INDEPENDENT TECHNICAL REPORT
ON THE
LOMONOSOVSKOYE IRON PROJECT,
REPUBLIC OF KAZAKHSTAN

Prepared by Mining Associates Limited

for

KazaX Minerals Incorporated

Authors:

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1 SUMMARY

This report is a description of the Lomonosovskoye Iron Project ("the Lomonosovskoye Project" or "the Project") in the Republic of Kazakhstan prepared by Mining Associates Limited ("MA"). At the request of Mr. Juan Camus, Country Manager of KazaX Minerals Incorporated ("KMI" or the "Company"), MA was commissioned in November 2013 to prepare a revised mineral resource estimate and Independent Technical Report on the Lomonosovskoye Project in compliance with the requirements of Canadian National Instrument 43-101 – Standards of Disclosure for Mineral Projects ("NI43-101"). The revised estimate for the Lomonosovskoye Project is based on the same drill database as used in the report prepared in compliance with National Instrument 43-101 - Standards of Disclosure for Mineral Projects ("NI 43-101"), which was dated December 18, 2012 (and resubmitted on SEDAR on May 9, 2013) (the "December 2012 report"), but with a re-interpretation of the geological and geophysical data and an estimation method that includes an allowance for bulk open-pit or underground mining. MA has been providing technical advice to the project since October 2011.

MA has based this report on information provided by KMI; third party technical reports; a data audit; geology models and resource estimates completed by MA using both historical and recent drilling; and a site visit by the Qualified Person ("QP") in March 2012 and December 2013.

1.1 DESCRIPTION AND LOCATION

The Lomonosovskoye Iron Project is located in the northwest corner of the Republic of Kazakhstan in the Kostanay Region, 618 km northwest of the country's capital of Astana and 50 km west-southwest of the regional capital of Kostanay. It is centred at latitude 53° 02' N and longitude 62° 53' E. The Project area lies 15 km northwest of the town of Rudniy. Primary access to the site is by highway from Kostanay to Rudniy and then sealed road to Lomonosovskoye.

Lomonosovskoye Project Location
(Source: after CIA Factbook)

Project topography is flat lying and has a continental climate of short relatively warm summers and longer very cold winters. The Project is located close to the town of Rudnyi and the significant iron mining-processing operations of the Sokolovsky-Sarbaisky Ore Mining and Processing Association

("SSGPO"), a subsidiary of Eurasian Natural Resources Corporation PLC ("ENRC"). The area has considerable industrial infrastructure related to the activities at SSGPO.

1.2 TENURE

Rights to explore and mine iron ore at the Lomonosovskoye Project are held under Subsoil Use Contract # 3151 owned by Lomonosovskoye Limited Liability Partnership ("LLLP"), a 100% subsidiary of Safin Element GmbH ("Safin"), granted in March 2009 for 21 years, but extendable. According to the Legal Opinion given by GRATA Law Firm LLP, the Subsoil Use Contract has been issued to LLLP in adherence to all the procedural rules and the Subsoil Use Contract remains issued to LLLP as of 14 November 2011.

The indirect acquisition by KMI of a 74.99% interest in LLLP from Safin was completed on 15 February 2013 pursuant to a share purchase agreement ("SPA") signed on 19 December 2011. The current ownership of LLLP is as follows:

1. KMI @ 99.99% (through its Austrian subsidiary, Kazco Beteiligungs GmbH);
2. Safin @ 0.01%.

The Subsoil Contract is registered to LLLP having been officially transferred from the original registrant, Tobol, on 31 July 2009. According to the Legal Opinion, as at the date thereof, the sole holder of participations in the capital of LLLP was Safin, a company registered under the laws of the Republic of Austria.

The SPA originally contemplated the indirect acquisition by KMI of a 99.9% legal interest and a 100% beneficial interest in LLLP by Newbridge (subsequently renamed KazaX Minerals Inc.) from Safin. The SPA was subject to conditions precedent, including government regulatory approval. Subsequently, the SPA was varied to contemplate the indirect acquisition by KMI of a 74.99% legal and beneficial interest in LLLP for aggregate consideration of US$56,383,200 to be satisfied through a combination of cash payments and issuances of common shares of KMI ("Common Shares") to Safin.

As of the effective date of this report, KMI has made cash payments totalling approximately $20.9 million and issued approximately $75.5 million Common Shares pursuant to the terms of the SPA. The future cash consideration due under the SPA is approximately $20.7 million. KMI and Safin are in discussions to revise the schedule for the cash payments remaining under the SPA. In the event that KMI does not complete the cash payments to Safin, in full or in part, in accordance with the terms of the SPA, KMI is required to transfer back to Safin the unpaid portion of its interest in LLLP on a pro rata basis.

1.3 HISTORY AND DRILLING

Iron mineralization was discovered in the region in 1949. The Lomonosovskoye Project has been subject to various geophysical and drilling surveys from 1951 through to 1984 during which time several mineral resource estimates were conducted.

560 diamond drill holes for a total of 206,768.43 m were recorded in the database for the Contract area prior to KMI acquiring the project, of which 190 drill holes were angled holes. A further eighty-six (86) drill holes were completed by KMI between 2011 and 2014 for a total of 25,311.26 m. Drilling in 2011-2012 was targeted at validation of historical drilling. From 2012-2014 drilling was targeted as improving the confidence in geological interpretation and extending the limits of mineralization as well as providing information for geotechnical and hydrological studies.

The last historical estimate was compiled after completion of drilling in 1984, and totalled 333 Mt at an average grade of 34.2% Fe, using a 20% Fe cut-off, which was classified under the Kazakhstan classification system as C1 and C2 categories. The figures quoted above are regarded as historical by

MA (as they are pre-2000) and have been superseded by the estimates reported here and in previous reports by MA. It is MA's opinion that the 1984 historical mineral resource estimates have been largely verified and estimates and are quoted here to provide context only.

1.4 GEOLOGY AND MINERALIZATION

The Lomonosovskoye Project iron deposits, along with a number of other significant magnetite deposits, occur in the Turgai belt of the regional Valerianovskoe magmatic arc in northern Kazakhstan. The magnetite deposits of the Valerianovskoe magmatic arc are hosted by andesitic volcanics, pyroclastics, and intercalated sediments and carbonates of the Valerianovo supergroup. Large gabbro-diorite-granodiorite igneous bodies of the Sarbai-Sokolovsk and Sulukolskaya complexes are related to the mineralization, with granitic facies interpreted as having been intruded from Mid-Visean to Permian period. In some deposits, the host sedimentary sequence is cross cut by post-mineralization dioritic porphyry. The Palaeozoic units of the Turgai belt in Kazakhstan are entirely covered by Mesozoic to Cainozoic sediments which are from 40 to 180 m in thickness.

Magnetite deposits in the Valerianovksoe arc are generally referred to as iron skarn deposits. Skarns result from high temperature alteration of limestones (or other carbonate rocks) resulting in a mineralogy dominated by calc-silicate minerals such as garnet and pyroxene, and various metallic elements such as iron, gold, copper, zinc, tungsten, molybdenum and tin. In this case the dominant metallic element mineral is iron.

The Lomonosovskoye Project comprises two deposits split into four domains: the Northwestern ("NW") deposit and three domains in the more complex Central deposit. The domains differ in geometry but are broadly similar in geological structure, genesis and composition of mineralization, although emphasis of particular mineralization styles changes between domains. The domains are impacted by, and to some extent defined by, diorite dykes and intrusions as well as faulting.

The Northwest Deposit contains stratabound magnetite mineralization along the contact between lower sedimentary (limestone) and upper volcanic-sedimentary (tuffite) members of the Sokolovsky Suite. Mineralization is enclosed by an envelope of garnet-pyroxene skarns and forms a single mineralization zone that can be traced over 1,200 m along strike in a southwest direction, and down dip to a depth of 1,600 m with an average thickness of about 100 m.

The Central Deposit has a complex multi-domain structure due to the widespread influence of diorite intrusions and faulting. Mineralization is defined by gradation in intensity from full skarn replacement to disseminated and partial replacement. The border between them is determined by chemical composition. Mineralized bodies are predominately of seam-like and lenticular shape. Dip angles vary from vertical to 30° for individual mineralized bodies. Average thickness of mineralized bodies is highly variable. The Central Deposit is more irregular that the Northwest Deposit but mineralization is contained within an area is traced along strike over 2,300 m and to a depth of 200 to 600 m in the north, and to 800 m in the south, although depth extent is poorly tested in most areas due to the complexity of the deposit.

Mineralized bodies at Lomonosovskoye consist of a gradation from massive magnetite to disseminated and/or vein magnetite. The boundary between massive and disseminated/vein mineralization is sometimes difficult to identify as dense disseminations of magnetite grade into massive. Massive mineralization is defined as being 50% or greater iron content. Hematite is also present. Seven types of mineralization have been recognized at Lomonosovskoye and both zones share similar mineralization types, although dominance changes from area to area.

2012 confirmation drilling included assaying by modern methods and results compared favourably with historical data. Assaying included measurement of magnetite content by the internationally recognised Davis Tube method at laboratories in the USA.

Historical metallurgical and mineralogical work indicated variations in deleterious element concentrattions between the 2 deposits with sulphur content averaging 2.9% in Northwest and 3.5% in Central, and phosphorus content averaging 0.07%-0.08% and 0.34%-0.45% respectively. Silica values are not reported in the historical mineral resource estimate, and there is insufficient assay data for silica to include its estimation in this resource estimate.

The current estimate confirms historical figures with a variation in deleterious elements with sulphur in Northwest averaging 3.54% and phosphate 0.09% whereas Central sulphur is lower at 2.79% but phosphate is substantially higher at 0.50%. In addition, it was noted that the paleosurface weathering profile may impact iron mineralization up to 100 m depth below that surface, although affected areas near the contacts are poorly drilled.

1.5 RESOURCE ESTIMATE

The revised estimate for the Lomonosovskoye Project is based on an updated drill database finalised at 31 October 2014, and is reported in compliance with National Instrument 43-101 - Standards of Disclosure for Mineral Projects ("NI 43-101"). Geological and geophysical data has been re-interpreted and assays from some previously un-sampled intervals in historical data have been added. Gaps in historical sampling were also filled by using down-hole magnetic susceptibility data where available. An estimation method that includes an allowance for bulk open-pit or underground mining has been utilised. This better understanding of the geology and mineralization controls and additional definition provided by down-hole geophysics has allowed an increase in the confidence levels of the estimates.

The new mineral resource estimate dated at 31 October 2014 is outlined below, above a cut-off grade of 20% Fe:

Class	Mt	Fe %	Fem %	P %	S %
Measured	66.6	27.57	19.11	0.46	2.66
Indicated	441.2	30.24	20.25	0.19	3.05
Measured & Indicated	507.8	29.89	20.10	0.23	3.00
Inferred	78.1	30.38	20.33	0.08	3.69

Fem% - percentage of magnetic Fe in mineralization

In addition to, and contained wholly within, the iron resource presented above MA determined an Exploration Target for vanadium ranging between 40 Mt grading 0.14% V and 100 Mt grading 0.13% V. The Exploration Target was defined using KMI assay data collected since 2011, totalling 3,373 samples in 50 drill holes. The potential quantity and grade is conceptual in nature, and In MA's opinion the number of samples and their spatial distribution is not sufficient to define a Mineral Resource. It is uncertain if further exploration will result in the target being delineated as a mineral resource.

Qualified Persons:

Andrew James Vigar
BAppSc Geo, FAusIMM, MSEG
Effective Date: 31 October 2014
Submitted Date: 14 February 2015
Amended Date: 30 October 2015

2 INTRODUCTION

2.1 ISSUER

This report, prepared for KazaX Minerals Incoporated. ("KMI"), is an independent technical review of the geology, exploration and current mineral resource estimates for the Lomonosovskoye Iron Project located in the Republic of Kazakhstan.

KMI is a public listed company trading on the TSX Venture Exchange and is engaged in the development of natural resource projects.

2.2 TERMS OF REFERENCE AND PURPOSE

At the request of Mr Juan Camus, CEO of Kazax Minerals Incoporated ("KMI"), MA and were commissioned in November 2013 to prepare an Independent Technical Report on the Lomonosovskoye Iron Project located in Kazakhstan.

KMI intends that this report be used as an Independent Technical Report as required under Part 4 "Obligation to File a Technical Report", of Canada's National Instrument 43-101 Standards of Disclosure for Mineral Projects ("NI43-101").

2.3 INFORMATION USED

This report is based on technical data provided by KMI to MA. KMI provided open access to all the records necessary, in the opinion of MA, to enable a proper assessment of the project. MA used the following report as the primary source for descriptions of historical mineral resources:

> IMC Montan, 2010*, Investment Analysis and Exploration Study on the Mine Construction Project at Lomonosovskoye Iron Ore Deposit, Kostanay Region, Republic of Kazakhstan*, dated July 2010, prepared for LLP "Lomonosovskoye" by IMC Montan (IMC Group Consulting Limited, International Economic and Energy Consulting Limited DMT GmbH).

KMI has warranted in writing that full disclosure has been made of all material information and that, to the best of the KMI's knowledge and understanding, such information is complete, accurate and true. Readers of this report must appreciate that there is an inherent risk of error in the acquisition, processing and interpretation of geological and geophysical data.

Additional relevant material was acquired independently from a variety of sources. The list of references at the end of this report lists the sources consulted. This material was used to expand on the information provided by KMI and, where appropriate, confirm or provide alternative assumptions to those made by KMI.

Six weeks were spent on data collection and analysis and preparation of this report.

Geological information usually consists of a series of small points of data on a large blank canvas. The true nature of any body of mineralization is never known until the last tonne of material has been mined out, by which time exploration has long since ceased. Exploration information relies on interpretation of a relatively small statistical sample of the deposit being studied; thus a variety of interpretations may be possible from the fragmentary data available. Investors should note that the statements and diagrams in this report are based on the best information available at the time, but may not necessarily be absolutely correct. Such statements and diagrams are subject to change or refinement as new exploration makes new data available, or new research alters prevailing geological concepts. Appraisal of all the information mentioned above forms the basis for this report. The views and conclusions expressed are solely those of MA. When conclusions and interpretations credited specifically to other parties are discussed within the report, then these are not necessarily the views of MA.

2.4 SITE VISIT BY QUALIFIED PERSONS

The summary review of geology and resource models and estimates was conducted by Mr Andrew Vigar the QP. Mr Vigar conducted a site visit from 26th to 30th March 2012. The visit consisted of visiting the laboratory in Karaganda, visiting the drill site of the current confirmation drilling program, inspecting drill core and the core storage in Rudniy and talking to the site geologists Sergey Debrov and Genadyi Shistak. The site visit was also to determine the competence of the laboratory tendered to do the geological test works, their methods and inspect equipment possessed by the lab. The Karaganda lab was proposed to conduct the geological assaying for the project's requirements, however, it was decided following the visit that the laboratory was unable to meet the international standards required and a second laboratory in Moscow, (Stewart Group) was chosen instead.

Mr Vigar conducted a second site visit from 3rd - 9th December 2013. Time was spent with the site geologists to discuss and understand in detail the geology and problems associated with sampling, preparation, its logistics and requirements of Kazakh and international certified laboratory analyses.

Mr Vigar is a Fellow of The Australasian Institute of Mining and Metallurgy (Melbourne) and a Member of the Society of Economic Geologists (Denver). Mr Vigar is employed by Mining Associates Limited of Hong Kong.

Mr Vigar has sufficient experience which is relevant to the style of iron mineralization and deposits under consideration and to the activity which he has undertaken to be considered a Qualified Person as defined in NI43-101 Standards (Canada).

An additional site visit was undertaken by Dr James Lally of Mining Associates from 12th – 18th October 2015. The purpose of the visit was to confirm the updated geological interpretation used in the resource estimate and address some specific issues by examining core.

3 RELIANCE ON OTHER EXPERTS

The opinions expressed in this report have been based on information supplied to MA by KMI, its associates and their staff, as well as various government agencies including the various government departments related to mineral resource and exploration in Kazakhstan. MA has exercised all due care in reviewing and compiling the supplied information. Although MA has compared key supplied data with expected values with other similar deposits, the accuracy of the results and conclusions from this review are reliant on the accuracy of the supplied data. MA has relied on this information and has no reason to believe that any material facts have been withheld, or that a more detailed analysis may reveal additional material information.

The author has relied wholly on the legal opinion given by GRATA Law Firm LLP in respect of Subsoil Use Contract of Lomonosovskoye LLP, ("the Legal Opinion") in the content of Section 4.3 to 4.8. The Legal Opinion is dated 27 January 2012 and is titled "Legal Opinion in respect of Subsoil Use Contract of Lomonosovskoye LLP". It is an unpublished letter from A Daumov of GRATA Law Firm LLP to TSX Venture Exchange, KMI Capital Inc. and Maitland & Company.

The author has not relied on reports, opinions or statements of legal or other experts who are not Qualified Persons for information concerning legal, environmental, political or other issues and factors relevant to this report.

4 PROPERTY DESCRIPTION AND LOCATION

4.1 AREA OF PROPERTY

The Lomonosovskoye contract area covers 31.83 km^2.

4.2 PROPERTY LOCATION

The Lomonosovskoye Project is located in the northwest corner of the Republic of Kazakhstan in the Kostanay Region, 618 km northwest of the country's capital of Astana and 50 km west-southwest of the regional capital of Kostanay (Figure 1). It is centred at latitude 53° 02' N and longitude 62° 53' E (Figure 1). The Project area lies 15 km northwest of the town of Rudniy.

Figure 1: Lomonosovskoye Project Location
(Source: after CIA Factbook)

4.3 TENURE

Rights to explore and mine iron ore in the Lomonosovskoye area are held under Subsoil Use Contract # 3151 ("the Subsoil Use Contract") with the Republic of Kazakhstan Ministry of Power Supply and Mineral Resources and originally registered to Joint Stock National Company Social Business Corporation Tobol in 20 March 2009. The contact was amended in 2009 and Lomonosovskoye Limited Liability Partnership ("LLLP") became the registered holder.

Table 1: Lomonosovskoye Project Tenement Summary

Tenement	Contractor	Interest 25%	Area (km^2)	Date Registered/ Amended	Date Expiry	Commodity
Contract # 3151	JSNCSBC Tobol * Safrin Element G.m.b.H. (Austria)	25% 75%	31.83	20/03/2009	19/03/2030	Iron
Contract # 3151 amended	LLLP **	100%	31.83	28/12/2010	19/03/2030	Iron
* JSNCSB Tobol = Joint Stock National Company Social Business Corporation Tobol ** LLLP = Lomonosovskoyee Limited Liability Partnership						

According to Legal Opinion, the Subsoil Use Contract has been issued to LLLP in adherence to all the procedural rules in respect of the submission of documents and information; and the Subsoil Use Contract remains issued to LLLP as of 14 November 2011, the date of the relevant comfort letter was provided by the Competent Authority. The Subsoil Use Contract was registered with the Competent Authority as of 14 November 2011. With the exception on the underperformance of expenditure noted in Section 4.8, LLLP has made all such expenditures to keep the Subsoil Use Contract in good standing with the Competent Authority and has complied with all requirements to date under the Subsoil Use Contract.

