Akyanga 43-101

National Instrument 43-101 Technical Report

Prepared in accordance with NI43-101 and Form 43-101F1

INDEPENDENT TECHNICAL REPORT, MISISI GOLD PROJECT AND AKYANGA MINERAL RESOURCE ESTIMATE

DEMOCRATIC REPUBLIC OF CONGO

LAT/LONG: 4°46'00"S, 28°43'30"E

UTM ZONE 35M: 691318.55 M E, 9472888.55 M S

Report Produced for:

VALOREM RESOURCES INC.
810 – 789 West Pender Street,
Vancouver, British Columbia, V6C 1H2

REGENCY MINING LIMITED
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Mahe, Seychelles

Effective Date: September 30, 2022

Report date: November 1, 2022

Authors: John Arthur
(Ph.D, CGeol FGS)

Ephraim Masibhera
(B.Sc. (Geol.), MSc (Cd), MGSSA, Pr. Sci Nat)

CERTIFICATE OF QUALIFIED PERSON

I, John Arthur do hereby certify that:

1. I am a resident at 19 Cardiff Road, Dinas Powys, United Kingdom, CF64 4DH.
2. I graduated from the University of Newcastle upon Tyne, UK, with a BSc Degree in Geology (1987) and MSc in Exploration and Mining Geology from Leicester University, UK (1989). I subsequently achieved PhD from Cardiff University (1994) for research in Mineral resource Estimation in Aggregate deposits.
3. I am a Fellow of the Geological Society of London (1005744) and a Chartered Geologist (CGeol)
4. I have worked or carried out research as a Geologist for a total of 34 years since 1987. My experience covers exploration for gold, iron ore and base metals through to estimation, reporting and classification of Mineral Resources at Scoping, pre and full feasibility level and includes time spent on producing operations. I have the requisite experience and time spent on the style of mineralisation and the deposit type described in the Misisi Gold Project and Akyanga Mineral Resource Estimate technical report.
5. I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfil the requirements to be a "qualified person" for the purposes of NI 43-101.
6. I am lead author and responsible for all Sections of the technical report entitled “INDEPENDENT TECHNICAL REPORT, MISISI GOLD PROJECT AND AKYANGA MINERAL RESOURCE ESTIMATE”, effective date 30 September 2022 (the "Technical Report") relating to the Misisi property. I have not personally visited the property.
7. I have not had prior involvement with the property that is the subject of the Technical Report.
8. As of the effective date, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.
9. I am independent of the Misisi Gold Project, Valorem Resources Inc. and the vendor, Golden Square Mining Limited applying all of the tests in National Instrument 43-101.
10. I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.
11. I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

Dated this 1 November 2022.

Dr. John Arthur
CGeol FGS

CERTIFICATE OF QUALIFIED PERSON

Ephraim Masibhera
Unit 6A Greenoaks Office Park,
Cnr Bekker Road & Gregory Avenue
Vorna Valley
Midrand,1686
Johannesburg, South Africa

I, Ephraim Masibhera am a Professional Geoscientist, employed as a Principal Geologist by Kweneng Group (Pty) Ltd.

This certificate applies to the technical report entitled "INDEPENDENT TECHNICAL REPORT, MISISI GOLD PROJECT AND AKYANGA MINERAL RESOURCE ESTIMATE" with an effective date 30 September 2022.

I am a member of the South African Council for Natural Scientific Professionals, 200093/12. I graduated from the University of Zimbabwe with BSc degree in Geology in 2002 and MSc *Cd* Minerals Production Engineering and Management.

I have practiced my profession continuously for 18 years. As a result of my experience and qualifications, I am a Qualified Person as defined in National Instrument 43-101 *Standards of Disclosure of Mineral Projects* (NI 43-101).

I visited Misisi Gold Project between 10th May and 12th May 2021. I am responsible for the Misisi Gold Project Site Visit Section of the Technical Report.

I am independent of the Misisi Gold Project, Valorem Resources Inc. and the vendor, Golden Square Mining Limited as independence is described by Section 1.4 of NI 43-101.

I have had no previous involvement with the Misisi Gold Project.

I have read NI 43-101 and the technical report has been prepared in compliance with that Instrument. As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

I consent to the filing of the Technical Report with any Canadian stock exchange and other Canadian regulatory authorities and publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

Signed

Ephraim Masibhera (SACNASP: 200093/12)
Dated at Midrand, Johannesburg, South Africa, this 1 November 2022.

CONSENT OF AUTHOR

Re: Technical Report entitled "Independent Technical Report, Misisi Gold Project and Akyanga Mineral Resource Estimate" (the "Report") dated effective 1 November 2022, prepared for Valorem Resources Inc. (the "Company")

I am a co-author of the Report and, pursuant to National Instrument 43-101:

1. I consent to the public filing of the Report by the Company and to the inclusion of extracts from, or a summary of the Report, in the news release issued by the Company on 1 November 2022; and

2. I confirm that I have read the said news release and that it fairly and accurately represents the information in the Report.

Dated: 1 November 2022.

John Arthur

CONSENT OF AUTHOR

Re: Technical Report entitled "Independent Technical Report, Misisi Gold Project and Akyanga Mineral Resource Estimate" (the "Report") dated effective 1 November 2022, prepared for Valorem Resources Inc. (the "Company")

I am a co-author of the Report and, pursuant to National Instrument 43-101:

1. I consent to the public filing of the Report by the Company and to the inclusion of extracts from, or a summary of the Report, in the news release issued by the Company on 1 November 2022; and

2. I confirm that I have read the said news release and that it fairly and accurately represents the information in the Report.

Dated: 1 November 2022.

Ephraim Masibhera

INDEPENDENT TECHNICAL REPORT, MISISI GOLD PROJECT AND AKYANGA MINERAL RESOURCE ESTIMATE

1 EXECUTIVE SUMMARY

The Misisi Gold Project (or the "Misisi Project") is an exploration property that hosts the Akyanga gold deposit with an Inferred Mineral Resource of 44.3 million tonnes averaging 2.16 g/t gold based on 19,956m of historic drilling. The project licenses cover 50km of strike length of the prospective Kibara belt within which further exploration targets include the partially drilled target at Akyanga East 500m to the east and three exploration targets within 8 to 13 km of Akyanga, defined by geochemical soil anomalies trenching and scout drilling. Soils lines at 200m spacing cover a majority of the 50km trend and identify 12 additional areas with significant soils anomalies (defined by multiple soils on 2 or more adjacent lines with samples over 100ppb Au) that are yet to be systematically explored. This technical report (the "Technical Report") has been produced for Valorem Resources Inc. ("Valorem") and Regency Mining Limited ("Regency").

The Akyanga resource is determined from surface to a vertical depth of 350m over a strike length of 2100 metres. The mineralization remains open to depth and south and drilling has indicated continuity of mineralization in terms of grade and thickness of mineralised package.

The Mineral Resource statement reported in Table 1-1 is a historical statement produced by Ivor Jones (QP) an employee of Denny Jones Pty Ltd. The Mineral Resource estimation methodology and resulting statement have been scrutinised and validated independently by Dr. John Arthur who is the principal Qualified Person (or "QP") as such term is defined in National Instrument 43-101 – *Standards of Disclosure for Mineral Projects* ("NI 43-101"), for the current report detailed herein (the "Lead Author"). Dr. Arthur, therefore, takes responsibility for the accuracy and veracity of the Mineral Resource statement contained within this Technical Report.

The principal takeaway from the validation results is that the orebody appears to be robust in terms of the grade variability and continuity and these results, coupled with the validation exercises and results detailed in Sections 14.9.1 through 14.9.6, lead the Lead Author to consider the Mineral Resource statement provided by Denny Jones in 2018 to be appropriate for the Akyanga Ridge deposit at the current level of investigation and reporting confidence.

Table 1-1. Akyanga Mineral Resource Statement – Effective Date September 30, 2022

Category	Tonnes (millions)	Gold Grade (g/t)	Contained Gold (M.oz)
Measured	-	-	-
Indicated	-	-	-
Inferred	44.3	2.16	3.1

1. Mineral Resources which are not Ore Reserves do not have demonstrated economic viability. The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, marketing, or other relevant issues. The Mineral Resources in this Technical Report were estimated using CIM Guidelines.
2. The quantity and grade of reported Inferred resources in this estimation are uncertain in nature and there has been insufficient exploration to define these Inferred Resources as an Indicated or Measured Mineral Resource and it is uncertain if further exploration will result in upgrading them to an Indicated or Measured Mineral Resource category.
3. Contained metal figures and totals may differ due to rounding of figures.
4. A cut-off grade of 0.5 g/t has been used to report the Mineral Resource

The Misisi Project is owned by LEDA Mining Congo S.A. ("LEDA"), of which Casa Mining Limited ("CASA") owns a 73.08% interest, with a 21.92% participating interest in LEDA being held by MMG Limited, and the DRC Government owning a 5% free-carried interest. Accordingly, Valorem and Regency have entered into a share exchange agreement (the "Share Exchange Agreement") dated December 2022, pursuant to which Valorem has agreed to acquire all of the issued and outstanding shares of Regency, which owns a 99.43% interest in CASA and, indirectly through its ownership in CASA, a 73.08 interest in LEDA. The government of the DRC retains a 5% free carried interest. According to statute, once mining commences, the government of the Democratic Republic of Congo ("DRC") shall acquire a 10% interest in the Misisi Gold Project.

Approximately 22,000m drilling have been undertaken on this project over a period 2011 to 2018. Several independent reviews of the project were undertaken by SRK (2013) [1], Vermaakt (2016) [2], African Mining Consultants (2017) [3] Denny Jones (2018) [4]. The AMC review [3] involved the relogging of all drill core, the standardization of lithotypes and used the structural interpretation of Vermaakt [2] to update and materially change the geological model from the one used by SRK [1]. The current Technical Report reviews the previous work with a revalidation of the Mineral Resource and current site visit.

A 2014 scoping study undertaken by MDM Engineering (South Africa) and reported jointly with SRK Consulting (UK) [1], although not compliant with NI 43-101 and the Canadian Institute of Mining, Metallurgy, and Petroleum ("CIM") standards, included mineral processing studies which indicated good recoveries through cyanide leach. However, when this Technical Report was undertaken the contained gold was reported as around 1Moz. As reported herein, a further 2Moz of gold has since been added to the Mineral Resource and the mineral processing and pit design needs to be reviewed to account for possible variations in the nature of the mineralization, particularly in view of the deeper and extended strike extent of the Mineral Resource. The initial study by MDM and SRK [1] was based around an open pit to the depth of 200m. The 2018 resource statement [4] brought in resources deeper than the MDM pit bottom and increased the overall grade from that stated by SRK from 1.9 to 2.2g/t.

Valorem and Regency commissioned Ephraim Masibhera of Kweneng Group SA, to conduct a site visit in compliance with NI 43-101 and CIM standards, (completed on May 11, 2021) and review all technical data and assist in the preparation of this Technical Report. Mr Masibhera has some 18 years' experience working in both the exploration and mining industry with extensive experience of gold and base metals projects throughout Southern Central and West Africa. Valorem and Regency commissioned Dr John Arthur, to independently validate the resource in regard to its compliance and classification with NI 43-101 and CIM standards. Dr John Arthur (CGeol FGS, membership ID 1005744) is an independent Mining Consultant with some 27 years' experience as an Exploration and Mineral Resource geologist working extensively throughout Africa, CIS, Central Asia and South America and is a qualified person under the guidelines set out by the JORC and CIM for reporting of Mineral Resources.

The Misisi Project site is located in the Fizi territory of South Kivu province, in the DRC, approximately 250 km south of Bukavu and 140 km north of Kalemie. The three mining licences (Permit de Exploitation) in which the project is located cover a combined area of approximately 133km^2 (157 carres). The central coordinates of the Akyanga deposit are 4°46'00"S 28°43'30"E. The village of Misisi is approximately 1.5 km west of the Akyanga Ridge target and is the current

location of the [4]base camp. Access to Akyanga from the camp in Misisi is by means of 4x4 vehicles on dirt roads that bypass the population centre. Airport links from Lubumbashi to Lulimba are available through private charter thus only requiring a 10 km section to be completed by road from Lulimba to the project area.

The ridges at Akyanga, Mdende, Eumba, Lubitchako and Tulonge are exploited by artisanal miners with little evidence of earlier activity (Figure 5-3). In addition, many of the streams and rivers draining these ridges are being mined and used for washing ore. The artisanal miners utilise small moveable ball mills to crush the ore mined and, in the second quarter of 2012, a group of artisanal miners constructed two small heap leach plants at Misisi village.

With the exception of informal artisanal activity and historical alluvial gold mining at the southern end of PR 822 (Ngalula area) there are currently no formal mine workings, tailings ponds or waste dumps located in the Misisi Gold Project area.

Wardrop [4], reported that historical exploration programmes prior to 2010 are poorly documented. The Misisi Gold Project area was poorly mapped and most geological surveys predate the independence of the DRC. Systematic mineral exploration had not been conducted prior to the programmes undertaken by previous owners CASA and subsequently ARC Minerals in 2010-2017.

CASA and ARC Minerals conducted all modern exploration work on the Misisi Gold Project. LEDA carried out a limited programme of reconnaissance and satellite interpretation work but no drilling or trenching.

CASA commenced exploration activity on the Fizi tenements in June 2010. The exploration activity comprised geological mapping, trenching and diamond drilling. ARC followed this up with the remapping and structural interpretation of Vermaaakt [2] and AMC [3] followed by a 5000m drilling campaign in 2017 which increased the global resource. In August 2011, CASA engaged New Resolution Geophysics to fly and process a 2,800 line km airborne (helicopter), high resolution magnetic and radiometric survey across the Fizi licence area.

Gold mineralisation is hosted in NW-SE trending, approximately 2.5-1.6 Ga Rusizian quartzites, schists and conglomerates of the Kibara Belt, an approximately 2,000 km long, NNE-SSW trending, Proterozoic intracontinental mobile belt situated between the Congo Craton in the west and the Tanzanian Craton in the east. The Kibara belt is a well known metallogenic province in which numerous mineralising events have taken place and which hosts both the Twangiza and Namoya mines developed by Banro. The LEDA licence holdings cover 60 km of the Tanganyika graben within the Rusizian belt with the Misisi Gold Project area within the interpreted lower unit.

The Akyanga geology consists of an overturned meta-sedimentary succession and intruded by dolerite and/or gabbro. The geology of the project area is dominated by meta-sediments comprising interbedded quartz muscovite schists, schistose arkoses, muscovite quartzites, and quartzites; pebble conglomerates and foliated mafic intrusion.

Several sub-parallel mineralised zones were established from historical exploration data and Diamond and RC drilling results from CASA. These mineralised zones with strike lengths of up to 2,000 m are generally less than 10 m thick and appear in the southern end of the deposit to be moderate to shallowly dipping to the southeast. In the central and northern parts to the deposit the deposit steepens at surface, such that at the northern end of the deposit, the mineralisation

is near vertical at surface and flattening out down dip at depth.

The depth of weathering is estimated to be approximately 30 m. Diamond drilling at Akyanga has intersected numerous gold bearing quartz vein zones. Mineralisation is structurally and lithologically controlled in association with local deformation zones and occurs along north-south striking structures. The current interpretation is that the base of a mafic unit provides a contact with hardness contrast along which there has been structural movement. Apart from the main mineralised zone at and adjacent to this contact, there are four sub-parallel zones below the main mineralised zone.

The deposit is located within the central section of an area bounded by a thrust zone to the west and by NW trending sinistral fault zones. Regional lineaments, were interpreted using airborne magnetic surveys (Gradient Enhanced VD1) and K/Th alteration ratio maps.The meta-sedimentary succession has been affected by brittle-ductile deformation. Thrusting has resulted in the overturned sequence at Akyanga.

Mineralisation on the Akyanga ridge within the Misisi Project area appears to be located within competent metaquartzite/conglomerate units with minor specular hematite bands. Minor associated sulphides (pyrite/pyrrhotite) and specularite hosted within broad quartz vein systems have been correlated with visible gold. This has been recorded both during surface mapping, in which the extent of mineralisation has been identified based on spatial distribution of artisan pits, and veins and veinlets logged within drill core which frequently have associated halos of mineralisation occurring in fractured quartzite with distinctive hematite rich oxidation. The host quartz veins vary in thickness from cm-scale to packages in excess of 200 m thick. Veins exploited by artisanal miners typically range in thickness from 0.5 – 2 m. Initial cyanide bottle roll testwork completed on a suite of early Misisi drill core samples confirmed significant free- milling coarse gold (which is currently targeted within high-grade shoots and exploited by local artisanal workings) with only minor sulphides. Potential recoveries in excess of 91% were recorded for all samples which underwent analysis.

Samples were initially submitted to the SGS Laboratory (“SGS”) in Mwanza, Tanzania for preparation, where they were dried and pulverised to 75 microns (µm) before being analysed at the same laboratory. From drillhole MSDD0010 onwards, samples were submitted to the ALS Minerals (“ALS”) facilities in Mwanza for preparation, and subsequently to ALS in Vancouver and Johannesburg for analysis. Samples from drillhole MSDD0084 onwards at Akyanga-Mdende and all holes at Tulonge (TLDD0001 – TLDD0007) were submitted to SGS accredited laboratory at Mwanza, Tanzania. The ALS Vancouver analytical facility is ISO 9001:2008 accredited and has received accreditation to ISO/IEC 17025:2005 from the Standards Council of Canada (SCC). The ALS Johannesburg laboratory is ISO/IEC 17025:2005 accredited for sample preparation and analysis.

Density measurements are carried out using Archimedean principles for consolidated fresh core. The drillhole database presented to the consultant, which forms the basis for the current reported Mineral Resource estimate, contains a total of 4039 density samples taken from surface to a maximum downhole depth of 320m with an average sample core length of 12cm. Average density for the complete database is 2.66t/m3 with a range of outliers between 1.06-4.8.

A site visit was carried out by QP Ephraim Masibhera of the Misisi Gold Project. During the visit

there were no exploration activities however appropriate verification was done to confirm the data in the Technical Report.

There have been several historic resource calculations for the Akyanga deposit. The pre 2021/2022 resource estimates were not reported using Canadian Institute of Mining, Metallurgy and Petroleum standards on mineral resources and reserves, definitions, and guidelines prepared by the CIM standing committee on reserve definitions and adopted by the CIM council, and hence are not compliant and considered historic.

- 2014 SRK Consulting (UK) Ltd Scoping Study and Resource Estimate [1]
- 2017 African Mining Consultants, Technical Report and Mineral Resource Estimate [3]
- 2018 Denny Jones Akyanga Resource Estimate [4]

The most recent 2018 Denny Jones Akyanga Resource Estimate forms the basis for the current resource estimate, updated and verified by the Lead Author.

The current Mineral Resource estimate for the Akyanga deposit was based upon 105 diamond drillholes, (19,069.85 m) and 6 RC drillholes (887m) mostly orientated 50-70° to the WNW, designed to be perpendicular to mineralization. Drillholes have been spaced on section lines at approximately 100 m intervals narrowing locally to 50m spacing. The major drilling direction was towards the north-west (290°). Most of the holes have inclinations in the order of -50º to -70º, with the majority of holes inclined at -50º. Selective holes have been drilled at -70º to test depth extent where access is limited due to terrain and surface artisanal workings. The use of these holes has confirmed the relatively steep contacts (sub vertical) of the Akyanga ridge target mineralisation, which based on the general dip of the drilling (-50°), best estimates of true width in the wider portions of the deposit are between 1 and 35 m.

Approximately 1-2km east and north-east of the Akyanga Project is the Akyanga East or Mdende structure. The mineralisation (a zone of veining) can be traced along strike for approximately 5.5 km, primarily through artisanal workings, with a gap in the workings through an east-west valley that cuts through the mineralisation and covers the surface with scree. It has been explored by drilling (10 holes) at around 200 m centres with up to 500 m spacing at the limit with a gap in exploration across the valley. The mineralisation dips at around 53^{o} to the southwest.

The project needs drilling of approximately 23-24,000m to convert Inferred Mineral Resources to Indicated and measured categories. Holes would be located so as to infill the current drill pattern to allow an average spacing of 50m along strike and 50-75m down dip. Thereafter mineral processing, mine design and economic assessment and any other factors pertaining to a Preliminary Economic Analysis and subsequent Feasibility Studies need to be undertaken. It is recommended that the focus should be on bringing the Mineral Resource at Akyanga up to a level of confidence such that detailed mining studies can be considered to a level of detail that could contribute to a Pre-feasibility study.

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2 INTRODUCTION AND TERMS OF REFERENCE

2.1 Issuer

This Technical Report was prepared for and on behalf of Valorem Resources Inc. (VALU-CSE) who are acquiring a 73.08% interest the Misisi Gold Project and associated Akyanga gold deposit indirectly through its acquisition of Regency pursuant to the terms of the Share Exchange Agreement. Valorem is a Canadian based mineral exploration company headquartered in Vancouver, British Columbia, whose common shares trade on the Canadian Securities Exchange under the symbol "VALU". Previously the Misisi Gold Project was owned by Arc Minerals Ltd, CASA and Anvil Mining Ltd ("Anvil Mining"). MMG Limited, through the acquisition of Anvil Mining have retained a 21.5% indirect shareholding in CASA, the DRC level company. The government of the DRC retains a 5% free carried interest.

2.2 Terms of Reference

Valorem and Regency commissioned Dr John Arthur, to independently validate and report the historical Mineral Resource produced by Denny Jones Pty Ltd [4] in regard to its compliance and classification with NI 43-101 and CIM standards. Dr John Arthur (CGeol FGS, membership ID 1005744) is an independent Mining Consultant with some 27 years' experience as an Exploration and Mineral Resource geologist working extensively throughout Africa, CIS, Central Asia and South America and is a qualified person under the guidelines set out by the JORC and CIM for reporting of Mineral Resources. Due to COVID-19 travel restrictions Dr Arthur was unable to visit the project site.

Valorem and Regency commissioned Ephraim Masibhera of Kweneng Group SA, to conduct a site visit in compliance with NI 43-101 and CIM standards, completed in 2021. Mr Masibhera has some 18 years' experience working in both the exploration and mining industry with extensive experience of gold and base metals projects throughout Southern Central and West Africa. Mr Masibhera is a qualified person within the meaning of NI 43-101. Mr Masibhera was able to review core and sample storage, project geology, artisanal mining activities, meet with community leaders, local government and report on site accessibility and current security conditions. Mr Masibhera provided detailed information to Dr Arthur, concerning the data collection procedures and quality and application of such data to the Mineral Resource estimation process.

This Technical Report is based on project drilling, geochemical and geological data, previously completed reports, testwork results, maps, published government reports and public information. Drilling at the Akyanga deposit was completed between 2010 and 2017 in several stages by former operators. This Technical Report was completed in accordance with disclosure and reporting requirements set forth in NI 43 101, Companion Policy 43-101CP, and Form 43-101F1

The Mineral Resource Estimate for the Akyanga gold deposit has been prepared in accordance with Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Definition Standards for Mineral Resources and Reserves (10 May 2014). Only Mineral Resources are estimated – no Mineral Reserves are defined for the Misisi Gold Project. The Technical Report is intended to enable Valorem, Regency and potential partners to reach informed decisions with respect to the Misisi Gold Project. The Effective Date of this Technical Report is September 30, 2022.

2.3 Sources of Information

This Technical Report is based on the exploration work, legal, community and environmental reports generated by Anvil Mining from 1998 through 2008, followed by CASA from 2011 to 2018. This included 21,610 metres of diamond drilling in 133 holes, 2,810 metres of reverse circulation drilling in 23 holes, 2,011-line metres of trenching, in addition to metallurgical studies, geophysical surveying, sampling and prospecting. This work generated a large amount of data and reports, including three historical resource estimates and a Scoping Study [1] reported using the JORC Code.

The estimate for the Akyanga gold deposit September 2022 Mineral Resource was prepared in the following steps:

- Confirmation of licence holding and area coverage (JA)
- Review of Regional and Local Geology (JA)
- Site visit for personal inspection (EM)
- digital data validation (JA/IJ)
- data preparation (JA/IJ)
- exploratory data analysis of Au (IJ)
- review of geological interpretations, definition of domains and modelling (IJ)
- establishment of block models (IJ)
- coding by domain and compositing of assay intervals (IJ)
- derivation of kriging plan and preparation of kriging parameters (IJ)
- variogram analysis for indicators (IJ)
- grade interpolation of Au using unfolding and ordinary kriging (IJ)
- validation of Au grade estimates (IJ)
- classification of estimates (IJ)
- resource tabulation and reporting (IJ)

2.4 Qualifications of Qualified Persons

Ephraim Masibhera (SACNASP No:200093/12; Geological Society of South Africa No:967492) is a partner and Senior Consultant for the Kweneng Group (Pty) Lty with over 18 years' experience in both exploration and development of mining projects, predominantly gold, copper, PGM and base metals, throughout South, Central and West Africa. Mr Masibhera is listed as a QP for the Technical Report, has assisted in report compilation and has carried out an independent review of the work performed on site as part of the data collection and verification aspects of the project.

John Arthur (CGeol FGS, membership ID 1005744) (together with Mr. Masibhera, the "Authors") is an independent Mining Consultant with some 27 years' experience as an Exploration and Mineral Resource geologist working extensively throughout Africa, CIS, Central Asia and South America and is a qualified person under the guidelines set out by the JORC and CIM for reporting of Mineral Resources. Dr Arthur is listed as a QP for the Technical Report, has assisted in report compilation and has carried out an independent review of the work performed by Ivor Jones as part of this report.

2.5 Site Inspection

Ephraim Masibhera is the Qualified Person ("QP") for validation of exploration data, drilling quality and sample quality. He visited site between 10th May and 12th May 2021. Work completed during the site visit of Mr Masibhera included assessing the conditions on the property, reviewing geology and mineralization and verifying exploration data, including drill hole locations, verifying the access to the property, determining what infrastructure is available, confirming sources of water and power, and so forth. Mr Masibhera visited the Akyanga resource area, camp and core storage facility, but did not visit the additional exploration sites within the greater Misisi Project.

3 RELIANCE ON OTHER EXPERTS

The details for section 4 of this report (property description and location) concerning the legal position and current status of the licence holdings, has been provided by Regency. The Authors carried out limited checks through the DRC Cadastre portal to confirm basic details, location and extent of the licence boundaries discussed in Section 4 below. Regency engaged legal counsel in Kinshasa to provide opinion on the license summarised as follows.

Dorothée Madiya Mwamba , Lawyer and Attorney – Mines and Quarries, of Madiya Law Kinshasa certified in November 2022, that the LEDA mining claims (PE13177 / PE13178 / PE13179) were valid and in compliance with the requirements of the mining authorities.

4 PROPERTY DESCRIPTION AND LOCATION

The Misisi Project site is located in the Fizi territory of South Kivu province, in the DRC, approximately 250 km south of Bukavu and 140 km north of Kalemie. The three mining licences (Permit de Exploitation) in which the project is located cover a combined area of approximately 133km^2 (157 carres, Table 4-1). The central coordinates of the Akyanga deposit are 4°46'00"S 28°43'30"E. The licence location is shown in Figure 4-1 and the licence outlines are shown in Figure 4-2.

The Misisi Project is situated towards the southern end of the Mitumba Mountain range, which forms part of the western escarpment of the Albertine Rift Valley in Eastern DRC. The area is mountainous with elevations in the area ranging from 800 m to 2,600 m AMSL. The Akyanga, Mdende, and Eumba ridges are located to the east of Misisi Village (Figure 4-2).

Table 4-1. Summary of licence holdings covering the Misisi Project

Licence No.	Area (Carres)	Area (km^2)	Licence Type	Expiry	Status
PE13177	13	10.96	Exploitation	3 March 2045	Granted from 4 March 2015
PE13178	60	50.56	Exploitation	3 March 2045	Granted from 4 March 2015
PE13179	84	70.79	Exploitation	3 March 2045	Granted from 4 March 2015

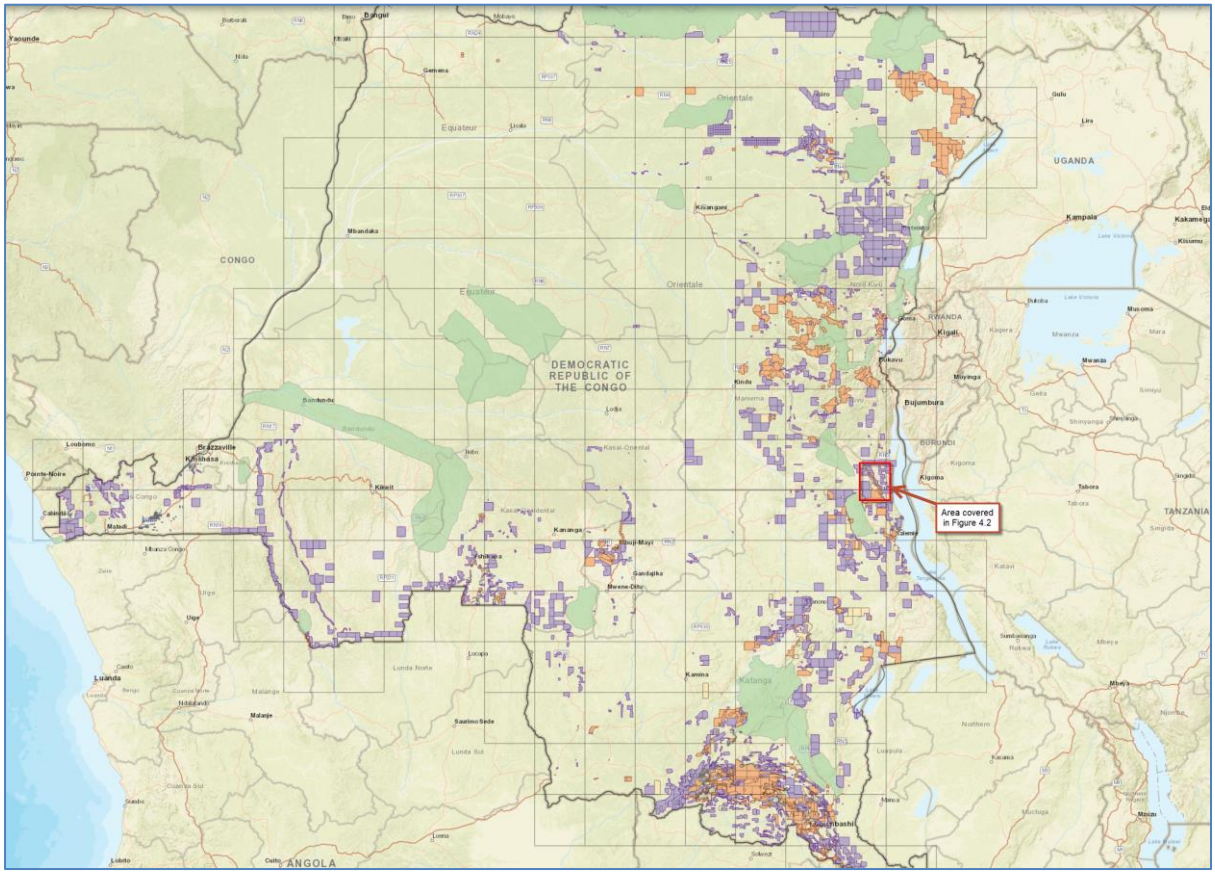

Figure 4-1. Regional location map showing the location and extent of the three licences currently held by ARC in the DRC.

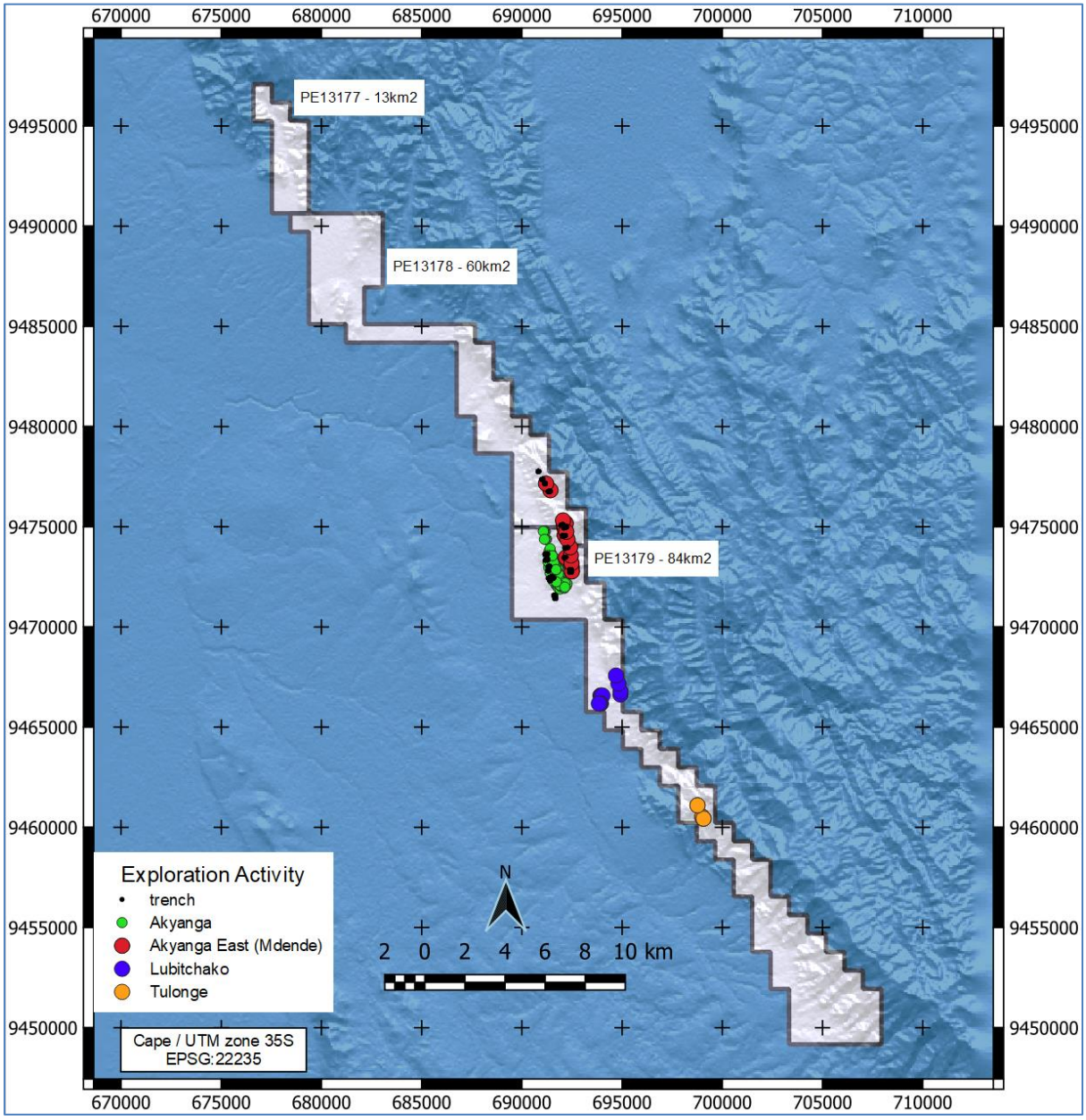

Figure 4-2. **Local area map showing the detailed outline of the licence boundaries, the Akyanga and Akyanga East trenching and drilling activity along with the drilling on the Lubitchako and Tulonge prospects.**

4.1 Mineral Tenure

The Misisi tenements are held in the name of LEDA Mining Congo SA (LEDA), the shareholding of which is to be jointly held by The Company (73.08%) and MMG (21.92%) through its subsidiary (Anvil Mining) with the remaining 5% held by the Government of the DRC. CASA Resources Ltd ("CASA Resources"), a subsidiary of CASA, entered into an Earn-in Agreement with Anvil Mining in October 2009, for the Misisi tenements, which contain the Akyanga deposit. Anvil Mining was subsequently acquired by Minmetals Resources Ltd in March 2012.

