.02	3.02	3.30	10.71	1.25	1.48	6.00	14.25
	CoV	1.36	1.39	2.18	2.18	1.82	1.82	1.75	2.46	2.91	3.12	1.00	1.13
Stringer (South)	Count	792	792	792	792	792	792	792	792	96	96	792	792
	Length	1569.95	1569.95	1569.95	1569.95	1569.95	1569.95	1569.95	1569.95	191.00	191.00	1569.95	1569.95
	Capped Comps	1	0	2	0	3	0	2	0	0	0	0	0
	Mean	12.56	12.62	0.05	0.05	0.34	0.35	0.72	0.72	0.01	0.01	1.26	1.26
	Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
	Median	5.00	5.00	0.02	0.02	0.10	0.10	0.33	0.33	0.01	0.01	0.65	0.65
	Max	255.00	300.71	0.58	0.63	6.40	10.07	12.00	12.85	0.04	0.04	11.83	11.83
	CoV	1.80	1.84	1.56	1.57	2.12	2.32	1.61	1.63	0.78	0.78	1.34	1.34

Notwithstanding the weakness highlighted above, the variography generally confirms the following:

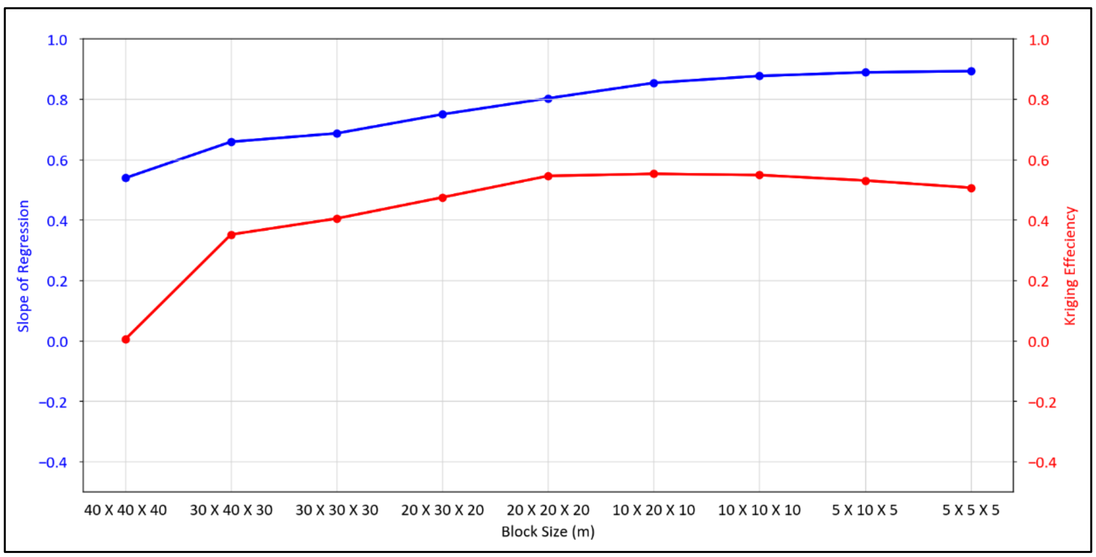
- The isotropic nature of the GO and MS domains in major and semi-major axes.
- The apparent major continuity down dip/plunge and along strike in the SW (stringer) and SW2 (stockwork) domains.

14.6 ESTIMATION

14.6.1 Block Size Analysis

Sensitivity analysis on block size was performed to select the most appropriate block size for the estimation. The method involved running multiple ordinary kriging estimations on zinc in the MS Domain with different block sizes and then comparing kriging efficiency and slope of regression. The optimal size is the one which shows the highest kriging efficiency coupled with the highest slope of regression. zinc was chosen because it is the primary component of the deposit. The results indicate an optimum block size of 5 x 10 x 5 m, as demonstrated in Figure 14.12 below.

Figure 14.12
Block Model Sensitivity Analysis



14.6.2 Resource Block Model Definition

The block model definition is presented in Table 14.2. The upper limit (Z) is approximately 40 m above the GO domain (gossan) contact with the overlying Tertiary cover rocks. The block size is based on drill hole spacing, the envisaged selective mining unit (SMU) and the geometry of the deposit.

Table 14.2
LS Project Mineral Resource Block Model Definition

Item	X	Y	Z
Origin Coordinates	547200	4231080	3
Extents	445	1600	655
Block Size (Parent m)	5	10	5
Rotation (degrees)	20 degrees Anti-clockwise		

14.6.3 Bulk Density

Bulk density measurements were conducted as described in Section 12.0. The average calculated density values used to estimate the tonnage in each domain are as follows:

GO (gossan) = 3.12.

MS (massive sulphide) = 4.76.

SW (stringer zone) = 2.88.

SW2 (stockwork) = 2.88.

14.6.4 Search Parameters

The search ellipse configurations were defined using variography as a guide, combined with the geometry of the deposit and average drill hole spacing. A two-pass estimation procedure for all domains was used for the interpolation. For both passes, the maximum number of samples per drill hole was set to control the number of drill holes in the interpolation. The search parameters adopted for grade interpolation are summarized in Table 14.3.

Table 14.3
Summary of Search Parameters

Domain	Element	Pass*	Interpol. Method	Y (m)	X (m)	Z (m)	Dip (º)	Dip Az. (º)	Pitch (º)	Min. S	Max. S	Max. S/DH
Gossan (GO)	Au	1	OK	60	40	15	0	0	59	9	18	3
	Ag	1	OK	50	40	15	0	0	57	9	18	3
	Cu	1	OK	60	40	15	0	0	58	9	18	3
	Zn	1	OK	50	45	20	0	0	56	9	18	3
	Pb	1	OK	80	40	20	0	0	56	9	18	3
	Sn	1	OK	60	40	15	0	0	32	9	18	3
Massive Main (MS)	Au	1	OK	80	40	30	63	70	12	9	18	3
	Ag	1	OK	80	50	40	63	70	168	9	18	3
	Cu	1	OK	100	50	30	63	70	168	9	18	3
	Zn	1	OK	100	50	40	63	70	146	9	18	3
	Pb	1	OK	90	40	30	63	70	12	9	18	3
	Sn	1	OK	100	40	40	63	70	168	9	18	3
Stringer (SW)	Au	1	OK	60	40	40	0	0	78	9	18	3
	Ag	1	OK	80	40	40	0	0	56	9	18	3
	Cu	1	OK	50	40	40	0	0	57	9	18	3
	Zn	1	OK	60	40	40	0	0	57	9	18	3
	Pb	1	OK	60	40	40	0	0	56	9	18	3
	Sn	1	OK	40	40	40	0	0	32	9	18	3

Domain	Element	Pass*	Interpol. Method	Y (m)	X (m)	Z (m)	Dip (º)	Dip Az. (º)	Pitch (º)	Min. S	Max. S	Max. S/DH
Central (MS2)	Au	1	ID2	200	200	30	59	79	171	2	18	3
	Ag	1	ID2	200	200	30	59	79	171	2	18	3
	Cu	1	ID2	200	200	30	59	79	171	2	18	3
	Zn	1	ID2	200	200	30	59	79	171	2	18	3
	Pb	1	ID2	200	200	30	59	79	171	2	18	3
Stockwork (SW2)	Au	1	OK	80	60	50	55	84	124	9	18	3
	Ag	1	OK	100	50	50	55	84	124	9	18	3
	Cu	1	OK	100	50	50	55	84	124	9	18	3
	Zn	1	OK	100	60	50	55	84	113	9	18	3
	Pb	1	OK	100	50	40	55	84	124	9	18	3
All	All	2	OK	P1x2	P1x2	P1x2	As P1	As P1	As P1	1	12	3

Y = Major axis (north – south); X = Semi-major axis (east – west); Z = Minor axis (vertical)

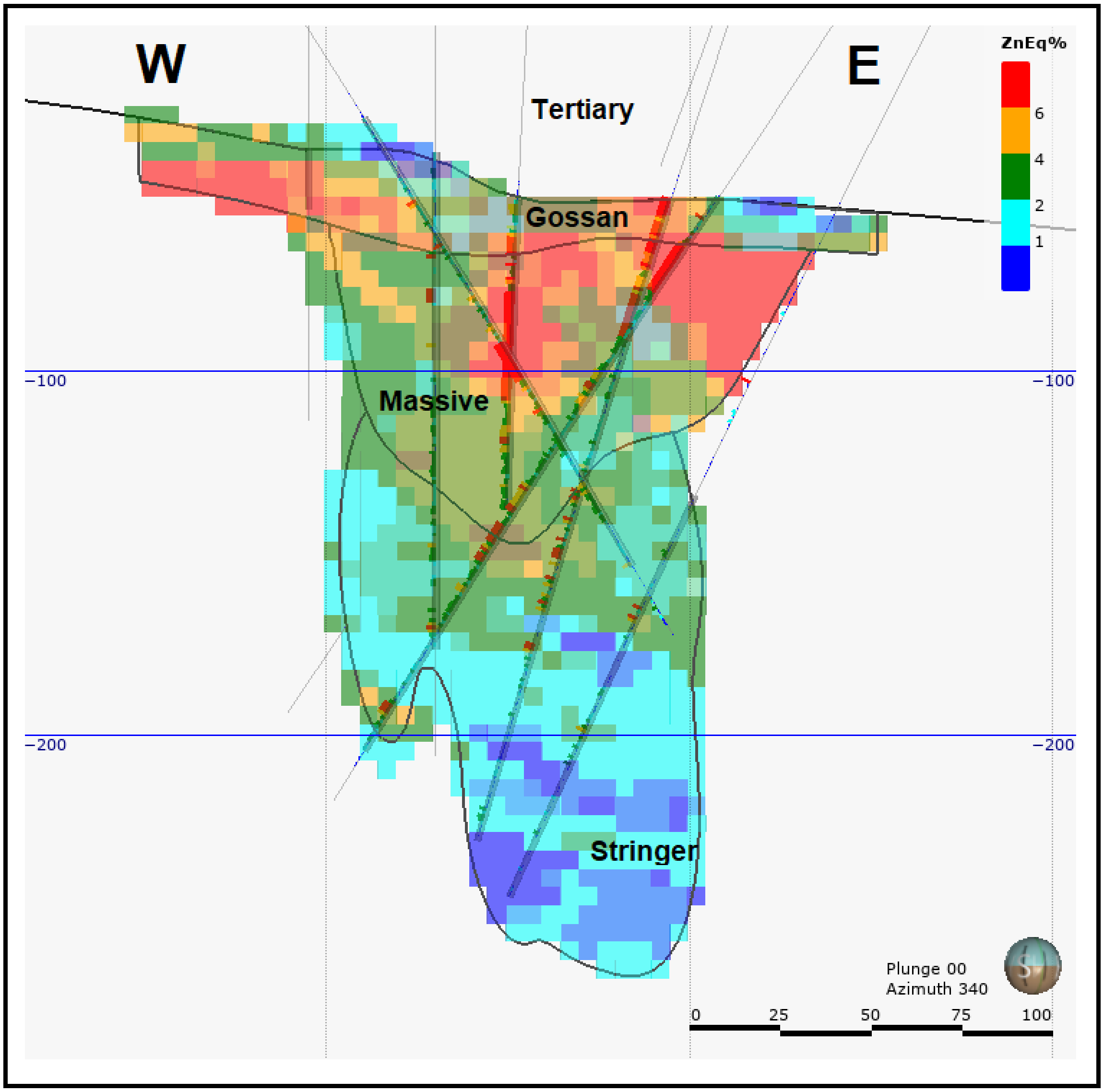
14.6.5 Grade Interpolation and Validation

Ordinary kriging (OK) was used for grade interpolation for all of the North and South deposit domains. The ID^2 technique was used for the Central deposit domain due to very limited drilling. The block grades were validated as described below.

14.6.5.1 Visual Validation

The model blocks and the drill hole intercepts were reviewed interactively in three-dimensional mode to ensure that the blocks were honouring the drill hole data. The agreement between the block grades and the drill intercepts of the LS Project deposits was found to be satisfactory. An example is given in Figure 14.13.

Figure 14.13
Section Through the MS Domain Showing the Match Between Block and Composite Grade



14.6.5.2 Validation by Swath Plots

Validation using swath plots produced satisfactory results. Examples are given in Figure 14.14 to Figure 14.18. In all cases, a satisfactory overall match is reflected between block grades and composites.