The Subsoil Use Contract is for 21 years, with the first 5 years for exploration, and 16 for extraction; with up to 4 years extension for the exploration period. The exploration stage was extended up to 2016 in accordance with Addendum No. 5 as of 21 July 2014 to the Subsoil Use Contract. The extraction period is also extendable. The 7year of exploration period is from 20 March 2009 to 20 March 2016. The Subsoil Use Contract expires either upon expiration of exploration period if no commercial discovery has been made or on 20 March 2030, unless prolonged by agreement of the parties. The exploration stage under the Subsoil Use Contract maybe prolonged not more than 2 times with 2-year periods and the period necessary for assessment of commercial discovery

The contract tenement has an area of 31.83 km^2. The location co-ordinates are listed in Table 2 and outlined in Figure 2 and Figure 3.

Table 2: Lomonosovskoye Project Tenement Co-ordinates

Corner Point No.	Northern Latitude	Eastern Longitude
1	53° 03′ 54′′	62° 50′ 40′′
2	53° 03′ 54′′	62° 54′ 08′′
3	53° 04′ 49′′	62° 54′ 54′′
4	53° 05′ 02′′	62° 55′ 37′′
5	53° 03′ 54′′	62° 56′ 19′′
6	53° 01′ 26′′	62° 56′ 19′′
7	53° 01′ 26′′	62° 50′ 40′′

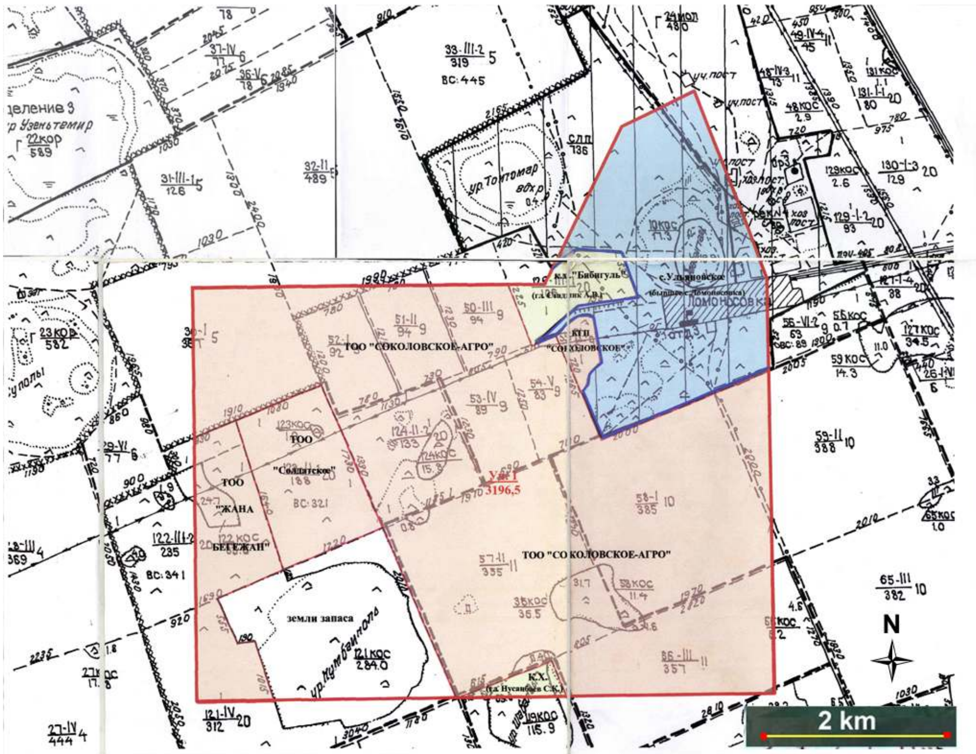


Figure 2: Lomonosovskoye Project Tenement (Contract) Map
(Source: LLLP 2011)

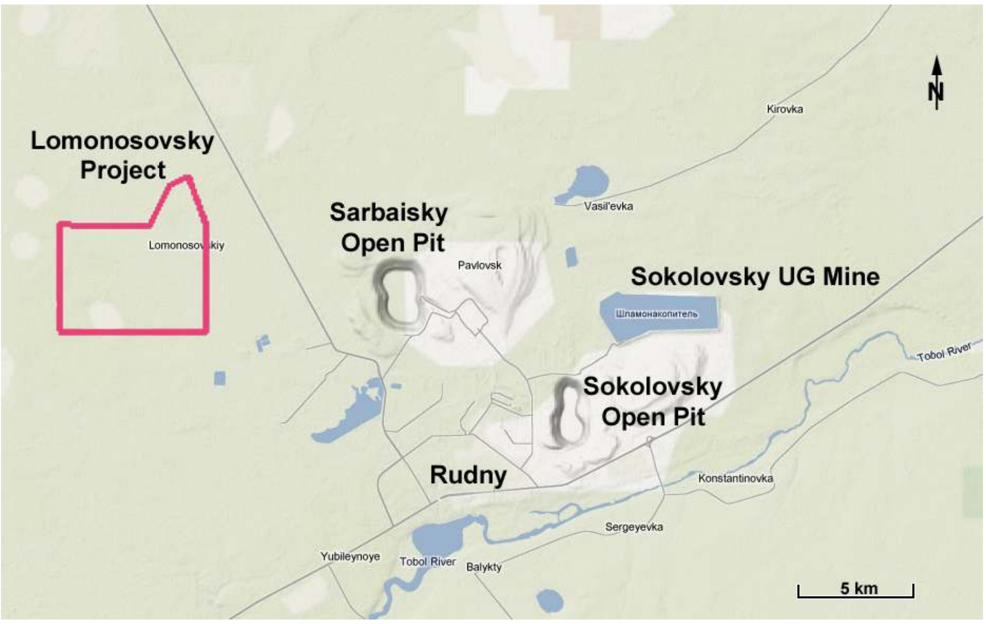


Figure 3: Lomonosovskoye Project Contract Location
(Source: Google Maps 2011)

Aside from a review of the Legal Opinion, MA has not undertaken any title search or due diligence on the tenement titles or tenement conditions and the tenement's status has not been independently verified by MA.

4.4 PROPERTY OWNERSHIP

The mining license (Subsoil Use Contract) is held by LLLP.. The current ownership of LLLP is as follows:

3. KMI @ 99.99% (through its Austrian subsidiary, Kazco Beteiligungs GmbH);
4. Safin @ 0.01%;

The Subsoil Contract is registered to LLLP having been officially transferred from the original registrant, Tobol, on 31 July 2009. According to the Legal Opinion, as at the date thereof, the sole holder of participations in the capital of LLLP was Safin, a company registered under the laws of the Republic of Austria.

The SPA originally contemplated the indirect acquisition by KMI of a 99.9% legal interest and a 100% beneficial interest in LLLP by Newbridge (subsequently renamed KazaX Minerals Inc.) from Safin. The SPA was subject to conditions precedent, including government regulatory approval. Subsequently, the SPA was varied to contemplate the indirect acquisition by KMI of a 74.99% legal and beneficial interest in LLLP for aggregate consideration of US$56,383,200 to be satisfied through a combination of cash payments and issuances of common shares of KMI ("Common Shares") to Safin.

As of the effective date of this report, KMI has made cash payments totalling approximately $20.9 million and issued approximately $75.5 million Common Shares pursuant to the terms of the SPA. The future cash consideration due under the SPA is approximately $20.7million.

As of the effective date of this report, KMI and Safin are in discussions to revise the schedule for the cash payments remaining under the SPA.

In the event that KMI does not complete the cash payments to Safin, in full or in part, in accordance with the terms of the SPA, KMI is required to transfer back to Safin the unpaid portion of its interest in LLLP on a pro rata basis.

4.5 ROYALTIES AND OTHER AGREEMENTS

The Contract lists the taxes, duties, fees, royalties and other governmental charges that are payable by LLLP. Fees and taxable payable are summarised in **Error! Reference source not found.**.

Table 3: Royalties and Fees

Corporate Income Tax	Other Payments
Value Added Tax	Fee for vehicle passage through Kazakhstan
Excise Taxes	Auction Fee
Subsurface Users Tax	Licence Fee for the Right to Definite Activities
Signature Bonus	Land Use Fee
Commercial Discovery Bonus	Fee for Water Resources of Surface Springs
Past Cost Recovery Payment	Environmental Emission Fee
Iron Ore Extraction Tax	Fauna Use Fee
Excess Profits Tax	Forest Use Fee
Tax on Vehicles	Fee to use Specially Protected Natural Areas
Land Tax	Radio Spectrum Fee
Property Tax	Navigable Waters Use Fee
Customs Payments	Outdoor (Visual) Advertising Fee
Transfer Pricing’	State Taxes
Pension Provision and Social Contributions	
Penalties	

Required payments include the following:

- Signing fee: $US120,000 on signing of the contract (paid)
- Commercial discover bonus: 0.1% of tax base
- Past state exploration cost repayment: US$1,269,918 after commencement of production
- Iron Ore extraction tax/royalty: 3.50%
- Excess profits tax: sliding scale from 10 to 60%
- Decommissioning fund: 1% of annual expenditure on exploration during exploration period; 1% annual expenditure on extraction

4.6 ENVIRONMENTAL LIABILITIES

LLLP exploration activities must comply with the environmental requirements of Kazakhstan legislation and regulations, including the Ecological Code (“EC”). Under EC, the Contractor (“subsoil user”) must comply with environmental requirements during all stages of a subsoil use operation. Kazakhstan environmental legislation requires that a State environmental expert examination precede the making of any legal, organisational or economic decisions with respect to an operation that could impact the environment and public health. One of the required documents to be submitted is an environmental impact assessment (“EIA” or “OVOS”).

The EC requires that the subsoil user obtain environmental permits to conduct its operations. An EC permit certifies the holder’s right to discharge emissions into the environment, provided that it introduces the “best available technologies” and complies with specific technical guidelines for emissions as set forth by the environmental legislation.

Government authorities and the courts enforce compliance with these permits and violations may result in civil or criminal penalties, the curtailment or cessation of operations, orders to pay compensation, orders to remedy the effects of violations and orders to take preventative steps against possible future violations. In certain situations, the issuing authority may modify, renew or revoke the permits.

The EC and the Contract set out requirements with respect to environmental insurance. The Contractor carrying out environmentally hazardous activities is required to obtain insurance to cover these activities, as well as civil liability insurance.

4.7 PERMITS AND OBLIGATIONS

The following descriptions have been extracted from the Legal Opinion unless otherwise noted.

4.7.1 Kazakhstan Mining Law

The subsoil, including mineral resources in their underground state, are Kazakh state property, while resources brought to the surface belong to the subsoil user, unless otherwise provided by the Subsoil Use Contract. In order to develop mineral resources, the appropriate State agency (the "Competent Authority"), grants exploration and production rights to third parties. Subsoil rights are granted for a specific period, but may be extended prior to the expiration of the applicable contract or licence. Subsoil rights may be terminated by the State if the counter-party does not satisfy its contractual obligations, which generally include compliance with project document and annual work program commitments, payment of taxes to the State and the satisfaction of mining, environmental, safety and health requirements. Subsoil rights become effective upon conclusion of a Subsoil Use Contract and a subsoil user is accorded the exclusive right to conduct mining operations, to erect production and social facilities, to freely dispose of its share of production and to conduct negotiations for extension of the Subsoil Use Contract.

While the Subsoil Law contains guarantees providing that changes to legislation which worsen the position of the subsoil user are not applicable (with the exception of legislation involving national defence or security, ecological safety and public health), the government has gradually weakened this stabilization guarantee, particularly in relation to new projects, and the national security exception is applied broadly to encompass security over strategic national resources (Foldenauer et al, 2009).

The Legal Opinion notes that the legal framework relating to exploration, development and production of the Lomonosovskoye Subsoil Use Contract is covered by the following primary and secondary legislation currently in force:

- Law of the Republic of Kazakhstan on Subsoil and Subsoil Use dated 27 January 1996 No. 2828, as amended, effective to 5 July 2010 (the "Old Subsoil Law");
- Law of the Republic of Kazakhstan on Subsoil and Subsoil Use dated 24 June 2010 No. 291-IV, as amended, effective since 6 July 2010 (the "New Subsoil Law") (the New Subsoil Law together with the Old Subsoil Law are collectively referred to as the "Mining Law");
- Rules on Procurement of Goods, Services and Works for Conducting Subsoil Operations dated 14 February 2013 No. 133, as amended;
- Minutes of Direct Negotiations between the Ministry of Energy and Mineral Resources and the National Company Social Entrepreneurial Corporation "Tobol" JSC with regard to provision of subsoil use right on exploration and production of iron ores at the Deposit in Kostanay region dated 14 November 2008;
- Environmental Code of the Republic of Kazakhstan dated 9 January 2007, as amended;
- Decree of the Government of the Republic of Kazakhstan dated 10 February 2011 No. 123 on Approval of Unified Rules on Rational and Complex Use of Subsoil at Exploration and Production of Minerals; and

- Decree of the Government of the Republic of Kazakhstan dated 20 September 2010 No. 965 on Approval of Forms and Rules on Development and Submission of Annual, Middle-Term, Long-Term Programs on Procurement of Goods, Works and Services, Reports of Subsoil Users about Procured Goods, Works and Services and on Execution of Obligations on Kazakhstani Content in Staff.

4.7.2 Lomonosovskoye Subsoil Use Contract Rights

The Subsoil Use Contract provides the following rights to LLLP:

- to conduct exploration of iron mineralization of the Lomonosovskoye deposit at the contract territory on an exclusive basis;
- conduct on its own any legal actions on subsoil use within the limits of the granted contract territory in accordance with conditions of the Subsoil Use Contract;
- to use at its discretion results of its operations, including mined iron ores of the Lomonosovskoye Deposit;
- build on the contract territory, and, if necessary, on the other plots of land provided to LLLP in the prescribed order, objects of industrial and social spheres necessary for the implementation of the exploration of iron ores of the Lomonosovskoye deposit;
- on the basis of agreements with owners to use facilities and public utilities both on the contract territory and outside of it;
- in the priority order to initiate negotiations for the renewal of the contract term according to conditions of the Subsoil Use Contract;
- to engage subcontractors for execution of separate types of works related to exploration of iron ores of the Lomonosovskoye deposit;
- to transfer all or part of its rights to third parties subject to the conditions determined by the Subsoil Use Contract and legislation of the Republic of Kazakhstan;
- to cease its operations on the terms established by the Subsoil Use Contract and legislation of the Republic of Kazakhstan;
- in case of termination of the Subsoil Use Contract LLLP is entitled to dispose the property being in its ownership on its own, unless otherwise stated by the Subsoil Use Contract.

4.7.3 Lomonosovskoye Subsoil Use Contract Obligations

The Subsoil Use Contract establishes specific conditions for LLLP in respect of its grant of permission to conduct exploration activities on the Property, including the following:

- The work must start within not later than 180 days since the date of registration of the Subsoil Use Contract;
- All work set out in the minimum exploration work schedule must be concluded within the envisaged period of 5 years, unless extended in the specified order;
- LLLP shall maintain accurate and detailed notes of any work that is carried out and must, upon request, make such notes available for inspection;
- Commercial discovery of any minerals of a monetary value must be reported as soon as practicable thereafter, and within not more than 180 days after commercial discovery LLLP shall prepare report on reserves assessment to be submitted to the authorized state body;
- Upon discovery of any mineral of a monetary value or as soon as practicable thereafter, the Permit holder must report in writing to the Competent Authority;
- LLLP must take all necessary measures to prevent damage to the environment;
- No environmental damage shall be caused in the surrounding area;

- Damage in the area shall be remedied upon conclusion of work.
- LLLP shall transfer funds to liquidation fund, for social development of the region, for tuition of Kazakhstani workers.
- LLLP must report on the work carried out, its costs and results in manners specified by the subsoil legislation of the Republic of Kazakhstan

4.7.4 Subsoil use licence extension and exploration programme

Under LLLP's exploration plan for 2013 approved by MINT in late June 2013, LLLP was required to complete a scope of work and activities by December 31, 2013. As new exploration works were added to the program and this scope of work and activities would not be completed in 2013, LLLP lodged an application with MINT in September 2013 to extend the exploration period allowed under the Subsoil Use Licence from the current expiry of March 2014 to March 2016. In November 2013, MINT confirmed receipt of the application by LLLP and informed LLLP that the application would be reviewed after receipt of supporting Project documentation. LLLP subsequently submitted a revised exploration work plan with MINT to support the extension application, including a revised plan for 2013.

In March 2014, LLLP obtained approval (the "Approval") from MINT to extend by two years the exploration phase of the Subsoil Use Licence for the Project. The original Subsoil Use Licence had a duration of 21 years, of which five years were for exploration and 16 years for mining. Both phases could be further extended, if required. As a result of the Approval, the exploration phase of the Subsoil Use Licence has been extended to seven years, and will expire on March 20, 2016. The extension of the exploration phase does not affect the 21-year term of the Subsoil Use Licence, which continues to expire on March 20, 2030.

The Approval included a new Exploration Works Plan ("EWP"), which contemplates exploration activities concerning the Project, including drilling and cameral works. Drilling work includes exploration, geotechnical and hydrogeological boreholes considered in the 2013-2014 drilling program. Cameral work comprises all administrative and evaluation work including analysis of geological information obtained from drilling programs, preparation of legal documentation for securing all applicable approvals by MINT, and State Registration of Reserves and Mine Master Plan, which is a pre-requisite to start pre-stripping and mine production activities. As all exploration expenditures contained within the new EWP are required to form part of the Subsoil Use Licence, amendment to the Subsoil Use Licence, was executed on 21 July 2014.

4.7.5 Assignment and Transfer

The Legal Opinion notes that permission is required from the Competent Authority to transfer shares. The Subsoil Law requires that assignments and transfers of subsoil use rights may be made only with the prior consent of the Competent Authority. The Ministry of Energy and Mineral Resources of Kazakhstan ("MEMR") customarily interpreted this requirement very widely (Foldenauer et al, 2009).

4.7.6 Pre-emptive Rights

As noted above, the Republic of Kazakhstan has a pre-emptive right to acquire subsurface use rights and equity interests in entities holding subsoil use rights and in any entity which may directly or indirectly determine or exert influence on decisions made by a subsoil user, if the main activity of such entity is related to subsoil use in Kazakhstan, when such entity wishes to transfer such rights or interests. This pre-emptive right permits the Republic of Kazakhstan to purchase any such subsoil use rights or equity interests being offered for transfer on terms no less favourable than those offered by other purchasers. The Competent Authority has the right to terminate a subsoil contract if a transaction takes place in breach of this law. According to the Subsoil Law requirements, these provisions apply both to Kazakhstan and overseas entities, including publicly traded companies (Foldenauer et al, 2009).

4.7.7 Work Programs

As noted in the Seller Disclosure Schedule in the SPA, under the New Subsoil Law, the requirement for annual work programs was replaced by a new project document “Plan of Prospecting Works”. Prior to applying for approvals, work programs require the completion of three studies (environmental impact, health protection, industrial safety), which need three departmental approvals: Ministry of the Environment, Ministry of Health and Ministry of Emergencies. The last amendment to the Plan of Prospecting Works was approved on 11 March 2014. The work program as an appendix to Addendum No. 5 to the subsoil use contract was executed on 21 July 2014.

4.7.8 Decommissioning

Within 1 year of the completion of the exploration period, LLLP must submit a decommissioning program and budget. LLLP must contribute to a Decommissioning fund consisting of 1% of annual expenditure on exploration during exploration period, and 1% annual expenditure on extraction. If actual costs exceed the fund, the LLLP is required to provide additional funding; if less, the amounts are returned to taxable income.