The Earn-in Agreement gave CASA Resources the right to earn a 73.08% interest in the Exploration Licences and the subsequent Misisi Project owned by LEDA Mining Congo S.A. ("LEDA"), by

completing, at its own expense, prospecting and research work and a Feasibility Study. LEDA presently holds a 100% interest in the three mining permits or Permis de Exploitation illustrated in Figure 4-2, which provide the appropriate surface rights and legal right to access for the planned exploration works. The total licence holding was originally 2,400 km^2, and following relinquishment was reduced to approximately 1,000 km^2. A further license reduction has seen the land package reduced to its current 157km^2, i.e. the three PE.

CASA was acquired by Ortac Minerals in 2014. Subsequently, Ortac Minerals underwent a name change to Arc Minerals Ltd. ("Arc Minerals"). In March of 2020, Arc Minerals entered into a share purchase agreement with Golden Square Equity Partners ("Golden Square") pursuant to which Golden Square acquired Arc Minerals' 99.43% shareholding in CASA. Following this, Regency entered into a share purchase agreement with Golden Square dated April 14, 2022, as amended November 4, 2022, pursuant to which Regency acquired Golden Square's 99.43% shareholding in CASA. Valorem and Regency have since entered into a Share Exchange Agreement, pursuant to which Valorem has agreed to acquire all of the issued and outstanding shares of Regency, which owns a 99.43% interest in CASA and, indirectly through its ownership in CASA, a 73.08% interest in LEDA. The government of the DRC retains a 5% free carried interest. According to statute, once mining commences, the government of the DRC shall acquire a 10% interest in the Misisi Gold Project. Royalties are set at 3%. No additional permits are currently required to facilitate the planned work going forward.

4.2 Environmental Liability

LEDA, as the DRC registered entity holding the tenements, will be liable to the DRC government for any damage to the environment resulting from a breach of the requirements of the DRC Mining Code and approved Plan d'Attenuation et de Rehabilitation ("PAR").

On the basis of observations in the field, there are no current liabilities in relation to the exploration activities but there are potential liabilities accruing due to artisanal mining and prospecting activities at some sites.

Figure 4-3. **Artisanal processing area observed on the valley floor between the Akyanga Main and East deposits (May 2021)**

The ridges at Akyanga, Mdende, Eumba, Lubitchako and Tulonge are exploited by artisanal miners (Figure 4-3). The number of artisanal miners varies according to the time of year (rains and school term time seeing a reduction in numbers). Miners themselves work shifts, with a total number varying between 1,000 and 3,000 people, with other people being involved in activities such as transport and crushing. During the site visit about 2000 artisanal miners were observed working on the Akyanga project.

In addition, many of the streams and rivers draining these ridges are being mined and used for washing ore. The artisanal miners utilise small moveable ball mills to crush the ore mined and, in the second quarter of 2012, a group of artisanal miners constructed two small heap leach plants at Misisi village. During the May 2021 visit, several moveable ball mills were observed which have potential to mill 1 tonne per hour.

With the exception of informal artisanal activity and historical alluvial gold mining at the southern end of PR 822 (Ngalula area) there are currently no formal mine workings, tailings ponds or waste dumps located in the Misisi Gold Project area.

4.3 Risks and Opportunities

LEDA recognises the need to engage positively with the local community and maintains regular dialogue with Civil Society, traditional leaders, and local authorities. Historically LEDA has a substantial social program amounting to 4% of exploration spend. This has already resulted in the reconstruction of six schools and the construction of a seventh. A community meeting hall was also constructed and is in constant use. The company accesses this hall for tripartite meetings between government officials, LEDA and the community. Future projects at the construction

stage, which may include roads, are likely to further assist in ensuring community benefit is seen.

Presently artisanal mining is conducted on Akyanga hill by a number of illegal miners. LEDA is working with the DRC government and regional authorities, as well as the Village Chief, to identify the optimal means of transitioning the project from illegal informal artisanal mining to a legal responsible and safe mining project with consensus support.

Central and regional government are eager to end illegal mining as there is no compliance with safety, labour or environmental laws and provides no revenue to the state.

LEDA recognises the importance of local community support and assisted by consultants and NGO's will work with community leaders to identify the optimal solutions to manage the transition to properly licenced and socially responsible industrial mining.

4.3.1 Political Risk

The DRC has since 2013 in particular seen increasing stability. The previous widely reported troubles that affected the east have largely been overcome, following co-operation between the UN and DRC forces. Félix Antoine Tshisekedi Tshilombo, the son of the country's longstanding opposition leader, won the December 2018 presidential election. He succeeded Joseph Kabila, who had led the country for 18 years, in the first peaceful transition of power in the DRC's history. In April 2021 the president announced a new government the 'Sacred Union of the Nation' which resolved a month's long power struggle with predecessor Joseph Kabila. The new DRC government provides an opportunity to advance significant mineral projects with lower politicial risk than former governments.

4.3.2 Access Road

Planning of construction activities around the wet season is well advised. However, the impact of this is considerably less than previously, thanks to the upgrading of the access road from Bukavu to within 10 km of the project LEDA will have to rehabilitate only a 10 km section of road from Lulimba to the project, this section however requires no bridges and should not be complicated.

Alternative transport routes from Kenya can also be considered, including lake transport to Baraka or Uvira.

4.3.3 Health and Safety

Maintaining the health of all personnel is key if morale and on time completion are to be maintained during project execution. Malaria, shigella, and cholera affect the region to varying degrees, as do HIV, and TB and Covid. Mitigation against the former group of diseases has already been put in place by ensuring water supplies are safe and taking anti- mosquito measures; this will need to continue as the project advances. Covid awareness is key in ensuring that the miners are notified of any potential risks and accelerated spreading of the disease if there is an outbreak.

5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 Accessibility

Road access to Misisi has historically been limited by poor road conditions with travel time to site from the regional capital, Bukavu, of up to two days. The area is accessible by the N5 road from the airports (links with Lubumbashi) to the north from Bukavu and south from Kalemie. The N5 is currently being improved from Kalemie through to Uvira. Road access from Burundi via Bujumbura and Uvira may also represent viable road alternatives.

For transport of heavy goods, the use of ferries from Kigoma to Kalemie or Uvira, utilising Lake Tanganyika with overland travel from Kalemie to Misisi, or Uvira to Misisi via Baraka to site may also be viable.

Travel by air is the most efficient in terms of time. An airstrip at Lulimba within the Misisi Project area has been renovated and licensed allowing for charter flights from Kalemie and Bukavu. The airstrip is 1.1km in length (3600 feet) which is within the parameters for a Beechcraft King Air or similar.

Airport links from Lubumbashi to Lulimba are available through private charter thus only requiring a 10 km section to be completed by road from Lulimba to the project area.

The village of Misisi is approximately 1.5 km west of the Akyanga Ridge target and is the current location of the [4]base camp. Access to Akyanga from the camp in Misisi is by means of 4x4 vehicles on dirt roads that bypass the population centre.

Larger population centres are located at Bukavu, the capital of South Kivu province, approximately 350 km to the north of Misisi. Bukavu has an airport serviced by commercial flights between Goma, Kalemie and Lubumbashi. There is a port at Bukavu with freight links across Lake Kivu to Goma, North Kivu. Kalemie, the headquarters of Tanganyika District in Katanga Province, is located approximately 180 km to the south of the Misisi Project. Kalemie has an airport serviced by commercial flights between Goma, Bukavu and Lubumbashi. There is a port at Kalemie operated by Société Nationale des Chemins de fer Congolais (SNCC), the national railway company. The port was built to establish a link between the DRC, Tanzania and Zambia from Kalemie by Lake Freighter to the Tanzanian port of Kigoma and Mpulungu in Zambia. There are two commercial ferries on Lake Tanganyika between Kalemie to Kigoma, and Kalemie to Uvira that run regularly.

5.2 Climate

The climate of the Misisi area can be classified as tropical to sub-tropical, with a wet season from October to April and a main dry season from May to September. Work may be completed year round although some access problems might be experienced on unsealed roads during the wet season.

No long term records exist for rainfall in Misisi. During the wet season, heavy rains are common in the mid to late afternoons. Violent thunderstorms are also frequent. In the Kalemie area, average annual rainfall is approximately 1,150 mm (Weatherbase, 2009). No long term records

exist for temperature in Misisi, however, in the Kalemie area; temperatures may range between 10 and 30°C during the dry season and between 15 and 33°C during the wet season (Weatherbase, 2009). The Akyanga Ridge is located in a low, mountainous area, prompting local wind patterns which generate gusts from variable directions. LEDA installed a weather station at site in October of 2013.

5.3 Local Resources and Infrastructure

5.3.1 Power

The Misisi area is remote and has no access to the national grid, although there is a hydro-electric facility at Bendera, 45 km to the south of the project area. The design capacity of this installation provides for a maximum of five 8,250 kW horizontal axis turbines to be installed, although only two were ultimately installed which do not function at maximum capacity. Production is 10,750 kVA delivered over a 10,000 V transmission line to Kalemie, 120 km to the south.

Figure 5-1. Generators observed on the project camp, May 2021.

5.3.2 Water

The Misisi Project is located in an area of high topographic relief. Water requirements for exploration activities, for example drilling, can be readily sourced from streams in the valley to the east of the ridge.

A gravity water system provides water to the field camp. This water is treated prior to use. A new gravity water system has been installed to improve access to clean water in the village.

5.3.3 Goods and Services

Mining is well established in the DRC. Vendors and contractors already supply a number of mining operations in the country. Proximity of the project to Zambia and Tanzania, where mining operations are also well established, means that there will be a relatively wide selection of services and personnel.

Figure 5-2. Camp site buildings observed during site visit, May 2021.

5.3.4 Population Livelihood

The local population is involved primarily with subsistence farming and artisanal mining.

5.3.5 Artisanal Mining Activities Within Licence Area

The ridges at Akyanga, Mdende, Eumba, Lubitchako and Tulonge are exploited by artisanal miners with little evidence of earlier activity (Figure 5-3). In addition, many of the streams and rivers draining these ridges are being mined and used for washing ore. The artisanal miners utilise small moveable ball mills to crush the ore mined and, in the second quarter of 2012, a group of artisanal miners constructed two small heap leach plants at Misisi village.

With the exception of informal artisanal activity and historical alluvial gold mining at the southern end of PR 822 (Ngalula area) there are currently no formal mine workings, tailings ponds or waste dumps located in the Misisi Gold Project area.

Figure 5-3. **Artisanal mining activities on the Akyanga ridge observed during May 2021 site visit.**

5.4 Physiography

The Misisi Project (including Akyanga Ridge) is situated to the west of the escarpments of the Albertine Rift Valley. The Akyanga Ridge summit is 1,030 m above mean sea level and is surrounded by peneplain grassland and shrub as well as patches of agricultural plots with mainly cassava in open fields and banana plantations in the valley floor.

6 HISTORY

6.1 Introduction

Wardrop, 2012 [4], reported that historical exploration programmes prior to 2010 are poorly documented. The Misisi Gold Project area was poorly mapped and most geological surveys predate the independence of the DRC. Systematic mineral exploration had not been conducted

prior to the programmes undertaken by previous owners CASA and subsequently ARC Minerals in 2010-2017.

CASA and ARC Minerals conducted all modern exploration work on the Misisi Gold Project. LEDA carried out a limited programme of reconnaissance and satellite interpretation work but no drilling or trenching.

6.2 Exploration History prior to 2010

Most mineral exploration programmes were conducted prior to the 1950's, during two distinct periods. These comprised:

- Early 20th century: General reconnaissance mapping and surveying;
- Late 1920's to late 1940's: Mineral exploration surveys targeting metallic ores.

Mineral exploration and development were conducted in the area by a number of companies as well as smaller independent prospectors and producers which included:

- Syndicat Minier Africain (Symaf) with or through its affiliates:
- Société Belge de Recherches Minières en Afrique (Remina);
- Société Minière de la Luama (Syluma);
- Syndicat Minière d'Or (Symor).
- Compagnie Géologique et Minière des Ingénieurs et Industriels Belges (Geomines) and its affiliâtes the Société des Charbons de la Lukuga;
- Société Internationale Forestière et Minière du Congo (Forminiere) through its affiliate the Société Minière du Maniema (SMM).

Among the larger independent prospectors and developers mentioned are Hosli, Holland and Leonard, who were directly involved in gold exploration and mining. Their work is not documented.

In more recent times, a work programme was carried out by Anvil Mining between 1998 and 2008 within the Kalemie tenements. The programme comprised:

- Data compilation and review of the geological and mineral setting – completed in 1998 by GF Consult in conjunction with the Royal Museum for Central Africa (RMCA);
- LANDSAT acquisition and interpretation – completed by Earthscan in 2005;
- Structural frame work from LANDSAT7 data – completed by Rankin of GeoInterp in 2007.

Anvil Mining (now a MMG subsidiary) has held six PR in the Fizi area through its subsidiary LEDA Mining Congo SPRL. Desktop studies commissioned by Anvil were undertaken by GF Consult, 1998; EarthScan, 2005; GeoInterp, 2007.

Anvil carried out a reconnaissance trip to gauge the political and security situations in the area in mid-2004 and reported the situation to be unfavourable for exploration programs to be mounted at the time. Another one in early 2007, reported that the security situation had improved and that work on the permits were possible.

A helicopter supported reconnaissance was carried out by Anvil in June 2007 to assess the geology of the project area, gauge the level of artisanal mining activity, and determine the best exploration methodologies for further assessment of its tenements.

Wardrop, 2012, reported no knowledge of historical mineral resource or reserve estimates for the licence areas.

6.3 Exploration 2010-2017

CASA commenced exploration activity on the Fizi tenements in June 2010. The exploration activity comprised geological mapping, trenching and diamond drilling. ARC followed this up with the remapping and structural interpretation of Vermaaakt [2] and AMC [3] followed by a 5000m drilling campaign in 2017 which increased the global resource.

Exploration targets within the licence areas are illustrated in Figure 4-2. The majority of these were derived by airborne geophysics and ground geochemical programs in 2011-2012. The main focus of the work programmes was the Misisi area (hosting the Akyanga and Akyanga East deposits), where early stage exploration culminated in a series of drilling campaigns. Regional geophysical surveys were completed for the licence area in August 2011. From the geophysics, the Mutshobwe (Lulimba), Kilombwe, Lubitchako and Tulonge/Turongi target areas were identified and the latter two have subsequently been drilled.

CASA and ARC collected approximately 5439 soil geochemical samples. The initial sample grid was 1km spaced lines, with 50m between samples, covering the entire 50km strike length of the property. Subsequent infill lines were conducted in areas of interest on 200m and 100m spaced lines. 16 significant soil anomalies, outside the Akyanga resource area, were defined across the Misisi district. A significant soil anomaly was defined as a coherent cluster of soils on 2 or more adjacent soil lines with gold values +100ppb. Only a few of these soil anomalies have received limited follow-up exploration.

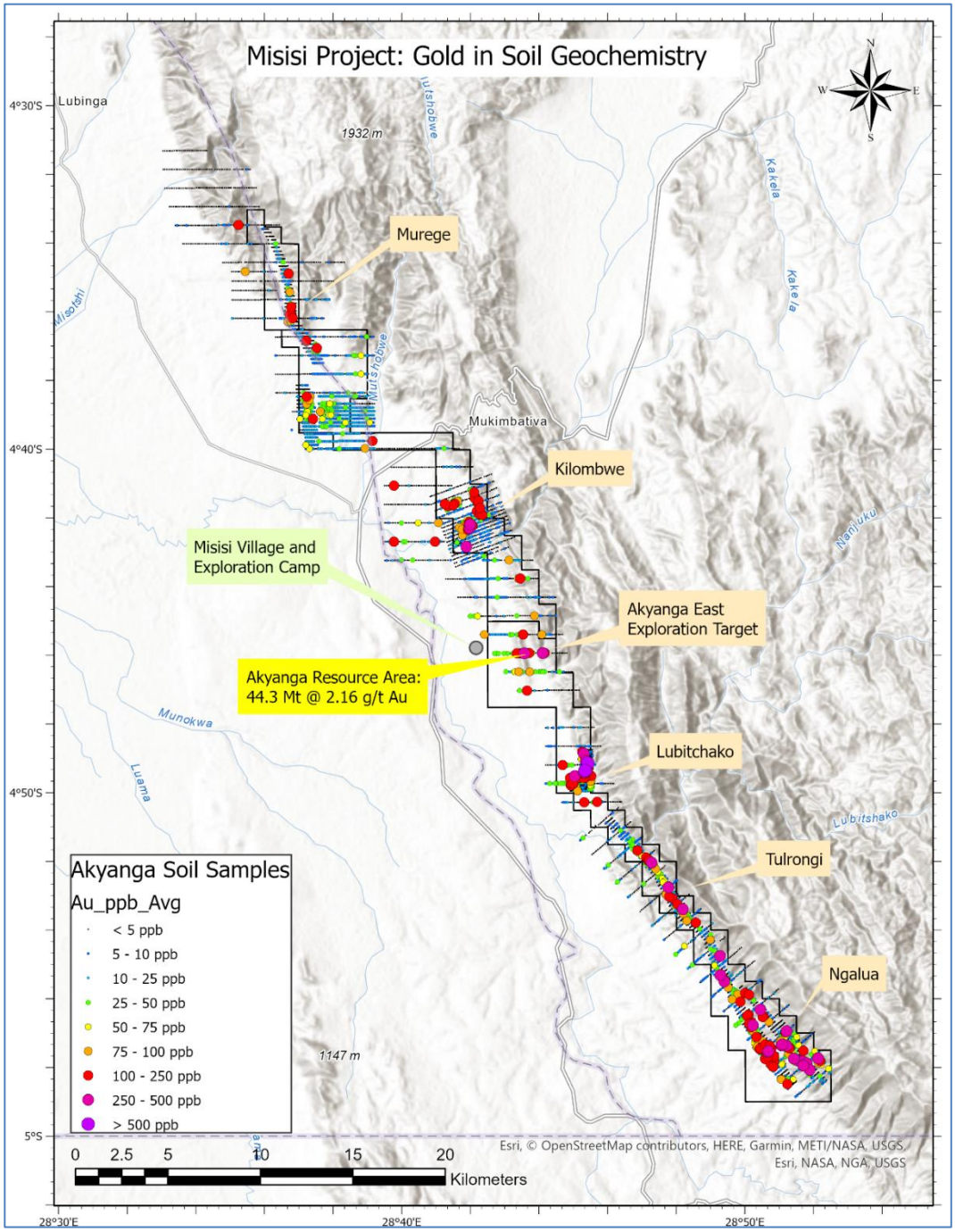

Figure 6-1. Gold in soil geochemical map of Misisi Project.

6.4 Rock Sampling and Geological Mapping

6.4.1 Lubitchako

Grab Samples from two separate areas of artisanal workings were collected during September and October 2011. The first area has a strike length of approximately 600 m in a N-S direction and the second area strikes NE-SW for approximately 300 m. The rock sampling returned gold values generally in excess of 3 g/t over samples lengths of between 0.3 m and 1.4 m.

6.4.2 Turongi (also known as Tulonge)

An outcrop sampling programme was carried at the Turongi area in March 2012. Samples were collected from outcrop in artisanal workings. Sampling was concentrated on two NW-SE trending quartz veins, 20-50 m apart and orientated sub-parallel to the Akyanga mineralisation. The quartz veins range from 0.3-0.8 m in width and have a strike length of over 1,300 m. Assay results for the quartz vein samples included gold values in excess of 30 g/t over 0.3-0.5 m intervals. Typical results were 2.5-9.0 g/t gold over 0.3-0.5 m.

6.4.3 Akyanga

The Akyanga Ridge was surveyed in June 2010 using a total station Differential Global Positional System (DGPS) from which a digital map with 5 m contours of the ridge area was produced.

Geological mapping and rock sampling was conducted at the Akyanga target within the Misisi area from June to July 2010, with follow up work in November 2010 through to February 2011.

6.5 Trench Sampling

Trenching has been carried out at Akyanga deposit, the locations of the trenches being shown in Figure 4-2.

During the first quarter, 2011, trenching was carried out both to evaluate mineralisation at surface and to assess the degree of mineralisation in areas not exploited by artisanal mining.

Twelve trenches, comprising 946 line metres, were excavated at the Akyanga deposit between 2010 and 2011.

For the entire Misisi licence area, 79 trenches comprising 5,753 line metres were excavated between 2010 and 2013. No trench samples were included in the sample database for the Mineral Resource Estimate reported herein.

6.6 GEOPHYSICAL PROGRAMMES

In August 2011, CASA engaged New Resolution Geophysics to fly and process a 2,800 line km airborne (helicopter), high resolution magnetic and radiometric survey across the Fizi licence area. The resulting geophysical map, including nine exploration targets identified, is illustrated in Figure 6-2. Two of the nine target areas, Misisi and Lubitchako, are known to host gold mineralisation.

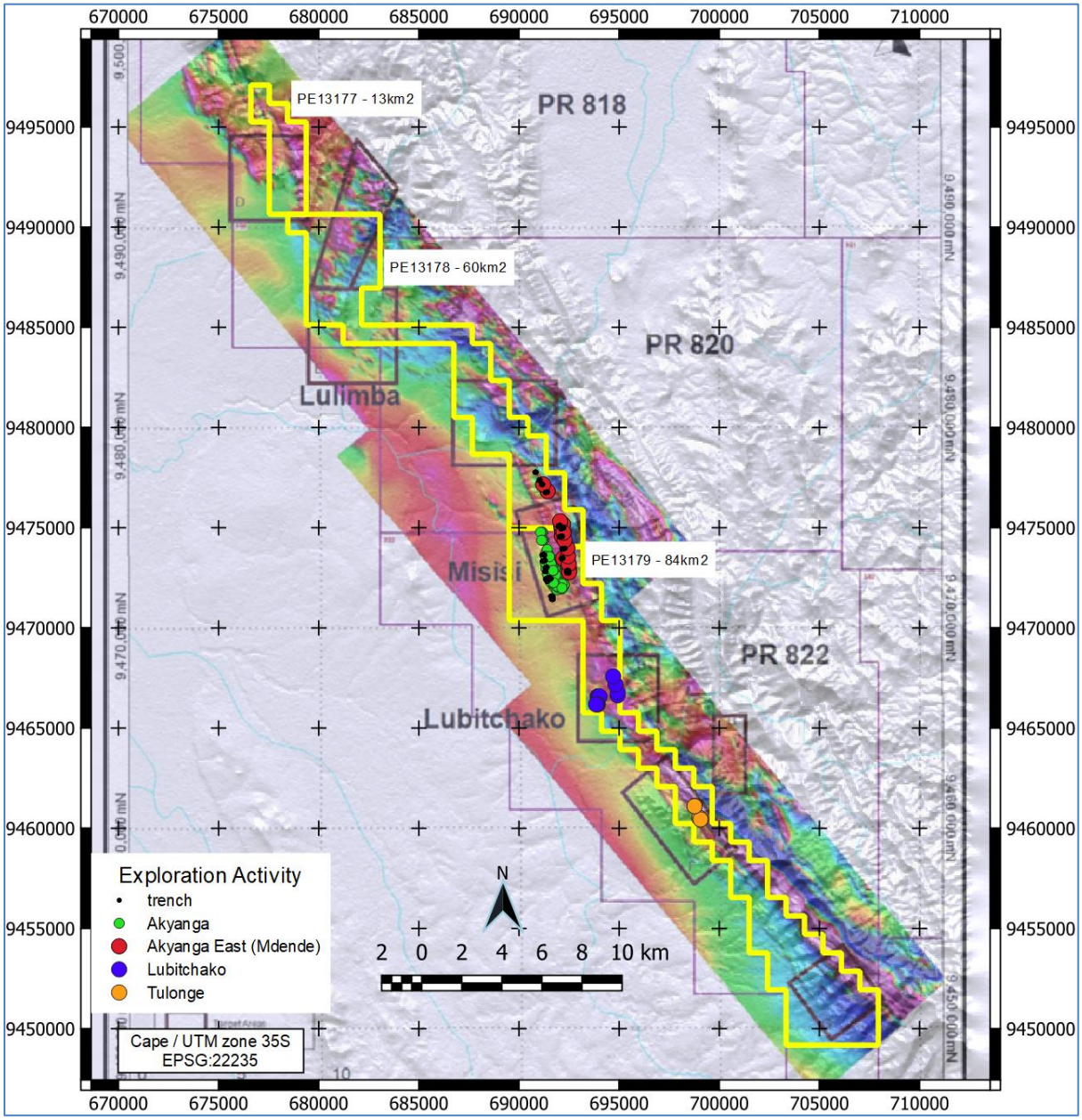

Figure 6-2. **Original exploration target outlines (grey outlines) within the context of the current EP licence boundaries (yellow outlines) showing current drilling and trenching locations as of March 2021 and aeromag results.**

6.7 Drilling

6.7.1 Akyanga

The current Mineral Resource estimate for the Akyanga deposit was based upon 105 diamond drillholes, (19,069.85 m) and 6 RC drillholes (887m) mostly orientated 50-70° to the WNW, designed to be perpendicular to mineralization. Drillholes have been spaced on section lines at approximately 100 m intervals narrowing locally to 50m spacing

The drilling programme has been completed by a number of different drilling contractors throughout the project.

Initial drill programmes were completed by Energold and DMP Drilling, and more recently and on an ongoing basis Drilltek/Coretek, who have operated up to three diamond core rigs on site. Diamond drillholes have been spaced on section lines at approximately 100 m intervals.

CASA had a fully trained full-time technician at the drill rigs to maintain the security/integrity of the drill core produced. This person maintained responsibility for monitoring and verifying the drill meterage as well as recovery through each drill run. Each day this data was collated and verified by the supervising geologist.

Wireline double tube drilling is undertaken with PQ hole diameter near surface for casing, stepping down to HQ (HQ3=61.1 mm core diameter) through the mineralisation, with step-down to NQ (NQ2=50.7 mm core diameter) only where necessary due to bad ground conditions and associated drilling recovery issues.

All drillhole collars were initially surveyed with standard hand-held GPS equipment and subsequently picked up using a Satellite Differential GPS ("DGPS") system to allow greater control and accuracy of the drill collars to be established. Both hand-held and DGPS coordinates are recorded in the database.

Initial collar surveys of dip and azimuth have been taken using compass measurements for all holes. Downhole surveying was undertaken by CASA on all holes at intervals of between 20–30 m, using a digital REFLEX EZ-SHOT camera provided by the drilling contractors. Parameters measured by the reflex camera included Inclination (in degrees), Azimuth (in degrees), and Time, Magnetic Field, Roll angle and Temperature.

The major drilling direction was towards the north-west (290°). Most of the holes have inclinations in the order of -50º to -70º, with the majority of holes inclined at -50º. Selective holes have been drilled at -70º to test depth extent where access is limited due to terrain and surface artisanal workings. The use of these holes has confirmed the relatively steep contacts (sub vertical) of the Akyanga ridge target mineralisation, which based on the general dip of the drilling (-50°), best estimates of true width in the wider portions of the deposit are between 1 and 35 m.

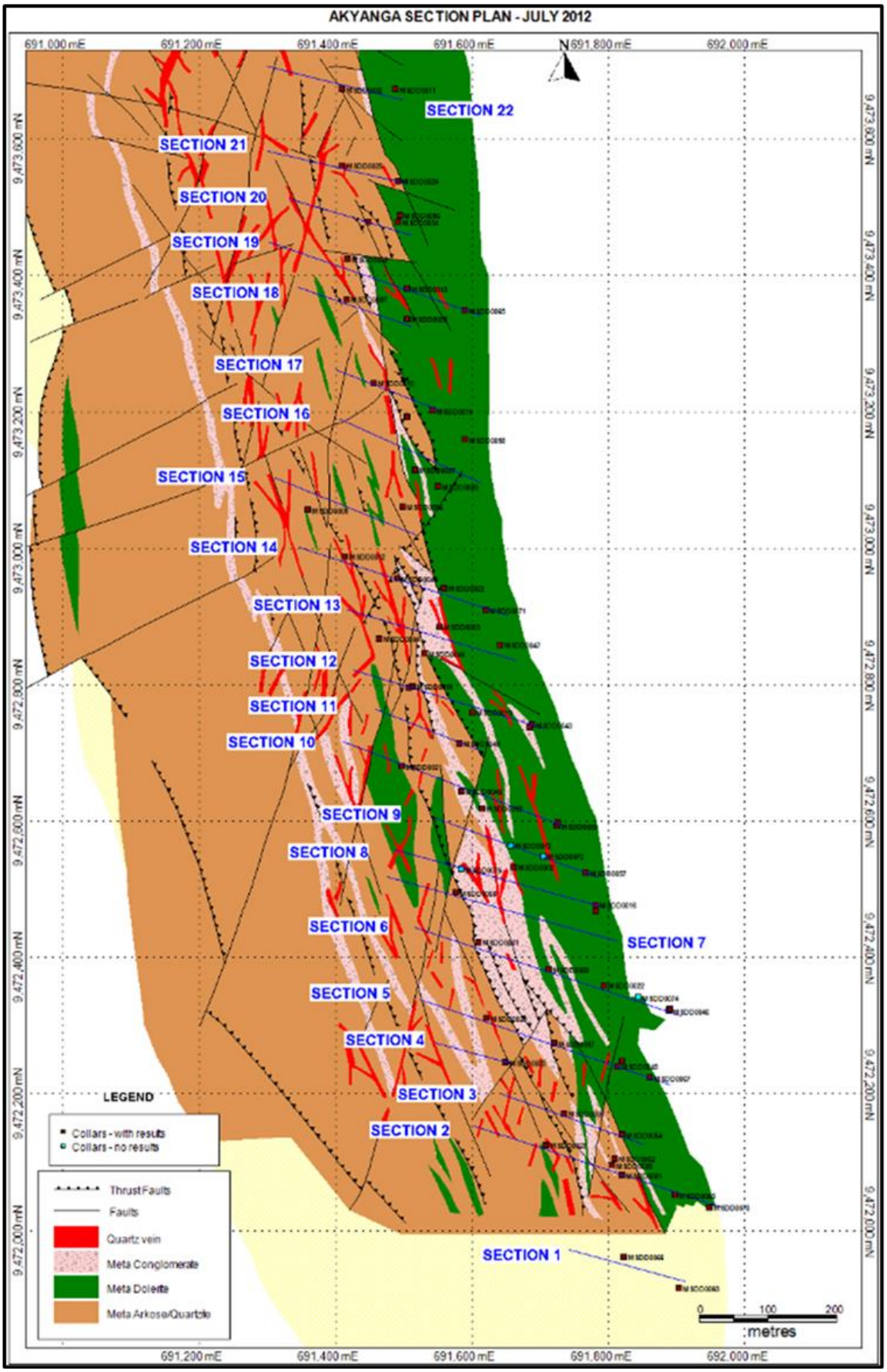

Figure 6-3. Akyanga Ridge drill plan and CASA defined drill section numbering

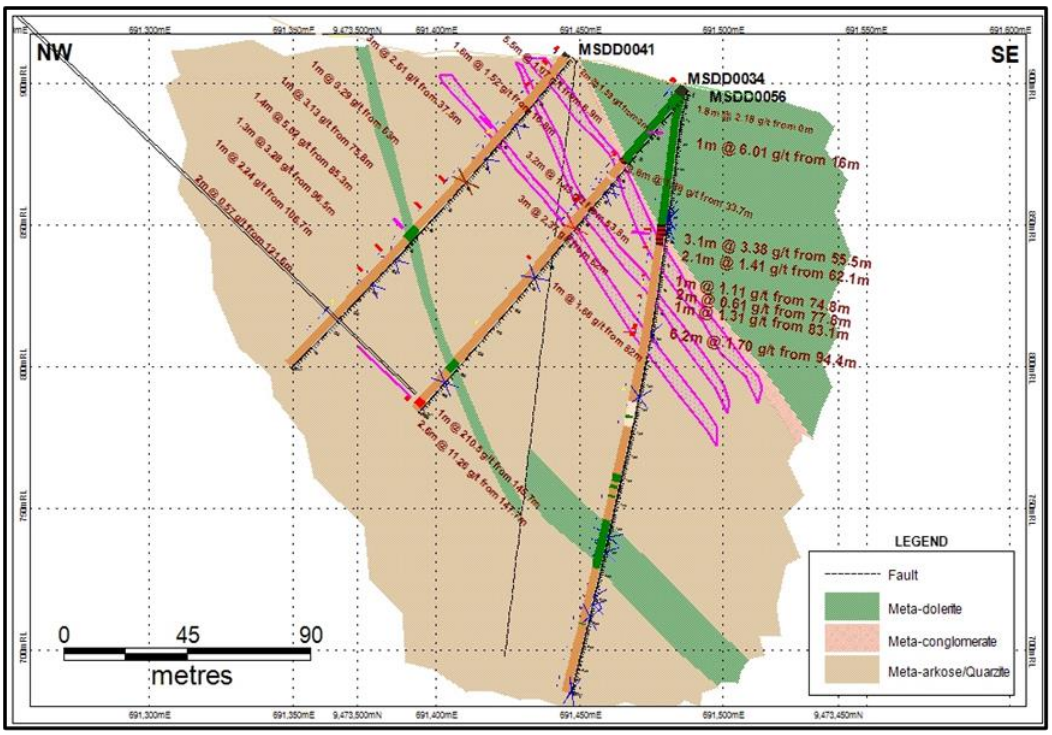

Figure 6-4. **Typical drill section through Akyanaga Ridge (Section line 20)**

Before the drill core is packed and returned to the project site for logging, core recovery was determined on the drill site. Core is measured from the midpoint on any fracture and extrapolated along intact core once reconstructed within the core boxes. In some sections due to the broken nature of the drilling core estimates of the core length are assumed. The length of recovered core is then recorded against the expected 100% drilled length for the intercept measured and marked by core blocks. Based on the data sets the samples generated an average core recovery >85%.

CASA established a logical logging and sampling sequence in order to ensure data capture procedures were followed and implemented to provide both consistent and quality methodology for the process of submitting the samples for external laboratory analysis. This was further refined by ARC minerals who commissioned consultants AMC to relog all the core for all drill campaigns and standardise rock names and produce a photographic guide.

Core and core blocks were placed in core boxes by the driller under supervision of the CASA and ARC rig technicians who took custody of the drill core at this stage. Upon receipt in the core shed on site by the supervising CASA and thereafter ARC geologist, the drillcore was cleaned or washed, if required, and core blocks were verified against the drillers logs.

Core is arranged/rotated to orient them to known features such as regular banding or joint sets. The core was photographed wet in a frame ensuring a constant angle, distance and light conditions.

Core was logged to define the key lithological domains encountered during drilling. These domains are logged descriptively based on their colour, texture, mineralogy, weathering intensity and oxidation which is recorded within the lithological log code sheets. These lithological domains are

used to define all sampling intervals and further section interpretations.

Geotechnical logging was completed on the drill core at the drill site. Recovery and RQD were recorded for each core run. Primary lithology was also recorded so these materials can be domained and interpreted during evaluation. Additional information was also recorded with respect to weathering and alteration.

Structural logging was undertaken identifying and recording the dip/dip direction and structural features within the geotechnical logged intervals. In addition information has been collected regarding mineral infill and structural thickness.

Following sampling, multiple magnetic susceptibility readings (using a Terraplus KT-10 magnetic susceptibility meter) were taken every sample interval. A minimum of two readings are taken on the flat surfaces of the broken or cut core. Results were averaged over the intercept and recorded in SI units (kappa).

CASA and ARC associated a potential link between mineralisation and the occurrence of a broken horizon of magnetite banded iron formation ("BIF"). Although not exclusive to mineralisation this potential marker horizon can be identified using the magnetic susceptibility in conjunction with geology and so can be used to indicate grade prior to the returning sample assays. The unit is also noted to be continuous between drill holes and sections assisting with the interpreted continuity and linking together of mineralised intervals in 3D.

Bulk density readings were taken based on sample intervals which were prepared at 1 m intervals within each lithology and are truncated on every lithological break.

Trained staff were involved at all stages of the sampling, sample packaging and sample transportation process. During the drilling programme staff members were based full time at the drill rig site to supervise the drilling and data recording and to complete preliminary geological logs of the drill core. This included an onsite technician or geologist and project geologist supervisor.