Figure 14.14
North Deposit GO Domain Au Swath Plot

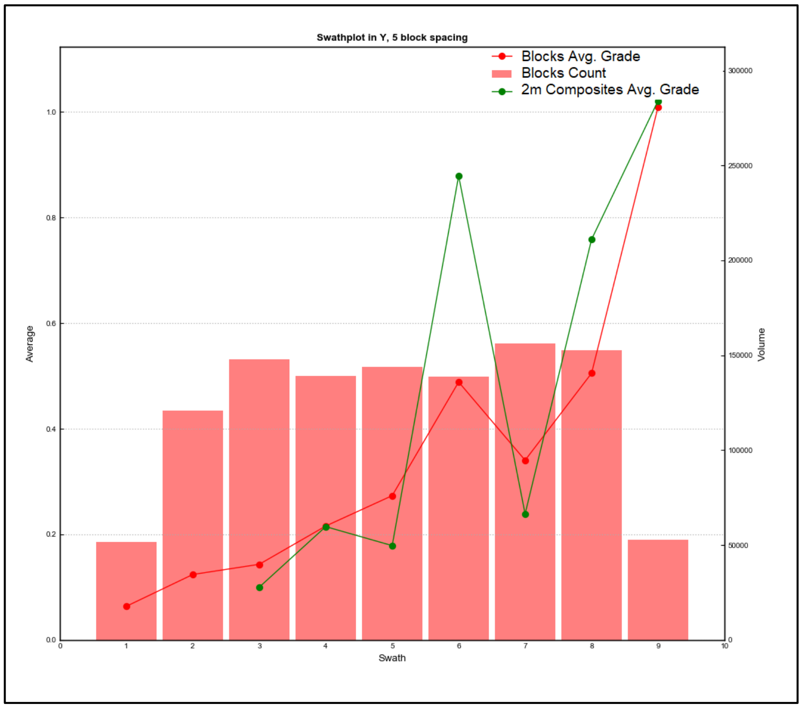


Figure 14.15
North Deposit MS Domain Zn Swath Plot

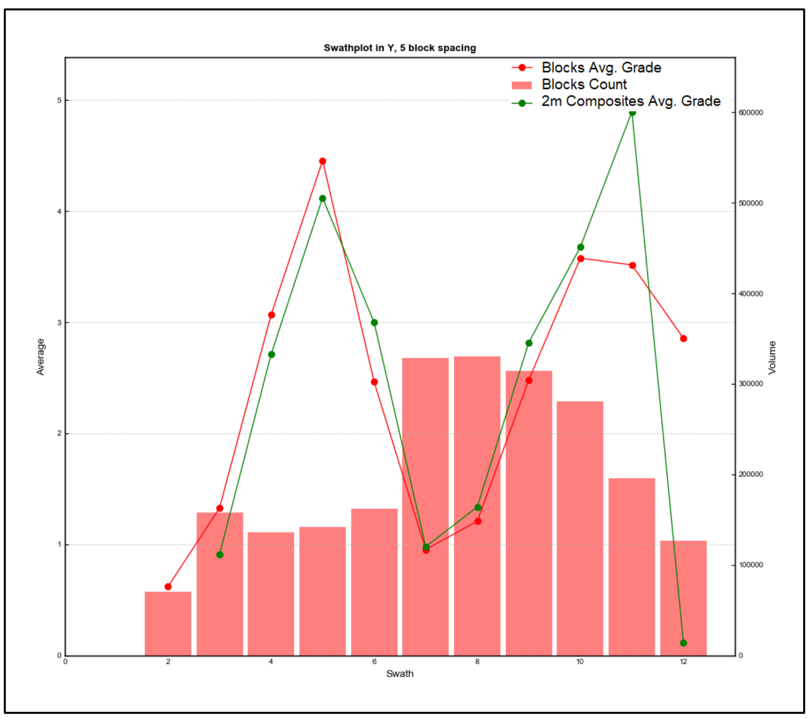


Figure 14.16
North Deposit MS Domain Pb Swath Plot

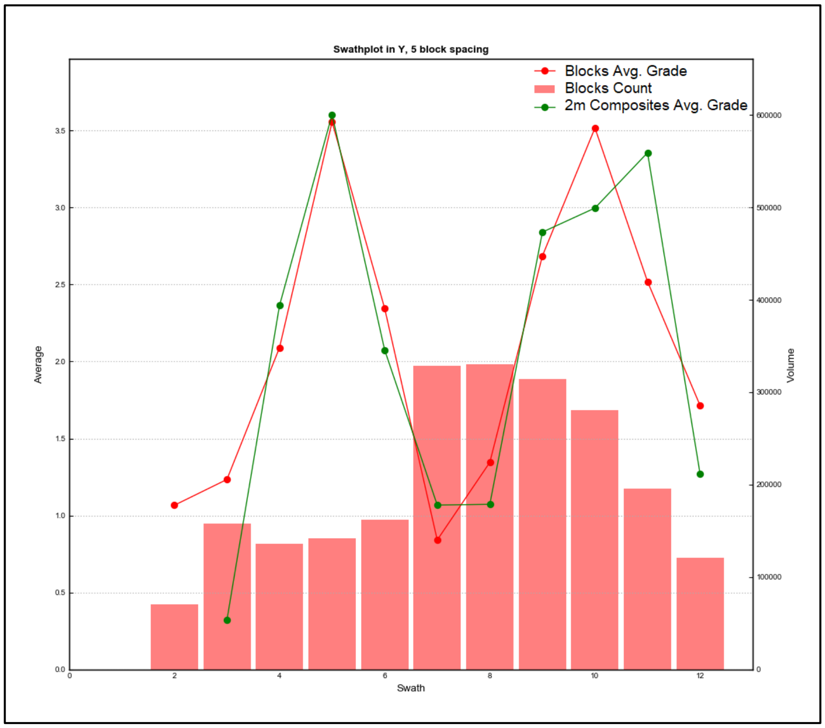


Figure 14.17
North Deposit MS Domain Cu Swath Plot

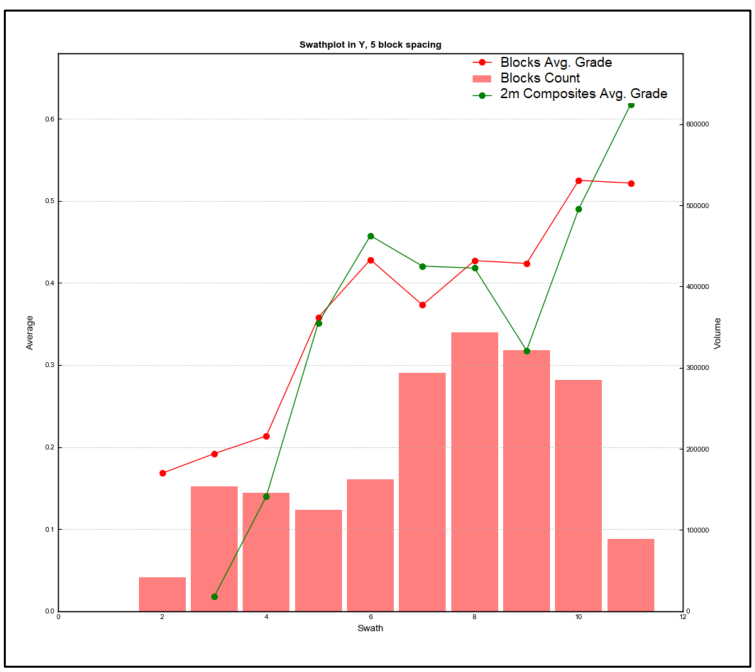
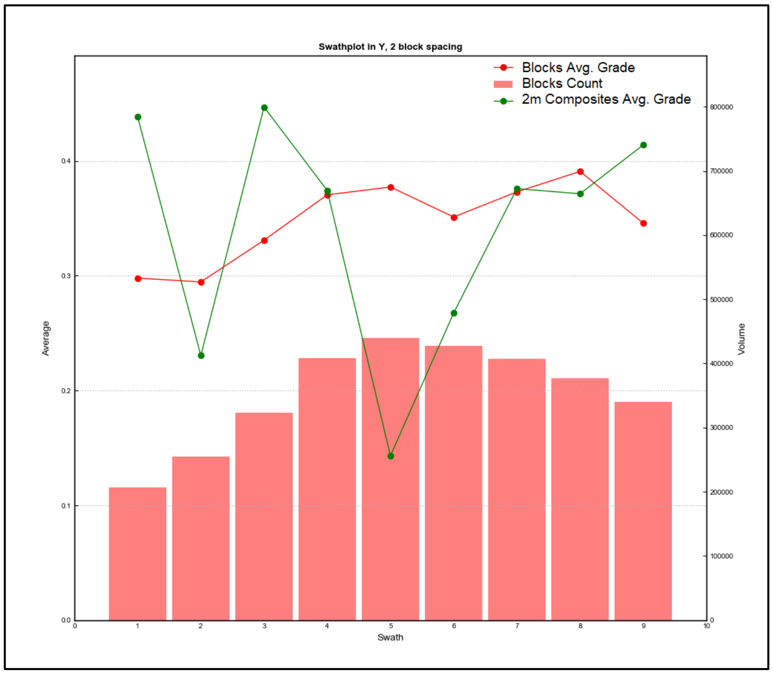


Figure 14.18
South Deposit SW2 Domain Cu Swath Plot



14.6.5.3 Validation by Different Estimation Technique

The final validation was conducted by utilizing the inverse distance cubed (ID^3) and nearest neighbour (NN) estimation techniques on the MS domain, which contains the majority of the resource. The results for zinc shown in Table 14.4 below indicate a favourable match with the original ordinary kriging (OK) method used for the estimate.

Table 14.4
Comparison Between ID3, NN, and OK Estimation Results for the MS Domain

Technique	Blocks Count	Mean	Std Dev	Coeff. V	Median	Max
OK	9027	2.27	2.01	0.89	1.63	13.46
NN	9052	2.39	2.11	0.89	1.59	11.78
ID3	9052	2.32	2.25	0.97	1.46	18.44

14.6.5.4 Overall Comments

All of the three methods used to validate block grade estimation supported the estimation results.

Table 14.5 presents the mineral inventory's sensitivity to cut-off grade for ZnEq and Table 14.6 presents the mineral inventory's sensitivity to cut-off grade for CuEq.

Table 14.5
LS Project North Deposit – Global Mineralized Tonnes at Various ZnEq Cut-off Grades

Category	Zn-Eq Cut-off	Tonnes (kt)	Average Grade							
			Zn-Eq[2] (%)	Cu (%)	Zn (%)	Pb (%)	Sn (%)	Ag (g/t)	Au (g/t)	Au-Eq[2] (g/t)
GO	6.0%	1,074	10.61	0.11	0.55	4.54	0.41	40.64	0.95	6.70
	5.5%	1,158	10.26	0.10	0.54	4.39	0.40	40.22	0.90	6.48
	5.0%	1,294	9.73	0.10	0.53	4.14	0.38	39.63	0.84	6.14
	4.5%	1,472	9.13	0.10	0.52	3.88	0.35	39.01	0.78	5.76
	4.0%	1,713	8.44	0.09	0.51	3.55	0.31	38.14	0.71	5.32
	3.5%	1,959	7.85	0.09	0.49	3.26	0.29	37.52	0.66	4.95
	3.0%	2,219	7.31	0.09	0.48	3.00	0.26	36.56	0.61	4.61
	2.5%	2,527	6.75	0.09	0.47	2.74	0.24	35.14	0.55	4.26
	2.0%	2,907	6.16	0.08	0.46	2.46	0.21	33.24	0.50	3.89
	1.5%	3,417	5.50	0.08	0.46	2.15	0.19	30.22	0.45	3.47
	1.0%	4,085	4.81	0.07	0.45	1.84	0.16	26.95	0.39	3.03
	0.0%	4,448	4.48	0.07	0.45	1.70	0.15	25.28	0.36	2.83
	Total	**4,448**	**4.48**	**0.07**	**0.45**	**1.70**	**0.15**	**25.28**	**0.36**	**2.83**
MS	6.0%	6,419	11.72	0.45	3.10	3.05	0.15	88.44	0.83	7.40
	5.5%	6,878	11.33	0.44	3.00	2.92	0.15	85.22	0.81	7.15
	5.0%	7,313	10.96	0.43	2.91	2.80	0.15	82.26	0.78	6.92
	4.5%	7,793	10.58	0.42	2.81	2.68	0.14	79.12	0.75	6.68
	4.0%	8,340	10.17	0.41	2.70	2.55	0.14	75.76	0.72	6.42
	3.5%	8,864	9.79	0.41	2.59	2.43	0.14	72.67	0.69	6.18
	3.0%	9,431	9.39	0.40	2.49	2.31	0.13	69.47	0.66	5.93
	2.5%	9,941	9.05	0.39	2.40	2.21	0.13	66.70	0.63	5.71
	2.0%	10,302	8.82	0.39	2.34	2.15	0.12	64.78	0.61	5.56
	1.5%	10,489	8.69	0.38	2.31	2.11	0.12	63.78	0.60	5.49
	1.0%	10,626	8.60	0.38	2.29	2.09	0.12	63.05	0.60	5.43
	0.0%	10,640	8.59	0.38	2.28	2.08	0.12	62.97	0.60	5.42
	Total	**10,640**	**8.59**	**0.38**	**2.28**	**2.08**	**0.12**	**62.97**	**0.60**	**5.42**
SW	6.0%	12	7.68	0.61	0.61	0.12	0.56	42.57	0.03	4.85
	5.5%	17	7.16	0.59	0.61	0.12	0.51	39.86	0.03	4.52
	5.0%	24	6.56	0.66	0.67	0.12	0.41	36.26	0.03	4.14
	4.5%	40	5.86	0.63	0.81	0.19	0.31	33.90	0.03	3.70
	4.0%	83	5.01	0.54	0.98	0.25	0.21	27.66	0.05	3.16
	3.5%	174	4.33	0.47	1.05	0.29	0.14	23.16	0.07	2.73
	3.0%	414	3.68	0.38	1.03	0.29	0.10	19.31	0.08	2.32
	2.5%	878	3.17	0.33	0.93	0.26	0.08	17.02	0.08	2.00
	2.0%	1,864	2.67	0.27	0.84	0.23	0.06	14.46	0.07	1.68
	1.5%	3,691	2.20	0.21	0.73	0.21	0.04	12.11	0.06	1.39
	1.0%	6,389	1.79	0.16	0.64	0.17	0.03	9.82	0.06	1.13
	0.0%	8,222	1.57	0.14	0.57	0.15	0.03	8.57	0.06	0.99
	Total	**8,222**	**1.57**	**0.14**	**0.57**	**0.15**	**0.03**	**8.57**	**0.06**	**0.99**

Table 14.6
LS Project – South Deposit Global Mineralized Tonnes at Various CuEq Cut-off Grades

Category	Cu-Eq Cut-off	Tonnes (kt)	Average Grade							
			Cu-Eq (%)	Cu (%)	Zn (%)	Pb (%)	Sn (%)	Ag (g/t)	Au (g/t)	Au-Eq (g/t)
South Deposit	6.0%	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5.5%	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5.0%	1	5.09	1.94	3.86	2.01	0.00	91.18	0.26	8.51
	4.5%	2	5.01	1.85	4.12	2.05	0.00	81.19	0.24	8.38
	4.0%	18	4.29	1.82	3.03	1.68	0.00	68.55	0.18	7.17
	3.5%	56	3.89	1.60	2.93	1.59	0.00	58.34	0.15	6.50
	3.0%	146	3.47	1.26	3.01	1.60	0.00	48.77	0.11	5.80
	2.5%	382	3.00	1.04	2.74	1.44	0.00	39.84	0.09	5.01
	2.0%	982	2.52	0.82	2.44	1.29	0.00	31.23	0.07	4.21
	1.5%	2,683	2.01	0.63	1.98	1.05	0.00	25.25	0.06	3.36
	1.0%	7,175	1.51	0.45	1.48	0.85	0.00	18.79	0.05	2.53
	0.9%	8,559	1.42	0.42	1.40	0.81	0.00	17.33	0.05	2.37
	0.5%	13,195	1.18	0.34	1.18	0.69	0.00	13.69	0.05	1.97
	0.3%	14,121	1.13	0.32	1.13	0.66	0.00	13.06	0.05	1.88
	0.0%	14,206	1.12	0.32	1.12	0.66	0.00	13.00	0.05	1.88
	Total	**14,206**	**1.12**	**0.32**	**1.12**	**0.66**	**0.00**	**13.00**	**0.05**	**1.88**

14.7 MINERAL RESOURCE PARAMETERS AND REPORT

14.7.1 Prospects for Economic Extraction

The CIM standards require that a mineral resource must have reasonable prospects for eventual economic extraction.

Based on three-year trailing averages, the forecasted metal commodity prices are: zinc = $2,535/tonne, lead = $2,315/tonne, copper = $6,724/tonne, gold = $1,250/ounce, silver = $19.40/ounce, and tin = $19,175/tonne. The zinc equivalent (ZnEq) and copper equivalent values are calculated as follow:

*ZnEq% = ((Zn Grade*25.35) +(Pb Grade*23.15)+(Cu Grade * 67.24)+(Au Grade*40.19)+(Ag Grade*0.62)+(Sn Grade * 191.75))/25.35*

*CuEq% = ((Zn Grade*25.35) +(Pb Grade*23.15)+(Cu Grade * 67.24)+(Au Grade*40.19)+(Ag Grade*0.62)+(Sn Grade * 191.75))/67.24*

Metals recoveries are expected to average about 60 to 70% based on the preliminary testwork completed by Grinding Solutions Mineral Processing Services. The preliminary testwork results also suggest that recoveries will be higher for the stringer/stockwork type mineralization (South/Central deposits) than for the massive sulphides (North deposit). The South and Central resources are reported at a copper equivalent grade of 0.9% CuEq since they are relatively more enriched in copper than zinc/lead. The North deposit resource is reported at 3% ZnEq (massive sulphides) and 2.5% ZnEq (gossan and stringer) in line with the expected lower recoveries in the massive sulphide mineralization.

Table 14.7 summarizes the underground economic assumptions upon which the resource estimate for the LS deposits are based.

Table 14.7
Summary of Economic Assumptions for the Conceptual Underground Mine at the LS Project

Description	Value Used
Mining Cost ($/t)	$65
Processing Cost ($/t)	$20
General & Administration ($/t)	$5
Average Metallurgical Recovery	65%

14.7.2 Classification of the Mineral Resource

Micon has classified the mineral resource estimate at the LS Project in the Measured, Indicated and Inferred categories.

The approach used to categorize the Measured resource was to select those blocks informed by more than 4 drill holes and within a 20 - 30 m distance from the closest composite. The approach used to categorize the Indicated resource was to select those blocks informed by more than 3 drill holes and within a 30 - 60 m distance from closest composite. The results were then smoothed to remove isolated small blocks and produce coherent shapes of reasonable volume, eliminating the spotted dog effect. All other blocks were classified in the Inferred category. A plan view of the resource categorization is shown in Figure 14.19.

14.7.3 Mineral Resource Statement

The Mineral resource statement for the LS project is summarized in Table 14.8.

The QP considers that the resource estimate for the LS Project has been reasonably prepared and conforms to the current CIM standards and definitions for estimating mineral resources.