4.8 OTHER SIGNIFICANT FACTORS

4.8.1 Procurement Requirements

Under Kazakhstan law, all subsoil users must procure goods, works and services for subsoil use operations under prescribed statutory procedures. In particular, subsoil users are required not later than 30 calendar days from the date of approval of an annual work program, to approve an annual procurement program for the following year.

4.8.2 Local Content Requirements

Since 2002, Kazakhstan has implemented a policy aimed at replacing imports, and encouraging more use of local producers (“Local Content Policy”). Under the Local Content Policy, subsoil users are obliged to purchase local goods, works and services (“GWS”) as required in the Contract. The LLLP Contract obligates LLLP to use GWS unless specifically approved to the contrary by the applicable regulatory authorities to the extent of at least 40% of the costs of equipment and material, must be for equipment and materials purchased of Kazakh origin. In addition, 90% of the contract work must be of Kazakh origin.

5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 TOPOGRAPHY, ELEVATION AND VEGETATION

The area is a flat plain (steppe) with a slight slope to the east (Figure 4). Maximum elevation is 200 m above sea level, with a gentle slope towards the Tobol River, which lies at an elevation of 170 m within a strongly incised river valley. The river channel slope is approximately 0.3-0.4 m per kilometre.

During summer, the Tobol River is shallow and easily crossable by vehicles. In the spring, during the flood, the river level rises 4-6 m due to the snow melt run off.

Figure 4. Lomonosovskoye Project Area Topography.
(Source: MA 2011)

5.2 ACCESS

Access to the Lomonosovskoye Project area is via the Rudniy-Kachary road located 1 km west of the Project area. The closest railway station is 20 km at Zhelezorudnaya, which is connected with Karaganda and Magnitogorsk through Tobol, and with Chelyabinsk through Kostanay. The closest airport is 50 km from the site, at Kostanay. If flights are not available, it is a 10 hour drive from Astana to Kostanay, then on to the Project area via the Kostanay-Rudniy road (Figure 5).

5.3 POPULATION AND TRANSPORT

The town of Rudny was established to support the mining operations at Sokolovsky-Sarbaisky Ore Mining and Processing Association ("SSGPO"), owned by Eurasian Natural Resources Corporation PLC ("ENRC"). Rudny has a population of some 120,000 and the region is relatively well serviced with rail, road and air access.

Figure 5: Lomonosovskoye Project Regional Location
(Source: Google Maps 2011)

5.4 CLIMATE

The climate is continental with an average annual temperature of 1.2°C- 1.3°C. The coldest month is January with an average temperature of -17.5°C and a possible minimum of -45°C. The warmest month, July, has an average temperature of 19.9°C and a possible maximum of 35°C. Highest rainfall occurs in the summer months of June, July, and August. Driest months are December, January, and February when precipitation falls as snow.

Exploration is not significantly affected by the climate.

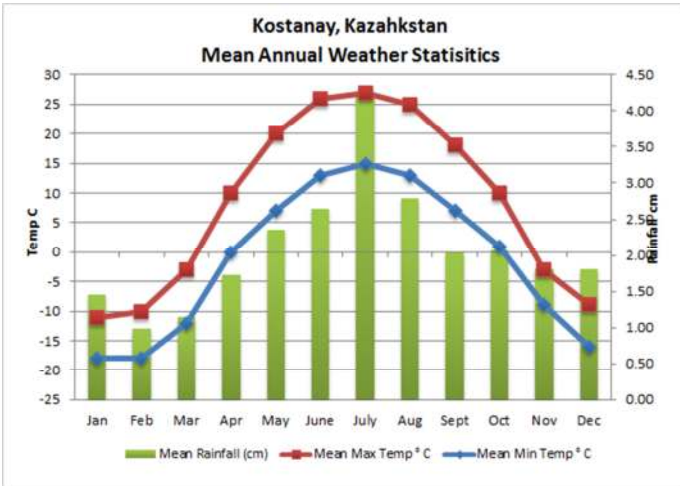


Figure 6: Rainfall, Temperature averages for Lomonosovskoye
(Source: MSN Weather)

5.5 INFRASTRUCTURE

The Lomonosovskoye Project has a highly favourable location due to its proximity to transportation routes, and sources of water, gas, and power supply which have been established with the regional mining complex of SSGPO based in Rudny.

The following facilities are run by SSGPO in the Rudny area, as described in the ENRC 2007 prospectus (which MA notes are not part of, nor are available to the Lomonosovskoye Project):

- Central processing facility and pelletising plant where all of SSGPO mining operations' ore is processed (Figure 7a). The pelletising plant is one of the oldest in the former Soviet Union. SSGPO aims to produce 21 Mt of concentrate by 2018;
- Power plant: This coal-fired power station has a capacity of 204 MW and supplies SSGPO with electricity and the town of Rudny with electricity, heat and hot water through the district heating system;
- Rail network: SSGPO operates its own rail network for transporting iron ore from the mines to the central processing facility and for transporting waste from some of the open pits (Figure 7b);
- Explosives manufacturing facility: This facility manufactures bulk explosives for each of the SSGPO mining operations; and
- Repair and maintenance workshop: This facility is responsible for providing a central maintenance support service for the major overhauls.

a) **SSGPO (ENRC) Pellet Plant** **b) Sokolovsky ore transport railway**

Figure 7. Infrastructure in Proximity to Lomonosovskoye Project.

6 HISTORY

6.1 PRIOR OWNERSHIP

There is no previous private ownership of the project.

6.2 PREVIOUS EXPLORATION

Metallic mineralization was first noted in the region in 1949, when the Lomonosovskoye magnetic anomaly was detected by an airborne magnetometer survey, conducted by the Uralian Geophysical expedition. Exploration started in 1950 in several stages, from 1950-57 and then 1967-1970. Exploration was carried out over the Lomonosovskoye anomaly as well as various other regional geophysical anomalies (outside the current project area).

6.2.1 Mapping

In 1951-52 a geological map at 1:500 000 scale was prepared for the northern part of Turgaisky depression. In 1959 and then in 1962 a geological survey at 1:200 000 scale was completed within the project area. The most promising areas were surveyed at 1:50 000 scale with the preparation of schematic maps of Palaeozoic basement rocks. In 1970 a schematic geological map of the Sokolovo-Sarbaisky ore region was made at 1:200 000 scale. A 1: 5 000 scale geology map was completed in 1992 (Figure 21).

6.2.2 Geophysics

The Lomonosovskaya magnetic anomaly was discovered in 1949 through an aeromagnetic survey conducted by the Urals geophysical expedition at 1:100 000 scale. Subsequently a detailed magnetic survey at 1:10 000 scale was carried out by the Turgaisky geophysical expedition in 1951 on the basis of which an isodynamic map at 1:5 000 scale was made in 1952.

In 1963 the Turgaisky geophysical expedition conducted a detail gravimetric survey at 1:10 000 scale over the North-Western and Central sites of the deposit.

In 1984 T.V. Tychkova summarized geophysical data over the western part of the Turgaisky depression at 1: 200 000 scale and over the iron mineralized regions at 1:50 000 scale. The 1:50 000 scale isodynamic map of the Sokolovo-Sarbaisky region is presented in Figure 8.

The magnetic surveys defined four main anomalies at the Lomonosovskoye Project (Figure 13): the North-Western epicenter with an area of 1000 m x 600 m and maximum intensity of 6000 nT, the Central epicenter (900 m x 650 m, 7000 nT), the South-Eastern epicenter (300 m x 250 m, 3000 nT) and the North-Eastern epicenter (1200 m x 600 m, 3000 nT).

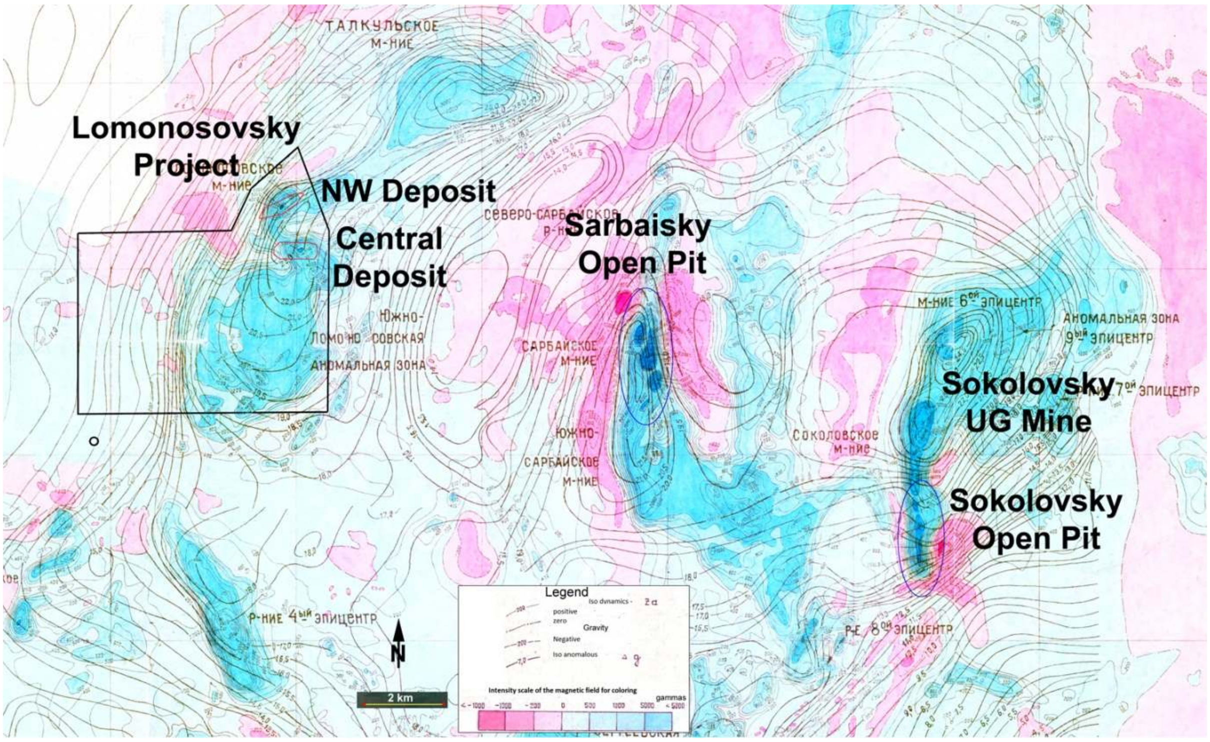


Figure 8: 1984 Compilation Map: Aeromagnetic and Gravity regional survey results
(Source: LPP 2011)

During exploration in 1961-67, down-hole geophysical studies were widely used: magnetic susceptibility logging, magnetic logging, apparent resistivity, gamma logging, mise a la masse (electrical resistivity), as well as directional logging. Table 4 lists the down hole logging conducted.

Table 4: Down-Hole Geophysical Logging, 1961-1967

Hole geophysical study	Holes	metres
Magnetic susceptibility log	118	73,701
Hole magnetometry	118	73,701
Electric logging (resistivity-spontaneous potential)	107	68,064
Gamma-logging	118	87,227
Selective gamma-logging	27	11,952
Directional logging	119	99,073
Caliper logging	72	52,461
Temperature logging	6	7,721
Excitation-at-the-mass	39	-
Radio-frequency survey	29	-
Acoustic logging	1	-
Contact method of polarization curves	19	-

6.2.3 Drilling

560 diamond drill holes are recorded in the database for the Contract area of which 190 were angled holes for a total of 206,768.43 m drilled (Appendix 1, Figure 9 to Figure 12). Due to technical capabilities and limitations on historical mineable depths at the time, drilling was initially limited to 400-500 m depth in the early stages of study, and then 600-700 m in later ones. Most of the early (pre-1981) drill holes ended above the main mineralization zones, or in poor, vein-type mineralization. Thus, the sources of some magnetic anomalies were not fully understood and erroneous conclusions were made regarding the extent of mineralization.

6.2.3.1 Drilling 1950-1956

Drill holes 1 and 2 were targeted at the epicentres of the Central and Northwestern magnetic anomalies. Both holes intersected magnetite mineralization, which justified further exploration. A total of 104 drill holes were completed including 51 exploration and 53 survey holes for 23 410 m. Drilling was done with KAM-500 machines to a depth of 536 m (mostly to 200-300 m) with core diameters of 91 mm and 75 mm. Core recovery in mineralized sections averaged 78.1%.

The exploration grid during the drilling program was 200 m spaced lines and 100 m spaced holes (200 x 150 m in the plane of mineralized bodies). During subsequent studies, the grid along some lines was reduced to 200 x 50 m, and over the northern flank of the Northwestern site to 100 × 50 to 100 m.

Whole core from the mineralized zone and barren rocks within the deposit lodes was sampled. Sampling was selective, with the use of lithological control. Sample intervals were generally between 0.5 m and 5.0 m.

The majority of routine and combined samples were analyzed at the Kustanaisky geological exploration trust laboratory. Magnetite iron was not determined. External analytical control was provided in laboratories of the Urals, Alma-Aty and Karaganda geological administrations. Results of internal control showed excessive permissible random errors for sulphur and phosphorus in 1951 and 1952 determinations.

6.2.3.2 Drilling 1956-1960

Exploration was only conducted in the Central site during this period of drilling. In 1956, datolite (calcium boron silicate hydroxide) was found in drill hole 58 and exploration for boron mineralization started along with the evaluation of magnetite mineralization and other minerals. Drill holes were drilled along exploration lines 15-21, on a 150-200 x 100 m grid, with depths that did not exceed 300 m. The total amount of drilling was 2,384 m with core recovery of 83.7% and 82.5% in the enclosing rocks and mineralization, respectively. Datolite mineralization was found to be of no commercial value, but at the same time a thick sequence of magnetite vein mineralization was discovered in boreholes 1761 and 1762. From 1957 to 1960 exploration for base metal mineralization revealed lead-zinc mineralization associated with garnet skarns. This data served as the justification for a survey for base metals.

6.2.3.3 Drilling 1960-1968

This period saw the preliminary exploration of the Lomonosovskoye deposit to a depth of 600 m with three mineral resource estimates of iron mineralization. These historical mineral resource estimates are described in Item 6.3.

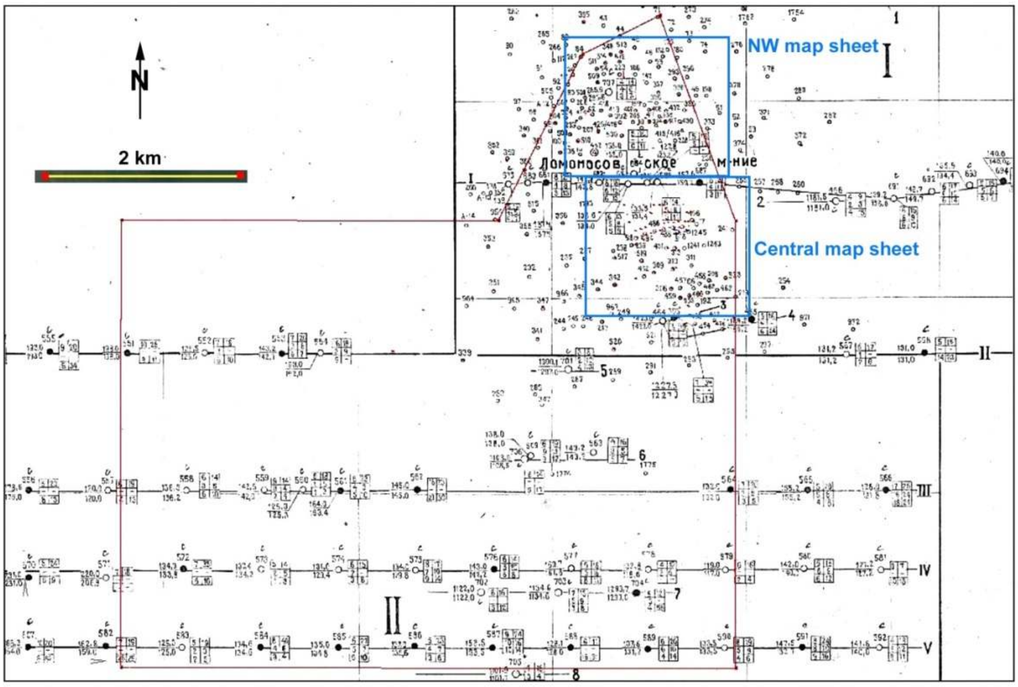


Figure 9: Historical drilling - Drill Collar locations
(Source:LLLP)

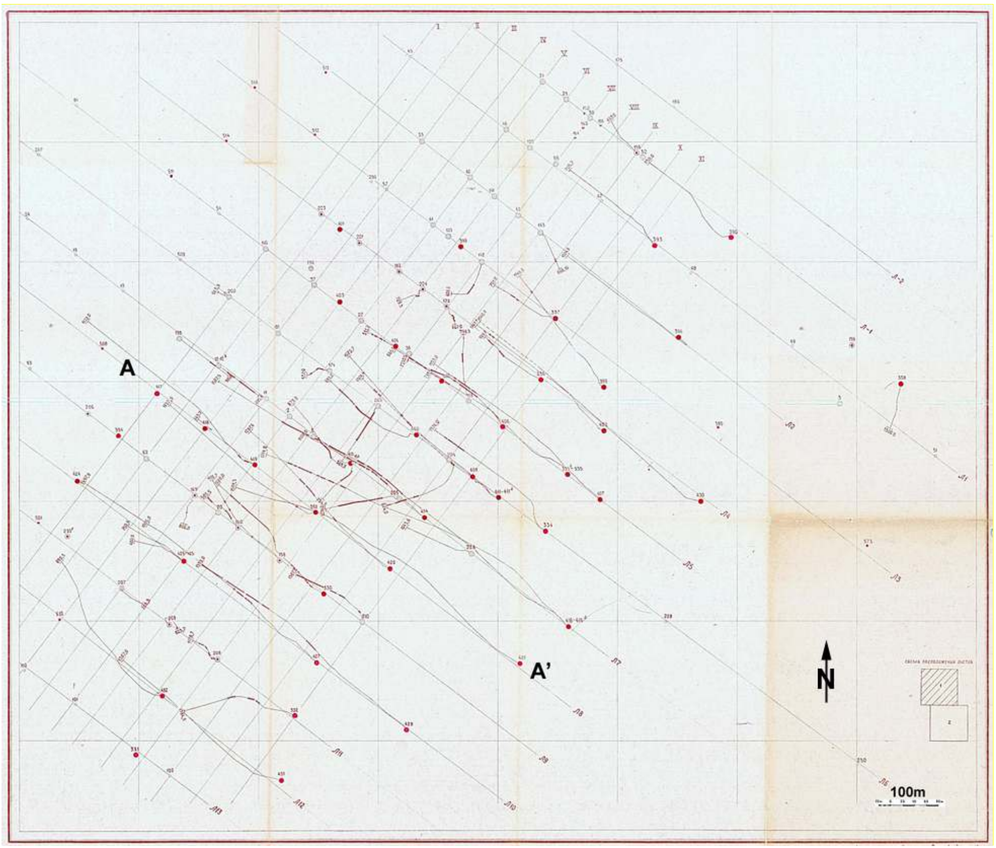


Figure 10: Historical Drilling - Drill Collar Locations & Lines NW resource area
Refer Figure 23 for Section A-A'
(Source: LLP)