Sampling of the drill core was undertaken at the Misisi base camp by the project geologist. Sampling is based primarily on the lithological logs produced by CASA geologists. Drillholes are, within each core tray were marked up and then split using a core saw along the orientation marks, being completed at the Misisi sample preparation and storage facility.

Each drill hole was sampled in its entirety along the core length with both HQ and NQ core halved for assay. Intervals are marked on a maximum sample interval of 4 m in areas considered waste (this is notably restricted to homogenous mafic material) and 1 m intervals in zones with potential for mineralisation, with samples lengths adjusted according to lithological contacts.

A minimum sample interval of 0.5 m was applied to ensure sufficient sample volume is generated to provide a homogenous and representative sample. The drill core was cut in half along the long axis on site by trained CASA / ARC personnel, with the right hand half of the drill core consistently removed for sampling and the remaining half returned to the core box for archival purposes.

All samples, under the supervision of a geologist, are assigned a sequential 5 digit number as reference which is recorded both on core box, by single ticket within the sample bag and also written on the heavy duty polythene sample bag. Sample numbers are entered into the database

with associated location data, including hole numbers and intervals. Sample weights are also recorded.

Both overall core recovery as well as core recovery for samples within the mineralisation domains only, are good. The average core recovery ranges from approximately 85-87%. Between 50% and 60% of samples are associated with core recovery of 95% or greater.

Core recovery of less than 60% is evenly distributed throughout the Akyanga mineralisation domains. There does not appear to be a single localised area or mineralisation domain affected to a material degree by poor core recovery.

A table of drill collar locations is provided in Appendix B and a table of mineralised intersection intervals is provided in Appendix C.

6.7.2 Akyanga East (Mdende)

Approximately 1-2km east and north-east of the Akyanga Project is the Akyanga East or Mdende structure (Figure 6-5). The mineralisation (a zone of veining) can be traced along strike for approximately 5500 m, primarily through artisanal workings, with a gap in the workings through an east-west valley that cuts through the mineralisation and covers the surface with scree. It has been explored by drilling (10 holes) at around 200 m centres with up to 500 m spacing at the limit with a gap in exploration across the valley. The mineralisation dips at around 53^{o} to the southwest. A summary of the drill results is presented in Table 6-1.

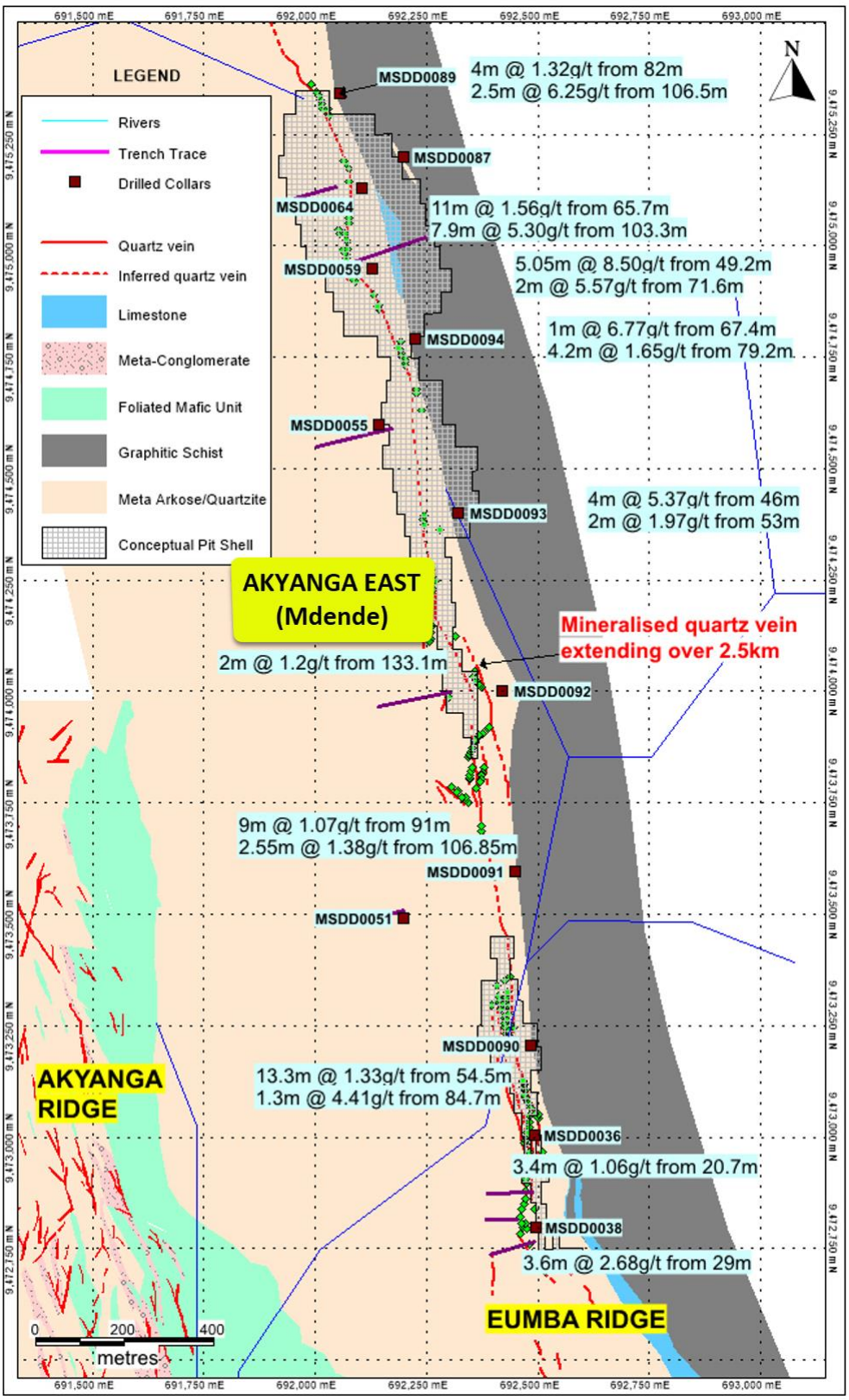

Figure 6-5. Akyanga East exploration target.

Table 6-1 Summary of drill results from Akyanga East

Hole_ID	UTM East	UTM North	From	To	Width (m)	Au g/t
MSDD0036	692491	9473005	20.70	24.10	3.40	1.06
MSDD0038	692495	9472798	29	32.6	3.6	2.68
MSDD0059	692124	9474942	49.2	54.25	5.05	8.50
MSDD0064	692108	9475139	65.7	76.8	11.1	1.56
and			103.3	111.2	7.9	5.30
MSDD0089	692059	9475339	82.00	86.00	4.00	1.32
and			106.50	109.00	2.50	6.25
MSDD0090	692481	9473201	54.50	67.80	13.30	1.33
and			84.70	86.00	1.30	4.41
MSDD0091	692446	9473592	91.00	100.00	9.00	1.07
and			106.85	109.40	2.55	1.38
MSDD0092	692418	9473998	133.10	135.10	2.00	1.20
and			138.00	139.00	1.00	1.17
MSDD0093	692277	9474396	46.00	50.00	4.00	5.37
and			53.00	55.00	2.00	1.97
and			123.00	124.10	1.10	2.20
MSDD0094	692220	9474777	67.40	68.40	1.00	6.77
and			79.20	83.40	4.20	1.65

6.7.3 Lubitchako

The Lubitchako Target is approximately 7 km south of Misisi. An initial soil sampling program revealed a 1.2 km gold in soil anomaly. This was further supported by positive trench results in a follow-up program shortly afterward (Figure 6-6).

Four diamond drill holes were completed in 2013 encountering a series of stacked quartz veins which warrant further exploration (results summary Table 6-2).

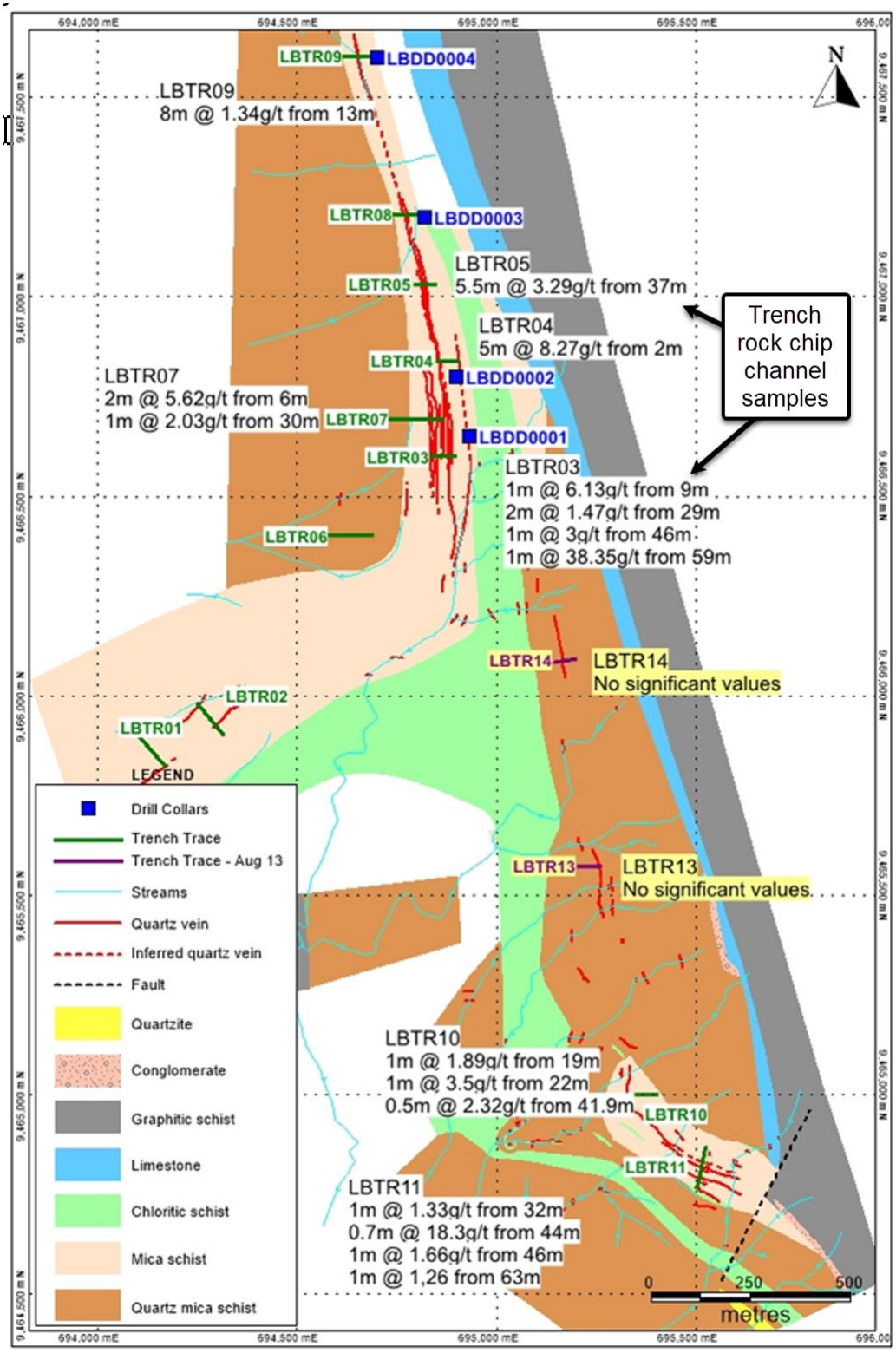

Figure 6-6. Lubitchako exploration target.

Table 6-2. Summary of drill results from Lubitchako

Hole ID	UTM East	UTM North	From	To	Interval (m)	Au ppm
LBDD0001	694925	9466652	26.30	30.50	4.20	1.24
and			62.40	67.00	4.60	6.08
and			93.60	95.70	2.10	9.06
and			110.20	114.50	4.30	1.09
LBDD0002	694926	9466797	28.20	31.20	3.00	0.80
and			134.10	137.10	3.00	1.37
LBDD0003	694826	9467207	11.70	12.70	1.00	2.09
and			83.90	85.50	1.60	1.13
and			90.60	91.40	0.80	2.45
and			99.30	100.10	0.80	73.55
LBDD0004	694700	9467600	36.20	37.50	1.30	0.76
and			40.50	50.90	10.40	1.37
and			52.50	55.80	3.30	2.82

6.7.4 Tulonge

At Tulonge, 14km south-east of Akyanga, 7 diamond holes have been drilled within a target zone with 5km of veining, anomalous gold in soils and artisanal gold production (Figure 6-7). The drill holes tested two areas, approximately 700m apart and cut a series of stacked veins which warrant further exploration (results summary Table 6-3).

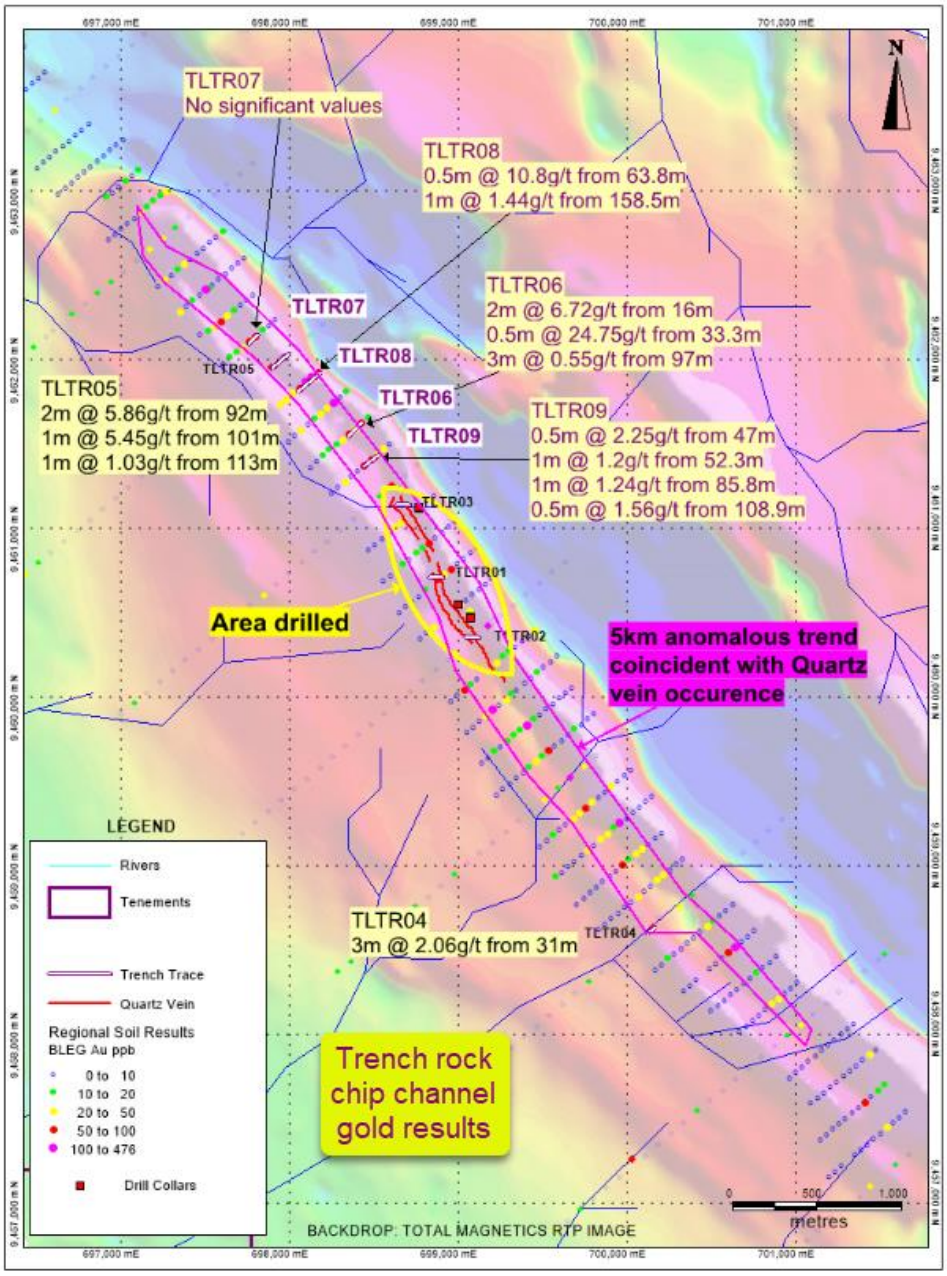

Figure 6-7. Tulonge exploration target.

Table 6-3. Summary of drill results from Tulonge

Hole ID	UTM East	UTM North	From	To	Interval (m)	Au ppm
TLDD0001	699063	9460463	10.6	12.4	1.8	6.64
and			16.9	18.7	1.8	5.94
and			40.6	44.2	3.6	4.12
and			54.5	55.5	1	3.59
and			73.1	74.3	1.2	1
TLDD0002	699054	9460542	52.2	58.4	6.2	5.05
and			126	127.3	1.3	2.78
TLDD0003	699068	9460464	14	19	5	3.98
and			28.5	30.2	1.7	0.91
and			80	84	4	5.04
and			89	92	3	3.04
and			147	148	1	1.27
TLDD0004	699004	9460542	19	20	1	0.95
and			97	98	1	2.38
and			137	138	1	0.98
TLDD0005	699069	9460457	8.5	9.8	1.3	13.05
and			15.3	16.3	1	2.02
and			31	34.4	3.4	7.11
TLDD0006	698768	9461115	57	60.2	3.2	0.8
and			61.55	63	1.45	1.01
and			103	108.9	5.9	7.15
TLDD0007	698771	9461119	46.1	47.4	1.3	0.73
and			169	169.9	0.9	1.19
and			184.7	185.2	0.5	3.57

6.8 Historic Resource Calculations.

There have been several historic resource calculations for the Akyanga deposit. The pre 2021 resource estimates were not reported using Canadian Institute of Mining, Metallurgy and Petroleum standards on mineral resources and reserves, definitions, and guidelines prepared by the CIM standing committee on reserve definitions and adopted by the CIM council, and hence are not compliant and considered historic. 2014 MDM and SRK Consulting (UK) Ltd Scoping Study and Resource Estimate [1]

- 2017 African Mining Consultants, Technical Report and Mineral Resource Estimate [3]
- 2018 Denny Jones Akyanga Resource Estimate [4]

The most recent 2018 Denny Jones Akyanga Resource Estimate forms the basis for the current resource estimate, updated and verified by the principal author Dr. John Arthur.

6.8.1 2014 MDM/SRK and 2017 AMC Resource Reports [1] [3].

In October 2013, CASA requested SRK to complete the Misisi Project's Maiden Mineral Resource Estimate as part of a Scoping study by MDM [1]. The Mineral Resource estimate was based on

drilling within the Misisi (Fizi) licence area which, at the time, comprised of a total of 81 drillholes for a total of 14,232 m, all of which were diamond core drillholes drilled between 2010 and 2013. SRK reported an Inferred oxide gold Mineral Resource of 4.3 million tonnes (Mt) at a grade of 1.2 g/t Au for 160 koz of contained metal. SRK also reported an Inferred transition gold Mineral Resource of 15.4 Mt at a grade of 1.7 g/t Au for 850 koz of contained metal.

In 2017 AMC completed a review of the geological interpretation for the Akyanga Deposit [3], specifically the contrasting interpretations between SRK [1] and Vermaakt [2], to evaluate its effect on the potential resource. This work included:

- A geological and resource workshop including a review of resource modelling.
- An audit of the geological modelling (mineralised vein systems produced by Vermaakt [2]);
- The creation of a revised block model based upon six (6) continuous mineralised vein systems (or domains); and
- A conceptual pit design for the 2017 block model to constrain the MRE using assumptions based on a conventional gravity and CIL operation.

The 2017 AMC mineral resource estimate was reported in accordance with the guidelines of the JORC Code and is considered historic and not compliant with the CIM reporting standards and 43-101 reporting requirements.

Table 6-4 illustrates the 2017 AMC mineral resource estimation for the Akyanga Deposit using the revised geological model. AMC has reported the portion of the global resource which had been shown to possess reasonable prospects for eventual economic extraction, as by the JORC Code, but was not compliant with CIM 43-101.

Table 6-4. 2017 AMC Historic Resource tabulation by cut off grade

Cut-off (g/t)	Quantity (Kt)	Au (g/t)	Au (Koz)
0.10	29,719	1.65	1,576
0.30	29,719	1.65	1,576
0.50	29,671	1.65	1,573
1.00	24,062	1.84	1,423
1.50	**14,334**	**2.27**	**1,046**
2.00	9,034	2.57	746

AMC reported the 2017 mineral resource, subject to:

- There were reasonable prospects for eventual economic extraction under assumptions of a gold price of US$1250/oz; employment of conventional open-pit mining methods, and processing in a conventional Gravity + CIL purpose-built facility. Mining costs are assumed at US$3/t ore/waste. Processing costs at US$18/t ore and general and administration US$1.5/t ore.
- Reported Mineral Resources contain a 5% allowance for hangingwall and footwall contact boundary loss and dilution. A mining recovery of 5% is applied.
- All resources were reported as Inferred.
- Approximate drill hole spacing's for the Inferred Mineral Resources were 100m. Depth of mineralisation below surface ranges from 0m to 300m.

6.8.2 2018 Denny Jones Akyanga Resource Estimate [4]

In 2018 Ivor Jones, Principal Consultant of Denny Jones Pty Ltd, produced a new Mineral Resource Estimate reported in accordance with the guidelines of the JORC Code (2012) and considered historic and not compliant with the CIM reporting standards and 43-101 reporting requirements. The estimate was based on information from 105 diamond drill holes and 6 RC drill holes.

The estimate for the Akyanga gold deposit June 2018 Mineral Resource was prepared in the following steps:

- Site visit for personal inspection
- digital data validation
- data preparation
- exploratory data analysis of Au
- review of geological interpretations, definition of domains and modelling
- establishment of block models
- coding by domain and compositing of assay intervals
- derivation of kriging plan and preparation of kriging parameters
- variogram analysis for indicators
- grade interpolation of Au using unfolding and ordinary kriging ("OK")
- validation of Au grade estimates
- classification of estimates
- resource tabulation and reporting

The resulting historic mineral resource estimate for Akyanga (2018) is summarised in Table 6-5 and accompanying notes.

Table 6-5. 2018 Denny Jones Historic Resource Estimate

Category	Tonnes (millions)	Gold Grade (g/t)	Contained Gold (million oz)
Inferred Resource	44.3	2.16	3.0

1. Mineral Resources which are not Mineral Reserves do not have demonstrated economic viability. The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, marketing, or other relevant issues. The Mineral Resources were estimated using JORC (2012).
2. The quantity and grade of reported Inferred resources in this estimation are uncertain in nature and there has been insufficient exploration to define these Inferred Resources as an Indicated or Measured Mineral Resource and it is uncertain if further exploration will result in upgrading them to an Indicated or Measured Mineral Resource category.
3. Contained metal figures and totals may differ due to rounding of figures.
4. A cut-off grade of 0.5 g/t has been used to report the Mineral Resource.

The Denny Jones 2018 report also outlined an exploration target for the Akyanga East area. The exploration target was reported in accordance with the guidelines of the JORC Code (2012) and considered historic and not compliant with the CIM reporting standards and 43-101 reporting requirements.

The Exploration target was calculated from 10 diamond drill holes (Section 6.7.2). Drill intersections cut the mineralisation with holes angled at approximately 70°. The true width of the mineralisation has been estimated using the dip of the mineralisation and the intersection angle of the drillhole. Down-dip length of the mineralisation has been measured from the intersections at 110 m for 100 m below the surface, and 165 m for 150 m below the surface.

Volume for the smaller case (1,188,000 m3) has been calculated as the average width (3.6 m) multiplied by the strike length excluding the valley less 500 m (3,000 m) multiplied by the down-dip length for 100 m below surface (110 m). Volume for the larger case (2,673,000 m3) has been calculated as the average width multiplied by the strike length including the valley (4,500 m) multiplied by the down-dip length for 150 m below surface (165 m).

For the tonnages, the average density for Akyanga (2.65 t/m3) has been applied. For the Upper Range case, the average grade has been taken as the grade from the central samples (2.43 g/t), and for the lower case, the average grade of all of the intersections has been applied less 20% (1.94 g/t).

The 2018 Denny Jones non-compliant historic Exploration Target for Akyanga East is summarised in Table 6-6.

Table 6-6. 2018 Denny Jones Historic Akyanga Exploration Target

Category	Tonnes (millions)	Gold Grade (g/t)	Contained Gold (million oz)
Upper Range	7.1	2.43	0.6
Lower Range	3.1	1.94	0.2

1. The quantity and grade of the reported Exploration Target are uncertain in nature and there has been insufficient exploration to define an Inferred Resource. It is uncertain if further exploration will result in the estimation of Mineral Resources.

2. A cut-off grade of 0.5 g/t has been used to define the Exploration Target.

7 GEOLOGICAL SETTING AND MINERALISATION

7.1 Regional Geology

Gold mineralisation is hosted in NW-SE trending, approximately 2.5-1.6 Ga Rusizian quartzites, schists and conglomerates of the Kibara Belt, an approximately 2,000 km long, NNE-SSW trending, Proterozoic intracontinental mobile belt situated between the Congo Craton in the west and the Tanzanian Craton in the east (Figure 7-1). The Kibara belt is a well known metallogenic province in which numerous mineralising events have taken place and which hosts both the Twangiza and Namoya mines developed by Banro. The LEDA licence holdings (Figure 4-2) cover 60 km of the Tanganyika graben within the Rusizian belt with the Misisi Gold Project area within the interpreted lower unit.

Wardrop, 2012, report that gold mineralisation in the Kibara belt has traditionally been considered to be related to the 970 Ma, G4 granites, but it is probable that at least some of the gold mineralisation is Pan African in age.

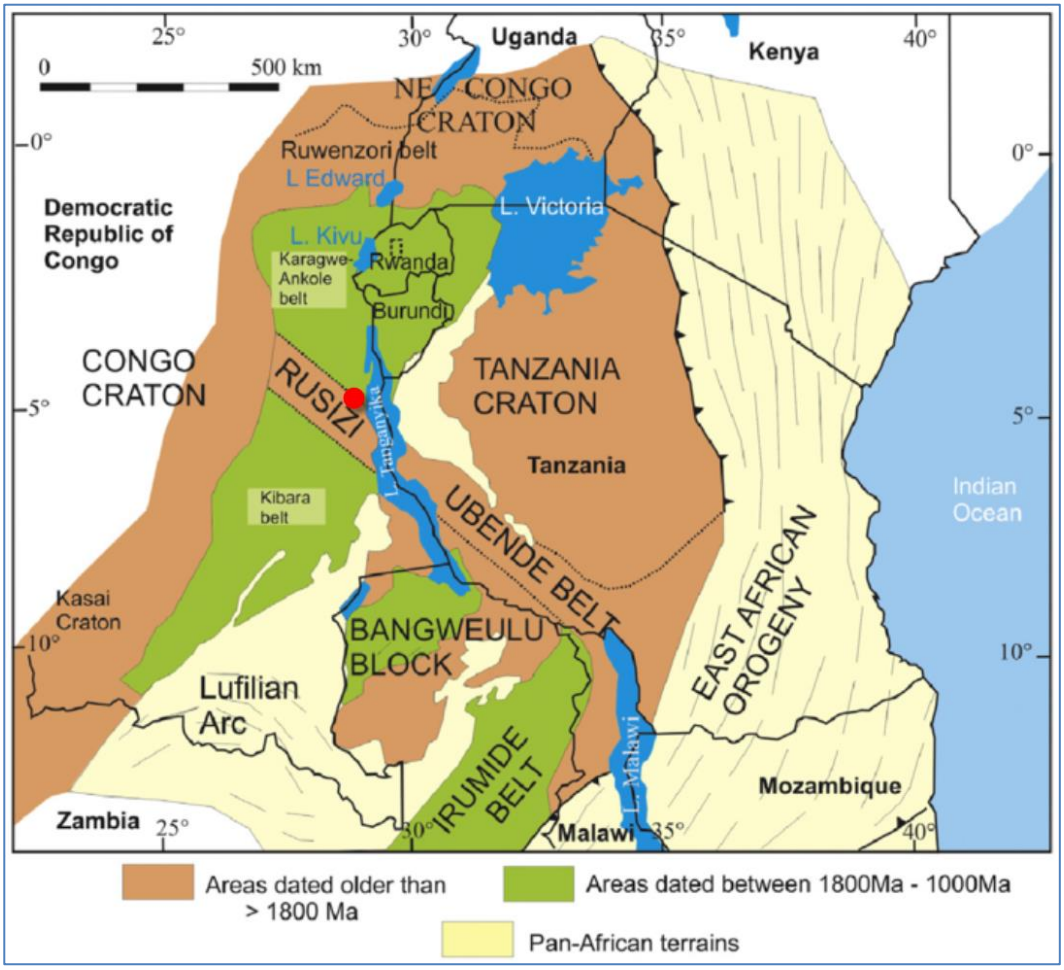

Figure 7-1. **Regional setting of the Akyanga Deposit (red circle) within the context of the Proterozoic Rusizi and Kibara tectonic belts (After Dewaele et al 2011)**

7.2 Local Geology

The Akyanga geology consists of an overturned meta-sedimentary succession and intruded by dolerite and/or gabbro. The geology of the project area is dominated by meta-sediments comprising interbedded quartz muscovite schists, schistose arkoses, muscovite quartzites, and quartzites; pebble conglomerates and foliated mafic intrusion.

Several sub-parallel mineralised zones were established from historical exploration data and Diamond and RC drilling results from CASA. These mineralised zones (Figure 7-2) with strike lengths of up to 2,000 m are generally less than 10 m thick and appear in the southern end of the deposit to be moderate to shallowly dipping to the southeast. In the central and northern parts to the deposit the deposit steepens at surface, such that at the northern end of the deposit, the mineralisation is near vertical at surface and flattening out down dip at depth.

The depth of weathering is estimated to be approximately 30 m. Diamond drilling at Akyanga has intersected numerous gold bearing quartz vein zones. Mineralisation is structurally and lithologically controlled in association with local deformation zones and occurs along north-south striking structures. The current interpretation is that the base of a mafic unit provides a contact with hardness contrast along which there has been structural movement. Apart from the main mineralised zone at and adjacent to this contact, there are four sub-parallel zones below the main

mineralised zone.

The deposit is located within the central section of an area bounded by a thrust zone to the west and by NW trending sinistral fault zones. Regional lineaments interpreted using airborne magnetic surveys (Gradient Enhanced VD1) and K/Th alteration ratio maps. The meta-sedimentary succession has been affected by brittle-ductile deformation. Thrusting has resulted in the overturned sequence at Akyanga.

The strong structural overprint in the region suggests a variable NNE to the NE plunge and a pitch between 30 degrees to 80°. The structural fabric and lineation dominates virtually all the host rocks, with the exception of the intrusive units and is interpreted as being the major control of the location and form of the deformed preferentially gold mineralised quartz "core" veins. The quartz "core" veins are often localised in groups.

The Mineral Resource estimation work detailed in this report uses the CASA interpretation of the mineralisation at Akyanga as the basis of the resource estimate. The deposit has been divided into several mineralised domains which comprise varying amounts of gold mineralisation.

7.3 Geological model

In June 2016, Dr Deon Vermaakt (Vermaakt) was commissioned, by CASA, to review the geological model for the Akyanga Deposit. This review included:

- A review of additional drilling (post-March 2014) not included in the 2014 SRK MRE (six RC holes);
- Lithological mapping (on section) to aid the study by highlighting the dips of the mineralised vein systems;
- The use of structural measurements collected during an earlier field visit including examinations of core and deposit outcrops (Vermaakt, 2013); and
- The use of Leapfrog software to constrain the principal mineralised vein systems (domains) dip directions and plunges.

The results of this combined study demonstrate that the Akyanga Deposit is within a westward converging thrust system with the mineralised vein systems hosted in meta-sediment strata. This led to a revised interpretation of the vein systems as continuous, shallow dipping, lithologically concordant, planar vein forms (Figure 7-2).

These findings are corroborated by CSA (2015) who concluded, on a separate site visit, that the deformation and mineralisation is inferred to be broadly concordant with host strata. Their interpretation implies that mineralisation is likely to be largely planar in form, and laterally continuous, although it may show thickness variations due to pinching and swelling of the multiple shear zones.

AMC reviewed the 2016 geological model and concluded:

- The wireframes created by Vermaakt were compiled at a 0.5g/t cut-off using 3m composites (Vermaakt, 2016). While assisting in the smoothing of the geological model, AMC noted that in several instances the wireframes were not accurately clipped to sample intervals. This was rectified during the current exercise. A 0.3g/t cut-off was used on 2m composites (Section 4.0);

- A shallow dipping, near-surface, top vein (interpreted by Vermaakt, 2016) has been removed from the model. These near surface results, used to classify the vein, are thought to represent contamination in the overburden material intersected in drill holes positioned at the base of the Akyanga ridge; and
- The mineralised vein system model, completed by Dr Deon Vermaakt (2016), is more concordant with host strata. No cross-cutting faults were modelled or included in the current MRE. This is based on observations by Vermaakt (2016) whereby faulting does not result in the material displacement or truncation of the Akyanga Deposit mineralisation.

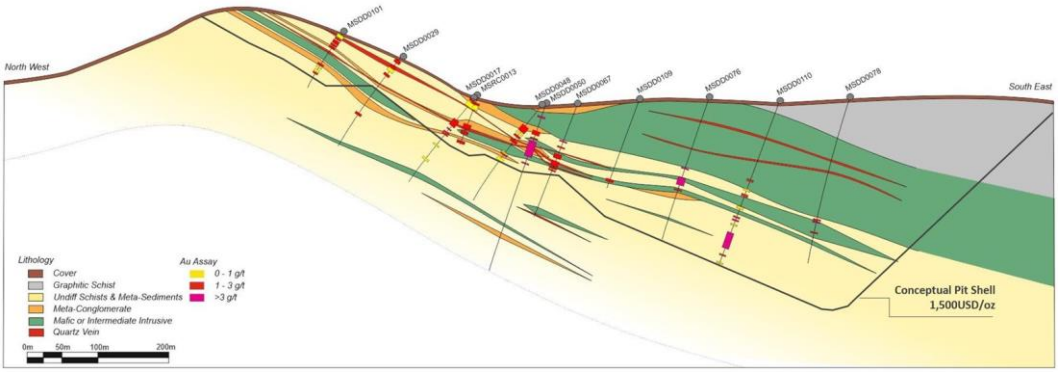

Figure 7-2. **Example cross section through Akyanga Ridge highlighting the relatively shallow dipping and stratiform nature of the mineralisation and the close association with thin stratabound mafic intrusives (*After ARC Minerals 2018*)**

7.4 Mineralisation

Mineralisation on the Akyanga ridge within the Misisi Gold Project area appears to be located within competent metaquartzite/conglomerate units with minor specular hematite bands. Minor associated sulphides (pyrite/pyrrhotite) and specularite hosted within broad quartz vein systems have been correlated with visible gold. This has been recorded both during surface mapping, in which the extent of mineralisation has been identified based on spatial distribution of artisan pits, and veins and veinlets logged within drill core which frequently have associated halos of mineralisation occurring in fractured quartzite with distinctive hematite rich oxidation. The host quartz veins vary in thickness from cm-scale to packages in excess of 200 m thick. Veins exploited by artisanal miners typically range in thickness from 0.5 – 2 m.

Initial cyanide bottle roll testwork completed on a suite of early Misisi drill core samples confirmed significant free- milling coarse gold (which is currently targeted within high-grade shoots and exploited by local artisanal workings) with only minor sulphides. Potential recoveries in excess of 91% were recorded for all samples which underwent analysis.

8 DEPOSIT TYPES

Wardrop [4], reports that the Akyanga deposit is hosted by quartz veins and, to a lesser extent, alteration haloes, within a mesothermal shear zone setting. The quartz veins appear to be syntectonic with the N-S trending shear zone which was the primary control on mineralisation. Mineralisation is concentrated in zones of dilation, or structural “jogs”, within the approximately

200 m wide shear zone.