Figure 14.19
Plan View of the LS Project Showing Mineral Resource Categorization

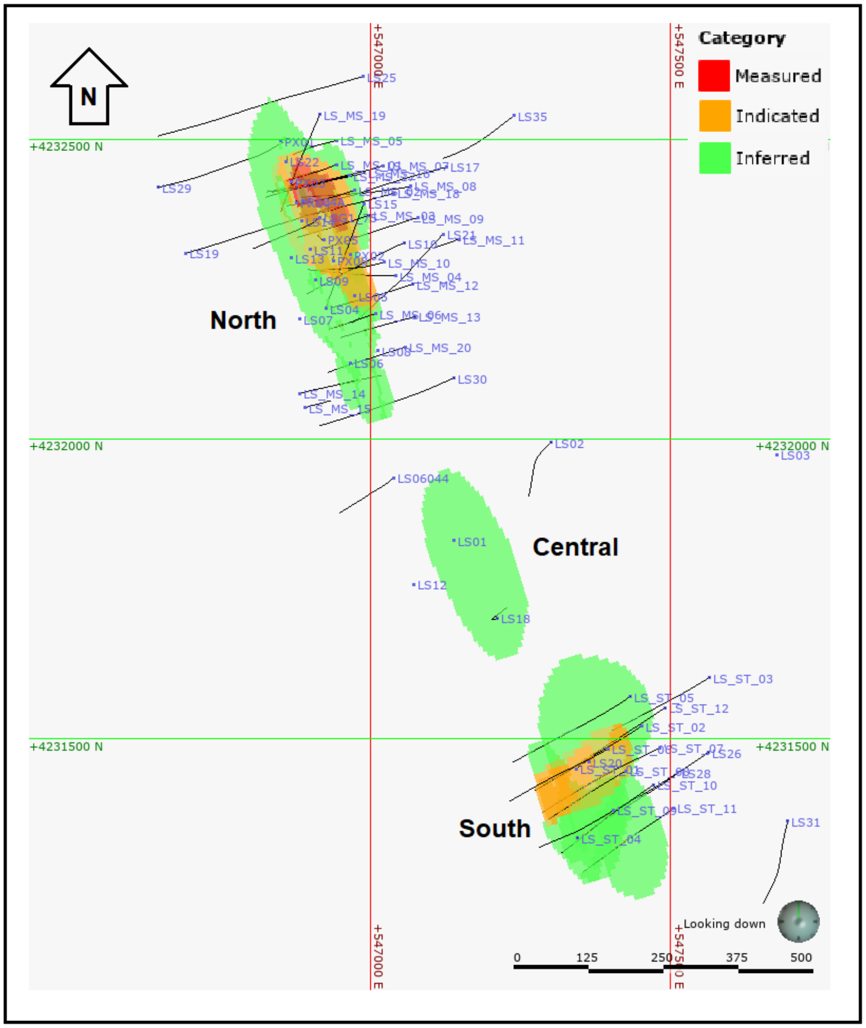


Table 14.8
LS Project Mineral Resource Estimate as of September 5, 2019

Deposit	Category	Min Zones	Cut-off ZnEq%	Tonnes (kt)	Cu (%)	Zn (%)	Pb (%)	Sn (%)	Ag (g/t)	Au (g/t)	ZnEq (%)	AuEq (g/t)	Cu (kt)	Zn (kt)	Pb (kt)	Sn (kt)	Ag (k Oz)	Au (k Oz)
North	Measured(M)	GO	2.5	234	0.13	0.70	4.32	0.36	51	1.50	11.38	7.18	0.3	1.6	10.1	0.9	385.2	11.3
	Indicated(I)	GO	2.5	1,462	0.08	0.43	2.55	0.26	37	0.51	6.63	4.18	1.2	6.2	37.3	3.8	1,742.1	23.8
	M & I	**GO**	**2.5**	**1,696**	**0.09**	**0.47**	**2.79**	**0.27**	**39**	**0.64**	**7.28**	**4.60**	**1.5**	**7.9**	**47.4**	**4.6**	**2,127.2**	**35.1**
	Inferred	GO	2.5	831	0.08	0.48	2.62	0.17	27	0.37	5.66	3.57	0.7	4.0	21.8	1.4	727.6	9.9
	Measured(M)	MS	3.0	2,444	0.40	3.12	2.97	0.15	72	0.74	10.95	6.91	9.7	76.3	72.5	3.7	5,623.9	58.4
	Indicated(I)	MS	3.0	5,457	0.45	2.35	2.30	0.13	75	0.67	9.55	6.03	24.5	128.1	125.6	7.3	13,221.5	116.9
	M & I	**MS**	**3.0**	**7,902**	**0.43**	**2.59**	**2.51**	**0.14**	**74**	**0.69**	**9.98**	**6.30**	**34.2**	**204.4**	**198.1**	**10.9**	**18,845.5**	**175.2**
	Inferred	MS	3.0	1,529	0.23	1.96	1.32	0.09	45	0.49	6.36	4.01	3.6	30.0	20.2	1.4	2,219.7	24.0
	Measured(M)	Str	2.5	94	0.37	0.88	0.28	0.05	17	0.12	3.08	1.94	0.3	0.8	0.3	0.0	51.0	0.4
	Indicated(I)	Str	2.5	643	0.34	0.90	0.23	0.09	17	0.06	3.23	2.04	2.2	5.8	1.5	0.6	354.0	1.3
	M & I	**Str**	**2.5**	**737**	**0.34**	**0.90**	**0.24**	**0.09**	**17**	**0.07**	**3.21**	**2.03**	**2.5**	**6.6**	**1.7**	**0.6**	**405.0**	**1.7**
	Inferred	Str	2.5	142	0.24	1.12	0.39	0.04	17	0.09	2.95	1.86	0.3	1.6	0.6	0.1	75.6	0.4
North	**M & I**	**All zones**	**2.9**	**10,334**	**0.37**	**2.12**	**2.39**	**0.16**	**64**	**0.64**	**9.06**	**5.72**	**38.2**	**219.0**	**247.2**	**16.2**	**21,377.7**	**212.0**
North	**Inferred**	**All zones**	**2.8**	**2,502**	**0.18**	**1.42**	**1.70**	**0.12**	**38**	**0.43**	**5.93**	**3.74**	**4.6**	**35.6**	**42.6**	**2.9**	**3,022.8**	**34.3**
					Average Grade								**Contained Metal**					
Deposit	**Category**	**Min Zones**	**Cut-off CuEq%**	**Tonnes (kt)**	**Cu (%)**	**Zn (%)**	**Pb (%)**	**Sn (%)**	**Ag (g/t)**	**Au (g/t)**	**CuEq (%)**		**Cu (kt)**	**Zn (kt)**	**Pb (kt)**	**Sn (kt)**	**Ag (k Oz)**	**Au (k Oz)**
Central	Inferred	Str	0.9	1,707	0.15	0.16	0.06	0	12	2.22	1.66		2.5	2.7	1.0	-	635.2	121.9
South	Measured(M)	Str/Fr	0.9	0	—	—	—	—	—	—	—							
	Indicated(I)	Str/Fr	0.9	2,473	0.47	1.53	0.83	0.00	19	0.06	1.54		11.5	37.9	20.6	0.0	1,484.7	4.7
	M & I	**Str/Fr**	**0.9**	**2,473**	**0.47**	**1.53**	**0.83**	**0.00**	**19**	**0.06**	**1.54**		**11.5**	**37.9**	**20.6**	**0.0**	**1,484.7**	**4.7**
	Inferred	Str/Fr	0.9	6,085	0.40	1.34	0.80	0.00	17	0.05	1.37		24.6	81.6	48.7	0.0	3,285.2	10.0

Notes:

The mineral resources were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Definitions and Standards (2014).
Min(eralized) Zones: GO=Gossan, MS=Massive Sulphide, Str=Stringer, Str/Fr=Stockwork
ZnEq% = ((Zn Grade*25.35)+(Pb Grade*23.15)+(Cu Grade * 67.24)+(Au Grade*40.19)+(Ag Grade*0.62)+(Sn Grade*191.75))/25.35
CuEq% = ((Zn Grade*25.35)+(Pb Grade*23.15)+(Cu Grade * 67.24)+(Au Grade*40.19)+(Ag Grade*0.62))/67.24
AuEq g/t = ((Zn Grade*25.35)+(Pb Grade*23.15)+(Cu Grade * 67.24)+(Au Grade*40.19)+(Ag Grade*0.62)+(Sn Grade*191.75))/40.19
Metal Prices: Cu $6,724/t, Zn $2,535/t, Pb $2,315/t, Au $1,250/oz, Ag $19.40/oz, Sn $19,175/t
Densities: GO=3.12, MS=4.76, Str=2.88, Str/Fr=2.88

TECHNICAL REPORT SECTIONS NOT REQUIRED

The following sections which form part of the NI 43-101 reporting requirements for advanced projects or properties are not relevant to the current Technical Report for the Lagoa Salgada Project:

15.0 MINERAL RESERVE ESTIMATES

16.0 MINING METHODS

17.0 RECOVERY METHODS

18.0 PROJECT INFRASTRUCTURE

19.0 MARKET STUDIES AND CONTRACTS

20.0 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

21.0 CAPITAL AND OPERATING COSTS

22.0 ECONOMIC ANALYSIS

23.0 ADJACENT PROPERTIES

There are no significant properties directly adjacent to the Lagoa Salgada Project.

There are two historic lead-zinc mines in regional proximity to the property: the Lousal mine, situated approximately 22 km south of the North deposit; and the Caveira mine situated approximately 13 km southwest of the North deposit.

23.1 LOUSAL MINE (MINA DE LOUSAL)

The Lousal mine (Mina de Lousal) was first opened in 1882 and operated continuously from 1900 up to 1988 when it was finally closed. Historic production figures for the Lousal mine were not available at the time of writing. The Lousal VHMS mine exploited pyrite primarily as a sulfur source for fertilizers production.

The mining village of Lousal (Grândola, Portugal) is currently an international example of success in socio-economic, environmental and mining heritage rehabilitation. The rehabilitation program resulted from the joint efforts of the Municipality of Grândola and the mine owner company – SAPEC, SA. The program is responsible for the restoration of the mineshafts and conversion of the old power plant into a mining museum. The main warehouse gave place to a regional restaurant, the mine offices were transformed into a handicraft centre and the administration house was converted in a rural hotel. A rehabilitation plan directed to reclaim the Lousal contaminated area was defined and promoted by EDM. Some other mining facilities have been uses to create the Mine of Science-"Ciência Viva" Centre, which promotes non-formal educational activities devoted to Science and Technology.

23.2 CAVEIRA MINE (MINA DA CANAL CAVEIRA)

The Caveira mine (Mina da Canal Caveira) operated for 103 years from 1863 to 1966. Historic production figures for the Caveira mine were unavailable at the time of writing.

The Caveira mine located 6 km southeast of the village of Grândola, is one of the most western copper mines of the IPB, geologically identical to the mines of São Domingos and Aljustrel, famous for the Roman finds. Historically, this mine was operated by the Romans along with a number of others.

The mine is known mainly because of the immense slag heap. In 1880, due to the spontaneous combustion of the pyrite, a fire broke out that lasted for three years. The mine consists of three deposits separated by host rocks and, due to this configuration, it was decided to concentrate efforts on underground exploitation.

24.0 OTHER RELEVANT DATA AND INFORMATION

All relevant data and information regarding the Lagoa Salgada Project are included in other sections of this Technical Report.

The QP is not aware of any other data that would make a material difference to the quality of this Technical Report or make it more understandable, or without which the report would be incomplete or misleading.

25.0 INTERPRETATION AND CONCLUSIONS

25.1 GEOLOGY AND MINERALIZATION

Geological reasoning suggests that the subdivision of the LS Project into the North, Central and South deposits is arbitrary, being based on the existing drill pattern. With further concerted systematic drilling, the three deposits are likely to coalesce into a single zinc-lead-copper VMS system, manifesting/displaying its macro-genetic features from secondary gossan to primary massive sulphides and ending with peripheral primary/secondary stringer/fissure type mineralization in the waning phases of volcanic activity. This interpretation is backed by geophysics which shows that all three deposits lie on a continuous coincidental Induced Polarization (IP) chargeability anomaly with an estimated geological strike length of 1.7 km in an SSE to NNW direction from the South deposit to beyond the North deposit and terminating against the Alpine fault.

The geometry of the MS domain of the North deposit appears to suggest that the main vent of the volcanic activity that gave rise to the LS deposit may be located at the northwestern end where the plunge swings westwards. However, this remains speculative until proven by additional drilling.

Drilling and geophysics results indicate that the mineralization remains open beyond the current limits of drilling, along strike in both directions and down plunge/dip. Geophysics results also indicate the potential to significantly increase mineral resources on the eastern flanks of all the deposits.

The massive sulphide intersections observed in drill holes LS 23 and LS-ST 12 on the eastern side of the South deposit suggest the possibility of another volcanic vent.

25.2 MINERAL RESOURCE ESTIMATE

The significant growth in the mineral resources at the LS Project is attributed to the success of Ascendant/Redcorp’s recent infill and step-out drilling directed mainly at the North deposit. The richest part of the LS Project coincides with the Measured resource area close to the northern extremity of the North deposit (Figure 14.7). This Measured resource area, in particular its GO (gossan) domain, could be brought into production early in the life of a future mine to boost the economics of the mining venture.

Currently, the greatest contribution to the mineral resources is from the North deposit. However, all deposits have the potential to delineate more resources with additional drilling. The stringer/fissure type mineralization of the South and Central deposits appears to be more amenable to metallurgical processing than the massive mineralization of the North deposit and future priority drilling will depend on progress in metallurgical testwork.

Micon’s QP considers that the resource estimate for the LS Project has been reasonably prepared and conforms to the current CIM standards and definitions for estimating mineral resources. The goals of the infill drill program have been met resulting in an increase of 70% in the Measured and Indicated mineral resources

25.3 METALLURGY

The metallurgical work completed to date is of a reconnaissance nature and no firm conclusions can be drawn therefrom. Detailed testwork is in progress.

26.0 RECOMMENDATIONS

The quantity and quality of the mineral resources are key factors in the development of the LS Project. Accordingly, Micon makes the following recommendations.

26.1 GEOLOGY AND MINERAL RESOURCES

Redcorp should continue to expand the mineral resources systematically. The immediate focus/short- to medium-term drilling should be directed at the northwest end of the North deposit to define the geometry/extent of the plunge and at the same time increase the resource. This northwest end is particularly attractive as it is underlain by a strong geophysical anomaly. The second priority should be the gap separating the North and Central deposits and the gap separating the Central and South deposits. Models of the deposits should continue to be refined/updated as more information becomes available.

Micon understands that one of Redcorp's immediate exploration plans involves a continuation of geophysical investigations to the eastern and southeastern areas of the Lagoa Salgada deposit. Micon endorses this undertaking and recommends that, subject to satisfactory results, the same exercise be implemented to the north of the North deposit, targeting the area immediately beyond the major east-west fault.

26.2 METALLURGY

Optimum metallurgical recoveries are key to the success of the LS Project. Thus, in Micon's view, detailed metallurgical investigations should be prioritized over additional drilling to expand the mineral resource.

26.3 PROJECT ECONOMICS

A preliminary economic assessment (PEA) is recommended as the number 1 priority in advancing the LS Project to the next step. The PEA results will assist in establishing the minimum acceptable levels of metal recoveries.

26.4 PROJECT SYNERGIES

A basic survey of infrastructural requirements and exploring possible synergies of cooperation with other parties holding prospective mineral resources/business interests in the same area of Portugal will be beneficial to Redcorp.

26.5 PROPOSED 2020 EXPLORATION/DEVELOPMENT PROGRAM AND BUDGET

In line with these recommendations, Ascendant/Redcorp will conduct follow up work to confirm the favourable geophysics results obtained during the 2019 exploration program in addition to detailed metallurgical testwork. The proposed follow up exploration program focuses on investigating the area between the North Zone and the South Zone along the 1.7

km strike length of the coincidental IP chargeability anomaly. In summary, the planned work program is as follows:

- Preliminary Economic Assessment.
- Ground and drill hole IP surveys.
- Diamond drilling (infill, step-out and metallurgical drill holes).
- Detailed metallurgical testwork.

To fulfil the planned 2020 exploration/development work, Ascendant/Redcorp has proposed a budget of USD 2.80 million broken down as summarized in Table 26.1.

Table 26.1
Proposed Work Program and Budget for the Lagoa Salgada Project for 2020

Program	Activity	Cost (US$)
Drill hole IP Survey (North, Central & South Deposits)	Interpretation/modelling	30,000
Preliminary Economic Assessment	NI 43-101 PEA	150,000
Metallurgical testwork drilling	4 drill holes (1,200 m)	240,000
Detailed metallurgical testwork	Optimizing recoveries	250,000
North deposit exploration drilling (expanding inferred)	4 drill holes (1,400 m) +assays+modelling	420,000
Central/South deposits + other targets exploration drilling	14 to 16 drill holes (5,700) +assays+modelling	1,710,000
All activities	**Grand Total**	**2,800,000**

Micon believes that the proposed budget is reasonable and justified and recommends that Ascendant/Redcorp conduct the planned activities subject to availability of funding and any other matters which may cause the objectives to be altered in the normal course of business activities.

27.0 DATE AND SIGNATURE PAGE

The independent Qualified Person(s) for this report are:

MICON INTERNATIONAL LIMITED

"Charley Murahwi" {signed and sealed as of the report date}

Charley Murahwi, M.Sc., P.Geo., Pr.Sci.Nat., FAusIMM.
Senior Geologist.

Report Date: November 5, 2019.
Effective Resource Date: September 5, 2019.

"Richard Gowans" {signed and sealed as of the report date}

Richard Gowans, B.Sc., P.Eng.
President and Principal Metallurgist

Report Date: November 5, 2019.
Effective Resource Date: September 5, 2019.

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29.0 CERTIFICATE

CERTIFICATE OF AUTHOR
Charley Murahwi, M.Sc., P.Geo., Pr.Sci.Nat., FAusIMM

As the author of this report for Mineral & Financial Investments Limited, Redcorp – Empreendimentos Mineiros, Lda and Ascendant Resources Inc. entitled "Technical Report on the Resource Estimate Update for the Lagoa Salgada Project, Setúbal District, Portugal" dated November 5, 2019 with effective date of September 5, 2019, I, Charley Murahwi, do hereby certify that:

1. I am employed as a Senior Geologist by Micon International Limited, Suite 900, 390 Bay Street, Toronto, Ontario M5H 2Y2, tel. +1 416 362 5135, e-mail cmurahwi@micon-international.com;
2. This certificate applies to the Technical Report titled "Technical Report on the Resource Estimate Update for the Lagoa Salgada Project, Setúbal District, Portugal" dated November 5, 2019 with effective date of September 5, 2019.
3. I hold the following academic qualifications:
   B.Sc. (Geology) University of Rhodesia, Zimbabwe, 1979;
   Diplome d´Ingénieur Expert en Techniques Minières, Nancy, France, 1987;
   M.Sc. (Economic Geology), Rhodes University, South Africa, 1996.
4. I am a registered Professional Geoscientist in Ontario (membership # 1618) and in PEGNL (membership # 05662), a registered Professional Natural Scientist with the South African Council for Natural Scientific Professions (membership # 400133/09) and am a Fellow of the Australasian Institute of Mining & Metallurgy (FAusIMM) (membership number 300395).
5. I have worked as a geologist in the minerals industry for over 40 years;
6. I am familiar with NI 43-101 and, by reason of education, experience and professional registration, I fulfill the requirements of a Qualified Person as defined in NI 43-101. My work experience includes 18 years on VMS, gold, silver, copper, tin and tantalite projects (on and off mine), 12 years on Cr-Ni-Cu-PGE deposits in layered intrusions/komatiitic environments and 10 years as a consulting geologist on precious and base metals and industrial minerals;
7. I have read NI 43-101 and this Technical Report has been prepared in compliance with the instrument;
8. I visited the Lagoa Salgada Project from 16 to 19 October 2018, from 13 to 17 November 2018 and from 28 to 31 May 2019;
9. This is my second Technical Report for the mineral properties that are the subject of this Technical Report;
10. I am independent of Mineral & Financial Investments Limited, Redcorp – Empreendimentos Mineiros, Lda and Ascendant Resources Inc. and any subsidiaries according to the definition described in NI 43-101 and the Companion Policy 43-101 CP;
11. I am responsible for all Sections of this Technical Report except Section 13 and summaries therefrom, in Section 1, 25 and 26.
12. As of the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make this technical report not misleading;

Report Dated this 5th day of November 2019, with effective date of September 5, 2019.

"Charley Murahwi" {signed and sealed as of the report date}

Charley Murahwi, M.Sc., P.Geo., Pr.Sci.Nat., FAusIMM

CERTIFICATE OF AUTHOR
Richard Gowans, B.Sc., P.Eng.