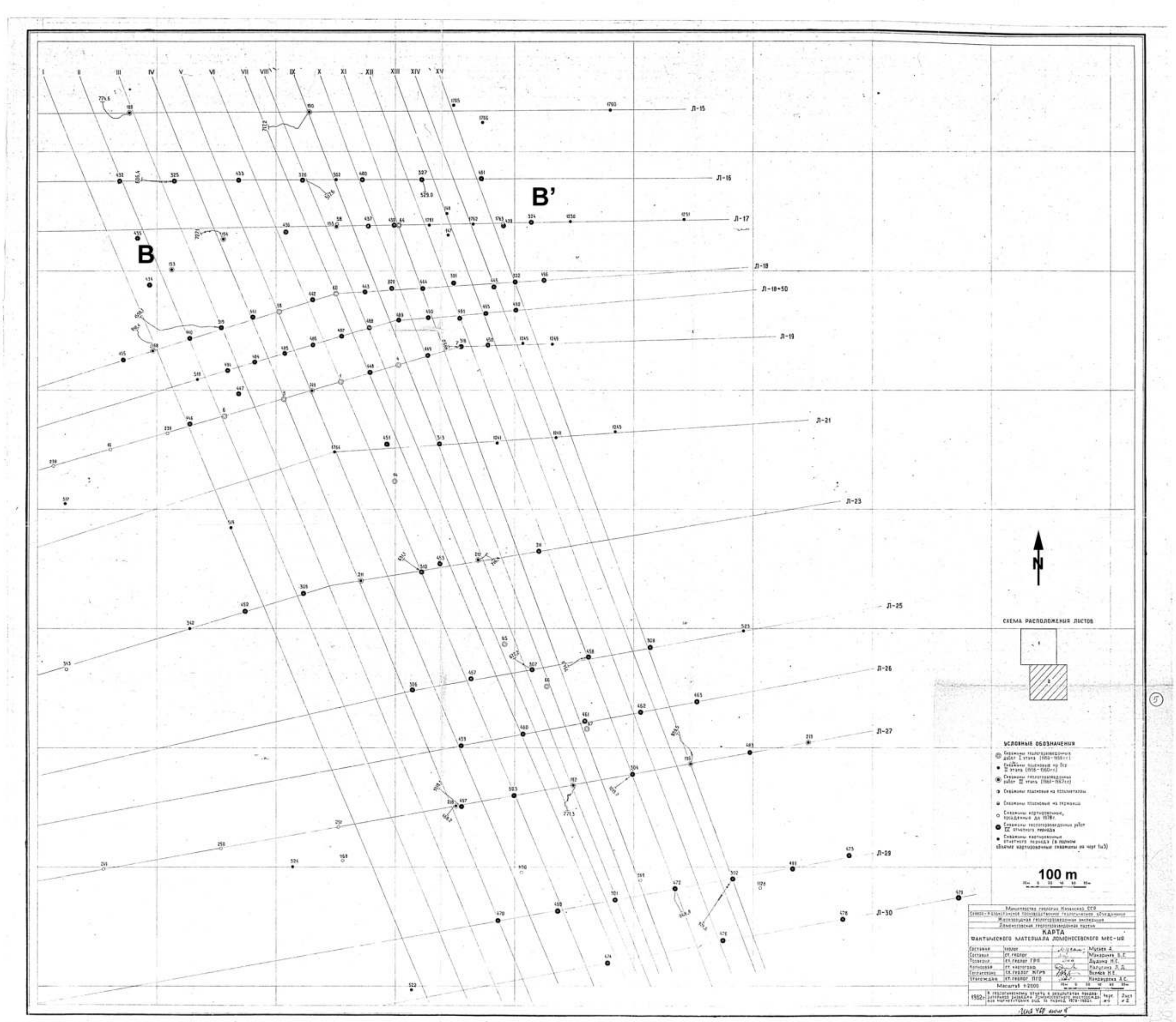


Figure 11: Historical Drilling - Drill Collar Locations & Lines Central resource area
Refer Figure 24 for Section B-B’
(Source: LPP 2011)

Appendix 1 lists the drill holes making up the drill lines outlined in the drill location plans (Figure 10 and Figure 11, Figure 12).

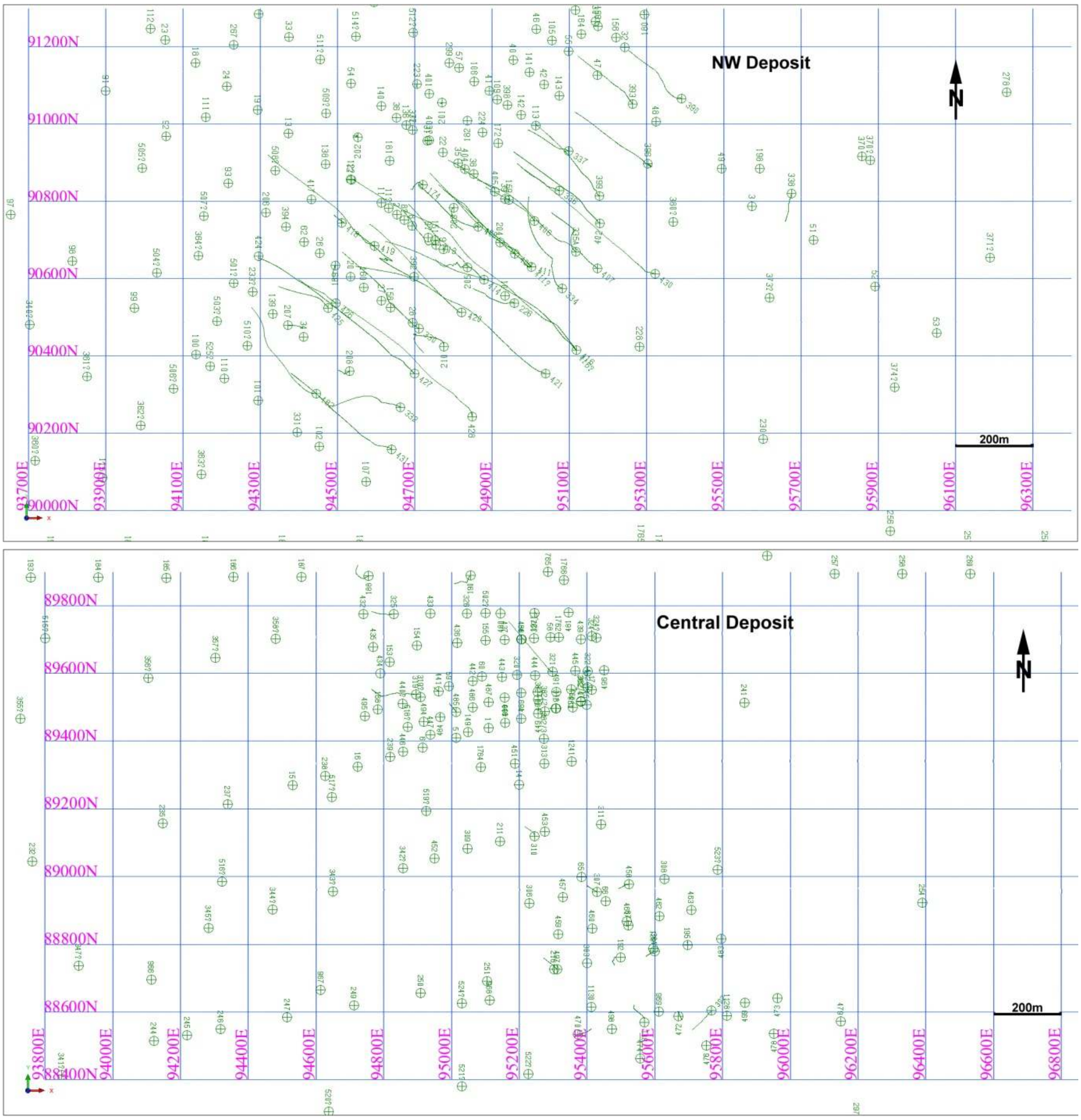


Figure 12: Historical Drill Collars and Drill lines – NW and Central deposit areas
(Source: MA 2011)

6.2.3.4 Exploration Work 1978 - 1984

In 1978 after a ten-year break, exploration re-commenced with the objective of completing preliminary exploration, exploration of poly-metallic mineralization, re-estimation of resources, metallurgical studies and scoping studies.

Between 1981 and 1984 exploration continued over the south-eastern part of the Lomonosovskoye anomaly and the Northern and Central epicentres of the South-Lomonosovskoye deposit as well as other anomalies (outside the current contract area). Drilling continued with holes drilled up to 1400 m deep testing various low-intensity magnetic anomalies.

During this period, a total of 19 deep drill holes (maximum depth 1,420 m) were drilled for a total of 20,624 m as well as 156 shallower drill holes down to 200 m depth for a total of 21,840 m. Seven of the deep (over 1,000 m) boreholes are located within the Contract area, DDH 464, 305, 701, 706, 702, 703 and 704 (Figure 13). Boreholes 701-706 were drilled within the South-Lomonosovskoye anomaly zone and did not intersect any iron mineralization. DDH 464 and 305 in the Central site discovered a mineralized zone at a depth of 800 m, which was first identified by an anomaly in borehole 497.

It was noted (Dudina, 1985) that DDH 701 intercepted stockwork-disseminated style copper mineralization from 340-700 m downhole depth. Chalcopyrite and rarely bornite and chalcocite hosted in volcanic breccias were observed. Thickness of mineralized intervals is between 1 m and 23 m with grades between 0.2% and 1.4% Cu. Individual samples (up to 10 m) reported 2.5% copper. It was also noted that the magnetic anomalies within this zone have not been drilled, which suggests the potential for mineralization at depth (1,200-1,800 m).

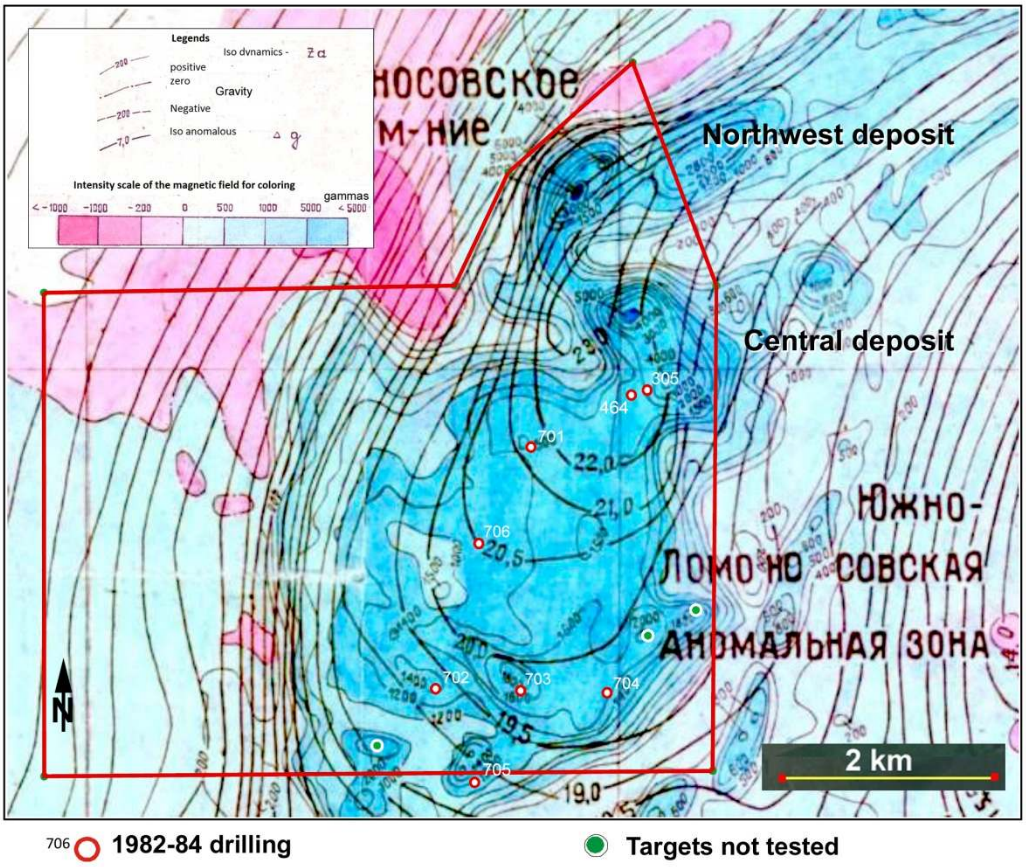


Figure 13: Aeromagnetic and gravity survey results and 1982-84 drill collars
(Source: LPP 2011)

6.2.4 Metallurgy

The following historical metallurgical testing/mineralogical studies were conducted on Lomonosovskoye Project mineralized material:

- In 1955, two technological samples were collected from core in the Northwest deposit to test the amenability of magnetite mineralization to concentration. These samples, No.1 and No.2, had respective weights of 450 and 350 kg, and iron contents of 36.7% Fe and 25% Fe.

The Uralmechanobr Institute carried out the studies. Dry and wet magnetic separation methods were used for sample concentration.

- Metallurgical testing of mineralization from the NW deposit using 3 bulk samples weighing from 350 to 3200 kg. The study was carried out at the Uralmehanobr Institute and Leningrad Mining Institute ("LMI").
- Metallurgical and mineralogical study of 15 samples weighing 35-85 kg by LMI.
- 20 metallurgical samples were collected from the Central deposit. Two samples weighing 200 kg each were examined at the technological laboratory at SSGPO. One sample weighing 1823 kg was studied at Uralmehanobr. The remaining 17 samples were sent to LMI.

Composition of mineralization from mineralogy work was noted as 36% magnetite from the Northwest Deposit and 43% magnetite from the Central Deposit.

Historical metallurgical testing indicated that mineralization of both deposits are easy to concentrate. Tests produced magnetite concentrates containing 65.4% and 68% iron from Northwest and Central deposits respectively, and during extraction 71% and 76.4% iron with recoveries of 37% and 38%. This is lower than that reported for adjacent SSGPO mining operations, but is similar to variations within skarn type deposits.

It was noted that magnetite concentrates of coarse-graded vein-brecciated mineralization of the Central deposit had increased concentration of vanadium (0.5%).

6.2.4.1 Sulphur Content

A significant component of iron mineralization is sulphur, which is generally associated with pyrite. Some sulphur is associated with anhydrite, gypsum, chalcopyrite, sphalerite and galena.

Sulphur distribution is varied or extremely varied in all mineralized bodies. The average sulphur content is 3.53% in the NW deposit as determined by 1,896 samples, and 2.90 % in the Central deposit as determined by 2,453 samples. The expected sulphur content in concentrate from the NW deposit is 0.43 % (IMC Montan, 2010).

6.2.4.2 Phosphorus Content

According to IMC Montan (2010), phosphorus distribution in mineralization is varied. Its content in the Central deposit mineralization is five times greater than in the NW deposit. The average phosphorus content in Central is 0.45% (2,454 samples) while that in the NW deposit is 0.09%, (1,864 samples), probably reflecting the apatite content of each deposit (4.4% and 0.6% respectively). IMC Montan (2010) noted that, in the process of concentration, phosphorus that occurs in apatite accumulates in the wet magnetic separation tailings.

6.3 HISTORICAL RESOURCE AND RESERVE ESTIMATES

6.3.1 Mineral Resource Estimates

The following information was summarised from the technical report entitled "Investment Analysis and Exploration Study on the Mine Construction Project at Lomonosovskoye Iron Ore Deposit, Kostanay Region, Republic of Kazakhstan" ("the IMC Montan Report") by independent consultants, IMC Montan (IMC Group Consulting Limited, International Economic and Energy Consulting Limited DMT GmbH). IMC Montan used the following unpublished technical reports for the source of their descriptions of historical resources:

- Dudina N.S., Makarichev V.G., 1978-82, *Report on preliminary exploration for solid magnetite ores on the North-Western site and vein-breccia-like ores on the Central site*, with Graphic appendices;
- Anonymous, *Report on survey and assessment works in the area of Lomonosovskoye iron ore deposit in Kustanayskaya Oblast in 1981-84*;
- GIPRORUDA, 1983, *Feasibility study for detailed exploration of Lomonosovskoye deposit*, Graphic appendices
- Porotov G.S., Rybakov V.V., 1982, *Report on the study of material composition and technological properties of complex magnetite ores of Lomonosovskoye and Kacharsky deposit new sites*.

The last mineral resource estimate was based on the results of drilling in 1978-84 (“1984 historical mineral resource estimate”). The description of this mineral resource estimate was sourced from the IMC Montan Report as noted above.

A polymetallic mineral resource estimate was also completed in 1993 which was a re-estimate based on results of analysis of copper, lead and zinc which were excluded from the previous reports. There is insufficient data available to describe this historical estimate.

6.3.1.1 1984 Historical Mineral Resource Estimate

Mineral resources at the NW deposit were estimated between exploration lines PR-1 and PR-13 along strike and to a depth of 1,600 m (absolute elevation –1,400 m) down dip. Approximately 59 % of the estimated resources are located above a depth of 800 m. In the Central deposit, mineral resources were estimated between exploration lines PR 15 and PR 30 to a depth of 820-880 m.

The 1984 historical mineral resource estimate was based on 1978-84 exploration results assuming total iron cut-off grades of 15% (only for Central site), 20% and 25% Fe. A minimum thickness of mineralized bodies of 10 m was used for the Central site and 5 m for North-Western site. A maximum thickness of barren rock layers included within mineralized zones was 10 m for the Central Deposit and 8 m for the North-Western Deposit.

Resource estimation in 1984 used the vertical cross-sectional method, also known as the polygonal method. Areas of mineralisation were measured on cross-sections by planimeter and checked by simple geometry. Those mineralized bodies identified by geological correlation were subject to separate estimates, and mineralized bodies were not combined. Results of the estimate are presented in Table 5.

Tonnage factors were determined by laboratory methods for each site separately, using 86 samples from the NW Deposit, and 36 from the Central Deposit. The average tonnage factors used was 3.8 t/m^3 for the NW Deposit, and 3.7 t/m^3 for the Central Deposit.

Table 5: 1984 historical mineral resource estimate *

Cut-off Fe %	Category	Tonnes	Fe total %	Magnetite %	S %	P %
North-Western						
20	C1	146,689,500	34.24	24.24	3.47	0.08
	C2	69,090,700	35.51	25.27	4.27	0.07
25	C1	123,406,300	36.25	26.93	3.52	0.08
	C2	62,728,500	37.27	27.19	4.35	0.07
Central						
15	C1	124,402,930	31.48	-	-	-
	C2	19,287,270	25.20	-	-	-
20	C1	104,298,590	34.09	24.99	2.77	0.43
	C2	13,110,910	27.58	19.27	2.35	0.36
25	C1	81,818,370	37.14	27.75	2.84	0.45
	C2	6,877,790	30.55	22.5	2.30	0.38
Total for deposit						
20	**C1+C2**	**333,189,700**	**34.20**	**24.49**	**3.37**	**0.20**

*This historical mineral resource estimate is not reported in compliance with CIM definitions standards.
C1 category is equivalent to Indicated under CIM definitions standards
C2 category is equivalent to Inferred under CIM definitions standards

The 1984 estimate totalled 333 Mt at an average grade of 34.2% iron, using a 20% iron cut-off, which was classified under the Kazakhstan classification system as C1 and C2 categories. In the opinion of MA, for this project, C1 category is roughly equivalent to Canadian Institute of Mining, Metallurgy and Petroleum ("CIM") standard definitions of Indicated, while C2 is equivalent to Inferred. However the figures quoted above are regarded as historical by MA as they are pre-2000 and have been superseded by the estimates reported here. It is MA's opinion that 1984 historical mineral resource estimates have been largely verified by the new drilling and estimates. KMI is not treating the historical estimates as current.