Based on field observations combined with drill data and software modelling Vermaakt (2016) interpreted the Akyanga deposit as being located within a westward verging thrust system with the mineralised vein systems hosted in meta-sediment strata. This led to a revised interpretation of the vein systems as continuous, shallow dipping, lithologically concordant, planar vein forms.

These findings are supported by the later field work (CSA, 2015) who concluded, on a separate site visit, that the deformation and mineralisation is inferred to be broadly concordant with host strata. Their interpretation implies that mineralisation is likely to be largely planar in form, and laterally continuous, although it may show thickness variations due to pinching and swelling of the multiple shear zones.

The further work of AMC (2017) noted that the mineralised vein system model, completed by Dr Deon Vermaakt (2016), is more concordant with host strata and no cross-cutting faults were modelled or included in the Resource modelling described herein. This is based on observations by Vermaakt (2016) whereby faulting does not result in the material displacement or truncation of the Akyanga Deposit mineralisation and marks a significant change in interpretation from that of the earlier interpretations (2014).

9 EXPLORATION

No exploration work has been carried out by the current issuer on the Misisi Project.

10 DRILLING

No drilling work has been carried out by the current issuer on the Misisi Project. The current Mineral Resource estimate for the Akyanga deposit was based on 105 diamond drillholes (19,069.85 m) and 6 RC drillholes (887 m), drilled primarily in 2011-2014 with minor infill in 2016.

All aspects of these programmes are described in detail in section 6.7 Drilling, including drilling, logging, core handling, sampling and security protocols, which conform to recommended industry practices.

Down-hole surveying was carried out on all holes and the collars were surveyed and marked with monuments.

All drill core was cut in half with a diamond saw, half being returned to the core tray and the other half being prepared for assay. All samples were shipped to internationally certified laboratories (SGS or ALS) in Mwanza, Tanzania, for preparation and analysis.

CRM's were added to the sample stream at approximately 6% and blanks were added at 2%. No systematic duplicate sampling was carried out.

11 SAMPLE PREPARATION, ANALYSES AND SECURITY

11.1 Introduction

Samples were initially submitted to the SGS Laboratory ("SGS") in Mwanza, Tanzania for preparation, where they were dried and pulverised to 75 microns (µm) before being analysed at the same laboratory. From drillhole MSDD0010 onwards, samples were submitted to the ALS Minerals ("ALS") facilities in Mwanza for preparation, and subsequently to ALS in Vancouver and Johannesburg for analysis. Samples from drillhole MSDD0084 onwards at Akyanga-Mdende and all holes at Tulonge (TLDD0001 – TLDD0007) were submitted to SGS accredited laboratory at Mwanza, Tanzania. The ALS Vancouver analytical facility is ISO 9001:2008 accredited and has received accreditation to ISO/IEC 17025:2005 from the Standards Council of Canada (SCC). The ALS Johannesburg laboratory is ISO/IEC 17025:2005 accredited for sample preparation and analysis. The Laboratories utilised for the analytical work were employed on an independent consultant basis and have no relationship with the Company.

11.2 Sample Preparation and Analysis

11.2.1 Sample Preparation

Samples sent to the laboratory are packed in sealed A0 plastic bags and packed into polyweave sacks sealed by cable ties. The samples were sent by road to Bukavu, where they were received by CASA's logistics staff, samples were then forwarded to the ALS laboratory in Mwanza via road for sample preparation. Sample preparation methods used by ALS Laboratory at Mwanza, comprised the following procedures:

- Samples layout and primary weighing;
- Drying of the whole sample at 100-110°C (roughly 4 kg/m drilled at HQ3);
- Crushing of the whole sample with Quality Control ("QC") requiring 70% of sample passing through a 2 mm sieve (or better) and using a jaw crusher. Sampling for QC at the first sample, on each individual machine, each lot/matrix, or when new adjustments are made. Cleaning with compressed air between each sample. Cleaning with sterile quartz each different lot or more if necessary;
- Sample splitting with riffle splitter or directly from the crusher. Subsample of 250-500g;
- Pulverisation of the 250-500 g subsample using a "flying disc" or "ring and puck" style grinding mills. QC every 20 samples requiring 85% of sample passing through a 75um (200 mesh) sieve or better. Cleaning with compressed air between each sample.

11.2.2 Sample Analysis

ALS transported the prepared pulps over to its laboratories in Vancouver and Johannesburg by airfreight for final analysis.

Drill core, rock and trench samples are analysed as 50 g aliquots by fire assay with an Atomic Absorption Spectroscopy ("AAS") finish. The lower detection limit is 0.01 g/t Au. Samples have to date been assayed only for gold.

All QC data are registered in the Laboratory Information Management System ("LIMS") system

and assay results were returned to CASA in electronic format and loaded into the sample database with the batch number and date of assay recorded after review by CASA personnel for QAQC.

11.2.3 Verification and Security

Trained LEDA staff were involved at all stages of the sampling, sample packaging and sample transportation process. During the drilling programme staff members were based full time at the drill rig site to supervise the drilling and data recording and to complete preliminary geological logs of the drill core. This included an onsite technician or geologist and project geologist supervisor.

Samples sent to the laboratory are packed in sealed A0 plastic bags and packed into polyweave sacks sealed by cable ties. The samples are then sent by road to Bukavu, where they are received by CASA / ARC logistics staff, samples are then forwarded to the ALS laboratory in Mwanza via road for sample preparation.

ALS transports the prepared pulps over to its laboratories in Vancouver and Johannesburg by airfreight for final analysis.

11.3 Density Determination

Density measurements are carried out using Archimedean principles for consolidated fresh core.

Bulk density for consolidated material is calculated using the formula W1/(W1-(W3-(W2-W1)-(W4-W1))), where W1 is dry weight, W2 is weight with plastic, W3 is weight in water and W4 is the wet weight. Weights are recorded manually from a mechanical 'dial' scale set and entered into the electronic database.

The drillhole database presented to the consultant, which forms the basis for the current reported Mineral Resource estimate, contains a total of 4039 density samples taken from surface to a maximum downhole depth of 320m with an average sample core length of 12cm. Average density for the complete database is 2.66t/m3 with a range of outliers between 1.06-4.8.

11.4 QAQC Program

11.4.1 CRM (Standards)

CASA introduced fourteen CRM's at a percentage of 6% of the total submitted sample population, each in 50 g sealed sachets, covering a range of Au grade concentrations. CRM's were sourced from African Mineral Standards and were monitored via a robust assessment of laboratory returns using ±2 standard deviations to establish that they were sufficiently accurate and suited to the mineralisation related to the project (Table 11-1). Re-assays were ordered for problematic CRM's.

Table 11-1. CRM standard results

CRM reference ID	CRM reference Value (Au ppm)	Std Deviation	-3 STD	-2 STD	+2 STD	+3 STD	Returning Mean Value (Au ppm)	Number of samples
AMIS0023	3.57	0.26	2.79	3.05	4.09	4.35	3.47	43
AMIS0030	21.42	1.24	17.7	18.94	23.9	25.14	20.47	21
AMIS0042	0.802	0.084	0.55	0.634	0.97	1.054	0.82	10
AMIS0043	1.65	0.17	1.14	1.31	1.99	2.16	1.63	93
AMIS0044	2.9	0.19	2.33	2.52	3.28	3.47	2.85	148
AMIS0080	1.14	0.1	0.84	0.94	1.34	1.44	1.14	34
AMIS0103	4.73	0.38	3.59	3.97	5.49	5.87	4.43	92
AMIS0174	2.13	0.1	1.83	1.93	2.33	2.43	2.1	94
AMIS0175	0.5	0.05	0.35	0.4	0.6	0.65	0.5	88
AMIS0181	1.39	0.08	1.15	1.23	1.55	1.63	1.37	11
AMIS0183	2.78	0.16	2.3	2.46	3.1	3.26	2.75	8
AMIS0232	3.29	0.2	2.69	2.89	3.69	3.89	3.37	9
OXD43	0.401	0.021	0.338	0.359	0.443	0.464	0.4	20
OXH52	1.291	0.025	1.216	1.241	1.341	1.366	1.28	23

11.4.2 Blanks

Blank pulps were inserted at a rate of 1:50 (2%). Results are shown in Figure 11-1. Blanks were submitted "blind" to the laboratory. There is some minor occurrences of elevated grade indicating possible laboratory contamination but the rate of occurrence and the lack of trend does not signify a material issue and the consultant consider the laboratory facilities to be appropriate for analysis of fine gold samples.

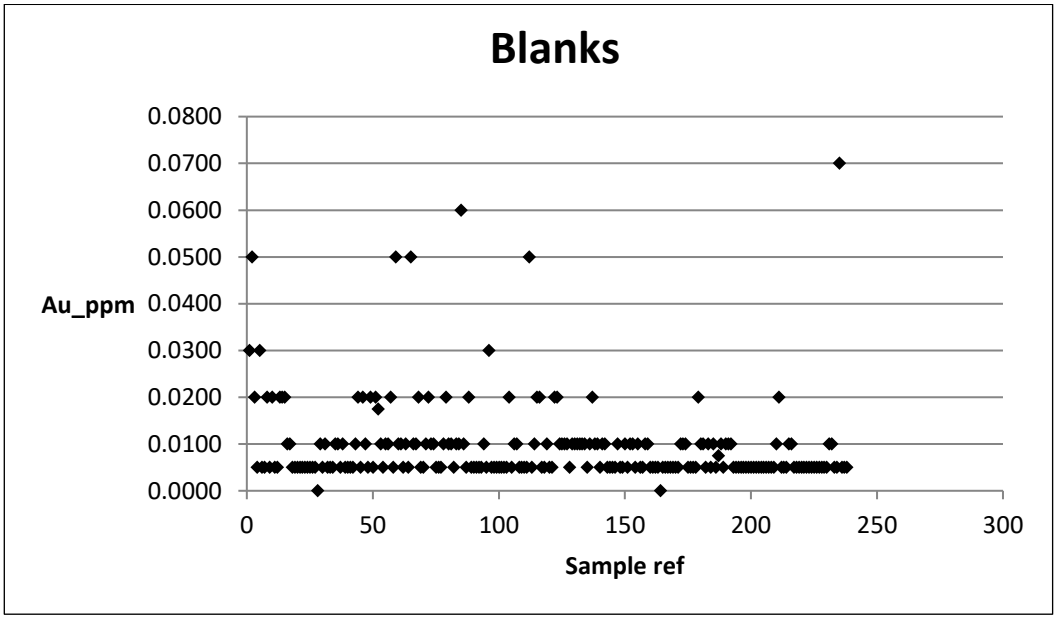

Figure 11-1. Results from analysis of 239 blind submitted blank samples

11.4.3 Duplicates

The company did not routinely insert duplicate and repeat samples into the analysis sample

stream, but rather relied on the results from the internal laboratory duplicate protocol which consists of three repeat assays from the same prepared sample. Therefore these are not true duplicates in that they are being generated from the same (single) sample and not from three separate samples produced from the same drill interval. Additionally, as these are in-house repeats within the laboratory, they cannot be considered "blind" and independent. Notwithstanding, the laboratories used throughout the drilling and sampling programmes at Akyanga are all internationally certified and subject to rigorous checks and certification requirements.

11.5 Conclusions

Overall the QAQC which has been carried out at Akyanga is considered appropriate for the style of mineralisation and expected grades. The number of samples taken and their frequency is within what would be considered "best practice" and the results from site inspection by both SRK and AMC confirm the quality of the work. Notwithstanding the above, there are a couple of points which should be considered:

- The number of CRM's used is high and several have similar average values and ranges which intersect. It may be worth reducing the number of CRM's which would allow larger populations of the remaining to be built up. This should be done while maintaining the current range from very low to high grades.
- Production of duplicate field samples should be considered to allow better determination of, not only small scale variation within individual samples, but also a better idea of potential lab variability and quality.
- The company should also consider sending repeat samples to the laboratory from those already assayed, after changing the sample number to ensure they are "blind" to the laboratory.
- There is no discussion on potential coarse gold and screen fire assay work has not been carried out.
- Ephraim Masibhera (QP) has reviewed the sample preparation, analysis and security and believes that it was conducted using the best practices as outlined by Canadian Institute of Mining, Metallurgy and Petroleum (CIM). The sampling preparation, security and analytical procedures used are consistent with generally accepted industry best practices and are therefore adequate for resource database compilation.
- Dr John Arthur reviewed the QA/QC work undertaken by CASA and has concluded that it was of acceptable standard for the type of sampling conducted. Dr Arthur believes that for the drilling programs sufficient standards and blanks were added to the sample stream for the purposes of checking on the quality of the assay laboratories used.
- Overall, the validation and the analytical quality control data examined by Dr Arthur suggest that gold grades are reasonably reproduced, and that the assays are generally reliable for the purpose of resource estimation.

12 DATA VERIFICATION

A site visit was done by QP Ephraim Masibhera on 11 May 2021 to Misisi Gold Project. During the

visit there were no exploration activities but the following verification was done to confirm the data in the technical reports:

12.1 Sampling and logging verification

The Misisi Gold Project exploration camp is properly managed and is in good order.

The core was found to be packed properly and a few drill holes were laid down to confirm the geology and mineralization and compare with the data captured in the database being used for resource estimation (Figure 12-1). The core consists of half core that remained after sampling and some zones have quarter core remaining from the metallurgical sampling that took place. The remaining core is in good order and can always be used for further analysis.

Figure 12-1. Core inspection during QP site visit.

The core trays are stored under a roofed shed and clearly marked and labelled for further use. It was very easy to locate the selected drill holes during the visit (Figure 12-2).

Figure 12-2. Core trays with historical core from drilling programmes.

12.2 Drill hole collar verification

During the site visit only one drill hole was observed and confirmed by comparison of GPS coordinates taken and the coordinates in the database. Most of the drill holes have the standpipes removed by the artisanal miners who are using them for support in the adits. Figure 12-3 shows the collar for MSD000128 as observed during site visit. The orientation of the drill hole was confirmed to be about 70°.

Figure 12-3. MSD00128 collar position

12.3 Verification of Local resources and Infrastructure

The project area can easily be accessed. Travel by air is the most efficient in terms of time. An airstrip in nearby Lulimba has been renovated and licensed allowing for charter flights from Kalemie and Bukavu. Airport links from Lubumbashi to Lulimba is available through private charter and only a 10 km section can be completed by road from Lulimba to the project area by a gravel road that require grading. The dirt roads, tracks and footpaths can be accessed by 4x4 vehicles only. Bridges were found on route to the project site although some may require repairing to allow heavy vehicles transporting mining equipment.

The project has good mobile phone and internet coverage.

12.4 The data verification procedures applied by the qualified person;

During the current exercise no additional samples were collected by Kweneng QP for verification purposes. Mineralized intersections recorded in the database for drill holes MSD0002, MSD0004, MSD00032, MSD00034 and MSD00080 were confirmed on the core from the stored core trays in the yard. The drill core was found to be in good order and can be sampled for future verifications. Below is drill hole MSD0002 which shows the intersected mineralized quartz vein from 65-70m

grading at an average grade of 7,75g/t. Several quartz veins were noted on each drill hole as reported from the previous reports. Structural analysis of the quartz veins to define the vein styles and type of veins is required. This can be done by the re-logging of the available core before further exploration is done for efficient strike and down-dip targeting of mineralisation. The quartz veins show evidence of brittle nature whilst the host rocks exhibit ductile deformation with mylonitic fabric strongly present.

Figure 12-4. **MSD0002 mineralized quartz vein (60-70m).**

Figure 12-5. **Quartz vein overlaying conglomerate from Akyanga ridge which is currently being mined by the artisanal miners.**

Figure 12-6. Quartz stockpile from artisanal mining activities ready for processing.

Due to time and access constraints only Akyanga deposit was visited, the other exploration targets namely Kilombwe, Lubitchako, Mdenge, Ngalula and Tulonge could not be visited by the QP.

In the opinion of the QP, the sampling preparation, security and analytical procedures used by ARC are consistent with generally accepted industry best practices and are therefore adequate.

Although no verification sampling was done by the QP on site visit, the presence of over 2000 artisanal miners on the Akyanga ridge shows that the oxide quartz vein is mineralised and of high grade with coarse and fine gold being recovered by the artisanal miners.

Figure 12-7. Akyanga ridge artisanal mining activities.

Geological observations made by the QP on site visit verify the mapping of Akyanga project and historical data being used for resource estimation. Quartz vein with pyrite and some chalcopyrite was observed with some intersections showing native gold on the remaining half core which is evidence that there is mineralization on the property as illustrated by previous studies.

Based on the data verification performed, the collar coordinates, downhole surveys and assay results are considered suitable to support Mineral Resource estimation at the Misisi Gold Project.

13 MINERAL PROCESSING AND METALLURGICAL TESTING

13.1 Introduction

As part of the original 2013 study, a small number of samples were selected for preliminary metallurgical testwork. All testwork was carried out by SGS in Mwanza, Tanzania. The following reports discuss the work carried out and the results obtained. A summary is included below:

- SGS Test Report, Metmin Report No: 13/018, Gold Deportment Study on Two Gold-Bearing Samples from the Misisi Gold Project, Mngoma and Lombard, 26 April 2013;
- SGS Test Report, Metmin Report No: 13/133, Comminution and Metallurgical Testwork, Fick and Stanek, 11 September 2013;
- SGS Test Report, Metmin Report No: 13/145, Simulated Heap Leach and Percolation Rate Tests on an Oxide Sample, Fick and Stanek, 18 December 2013.

13.2 Gold Deportment Testwork

13.2.1 Sample Preparation

Two samples of about 25 kg of each (1 oxide and 2 transitional) were required for the gold deportment testwork. Each sample was crushed to approximately 100% passing 1.7 mm and blended, then milled down to approximately 80% passing 75 µm.

Each sample was split into the following aliquots:

- 2 x 10 kg split aliquots for gravity concentration followed by dissolution appraisal;
- Approximately 500 g split aliquot for grading analysis;
- Approximately 500 g split aliquot for Heavy Liquid Separation ("HLS");
- Approximately 250 g split aliquot for head assay;
- Approximately 10 g of each sample for XRD analysis;
- Approximately 250 g of the head material was split for the preparation of polished blocks for mineralogical investigation;
- Approximately 10 kg for diagnostic leach testwork.

13.2.2 Test Work Results and Conclusions

The Akyanga samples, labelled AKMET 01 for the transitional sample and AKMET 02 for the oxide sample, were submitted for chemical, mineralogical and metallurgical assessment with the resulting data discussed below. Due to uncertainties in the metallurgical results obtained from gravity and intensive leach on sample AKMET 01, the test work had to be repeated on sample AKMET 03, which was equivalent to sample AKMET 01. Since this work was undertaken (2013), the depth of the ore resource has been increased significantly through deeper drilling and this may reflect in different recoveries.

Approximately 91% of the AKMET 01 sample and approximately 87% of AKMET 02 was SiO_2. The head grades of the samples were 2.84 g/t Au and 2.13 g/t Au for the AKMET 01 and AKMET 02 samples, respectively. The loss on ignition was low as was the total S and organic carbon. Arsenic was below detection for the AKMET 01 sample (<0.01%) and 0.01% for the AKMET 02 sample, implying that the Au in these samples is not refractory or associated with arsenopyrite.

The grading analysis on the AKMET 01 sample indicated that the Au is progressively upgraded into the finer size fractions, with the occurrence of coarse gold. The skewed distribution of Au in the AKMET 02 sample is a result of the nugget effect, similarly to the AKMET 01 sample, the AKMET 02 sample is upgraded into the finer size fractions.

The HLS analysis results for the Akyanga samples indicated that approximately 55% of the Au in the AKMET 01 sample and approximately 45% of the Au in the AKMET 02 sample was gravity recoverable as determine by HLS. These results we confirmed when the gravity tests were conducted, where a close agreement was noted between the HLS and gravity tests; implying that these samples are amenable to gravity recovery.

Bulk Mineralogical Analyses (QEMSCAN) were conducted on the head and gravity concentrate. These results were validated and compared to the XRD analysis and all the results were in close

agreement. The head samples were dominated by silicates, approximately 97% and approximately 94% silicates for the AKMET 01 and AKMET 02 respectively. The gravity concentrates where also dominated by the silicates (approximately 61% for the AKMET 01 sample and approximately 57% for the AKMET 02 sample), with abundant amounts of Fe-oxide/hydroxide (approximately 31% and approximately 39% for the AKMET 01 and AKMET 02, respectively).

The QEMSCAN Trace Mineral Search analyses of the gravity concentrates showed that almost all of the Au occurred as native Au in both the samples. These grains occurred in particles which ranged in size from 1 μm^2 to 7702 μm^2 in the AKMET 01 sample and between 1 μm^2 to 10380 μm^2 in the AKMET 02 sample. The GSD results indicated that at 80% passing 75 µm, most of the Au will be exposed. Sample AKMET 02 was slightly coarser than sample AKMET 01.

The liberation of Au in both the gravity concentrate samples was very high, with liberation of approximately 82% Au and approximately 81% Au in the AKMET 01 and AKMET 02, respectively. Some of the Au was associated with silicates and oxides, with lesser Au grains associated with poly phase minerals. Approximately 2% of the Au grains in the AKMET 01 and approximately 1% in the AKMET 02 samples were associated with sulphides.

13.3 COMMUNITION AND SIMULATED HEAP LEACH TEST WORK

13.3.1 Sample Receipt and Preparation

Two samples representative of oxide material (AKMET04), weighing approximately 136 kg and transition material (AKMET05) weighing approximately 178 kg were collected in October 2013 from the Akyanga deposit. Existing core was used and the samples sent for comminution and metallurgical test work at SGS South Africa.

Collection of these samples followed the guidelines listed below:

- Required total weight for oxide sample was 100 kg and transition sample was 175 kg;
- Average grade of sample approximately 2.5 g/t which is higher than the reported average grade for the resource (2.16g/t Au);
- Sample was obtained by halving existing halved diamond drill core;
- Sample from mineable intersects with representative grade ranges (has some high and low values and includes internal dilution similar to a possible mined width);
- Sample from holes representing good spread strike wise along the ore body;
- Maximum vertical depth of samples at around 100 m below surface, to represent ‘early’ open pit production.

In classifying oxidised versus transitional material, presence of sulphides and ferruginisation were used as key indicators, as well as alteration/weathering, as follows:

- Oxidised – mineralized intervals with no fresh sulphides (box works or pseudo morphs of pyrite sometimes present), highly weathered intervals near surface and highly ferruginised (altered)/sheared intervals at depth;
- Transition – mineralized intervals with fresh sulphides (rarely observed), mainly competent rock material and moderately to weakly ferruginised, with oxidation on fractures.

Some oxidised material exists at depth. This is believed to be mainly related to contacts of chloritic

schists and the other highly siliceous metasediments.

Following the guidelines above, these samples were collected from 41 holes for transition material and 27 holes for oxide material.

13.3.2 Comminution Test Work

Tests were performed on the transitional mineralisation sample to determine the Bond Ball, Rod, Crushability and Abrasion work indices. The abrasion test, carried out on a composite, gave a result of 0.2642.

13.3.3 Flowsheet Testing

Three proposed flowsheets were tested:

- Flowsheet 1:Two-stage milling and CIL, with gravity concentration in the primary milling circuit;
- Flowsheet 2:Gravity concentration at a coarse grind with the tailings being heap leached;
- Flowsheet 3: Crushing to <10 mm followed by screening at 1.18 mm. The +1.18 mm material being heap leached and the -1.18 mm portion subjected to gravity recovery and screened at 0.15 mm. The +0.15 mm material is added to the +1.18 mm on the heap, the -0.15 mm is subjected to CIL.

13.4 Simulated Heap Leach

13.4.1 Sample Preparation

52 samples (approximately 1 kg each) were composited to form AKMET 06 Oxide composite of 52 kg. The composite sample was crushed to 100% <8 mm and then riffle split to two aliquots of 26.5 kg. Each aliquot was rotary split to 10 aliquots and 8 opposite cup aliquots were combined to form two aliquots, approximately 20 kg each, for the percolation rate test. The 2 remaining aliquots were recombined and rifle split to two aliquots of approximately 5.3 kg. One aliquot was subjected to simulated heap leach test and the remainder of the aliquots were stored.

13.4.2 Simulated Heap Leach Test Work

The composite was crushed and bottle-roll leached for seven days. Gold dissolution of 65.2% was achieved. Percolation tests were carried out on agglomerated and un-agglomerated samples. No ponding was observed at rates up to 100 l/h/m^2.

13.5 Test Work Discussion

The test work on drill core from drill programs prior to 2014 showed that the ore was not refractory and that good recoveries could be expected from gravity and leaching techniques. The extent of mineralization was since increased by deeper drilling. No testwork has been undertaken on core from this level of the mineralization.

The mineralization hardness is considered to be medium. The crushing index indicated soft to medium, indicating that little difficulty would be experienced in the crushing and comminution stages.

Generally, all recoveries were high, the heap leach results being especially promising. As the cost

of diesel-generated power was known to be high, it was decided that the flowsheet should be simplified by the elimination of the gravity recovery step and associated high-intensity leaching. Gravity concentrate was shown to have very good leaching characteristics and it was concluded that this material would leach without being concentrated.

The lack of ponding at high flow rates indicates good heap permeability was to be expected and so no agglomeration step was included in the proposed flowsheet. The recovery for the simulated seven day heap leach was lower than that previously reported for oxides at 65.2% but the slope of the curve indicates that longer leaching times will result in improved recoveries.

Testwork has been carried out by a reputable laboratory and indicates that the mineralisation is amenable to gravity recovery and leaching. Additional testwork is recommended to test gold recoveries on material added to the mineral resource since 2014 much of which is from a depth below that of the previous resource and sample collection points.

14 MINERAL RESOURCE ESTIMATE

14.1 Introduction

In June 2018, Ivor Jones (Denny Jones Pty Ltd) completed a mineral resource estimate for the Akyanga deposit using data provided by ARC Minerals, and geological interpretations also provided by ARC Minerals.

The Mineral Resource Statement presented herein has been reported in accordance with NI-43-101. The Competent Person who assumes responsibility for reporting of the Mineral Resource is Dr John Arthur who is independent of Valorem and Regency. Dr Arthur has carried out detailed validation and verification of the Mineral Resource estimate produced by Ivor Jones (as described in Section 6.8.2) and is satisfied that the data quality, methodology and results reported by Ivor Jones [4] are appropriate and are a reasonable and accurate reflection of the tonnes and grade as reported at the level of confidence quoted. The effective date of the resource statement is September 30, 2022.

The Lead Author is not aware of any permitting, legal, title, taxation, socio-economic, and marketing that could materially affect the Mineral Resource.

14.2 Database Validation

14.2.1 Data Provided

The drillhole database used by Denny Jones for the 2018 Mineral Resource estimate, was provided by ARC Minerals. The data was provided as datamine format digital files from the ARC Minerals database and contained collar, survey, assay, geological codes and specific gravity data.

Digital terrain models (DTMs) for the topographic elevation were provided by ARC Minerals, together with five solids for the mineralised zones.

The June 2018 Mineral Resource Estimate for the Akyanga deposit was based upon information from 105 diamond drill holes and 6 RC drillholes (Appendix A).

The sample database and the topographic surface were reviewed and validated by ARC Minerals prior to being supplied to Denny Jones. Denny Jones carried out additional validation checks and found no material issues with the database supplied. The validation exercise carried out by the Lead Author has confirmed the integrity of the database.

14.2.2 Approach

The basis of the resource estimates for the Akyanga gold deposit was prepared in the following steps:

- digital data validation
- data preparation
- exploratory data analysis of Au values
- Geological interpretation and modelling (wireframing)
- establishment of block models
- coding and compositing of assay intervals
- consideration of grade outliers
- derivation of kriging plan and boundary conditions
- variogram analysis and selection of appropriate kriging parameters
- grade interpolation of Au using OK and check estimates using RBF interpolation
- classification of estimates
- resource tabulation and resource reporting

This estimation method was chosen because of the broad drill spacing, the confidence in the interpretation, and the advantages of kriging in considering the clustering of data.

14.3 Domain Modelling

The deposit is split into 5 separate, hard boundary, grade domains for the purpose of Resource estimation (Figure 14-4 to Figure 14-5). The numbering order is from uppermost (1) to lowermost (5). Domains 1-4 are roughly equal in areal extent although thickness varies considerably both between and within individual domains from 1m to +20m in places. Domain 5 is significantly smaller than the others. The overall mean thickness for the combined domains is 6.3m but varies up to a maximum of 47m in domain 1. In general, the thickness intervals are positively skewed with the majority of the intervals clustered around the mean and the thicker intervals occurring as outliers.

	Value
Count	91.00
Mean	8.94
SD	8.40
CV	0.94
Variance	70.48
Minimum	1.00
Q1	3.68
Q2	6.04
Q3	11.31
Maximum	46.77

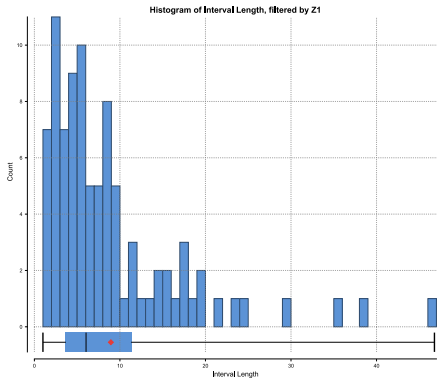

Figure 14-1. Mineralised domain interval thickness plots – domains 1

	Value
Count	94.00
Mean	6.58
SD	6.09
CV	0.93
Variance	37.03
Minimum	0.01
Q1	1.78
Q2	4.85
Q3	10.13
Maximum	27.22

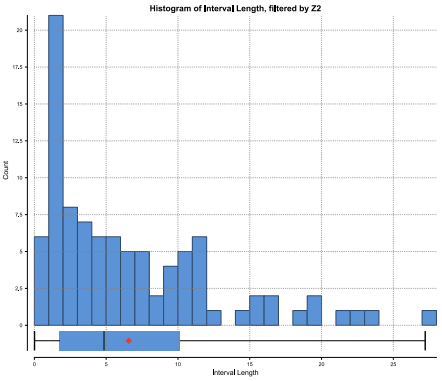

Figure 14-2. Mineralised domain interval thickness plots – domains 2

	Value
Count	78.00
Mean	4.76
SD	4.94
CV	1.04
Variance	24.40
Minimum	0.49
Q1	1.53
Q2	2.64
Q3	5.42
Maximum	21.42

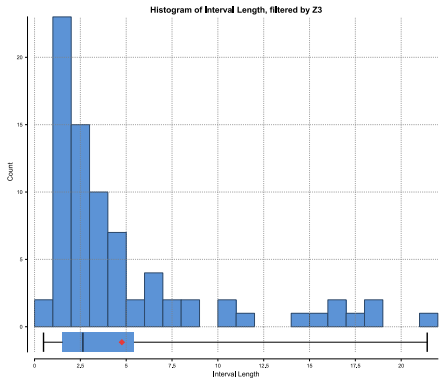

Figure 14-3. Mineralised domain interval thickness plots – domains 3

	Value
Count	50.00
Mean	3.45
SD	2.90
CV	0.84
Variance	8.43
Minimum	0.52
Q1	1.49
Q2	2.59
Q3	4.01
Maximum	12.06

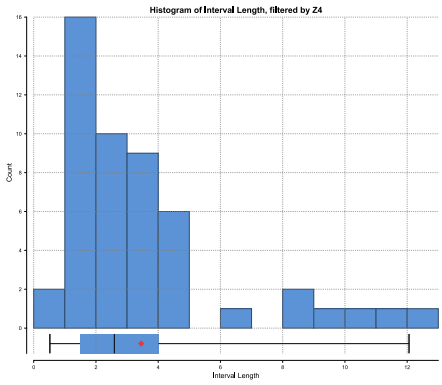

Figure 14-4. Mineralised domain interval thickness plots – domains 4

	Value
Count	5.00
Mean	5.99
SD	10.52
CV	1.76
Variance	110.63
Minimum	0.53
Q1	0.80
Q2	0.87
Q3	3.03
Maximum	24.72

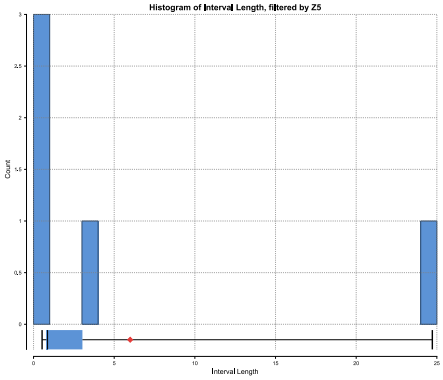

Figure 14-5. Mineralised domain interval thickness plots – domains 5

Figure 14-6 shows a plot of interval composite grade plotted against the corresponding domain thickness. The plot is log transformed on both axes to emphasise any trend. However, it is clear that there is little to no correlation between the thickness of individual domains and the grade of the interval.

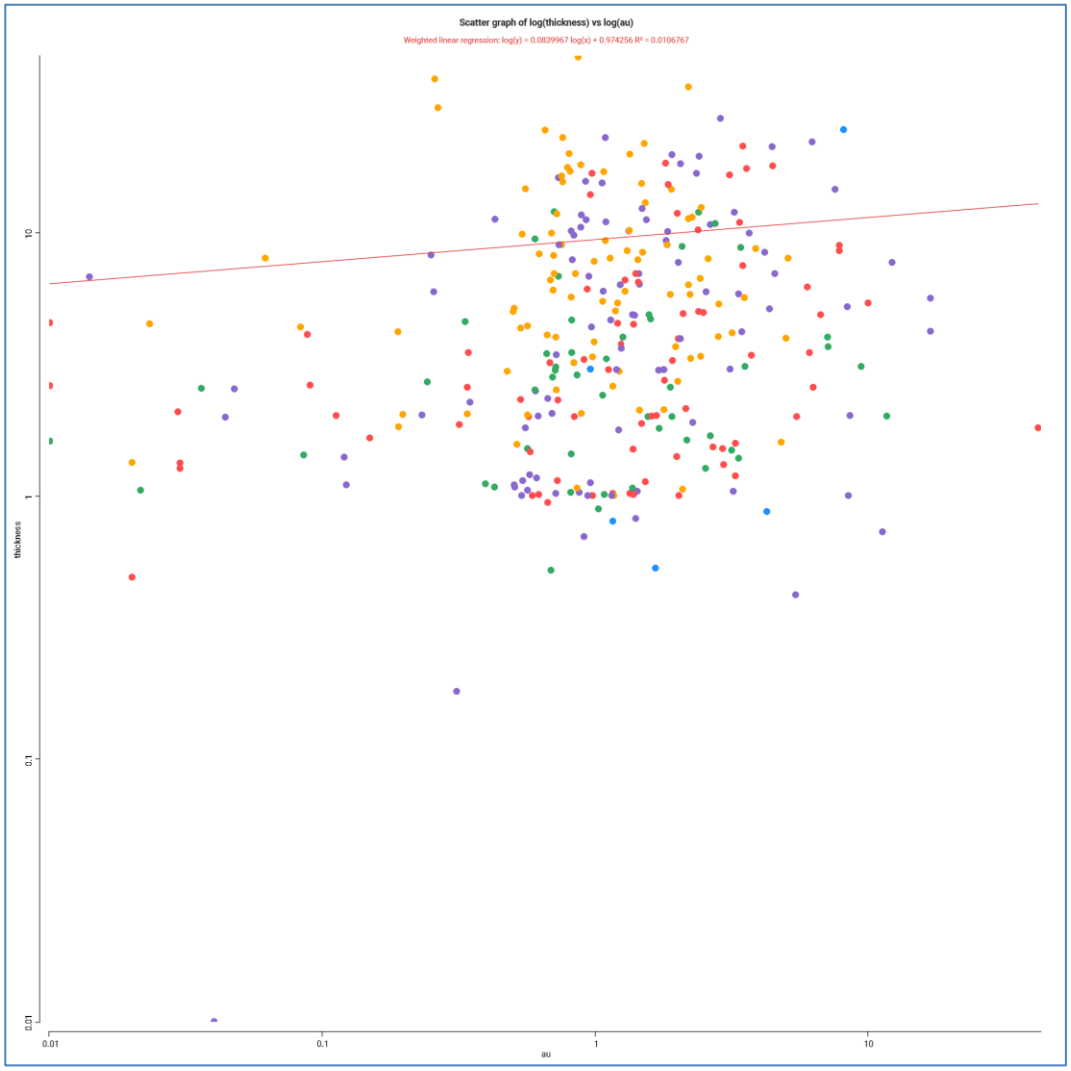

Figure 14-6. grade vs thickness plot for the combined mineralised domains (coloured by domain zone)

There is a moderate degree of confidence in the geological framework in the interpretation presented. Orientation of the structural zones included use of artisanal workings to assist the interpretation. There were five mineralised volumes interpreted and used for the grade modelling described below. Drillhole spacing is not on a regular grid pattern, partially due to different campaigns and also because of lack of suitable pad locations owing to extensive artisanal workings in some areas. Figure 14-7 below, give some idea of the irregular drill collar spacing in relation to the current mineralisation domains. Modelling of these domains is based initially on grade whereby the relatively hard grade boundary can be easily discerned from the assay results. This is followed up by an interpretation of the host lithology units to allow continuity within the five domains to be confirmed both along strike and in the dip direction. The overall form of the deposit changes from the north, where it is predominantly steeply dipping to the east, to the central and south where the units tend to flatten towards the east (Figure 14-8 and Figure 14-9). Average dips in the steeply dipping area are in the order of between 60-80^{o} whereas in the south and east the dip flattens to between 20-30^{o}.