As the author of this report for Mineral & Financial Investments Limited, Redcorp – Empreendimentos Mineiros, Lda and Ascendant Resources Inc. entitled "Technical Report on the Resource Estimate Update for the Lagoa Salgada Project, Setúbal District, Portugal" dated November 5, 2019 with effective date of September 5, 2019, I, Richard Gowans do hereby certify that:

1. I am employed by, and carried out this assignment for, Micon International Limited, 900 – 390 Bay Street, Toronto, Ontario M5H 2Y2, tel. +1 416 362 5135, fax +1 416 362 5763, e-mail rgowans@micon-international.com.
2. I hold the following academic qualifications:

   B.Sc. (Hons) Minerals Engineering, The University of Birmingham, U.K. 1980.
3. I am a registered Professional Engineer of Ontario (membership number 90529389); as well, I am a member in good standing of the Canadian Institute of Mining, Metallurgy and Petroleum.
4. I am familiar with NI 43-101 and by reason of education, experience and professional registration and fulfill the requirements of a Qualified Person as defined in NI 43-101. I have been continuously employed in the mining industry since graduation and my work experience includes over 30 years of the management of technical studies and design of numerous metallurgical testwork programs and metallurgical processing plants.
5. This certificate applies to the Technical Report titled "Technical Report on the Resource Estimate Update for the Lagoa Salgada Project, Setúbal District, Portugal" dated November 5, 2019 with effective date of September 5, 2019.
6. I have not visited the site.
7. I am responsible for Section 13, and summaries therefrom, in Section 1, as well as relevant conclusions in Sections 25 and 26 of this Technical Report titled "Technical Report on the Resource Estimate Update for the Lagoa Salgada Project, Setúbal District, Portugal" dated November 5, 2019 with effective date of September 5, 2019.
8. This is my first Technical Report for the mineral properties that are the subject of this Technical Report;
9. I am independent of Mineral & Financial Investments Limited, Redcorp – Empreendimentos Mineiros, Lda and Ascendant Resources Inc. and any subsidiaries according to the definition described in NI 43-101 and the Companion Policy 43-101 CP.
10. As of the date of this Certificate, to the best of my knowledge, information, and belief, this Technical Report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.
11. I have read National Instrument 43-101 and the Technical Report has been prepared in compliance with National Instrument 43-101 and Form 43-101F1.

Report Dated this 5th day of November 2019, with effective date of September 5, 2019.

"Richard Gowans" {signed and sealed as of the report date}

Richard Gowans, P.Eng.

APPENDIX 1

GLOSSARY OF MINING AND OTHER RELATED TERMS

GLOSSARY AND DEFINED TERMS

The following is a glossary of certain mining terms that may be used in this Technical Report.

A

Assay	A chemical test performed on a sample of ores or minerals to determine the amount of valuable metals contained.

B

Bulk mining	Any large-scale, mechanized method of mining involving many thousands of tonnes of ore being brought to surface per day.
Bulk sample	A large sample of mineralized rock, frequently hundreds of tonnes, selected in such a manner as to be representative of the potential orebody being sampled. The sample is usually used to determine metallurgical characteristics.
By-product	A secondary metal or mineral product recovered in the milling process.

C

Channel sample	A sample composed of pieces of vein or mineral deposit that have been cut out of a small trench or channel, usually about 10 cm wide and 2 cm deep.
Chip sample	A method of sampling a rock exposure whereby a regular series of small chips of rock is broken off along a line across the face.
CIM Standards	The CIM Definition Standards on Mineral Resources and Mineral Reserves adopted by CIM Council from time to time. The most recent update adopted by the CIM Council is effective as of May 10, 2014.
CIM	The Canadian Institute of Mining, Metallurgy and Petroleum.
Contact	A geological term used to describe the line or plane along which two different rock formations meet.
Core	The long cylindrical piece of rock, about an inch in diameter, brought to surface by diamond drilling.
Core sample	One or several pieces of whole or split parts of core selected as a sample for analysis or assay.
Cut-off grade	The lowest grade of mineralized rock that qualifies as ore grade in a given deposit, and is also used as the lowest grade below which the mineralized

rock currently cannot be profitably exploited. Cut-off grades vary between deposits depending upon the amenability of ore to extraction and upon costs of production.

D

Dacite — The extrusive (volcanic) equivalent of quartz diorite.

Deposit — An informal term for an accumulation of mineralization or other valuable earth material of any origin.

Development drilling — Drilling to establish accurate estimates of mineral resources or reserves usually in an operating mine or advanced project.

Dilution — Rock that is, by necessity, removed along with the ore in the mining process, subsequently lowering the grade of the ore.

Diorite — An intrusive igneous rock composed chiefly of sodic plagioclase, hornblende, biotite or pyroxene.

Dip — The angle at which a vein, structure or rock bed is inclined from the horizontal as measured at right angles to the strike.

E

Exploration — Prospecting, sampling, mapping, diamond drilling and other work involved in searching for a mineral deposit.

F

Face — The end of a drift, cross-cut or stope in which work is taking place. It also refers to the end of a quarry from which material is being extracted

Fault — A break in the Earth's crust caused by tectonic forces which have moved the rock on one side with respect to the other.

Fold — Any bending or wrinkling of rock strata.

Footwall — The rock on the underside of a vein or mineralized structure or deposit.

Fracture — A break in the rock, the opening of which allows mineral-bearing solutions to enter. A "cross-fracture" is a minor break extending at more-or-less right angles to the direction of the principal fractures.

G

g/t — Abbreviation for gram(s) per metric tonne.

Grade — Term used to indicate the concentration of an economically desirable mineral or element in its host rock as a function of its relative mass. With

	gold, this term may be expressed as grams per tonne (g/t) or ounces per tonne (opt).
Gram	One gram is equal to 0.0321507 troy ounces.

H

Hangingwall	The rock on the upper side of a vein or mineral deposit.
Host rock	The rock surrounding an mineral/ore deposit.
Hydrothermal	Processes associated with heated or superheated water, especially mineralization or alteration.

I

Indicated Mineral Resource

An Indicated Mineral Resource is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit. Geological evidence is derived from adequately detailed and reliable exploration, sampling and testing and is sufficient to assume geological and grade or quality continuity between points of observation. An Indicated Mineral Resource has a lower level of confidence than that applying to a Measured Mineral Resource and may only be converted to a Probable Mineral Reserve.

Inferred Mineral Resource

An Inferred Mineral Resource is that part of a Mineral Resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade or quality continuity. An Inferred Mineral Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.

Intrusive	A body of igneous rock formed by the consolidation of magma intruded into other

K

km	Abbreviation for kilometre(s). One kilometre is equal to 0.62 miles.

L

Leaching — The separation, selective removal or dissolving-out of soluble constituents from a rock or ore body by the natural actions of percolating solutions.

M

m — Abbreviation for metre(s). One metre is equal to 3.28 feet.

Measured Mineral Resource

A Measured Mineral Resource is that part of a Mineral Resource for which quantity, grade or quality, densities, shape, and physical characteristics are estimated with confidence sufficient to allow the application of Modifying Factors to support detailed mine planning and final evaluation of the economic viability of the deposit. Geological evidence is derived from detailed and reliable exploration, sampling and testing and is sufficient to confirm geological and grade or quality continuity between points of observation. A Measured Mineral Resource has a higher level of confidence than that applying to either an Indicated Mineral Resource or an Inferred Mineral Resource. It may be converted to a Proven Mineral Reserve or to a Probable Mineral Reserve.

Metallurgy — The science and art of separating metals and metallic minerals from their ores by mechanical and chemical processes.

Metamorphic — Affected by physical, chemical, and structural processes imposed by depth in the earth's crust.

Mine — An excavation on or beneath the surface of the ground from which mineral matter of value is extracted.

Mineral — A naturally occurring homogeneous substance having definite physical properties and chemical composition and, if formed under favourable conditions, a definite crystal form.

Mineral Claim — That portion of public mineral lands which a party has staked or marked out in accordance with federal or state mining laws to acquire the right to explore for and exploit the minerals under the surface.

Mineralization — The process or processes by which mineral or minerals are introduced into a rock, resulting in a valuable or potentially valuable deposit.

Mineral Resource

A Mineral Resource is a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade or quality and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade or quality, continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling. Material of economic interest refers to diamonds, natural solid inorganic material, or natural solid fossilized organic material including base and precious metals, coal, and industrial minerals. The term mineral resource used in this report is a Canadian mining term as defined in accordance with NI 43-101 – Standards of Disclosure for Mineral Projects under the guidelines set out in the Canadian Institute of Mining, Metallurgy and Petroleum (the CIM), Standards on Mineral Resource and Mineral Reserves Definitions and guidelines adopted by the CIM Council on December 11, 2005 and recently updated as of May 10, 2014 (the CIM Standards).

Mineral Reserve

A Mineral Reserve is the economically mineable part of a Measured and/or Indicated Mineral Resource. It includes diluting materials and allowances for losses, which may occur when the material is mined or extracted and is defined by studies at Pre-Feasibility or Feasibility level as appropriate that include application of Modifying Factors. Such studies demonstrate that, at the time of reporting, extraction could reasonably be justified. The reference point at which Mineral Reserves are defined, usually the point where the ore is delivered to the processing plant, must be stated. It is important that, in all situations where the reference point is different, such as for a saleable product, a clarifying statement is included to ensure that the reader is fully informed as to what is being reported. The public disclosure of a Mineral Reserve must be demonstrated by a Pre-Feasibility Study or Feasibility Study.

N

NI 43-101 — National Instrument 43-101 is a national instrument for the Standards of Disclosure for Mineral Projects within Canada. The Instrument is a codified set of rules and guidelines for reporting and displaying information related to mineral properties owned by, or explored by, companies which report these results on stock exchanges within Canada. This includes foreign-owned mining entities who trade on stock exchanges overseen by the Canadian Securities Administrators (CSA), even if they only trade on Over The Counter (OTC) derivatives or other instrumented securities. The last major NI 43-101 rules and guidelines updated was as of June 30, 2011 with minor changes and additions since with the latest being May 5, 2016.

O

Open Pit/Cut — A form of mining operation designed to extract minerals that lie near the surface. Waste or overburden is first removed, and the mineral is broken and loaded for processing. The mining of metalliferous ores by surface-mining methods is commonly designated as open-pit mining as

	distinguished from strip mining of coal and the quarrying of other non-metallic materials, such as limestone and building stone.
Outcrop	An exposure of rock or mineral deposit that can be seen on surface that is, not covered by soil or water.
Oxidation	A chemical reaction caused by exposure to oxygen that results in a change in the chemical composition of a mineral.

P

Plant	A building or group of buildings in which a process or function is carried out; at a mine site it will include warehouses, hoisting equipment, compressors, maintenance shops, offices and the mill or concentrator. At a quarry site it may just be comprised of a crushing circuit, associated stockpiles and truck loading facilities.
Pyrite	A common, pale-bronze or brass-yellow, mineral composed of iron and sulphur. Pyrite has a brilliant metallic luster and has been mistaken for gold. Pyrite is the most wide-spread and abundant of the sulphide minerals and occurs in all kinds of rocks.

Q

Qualified Person

Conforms to that definition under NI 43-101 for an individual: (a) to be an engineer or geoscientist with a university degree, or equivalent accreditation, in an area of geoscience, or engineering, related to mineral exploration or mining; (b) has at least five years' experience in mineral exploration, mine development or operation or mineral project assessment, or any combination of these, that is relevant to his or her professional degree or area of practice; (c) to have experience relevant to the subject matter of the mineral project and the technical report; (d) is in good standing with a professional association; and (e) in the case of a professional association in a foreign jurisdiction, has a membership designation that (i) requires attainment of a position of responsibility in their profession that requires the exercise of independent judgement; and (ii) requires (A) a favourable confidential peer evaluation of the individual's character, professional judgement, experience, and ethical fitness; or (B) a recommendation for membership by at least two peers, and demonstrated prominence or expertise in the field of mineral exploration or mining.

R

Reclamation	The restoration of a site after mining or exploration activity is completed.

Rogue	Rogue Resources Inc., including, unless the context otherwise requires, the Company's subsidiaries.

S

Stockpile	Broken ore heaped on surface, pending treatment or shipment.
Strike	The direction, or bearing from true north, of a vein or rock formation measure on a horizontal surface.
Stringer	A narrow vein or irregular filament of a mineral or minerals traversing a rock mass.

T

Tonne	A metric ton of 1,000 kilograms (2,205 pounds).

V

Vein	A fissure, fault or crack in a rock filled by minerals that have travelled upwards from some deep source.

W

Wallrocks	Rock units on either side of an orebody. The hangingwall and footwall rocks of a mineral deposit or orebody.
Waste	Unmineralized, or sometimes mineralized, rock that is not minable at a profit.
Working(s)	May be a shaft, quarry, level, open-cut, open pit, quarry or stope etc. Usually noted in the plural.

Z

Zone	An area of distinct mineralization.

APPENDIX 2

VARIOGRAPHY/SPATIAL ANALYSIS RESULTS

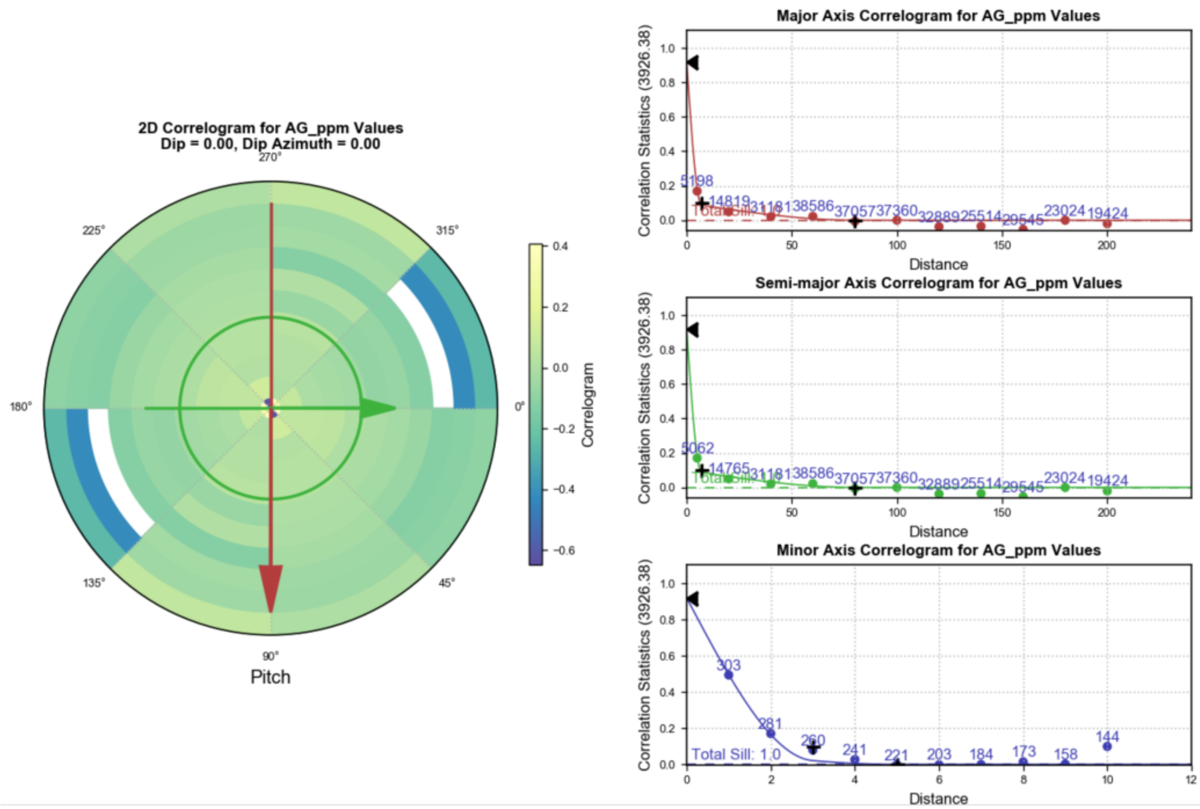
SUMMARY OF PRINCIPAL VARIOGRAMS IN THIS APPENDIX

Deposit	Domain	Element	Variogram Description	
			Type	Model
North	GO	Ag	Correlogram	Spherical
	GO	Au	Correlogram	Spherical
	GO	Cu	Correlogram	Spherical
	GO	Pb	Correlogram	Spherical
	GO	Sn	Variogram	Spherical
	GO	Zn	Correlogram	Spherical
	MS	Ag	Variogram	Spherical
	MS	Au	Variogram	Spherical
	MS	Cu	Variogram	Spherical
	MS	Pb	Variogram	Spherical
	MS	Sn	Variogram	Spherical
	MS	Zn	Correlogram	Spherical
	Str_N	Ag	Variogram	Spherical
	Str_N	Au	Variogram	Spherical
	Str_N	Cu	Variogram	Spherical
	Str_N	Pb	Correlogram	Spherical
	Str_N	Sn	Correlogram	Spherical
	Str_N	Zn	Correlogram	Spherical
South	Str_S	Ag	Correlogram	Spherical
	Str_S	Au	Correlogram	Spherical
	Str_S	Cu	Correlogram	Spherical
	Str_S	Pb	Correlogram	Spherical
	Str_S	Sn	NA	NA
	Str_S	Zn	Correlogram	Spherical

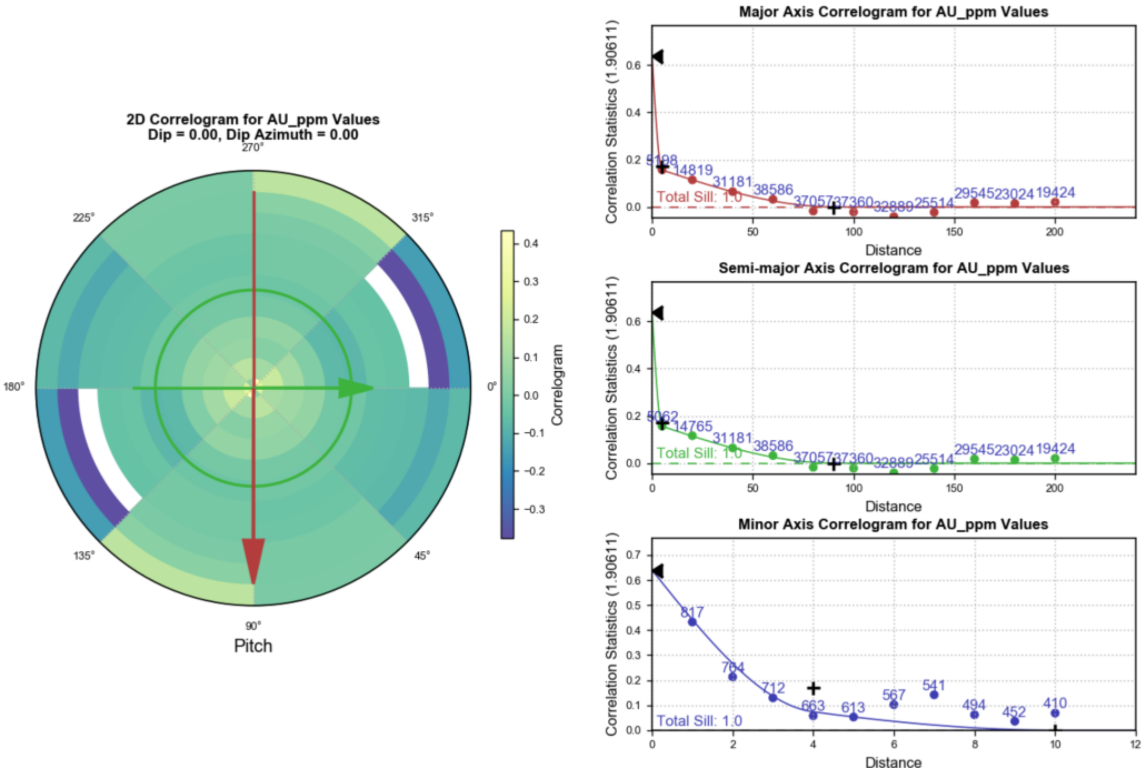
N.B. There was no variography conducted on the Central deposit due to very limited data