In Kazakhstan, mineral resources and reserves are classified according to the 1981 "System of Classification of Reserves and Resources of Mineral Deposits". This classification system uses seven categories in three groups, based on the level of exploration performed. Table 6 presents a reconciliation of the Kazakh classification system to the Canadian Institute of Mining, Metallurgy and Petroleum ("CIM") standard definitions.

Table 6: Reconciliation of Classifications of Mineral Reserves and Resources *

CIS Classification	CIS Categories	Comparable CIM Resources	Comparable CIM Reserves
Explored Reserves	A and B	Measured	Proven / Probable
Explored Reserves	C1	Indicated	Probable
Evaluated Reserves	C2	Inferred	-
Prognosticated Resources	P1, P2 and P3	Potential	-

* Foldenauer et al (2010)

6.3.2 Comment on Mineral Resource Estimates

MA notes that C1 and C2 categories referred to for the 1984 historical mineral resource estimate would be roughly equivalent to Indicated and Inferred categories under CIM standards (Table 6). However the figures quoted above are regarded as historical by MA as they are pre-2000 and have been superseded by the estimates reported here. It is MA's opinion that the 1984 historical mineral resource estimates have been largely verified by the new drilling and estimates. KMI is not treating the historical estimates as current.

It is noted that the mineralization outlined by the drilling has not been closed off at depth in the NW Deposit, and possibly in the Central Deposit. In addition, the modelling of the individual mineralized lenses in both deposits is incomplete.

6.4 HISTORICAL PRODUCTION

There is no historical production from the Lomonosovskoye Project.

7 GEOLOGICAL SETTING AND MINERALIZATION

7.1 REGIONAL GEOLOGY

Regional geology was investigated by Russian geologists following the discovery of the Sarbaisky and Sokolovsky magnetite deposits in 1949, particularly from 1958, through the 1960's and up to 1971. The tectonic framework of the southern Urals was investigated in detail in the mid 1980's, and seismic lines across the southern Urals in the mid 1990's led to further advances in the understanding of the tectonic evolution of the region (e.g. Berzin et al, 1996; Echtler et al, 1996; Juhlin et al, 1996; Knapp et al, 1998 and Matte, 2006).

This regional data was reviewed and presented in detail by Herrington et al (2002) and Herrington et al (2005) in the context of relating the mineral deposits to the tectonic evolution and framework of the southern Urals. The magnetite deposits of the Turgai (south-eastern Urals) area, including their mineralogy, geological setting and genesis, are discussed in detail in Hawkins et al (2010). Most of the information presented in the geological section of this report is derived from these three most recent sources.

7.1.1 Tectonic Framework

Lomonosovskoye is one of a number of significant magnetite deposits occuring in the Valerianovskoe (Valerianov, Valerianovsky) magmatic arc in two districts: the Glubochensk belt in the north in Russia, and the Turgai belt to the south in northern Kazakhstan. The Valerianovskoe arc lies east of the main Urals fault zone in the southern limit of the Uralides (Urals, Ural Mountains, Ural Orogen).

The Uralides are a 2500 km long, north-south trending mountain belt that extends from the steppes of northern Kazakhstan to the Arctic Ocean, and were formed as a result of the collision of the Baltica (largely the East European craton) and Siberia-Kazakh plates during the Late Carboniferous to Early Permian periods (Figure 14).

Figure 14: Location of the Urals between Europe & Asia.
LIOD = Lomonosovskoye Iron Project
(Source: Perez-Estaun & Brown, undated)

On a regional scale, the Southern Uralides can be divided into four zones, bounded by large north-south structures (Figure 15):

- Sakmara Zone: part of a foreland thrust and fold belt up to 150 km wide, representing an obducted accretionary complex of Neoproterozoic and Lower Palaeozoic sediments and arc rocks, and ophiolites/mafic-ultramafic complexes, thrust over the eastern margin of the East European craton ahead of the approaching Magnitogorsk arc to the east. Its eastern margin is a 20 km wide zone of east dipping melange of the Main Urals fault zone.
- Magnitogorsk Zone: Mid-Late Devonian oceanic arc sequence of tholeiites, overlain by younger calc-alkaline volcanics, and a westward thickening volcaniclastic pile. They are overlain by Lower Carboniferous carbonates and intruded by Early Carboniferous granitoids.
- East Uralian Megazone: Suture between the East European craton and the Kazakh plate and is composed of extensively strike-slip faulted, deformed and metamorphosed Proterozoic and Palaeozoic continental and island arc fragments, intruded by Late Devonian to Early Carboniferous tonalite to granodiorite masses, and by Late Carboniferous to Permian granitoid batholiths with subordinate diorite and gabbro. On its eastern margin, the Troitsk fault is a west dipping melange zone of serpentinite containing relics of harzburgite.
- Trans-Uralian Zone: Lower Palaeozoic basement overlain by Andean-type Valerianovskoe arc developed over an east-dipping subduction zone. Arc is composed of Devonian and Carboniferous calc-alkaline volcano-plutonic complexes overlain by terrigenous red beds and evaporates. Two main linear belts of iron, copper and gold mineralization in this zone are: a western belt (the Alexandrovksaya and Irgizskaya mineral zones) and the eastern Valerianovskoe mineral zone (host to the Lomonosovskoye Project deposits and SSGPO deposits, Figure 16).

The development of the four zones and evolution of the Uralides is summarised in Figure 17.

7.1.2 Valerianovskoe Arc

In the Valerianovskoe arc (Figure 16), Silurian sediments with Devonian and Carboniferous calc-alkaline volcano-plutonic and sedimentary complexes are composed mainly of volcaniclastic rocks and volcanic flows, intruded by gabbroic to dioritic plutons. Ophiolite units and high pressure rocks are also present. It is bounded by the major Livanovsk and Anapovsk faults in the west and east respectively.

The region was affected by major sinistral transpressional strike-slip faulting from 320 to 265 Ma (Mid Carboniferous to Late Permian) due to the oblique closure of the Uralian ocean and continent-continent collision of the East European craton and the Kazakh plate.

By the end of the Triassic, much of the Uralides had been eroded with the development of a peneplain over the bulk of the orogen, particularly in the South Urals which includes the Trans Uralian zone. Jurassic and Lower Cretaceous marine and continental sedimentary rocks covered this peneplain, with at least three marine regression-transgression cycles recorded from the Late Cretaceous to Eocene.

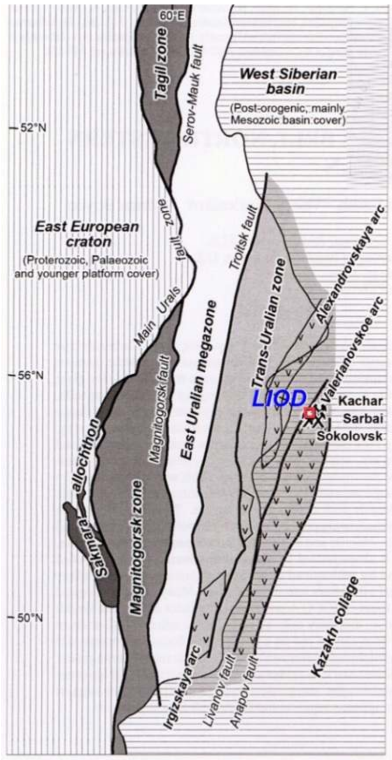


Figure 15: Tectonic zones, Showing Location of Valerianovskoe Arc
(Source: Hawkins et al, 2010)

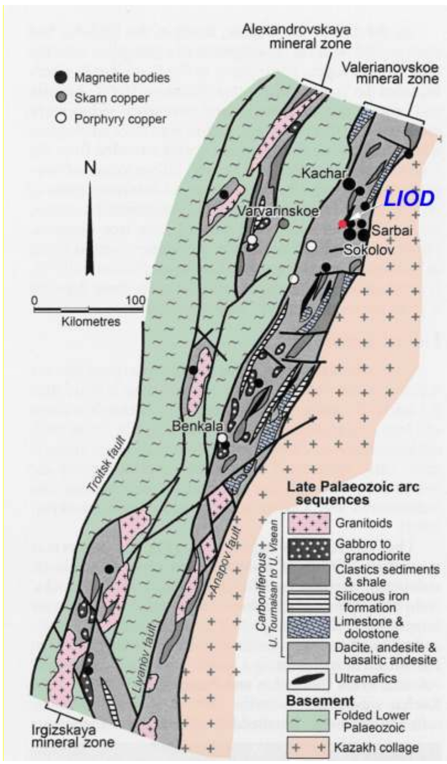


Figure 16: Sub-Mesozoic Geology of Valerianovskoe Mineral Zone
(Source: Hawkins et al, 2010)

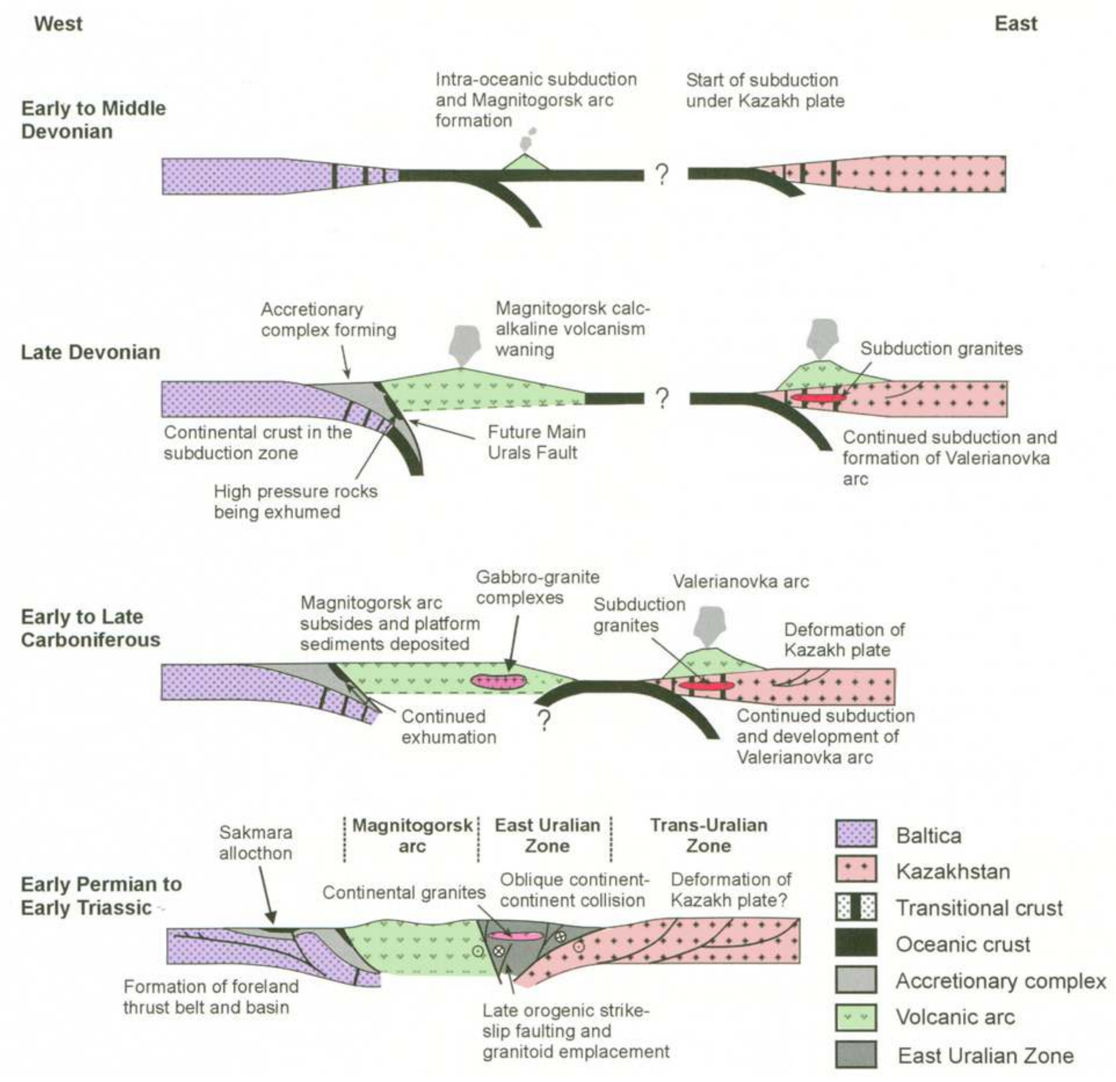


Figure 17: Tectonic evolution of Uralides.
(Source: Herrington et al, 2005)

7.2 LOCAL GEOLOGY

The Carboniferous sequence that hosts the giant deposits of the Valerianovskoe mineral zone is more than 3.5 km thick, while in the western belt (Alexandrovksaya and Irgizskaya mineral zones) it is only 700 m thick. In the Valerianovskoe zone, early rift-related sedimentary successions are overlain by two volcano-sedimentary successions, the Valerianovo and Kachar Supergroups (Figure 18).

Valerianovo Supergroup consists of more than 1000 m of andesite lava and volcaniclastic sediments, overlain by siliclastic and carbonate rocks. Anhydrite layers and mudstones are found in marine limestones in the upper part of the Supergroup. Basaltic andesite and andesite dominate, and the Supergroup has been interpreted as representing a single large scale continental volcanic event.

Kachar Supergroup contains about 800 m of conglomerates, tuffs and sediments, interbedded with mafic to intermediate flows and their pyroclastic equivalents. These volcanic rocks are interpreted to be largely sub-aerial. Directly overlying the Valerianovo Supergroup, the Kachar Supergroup forms a distinct unit of red volcanic breccia containing 5 cm clasts of magnetite in a hematised matrix, with hematite rims surrounding breccia clasts. This sequence is intruded by gabbros and diorites of the

Sarbai-Sokolovsk complex, considered to be comagmatic with the Kachar supergroup volcanics and as such, part of the Valerianovskoe volcano-plutonic complex.

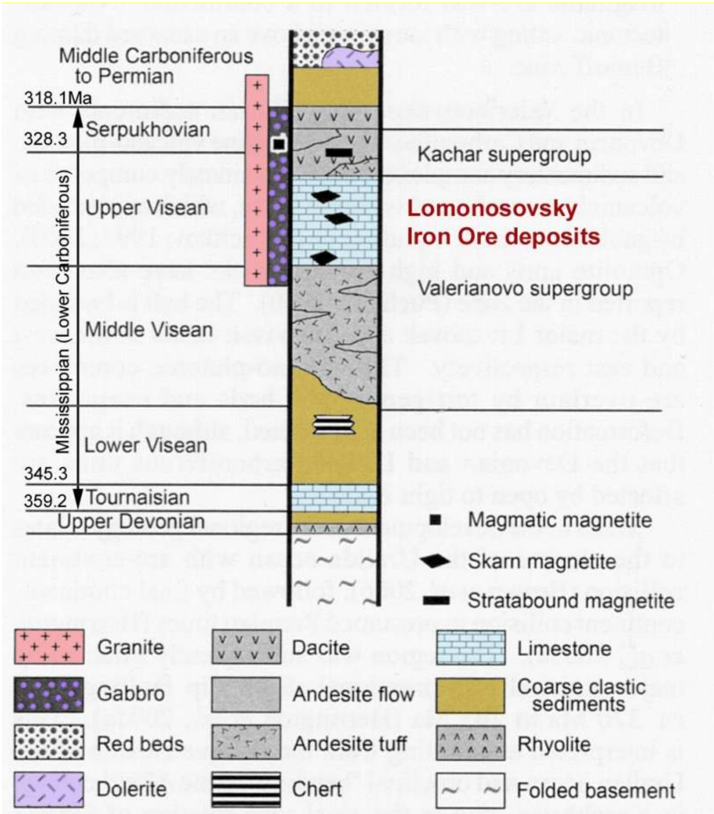


Figure 18: Idealised stratigraphic column of Valerianovskoe arc
(Source: Hawkins et al, 2010)

The Sarbai-Sokolovsk complex is a composite pluton in which orthomagmatic disseminations of titano-magnetite are found. A second intrusive suite, the Sulukolskaya complex, was subsequently emplaced, containing xenoliths of the Sarbai-Sokolovsk suite.

Magnetite deposits of the Valerianovskoe mineral zone are hosted by andesitic volcanics, pyroclastics, and intercalated sediments and carbonates of the Valerianovo supergroup. Large gabbro-diorite-granodiorite igneous bodies of the Sarbai-Sokolovsk and Sulukolskaya complexes are related to the mineralization, with granitic facies interpreted as having been intruded from Mid-Visean to Permian. In some deposits, the host sedimentary sequence is cross cut by post-mineralization dioritic porphyries.

Palaeozoic units of the Turgai belt (Kazakhstan portion of the Valerianovskoe arc) are entirely covered by Mesozoic to Cainozoic sediments which are sub-horizontal and range from 40 m to 180 m in thickness. Plan and cross-sections of the nearby major deposits are shown at Figure 19 and Figure 20 which illustrate the dimensions and orientation of the host limestone units and the skarn mineralization. MA has not been able to verify the mineralization illustrated in Figure 19 and Figure 20 for Sarbaisky, Sokolovsky and Kacharsky and notes that the descriptions of iron mineralization at these deposits is not necessarily indicative of the same on the Lomonosovskoye Project.