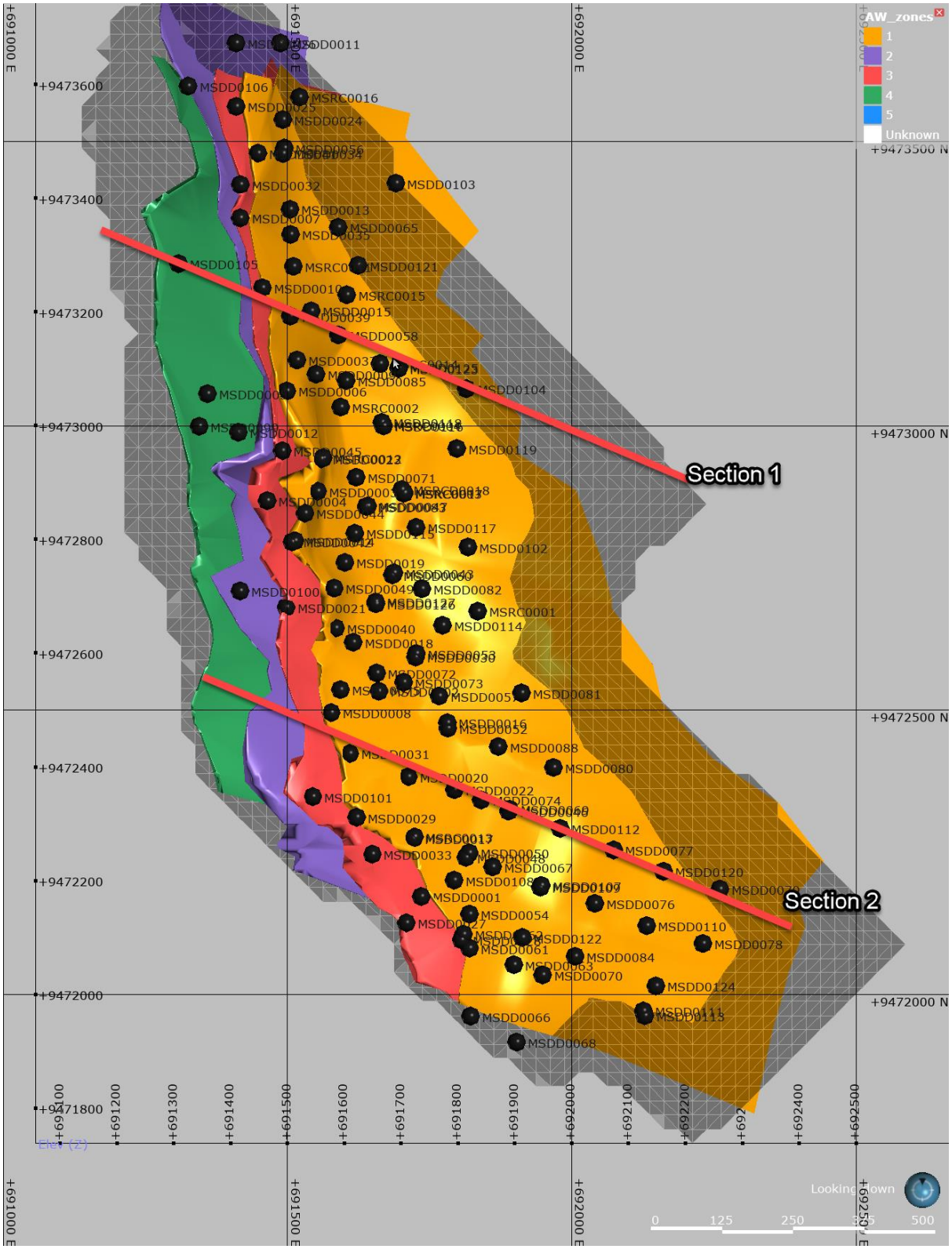

Figure 14-7. Plan view of drill collar locations at Akyanga Ridge deposit and conceptual Resource pit shell (RF1)

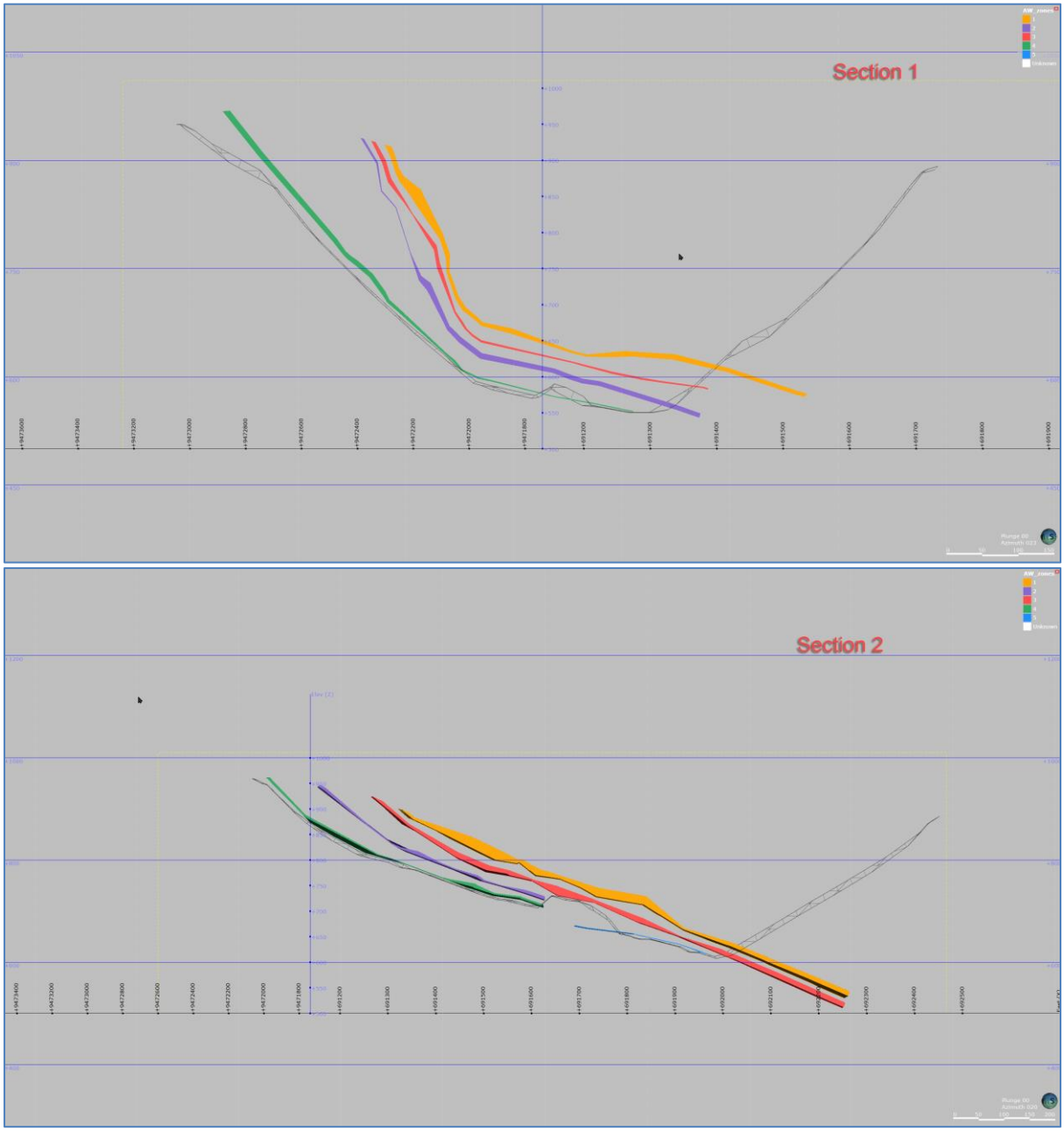

Figure 14-8. Cross sections through the Akyanga Ridge deposit in the north and south of the Mineral Resource domain highlighting how the dip changes with latitude (refer to Figure 14-7 for section locations).

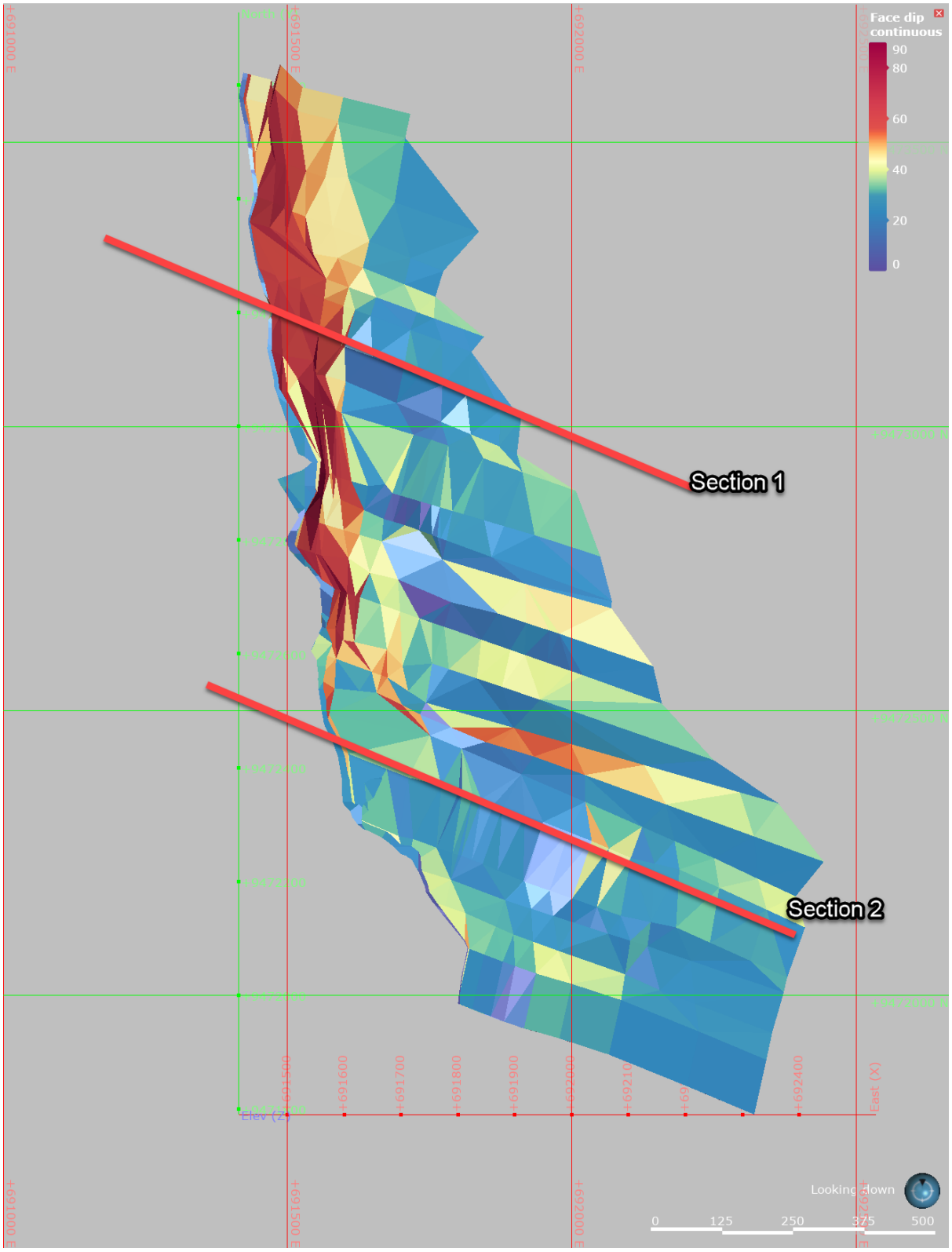

Figure 14-9. Plan view of domain 1 with colour shading representing the average dip of the domain showing steeper dips in the north-west (red colouring) and shallower dips in the south and east (green/blue colours)

14.4 Compositing

All data was composited to the dominant sample length of 1 m prior to analysis and estimation. The composited data was then coded according to the relevant vein package in preparation for

modelling.

The histogram of the grades of samples in the mineralised domains is positively skewed with a small proportion of the higher grades in amongst a large number of low-grade mineralisation mixed with barren rock (Figure 14-10 to Figure 14-15). The following plots are all showing the results from the uncapped data.

	Weighted Value
Count	2,039
Length	1,978
Mean	2.09
SD	4.74
CV	2.27
Variance	22.50
Minimum	0.01
Q1	0.39
Q2	0.83
Q3	1.85
Maximum	72.96

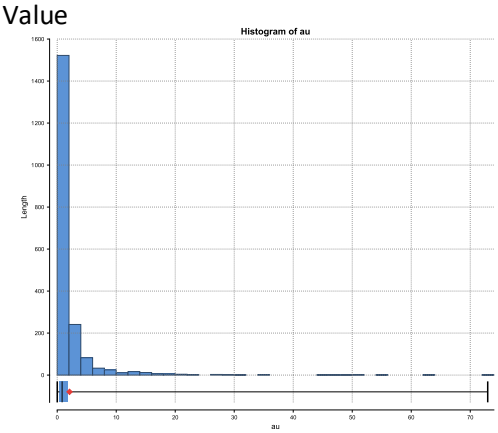

Figure 14-10. Mineralised domain interval 1m composite grade plots – combined domains

	Weighted Value
Count	822
Length	804
Mean	1.23
SD	2.33
CV	1.90
Variance	5.45
Minimum	0.01
Q1	0.29
Q2	0.66
Q3	1.33
Maximum	45.40

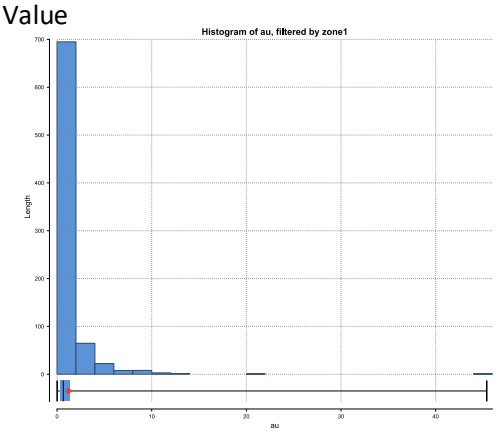

Figure 14-11. Mineralised domain interval 1m composite grade plots –domain1

	Weighted Value
Count	622
Length	609
Mean	2.54
SD	5.43
CV	2.14
Variance	29.49
Minimum	0.01
Q1	0.47
Q2	0.91
Q3	2.29
Maximum	72.96

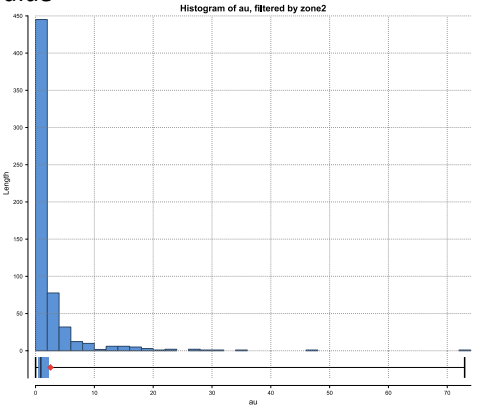

Figure 14-12. Mineralised domain interval 1m composite grade plots –domain2

	Weighted Value
Count	388
Length	369
Mean	2.85
SD	5.84
CV	2.05
Variance	34.06
Minimum	0.01
Q1	0.52
Q2	1.15
Q3	2.63
Maximum	51.20

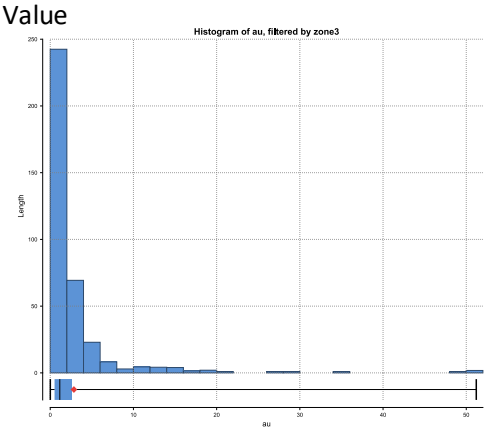

Figure 14-13. Mineralised domain interval 1m composite grade plots –domain3

	Weighted Value
Count	176
Length	166
Mean	2.02
SD	3.26
CV	1.61
Variance	10.66
Minimum	0.01
Q1	0.36
Q2	0.92
Q3	2.09
Maximum	20.27

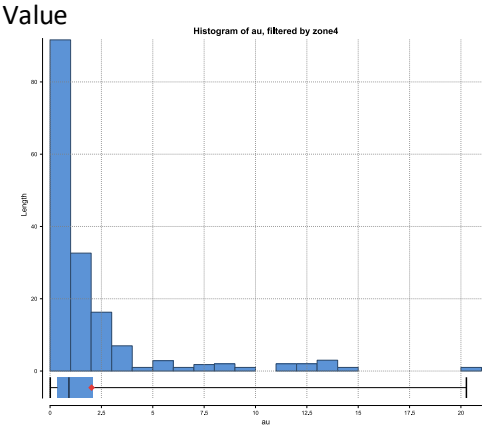

Figure 14-14. Mineralised domain interval 1m composite grade plots –domain4

	Weighted Value
Count	31
Length	30
Mean	7.00
SD	14.68
CV	2.10
Variance	215.50
Minimum	0.07
Q1	0.66
Q2	1.66
Q3	4.48
Maximum	62.53

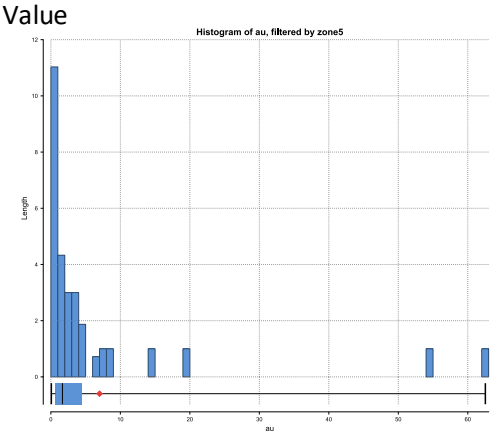

Figure 14-15. Mineralised domain interval 1m composite grade plots –domain5

14.5 Evaluation of Outliers

An outlier analysis was conducted on the samples within wireframes for each of the Akyanga domains. Grade-capping was conducted on the 1m composites. The grades were top-cut based on the break of slope on the cumulative frequency plot. AMC had historically selected a grade cap of 20g/t [3]. This is supported by the results documented in the 2014 MRE by SRK [1]. However, based

on the updated drilling results from 2017-2018, Denny Jones decided that a cap of 30g/t would be better suited to the deposit. Review of the capping used by Denny Jones by the Lead Author confirms the appropriateness of using the 30g/t value in reducing the impact of high grade outliers. Notwithstanding, there is scope to review this figure at a further stage in the project.

All the grades that were above capping grade in all the domains were reduced to 30g/t. These samples were retained for both statistical evaluation as well as variography. The capped grades in all the domains were less than 5% of composite data.

14.6 Statistical Analysis and Variography

Initial semi-variograms produced by AMC in 2017 [3] were carried out on 2m composites. Only the basal domain was modelled (subsequently renamed to domain 1 for this report) and the variogram modelling parameters were then applied to the other smaller domains. Hence AMC had assumed a degree of stationarity exists between the different domains.

Denny Jones [4], used a composite value of 1m and applied an unfolding algorithm to the vein domains in order to try and improve the robustness of the semi-variograms. However, modelling was only performed on the largest vein (domain 1) and the results applied to the remaining smaller domains.

In both cases, there is an assumption of stationarity between veins implying the overall statistical properties and variance are similar. The results from the basic statistics for each domain show significantly differing variances and ranges with mean values ranging from 1.2 to 7g/t. However, the CV values are all within a narrow range of between 1.4-1.7 (after capping) which would tend to suggest a similar data distribution within each vein and hence the assumption of stationarity is likely to be valid.

As part of the current reporting an independent due diligence exercise was carried out by Dr John Arthur to verify the modelling and inputs used for the final block modelling and grade estimation. The following variograms were produced as part of the due diligence and show a broadly similar pattern and quality to those produced previously by both AMC and Denny Jones. These results, along with the associated Kriging Quality test results indicate that the models and assumptions used by Denny Jones in the block model grade estimation and Mineral resource reporting were appropriate and valid at the effective date of the report contained herein.

Downhole variogram	
Lag = 1m	
Pairwise relative	
Co= 0.2	
C1 = 0.37	
a1 = 2m	
C2 = 0.13	
a2 = 7m	
Dip variogram	
Lag = 10m	
Pairwise relative	
Co= 0.2	
C1 = 0.37	
a1 = 58m	
C2 = 0.13	
a2 = 120m	
Strike variogram	
Lag = 20m	
Pairwise relative	
Co= 0.2	
C1 = 0.37	
a1 = 25m	
C2 = 0.13	
a2 = 80m	

Figure 14-16. Global variograms for the combined 1m composite data from all 5 domains

14.7 Block Model Grade Interpolation

Denny Jones constructed a Datamine block model with parent cell dimensions of 25 mE by 25 mN by 25 mRL was coded to reflect the surface topography and mineralised zones.

This block model was further subdivided for each vein package into discretised blocks (2.5 m by 2.5 m by 2.5 m block size) for grade estimation purposes. Using the discretised blocks has several advantages:

- The search ellipse in grade estimation of narrow deposits is often barely bigger than the block size in the across-dip orientation. In the discretised model approach, the search is always centred on the discretised block. The parent block estimate (a combined value from the discretised estimates) is then a far better estimate than the traditional point estimate of MIK.
- The discretised models are more easily validated against the input data with all blocks having the same support.

14.7.1 Density

As part of the validation exercise for the current report, the Lead Author reviewed the density data obtained during the various drill programmes. The mean density is 2.63t/m3 and the distribution shows a high skew value with no evidence for mixing of density domains (Figure 14-17).

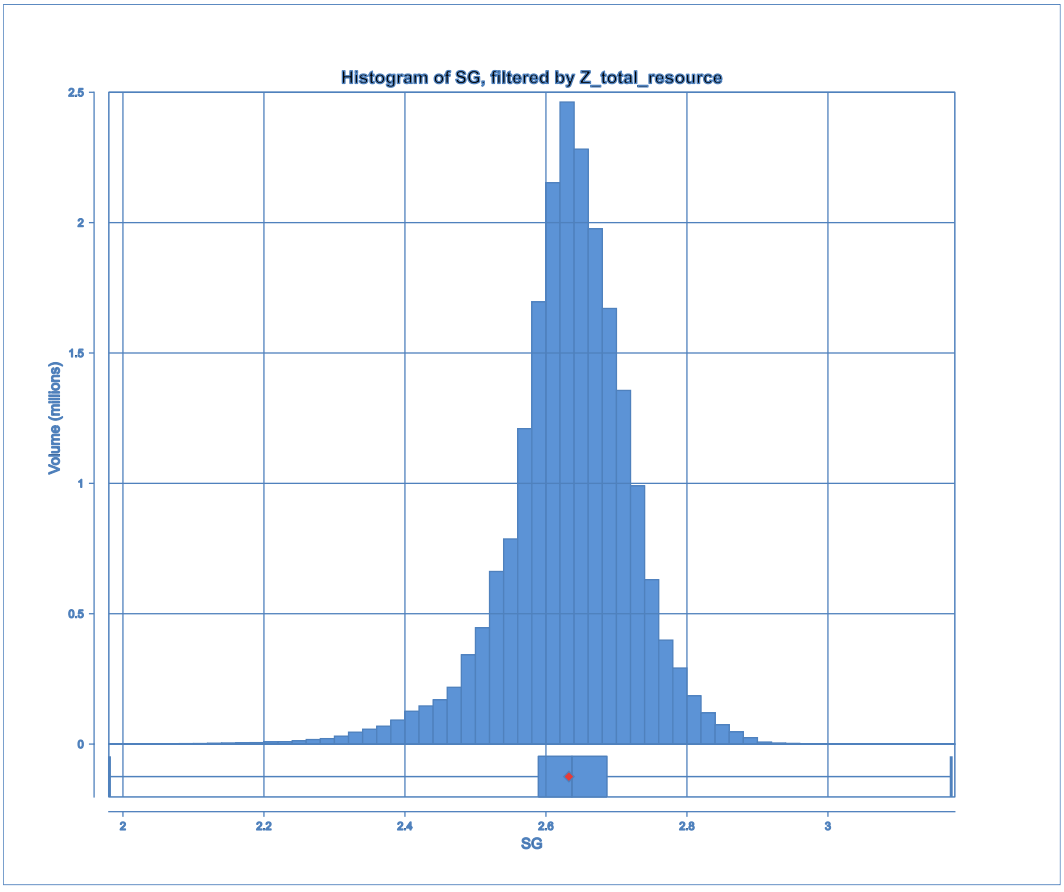

Figure 14-17. Density results histogram for the combined mineralised domains (1-5)

14.7.2 Grade Estimation (Denny Jones 2018)

Assay populations from gold deposits are generally positively skewed and contain outliers that can introduce bias into mineral resource estimates.

The composite data for Akyanga exhibits a skewed grade population where the high grades and a significant portion of the represented metal represented in only a small amount of the data, with individual composited gold grades of up to 213 g/t Au.

Ordinary kriging using unfolding (in Datamine Studio 3) was selected for estimation of the grade of the mineralised packages. This technique does not manage the different continuity characteristics of the higher grades during grade estimation. The high grades were therefore controlled in the grade estimation by top-capping the grades at 30 g/t Au. This modelling was based on a number of key assumptions. They are:

- The base data is a 1 m composite of grade. Therefore, the minimum vertical resolution we can consider is 1 m.
- The mineralised wireframes represent zones where the contained mineralisation is consistent in orientation and with similar character. There is no assumption of stationarity within the zone, although it is expected that if one were to be able to isolate a mineralised zone from the corridor, the assumption of stationarity (or at least quasi- stationarity) would be reasonable.
- Connectivity of mineralisation can be assumed within the zone representing the structural wireframe.
- The mineralisation within the grouping of veins is sufficiently similar to use OK for grade estimation using the same grade estimation parameters over all of the mineralised zones within the model.

The grade estimation has been completed in several steps to optimise evaluation of the resource. These were:

- A model was prepared at the parent block size (25 m by 25 m by 25 m) and coded by mineralised wireframes.
- The blocks for each structural corridor were selected, and then split up into “discretised” blocks of 2.5 m by 2.5 m by 2.5 m for grade estimation.
- Unfold strings were prepared. Initially they were strings aligned down the centre of the corridor. The strings used for the unfolding were derived by moving a copy of the strings perpendicular to the central string.
- For variography, the data was unfolded. Only data from Zone 1 was used for variography.
- The unfolding process was validated to ensure all blocks were unfolded (as well as data).
- Grade estimation was completed using unfolded OK.
- The estimates were compared with the composited data in order to check/validate the estimates.

Whilst data for grade estimation and the estimation of parameters was based on composite values that fall within the mineralised zone wireframes, the definition of the wireframes was based on a volume which captured mineralisation with similar orientations.

Unfolding was completed using Datamine’s unfold process. Initially a string was prepared along the centre of each vein package on 50 m intervals, taking care to ensure the starting position of the string remains constant relative to the other strings for the vein package. The strings were then copied outward (up and down) by 50 m perpendicular to the orientation of the plane of mineralisation to form the unfold strings used for defining the coordinates.

The anisotropy and search ellipse were defined in unfolded coordinates to account for the local variability in the orientation of the structures by using Datamine's "unfold" process.

Variogram models were used as input parameters to the OK. Search parameters were selected so that the search would select enough data to make an estimate without selecting all the samples from a single drillhole.

Grade estimation was then completed using unfolded coordinates (Table 14-1) and using the discretised model (2.5m by 2.5m by 2.5m blocks) as the base. The unfolded coordinates were based on the true length along the profile (UCSMODE = 3 in the UNFOLD process).

Table 14-1. Ordinary Kriging Search Ellipse parameters

Variable	Parameter value
Pass 1	
Search Ellipse (all veins)	120m x 120m x 5m
Minimum Samples	10
Maximum Samples	20
Max composites per hole	6
Pass 2	
Search multiplication factor (all veins)	3
Minimum Samples	2
Maximum Samples	20
Max composites per hole	6

In addition to conducting validation checks on all stages of the modelling and estimation process, final grade estimates and models were validated by undertaking global grade comparisons with the input drillhole composites, visual validation of block model cross sections, and by grade trend plots.

Sectional validation graphs were created to assess the reproduction of local means and to validate the grade trends in the model. These graphs compare the mean of the estimated grades to the mean of the input grades. The graphs indicate that there is good local reproduction of the input grades and proportions of mineralisation. The mineralised population estimate generally shows a good reproduction of the input grades with some smoothing evident.

14.8 Mineral Resource Reporting

In order to demonstrate that the mineralisation as estimated in the block model has a reasonable expectation of being mined economically in the foreseeable future, AMC completed a pit optimisation exercise using the parameters provided in Table 14-2. The work was completed by an engineer with sufficient experience in this style of work and mineralisation to ensure the robustness of the parameters used. Notwithstanding the pit optimisation exercise, it has not resulted in an engineered and operational open-pit mine design.

The results of the optimisation indicated that the resource potential was constrained by a pit shell which was used to define the limits of the Mineral Resource.

Table 14-2. Parameters for testing reasonable prospects of economic extraction (all costs in USD)

Parameter	Value
Gold Price ($/oz)	1,500
Royalties (%)	3
Overall Recovery (%)	94
Cut-off grade (g/t)	0.5
Processing + G&A ($/t)	18.00
Mining Dilution (%)	105
Geotechnical Slope Angles (degrees)	35-45
Average Mining Cost ($/t)	3.00

This optimisation does not demonstrate that the mineralisation is economic, since the exercise is not at the level of a Pre-Feasibility Study ("PFS") and does not conform to the studies required for a PFS.

The resource classification definitions used for this estimate are those published by the CIM and outlined in the form. Classification was applied based on geological confidence, data quality and grade variability. In order for the grade estimate to form a part of the Mineral Resource, the criteria were also set that a block must fall within a pit shell as defined by a Whittle evaluation, thereby demonstrating under those economic assumptions that there is a reasonable chance of economic extraction.

The Lead Author is satisfied that the vast majority of the information which was used to define the Mineral Resource is suitable for the estimation of resources. The Lead Author is also satisfied that the geological framework as defined by the geological interpretation is of relatively high confidence, and that any changes to the interpretation following the acquisition of new data would have minimal impact on the Mineral Resource.

14.9 Grade Model Validation – Dr John Arthur

In order for the Mineral Resource estimate produced by Denny Jones in 2018, to be used and reported here as the current Mineral Resource Statement, it was necessary for the Lead Author and QP, Dr John Arthur, to conduct a detailed due diligence of the previous historical estimate. This has enabled Dr Arthur to approve and sign off as QP on the work undertaken by Denny Jones in 2018. The following section summarises the results of the validation work conducted by Dr Arthur as part of the current Mineral Resource reporting.

Key differences between the methods used by Denny Jones in 2018 and those used by DR Arthur for the current re-validation exercise are essentially due to the use of different software and their respective algorithms for modelling and estimation. Denny Jones exclusively used Datamine® whereas Dr Arthur has used a combination of Supervisor® and Leapfrog®.

14.9.1 Domain modelling

The individual domain models have not been changed from those used by Denny Jones [4] which were, in turn produced by AMC in 2017 [3]. Review of the geological logs, assay database and the methodology used by AMC to construct the mineralised domains has shown the methodology employed was appropriate given the drill spacing and quality. The domain wireframes were therefore accepted and imported into Leapfrog® for domaining purposes. Section 14.3 details the

approach used and the statistical analysis of the individual domains.

14.9.2 Grade Capping

The grade capping analysis carried out by AMC and subsequently Denny Jones, as detailed in Section 14.5 was reviewed and the approach taken is considered appropriate for the purposes of the Mineral Resource estimation of the project at the exploration stage. For ongoing future iterations of the project it would be recommended to look at capping of data within individual domains. However, for the purpose and level of the current estimate the previous capping procedure was accepted with a data cap at 30g/t for all domains.

14.9.3 Density modelling

The density data is discussed in Section 14.7.1. Previous handling and interpretation of the density data in the Denny Jones repot is not discussed in detail other than an implication that the e=average of 2.63t/m^3 was applied. As part of the validation work the density data was interpolated on a per-block basis using a radial basis function (RBF) interpolation in Leapfrog® in order to check the reported estimates. No material differences were observed in the validation results when compared to the Denny Jones reported results and therefore the Denny Jones density interpolation was accepted. Going forward, in future reporting it should be made clear as to whether the average or a per block estimate for density was used.

14.9.4 Variography

Section 14.6 above includes a discussion by the Lead Author on the statistical approach and variographic modelling performed by Denny Jones and the validation performed by the Lead Author as part of the current reporting.

14.9.5 Block model grade interpolation

One key difference between the grade modelling performed by Denny Jones in 2018 and the validation carried out by the author as part of the current reporting, is the use of the unfolding routine in Datamine®. The approach used by the Lead Author for validation involved the construction of structural domains and form interpolants in Leapfrog for each individual domain. The result is, in effect, a series of “best fit” trend surfaces which are then used by the grade interpolation routine to provide each parent block estimate with the appropriate search ellipse orientation for its position within the domain model. This avoids the problem of having to either, sub-divide the domains into separate sub-domains based on their average dip and strike or carrying out a complex unfolding and re-folding exercise.

14.9.6 Mineral Resource reporting

The requirement for the Mineral resource to be reported as having “reasonable prospects for eventual economic extraction” is a key element of all current Mineral Resource reporting. The approach taken by Denny Jones in 2018 was to produce a high level open pit optimisation using predicted/elevated gold prices and high level benchmarked mining cost and recovery assumptions. The Lead Author agrees with this approach and the parameters detailed in Section 14.8 have been reviewed and adopted “as is” for the validation exercise.

14.9.7 Validation results

The following Table 14-3 lists the results of the various validation runs carried out by the Lead Author and compares them directly with the results obtained and reported by Denny Jones [4]. All numbers reported in Table 14-3 are reported within the whittle optimised pit shell for RF1.