GOSSAN (GO) DOMAIN VARIOGRAMS

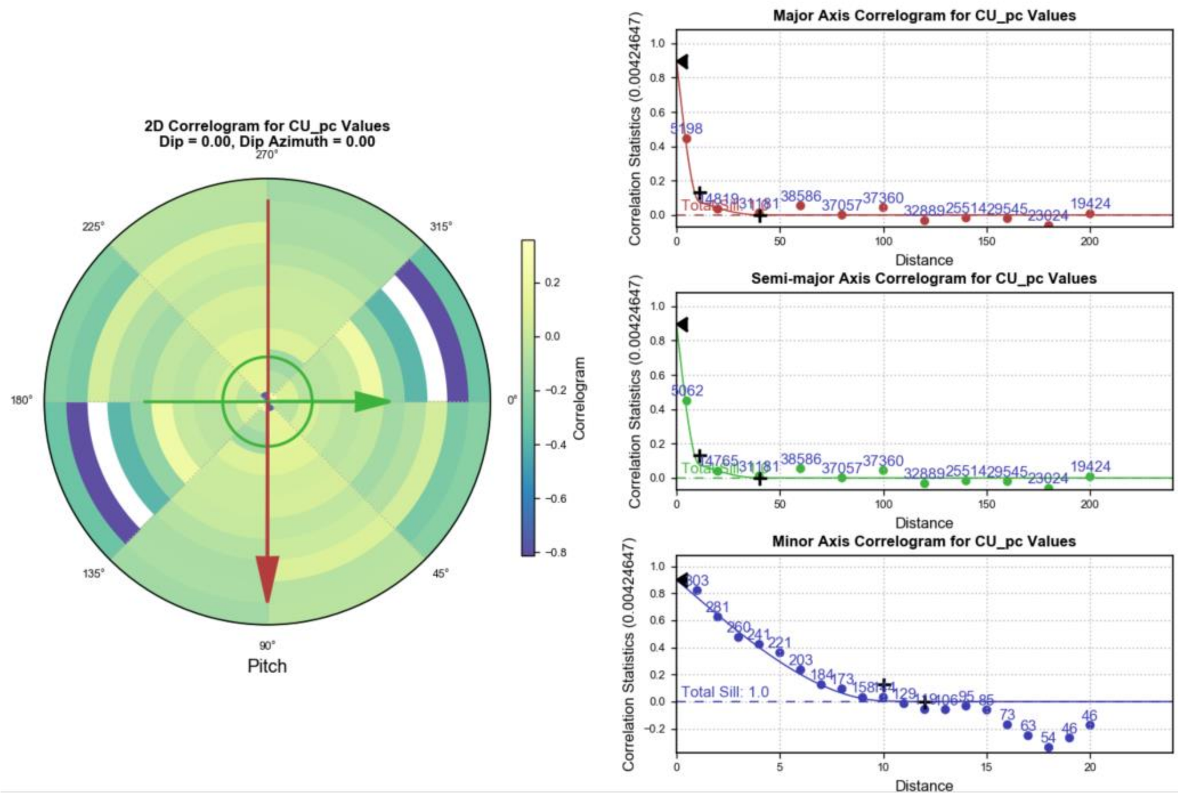
Ag



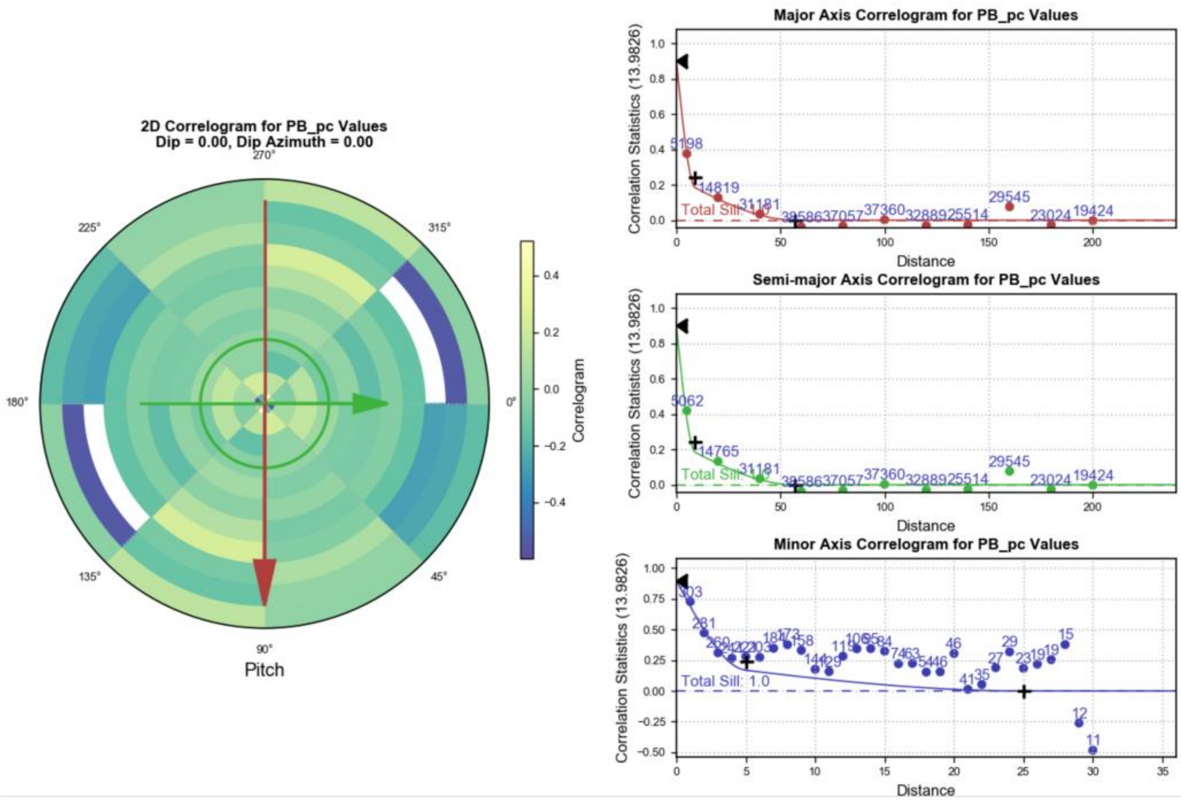
Au


2D Correlogram for AU_ppm Values
Dip = 0.00, Dip Azimuth = 0.00
270°
315°
0°
45°
90°
135°
180°
225°
Pitch
Correlogram
Major Axis Correlogram for AU_ppm Values
Semi-major Axis Correlogram for AU_ppm Values
Minor Axis Correlogram for AU_ppm Values
Correlation Statistics (1.90611)
Distance
Total Sill: 1.0

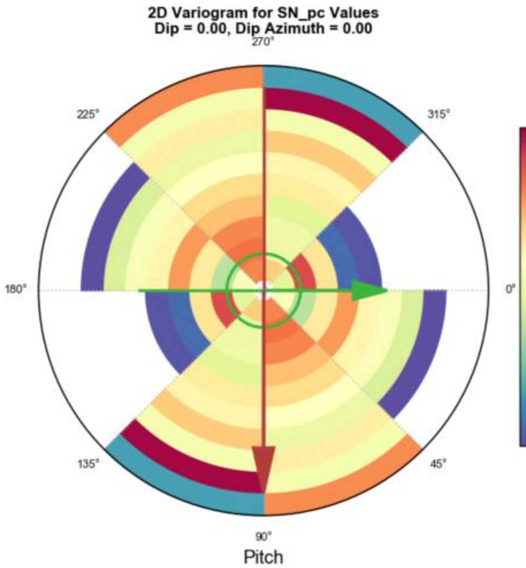
Cu


2D Correlogram for CU_pc Values
Dip = 0.00, Dip Azimuth = 0.00
270°
225°
315°
180°
0°
135°
45°
90°
Pitch
Correlogram
0.2
0.0
−0.2
−0.4
−0.6
−0.8
Major Axis Correlogram for CU_pc Values
Semi-major Axis Correlogram for CU_pc Values
Minor Axis Correlogram for CU_pc Values
Correlation Statistics (0.00424647)
Distance
Total Sill: 1.0

Pb


2D Correlogram for PB_pc Values
Dip = 0.00, Dip Azimuth = 0.00
270°
315°
0°
45°
90°
135°
180°
225°
Pitch
Correlogram
0.4
0.2
0.0
−0.2
−0.4
Major Axis Correlogram for PB_pc Values
Correlation Statistics (13.9826)
Distance
Total Sill
Semi-major Axis Correlogram for PB_pc Values
Correlation Statistics (13.9826)
Distance
Total Sill
Minor Axis Correlogram for PB_pc Values
Correlation Statistics (13.9826)
Distance
Total Sill: 1.0

Sn


2D Variogram for SN_pc Values
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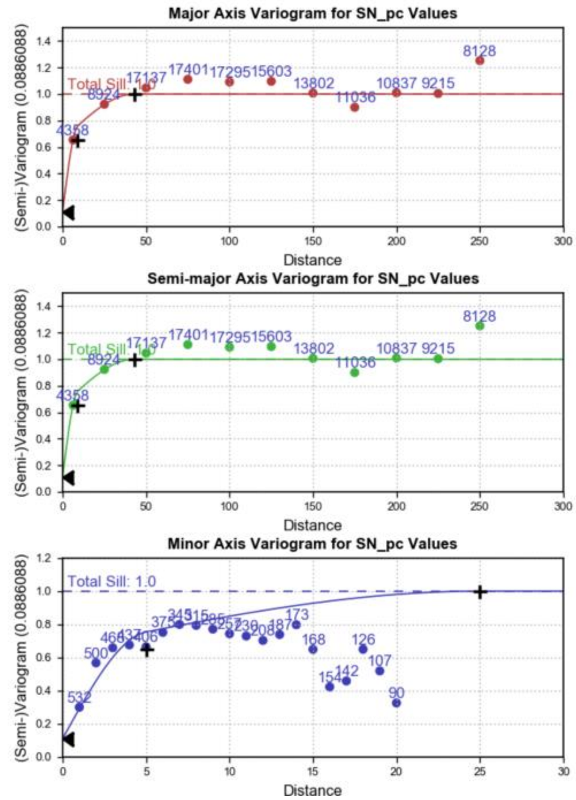
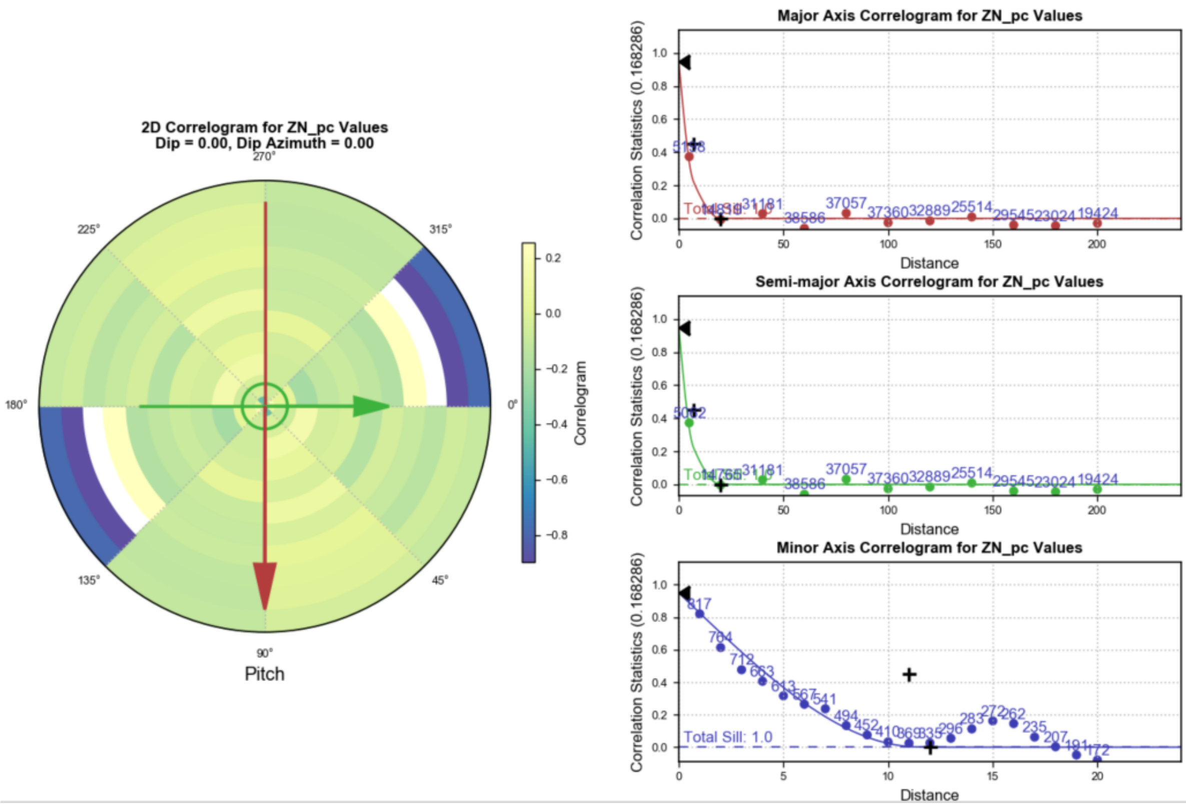
270°
225°
315°
180°
0°
135°
45°
90°
Pitch
Variogram

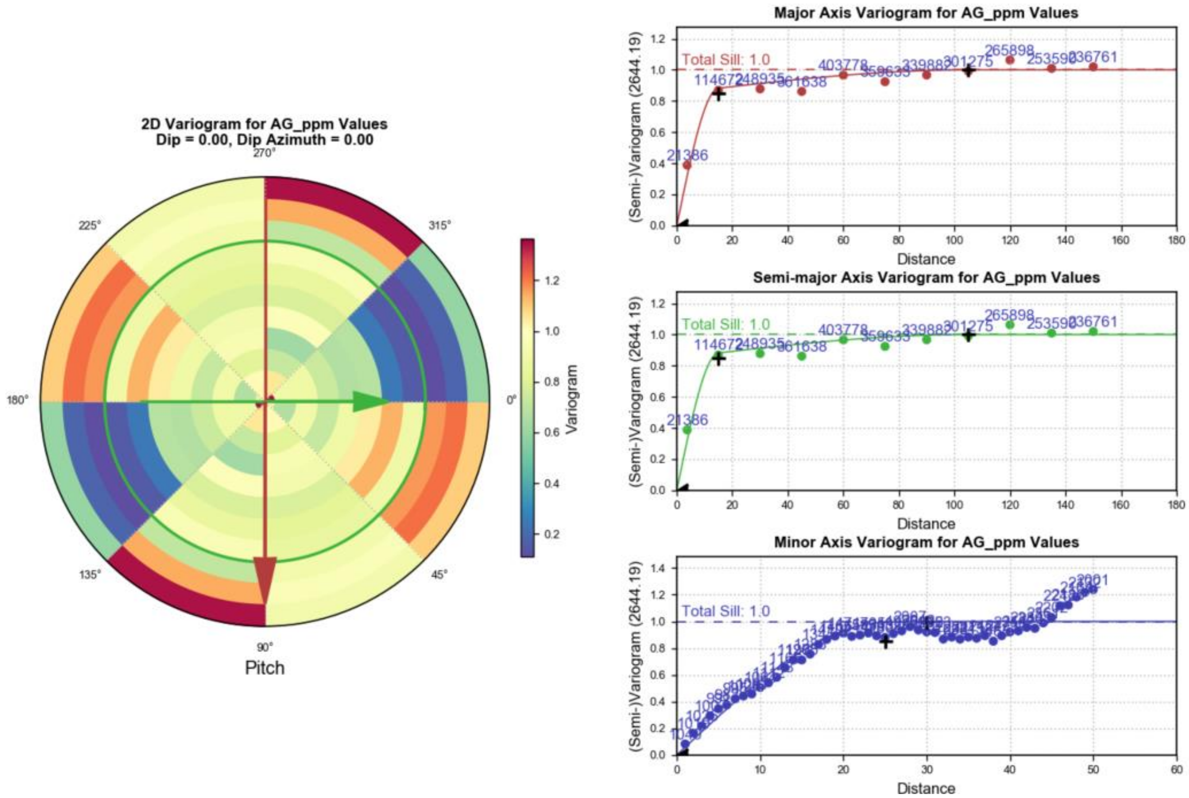

Major Axis Variogram for SN_pc Values
(Semi-)Variogram (0.0886088)
Distance
Semi-major Axis Variogram for SN_pc Values
(Semi-)Variogram (0.0886088)
Distance
Minor Axis Variogram for SN_pc Values
Total Sill: 1.0
(Semi-)Variogram (0.0886088)
Distance