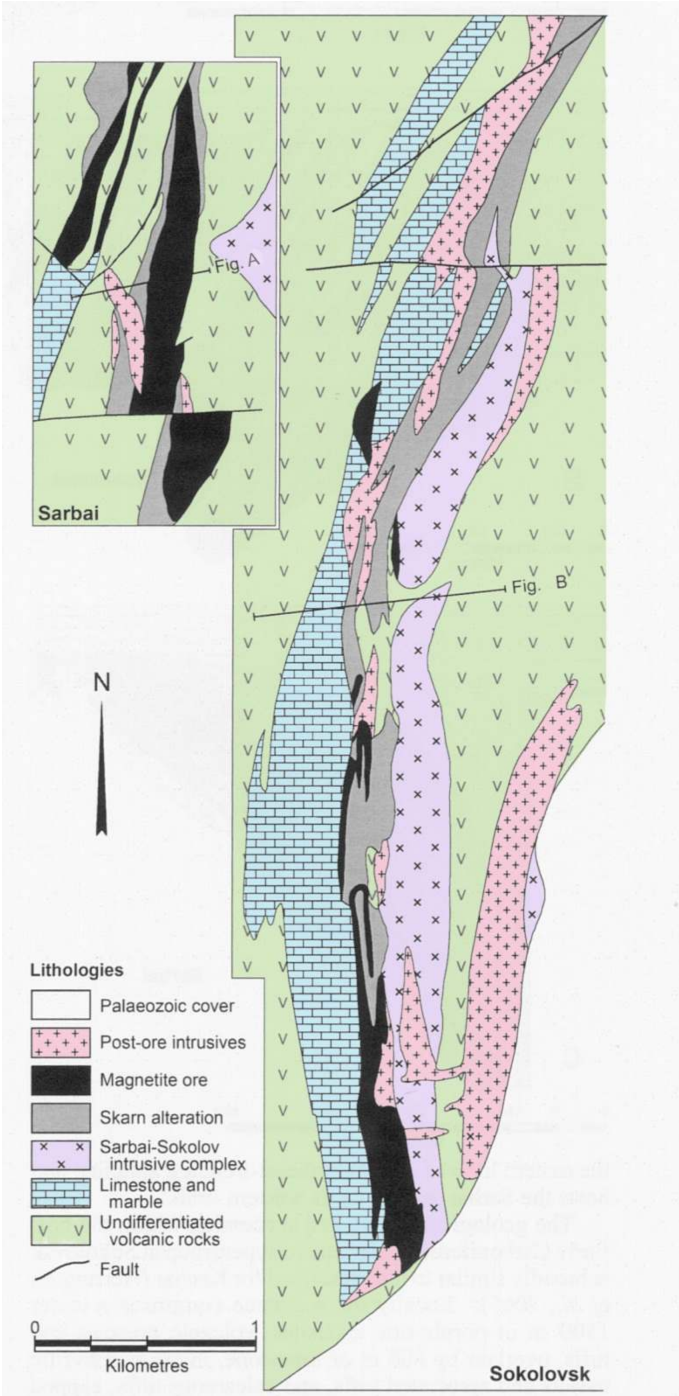


Figure 19: Sokolovsky & Sarbaysky (Sarbai) – Simplified Geology
(Source: Hawkins et al, 2010)

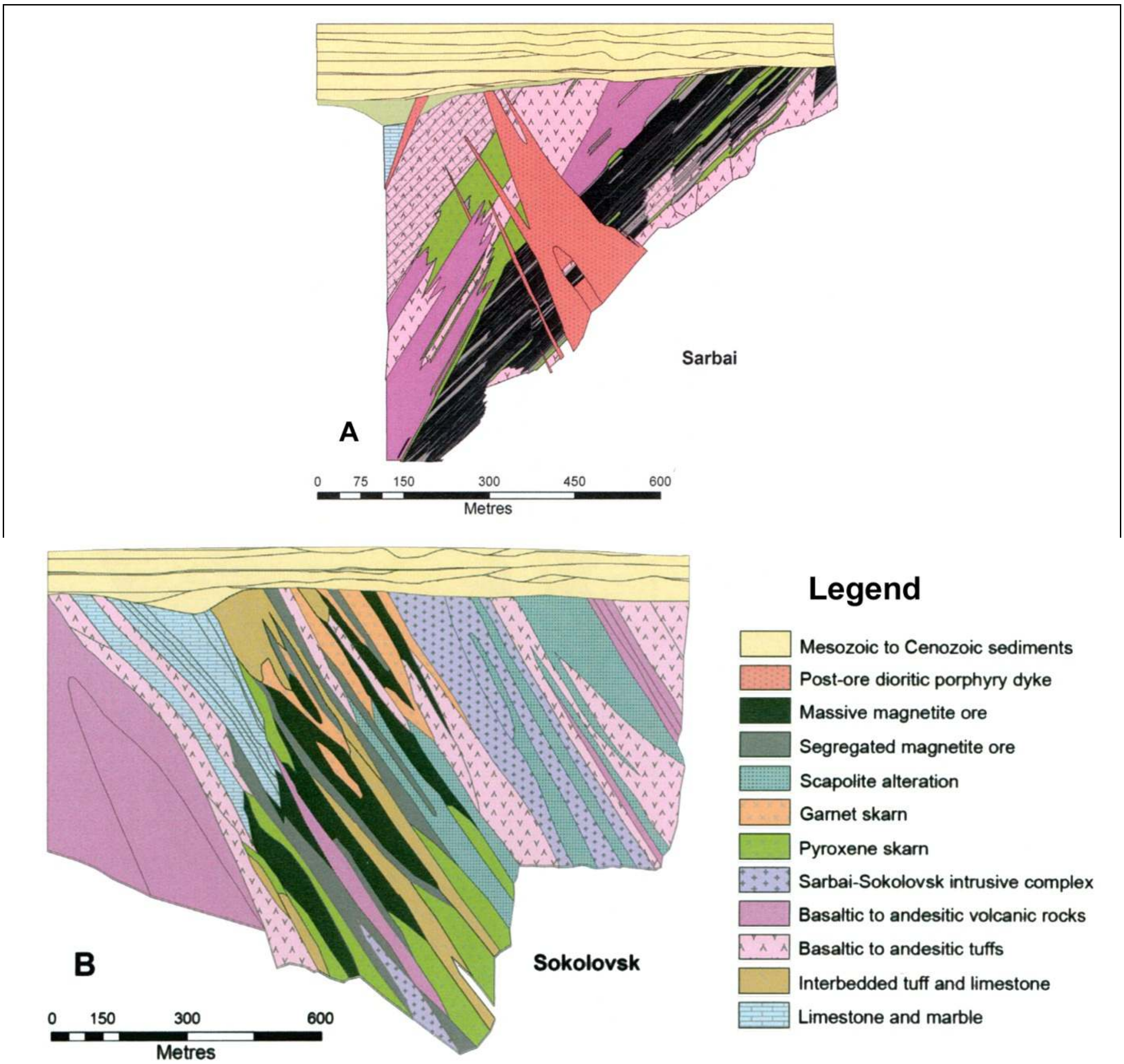


Figure 20: Geological cross-sections of Sokolovsk and Sarbai magnetite deposits
Refer Figure 5 for location relative to Lomonosovskoye & Figure 19 for location of cross-sections A and B
(Source: Hawkins et al, 2010)

7.3 PROSPECT GEOLOGY

The Lomonosovskoye Project comprises two deposits: North-Western ("NW") and Central (Figure 21, Figure 22), which are separated by a major fault postulated to strike east-northeast or east-southeast. Paleozoic stratigraphy is interpreted to young from west to east, with the oldest units represented by sedimentary (calcareous siltstone, limestone) rocks. The local succession passes upwards into volcano-sedimentary (sandy tuff, silty tuff, and tuffs of andesite and andesite-basalt porphyry) and lastly volcanic (andesite and andesite-basalt porphyry) rocks. Intrusive phases consist of diorite stocks and sub-volcanic aphanitic dykes of intermediate to mafic composition. All units were affected by varying degrees of contact metamorphism and skarn-style alteration. In many instances intense skarn alteration makes recognition of original lithology extremely difficult.

The sub-Mesozoic geology map shown in Figure 21 was compiled in 1992. While broadly correct in terms of distribution of lithologies, recent work has shown that the structural interpretation is less likely to be correct. There is little evidence of northwest trending faults offsetting mineralization in Northwest. The position of the fault separating Northwest and Central has been shifted to the north, and an additional east-northeast trending fault transects Central approximately halfway along its strike length. Further details of the interpretation of faults is given in section 14.5.

7.3.1 NW Deposit

In the NW Deposit (Figure 22, Figure 23), magnetite mineralization is represented by relatively high-temperature, early metasomatic formations along the contact between lower sedimentary (limestone) and upper volcanic-sedimentary (tuffite) members of the Sokolovsky suite. The mineralization is surrounded by an envelope of garnet-pyroxene skarns and forms a single skarn-mineralization zone that can be traced over 1,200 m along strike in a south-western direction (azimuth 220°), and down dip to a depth of 1,600 m with an average mineralized body thickness of 200 m.

Dip angles vary from 55° to 65° in the upper portion (to an elevation of -450 m), to nearly vertical at depth.

7.3.2 Central Deposit

Magnetite mineralization in the Central Deposit (Figure 22, Figure 24) has a complex multi-domain structure due to the widespread influence of diorite intrusions and faulting. Mineralized bodies are predominately of seam-like and lenticular shape, appear to be roughly stratabound, and are defined by a gradation in intensity from full skarn replacement to disseminated and partial replacement. Dip angles vary from sub-horizontal to 45° for individual mineralized lenses and the average thickness of mineralized bodies is highly variable.

Interpretation of mineralization geometry throughout Central shows a switch in dip direction from northeast dipping to southwest dipping approximately halfway along its strike extent. A steeply dipping, east striking fault is interpreted by MA to mark the dip direction change, although there is no direct evidence for the structure. Central Deposit is more irregular in shape than NW Deposit and mineralization is concentrated within an area with a strike length over 2,300 m and to a depth of 200 m to 600 m in the north, and to 800 m in the south. Depth extent is poorly constrained in most areas due to the complexity of the deposit.

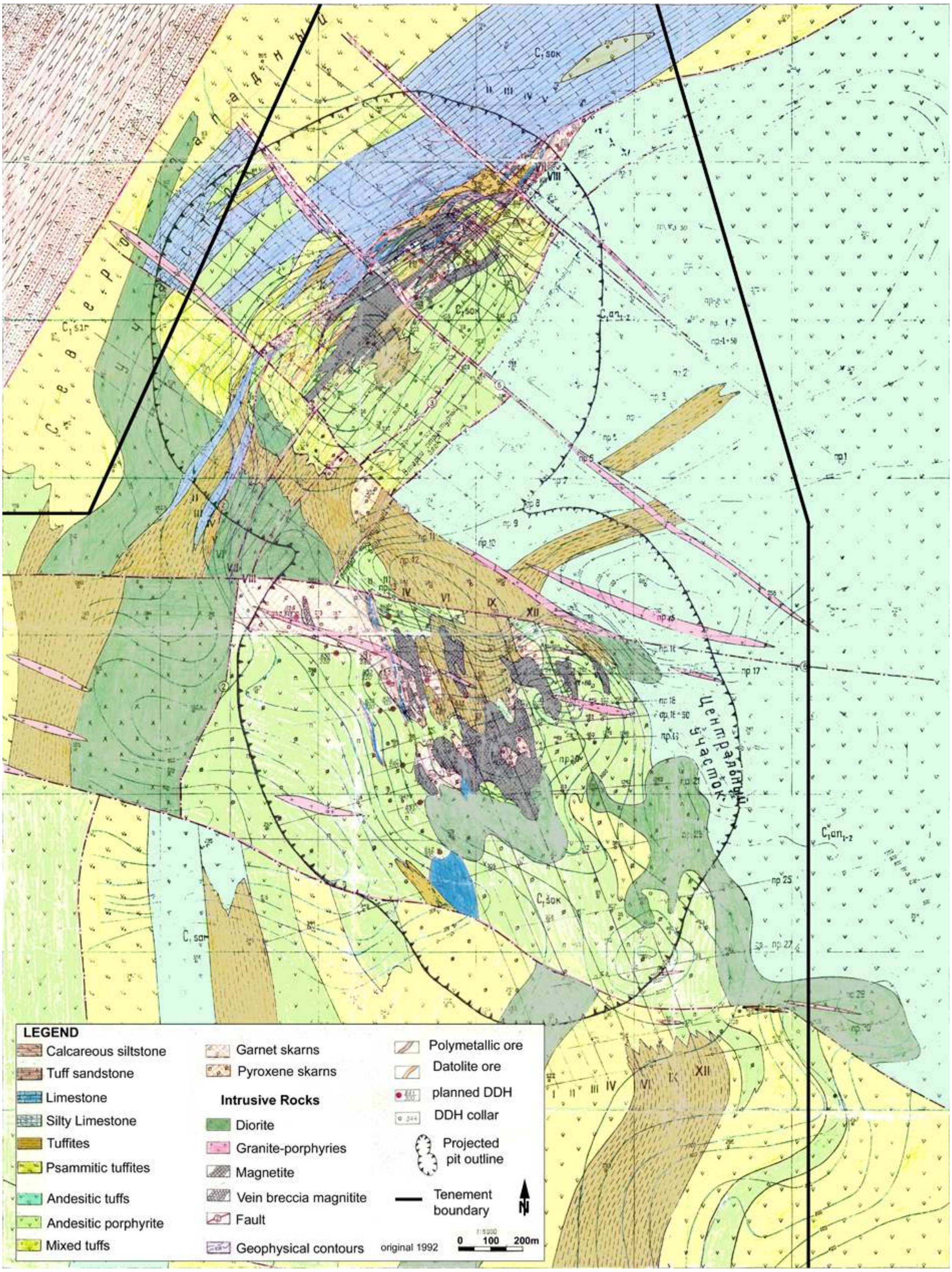


Figure 21: Lomonosovskoye Project Prospect Geology Map
(Source: Compiled by Soviet geologists, 1992)

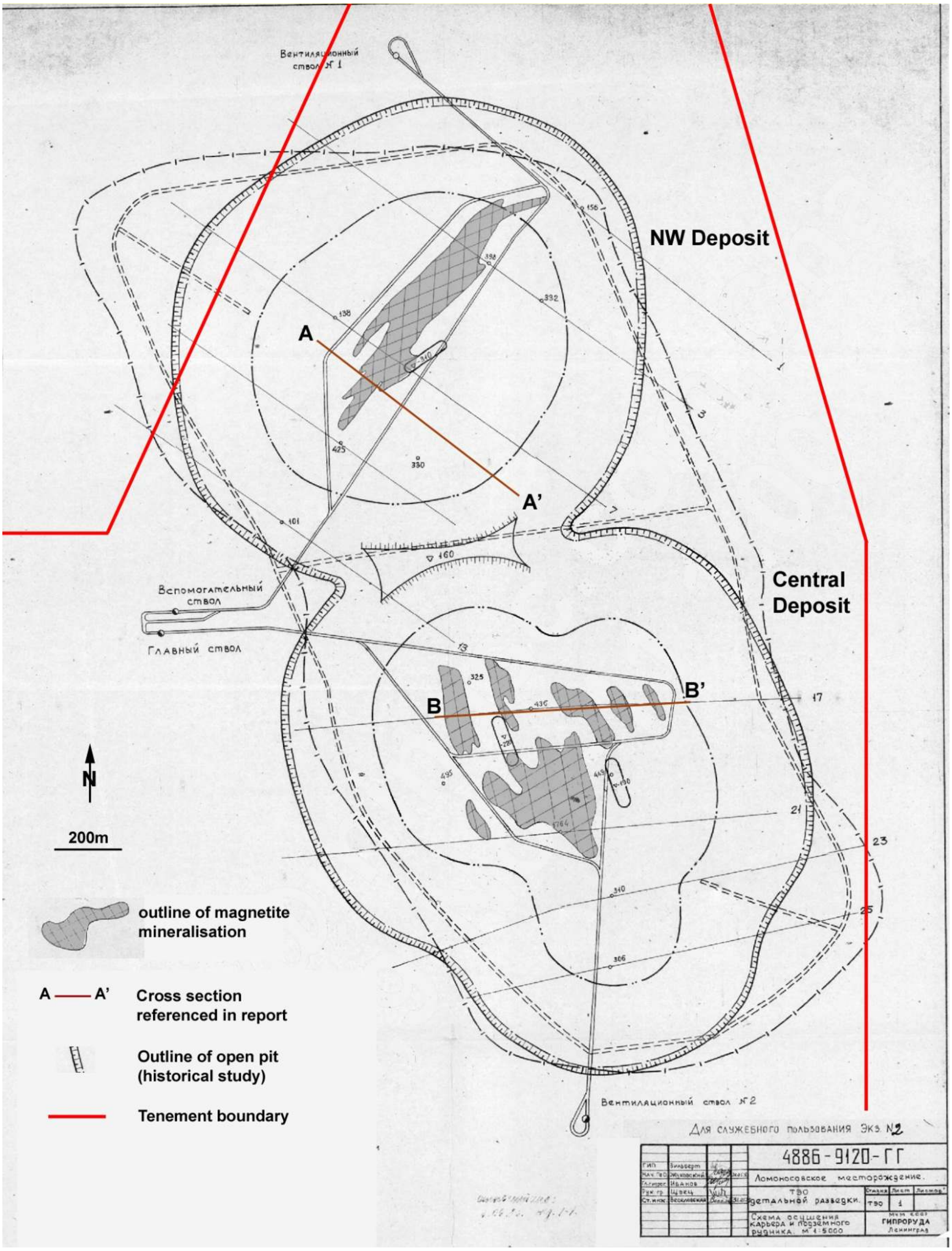


Figure 22: Outline of magnetite mineralization: NW and Central deposits
Refer Figure 23 and Figure 24 for cross sections
(Source: after LLLP)

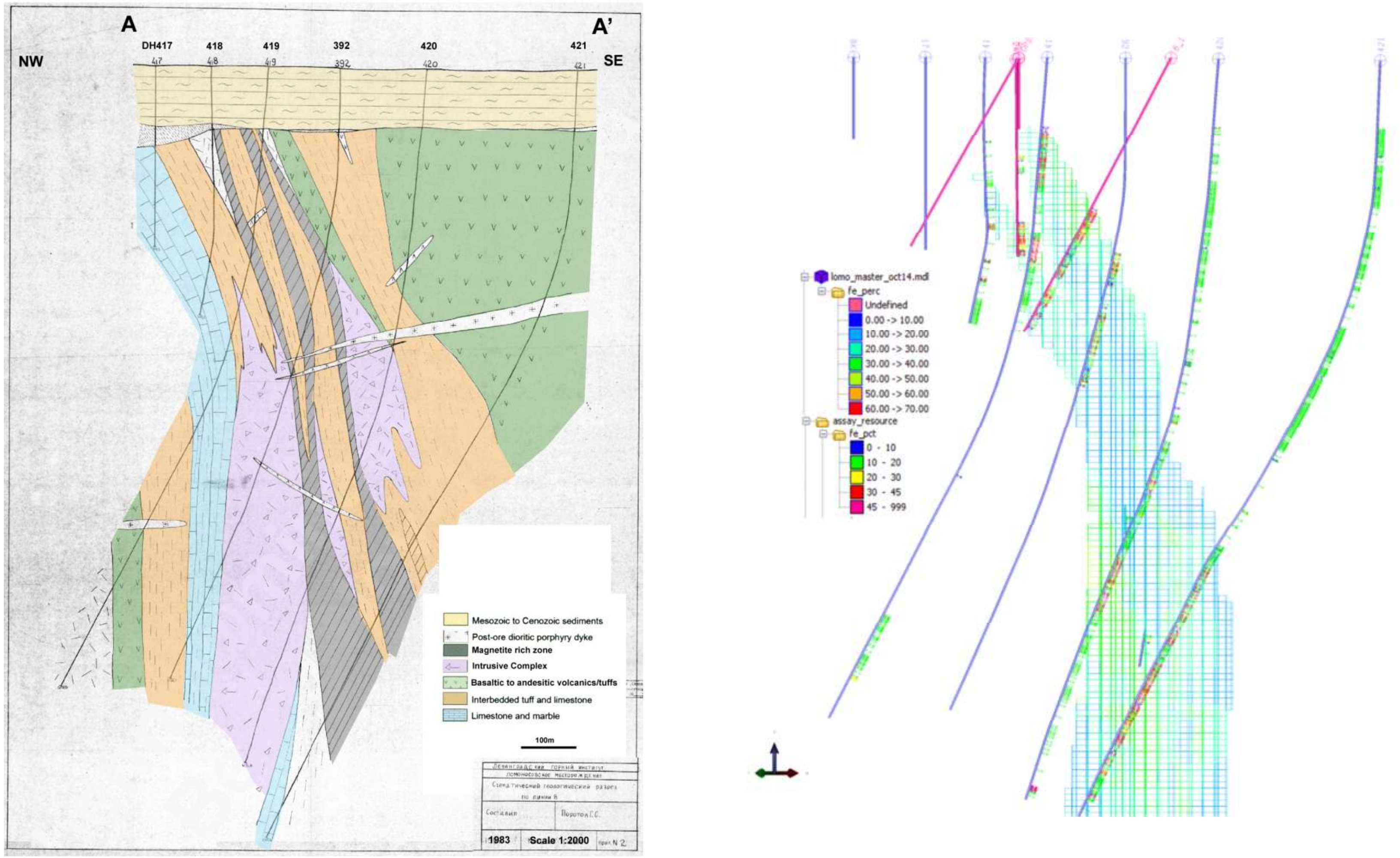


Figure 23: Drill Line 417-421 Cross Section, NW Area.
Left is historical interpretation, right is current Interpretation, KMI drilling coloured magenta; Refer Figure 10 and Figure 22 for location
(Source: LLLP & MA)