Table 14-3. Validation results comparison with reported Mineral resource estimate and model

COG (g/t)	Cut (g/t)	Density (t/m^3)	Tonnes (Mt)	Grade (g/t)	Gold (M.oz)	Comment
0.5	**30**	**2.63**	**44.1**	**2.16**	**3.07**	**Denny Jones (2018) – Ordinary Krige (Datamine)**
0.5	30	variable	39.7	2.27	2.90	J. Arthur (2021) – Ordinary Krige (leapfrog)
% Diff to 2018 MRE			**-10%**	**+5%**	**-5%**	
0.5	uncut	2.63	41.3	2.37	3.15	J. Arthur (2021) – RBF (leapfrog)
% Diff to 2018 MRE			**-7%**	**+10%**	**+3%**	
0.5	uncut	variable	40.8	2.37	3.11	J. Arthur (2021) – Ordinary Krige (leapfrog)
% Diff to 2018 MRE			**-8%**	**+10%**	**+1%**	

Despite using different methodology and search parameters the overall contained gold is very close to that which was estimated by Denny Jones in 2018. The principal difference appears to be in the tonnage estimates and there are several potential reason for this:

- The datamine model used by Denny Jones used a variable block size but this was capped at a 2.5m vertical limit. This means that a proportion of the blocks reporting to the 2018 resource numbers lie partially above the topo surface.
- The leapfrog model used for the validation checks uses a much smaller sub-cell size (0.375m vertically) which allows for a much better resolution against the topography.
- Although the pit parameters used for the validation were the same as those used by Denny Jones in 2018, the Lead Author did not have access to the actual pit shell produced by Denny Jones and therefore a direct comparison cannot be made and some additional differences may be present in the input parameters for the whittle optimisation used in the two exercises. In particular Denny Jones state that the pit shell they used represents a gold price of "approximately" $1500, whereas the validation pit shell used for the reporting by the Lead Author used an exact $1500 gold price. The actual difference is not known and this may have an impact on the reported tonnes and grade as a higher gold price would generally lead to more tonnes at a lower grade.

The principal takeaway from the validation results is that the orebody appears to be robust in terms of the grade variability and continuity and these results, coupled with the validation exercises and results detailed in Sections 14.9.1 through 14.9.6, lead the Lead Author to consider the Mineral Resource statement provided by Denny Jones in 2018 and reported below, to be appropriate for the Akyanga Ridge deposit at the current level of investigation and reporting confidence.

14.10 Mineral Resource Statement

As stated in Section 1.2 of NI 43-101, the terms “mineral resource”, “inferred mineral resource”, “indicated mineral resource” and “measured mineral resource” have the meanings ascribed to those terms by the Canadian Institute of Mining, Metallurgy and Petroleum, as the CIM Definition Standards for Mineral Resources and Mineral Reserves adopted by CIM Council (May 19 2014).

The Mineral Resources are reported above a cut-off grade of 0.5 g/t Au. One potential outcome was provided for the pit optimization. Pit Shell 34-45 was the shell representing a gold price of approximately $1500 per ounce. Pit Shell 35-45 from the Whittle evaluation was chosen to represent the Mineral Resource.

Following estimation of the grade model, the estimate was depleted for artisanal and small-scale mining production. It was estimated by an independent geologist that 54,000 oz Au were produced prior to 2013, and that between 5,000 and 6,000 oz Au per annum has been produced since then. This would total 84,000 oz Au. With respect to depletion of the mineral resource, much of the mineralisation mined has either come from areas where there is no drilling and the resource is not modelled, or from the “soft rock” derived from the weathering and break-up of the mineralisation rather than in-situ vein mineralisation. In this model, a value of 50,000 oz Au has been removed from the grade-tonnage report within the pit shell.

Table 14-4. Akyanga Mineral Resource Statement – Effective Date September 30, 2022

Category	Tonnes (millions)	Gold Grade (g/t)	Contained Gold (M.oz)
Measured	-	-	-
Indicated	-	-	-
Inferred	44.3	2.16	3.0

1. Mineral Resources which are not Ore Reserves do not have demonstrated economic viability. The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, marketing, or other relevant issues. The Mineral Resources in this report were estimated using CIM Guidelines.
2. The quantity and grade of reported Inferred resources in this estimation are uncertain in nature and there has been insufficient exploration to define these Inferred Resources as an Indicated or Measured Mineral Resource and it is uncertain if further exploration will result in upgrading them to an Indicated or Measured Mineral Resource category.
3. Contained metal figures and totals may differ due to rounding of figures.
4. A cut-off grade of 0.5 g/t has been used to report the Mineral Resource

To the extent known, there are currently no environmental, permitting, legal, or marketing issues which would materially affect the estimate of Mineral Resources as outlined above.

15 MINERAL RESERVE ESTIMATES

The project does not currently constitute an Advanced Property. A Mineral Reserve has not been estimated for Akyanga as of the Effective date of this report.

16 MINING METHODS

The project does not currently constitute an Advanced Property. A Mineral Reserve has not been estimated for Akyanga as of the Effective date of this report.

17 RECOVERY METHODS

The project does not currently constitute an Advanced Property. A Mineral Reserve has not been estimated for Akyanga as of the Effective date of this report.

18 PROJECT INFRASTRUCTURE

The project does not currently constitute an Advanced Property. A Mineral Reserve has not been estimated for Akyanga as of the Effective date of this report.

19 MARKET STUDIES AND CONTRACTS

The project does not currently constitute an Advanced Property. A Mineral Reserve has not been estimated for Akyanga as of the Effective date of this report.

20 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

The project does not currently constitute an Advanced Property. A Mineral Reserve has not been estimated for Akyanga as of the Effective date of this report.

21 CAPITAL AND OPERATING COSTS

The project does not currently constitute an Advanced Property. A Mineral Reserve has not been estimated for Akyanga as of the Effective date of this report.

22 ECONOMIC ANALYSIS

The project does not currently constitute an Advanced Property. A Mineral Reserve has not been estimated for Akyanga as of the Effective date of this report.

23 ADJACENT PROPERTIES

To the east of Akyanga lies the Akyanga East structure, which has been the subject of some early-stage exploration. Mr Ephraim Masibhera visited the Akyanga East property as part of his site visit, however, the information is not necessarily indicative of the mineralization on the Misisi Gold Project which is the subject of this Technical Report.

The mineralisation at Akyanga East has been explored by drilling at around 200 m centres with up to 500 m spacing at the limits. Mineralisation can be traced along strike for approximately 5500 m, primarily through the artisanal workings, with a gap in the workings through a valley that cuts through the mineralisation and covers the surface with scree. The valley area has not been

explored. The mineralisation dips at around 53° to the southwest towards the Akyanga deposit.

Drill intersections cut the mineralisation with holes angled at approximately 70°. The true width of the mineralisation has been estimated using the dip of the mineralisation and the intersection angle of the drillhole. Down-dip length of the mineralisation has been measured from the intersections at 110 m for 100 m below the surface, and 165 m for 150 m below the surface. The mineralisation appears to have an average width of 3.6 m.

There is insufficient data on quantity and grade of the mineralisation at Akyanga East to define a resource.

24 OTHER RELEVANT INFORMATION

No other relevant information is available which is pertinent to the current report.

25 INTERPRETATION AND CONCLUSIONS

The Missi Gold Project, located in South Kivu Province, DRC, comprises three contiguous mining leases, valid until 2045, covering 133 km² and includes the Akyanga deposit which hosts an Inferred Resource comprising 44.3 million tonnes averaging 2.16 g/t gold containing 3.1 Moz gold. The Company has entered into an agreement to acquire a 73.08% indirect interest in the Misisi Gold Project and has commissioned Dr John Arthur and Mr Ephraim Masibhera to prepare this report describing the project and preparing a Mineral Resource Estimate for the Akyanga deposit.

The Mineral Resource statement reported herein is a historical statement produced by Ivor Jones (QP) an employee of Denny Jones Pty Ltd. The Mineral Resource estimation methodology and resulting statement have been scrutinised and validated independently by Dr. John Arthur who is the Principal QP for the current report detailed herein. Dr. Arthur, therefore takes responsibility for the accuracy and veracity of the Mineral Resource statement contained within this report.

The principal takeaway from the validation results is that the orebody appears to be robust in terms of the grade variability and continuity and these results, coupled with the validation exercises and results detailed in Sections 14.9.1 through 14.9.6, lead the Lead Author to consider the Mineral Resource statement provided by Denny Jones in 2018 to be appropriate for the Akyanga Ridge deposit at the current level of investigation and reporting confidence.

The Misisi Gold Project is located 250 kilometres south of Bukavu, covering 55 kilometres of strike along the highly prospective Kibara Gold Belt. Within the license area, aside from the main Akyanga deposit a number of exploration targets have been delineated through artisanal mining, soil and rock chip geochemistry, trenching, geophysics and limited diamond drilling including Akyanga East, Lubitchako, and Tulogwe targets.

The geology of the project area is dominated by Proterozoic meta-sediments comprising interbedded quartz muscovite schists, schistose arkoses, muscovite quartzites, and quartzites; pebble conglomerates and foliated mafic intrusion. Gold mineralization is associated with numerous zones of stacked quartz veins that occur sub parallel to bedding. The mineralised zones have strike lengths of up to 2,000 m are generally less than 10 m thick. At the southern end of the

Akyanda deposit the vein zones dip moderate to shallowly to the southeast. In the central and northern part the deposit steepens at surface, such that at the northern end the mineralisation is near vertical at surface and flattening out down dip. The depth of weathering is estimated to be approximately 30 m. Mineralisation is structurally and lithologically controlled, in association with local deformation zones, and occurs along north-south striking structures. The current interpretation is that the base of a mafic unit provides a contact with hardness contrast along which there has been structural movement.

Modern exploration was carried out by Anvil Mining from 1998 through 2008, followed by CASA from 2011 to 2018 that included 21,610 metres of diamond drilling in 133 holes, 2,810 metres of reverse circulation drilling in 23 holes, 2,011-line metres of trenching, in addition to metallurgical studies, geophysical surveying, sampling and prospecting. This work generated a large amount of data and reports, including three historical resource estimates and a Scoping Study [1] reported using the JORC Code.

Possible risks to the Misisi Project and the Akyanga MRE

- Grade and thickness variability along strike and down dip combined with pinching and swelling of the mineralized quartz vein zones could require tightly spaced drilling to advance the resource from Inferred to Indicated and Measured categories.
- Politicial risks typically associated with projects located in the Democratic Republic of the Congo.
- Community risk associated with large numbers of artisanal miners working on the project.
- The lack of infrastructure, including lack of adequate roading to the project.

Potential opportunities at the Misisi Project and the Akyanga MRE

- The mineral resources at the Akyanga deposit have not been closed off and are open to potential expansion down dip and along strike.
- The Akyanga East target has the potential to advance to resources with further drilling.
- Based on the initial metallurgical testing gold recoveries from gravity and cyanide leaching appear to be high. Detailed metallurgical studies should be conducted.
- 50km strike length of prospective exploitation concessions that have multiple large soil geochemical anomalies, artisanal mining, with limited trenching and a very limited drilling offer significant chance for further discovery.

26 RECOMMENDATIONS

The following table provides a breakdown of what is considered by the Lead Author to be appropriate next phase of work for the Misisi Gold Project.

It is recommended that the focus should be on bringing the Mineral Resource at Akyanga up to a level of confidence such that detailed mining studies can be considered to contribute to a Pre-feasibility study.

A total of 83 holes are recommended for infill drilling along the strike and dip extents of the current mineral resource outline, to include confirmatory drilling to test the strike extension to the south. The planned holes should be phased and it is likely that a smaller number of metres could be

drilled to get a starter pit planned to Scoping/PEA level of study. This is an effective way of adding value to the project. In parallel it is recommended that a wide and regularly spaced drilling campaign be planned for the adjoining Akyanga East deposit as additional Resources from here would add to the economics of a centralised plant and infrastructure at Akyanga.

Table 26-1. Estimated Cost for proposed next phase of work at Akyanga.

Description	Units	Cost (USD$)
Infill drilling Akyanga (Starter pit only)	4000m	1,000,000
Evaluation of exploration targets		500,000
Updated metallurgical studies		50,000
Preparation of PEA technical report		100,000
Sub-total		**1,650,000**
Contingency (7.5%)		123,750
Total		**1,773,750**

27 CITATIONS

[1] MDM Engineering, "Project No: 1363S1 - Misisi, DRC Akyanga Deposit Project Scoping Feasibility Study Independent Technical Report," 2014.

[2] Denny Jones Pty Ltd, "ARC Minerals - Summary of the Akyanga Resource Estimate 2018-06," 2018.

[3] African Mining Consultants Litd, "Technical Report – Mineral Resource Estimate Update - Akyanga Gold Deposit - May 2017," 2017.

[4] Wardrop, "Technical report for the Fizi Project, South Kivu Province, Democratic Republic of Congo, April 2012," 2012.

[5] D. D. Vermaakt, "Akyanga Ridge – Modelling and Resource Estimation July 2016," 2016.

Dr John Arthur
CGeol FGS (1005744)
November 1, 2022

Mr Ephraim Masibhera
South African Council for Natural Scientific Professionals, 200093/12
November 1, 2022

A TECHNICAL APPENDIX 1 – LICENCE INFORMATION

REPUBLIQUE DEMOCRATIQUE DU CONGO

CADASTRE MINIER

CERTIFICAT D'EXPLOITATION

N°CAMI/CE/.7026/16.

En exécution de l'Arrêté Ministériel n° **0160/CAB.MIN/MINES/01/2015** du **04/03/2015** portant octroi du **PERMIS D'EXPLOITATION** n° **13177**, au nom de **LEDA MINING CONGO SARL** ayant son siège social sis Avenue **de l'Equateur n°191, Kinshasa/Gombe,**

Est établi le présent **CERTIFICAT D'EXPLOITATION** qui lui confère le droit exclusif d'effectuer, du **04/03/2015** au **03/03/2045**, les travaux de recherches, de développement et d'exploitation des substances minérales suivantes : **Cuivre et Or** à l'intérieur du périmètre faisant l'objet du **PERMIS D'EXPLOITATION** composé de **13** carrés situés dans le Territoire de **Fizi**, Province du **Sud Kivu**.

Les coordonnées géographiques des sommets dudit périmètre sont reprises dans l'Annexe **1** qui fait partie intégrante du présent **CERTIFICAT**.

Délivré à Kinshasa, le .02.MAR..2016

DIRECTEUR GENERAL

Jean-Félix MUPANDE KAPWA

Mentions Spécifiques

- Il est rappelé au titulaire de ce titre minier qu'en application de l'article 592 du Règlement Minier, il est tenu de respecter les dispositions du Chapitre VI du Titre XVIII dudit Règlement visant la mise en conformité environnementale des opérations exécutées en vertu de son PERMIS D'EXPLOITATION.
- Il est également rappelé le dépôt de l'Attestation de Commencement des travaux de développement et de construction dans les **3 ans** de la délivrance du titre.
- Toute modification ultérieure du présent CERTIFICAT D'EXPLOITATION sera, selon le cas, portée au dos de ce titre ou reprise dans une des annexes complémentaires qui en feront parties intégrantes.

REPUBLIQUE DEMOCRATIQUE DU CONGO

CADASTRE MINIER

CERTIFICAT D'EXPLOITATION

N°CAMI/CE/1025/16.

En exécution de l'Arrêté Ministériel n° **0158/CAB.MIN/MINES/01/2015** du **04/03/2015** portant octroi du **PERMIS D'EXPLOITATION** n° **13179**, au nom de **LEDA MINING CONGO SARL** ayant son siège social sis Avenue **de l'Equateur n°191, Kinshasa/Gombe,**

Est établi le présent **CERTIFICAT D'EXPLOITATION** qui lui confère le droit exclusif d'effectuer, du **04/03/2015** au **03/03/2045**, les travaux de recherches, de développement et d'exploitation des substances minérales suivantes : **Cuivre et Or** à l'intérieur du périmètre faisant l'objet du **PERMIS D'EXPLOITATION** composé de **84** carrés situés dans le Territoire de **Fizi**, Province du **Sud Kivu**.

Les coordonnées géographiques des sommets dudit périmètre sont reprises dans l'Annexe **1** qui fait partie intégrante du présent **CERTIFICAT**.

Délivré à Kinshasa, le 12 MAR. 2016

DIRECTEUR GENERAL

Jean-Félix MUPANDE KAPWA

Mentions Spécifiques

- Il est rappelé au titulaire de ce titre minier qu'en application de l'article 592 du Règlement Minier, il est tenu de respecter les dispositions du Chapitre VI du Titre XVIII dudit Règlement visant la mise en conformité environnementale des opérations exécutées en vertu de son PERMIS D'EXPLOITATION.
- Il est également rappelé le dépôt de l'Attestation de Commencement des travaux de développement et de construction dans les **3 ans** de la délivrance du titre.
- Toute modification ultérieure du présent CERTIFICAT D'EXPLOITATION sera, selon le cas, portée au dos de ce titre ou reprise dans une des annexes complémentaires qui en feront parties intégrantes.

REPUBLIQUE DEMOCRATIQUE DU CONGO

CADASTRE MINIER

CERTIFICAT D'EXPLOITATION

N°CAMI/CE/1927/16.

En exécution de l'Arrêté Ministériel n° **0159/CAB.MIN/MINES/01/2015** du **04/03/2015** portant octroi du **PERMIS D'EXPLOITATION** n° **13178**, au nom de **LEDA MINING CONGO SARL** ayant son siège social sis Avenue **de l'Equateur n°191, Kinshasa/Gombe,**

Est établi le présent **CERTIFICAT D'EXPLOITATION** qui lui confère le droit exclusif d'effectuer, du **04/03/2015** au **03/03/2045**, les travaux de recherches, de développement et d'exploitation des substances minérales suivantes : **Cuivre et Or** à l'intérieur du périmètre faisant l'objet du **PERMIS D'EXPLOITATION** composé de **60** carrés situés dans le Territoire de **Fizi**, Province du **Sud Kivu**.

Les coordonnées géographiques des sommets dudit périmètre sont reprises dans l'Annexe **1** qui fait partie intégrante du présent **CERTIFICAT**.

Délivré à Kinshasa, le 02 MAR 2016

DIRECTEUR GENERAL

Jean-Félix MUPANDE KAPWA

Mentions Spécifiques

- Il est rappelé au titulaire de ce titre minier qu'en application de l'article 592 du Règlement Minier, il est tenu de respecter les dispositions du Chapitre VI du Titre XVIII dudit Règlement visant la mise en conformité environnementale des opérations exécutées en vertu de son PERMIS D'EXPLOITATION.
- Il est également rappelé le dépôt de l'Attestation de Commencement des travaux de développement et de construction dans les **3 ans** de la délivrance du titre.
- Toute modification ultérieure du présent CERTIFICAT D'EXPLOITATION sera, selon le cas, portée au dos de ce titre ou reprise dans une des annexes complémentaires qui en feront parties intégrantes.

République Démocratique du Congo

MINISTERE DES MINES

Le Ministre

ARRETE MINISTERIEL N° 0160/CAB.MIN/MINES/01/2015 DU 04 MAR 2015
PORTANT OCTROI DU PERMIS D'EXPLOITATION
N° 13177 A LA SOCIETE LEDA MINING CONGO SARL

Vu la Constitution, spécialement ses articles 93, 202 point 36 littera f et 203 point 16 ;

Vu la Loi n° 007/2002 du 11 juillet 2002 portant Code Minier, spécialement ses articles 10, 12, 43,47 et 69 à 72 ;

Vu le Décret n° 038/2003 du 26 mars 2003 portant Règlement Minier, notamment ses articles 145 à 150 et 160;

Vu l'Ordonnance n° 12/007 du 11 juin 2012 portant organisation et fonctionnement du Gouvernement, modalités pratiques de collaboration entre le Président de la République, et le Gouvernement ainsi qu'entre les membres du Gouvernement ;

Vu l'Ordonnance n° 12/008 du 11 juin 2012 fixant les attributions des Ministères, spécialement son article 1er B points 6 et 14 ;

Vu l'Ordonnance n° 014/078 du 07 décembre 2014 portant nomination des Vice-Premiers Ministres, des Ministres d'Etat, des Ministres et des Vice-Ministres ;

Considérant la demande d'octroi de Permis d'Exploitation **n° 5891** et les pièces requises y jointes, introduite le **25 août 2014** par la Société **LEDA MINING CONGO Sarl** en vue d'obtenir un Permis d'Exploitation sur une partie du périmètre couvrant son Permis de Recherches n° **818**.

Sur avis favorable du Cadastre Minier, de la Direction des Mines et de la Direction chargée de la protection de l'Environnement Minier ;

ARRETE :

Article 1er :

Il est octroyé à la Société **LEDA MINING CONGO Sarl**, ayant son siège social sise Avenue de l'Equateur n°191, Kinshasa/Gombe, le Permis d'Exploitation **n° 13177**.

Article 2 :

Le Permis d'Exploitation **n° 13177** est établi sur un périmètre composé de **13 carrés** entiers situé dans le Territoire de Fizi, District du Sud-Kivu, Province du Sud-Kivu.

Les coordonnées géographiques des sommets dudit périmètre suivant le datum WGS 84 et la projection UTM, sont :

	Longitude			Latitude		
Sommets	Degré	Minute	Seconde	Degré	Minute	Seconde
1	28	35	30.00	- 04	33	00.00
2	28	36	00.00	- 04	33	00.00
3	28	36	00.00	- 04	33	30.00
4	28	36	30.00	- 04	33	30.00
5	28	36	30.00	- 04	34	00.00
6	28	37	00.00	- 04	34	00.00
7	28	37	00.00	- 04	36	30.00
8	28	36	00.00	- 04	36	30.00
9	28	36	00.00	- 04	34	00.00
10	28	36	30.00	- 04	34	00.00

Carte de retombe : S5/28

Article 3 :

Le Permis d'Exploitation n° **13177** confère à la Société **LEDA MINING CONGO Sarl** le droit exclusif d'effectué, à l'intérieur du périmètre défini à l'article 2 les travaux de prospection, de Recherches et d'Exploitation des substances suivantes : **Cuivre et Or.**

Ce droit s'étend également à la construction des installations et infrastructures nécessaires à l'exploitation des Mines, à l'utilisation des ressources d'eau et du bois se trouvant à l'intérieur du périmètre pour les besoins de l'exploitation des mines, à la libre commercialisation des produits marchands conformément à la législation en la matière ainsi qu'a la réalisation des opérations de concentration, de traitement métallurgique ou technique et de transformation des produits extraits du gisement.

Article 4 :

Sur présentation du récépissé du paiement des droits superficiaires annuels par carrés prorata temporis, le présent Permis d'Exploitation donne lieu à la délivrance d'un Certificat d'Exploitation.

A défaut de paiement des droits superficiaires annuels par carré prorata temporis dans les trente jours ouvrables à compter de la date de notification du présent Arrêté, le Permis d'Exploitation n° **13177** devient caduque, conformément aux prescrits de l'article 159 du Règlement Minier.

Article 5 :

Le Permis d'Exploitation n° **13177** est valable pour une durée de 30 (trente) ans, à dater de la signature du présent Arrêté.

Il pourra être renouvelé plusieurs fois pour une durée de 15 (quinze) ans à chaque renouvellement.

Article 6 :

la Société **LEDA MINING CONGO Sarl** notamment tenue de :

1°S'acquitter, chaque année, des droits superficiaires par carré conformément aux dispositions de l'article 198 du Code Minier et des articles 157 et 396 du Règlement Minier ;

2°Transmettre chaque semestre un relevé du registre d'extraction et chaque année, le rapport d'activités à la Direction des Mines ainsi qu'à la Division Provinciale des Mines et Géologie ou au Bureau minier du ressort, en vertu des articles 216 du Code Minier, 499 et 501 du Règlement Minier ;

3°Déposer tous les trimestres, à la Direction de Géologie ou au Bureau Minier du ressort, les échantillons prélevés au cours des travaux de recherches ainsi qu'une copie de sa carte de recherches ;

4°Fournir aux agents de la Direction des Mines et de la Direction chargée de la Protection de l'Environnement minier dûment mandatés, tous les moyens de parcourir le périmètre et d'inspecter ses travaux de recherches minières ;

5°Tenir sur le terrain, les journaux et les registres de suivi journalier des travaux de prospection, de recherches et d'exploitation, vérifiables par les agents des Directions des Mines et de Géologie pendant l'inspection ;

6°Respecter les dispositions du Chapitre VI du Titre XVIII du Règlement minier visant la mise en conformité environnementale des opérations exécutées en vertu du Permis d'Exploitation.

Article 7 :

Sans préjudice des dispositions de l'article 30 du Code Minier, il est interdit aux tiers d'entreprendre les travaux de prospection, de recherches et/ou d'exploitation à l'intérieur du périmètre couvert par le Permis d'Exploitation n° **13177.**

Article 8:

Toute violation, par le titulaire du Permis d'Exploitation n°**13177**, des dispositions du Code Minier, du Règlement Minier ou du présent Arrêté, entraîne, selon les cas définis par la législation minière et sans préjudice d'autres sanctions, la suspension des activités ou le retrait dudit Permis d'Exploitation.

Article 9 :

Le Secrétaire Général des Mines et le Directeur Général du Cadastre Minier, sont chargés, chacun en ce qui le concerne, de l'exécution du présent Arrêté qui entre en vigueur à la date de sa signature.

Fait à Kinshasa, le 04 MAR 2015,

Martin KABWELULU

AMPLIATIONS

Cabinet du Président de la République	: 1
Cabinet du Premier Ministre	: 1
Cabinet du Ministre des Mines	: 2
Secrétariat Général des Mines	: 1
Cadastre Minier	: 1
CTCPM	: 1
SAESSCAM	: 1
Direction des Mines	: 1
Direction de Géologie	: 1
Direction des Investigations	: 1
Direction chargée de la Protec. de l'Environ	:1
Div. Prov./des Mines & Géologie du ressort	: 1
La Société **LEDA MINING CONGO Sarl**	: 1
	13

République Démocratique du Congo

MINISTERE DES MINES

Le Ministre

ARRETE MINISTERIEL N° 0159/CAB.MIN/MINES/01/2015 DU 04 MAR 2015
PORTANT OCTROI DU PERMIS D'EXPLOITATION
N° 13178 A LA SOCIETE LEDA MINING CONGO SARL

Vu la Constitution de la République Démocratique du Congo, spécialement ses articles 93, 202 point 36 littera f et 203 point 16 ;

Vu la Loi n° 007/2002 du 11 juillet 2002 portant Code Minier, spécialement ses articles 10, 12, 43,47 et 69 à 72 ;

Vu le Décret n° 038/2003 du 26 mars 2003 portant Règlement Minier, notamment ses articles 145 à 150 et 160;

Vu l'Ordonnance n° 12/007 du 11 juin 2012 portant organisation et fonctionnement du Gouvernement, modalités pratiques de collaboration entre le Président de la République, et le Gouvernement ainsi qu'entre les membres du Gouvernement ;

Vu l'Ordonnance n° 12/008 du 11 juin 2012 fixant les attributions des Ministères, spécialement son article 1er B points 6 et 14 ;

Vu l'Ordonnance n° 014/078 du 07 décembre 2014 portant nomination des Vice-Premiers Ministres, des Ministres d'Etat, des Ministres et des Vice-Ministres ;

Considérant la demande d'octroi de Permis d'Exploitation **n° 5892** et les pièces requises y jointes, introduite le **25 août 2014** par la Société **LEDA MINING CONGO Sarl** en vue d'obtenir un Permis d'Exploitation sur une partie du périmètre couvrant son Permis de Recherches n° **820**.

Sur avis favorable du Cadastre Minier, de la Direction des Mines et de la Direction chargée de la protection de l'Environnement Minier ;

ARRETE :

Article 1er :

Il est octroyé à la Société **LEDA MINING CONGO Sarl**, ayant son siège social sise Avenue de l'Equateur n°191, Kinshasa/Gombe, le Permis d'Exploitation **n° 13178**.

Article 2 :

Le Permis d'Exploitation **n° 13178** est établi sur un périmètre composé de **60 carrés** entiers situé dans le Territoire de Fizi, District du Sud-Kivu, Province du Sud-Kivu.

Les coordonnées géographiques des sommets dudit périmètre suivant le datum WGS 84 et la projection UTM, sont :

	Longitude			Latitude		
Sommets	Degré	Minute	Seconde	Degré	Minute	Seconde
1	28	39	00.00	- 04	36	30.00
2	28	39	00.00	- 04	38	30.00
3	28	38	30.00	- 04	38	30.00
4	28	38	30.00	- 04	39	30.00
5	28	41	30.00	- 04	39	30.00
6	28	41	30.00	- 04	40	00.00
7	28	42	00.00	- 04	40	00.00
8	28	42	00.00	- 04	41	00.00
9	28	42	30.00	- 04	41	00.00
10	28	42	30.00	- 04	42	00.00
11	28	43	00.00	- 04	42	00.00
12	28	43	00.00	- 04	42	30.00
13	28	43	30.00	- 04	42	30.00
14	28	43	30.00	- 04	43	30.00
15	28	44	00.00	- 04	43	30.00
16	28	44	00.00	- 04	44	30.00
17	28	44	30.00	- 04	44	30.00
18	28	44	30.00	- 04	45	30.00
19	28	44	00.00	- 04	45	30.00
20	28	44	00.00	- 04	45	00.00
21	28	42	30.00	- 04	45	00.00
22	28	42	30.00	- 04	43	00.00
23	28	41	30.00	- 04	43	00.00
24	28	41	30.00	- 04	42	00.00
25	28	41	00.00	- 04	42	00.00
26	28	41	00.00	- 04	40	00.00
27	28	38	00.00	- 04	40	00.00
28	28	38	00.00	- 04	39	30.00
29	28	37	00.00	- 04	39	30.00
30	28	37	00.00	- 04	37	00.00
31	28	36	30.00	- 04	37	00.00
32	28	36	30.00	- 04	36	30.00

Carte de retombe : S5/28

Article 3 :

Le Permis d'Exploitation n° **13178** confère à la Société **LEDA MINING CONGO Sarl** le droit exclusif d'effectué, à l'intérieur du périmètre défini à l'article 2 les travaux de prospection, de Recherches et d'Exploitation des substances suivantes : **Cuivre et Or.**

Ce droit s'étend également à la construction des installations et infrastructures nécessaires à l'exploitation des Mines, à l'utilisation des ressources d'eau et du bois se trouvant à l'intérieur du périmètre pour les besoins de l'exploitation des mines, à la libre commercialisation des produits marchands conformément à la législation en la matière ainsi qu'a la réalisation des opérations de concentration, de traitement métallurgique ou technique et de transformation des produits extraits du gisement.

Article 4 :

Sur présentation du récépissé du paiement des droits superficiaires annuels par carrés prorata temporis, le présent Permis d'Exploitation donne lieu à la délivrance d'un Certificat d'Exploitation.

A défaut de paiement des droits superficiaires annuels par carré prorata temporis dans les trente jours ouvrables à compter de la date de notification du présent Arrêté, le Permis d'Exploitation n° **13178** devient caduque, conformément aux prescrits de l'article 159 du Règlement Minier.

Article 5 :

Le Permis d'Exploitation n° **13178** est valable pour une durée de 30 (trente) ans, à dater de la signature du présent Arrêté.

Il pourra être renouvelé plusieurs fois pour une durée de 15 (quinze) ans à chaque renouvellement.

Article 6 :

la Société **LEDA MINING CONGO Sarl** notamment tenue de :

1°S'acquitter, chaque année, des droits superficiaires par carré conformément aux dispositions de l'article 198 du Code Minier et des articles 157 et 396 du Règlement Minier ;

2°Transmettre chaque semestre un relevé du registre d'extraction et chaque année, le rapport d'activités à la Direction des Mines ainsi qu'à la Division Provinciale des Mines et Géologie ou au Bureau minier du ressort, en vertu des articles 216 du Code Minier, 499 et 501 du Règlement Minier ;

3°Déposer tous les trimestres, à la Direction de Géologie ou au Bureau Minier du ressort, les échantillons prélevés au cours des travaux de recherches ainsi qu'une copie de sa carte de recherches ;

4°Fournir aux agents de la Direction des Mines et de la Direction chargée de la Protection de l'Environnement minier dûment mandatés, tous les moyens de parcourir le périmètre et d'inspecter ses travaux de recherches minières ;

5°Tenir sur le terrain, les journaux et les registres de suivi journalier des travaux de prospection, de recherches et d'exploitation, vérifiables par les agents des Directions des Mines et de Géologie pendant l'inspection ;

6°Respecter les dispositions du Chapitre VI du Titre XVIII du Règlement minier visant la mise en conformité environnementale des opérations exécutées en vertu du Permis d'Exploitation.

Article 7 :

Sans préjudice des dispositions de l'article 30 du Code Minier, il est interdit aux tiers d'entreprendre les travaux de prospection, de recherches et/ou d'exploitation à l'intérieur du périmètre couvert par le Permis d'Exploitation n° **13178.**

Article 8:

Toute violation, par le titulaire du Permis d'Exploitation n°**13178**, des dispositions du Code Minier, du Règlement Minier ou du présent Arrêté, entraîne, selon les cas définis par la législation minière et sans préjudice d'autres sanctions, la suspension des activités ou le retrait dudit Permis d'Exploitation.

Article 9 :

Le Secrétaire Général des Mines et le Directeur Général du Cadastre Minier, sont chargés, chacun en ce qui le concerne, de l'exécution du présent Arrêté qui entre en vigueur à la date de sa signature.

Fait à Kinshasa, le 04 MAR 2015

Martin KABWELULU

AMPLIATIONS

Cabinet du Président de la République	: 1
Cabinet du Prèmier Ministre	: 1
Cabinet du Ministre des Mines	: 2
Secrétariat Général des Mines	: 1
Cadastre Minier	: 1
CTCPM	: 1
SAESSCAM	: 1
Direction des Mines	: 1
Direction de Géologie	: 1
Direction des Investigations	: 1
Direction chargée de la Protec. de l'Environ	:1
Div. Prov./des Mines & Géologie du ressort	: 1
La Société **LEDA MINING CONGO Sarl**	: 1
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République Démocratique du Congo

MINISTERE DES MINES

Le Ministre

ARRETE MINISTERIEL N°0158/CAB.MIN/MINES/01/2015 DU 04 MAR 2015
PORTANT OCTROI DU PERMIS D'EXPLOITATION
N° 13179 A LA SOCIETE LEDA MINING CONGO SARL

Vu la Constitution, spécialement ses articles 93, 202 point 36 littera f et 203 point 16 ;

Vu la Loi n° 007/2002 du 11 juillet 2002 portant Code Minier, spécialement ses articles 10, 12, 43,47 et 69 à 72 ;

Vu le Décret n° 038/2003 du 26 mars 2003 portant Règlement Minier, notamment ses articles 145 à 150 et 160;

Vu l'Ordonnance n° 12/007 du 11 juin 2012 portant organisation et fonctionnement du Gouvernement, modalités pratiques de collaboration entre le Président de la République, et le Gouvernement ainsi qu'entre les membres du Gouvernement ;

Vu l'Ordonnance n° 12/008 du 11 juin 2012 fixant les attributions des Ministères, spécialement son article 1er B points 6 et 14 ;

Vu l'Ordonnance n° 014/078 du 07 décembre 2014 portant nomination des Vice-Premiers Ministres, des Ministres d'Etat, des Ministres et des Vice-Ministres ;

Considérant la demande d'octroi de Permis d'Exploitation **n° 5893** et les pièces requises y jointes, introduite le **25 août 2014** par la Société **LEDA MINING CONGO Sarl** en vue d'obtenir un Permis d'Exploitation sur une partie du périmètre couvrant son Permis de Recherches n° **822**.

Sur avis favorable du Cadastre Minier, de la Direction des Mines et de la Direction chargée de la protection de l'Environnement Minier ;

ARRETE :

Article 1er :

Il est octroyé à la Société **LEDA MINING CONGO Sarl**, ayant son siège social sise Avenue de l'Equateur n°191, Kinshasa/Gombe, le Permis d'Exploitation **n° 13179**.

Article 2 :

Le Permis d'Exploitation **n° 13179** est établi sur un périmètre composé de **84 carrés** entiers situé dans le Territoire de Fizi, District du Sud-Kivu, Province du Sud-Kivu.