Zn

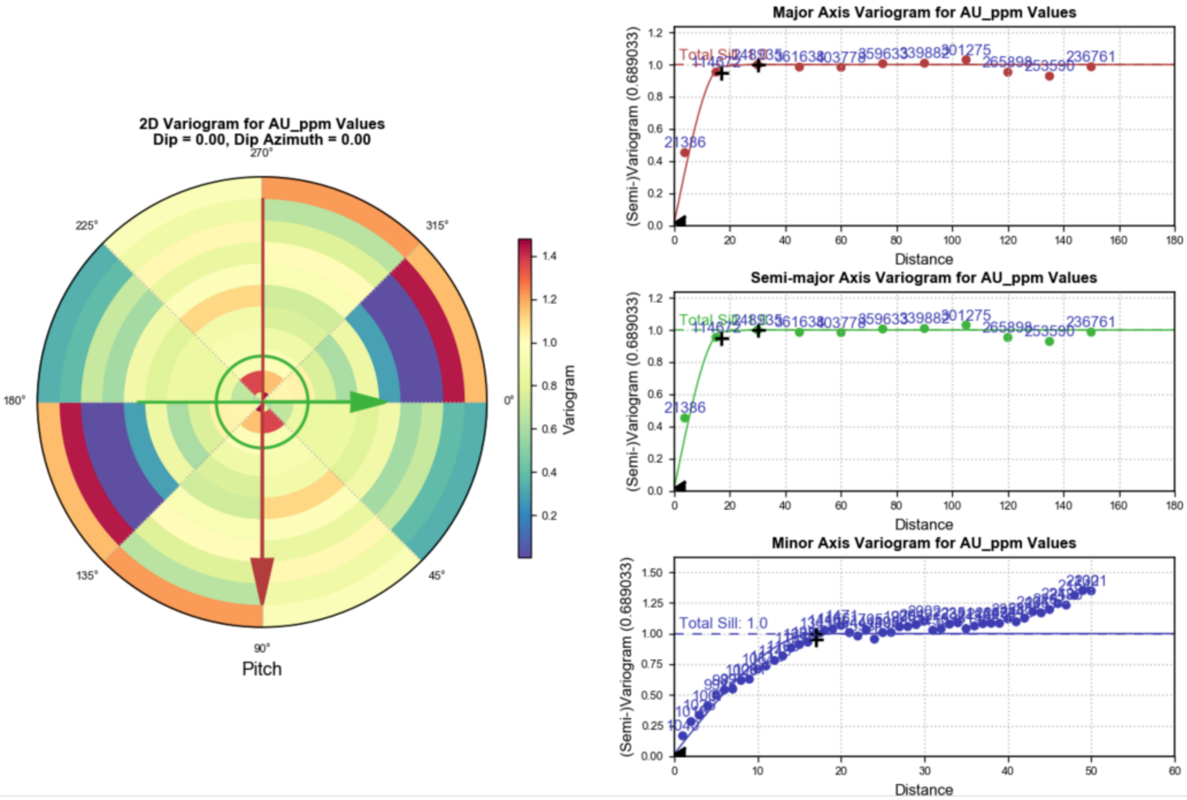

2D Correlogram for ZN_pc Values
Dip = 0.00, Dip Azimuth = 0.00
270°
225°
315°
180°
0°
135°
45°
90°
Pitch
Correlogram
0.2
0.0
−0.2
−0.4
−0.6
−0.8
Major Axis Correlogram for ZN_pc Values
Semi-major Axis Correlogram for ZN_pc Values
Minor Axis Correlogram for ZN_pc Values
Correlation Statistics (0.168286)
Distance
Total Sill: 1.0

MASSIVE (MS) DOMAIN

Ag

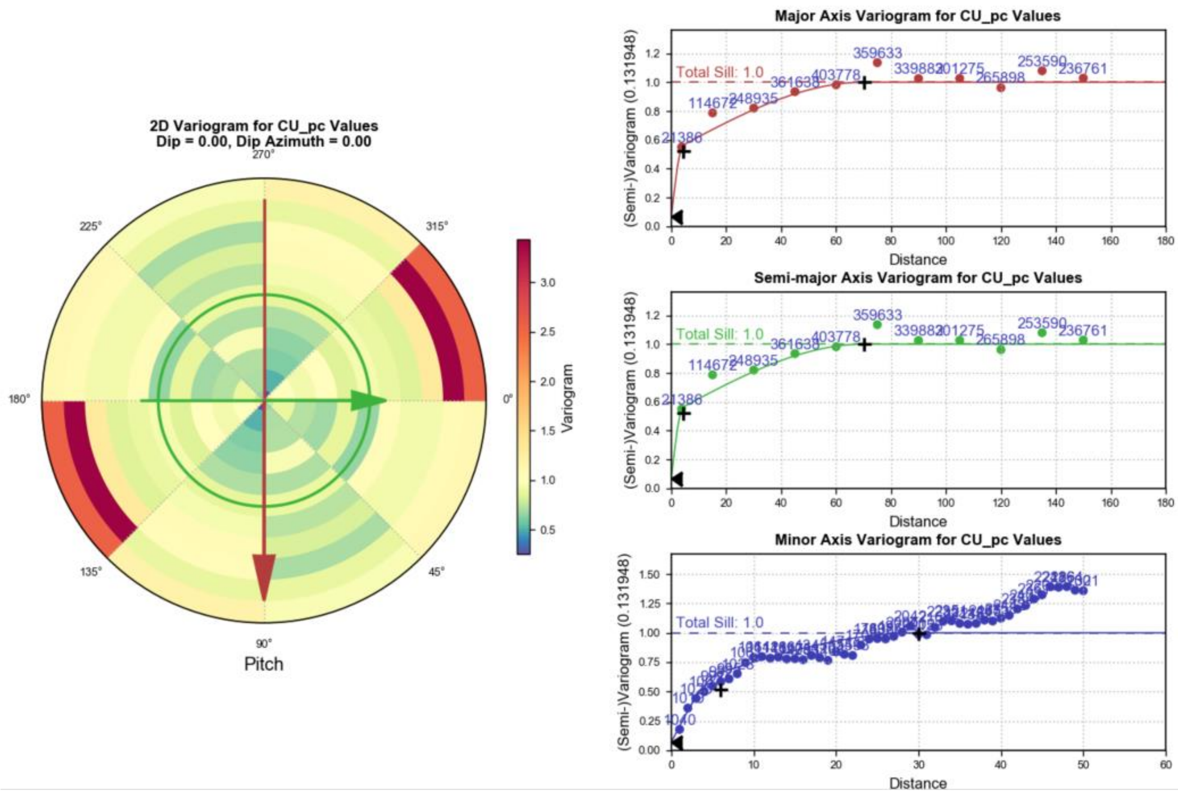


Au



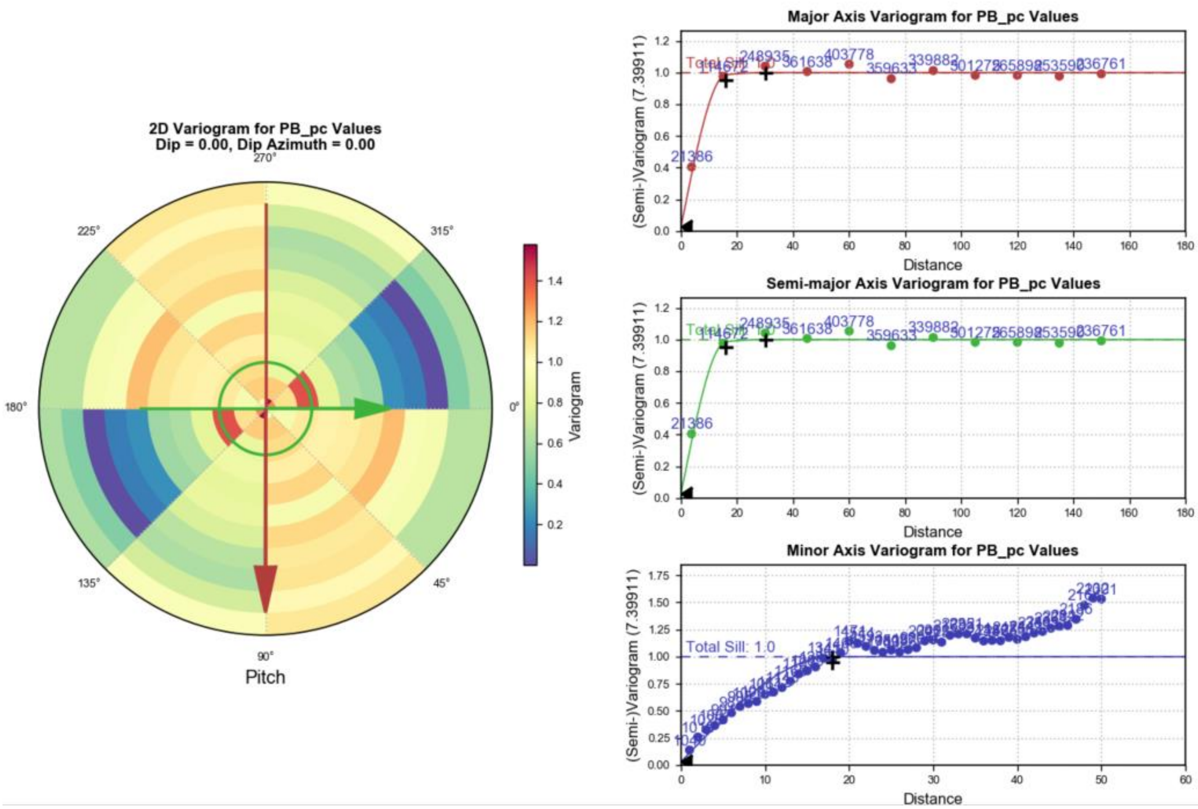
2D Variogram for AU_ppm Values
Dip = 0.00, Dip Azimuth = 0.00
270°
225°
315°
180°
0°
135°
45°
90°
Pitch
Variogram
Major Axis Variogram for AU_ppm Values
Semi-major Axis Variogram for AU_ppm Values
Minor Axis Variogram for AU_ppm Values
(Semi-)Variogram (0.689033)
Distance
Total Sill: 1.0

Cu

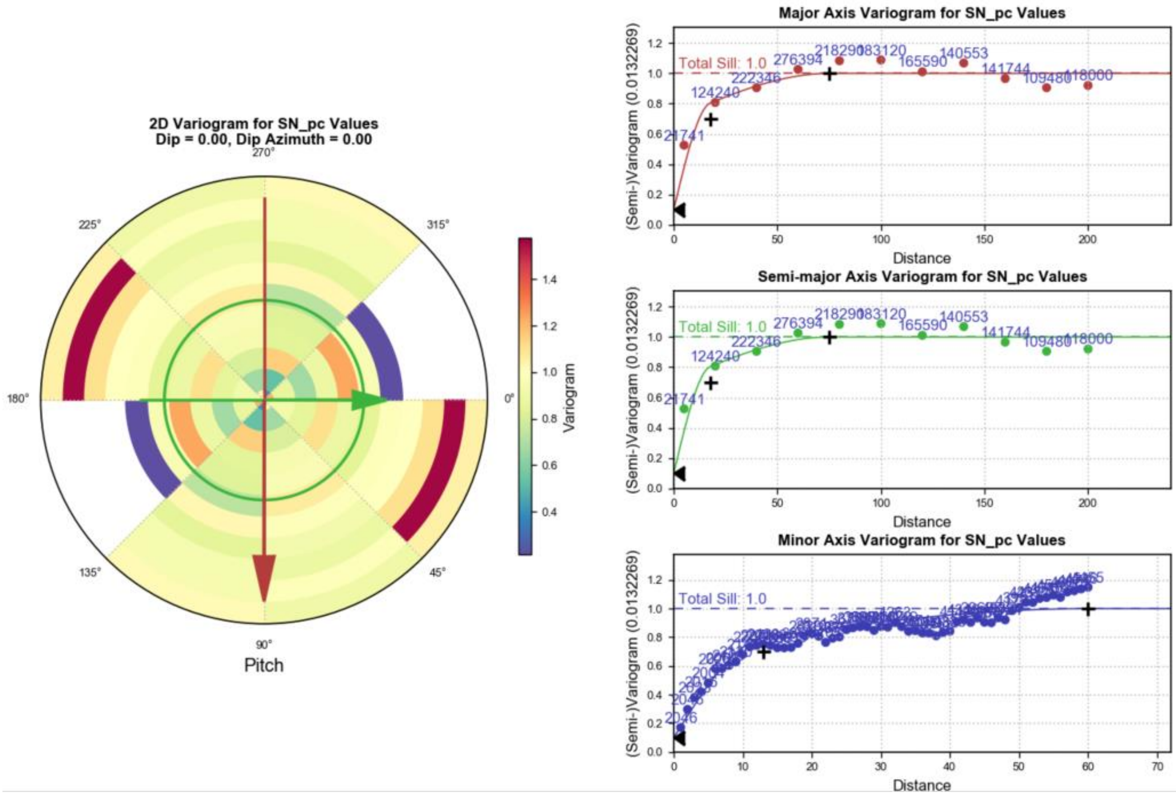


2D Variogram for CU_pc Values
Dip = 0.00, Dip Azimuth = 0.00
Pitch
Variogram
Major Axis Variogram for CU_pc Values
Semi-major Axis Variogram for CU_pc Values
Minor Axis Variogram for CU_pc Values
(Semi-)Variogram (0.131948)
Distance
Total Sill: 1.0

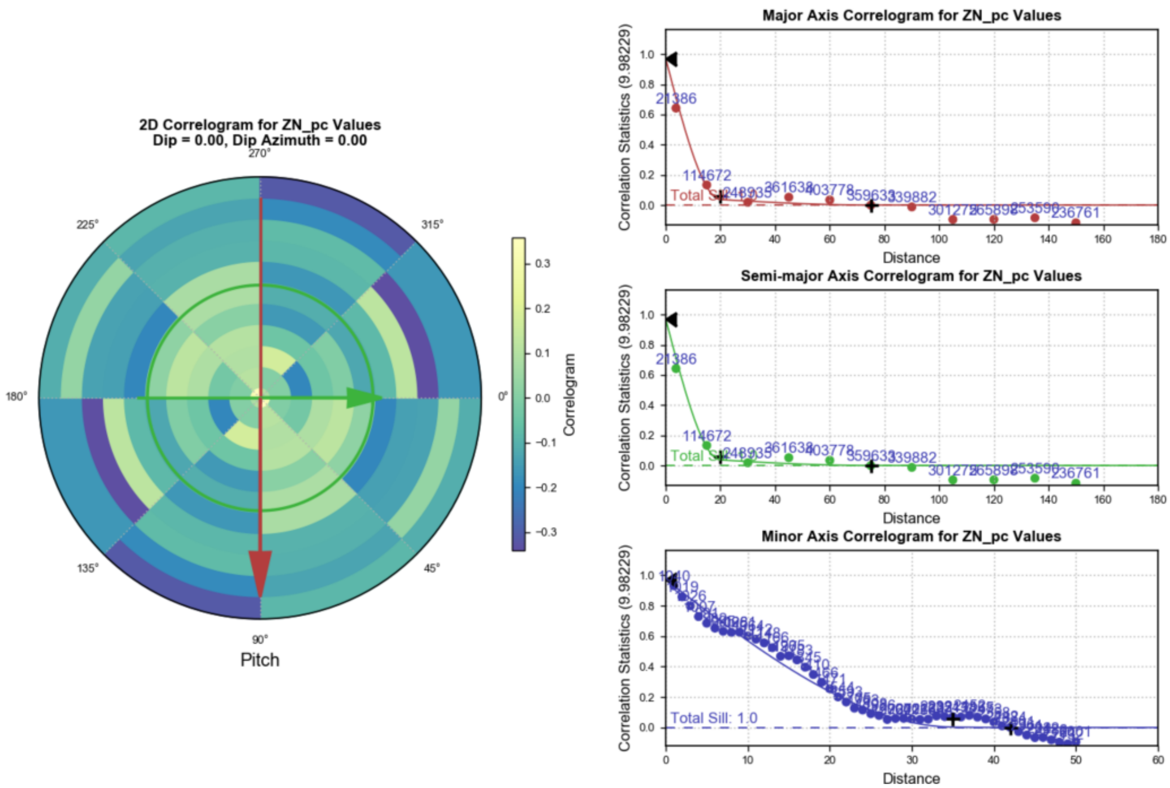
Pb


2D Variogram for PB_pc Values
Dip = 0.00, Dip Azimuth = 0.00
270°
225°
315°
180°
0°
135°
45°
90°
Pitch
Variogram
Major Axis Variogram for PB_pc Values
(Semi-)Variogram (7.39911)
Distance
Semi-major Axis Variogram for PB_pc Values
(Semi-)Variogram (7.39911)
Distance
Minor Axis Variogram for PB_pc Values
Total Sill: 1.0
(Semi-)Variogram (7.39911)
Distance

Sn

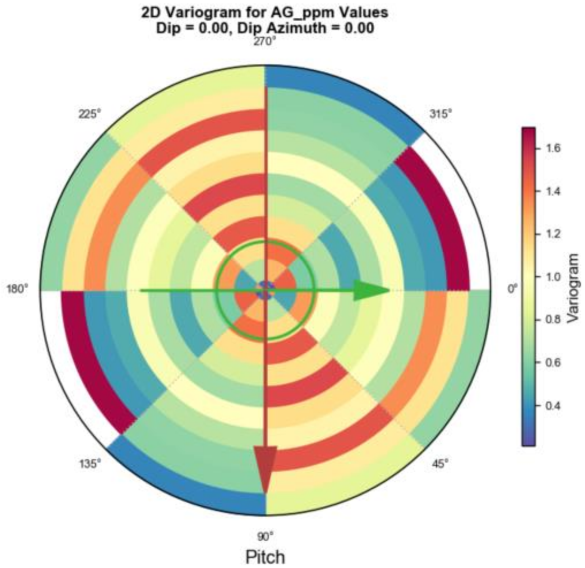

2D Variogram for SN_pc Values
Dip = 0.00, Dip Azimuth = 0.00
270°
225°
315°
180°
0°
135°
45°
90°
Pitch
Variogram
Major Axis Variogram for SN_pc Values
Semi-major Axis Variogram for SN_pc Values
Minor Axis Variogram for SN_pc Values
(Semi-)Variogram (0.0132269)
Total Sill: 1.0
Distance