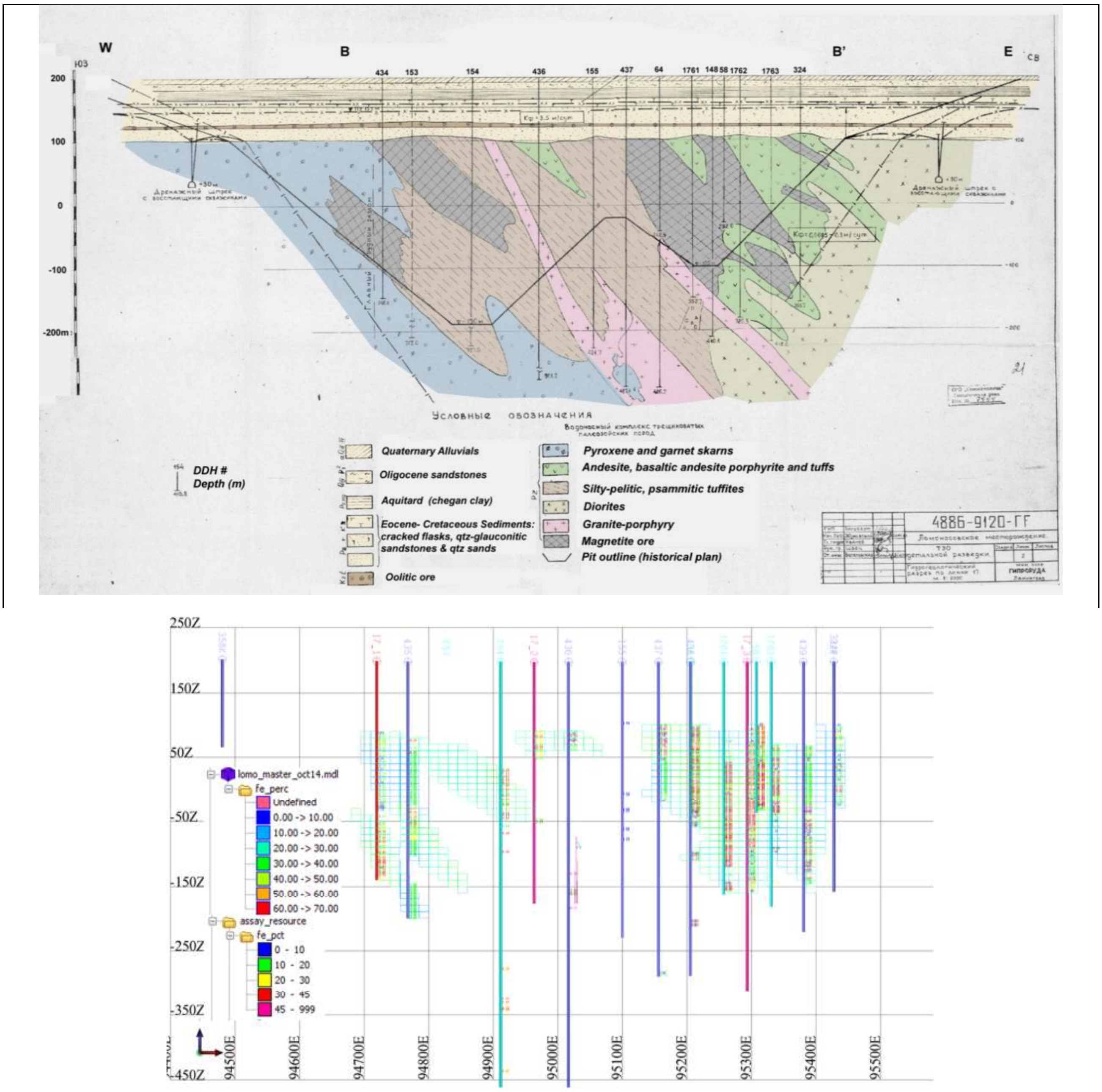


Figure 24: Drill Line 434-324 Cross-Section, Central Area.
Top is historical interpretation, beneath is the current interpretation, KMI drilling coloured magenta; Refer Figure 11 and Figure 22 for location ***(Source: after LLLP & MA)***

7.4 MINERALIZATION

Mineralization at Lomonosovskoye consists of massive and vein/disseminated magnetite. The boundary between massive and disseminated mineralization is difficult to identify because dense disseminations of magnetite grades into massive.

7.4.1 Massive magnetite mineralization

Massive magnetite occurs as "seams" of mineralization within barren skarn ranging from 10-15 cm to several metres in thickness.

Macroscopically, massive magnetite mineralization is dark grey in colour with a predominantly fine-grained structure, commonly with a layered appearance due to the substitution of primary stratified rocks with layered magnetite and disseminated sulphides (Figure 25).

The mineralogical composition of the mineralization is characterized by predominance (60% to 80%) of magnetite, and occasionally titano-magnetite. Pyrite content is general low (1-2%) but can be up to 5% or more in places. Pyrite is often accompanied by chalcopyrite, lesser sphalerite (as single grains), and galena. Non-metallic minerals usually occur as interstitial material between magnetite grains, and include garnet, calcite, actinolite, epidote, and chlorite plus accessory apatite.

Figure 25. Massive Magnetite Mineralisation Grading to Banded Magnetite-Garnet Skarn. Drill hole 4_2 (Northwest), 378 m

7.4.2 Vein/Disseminated magnetite mineralization

Vein/Disseminated mineralization consists of magnetite skarns genetically inseparable from massive magnetite mineralization. The vein/disseminated mineralization shows a transition from massive magnetite mineralization through to an almost barren skarn. The disseminated mineralization can be divided into two groups:

a) Magnetite mineralization related to garnet skarns (“magnetite-garnet skarns”), and
b) Magnetite mineralization confined to epidote-chlorite rocks (“magnetite epidote-chlorite”).

7.4.2.1 Magnetite-garnet skarn mineralization

Magnetite-garnet skarn mineralization is the dominant type. It commonly has a dark grey irregular mottled and granular-crystalline appearance with a banded texture (Figure 25). The banded texture is caused by alternating layers of different intensity disseminations of magnetite interbedded with barren skarn and magnetite, and sometimes with layered disseminated sulphides and calcite.

The approximate average mineralogical composition of the magnetite-garnet skarn is magnetite, and titanium-magnetite from 40-60 %, pyrite about 1-2 % (with lesser chalcopyrite, sphalerite and galena as single grains). The non-metallic minerals are mainly garnet, epidote, actinolite, and chlorite.

Magnetite occurs as disseminated fine grains or irregularly shaped clusters of tiny (0.05 mm) isometric grains, sometimes forming extended chains. Phenocrysts of magnetite, sometimes merging with each other, form solid granular aggregates.

Pyrite is generally disseminated or in small intersecting veins, and in lower grade skarns it locally cements the grains of magnetite and non-metallic minerals.

7.4.2.2 Magnetite-epidote-chlorite mineralization.

Magnetite-epidote-chlorite mineralization occurs as high and low grade mineralization and has a greyish-green colour. Mineralization of this style may be banded, disseminated or breccia-type structure. In the core samples observed by MA, breccia-type mineralization was dominant in Central, with banded/disseminated more common in Northwest. Breccia type mineralization shows complex overprinting of multiple breccia events (Figure 26), and transitions from a jigsaw style breccia (Figure 27) with massive magnetite infill to a weak crackle style breccia where magnetite infills veins and veinlets (Figure 28).

Figure 26. Massive Magnetite Breccia Infill Re-Brecciated and Overprinted by Pyrite. Drill hole 17_3 (Central), 150 m

Figure 27. Jigsaw Breccia With Magnetite Infill, Epidote Alteration on Clast Margins. Drill hole 22_1 (Central), 284 m

Figure 28. Crackle Breccia With Magnetite Infill in Veins/Veinlets
Drill hole 17_3 (Central), 291 m

Magnetite (and titanium-magnetite) can make up to 50% of the material, mainly as fine-grained phenocrysts and as individual clusters of magnetite and sulphides. Sulphides identified are disseminated pyrite, chalcopyrite, sphalerite, galena, associated with pyrite as inclusions in small isolated grains.

7.4.2.3 Oxidized Mineralization

IMC Montan (2010) note that a Palaeozoic weathered horizon occurs in all cross-sections of NW deposit and partially in the Central deposit. The upper and marginal parts of mineralized bodies therefore could be expected to contain oxidized mineralization similar to that which has been found in the neighbouring deposits of Sarbai-Sokolovsky.

At the far northeastern end of NW deposit, there is also an extensive zone of oxidization along the footwall contact of the main mineralized zone. This is interpreted to be related to deeper weathering along a wide fault zone, although inspection of recent core does not show any strong evidence for shearing/faulting.

7.4.3 **Host rocks**

Deposits are hosted by a package of carbonate sedimentary rocks, basic volcanic rocks and tuffs with porphyritic granitoid and dioritic intrusions and dykes. The immediate host rocks are skarns that usually envelope mineralized zones and are extensively developed between mineralized zones. The most widely developed are pyroxene and pyroxene-garnet skarns.

Mineralized bodies of the North-Western deposit lie in contact with limestone and tuffites of the Sokolovskaya suite. They are accompanied with aureole of garnet-pyroxene skarns, making up a single skarn and iron mineralization zone.

7.4.4 **Controls**

The NNE-trending orientation of the arc and major regional faults due to sinistral transpressional strike-slip faulting resulting from the oblique ocean closure and continent-continent collision (and secondary faults) resulted in probable pathways for mineralizing fluids. Carbonate sediments of the Valerianovo supergroup (e.g. limestone tuffites and limestones) exert a lithological control on mineralization. Close proximity to plutonic gabbro-diorite-granodiorite bodies of the Sarbai-Sokolovsk complex are not considered relevant, as deposits such as Kachar, are some distance from them.

7.4.5 Alteration

In general the alteration assemblage is typical of skarns, i.e. calc-silicate minerals such as wollastonite, actinolite-tremolite, andradite (garnet), diopside-augite (pyroxene) and scapolite, followed by sodic-potassic alteration in the form of K-feldspar, albite and scapolite.

Hawkins (2010) reports that alteration appears to be generally zoned outward from the main Sarbai-Sokolovsk intrusive as:

- Biotite-albite-scapolite in volcanic hosts.
- Garnet-pyroxene skarn in the footwall of the magnetite mineralization.
- Skarn mineralization (magnetite and scapolite) in the carbonate hosts.
- Scapolite-pyroxene alteration.
- Pyroxene skarns in the hanging wall.
- Outer, hornfels and albitised volcanic country rocks.

7.4.6 Dimensions & Continuity

To date there are two areas of mineralization, the NW Deposit and the adjacent Central Deposit. Both deposits are covered by about 100 m of overburden (Figure 23, Figure 24).

The NW Deposit contains stratabound magnetite mineralization along the contact between lower sedimentary (limestone) and upper volcanic-sedimentary (tuffite) members of the Sokolovsky suite. The mineralization is surrounded by an envelope of garnet-pyroxene skarns and forms a single skarn-mineralization zone that can be traced over 1,200 m along strike in a south-western direction, and down dip to a depth of 1,600 m with an average mineralization body thickness of about 100 m.

The Central Deposit has a complex multi-domain structure due to the widespread influence of diorite intrusions and faulting. Ore bodies are defined by gradation in intensity from full skarn replacement to disseminated and partial replacement. The border between them is determined by chemical composition. Ore bodies are predominately of seam-like and lenticular shape. Dip angles vary from vertical to 30° for individual ore bodies. Average thickness of mineralized bodies is highly variable. The Central Deposit is more irregular that the NW Deposit but mineralization is contained with an area is traced along strike over 2,300 m and to a depth of 200 to 600 m in the north, and to 800 m in the south, although depth extent is poorly tested in most areas due to the complexity of the deposit

The NW Deposit appears to have a more consistent continuity whereas the Central Deposit appears relatively more discontinuous; however both deposits remain to be drilled out and the dimensions and continuity are not fully defined.

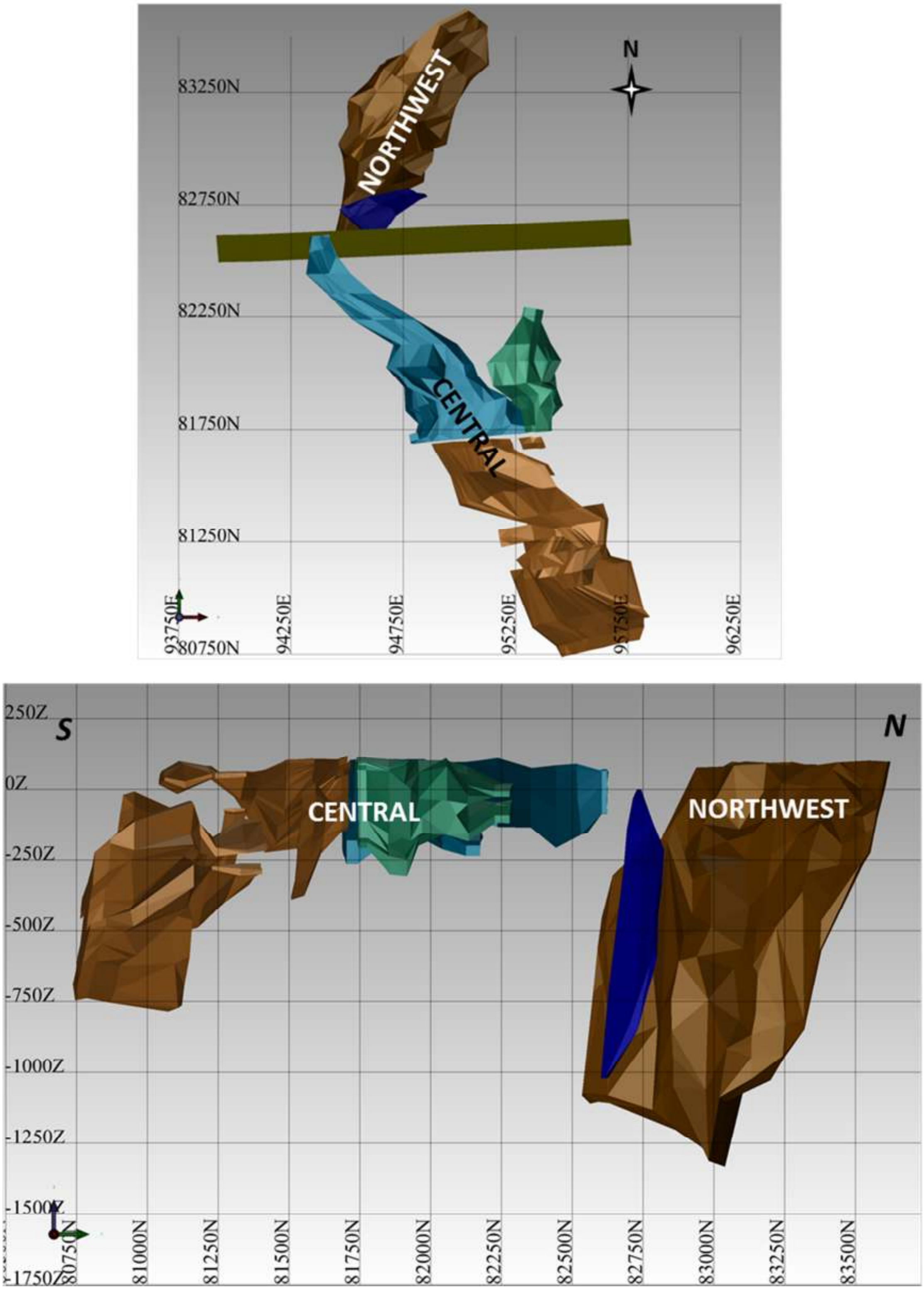


Figure 29: Plan and long section view of the Lomonosovskoye Iron Deposit, Showing Mineralised Domains.

8 DEPOSIT TYPES

The Lomonosovskoye deposit and other magnetite deposits in the Valerianovksoe arc are generally referred to as iron skarn deposits.

8.1 CLASSIFICATION

“Skarn” and “skarn deposit” are descriptive terms based on mineralogy and are free of genetic implications. There are many definitions and usages of the word "skarn". Skarns can form during regional or contact metamorphism and from a variety of metasomatic processes involving fluids of magmatic, metamorphic, meteoric, and/or marine origin. They are found adjacent to plutons, along faults and major shear zones, in shallow geothermal systems, on the bottom of the seafloor, and at lower crustal depths in deeply buried metamorphic terrains. What links these diverse environments, and what defines a rock as skarn, is the garnet and pyroxene mineralogy.

Skarns generally result from the early high temperature (> 500°C) alteration of limestones (or other carbonate rocks) resulting in a mineralogy dominated by calc-silicate minerals such as garnet and pyroxene, followed by lower temperature (< 400°C) retrograde alteration.

Skarns that contain mineralization are termed skarn deposits and are generally classified based on dominant economic metal. The seven major skarn deposit types are Fe, Au, Cu, Zn, W, Mo and Sn. Plutons associated with Fe and Au skarns contain significantly more MgO and less SiO_2 and K_2O (Meinert et al, 2005).

8.1.1 Iron skarns

Iron skarns are mined for their magnetite content although minor amounts of Cu, Co, Ni and Au may be present. These deposits are typically very large with > 1,000 Mt and > 500 Mt contained Fe.

Skarn minerals consist dominantly of garnet and pyroxene with lesser epidote, ilvaite, and actinolite. Alteration of igneous rocks is common with widespread albite, orthoclase, and scapolite veins and replacements. When wallrocks are magnesium-rich (e.g. dolomite), the main skarn minerals are forsterite, diopside, periclase, talc and serpentine.

8.1.2 Valerianovskoe Arc Iron Skarns

Iron skarns of the Valerianovksoe arc are related to gabbro-diorite-granodiorite igneous bodies of the Sarbai-Sokolovsk and Sulukolskaya complexes (interpreted from geophysics to have batholithic proportions at depths of 2 km) emplaced during the closure of the Uralian ocean and subsequent continent-content collision. Mineralization zones form a series of stacked, stratabound, massive magnetite lenses and may also contain up to 10% each of hematite and sulphides. Gangue minerals include albite, K feldspar, garnet, pyroxeme, scapolite, calcic-amphiboles, chlorite, epidote, calcite, wollastonite and gypsum.

The timing of alteration can be subdivided as follows (Figure 30):

1. Pre-mineralization phase: Characterised by silicification, calc-silicates and low grade metapmorphism of the limestone host rock. Wollastonite, calcic-amphiboles (tremolite and actinolite), calcic-pyroxenes, apatite, quartz and calcite are associated with this phase. Textures included fine grained, euhedral pyroxenes within the limestone giving a green tint to an otherwise unaltered appearance to the limestone.