Les coordonnées géographiques des sommets dudit périmètre suivant le datum WGS 84 et la projection UTM, sont :

	Longitude			Latitude		
Sommets	Degré	Minute	Seconde	Degré	Minute	Seconde
1	28	42	30.00	- 04	45	00.00
2	28	44	00.00	- 04	45	00.00
3	28	44	00.00	- 04	45	30.00
4	28	44	30.00	- 04	45	30.00
5	28	44	30.00	- 04	46	30.00
6	28	45	00.00	- 04	46	30.00
7	28	45	00.00	- 04	47	30.00
8	28	45	30.00	- 04	47	30.00
9	28	45	30.00	- 04	50	00.00
10	28	46	00.00	- 04	50	00.00
11	28	46	00.00	- 04	50	30.00
12	28	46	30.00	- 04	50	30.00
13	28	46	30.00	- 04	51	00.00
14	28	47	00.00	- 04	51	00.00
15	28	47	00.00	- 04	51	30.00
16	28	47	30.00	- 04	51	30.00
17	28	47	30.00	- 04	52	00.00
18	28	48	00.00	- 04	52	00.00
19	28	48	00.00	- 04	53	00.00
20	28	48	30.00	- 04	53	00.00
21	28	48	30.00	- 04	53	30.00
22	28	49	00.00	- 04	53	30.00
23	28	49	00.00	- 04	54	00.00
24	28	49	30.00	- 04	54	00.00
25	28	49	30.00	- 04	55	00.00
26	28	50	00.00	- 04	55	00.00
27	28	50	00.00	- 04	55	30.00
28	28	50	30.00	- 04	55	30.00
29	28	50	30.00	- 04	56	00.00
30	28	51	00.00	- 04	56	00.00
31	28	51	00.00	- 04	56	30.00
32	28	51	30.00	- 04	56	30.00
33	28	51	30.00	- 04	57	00.00
34	28	52	00.00	- 04	57	00.00
35	28	52	00.00	- 04	57	30.00
36	28	52	30.00	- 04	57	30.00

37	28	52	30.00	- 04	59	00.00
38	28	50	00.00	- 04	59	00.00
39	28	50	00.00	- 04	57	30.00
40	28	49	30.00	- 04	57	30.00
41	28	49	30.00	- 04	56	30.00
42	28	49	00.00	- 04	56	30.00
43	28	49	00.00	- 04	55	00.00
44	28	48	30.00	- 04	55	00.00
45	28	48	30.00	- 04	54	00.00
46	28	48	00.00	- 04	54	00.00
47	28	48	00.00	- 04	53	30.00
48	28	47	30.00	- 04	53	30.00
49	28	47	30.00	- 04	53	00.00
50	28	47	00.00	- 04	53	00.00
51	28	47	00.00	- 04	52	00.00
52	28	46	30.00	- 04	52	00.00
53	28	46	30.00	- 04	51	30.00
54	28	46	00.00	- 04	51	30.00
55	28	46	00.00	- 04	51	00.00
56	28	45	30.00	- 04	51	00.00
57	28	45	30.00	- 04	50	30.00
58	28	45	00.00	- 04	50	30.00
59	28	45	00.00	- 04	50	00.00
60	28	44	30.00	- 04	50	00.00
61	28	44	30.00	- 04	47	30.00
62	28	42	30.00	- 04	47	30.00

Carte de retombe : S5/28

Article 3 :

Le Permis d'Exploitation n° **13179** confère à la Société **LEDA MINING CONGO Sarl** le droit exclusif d'effectué, à l'intérieur du périmètre défini à l'article 2 les travaux de prospection, de recherches et d'exploitation des substances suivantes : **Cuivre et Or.**

Ce droit s'étend également à la construction des installations et infrastructures nécessaires à l'exploitation des Mines, à l'utilisation des ressources d'eau et du bois se trouvant à l'intérieur du périmètre pour les besoins de l'exploitation des mines, à la libre commercialisation des produits marchands conformément à la législation en la matière ainsi qu'a la réalisation des opérations de concentration, de traitement métallurgique ou technique et de transformation des produits extraits du gisement.

Article 4 :

Sur présentation du récépissé du paiement des droits superficiaires annuels par carrés prorata temporis, le présent Permis d'Exploitation donne lieu à la délivrance d'un Certificat d'Exploitation.

A défaut de paiement des droits superficiaires annuels par carré prorata temporis dans les trente jours ouvrables à compter de la date de notification du présent Arrêté, le Permis d'Exploitation n° **13179** devient caduque, conformément aux prescrits de l'article 159 du Règlement Minier.

Article 5 :

Le Permis d'Exploitation n° **13179** est valable pour une durée de 30 (trente) ans, à dater de la signature du présent Arrêté.

Il pourra être renouvelé plusieurs fois pour une durée de 15 (quinze) ans à chaque renouvellement.

Article 6 :

la Société **LEDA MINING CONGO Sarl** notamment tenue de :

1°S'acquitter, chaque année, des droits superficiaires par carré conformément aux dispositions de l'article 198 du Code Minier et des articles 157 et 396 du Règlement Minier ;

2°Transmettre chaque semestre un relevé du registre d'extraction et chaque année, le rapport d'activités à la Direction des Mines ainsi qu'à la Division Provinciale des Mines et Géologie ou au Bureau minier du ressort, en vertu des articles 216 du Code Minier, 499 et 501 du Règlement Minier ;

3°Déposer tous les trimestres, à la Direction de Géologie ou au Bureau Minier du ressort, les échantillons prélevés au cours des travaux de recherches ainsi qu'une copie de sa carte de recherches ;

4°Fournir aux agents de la Direction des Mines et de la Direction chargée de la Protection de l'Environnement minier dûment mandatés, tous les moyens de parcourir le périmètre et d'inspecter ses travaux de recherches minières ;

5°Tenir sur le terrain, les journaux et les registres de suivi journalier des travaux de prospection, de recherches et d'exploitation, vérifiables par les agents des Directions des Mines et de Géologie pendant l'inspection ;

6°Respecter les dispositions du Chapitre VI du Titre XVIII du Règlement minier visant la mise en conformité environnementale des opérations exécutées en vertu du Permis d'Exploitation.

Article 7 :

Sans préjudice des dispositions de l'article 30 du Code Minier, il est interdit aux tiers d'entreprendre les travaux de prospection, de recherches et/ou d'exploitation à l'intérieur du périmètre couvert par le Permis d'Exploitation n° **13179.**

Article 8:

Toute violation, par le titulaire du Permis d'Exploitation n°**13179**, des dispositions du Code Minier, du Règlement Minier ou du présent Arrêté, entraîne, selon les cas définis par la législation minière et sans préjudice d'autres sanctions, la suspension des activités ou le retrait dudit Permis d'Exploitation.

Article 9 :

Le Secrétaire Général des Mines et le Directeur Général du Cadastre Minier, sont chargés, chacun en ce qui le concerne, de l'exécution du présent Arrêté qui entre en vigueur à la date de sa signature.

Fait à Kinshasa, le 04 MAR 2015

Martin KABWELULU

AMPLIATIONS

Cabinet du Président de la République	: 1
Cabinet du Premier Ministre	: 1
Cabinet du Ministre des Mines	: 2
Secrétariat Général des Mines	: 1
Cadastre Minier	: 1
CTCPM	: 1
SAESSCAM	: 1
Direction des Mines	: 1
Direction de Géologie	: 1
Direction des Investigations	: 1
Direction chargée de la Protec. de l'Environ	:1
Div. Prov./des Mines & Géologie du ressort	: 1
La Société **LEDA MINING CONGO Sarl**	: 1
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B TECHNICAL APPENDIX 2 – DRILL COLLAR DATA

Hole_ID	y	x	z	Max_Depth	path	status	year
MSDD0001	9472171.899	691735.181	842.478	150.15	LINEAR	COMPLETE	2014
MSDD0002	9472532.871	691660.506	849.401	150.3	LINEAR	COMPLETE	2014
MSDD0003	9472884.738	691552.655	910.259	152.2	LINEAR	COMPLETE	2014
MSDD0004	9472868.062	691464.117	955.958	100.7	LINEAR	COMPLETE	2014
MSDD0005	9473056.186	691359.04	967.602	100.5	LINEAR	COMPLETE	2014
MSDD0006	9473060.95	691498.621	915.85	150	LINEAR	COMPLETE	2014
MSDD0007	9473365.239	691416.637	928.738	120.58	LINEAR	COMPLETE	2014
MSDD0008	9472495.317	691576.489	903.165	150	LINEAR	COMPLETE	2014
MSDD0009	9473090.497	691549.974	898.872	152.15	LINEAR	COMPLETE	2014
MSDD0010	9473242.474	691455.626	909.482	95	LINEAR	COMPLETE	2014
MSDD0011	9473672.923	691487.42	902.49	200.7	LINEAR	COMPLETE	2014
MSDD0012	9472988.283	691413.299	960.333	100.2	LINEAR	COMPLETE	2014
MSDD0013	9473380.386	691504.277	898.741	200.2	LINEAR	COMPLETE	2014
MSDD0014	9472797.453	691512.798	929.31	129.48	LINEAR	COMPLETE	2014
MSDD0015	9473201.717	691541.547	892.645	206.1	LINEAR	COMPLETE	2014
MSDD0016	9472477.483	691781.115	849.852	326.1	LINEAR	COMPLETE	2014
MSDD0017	9472274.342	691720.972	843.733	153.7	LINEAR	COMPLETE	2014
MSDD0018	9472619.056	691615.325	857.836	46	LINEAR	COLLAPSE	2014
MSDD0019	9472759.431	691600.75	888.631	185.9	LINEAR	COMPLETE	2014
MSDD0020	9472382.565	691712.4	846.058	152.8	LINEAR	COMPLETE	2014
MSDD0021	9472680.706	691497.574	890.852	138.5	LINEAR	COMPLETE	2014
MSDD0022	9472359.717	691793.557	845.412	209.3	LINEAR	COMPLETE	2014
MSDD0023	9472941.559	691558.989	905.211	150.6	LINEAR	COMPLETE	2014
MSDD0024	9473538.29	691491.777	894.426	202.3	LINEAR	COMPLETE	2014
MSDD0025	9473561.307	691409.53	916.414	155.9	LINEAR	COMPLETE	2014
MSDD0026	9473672.861	691409.178	923.876	158.6	LINEAR	COMPLETE	2014
MSDD0027	9472125.488	691708.67	849.202	175.8	LINEAR	COMPLETE	2014
MSDD0028	9472095.766	691805.739	835.559	200	LINEAR	COMPLETE	2014
MSDD0029	9472311.33	691621.453	898.217	155.6	LINEAR	COMPLETE	2014
MSDD0030	9472593.033	691725.145	852.298	203	LINEAR	COMPLETE	2014
MSDD0031	9472423.294	691609.194	885.27	150	LINEAR	COMPLETE	2014
MSDD0032	9473423.902	691416.901	923.858	150.3	LINEAR	COMPLETE	2014
MSDD0033	9472246.382	691648.841	882.942	150	LINEAR	COMPLETE	2014
MSDD0034	9473478.553	691491.84	897.588	150.3	LINEAR	COMPLETE	2014
MSDD0035	9473336.256	691505.279	901.599	152.4	LINEAR	COMPLETE	2014
MSDD0037	9473115.427	691516.507	905.048	150.6	LINEAR	COMPLETE	2014
MSDD0039	9473192.722	691504.873	903.124	150.5	LINEAR	COMPLETE	2014
MSDD0040	9472643.974	691584.364	865.361	150	LINEAR	COMPLETE	2014
MSDD0041	9473479.168	691447.799	909.199	150	LINEAR	COMPLETE	2014
MSDD0042	9472795.492	691508.02	929.971	80	LINEAR	COMPLETE	2014
MSDD0043	9472741.152	691687.143	869.139	250	LINEAR	COMPLETE	2014
MSDD0044	9472846.143	691530.402	921.88	137.95	LINEAR	COMPLETE	2014
MSDD0045	9472955.764	691490.603	939.564	120	LINEAR	COMPLETE	2014
MSDD0046	9472322.007	691888.714	845.648	260	LINEAR	COMPLETE	2014
MSDD0047	9472858.591	691640.784	888.811	234.1	LINEAR	COMPLETE	2014
MSDD0048	9472240.722	691813.683	841.261	174.1	LINEAR	COMPLETE	2014
MSDD0049	9472714.225	691581.956	891.707	171.32	LINEAR	COMPLETE	2014
MSDD0050	9472248.658	691819.472	841.751	250.2	LINEAR	COMPLETE	2014
MSDD0052	9472468.06	691781.782	849.31	250.3	LINEAR	COMPLETE	2014

Hole_ID	y	x	z	Max_Depth	path	status	year
MSDD0053	9472599.22	691726.414	852.556	200	LINEAR	COMPLETE	2014
MSDD0054	9472140.972	691820.052	837.81	200	LINEAR	COMPLETE	2014
MSDD0056	9473488.215	691494.324	895.954	250	LINEAR	COMPLETE	2014
MSDD0057	9472524.516	691766.59	851.649	200	LINEAR	COMPLETE	2014
MSDD0058	9473159.539	691589.31	891.15	200	LINEAR	COMPLETE	2014
MSDD0060	9472737.56	691684.317	869.238	236	LINEAR	COMPLETE	2014
MSDD0061	9472081.185	691819.996	836.336	46.5	LINEAR	COMPLETE	2014
MSDD0062	9472105.488	691809.308	837.003	66.3	LINEAR	COMPLETE	2014
MSDD0063	9472051.976	691898.092	835.199	155.9	LINEAR	COMPLETE	2014
MSDD0065	9473348.826	691589.006	886.167	250	LINEAR	COMPLETE	2014
MSDD0066	9471961.479	691821.907	833.912	116.3	LINEAR	C0MPLETE	2014
MSDD0067	9472224.054	691860.604	839.944	172.8	LINEAR	COMPLETE	2014
MSDD0068	9471915.801	691902.745	836.678	141.1	LINEAR	COMPLETE	2014
MSDD0069	9472325.358	691890.526	845.723	208.5	LINEAR	COMPLETE	2014
MSDD0070	9472034.01	691948.582	836.002	217	LINEAR	COMPLETE	2014
MSDD0071	9472909.27	691620.643	890.822	136.7	LINEAR	COMPLETE	2014
MSDD0072	9472565.039	691656.67	851.328	138.1	LINEAR	COMPLETE	2014
MSDD0073	9472548.861	691704.133	849.667	155.2	LINEAR	COMPLETE	2014
MSDD0074	9472341.73	691840.52	845.57	165.3	LINEAR	COMPLETE	2014
MSDD0075	9472535.71	691593.04	891.14	98.5	LINEAR	COMPLETE	2014
MSDD0076	9472159.79	692040.52	860	218.2	LINEAR	COMPLETE	2014
MSDD0077	9472253.79	692073.85	863.4	234.1	LINEAR	COMPLETE	2014
MSDD0078	9472089.27	692230.65	866.1	252.6	LINEAR	COMPLETE	2014
MSDD0079	9472184.85	692260.4	871.98	319.9	LINEAR	COMPLETE	2014
MSDD0080	9472398.85	691967.71	858.35	288.3	LINEAR	ABANDONED	2014
MSDD0081	9472529.92	691911.48	854.57	257.5	LINEAR	COMPLETE	2014
MSDD0082	9472713.09	691736.2	855.53	247.3	LINEAR	COMPLETE	2014
MSDD0083	9472857.85	691638.44	889.32	237.1	LINEAR	COMPLETE	2014
MSDD0084	9472066.63	692005.82	844.02	152.3	LINEAR	COMPLETE	2014
MSDD0085	9473079.14	691602.9	891.17	215.6	LINEAR	COMPLETE	2014
MSDD0086	9473759.89	691420.2	910.01	180	LINEAR	COMPLETE	2014
MSDD0088	9472435.64	691870.65	847.83	220.3	LINEAR	COMPLETE	2014
MSDD0097	9473801.31	691364.79	930.23	146.9	LINEAR	COMPLETE	2018
MSDD0098	9473935.76	691409.95	895.62	116.4	LINEAR	COMPLETE	2018
MSDD0099	9472998.9	691344.56	976.51	90.7	LINEAR	COMPLETE	2018
MSDD0100	9472709.27	691416.42	927.87	107.5	LINEAR	COMPLETE	2018
MSDD0101	9472347.48	691544.13	932.55	96.4	LINEAR	COMPLETE	2018
MSDD0102	9472786.59	691817.39	871.92	256.8	LINEAR	COMPLETE	2018
MSDD0103	9473426.5	691690.45	893.56	321.9	LINEAR	COMPLETE	2018
MSDD0104	9473064.93	691814.26	875.11	302.45	LINEAR	COMPLETE	2018
MSDD0105	9473284.89	691308.17	977.18	88.7	LINEAR	COMPLETE	2018
MSDD0106	9473597.25	691324.82	950.73	71.2	LINEAR	COMPLETE	2018
MSDD0107	9472191.291	691946.199	837.873	18.03	LINEAR	ABANDONED	2018
MSDD0108	9472200.664	691792.918	827.228	101.2	LINEAR	COMPLETE	2018
MSDD0109	9472188.388	691944.819	838.533	139.3	LINEAR	COMPLETE	2018
MSDD0110	9472120.613	692131.781	835.185	249.9	LINEAR	ABANDONED	2018
MSDD0111	9471970.602	692125.971	831.285	153.9	LINEAR	COMPLETE	2018
MSDD0112	9472291.715	691979.625	832.744	206.6	LINEAR	COMPLETE	2018
MSDD0113	9471962.343	692128.3	830.78	189.7	LINEAR	COMPLETE	2018

Hole_ID	y	x	z	Max_Depth	path	status	year
MSDD0114	9472648.952	691772.561	847.459	279.2	LINEAR	COMPLETE	2018
MSDD0115	9472810.716	691618.355	873.965	169.6	LINEAR	ABANDONED	2018
MSDD0116	9472999.576	691669.008	870.862	85.9	LINEAR	ABANDONED	2018
MSDD0117	9472821.115	691726.077	852.576	361.1	LINEAR	COMPLETE	2018
MSDD0118	9473005.76	691665.834	868.403	322	LINEAR	COMPLETE	2018
MSDD0119	9472959.84	691797.619	855.171	334.3	LINEAR	COMPLETE	2018
MSDD0120	9472216.209	692161.327	856.941	321.15	LINEAR	COMPLETE	2018
MSDD0121	9473281.966	691624.048	864.851	221.9	LINEAR	COMPLETE	2018
MSDD0122	9472099.925	691912.992	830.428	189	LINEAR	COMPLETE	2018
MSDD0123	9473100.728	691695.434	849.766	17.1	LINEAR	ABANDONED	2018
MSDD0124	9472014.607	692147.881	842.637	266.2	LINEAR	ABANDONED	2018
MSDD0125	9473102.735	691695.698	851.223	287.5	LINEAR	COMPLETE	2018
MSDD0126	9472686.702	691655.291	851.435	8.2	LINEAR	ABANDONED	2018
MSDD0127	9472689.889	691655.097	850.98	228.2	LINEAR	COMPLETE	2018
MSRC0001	9472673.63	691834.45	858.1	205	LINEAR	COMPLETE	2018
MSRC0002	9473032.71	691593.44	888.95	188	LINEAR	COMPLETE	2018
MSRC0003	9472881.04	691704.28	874.83	145	LINEAR	ABANDONED	2018
MSRC0004	9473001.05	691667.53	869.41	163	LINEAR	COMPLETE	2018
MSRC0005	9474403.05	691233.31	881.16	100	LINEAR	COMPLETE	2018
MSRC0006	9474401	691184	882	106	LINEAR	COMPLETE	2018
MSRC0007	9474796.38	691175.98	894.84	100	LINEAR	COMPLETE	2018
MSRC0008	9474800.34	691126.11	887.1	100	LINEAR	COMPLETED	2018
MSRC0009	9474796.28	691074.49	881.7	100	LINEAR	COMPLETED	2018
MSRC0010	9474398.08	691130.42	875.68	106	LINEAR	COMPLETED	2018
MSRC0011	9473280.12	691510.16	895.88	150	LINEAR	COMPLETED	2018
MSRC0012	9472943.36	691562.47	903.37	111	LINEAR	COMPLETED	2018
MSRC0013	9472276.86	691723.11	842.8	70	LINEAR	COMPLETED	2018
MSRC0014	9473109.08	691662.57	881.7	210	LINEAR	COMPLETED	2018
MSRC0015	9473230.1	691604	883.82	70	LINEAR	ABANDONED	2018
MSRC0016	9473577.81	691520.96	892.37	196	LINEAR	COMPLETED	2018
MSRC0017	9472881.61	691705.24	874.64	88	LINEAR	ABANDONED	2018
MSRCD0018	9472887.51	691700.77	875.22	269.85	LINEAR	COMPLETE	2018

C TECHNICAL APPENDIX 3 – MINERALISED INTERSECTION FILE

holeid	from	to	au	interval length	zone	start_x	start_y	start_z	mid_x	mid_y	mid_z	end_x	end_y	end_z
MSDD0001	13	20	4.569286	7	2	691727.3	9472169	832.5194	691725.2	9472168	829.8383	691723.1	9472168	827.1571
MSDD0001	26	28	5.495	2	3	691719.5	9472166	822.5608	691718.9	9472166	821.7948	691718.3	9472166	821.0288
MSDD0002	6	41.93	2.200431	35.93	1	691656.9	9472532	844.8007	691646.1	9472528	830.9784	691635.3	9472524	817.1162
MSDD0002	64.6	69.84	8.394427	5.24	2	691621.6	9472519	799.6093	691620.1	9472519	797.5821	691618.5	9472518	795.554
MSDD0002	87.91	90.92	1.118405	3.01	3	691607.7	9472515	781.5819	691606.8	9472514	780.4229	691605.8	9472514	779.2648
MSDD0002	117.94	119.94	1.5652	2	4	691589.5	9472508	758.5297	691588.9	9472508	757.7612	691588.3	9472508	756.9925
MSDD0003	0	46.77	0.865709	46.77	1	691552.7	9472885	910.259	691537.7	9472882	892.4434	691522.5	9472880	874.8165
MSDD0003	55.28	78.34	1.092755	23.06	2	691517	9472879	868.4399	691509.4	9472878	859.7924	691501.9	9472876	851.1303
MSDD0003	110.02	111.55	2.712026	1.53	3	691481.8	9472873	827.016	691481.3	9472873	826.4294	691480.8	9472872	825.8427
MSDD0003	149.21	150.72	0.566291	1.51	4	691457.1	9472868	796.9357	691456.6	9472868	796.3581	691456.2	9472868	795.7806
MSDD0004	5.7	27.86	6.242148	22.16	2	691460.5	9472867	951.5929	691453.5	9472866	943.1159	691446.5	9472865	934.6492
MSDD0004	44.06	45.08	1.341373	1.02	3	691436.3	9472863	922.2516	691436	9472862	921.8607	691435.6	9472862	921.4698
MSDD0004	86.11	98.09	2.396394	11.98	4	691409.7	9472858	889.9066	691406	9472858	885.2826	691402.2	9472858	880.6558
MSDD0005	57.57	60.28	0.242804	2.71	4	691323.5	9473048	923.1335	691322.7	9473047	922.0914	691321.9	9473047	921.0497
MSDD0006	13.44	22.81	1.088136	9.37	1	691490.2	9473059	905.5092	691487.3	9473059	901.8836	691484.4	9473058	898.2476
MSDD0006	28.79	30.8	0.617761	2.01	2	691480.7	9473057	893.5961	691480.1	9473057	892.8147	691479.5	9473057	892.0334
MSDD0006	49.7	51.72	0.112277	2.02	3	691467.9	9473054	877.3748	691467.3	9473054	876.5933	691466.7	9473054	875.8117
MSDD0006	143.45	146.01	0.035977	2.56	4	691410.6	9473039	804.7919	691409.8	9473039	803.8	691409.1	9473038	802.808
MSDD0007	13.93	14.95	0.717843	1.02	2	691407.8	9473364	918.0633	691407.5	9473364	917.6723	691407.2	9473363	917.2814
MSDD0007	31.87	33.37	1.377333	1.5	3	691396.6	9473361	904.3069	691396.1	9473361	903.7317	691395.6	9473361	903.1564
MSDD0007	107.8	114.65	0.733577	6.85	4	691349.6	9473350	845.8156	691347.5	9473349	843.1937	691345.3	9473348	840.575
MSDD0008	5	9.01	0.718404	4.01	1	691573.5	9472494	899.3334	691572.2	9472494	897.7963	691571	9472493	896.2589
MSDD0008	27.91	28.95	1.428269	1.04	2	691559.3	9472490	881.7588	691559	9472490	881.3595	691558.7	9472490	880.96
MSDD0008	49.43	51.44	1.615224	2.01	3	691546.1	9472487	865.1706	691545.4	9472487	864.393	691544.8	9472487	863.615
MSDD0008	107.83	112.72	1.574315	4.89	4	691510.4	9472478	819.7119	691508.9	9472478	817.8141	691507.4	9472478	815.9183
MSDD0009	51.57	66.99	1.484073	15.42	1	691518.1	9473083	859.0213	691513.3	9473082	853.0881	691508.5	9473081	847.1655
MSDD0009	76.03	77.08	0.565619	1.05	2	691502.8	9473080	840.2347	691502.5	9473080	839.8324	691502.2	9473079	839.4301
MSDD0009	89.13	90.07	0.669362	0.94	3	691494.6	9473078	830.1861	691494.3	9473078	829.8252	691494	9473078	829.4642
MSDD0010	8.88	47.47	0.258359	38.59	1	691459.6	9473247	902.6716	691468.3	9473255	887.8193	691476.7	9473264	872.8941
MSDD0010	65.09	95	0.265316	29.91	1	691484.4	9473272	859.2308	691490.9	9473279	847.6189	691497.5	9473286	835.9784
MSDD0011	188.61	193.13	1.210022	4.52	3	691364	9473709	764.5553	691362.5	9473709	762.932	691361	9473710	761.309
MSDD0012	91.82	92.9	0.426667	1.08	4	691355.8	9472996	889.3794	691355.4	9472996	888.9621	691355.1	9472996	888.5448
MSDD0013	52.91	56.75	0.993411	3.84	1	691475	9473394	856.8072	691474	9473394	855.2739	691472.9	9473395	853.7417
MSDD0013	79.04	89.03	3.67979	9.99	2	691460.4	9473400	836.0404	691457.6	9473401	832.094	691454.7	9473402	828.1547
MSDD0013	110.15	111.16	0.621782	1.01	3	691442.6	9473407	811.5797	691442.3	9473407	811.1851	691442	9473408	810.7906
MSDD0013	160.72	163.75	0.962985	3.03	4	691412.8	9473419	772.5005	691411.9	9473420	771.3445	691411	9473420	770.1895
MSDD0014	4.57	10.91	2.201656	6.34	1	691510	9472798	925.794	691508.1	9472799	923.3385	691506.2	9472799	920.8705
MSDD0014	33.59	40.39	0.013957	6.8	2	691492.4	9472801	902.9553	691490.4	9472801	900.2462	691488.3	9472801	897.5353
MSDD0014	67.74	69.83	0.029522	2.09	3	691472.2	9472797	875.8334	691471.6	9472797	875.0136	691471	9472796	874.1939
MSDD0014	125.17	128.27	3.539806	3.1	4	691438.2	9472798	830.1471	691437.3	9472799	828.9329	691436.3	9472799	827.7198
MSDD0015	65.78	69.98	0.189714	4.2	1	691505.2	9473220	840.8605	691504	9473220	839.2099	691502.8	9473221	837.5595
MSDD0015	87.43	89.98	0.047608	2.55	2	691492.9	9473225	823.8902	691492.2	9473225	822.8949	691491.5	9473226	821.9
MSDD0015	100.59	103.6	1.778007	3.01	3	691485.4	9473229	813.6399	691484.5	9473229	812.4707	691483.7	9473229	811.302
MSDD0015	189.91	199.41	0.602857	9.5	4	691432.1	9473251	745.6013	691429.1	9473252	742.0421	691426.2	9473253	738.491
MSDD0016	82.95	91.97	0.753869	9.02	1	691733.1	9472493	784.0861	691730.5	9472494	780.4867	691727.9	9472495	776.8879
MSDD0016	104.15	110.13	0.256087	5.98	2	691720.9	9472497	767.1716	691719.2	9472498	764.7856	691717.5	9472498	762.3991
MSDD0016	152.53	153.53	0.9781	1	3	691693.2	9472506	728.5239	691692.9	9472506	728.1249	691692.7	9472506	727.7258
MSDD0016	162.81	165.63	0.698759	2.82	4	691687.3	9472508	720.3213	691686.5	9472508	719.1947	691685.7	9472509	718.0675
MSDD0017	0	9.98	0.693126	9.98	1	691721	9472274	843.733	691718	9472275	839.9112	691715	9472277	836.0909
MSDD0017	18.24	19.27	0.875049	1.03	2	691710	9472278	829.7705	691709.7	9472279	829.3765	691709.4	9472279	828.9826
MSDD0017	36.54	46.8	2.383119	10.26	3	691699	9472283	815.7838	691695.9	9472284	811.8671	691692.9	9472285	807.9524
MSDD0017	57.87	61.88	1.262494	4.01	4	691686.3	9472288	799.4913	691685.1	9472289	797.9518	691683.9	9472289	796.4101
MSDD0018	29.19	30.26	0.85757	1.07	1	691597.5	9472624	835.3562	691597.2	9472624	834.9428	691596.8	9472625	834.5293
MSDD0019	66.83	74.8	2.598231	7.97	1	691559.2	9472773	838.1165	691556.7	9472774	835.1044	691554.2	9472775	832.0923
MSDD0019	79.79	91.02	1.540801	11.23	2	691551.1	9472776	828.3214	691547.6	9472777	824.0807	691544.1	9472778	819.843
MSDD0019	98.18	107.16	7.868441	8.98	3	691539.6	9472779	814.4435	691536.7	9472780	811.0597	691533.9	9472781	807.6749
MSDD0019	172.72	184.78	0.709453	12.06	4	691491.6	9472791	758.5056	691487.6	9472791	754.0654	691483.6	9472792	749.6267
MSDD0020	0	19.99	0.804062	19.99	1	691712.4	9472383	846.058	691706.3	9472385	838.4162	691700.2	9472387	830.7967
MSDD0020	40.1	50.59	0.888065	10.49	2	691687.9	9472391	815.3842	691684.7	9472392	811.3432	691681.5	9472393	807.2935
MSDD0020	73.49	75.81	0.533017	2.32	3	691667.6	9472397	789.5451	691666.9	9472397	788.6435	691666.2	9472397	787.7417
MSDD0020	100.48	101.59	0.396757	1.11	4	691651.3	9472400	768.3611	691650.9	9472400	767.9196	691650.6	9472400	767.4779
MSDD0021	0	0.01	0.04	0.01	2	691497.6	9472681	890.852	691497.6	9472681	890.8482	691497.6	9472681	890.8443
MSDD0021	41.36	42.36	0.5876	1	3	691474.2	9472693	859.121	691473.9	9472693	858.7374	691473.6	9472693	858.3538
MSDD0021	84.9	86.17	2.544488	1.27	4	691449.2	9472706	825.7937	691448.8	9472706	825.3096	691448.4	9472706	824.8257
MSDD0022	38.49	60.4	1.513166	21.91	1	691770.3	9472369	816.0741	691764	9472371	807.5635	691757.8	9472374	798.9948
MSDD0022	76.78	89.17	1.487659	12.39	2	691748.8	9472379	786.0878	691745.4	9472380	781.1929	691742	9472382	776.2939
MSDD0022	107.3	110.73	3.74	3.43	3	691732.1	9472387	761.9218	691731.2	9472388	760.5556	691730.3	9472388	759.1878
MSDD0022	124.03	132.89	2.08123	8.86	4	691723.2	9472392	748.5285	691720.8	9472393	744.9577	691718.5	9472394	741.3785
MSDD0023	0	4.03	2.832134	4.03	1	691559	9472942	905.211	691557.8	9472942	903.6665	691556.6	9472942	902.1202
MSDD0023	28.71	38.84	1.844097	10.13	2	691541.4	9472947	883.0686	691538.3	9472947	879.1683	691535.1	9472948	875.2886
MSDD0023	77.01	93.64	3.107811	16.63	3	691510.4	9472952	846.5122	691504.9	9472953	840.2777	691499.4	9472953	834.0604
MSDD0024	44.06	48.14	0.667941	4.08	1	691465.6	9473545	859.6969	691464.4	9473546	858.0763	691463.2	9473546	856.4557
MSDD0024	82.4	83.4	8.474	1	2	691443	9473552	829.5161	691442.7	9473552	829.1273	691442.4	9473552	828.7386
MSDD0024	153.12	158.04	2.10122	4.92	3	691399.6	9473565	775.2134	691398	9473565	773.3523	691396.4	9473566	771.4933
MSDD0024	178.63	181.72	0.718447	3.09	4	691383.2	9473569	756.0144	691382.2	9473569	754.8588	691381.1	9473569	753.7041
MSDD0025	34.16	35.36	0.576	1.2	2	691388	9473567	890.6276	691387.6	9473567	890.1787	691387.2	9473567	889.7297
MSDD0025	91.43	97.53	0.937754	6.1	3	691350.5	9473575	847.9099	691348.5	9473575	845.6644	691346.4	9473575	843.4238
MSDD0025	122.11	123.16	0.021524	1.05	4	691329.8	9473578	825.4736	691329.5	9473578	825.0918	691329.1	9473578	824.7101
MSDD0026	114.67	119.22	0.01	4.55	3	691335	9473691	838.3393	691333.5	9473691	836.6838	691331.9	9473691	835.0277
MSDD0027	0	4.21	3.448456	4.21	2	691708.7	9472125	849.202	691707.4	9472126	847.5884	691706.1	9472126	845.9725