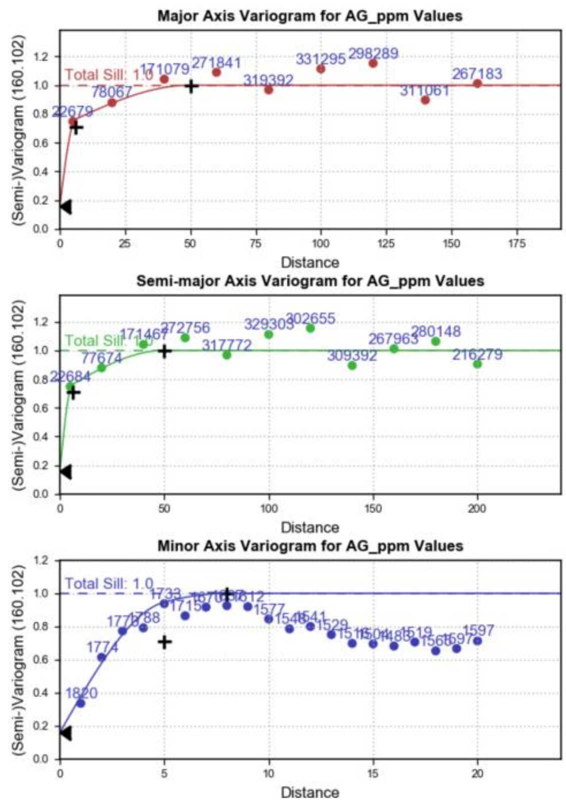
Zn


2D Correlogram for ZN_pc Values
Dip = 0.00, Dip Azimuth = 0.00
Pitch
Correlogram
Major Axis Correlogram for ZN_pc Values
Semi-major Axis Correlogram for ZN_pc Values
Minor Axis Correlogram for ZN_pc Values
Correlation Statistics (9.98229)
Distance
Total Sill: 1.0

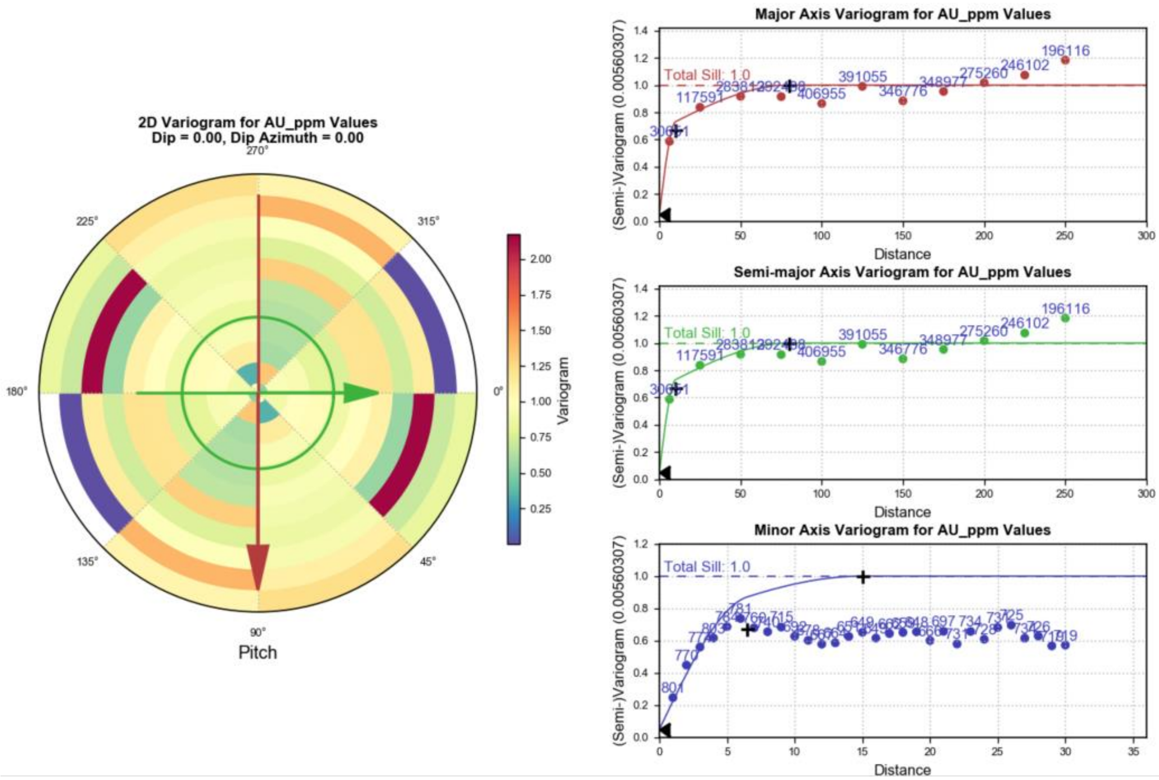
STRINGER (SW) DOMAIN

Ag

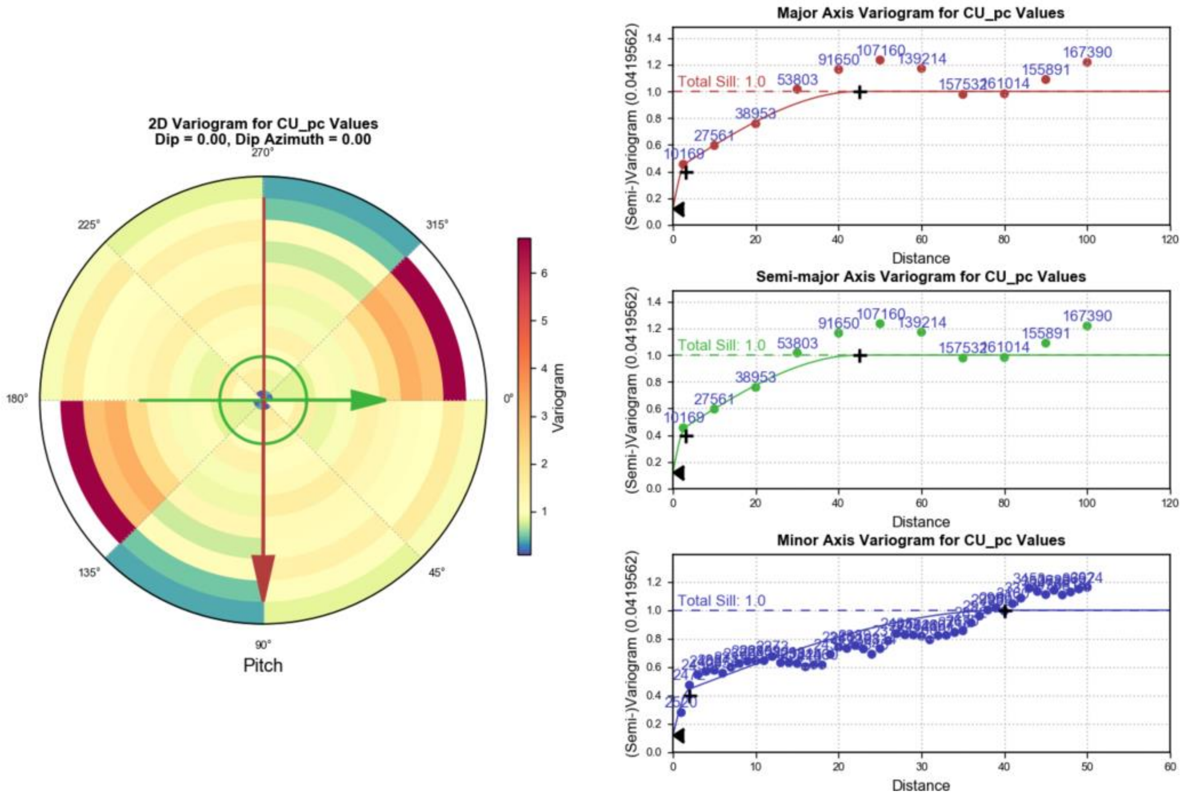




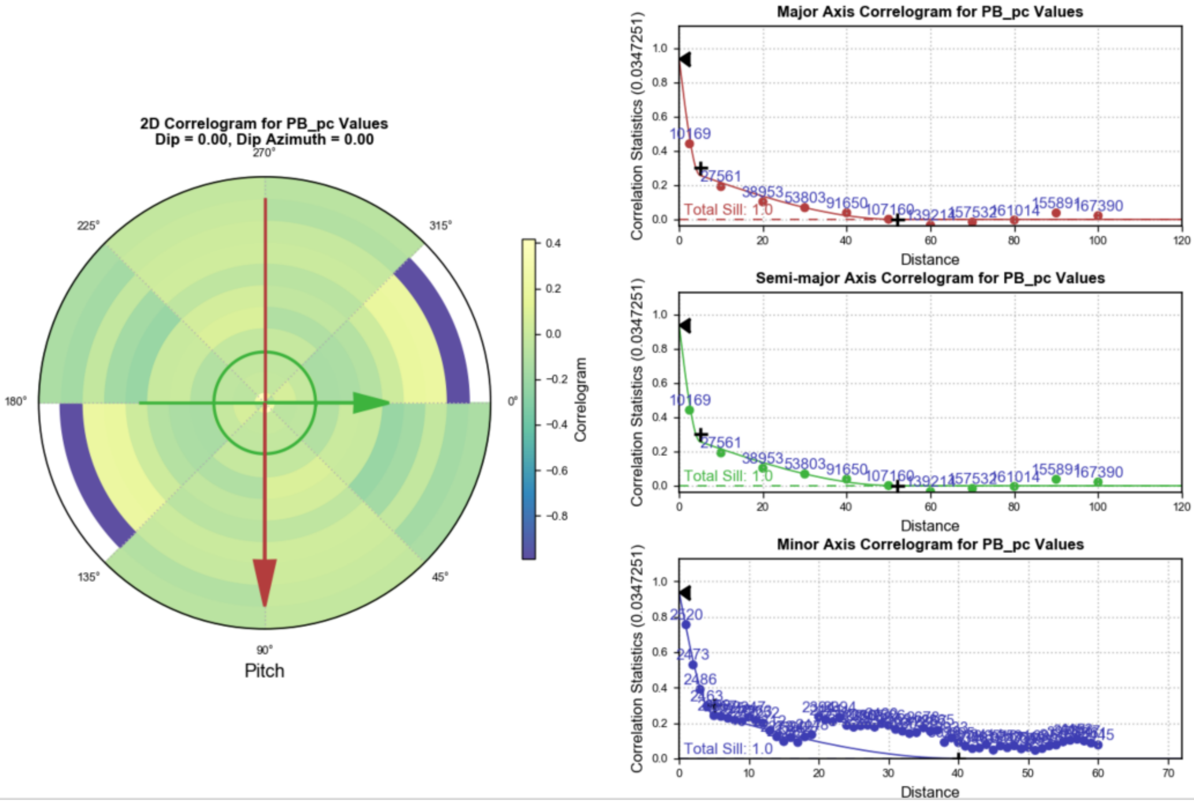
Au


2D Variogram for AU_ppm Values
Dip = 0.00, Dip Azimuth = 0.00
270°
225°
315°
180°
0°
135°
45°
90°
Pitch
Variogram
Major Axis Variogram for AU_ppm Values
Total Sill: 1.0
(Semi-)Variogram (0.00560307)
Distance
Semi-major Axis Variogram for AU_ppm Values
Total Sill: 1.0
(Semi-)Variogram (0.00560307)
Distance
Minor Axis Variogram for AU_ppm Values
Total Sill: 1.0
(Semi-)Variogram (0.00560307)
Distance

Cu


2D Variogram for CU_pc Values
Dip = 0.00, Dip Azimuth = 0.00
270°
315°
225°
180°
0°
135°
45°
90°
Pitch
Variogram
Major Axis Variogram for CU_pc Values
Total Sill: 1.0
(Semi-)Variogram (0.0419562)
Distance
Semi-major Axis Variogram for CU_pc Values
Total Sill: 1.0
(Semi-)Variogram (0.0419562)
Distance
Minor Axis Variogram for CU_pc Values
Total Sill: 1.0
(Semi-)Variogram (0.0419562)
Distance

Pb


2D Correlogram for PB_pc Values
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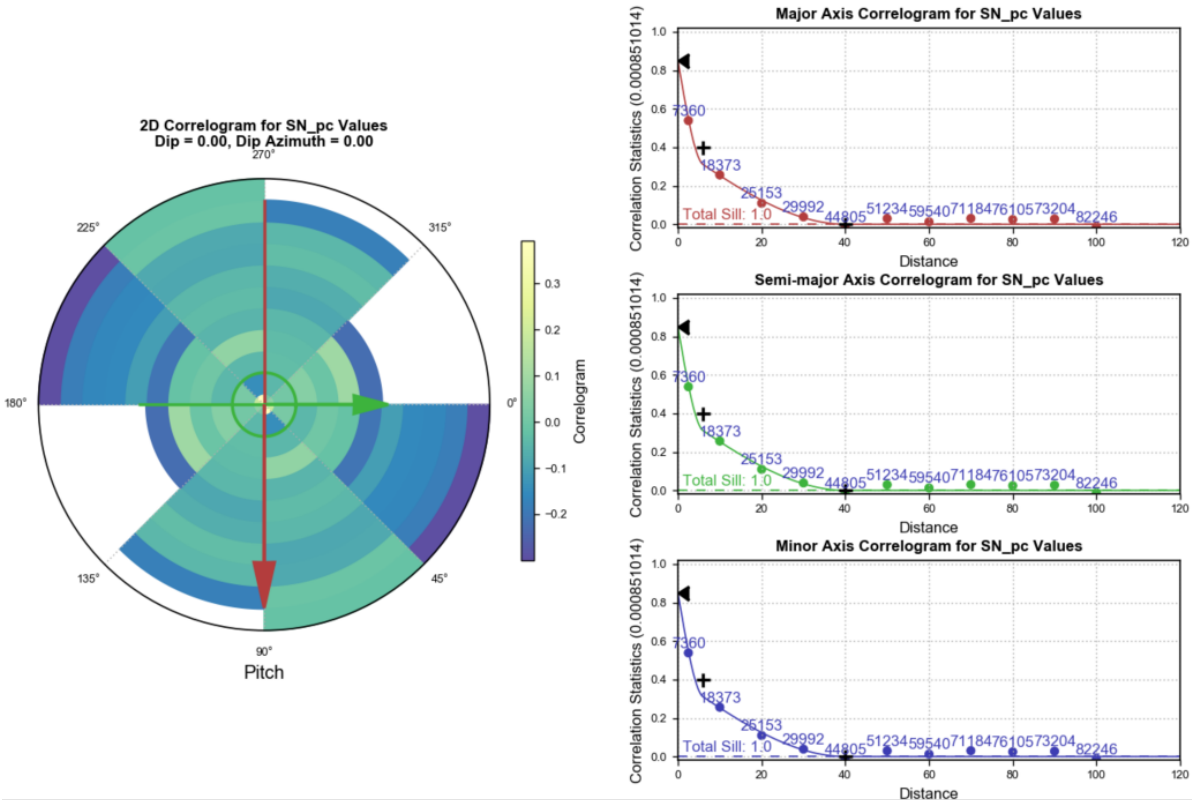
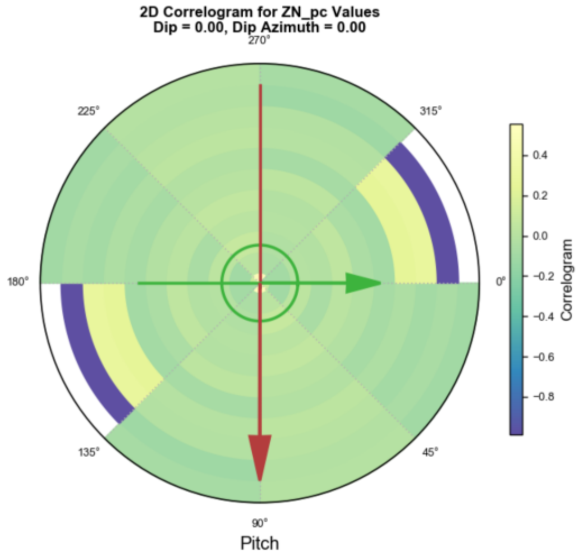
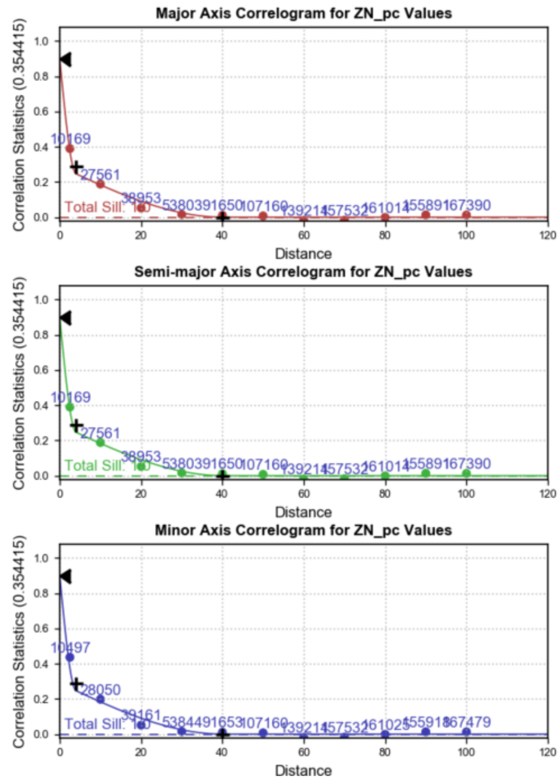
270°
225°
315°
180°
0°
135°
45°
90°
Pitch
Correlogram
Major Axis Correlogram for PB_pc Values
Correlation Statistics (0.0347251)
Total Sill: 1.0
Distance
Semi-major Axis Correlogram for PB_pc Values
Correlation Statistics (0.0347251)
Total Sill: 1.0
Distance
Minor Axis Correlogram for PB_pc Values
Correlation Statistics (0.0347251)
Total Sill: 1.0
Distance

Sn


2D Correlogram for SN_pc Values
Dip = 0.00, Dip Azimuth = 0.00
270°
225°
315°
180°
0°
135°
45°
90°
Pitch
Correlogram
Major Axis Correlogram for SN_pc Values
Semi-major Axis Correlogram for SN_pc Values
Minor Axis Correlogram for SN_pc Values
Correlation Statistics (0.000851014)
Distance
Total Sill: 1.0
7360
18373
25153
29992
44805
51234
59540
71184
76105
73204
82246

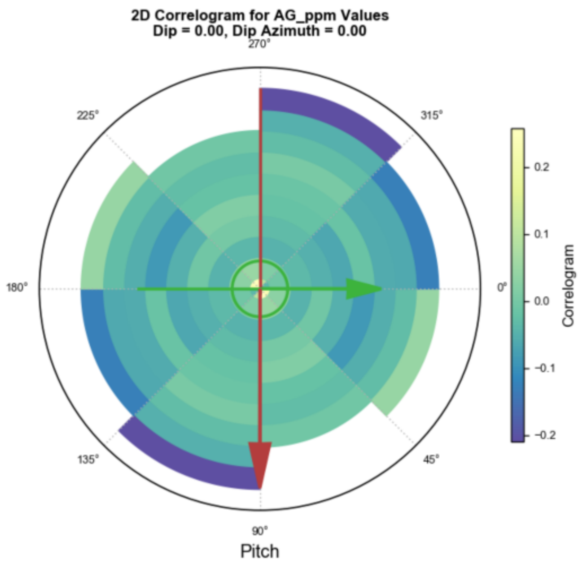
Zn

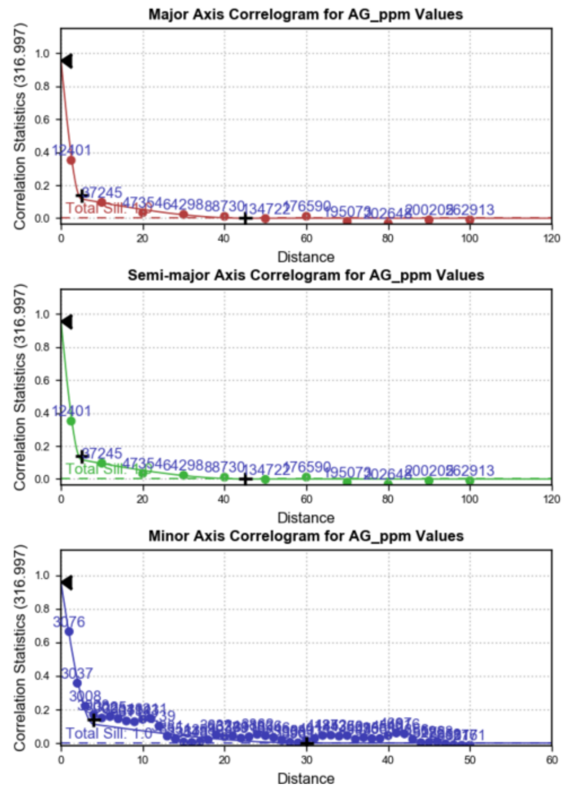

2D Correlogram for ZN_pc Values
Dip = 0.00, Dip Azimuth = 0.00
270°
315°
0°
45°
90°
135°
180°
225°
Pitch
Correlogram
0.4
0.2
0.0
−0.2
−0.4
−0.6
−0.8


Major Axis Correlogram for ZN_pc Values
Semi-major Axis Correlogram for ZN_pc Values
Minor Axis Correlogram for ZN_pc Values
Correlation Statistics (0.354415)
Distance
Total Sill: 1.0
10169
27561
38953
10497
28050
39161
0
20
40
60
80
100
120

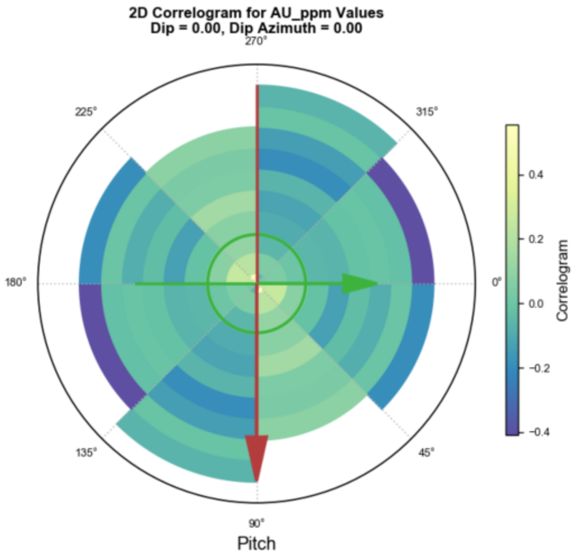
STRINGER/STOCKWORK (SW2) DOMAIN (SOUTH DEPOSIT)

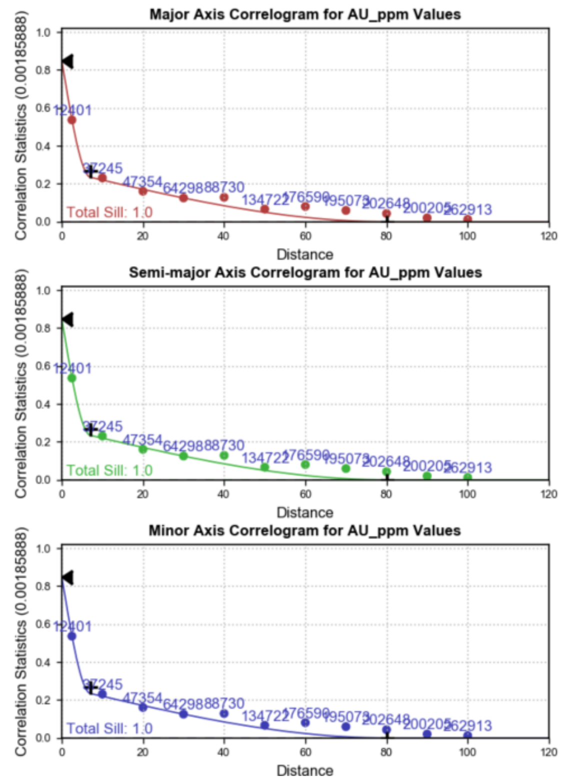
Ag



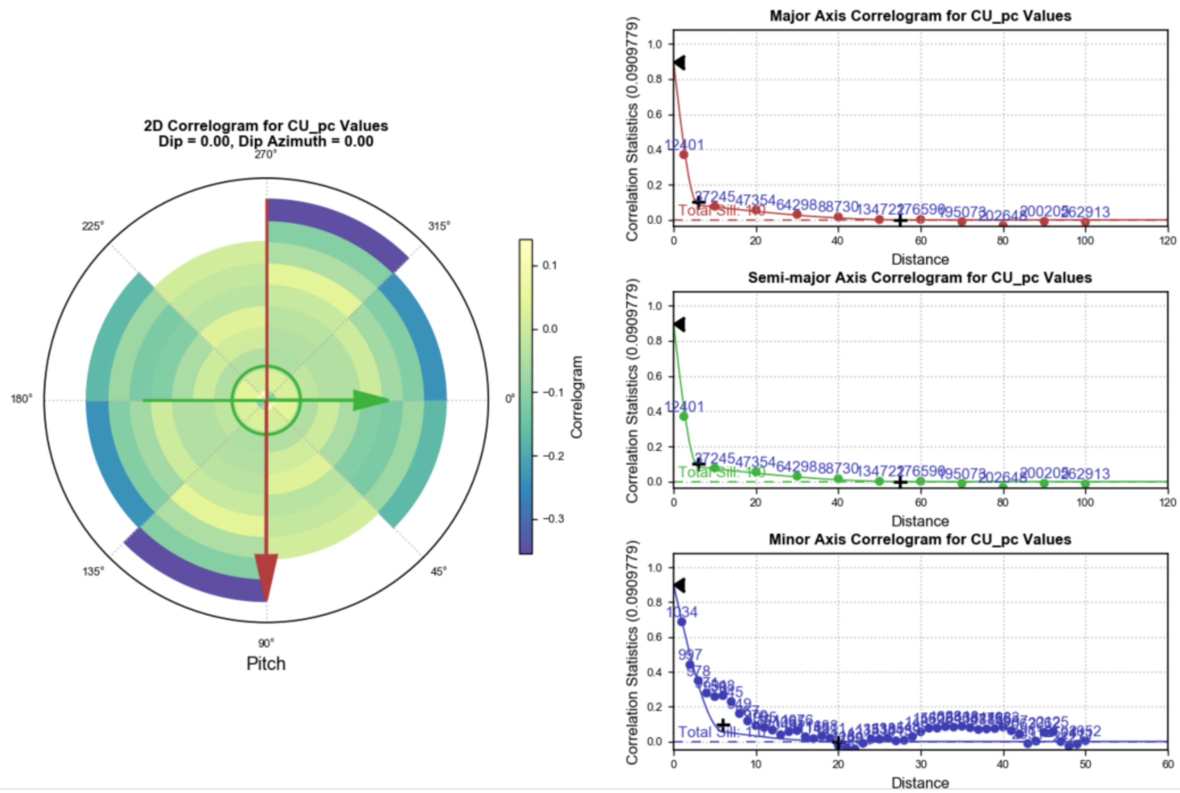


Au

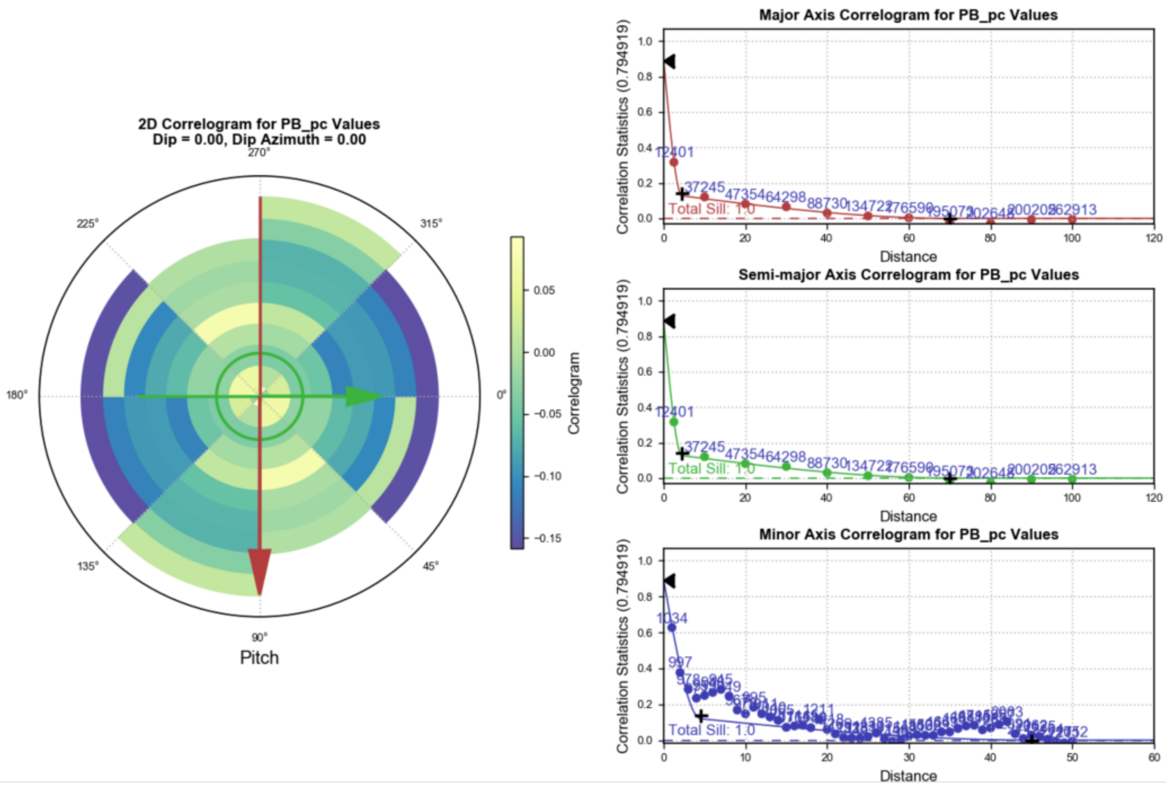

2D Correlogram for AU_ppm Values
Dip = 0.00, Dip Azimuth = 0.00
270°
315°
0°
45°
90°
135°
180°
225°
Pitch
Correlogram
0.4
0.2
0.0
−0.2
−0.4


Major Axis Correlogram for AU_ppm Values
Semi-major Axis Correlogram for AU_ppm Values
Minor Axis Correlogram for AU_ppm Values
Correlation Statistics (0.00185888)
Distance
Total Sill: 1.0
12401
37245
47354
64298
88730
134722
276590
195073
202648
200205
262913

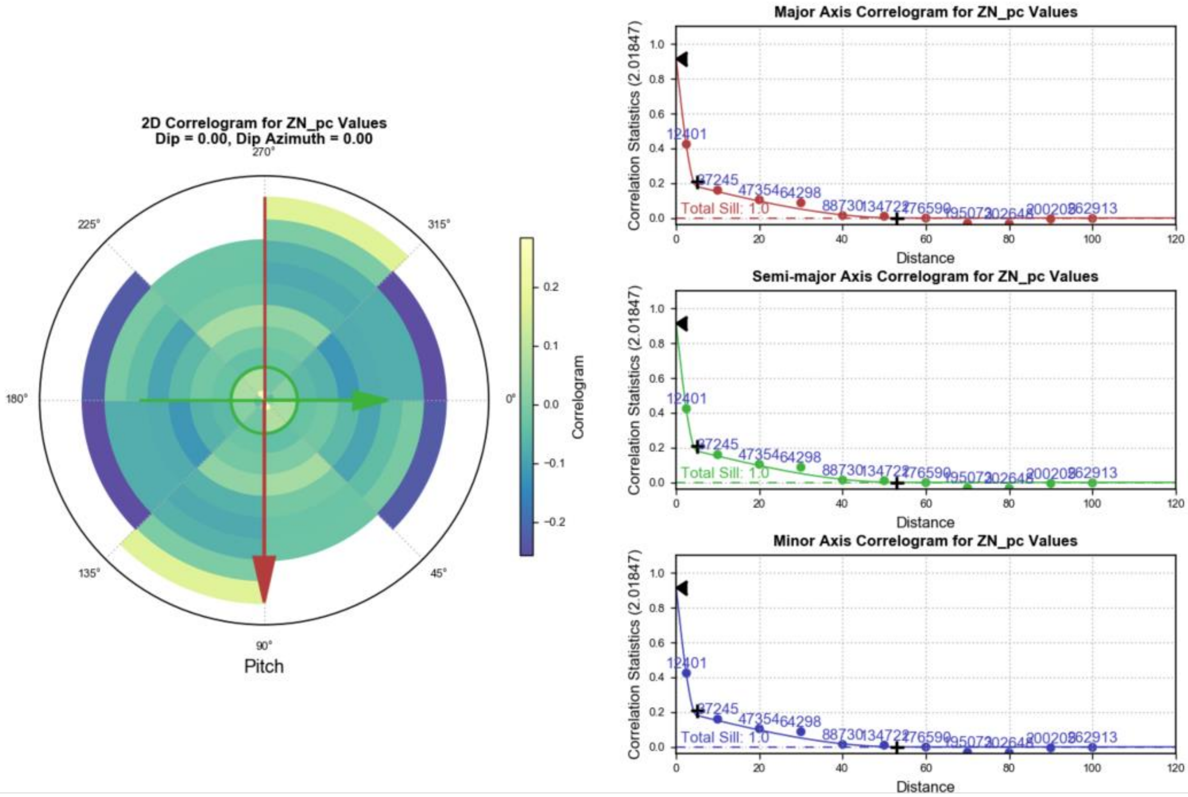
Cu


2D Correlogram for CU_pc Values
Dip = 0.00, Dip Azimuth = 0.00
270°
315°
0°
45°
90°
135°
180°
225°
Pitch
Correlogram
0.1
0.0
−0.1
−0.2
−0.3
Major Axis Correlogram for CU_pc Values
Semi-major Axis Correlogram for CU_pc Values
Minor Axis Correlogram for CU_pc Values
Correlation Statistics (0.0909779)
Distance
Total Sill

Pb


2D Correlogram for PB_pc Values
Dip = 0.00, Dip Azimuth = 0.00
Pitch
Correlogram
Major Axis Correlogram for PB_pc Values
Semi-major Axis Correlogram for PB_pc Values
Minor Axis Correlogram for PB_pc Values
Correlation Statistics (0.794919)
Distance
Total Sill: 1.0

Zn


2D Correlogram for ZN_pc Values
Dip = 0.00, Dip Azimuth = 0.00
Pitch
Correlogram
Major Axis Correlogram for ZN_pc Values
Semi-major Axis Correlogram for ZN_pc Values
Minor Axis Correlogram for ZN_pc Values
Correlation Statistics (2.01847)
Distance
Total Sill: 1.0