holeid	from	to	au	interval length	zone	start_x	start_y	start_z	mid_x	mid_y	mid_z	end_x	end_y	end_z
MSDD0028	21.52	32.27	2.645312	10.75	2	691792.8	9472100	818.8655	691789.6	9472101	814.645	691786.4	9472102	810.414
MSDD0029	0	5.42	1.211661	5.42	1	691621.5	9472311	898.217	691619.8	9472312	896.1383	691618.2	9472312	894.0543
MSDD0029	11.18	20.96	0.836401	9.78	2	691614.7	9472314	889.6076	691611.7	9472314	885.815	691608.8	9472315	882.0071
MSDD0029	25.79	29.74	2.020152	3.95	3	691605.9	9472316	878.2319	691604.7	9472316	876.6861	691603.5	9472317	875.1401
MSDD0029	95.8	97.49	2.645799	1.69	4	691565	9472326	822.2375	691564.6	9472326	821.5336	691564.1	9472326	820.829
MSDD0030	80.83	84.03	0.834656	3.2	1	691674.7	9472608	790.9257	691673.7	9472608	789.7026	691672.7	9472608	788.4784
MSDD0030	106.02	108.36	0.670769	2.34	2	691659	9472612	771.5554	691658.3	9472612	770.6501	691657.6	9472612	769.7443
MSDD0030	157.81	161.11	0.910091	3.3	3	691627.2	9472617	731.0095	691626.2	9472617	729.7078	691625.2	9472617	728.4057
MSDD0030	187.76	191.08	1.099508	3.32	4	691609	9472619	707.3026	691608	9472619	705.9813	691607	9472619	704.6592
MSDD0031	3.11	7.53	0.565249	4.42	1	691607.3	9472424	882.8826	691606	9472424	881.1801	691604.6	9472425	879.4728
MSDD0031	19.31	23.69	0.969338	4.38	2	691597.5	9472427	870.2978	691596.2	9472427	868.5795	691594.9	9472427	866.8575
MSDD0031	69.72	71.6	1.483191	1.88	3	691567.4	9472433	830.3724	691566.8	9472433	829.6226	691566.2	9472433	828.8726
MSDD0031	97.57	98.6	0.813689	1.03	4	691550.9	9472436	808.1547	691550.6	9472436	807.7444	691550.3	9472436	807.3341
MSDD0032	0	0.18	0.31	0.18	2	691416.9	9473424	923.858	691416.8	9473424	923.7891	691416.8	9473424	923.7201
MSDD0032	28.48	30.48	0.5692	2	3	691399.3	9473429	902.1469	691398.6	9473429	901.3878	691398	9473430	900.6289
MSDD0032	67.61	76.4	3.413299	8.79	4	691374.4	9473436	872.581	691371.6	9473436	869.2853	691368.8	9473437	865.9956
MSDD0033	0	19.58	2.410962	19.58	2	691648.8	9472246	882.942	691642.9	9472248	875.4204	691637	9472250	867.856
MSDD0033	28.33	46.71	1.813901	18.38	3	691631.8	9472252	861.0603	691626.2	9472254	853.889	691620.7	9472255	846.6844
MSDD0034	33.7	36.31	1.16023	2.61	1	691471.5	9473486	871.7631	691470.7	9473486	870.7655	691469.9	9473487	869.7681
MSDD0034	62.01	65.02	1.787841	3.01	2	691454.3	9473492	850.1815	691453.4	9473493	849.0361	691452.5	9473493	847.8907
MSDD0034	112.55	114.41	0.318387	1.86	3	691423	9473503	811.9534	691422.4	9473503	811.2587	691421.8	9473503	810.5642
MSDD0034	147.2	150.3	9.454516	3.1	4	691400.5	9473509	786.2366	691399.5	9473509	785.0974	691398.5	9473509	783.9597
MSDD0035	61.85	66.02	3.186667	4.17	1	691468.8	9473350	853.5121	691467.6	9473350	851.8809	691466.3	9473351	850.2514
MSDD0035	80.18	81.32	0.54193	1.14	2	691457.8	9473353	839.2338	691457.5	9473353	838.7923	691457.1	9473353	838.3508
MSDD0035	89.74	93.51	1.245252	3.77	3	691452	9473355	831.8498	691450.8	9473355	830.3994	691449.6	9473355	828.9509
MSDD0037	42.03	47.07	1.187837	5.04	1	691491.4	9473124	872.592	691489.9	9473125	870.6514	691488.3	9473126	868.7125
MSDD0037	59.21	69.37	0.818999	10.16	2	691480.9	9473128	859.4184	691477.7	9473129	855.564	691474.5	9473130	851.7311
MSDD0037	77.42	78.73	2.96229	1.31	3	691469.4	9473131	845.7025	691468.9	9473131	845.2145	691468.5	9473131	844.7268
MSDD0039	27.93	30.9	0.475421	2.97	1	691487.5	9473198	882.0286	691486.5	9473199	880.9149	691485.6	9473199	879.8009
MSDD0039	54.53	55.65	0.961071	1.12	2	691470.6	9473203	862.0431	691470.2	9473203	861.622	691469.9	9473203	861.2009
MSDD0039	78.31	80.62	0.729524	2.31	3	691455.4	9473207	844.1916	691454.6	9473207	843.3262	691453.9	9473207	842.4609
MSDD0040	0	7.9	1.432911	7.9	1	691584.4	9472644	865.361	691582	9472645	862.3242	691579.6	9472646	859.2662
MSDD0040	38.12	48.29	1.328102	10.17	2	691561.7	9472650	835.3551	691558.7	9472651	831.3174	691555.7	9472652	827.2856
MSDD0040	58.08	69.02	3.39627	10.94	3	691549.9	9472653	819.5405	691546.6	9472654	815.2229	691543.4	9472655	810.9126
MSDD0040	114.68	115.75	1.372523	1.07	4	691516.1	9472663	775.2245	691515.7	9472663	774.8095	691515.4	9472663	774.3946
MSDD0041	6.88	12.37	1.068397	5.49	1	691443.6	9473481	903.9442	691442	9473481	901.8564	691440.3	9473482	899.7738
MSDD0041	37.51	40.54	3.131056	3.03	2	691424.9	9473488	880.8879	691424	9473489	879.7572	691423	9473489	878.6274
MSDD0041	86.56	88.03	0.577551	1.47	3	691393.1	9473498	844.8374	691392.6	9473498	844.3064	691392.1	9473498	843.7755
MSDD0041	98.47	99.9	0.085245	1.43	4	691385	9473499	836.2484	691384.5	9473500	835.7338	691384	9473500	835.2194
MSDD0042	0	9.88	0.54135	9.88	1	691508	9472795	929.971	691506.8	9472793	925.6949	691505.5	9472791	921.4231
MSDD0042	44.77	50.73	2.555252	5.96	2	691496.7	9472776	891.131	691496	9472775	888.5261	691495.2	9472774	885.923
MSDD0042	72.34	74.96	0.01	2.62	3	691489.8	9472765	867.0901	691489.4	9472764	865.9495	691489.1	9472764	864.809
MSDD0043	133.42	141.22	0.992615	7.8	1	691606.7	9472768	766.4375	691604.3	9472769	763.3935	691601.9	9472769	760.3448
MSDD0043	146.5	162.23	0.921755	15.73	2	691598.7	9472770	756.2102	691593.9	9472771	750.042	691589	9472771	743.8861
MSDD0043	177.78	182.8	2.397928	5.02	3	691579.4	9472773	731.7615	691577.8	9472773	729.8102	691576.3	9472773	727.8588
MSDD0043	248.61	250	3.36	1.39	4	691535.3	9472777	676.4962	691534.9	9472777	675.9545	691534.4	9472777	675.4129
MSDD0044	0	23.04	0.760842	23.04	1	691530.4	9472846	921.88	691527.7	9472841	911.9213	691525.2	9472836	902.0224
MSDD0044	70.15	78.4	0.250061	8.25	2	691514.1	9472811	863.6275	691513.1	9472809	860.24	691512.1	9472806	856.8945
MSDD0044	95.83	100.72	6.718487	4.89	3	691507.9	9472797	842.6487	691507.3	9472796	840.6009	691506.7	9472795	838.5417
MSDD0045	2.25	4.03	1.222978	1.78	2	691489.2	9472956	937.84	691488.7	9472956	937.1578	691488.2	9472957	936.4756
MSDD0045	21.44	42.86	3.477152	21.42	3	691477.4	9472959	923.1253	691470.6	9472961	914.9312	691463.7	9472961	906.7452
MSDD0046	84.29	98.92	1.90391	14.63	1	691840.6	9472345	780.2799	691836.8	9472346	774.3359	691832.9	9472348	768.3414
MSDD0046	109.61	111.88	0.347533	2.27	2	691827.4	9472351	759.4928	691826.8	9472351	758.5473	691826.3	9472351	757.6012
MSDD0046	134.17	140.79	1.286495	6.62	3	691815.1	9472356	738.8873	691813.4	9472356	736.0871	691811.8	9472357	733.2815
MSDD0046	151.27	155.28	7.134489	4.01	4	691806.7	9472359	724.3581	691805.7	9472359	722.6439	691804.7	9472360	720.9274
MSDD0047	122.98	136	1.526406	13.02	1	691561.3	9472873	796.2396	691556.9	9472874	791.4466	691552.5	9472875	786.6827
MSDD0047	139.26	146.08	0.948974	6.82	2	691550.3	9472875	784.3084	691548	9472875	781.8332	691545.6	9472876	779.3663
MSDD0047	152.05	167.33	1.856093	15.28	3	691541.5	9472876	775.066	691536.3	9472877	769.5658	691531	9472877	764.06
MSDD0048	40.14	50.34	1.337294	10.2	1	691790	9472249	809.9684	691787.1	9472250	805.89	691784.2	9472251	801.8116
MSDD0048	52.88	69.08	0.734481	16.2	2	691782.8	9472252	799.7804	691778.2	9472253	793.3025	691773.7	9472255	786.7876
MSDD0048	87.73	90.94	0.682741	3.21	3	691763.4	9472258	771.5648	691762.6	9472259	770.2407	691761.7	9472259	768.9144
MSDD0048	97.15	100.62	0.666138	3.47	4	691758.3	9472260	763.7807	691757.4	9472260	762.3474	691756.5	9472260	760.9145
MSDD0049	0	15.61	0.759705	15.61	1	691582	9472714	891.707	691577.2	9472716	885.6984	691572.3	9472716	879.6574
MSDD0049	40.8	60.67	1.914766	19.87	2	691556.2	9472716	860.3191	691549.7	9472716	852.7951	691543.2	9472715	845.325
MSDD0049	69.86	72.44	6.32093	2.58	3	691537.1	9472715	838.4363	691536.2	9472715	837.4706	691535.4	9472715	836.5052
MSDD0049	143.02	145.43	1.067303	2.41	4	691487.9	9472711	784.4138	691487.1	9472711	783.5516	691486.2	9472711	782.6905
MSDD0050	42.07	47.9	2.230373	5.83	1	691805.5	9472245	802.2455	691804.6	9472245	799.5118	691803.6	9472244	796.7787
MSDD0050	58.23	79.52	4.464922	21.29	2	691800	9472244	787.0984	691796.3	9472243	777.1295	691792.6	9472242	767.1677
MSDD0050	90.98	92.17	3.269832	1.19	3	691788.7	9472242	756.449	691788.5	9472242	755.8926	691788.3	9472242	755.3362
MSDD0052	66.96	73	0.702119	6.04	1	691750.7	9472456	791.1579	691749.3	9472456	788.5275	691747.9	9472455	785.8965
MSDD0052	86.51	89.01	0.6058	2.5	2	691741.7	9472453	774.1187	691741.2	9472453	773.0283	691740.6	9472453	771.9378
MSDD0052	101.09	109.66	7.871739	8.57	3	691735.1	9472450	761.3935	691733.2	9472450	757.6508	691731.2	9472449	753.9068
MSDD0052	121.88	123.89	11.72189	2.01	4	691725.7	9472447	743.2224	691725.2	9472447	742.343	691724.8	9472446	741.4634
MSDD0053	82.31	86.29	5.009095	3.98	1	691702.3	9472579	776.6342	691701.8	9472578	774.7799	691701.2	9472578	772.9255
MSDD0053	107.77	108.59	1.412073	0.82	2	691695.5	9472573	752.9073	691695.4	9472572	752.5256	691695.3	9472572	752.1439
MSDD0053	150.8	151.94	0.728246	1.14	3	691683.9	9472562	712.9397	691683.7	9472561	712.4098	691683.6	9472561	711.88
MSDD0053	177.78	180.78	0.712933	3	4	691676.5	9472555	687.8888	691676.1	9472554	686.4969	691675.7	9472554	685.1053
MSDD0054	22.25	25.93	1.973723	3.68	1	691813.1	9472144	816.8823	691812.5	9472144	815.1504	691812	9472144	813.4183
MSDD0054	43.19	46.82	1.247741	3.63	2	691806.9	9472147	797.1493	691806.3	9472147	795.4353	691805.8	9472148	793.7207
MSDD0056	53.95	62.49	1.311487	8.54	1	691479.7	9473465	849.5865	691478.6	9473463	845.9325	691477.5	9473461	842.2802

holeid	from	to	au	interval length	zone	start_x	start_y	start_z	mid_x	mid_y	mid_z	end_x	end_y	end_z
MSDD0056	93.57	99.95	1.454498	6.38	2	691469	9473447	815.7792	691468.1	9473446	813.0783	691467.2	9473444	810.3822
MSDD0056	134.66	137.3	0.090152	2.64	3	691456.4	9473429	781.3071	691456	9473428	780.2051	691455.6	9473428	779.103
MSDD0057	74.1	79.76	3.536219	5.66	1	691743.5	9472514	782.0174	691742.6	9472514	779.362	691741.7	9472513	776.7074
MSDD0057	91.24	99.15	0.824223	7.91	2	691738.1	9472512	765.9404	691736.8	9472511	762.2311	691735.6	9472511	758.5217
MSDD0057	130.09	131.11	1.16	1.02	3	691725.9	9472506	729.4811	691725.7	9472506	729.0015	691725.6	9472506	728.5218
MSDD0057	154.33	155.77	0.818056	1.44	4	691718.8	9472502	706.6502	691718.6	9472502	705.9717	691718.4	9472502	705.293
MSDD0058	129.24	141.76	2.452668	12.52	1	691543.4	9473114	779.5555	691540.8	9473112	774.2941	691538.1	9473110	769.0419
MSDD0058	156.15	157.55	0.12	1.4	2	691531.9	9473105	756.998	691531.6	9473105	756.4131	691531.3	9473105	755.8283
MSDD0058	197.01	198.28	0.03	1.27	3	691514.1	9473091	723.1366	691513.8	9473091	722.6146	691513.5	9473090	722.0928
MSDD0060	120.7	124.08	0.980947	3.38	1	691644.5	9472743	755.5108	691643.9	9472743	753.9213	691643.3	9472743	752.3314
MSDD0060	147.67	162.31	7.580102	14.64	2	691635.4	9472743	730.0978	691633	9472743	723.1898	691630.6	9472742	716.2795
MSDD0060	174.64	176.22	3.268987	1.58	3	691626.5	9472742	704.6344	691626.3	9472742	703.8881	691626	9472742	703.1417
MSDD0060	211.65	214.18	0.601265	2.53	4	691614.6	9472742	669.5993	691614.2	9472742	668.4	691613.8	9472742	667.2005
MSDD0061	0	1	1.17	1	1	691820	9472081	836.336	691819.7	9472081	835.953	691819.4	9472081	835.5701
MSDD0061	27.7	39.65	3.235774	11.95	2	691803.3	9472088	815.2474	691799.6	9472089	810.7361	691795.9	9472091	806.2392
MSDD0062	0.57	2.4	0.190328	1.83	1	691809	9472106	836.5662	691808.4	9472106	835.8646	691807.9	9472106	835.1624
MSDD0062	32.91	38.05	4.358171	5.14	2	691790.8	9472115	811.5099	691789.4	9472116	809.4995	691788	9472117	807.4862
MSDD0063	31.89	48.98	1.076109	17.09	1	691878.7	9472059	810.7677	691873.5	9472060	804.2216	691868.2	9472062	797.6532
MSDD0063	60.26	68.68	4.18677	8.42	2	691861.4	9472064	788.9203	691858.9	9472065	785.6456	691856.3	9472065	782.3657
MSDD0065	141.54	143.58	0.197059	2.04	1	691507.4	9473378	774.671	691506.9	9473378	773.8513	691506.3	9473379	773.0312
MSDD0065	172.73	174.79	0.694612	2.06	2	691490.1	9473384	749.4251	691489.5	9473384	748.5853	691489	9473384	747.7451
MSDD0065	187.57	189.23	0.149337	1.66	3	691481.9	9473386	737.2891	691481.5	9473387	736.6081	691481	9473387	735.9269
MSDD0067	53.91	55.51	4.817563	1.6	1	691843.2	9472231	789.3333	691842.9	9472231	788.5868	691842.7	9472231	787.8404
MSDD0067	73.75	92.08	2.052886	18.33	2	691836.5	9472233	770.8245	691833.4	9472234	762.257	691830.1	9472235	753.7275
MSDD0069	78.42	85.02	0.686864	6.6	1	691877.9	9472329	768.4104	691877.3	9472329	765.1623	691876.8	9472329	761.9127
MSDD0069	99.94	116.78	2.350036	16.84	2	691874.4	9472330	747.2003	691873	9472330	738.8886	691871.7	9472330	730.5768
MSDD0070	35.3	51.72	0.75486	16.42	1	691937.3	9472038	802.7487	691934.4	9472038	795.1017	691931.6	9472039	787.4327
MSDD0071	118.82	123.99	0.504083	5.17	1	691578	9472919	780.3572	691577	9472919	777.967	691576	9472919	775.577
MSDD0072	14.47	19.82	2.841514	5.35	1	691647.9	9472568	840.2609	691646.3	9472569	838.2188	691644.7	9472570	836.178
MSDD0072	65.02	68.98	2.060455	3.96	2	691616.9	9472579	801.8835	691615.7	9472580	800.3951	691614.4	9472580	798.9093
MSDD0072	83.31	85.12	42.21249	1.81	3	691605.4	9472583	788.2305	691604.8	9472583	787.5568	691604.3	9472584	786.8826
MSDD0073	47.41	54.12	2.431923	6.71	1	691675.7	9472558	812.9729	691673.7	9472559	810.3504	691671.7	9472560	807.7292
MSDD0073	61.51	63.53	8.595545	2.02	2	691667.3	9472561	801.96	691666.7	9472561	801.1722	691666.1	9472561	800.3847
MSDD0073	109.24	110.25	1.384356	1.01	3	691638.3	9472570	765.0568	691638	9472570	764.6681	691637.7	9472570	764.2792
MSDD0073	153.57	155.2	2.166196	1.63	4	691611.5	9472579	730.8834	691611	9472579	730.2572	691610.5	9472579	729.6311
MSDD0074	58.13	66.32	0.705556	8.19	1	691807.1	9472356	800.2355	691804.7	9472357	797.0404	691802.4	9472358	793.8493
MSDD0074	89.89	98.89	0.738054	9	2	691788.8	9472364	775.5635	691786.2	9472365	772.0823	691783.6	9472366	768.6033
MSDD0074	123.95	125.46	2.941325	1.51	3	691769	9472373	749.2514	691768.6	9472373	748.6678	691768.1	9472373	748.0839
MSDD0074	145.91	149.42	0.821567	3.51	4	691756.4	9472378	732.1976	691755.3	9472379	730.8275	691754.3	9472379	729.4565
MSDD0075	17.05	22.07	0.4999	5.02	1	691582.8	9472539	877.9482	691581.3	9472540	875.9847	691579.8	9472540	874.0189
MSDD0075	56.27	57	11.32123	0.73	2	691559.3	9472547	847.4655	691559.1	9472547	847.1818	691558.8	9472547	846.898
MSDD0075	64	66.14	2.151682	2.14	3	691554.6	9472548	841.449	691554	9472548	840.6148	691553.3	9472548	839.7803
MSDD0076	126.68	134.69	5.114669	8.01	1	692000.9	9472170	740.1429	691999.7	9472170	736.3274	691998.5	9472170	732.5086
MSDD0076	172.34	174.37	0.231527	2.03	2	691987.7	9472173	696.5254	691987.4	9472173	695.5532	691987.1	9472173	694.5808
MSDD0076	214.27	217.3	0.960495	3.03	5	691976.3	9472176	656.3034	691975.9	9472176	654.85	691975.5	9472176	653.3966
MSDD0077	141.22	158.99	0.791148	17.77	1	692035.3	9472271	728.6508	692033	9472272	720.1137	692030.7	9472272	711.5734
MSDD0077	183.41	194.62	0.925941	11.21	2	692024.5	9472275	688.0844	692023.1	9472275	682.689	692021.7	9472276	677.2915
MSDD0077	218.12	218.99	4.259885	0.87	5	692015.8	9472278	654.6515	692015.6	9472278	654.2331	692015.5	9472278	653.8148
MSDD0078	205.94	208.05	1.456066	2.11	1	692183.3	9472119	668.0953	692183.1	9472119	667.0672	692182.9	9472119	666.039
MSDD0079	249.25	257.68	1.49446	8.43	1	692189.3	9472221	635.8362	692188.2	9472221	631.817	692187.1	9472222	627.7957
MSDD0079	265.85	275.2	1.821465	9.35	2	692185	9472223	619.9949	692183.8	9472224	615.5276	692182.6	9472225	611.0579
MSDD0080	111.65	126.35	0.554728	14.7	1	691933.4	9472419	754.1566	691931.3	9472421	747.2944	691929.2	9472423	740.4242
MSDD0080	148.65	155.66	1.449315	7.01	2	691923.2	9472427	719.5188	691922.3	9472428	716.2243	691921.4	9472429	712.9247
MSDD0080	197.17	198.5	0.03	1.33	3	691912	9472438	673.4642	691911.8	9472438	672.8266	691911.7	9472438	672.1889
MSDD0081	114.19	115.25	2.090849	1.06	1	691877.3	9472542	746.3181	691877.1	9472542	745.8085	691877	9472542	745.2989
MSDD0081	151.96	153.86	2.285474	1.9	2	691867.5	9472545	709.9693	691867.3	9472545	709.0546	691867.1	9472545	708.1399
MSDD0081	191.19	196.17	2.490643	4.98	3	691857.6	9472548	672.1604	691857	9472548	669.7569	691856.3	9472549	667.3529
MSDD0082	139.83	146.84	0.709315	7.01	1	691694.5	9472731	723.2261	691693.5	9472731	719.9025	691692.5	9472731	716.5796
MSDD0082	176.88	183.23	1.237685	6.35	2	691683.4	9472735	688.1353	691682.5	9472735	685.1329	691681.5	9472736	682.1309
MSDD0082	190.46	194.94	1.386607	4.48	3	691679.3	9472736	675.2948	691678.6	9472737	673.1768	691677.9	9472737	671.0588
MSDD0082	243.58	245.38	1.719333	1.8	4	691663.3	9472742	625.0055	691663	9472743	624.1515	691662.7	9472743	623.2975
MSDD0083	132.56	143.87	2.202255	11.31	1	691592.6	9472872	765.747	691590.5	9472872	760.5151	691588.3	9472872	755.286
MSDD0083	156.29	171.81	1.062635	15.52	2	691583.7	9472873	743.8088	691580.8	9472874	736.6359	691577.9	9472874	729.4604
MSDD0083	175.23	177.81	0.339806	2.58	3	691576.6	9472875	726.2972	691576.1	9472875	725.1039	691575.6	9472875	723.9105
MSDD0084	92.46	101.48	1.837051	9.02	1	691976.3	9472078	757.093	691974.8	9472078	752.859	691973.4	9472079	748.6261
MSDD0084	128.3	129	0.91	0.7	2	691964.6	9472082	723.4785	691964.5	9472082	723.1505	691964.4	9472082	722.8225
MSDD0085	170.84	176.53	0.817381	5.69	1	691549.2	9473091	729.4956	691548.3	9473091	726.818	691547.3	9473091	724.1401
MSDD0085	186.05	190.9	1.398247	4.85	2	691544.1	9473092	715.1793	691543.3	9473092	712.898	691542.5	9473092	710.6173
MSDD0085	215.11	215.6	0.02	0.49	3	691534.2	9473093	687.8801	691534.1	9473093	687.6503	691534	9473093	687.4205
MSDD0088	72.22	89.38	0.808881	17.16	1	691848.2	9472445	779.8377	691845.5	9472446	771.7616	691842.9	9472447	763.6812
MSDD0088	116.29	124.02	12.25312	7.73	2	691834.5	9472451	738.3223	691833.3	9472451	734.679	691832.1	9472452	731.032
MSDD0088	152.96	154.98	1.682574	2.02	3	691823.7	9472455	703.5147	691823.4	9472455	702.5489	691823.1	9472455	701.583
MSDD0088	168.13	169.14	1.080891	1.01	4	691819.6	9472456	688.9959	691819.4	9472456	688.5121	691819.3	9472456	688.0283
MSDD0099	32.26	35.95	7.167615	3.69	4	691323.7	9472998	951.9298	691322.5	9472998	950.531	691321.3	9472998	949.1322
MSDD0100	16.75	20.02	1.921162	3.27	3	691405.5	9472709	915.1602	691404.4	9472709	913.9328	691403.3	9472709	912.7077
MSDD0100	26.29	37.14	2.752682	10.85	4	691399.2	9472709	908.0316	691395.5	9472709	904.0129	691391.9	9472709	900.0002
MSDD0101	1	12.71	0.888562	11.71	2	691543.5	9472348	931.7829	691540	9472349	927.2474	691536.6	9472350	922.6388
MSDD0101	14.88	31.71	0.973464	16.83	3	691535.4	9472350	920.9127	691530.6	9472352	914.1294	691526	9472353	907.2097
MSDD0101	64.87	69.54	0.82242	4.67	4	691509.1	9472357	878.9825	691508	9472358	876.9583	691506.8	9472358	874.9341
MSDD0102	169.72	171.84	1.787736	2.12	1	691769.5	9472803	709.9796	691769.2	9472803	708.9561	691769	9472803	707.9326

holeid	from	to	au	interval length	zone	start_x	start_y	start_z	mid_x	mid_y	mid_z	end_x	end_y	end_z
MSDD0102	224.17	227.61	0.720291	3.44	2	691756.3	9472807	657.3454	691755.9	9472807	655.6808	691755.5	9472808	654.0159
MSDD0102	243.26	246.01	1.797964	2.75	3	691751.8	9472809	638.8588	691751.4	9472809	637.5264	691751.1	9472809	636.1938
MSDD0103	245.11	247.83	2.007132	2.72	1	691606.4	9473438	663.9942	691605.9	9473438	662.7615	691605.3	9473438	661.5279
MSDD0103	253.98	255.79	0.554862	1.81	2	691602.7	9473438	655.9378	691602.3	9473438	655.1135	691602	9473438	654.2889
MSDD0104	248.75	268.68	1.342002	19.93	1	691704.3	9473102	655.1283	691699.8	9473103	646.3355	691695.4	9473105	637.5292
MSDD0104	290.77	291.19	5.444048	0.42	2	691685.5	9473108	617.9773	691685.4	9473108	617.7913	691685.4	9473108	617.6053
MSDD0105	28.64	33.34	1.597191	4.7	4	691291.4	9473289	954.384	691290.1	9473290	952.4465	691288.8	9473290	950.5075
MSDD0106	0	3.5	6.117143	3.5	3	691324.8	9473597	950.73	691323.8	9473598	949.3887	691322.7	9473598	948.0459
MSDD0106	34.1	36.69	1.887375	2.59	4	691304.5	9473605	924.3334	691303.7	9473605	923.3202	691303	9473605	922.3063
MSDD0108	17.94	20.92	1.224564	2.98	1	691787.3	9472203	810.3377	691786.8	9472203	808.9321	691786.4	9472203	807.526
MSDD0108	28.72	31.74	1.201126	3.02	2	691784	9472204	800.1585	691783.5	9472204	798.7309	691783.1	9472205	797.3028
MSDD0108	53.75	59.97	6.003826	6.22	3	691776.3	9472206	776.4548	691775.3	9472206	773.5088	691774.3	9472206	770.5639
MSDD0109	90.11	92.17	0.891456	2.06	1	691914.7	9472200	754.3919	691914.4	9472200	753.4305	691914	9472200	752.4691
MSDD0109	120.4	125.29	1.373599	4.89	2	691904.4	9472203	726.1147	691903.6	9472204	723.8321	691902.8	9472204	721.5495
MSDD0110	141.93	145.26	2.243754	3.33	1	692086.3	9472139	702.0523	692085.7	9472139	700.5011	692085.2	9472140	698.9498
MSDD0110	176.17	182.17	1.07165	6	2	692074.8	9472144	670.16	692073.8	9472145	667.3692	692072.8	9472145	664.5813
MSDD0110	200.73	225.45	8.145514	24.72	5	692066.3	9472148	647.396	692061.9	9472149	635.9919	692057.4	9472151	624.6002
MSDD0111	128.92	136.93	1.133683	8.01	1	692086.7	9471991	710.236	692085.5	9471992	706.4552	692084.4	9471992	702.6741
MSDD0112	94.13	112.27	0.888109	18.14	1	691949.9	9472304	744.3231	691947.2	9472305	735.7428	691944.6	9472307	727.1445
MSDD0112	118.36	124.23	3.358279	5.87	2	691942.9	9472307	721.3601	691942	9472308	718.5692	691941.2	9472308	715.7762
MSDD0112	176.58	177.11	1.661698	0.53	5	691926.8	9472315	665.8907	691926.7	9472315	665.6381	691926.7	9472315	665.3855
MSDD0114	131.85	133.88	0.566207	2.03	1	691732.1	9472662	722.6781	691731.9	9472662	721.7102	691731.6	9472662	720.7422
MSDD0114	159.1	160.18	0.508333	1.08	2	691724.4	9472664	696.6504	691724.2	9472664	696.1339	691724.1	9472664	695.6174
MSDD0114	178	179.13	1.531416	1.13	3	691719	9472666	678.5641	691718.8	9472666	678.0232	691718.7	9472666	677.4822
MSDD0114	222.02	224.9	0.859306	2.88	4	691706.5	9472667	636.3854	691706.1	9472667	635.0036	691705.7	9472667	633.6215
MSDD0115	98.61	107.31	3.871402	8.7	1	691555	9472831	801.2103	691552.2	9472832	797.9867	691549.4	9472833	794.7578
MSDD0115	110.89	138.11	2.8886	27.22	2	691547	9472833	792.0965	691538.2	9472835	781.9462	691529.4	9472837	771.7886
MSDD0115	143.88	145.29	1.990142	1.41	3	691525.7	9472838	767.4953	691525.2	9472838	766.9712	691524.7	9472838	766.4473
MSDD0117	169.2	177.52	0.625048	8.32	1	691669	9472837	694.1796	691667.6	9472837	690.2759	691666.2	9472837	686.3733
MSDD0117	190.38	195.04	1.141288	4.66	2	691661.7	9472838	674.3179	691660.9	9472838	672.1352	691660.1	9472838	669.953
MSDD0117	211.54	218.04	1.444092	6.5	3	691654.2	9472838	654.5181	691653.1	9472838	651.4825	691651.9	9472837	648.4485
MSDD0117	273.83	275.32	3.163826	1.49	4	691631.9	9472834	596.4631	691631.6	9472834	595.7669	691631.4	9472834	595.0706
MSDD0118	199.74	205.58	1.889418	5.84	1	691594.8	9473024	682.635	691593.8	9473024	679.9224	691592.7	9473024	677.2109
MSDD0118	223.78	224.88	0.504545	1.1	2	691586	9473025	660.3184	691585.8	9473025	659.8078	691585.6	9473025	659.2971
MSDD0118	234.33	246.21	2.00468	11.88	3	691582.1	9473026	650.5206	691579.9	9473026	645.0022	691577.7	9473026	639.4896
MSDD0118	269.54	270.43	1.027753	0.89	4	691568.7	9473026	617.9578	691568.6	9473026	617.5491	691568.4	9473026	617.1404
MSDD0119	236.91	238.48	0.517006	1.57	1	691721.4	9472985	632.3383	691721.2	9472985	631.5978	691720.9	9472985	630.8573
MSDD0119	247.47	248.51	3.212596	1.04	2	691718	9472986	622.3776	691717.9	9472986	621.8872	691717.7	9472986	621.3967
MSDD0119	259.54	267.05	3.480759	7.51	3	691714.2	9472987	610.9929	691713	9472988	607.4511	691711.8	9472988	603.9093
MSDD0119	298.86	299.38	0.688462	0.52	4	691701.6	9472991	573.9216	691701.5	9472991	573.6766	691701.4	9472991	573.4317
MSDD0120	200.23	203.62	2.438407	3.39	1	692104	9472241	666.7028	692103.6	9472241	665.0878	692103.1	9472241	663.4728
MSDD0120	217.97	219.14	0.608889	1.17	2	692099.1	9472243	649.7999	692099	9472243	649.2423	692098.8	9472243	648.6848
MSDD0120	232.87	233.67	1.161	0.8	5	692095.1	9472245	635.5929	692095	9472245	635.2113	692094.9	9472245	634.8297
MSDD0121	146.08	148.13	0.34	2.05	1	691545	9473304	743.9637	691544.4	9473304	743.1356	691543.9	9473304	742.3079
MSDD0121	159.37	160.47	0.122182	1.1	2	691537.3	9473305	733.2654	691537	9473305	732.8245	691536.7	9473305	732.3838
MSDD0121	176.36	181.78	10.04472	5.42	3	691527.2	9473307	719.7237	691525.6	9473307	717.5851	691524	9473308	715.4535
MSDD0121	220.29	221.9	0.01	1.61	4	691499.8	9473312	685.7443	691499.3	9473312	685.1267	691498.8	9473312	684.5091
MSDD0122	48.53	60.02	2.269164	11.49	1	691897.7	9472106	784.8255	691895.9	9472107	779.4181	691894.1	9472108	774.0076
MSDD0122	77.33	85.05	2.021282	7.72	2	691888.8	9472110	757.6974	691887.6	9472111	754.0596	691886.3	9472111	750.4215
MSDD0124	161.54	169.55	0.06174	8.01	1	692091.7	9472037	692.7985	692090.3	9472037	689.1021	692088.8	9472038	685.4027
MSDD0125	198.93	203.44	0.023289	4.51	1	691595.2	9473137	683.0056	691594	9473137	681.1364	691592.8	9473138	679.2687
MSDD0125	222.11	224.1	0.04402	1.99	2	691582.7	9473140	663.8496	691582.1	9473140	663.0295	691581.6	9473141	662.2095
MSDD0125	248.51	252.61	0.087976	4.1	3	691567.9	9473143	642.1299	691566.8	9473144	640.4401	691565.7	9473144	638.7489
MSDD0125	270.68	275.28	0.333109	4.6	4	691555.7	9473146	623.7821	691554.4	9473146	621.8709	691553.2	9473146	619.9596
MSDD0127	70.95	72.29	0.02	1.34	1	691621.8	9472704	789.9296	691621.5	9472704	789.354	691621.1	9472704	788.7785
MSDD0127	89.34	100.59	0.429248	11.25	2	691612.8	9472707	774.1466	691610	9472708	769.3253	691607.2	9472708	764.505
MSDD0127	114.57	118.08	0.343732	3.51	3	691600.3	9472710	752.5291	691599.4	9472711	751.0261	691598.5	9472711	749.5232
MSRC0001	144	151	0.845714	7	1	691788.2	9472690	722.7843	691787	9472691	719.4953	691785.9	9472691	716.2064
MSRC0001	184	185	1.15	1	2	691775.3	9472695	685.1966	691775.2	9472695	684.7267	691775	9472695	684.2569
MSRC0002	98	104	1.286667	6	1	691547.4	9473049	804.0795	691546	9473050	801.4814	691544.6	9473050	798.8834
MSRC0002	109	120	1.096364	11	2	691542.2	9473051	794.5532	691539.6	9473052	789.7901	691537.1	9473053	785.027
MSRC0002	138	156	4.472778	18	3	691528.6	9473056	769.4385	691524.4	9473058	761.6443	691520.1	9473059	753.85
MSRC0011	48.82	53.16	0.532535	4.34	1	691487.2	9473288	853.6006	691486.2	9473289	851.7214	691485.2	9473289	849.8421
MSRC0011	59	62	1.706667	3	2	691482.4	9473290	844.7845	691481.7	9473290	843.4855	691481	9473291	842.1864
MSRC0011	80	82	0.84	2	3	691472.6	9473294	826.598	691472.1	9473294	825.7319	691471.6	9473294	824.8659
MSRC0012	6.56	10.95	0.083007	4.39	1	691558.5	9472945	898.3447	691557.2	9472945	896.6633	691555.9	9472946	894.9818
MSRC0012	33.77	38	16.94362	4.23	2	691542.1	9472951	877.5007	691540.8	9472951	875.8805	691539.5	9472952	874.2603
MSRC0012	82.69	100.23	3.596591	17.54	3	691512.5	9472962	840.0258	691507.2	9472963	833.3076	691501.9	9472965	826.5894
MSRC0013	0.19	12	0.725556	11.81	1	691723	9472277	842.6215	691721.2	9472278	837.0726	691719.3	9472278	831.5237
MSRC0013	18	19	0.94	1	2	691717.3	9472279	825.8855	691717.2	9472279	825.4157	691717	9472279	824.9458
MSRC0013	33	47	0.96	14	3	691712.5	9472281	811.7901	691710.3	9472282	805.2123	691708	9472282	798.6344
MSRC0013	65	67	1.91	2	4	691702.2	9472284	781.72	691701.9	9472285	780.7803	691701.6	9472285	779.8406
MSRC0016	92.61	95.14	0.720356	2.53	1	691478.7	9473593	811.4395	691478.1	9473593	810.3477	691477.5	9473594	809.2563
MSRC0016	121.27	122.27	0.539	1	2	691464.7	9473597	786.7111	691464.4	9473597	786.2771	691464.2	9473597	785.8429
MSRC0016	188.74	195.74	1.410114	7	3	691432.7	9473604	727.6987	691431	9473604	724.6346	691429.4	9473604	721.5705
MSRCD0018	177.45	202	0.656436	24.55	1	691671.8	9472898	700.4659	691669.8	9472899	688.3773	691667.8	9472900	676.2888
MSRCD0018	223.26	228.9	16.99356	5.64	2	691664.3	9472901	655.3518	691663.9	9472901	652.5747	691663.4	9472901	649.7975
MSRCD0018	260	261	2.03	1	3	691658.3	9472903	619.17	691658.3	9472903	618.6776	691658.2	9472903	618.1852