2. Ore phase subdivided as:
    a. Skarn stage, replacing limestone: Typically contains calc-and alumina-silicates, massive iron oxide mineralization and minor iron rich sulphides. The vast majority of magnetite mineralization is formed during this phase at temperatures >500°C and characterised by intergrown coarse epidote, calcic-pyroxenes (augite and diopside), calcic-garnet (andradite), calcic-amphiboles (tremolite and actinolite), magnetite, calcite, and pyrite with minor titanite (a calcium titanium silicate) and apatite (Figure 31 A & D). Alteration has obliterated primary rock textures. Massive magnetite lenses formed in this stage are bedding parallel.
    b. Late sulphide stage: Characterised by an evolving sequence of sulphide minerals, hosted by calcite, and associated with extensive sodic and potassic alteration. The sulphide-rich calcite veins contain sparry white calcite, albite, magnetite and minor quartz, and carry very fine sulphides, including pyrite, chalcopyrite, sphalerite, galena and arsenopyrite (Figure 31 B). The gangue mineralogy also includes scapolite and chlorite. Sulphide rich alteration zones can contain up to 10% each of chalcopyrite and pyrite. Fine veinlets of galena are deposited last. Other late stage minerals include trace silver telluride, coarse gypsum veins as well as barite with associated cuprite.
    c. Chlorite stage: Characterised by coarse grained sparry calcite veins that host coarse euhedral magnetite and coarse specularite (specular hematite) with a chlorite rich selvage. There is also development of widespread disseminated chlorite. Temperature of vein formation is estimated at 350 – 350°C.
3. Post mineralization phase: Distinguished by coarse, cross-cutting veins containing varying amounts of calcite, K feldspar and albite, and are barren of any metal bearing minerals. It is widespread, surrounds deposits and extends for several kilometres into the host rock. It is characterised by coarse, euhedral scapolite (Figure 31 C) and albite porphyroblasts (scapolite & albite = sodic alteration), and by silicification of the host limestone. Temperatures are estimated at 100 – 140°C.

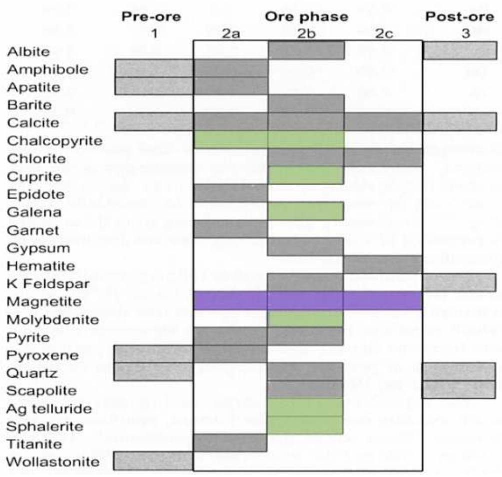


Figure 30: General paragenesis for the Valerianovskoe iron skarns
(Source: Hawkins et al, 2010)

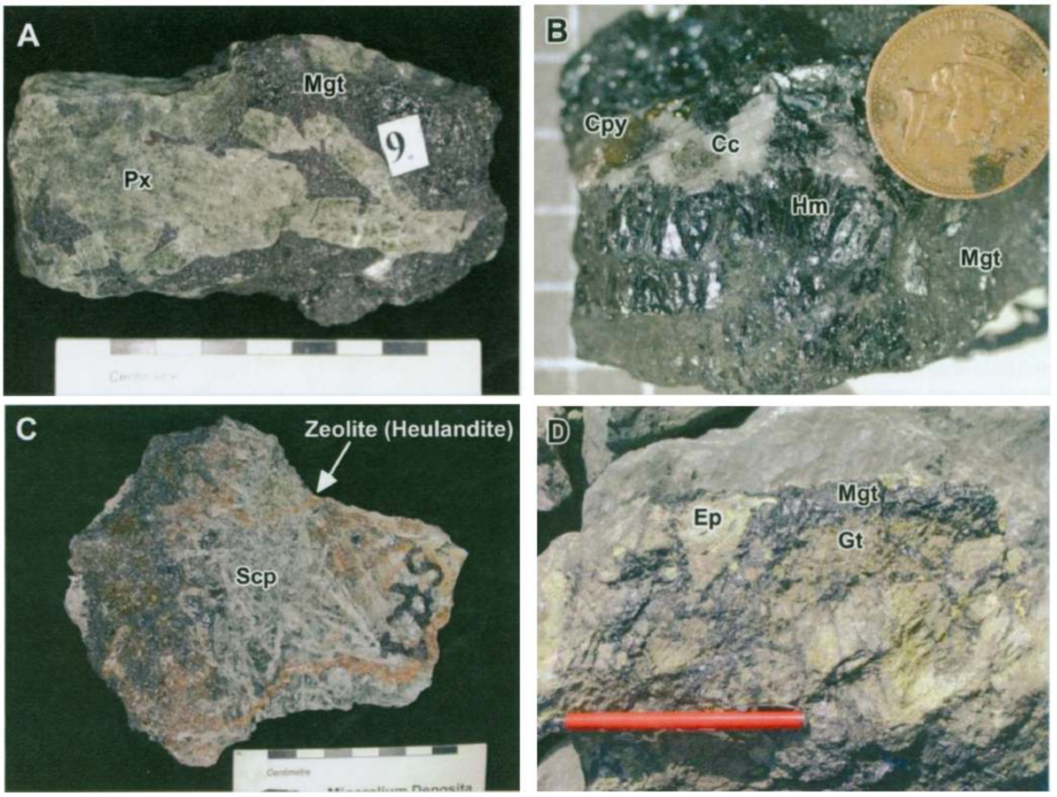


Figure 31: Alteration assemblages.
A: magnetite (Mgt) & calcic-pyroxene (Px) from the *skarn stage*. B: sulphide-rich calcite vein with massive magnetite & vug fill of calcite (Cc), hematite (Hm) & chalcopyrite (Cpy), from the *late suphide stage*. C: blocky magnetite on the left (*chlorite stage*), & coarse scapolite on right from *the post-mineralization phase*. D: skarn alteration in limestone with magnetite, garnet (Gt) & epidote (Ep) from the *skarn stage*.
(Source: Hawkins et al, 2010)

8.1.3 IOCG (Iron Oxide Copper Gold/Iron Oxide Alkali Altered)

The question of whether iron skarns also fall under the classification of Iron Oxide Copper Gold (IOCG) deposits is implicitly questioned in Herrington et al (2002), raised again in Herrington et al (2005) and discussed in Williams et al (2005). Williams et al (2005) suggested that a deposit must have economic copper to be included in the category.

Porter (2000) suggested that IOCG does not represent a single style or a common genetic model, but rather a family of loosely related mineralization that shares a pool of common characteristics, the principal common feature being the abundance of low-titanium iron oxides. Pollard (2000) further discussed the variety of characteristics and factors for this diversity.

Porter (2010a) introduced the term “iron oxide-alkali altered” mineralized systems that included IOCG deposits and similar deposits that also have abundant related hydrothermal iron oxides and associated alkali alteration, but are copper-gold deficient. This includes the iron skarns of the Valerianovskoe arc.

This compares with Groves et al (2010) who used the term “iron-oxide associated” to include IOCG, iron oxide apatite, iron skarns and other related deposits. Although the criteria of Meinert et al (2005) discussed above is clear, Porter (2010a) reasons that as IOCG and related mineralization are the products of interaction between host protoliths and hot, saline to hypersaline, volatile-rich fluids, should those protoliths be calcareous, then a skarn alteration assemblage would be expected.

Hawkins et al (2010) agree stating that the iron skarns of the Turgai belt exhibit many of the characteristics of IOCG-style mineralization, including significant early iron oxide (low Ti magnetite) deposition, followed by a late copper sulphide phase, association with extensive alkali metasomatism and a broad space-time association with batholithic intrusive masses.

In summary, the Valerianovskoe iron skarns are regarded as IOCG-related deposits by Hawkins et al (2010), iron oxide associated by Groves et al (2010) and iron oxide alkali altered by Porter (2010a) and Porter (2010b).

9 EXPLORATION

Exploration to date is largely historical and is decribed in detail in Section 6.2.

In addition to drilling, KMI reviewed historic drill hole data and undertaken a limited programme of assaying historic sample pulps that were not previously submitted for analysis. A ground magnetic survey was completed in 2013. The deposits are covered by deep cover rocks and no geochemical surveys have been conducted.

10 DRILLING

The majority of drilling at Lomonosovskoye is historical, and is described in detail in 6.2. Since KMI acquired the project in 2009, a further 86 drill holes have been completed. The first 22 KMI holes drilled in 2010-2012 were for validation purposes and were targeted within previously drilled mineralization. 17 holes drilled in 2013 were targeted at extending mineralization along strike and down dip, with an additional 10 holes drilled for geotechnical investigations of proposed waste dumps and tailings storage areas. Seven (7) holes were completed in 2014 targeted at mineralization extensions, with a further 5 holes targeted at base metal mineralization outside the iron resource and 11 holes drilled for hydrological studies. Fourteen (14) geotechnical holes were also completed within the proposed pit area in early 2014. Table 7 summarises the amount of drilling undertaken at various times over the life of the Lomonosovskoye project.

Table 7. Summary of All Drilling at Lomonovskoye Completed up to 31st October 2014

Year	Holes Drilled	Metres Drilled	Holes sampled	Number of samples	Metres sampled
1950-1955	106	25738.65	32	1592	5091.75
1956-1960	12	4717.9	12	894	1425.5
1961-1968	90	34418.2	29	1860	5555.49
1978-1984	352	141893.68	101	7838	16905.59
Total historic	**560**	**206768.43**	**174**	**12184**	**28978.33**
2011	5	1871.2	5	269	792.45
2012	17	7179.66	17	1272	2491
2013	27	7085.2	17	1101	2343.7
2014	37	9175.2	11	593	1194.7
Total KMI	**86**	**25311.26**	**50**	**3235**	**6821.85**
TOTAL KMI + HISTORIC	**646**	**232079.69**			

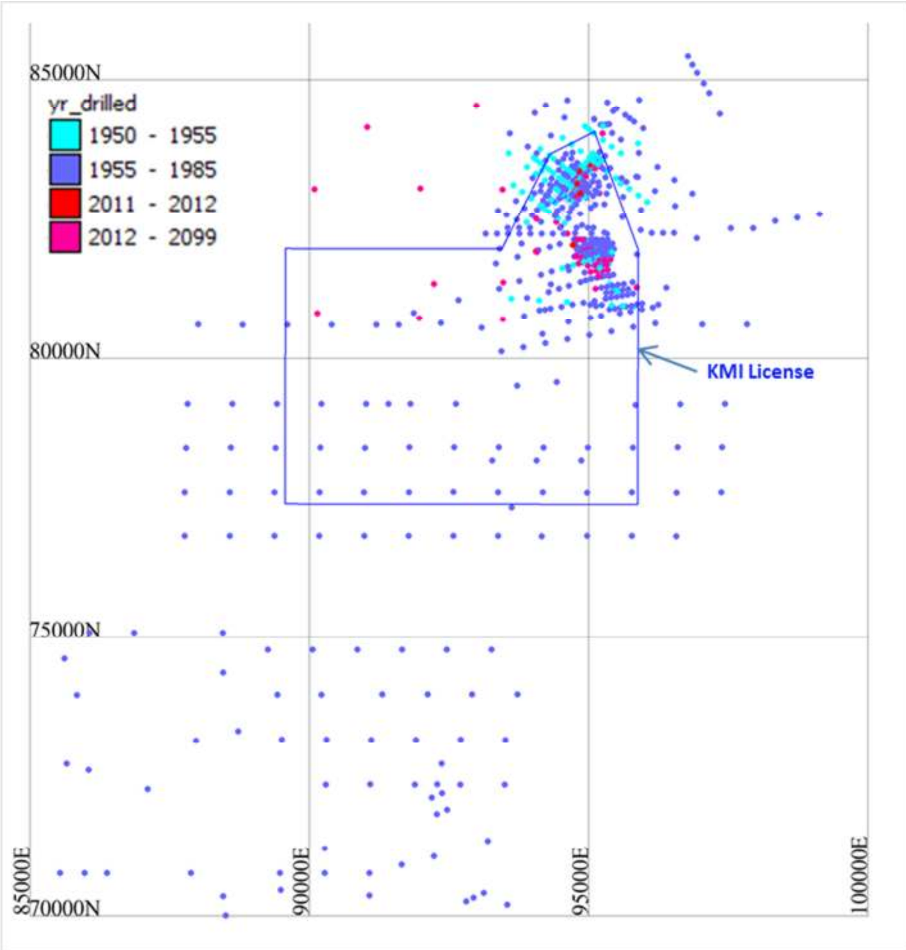


Figure 32: Plan of Drill Collars Coloured by Period (Yr_drilled)
KMI drilling outside subsoil license are geotechnical holes for waste dump and tailings dam sites

10.1 DRILLING PROCEDURES

10.1.1 Drilling prior to 2011

Procedures for pre-2011 drilling are summarised in Dudina et al (1982) for the three main phases of exploration at Lomonosovskoye. Table 8 summarises the key parameters for historic drilling. Coring bits were general used only in Palaeozoic basement rocks. Mesozoic overburden was usually penetrated using tri-cone roller bits, although some holes from 1978-1982 cored the overburden in order to more fully characterise the sediments.

Steel casing was inserted in the top of every hole to at least 20 m depth. For some angled holes, the casing was inserted to approximately 110 m depth, or to base of overburden. Drill hole diameters varied with depth, from 132 mm in overburden (slightly larger than PQ), to 59 mm at the base of deeper holes (approximately BQ diameter). Most coring was carried out using 93 mm and 76 mm hole diameters (HQ and NQ respectively).

Drill hole collar positions were surveyed using a theodolite, tied to state-defined trigonometry stations. Up to 1960, angled holes were surveyed down-hole for dip only by the acid etch method, and vertical holes were not surveyed. From 1961 onwards, gyroscopic inclinometers were used to down-hole survey for dip and azimuth every 50 m in angled holes and vertical holes more than 500 m depth.

Table 8. Summary of Drill Equipment and Downhole Surveying, pre-2011 drilling

Period	Drill Rigs	Depth Limit	Type	Hole diameter range (mm)	Downhole Surveys
1950-1956	KM-500	500-600 m	Core	132-75	None on vertical holes, acid etch dip measurements on angled holes
1958-1967	ZIF-650, ZIF-1200	650 m, 1200 m	Core	132-75	None on vertically collared holes. Acid etch dip measurements on angled holes to 1960, then gyroscopic measurements from 1960-1968
1978-1984	ZIF-650, ZIF-1200, K SKB-7	650 m, 1200 m, 2000 m	Core	132-59	None on vertical holes <500 m depth. Gyroscopic measurements on other holes every 50 m.

Drill holes were logged for geology and marked for sampling by the geologist. Only intervals showing visible iron, or polymetallic mineralization, were sampled. Nominal sampling length was 3 m, with a minimum length of 1 m. Zones of weaker mineralisation were sampled over longer intervals of up to 6 m. Samples were taken using a manual splitter to cleave core in half along its long axis. The remaining half core was stored in a core tray.

10.1.2 Drilling 2011-2014

Drilling by KMI since 2011 has been completed using a number of different coring drill rigs. Mesozoic overburden was drilled at PQ (112.6 mm) diameter with a roller bit, and Paleozoic basement rocks were drilled at HQ and NQ diameters, depending on depth.

Initial rig siting for set-up was determined using a Garmin handheld GPS. Following drill hole completion, drill collar positions were determined by Total Station survey with reference to state-defined trigonometry points.

Down-hole dips and azimuths were determined using a Kura1 gyroscopic instrument, taking readings every 10 m or 20 m down-hole.

After drillers laid out core in boxes, they were transported to KMI's core processing and storage facility in Rudniy. Geologists marked natural and artificial breaks on the core and mark a cut line parallel to the core long axis. The following were processes were carries out for each drill hole:

- Geological logging.
- Geotechnical logging.
- Photography of each core tray (wet and dry)
- Magnetic susceptibility readings for mineralised intervals using a handheld magnetic susceptibility meter.
- Preparation of sample sheets and bags ready for processing of the mineralised zones.
- Preparation of a standard, blank (quartz sand) and duplicate to be inserted after each 25th sample, inclusive.

Core samples for assay were selected using the following procedure:

- Only intervals with visible mineralisation, and 4 m either side of the mineralised zone were sampled
- If mineralization was present again within 4 m of the previous zone, the entire interval was sampled
- Unmineralised waste was left as whole core
- Individual samples nominally 2 m in length, with adjustments made to geological boundaries.

10.1.3 Downhole Geophysics

10.1.3.1 Prior to 2011

A number of different down-hole geophysical measurements were taken during Soviet-era drilling, including hole diameter, resistivity, natural gamma and magnetic susceptibility. Not all these techniques were applied on every drill hole, due to equipment availability and hole collapse.

Magnetic susceptibility measurements were collected from the majority of drill holes from about 1963 onwards. These data are available only as printed logs, which were scanned and converted to vectors using CAD software.

10.1.3.2 2011 Onwards

KMI routinely collected downhole geophysical measurements on all drill holes that remained open after drilling. Magnetic susceptibility, hole diameter (caliper), resistivity and natural gamma were the main data collected.

10.2 ACCURACY & RELIABILITY

10.2.1 Drill Recovery

Historical drilling core recoveries within mineralization and enclosing rocks were recorded as generally good, i.e. not less than 80% (the GKZ State Commission on Reserves required not less than 70% recovery). IMC Montan (2010) noted that at least 14 drill holes were recorded as being substandard in terms of core recovery (<70%), but no details are provided to allow any assessment on whether these holes impact on the resource. Although recovery information was recorded for historic drilling, it has not yet been compiled into the drill database. However, from the information available, MA do not consider that core recovery in historic drilling is a factor that materially affects assay data.

KMI drilling recoveries in mineralization averaged 98-100% in all domains.

10.2.2 Drill Hole Locations

Results from drilling since 2011 generally correlate well with the historical drilling where drill holes intersect the same volume of mineralization. However, there are a few sections in which new drill holes intersect or pass through the trace of historic holes and the location of mineralization does not correspond. In these cases the historic drill holes were not used to define mineralization wireframes, and intercepts were not used for resource estimation. Details of excluded drill holes are given in Table 9.

Table 9. Drill Holes Excluded From Resource Estimate

Hole ID	Year Drilled	Easting	Northing	RL	Area	Reason for exclusion
105	1954	95054.13	83567.42	200.17	NW	Fe mag numbers all calculated, unclear if any are real assays.
138	1954	94467.66	83247.08	202.25	NW	Should pass through high grade zone for longer, query position or dip
14	1951	95199.21	81623.22	201.62	Central	Should pass through mineralization. No samples or magnetic susceptibility data. Query position
164	1963	95130.44	83584.15	199.8	NW	Downhole surveys can't be verified
182	1965	94834.82	83359.85	200.02	NW	Should intersect grade higher in drill hole.
224	1967	94873.94	83330.26	199.83	NW	Grade doesn't match crossing hole 4_2
313	1979	95273.57	81685.01	200.65	Central	Not assayed, but must pass through low grade zone
35	1953	94811.29	83250.05	200.35	NW	Drilled apparently down-dip along edge of mineralization in Northwest zone. Grade intercepts too far east, no azimuth measurements
37	1952	94693.09	83336.49	200.6	NW	
38	1952	94850.96	83222.03	199.87	NW	Should intersect good mineralization grades, but samples/geology in incorrect location
9A	1953	94733.96	83058.07	201.8	NW	Downhole surveys can't be verified

10.2.3 Comparison of Historical and New Drilling

No spatially equivalent twin holes have been drilled at Lomonosovokoye, and a direct comparison of new and historic drill sampling is not possible. Historical and new assay data were compared in each mineralized domain using Q-Q plots to determine if grade distributions were equivalent. Data was composited downhole to 5 m intervals prior to analysis to remove effects of unequal sample lengths. Composited data included dummy assay intervals and intervals for which Fem% and Fe% were derived from magnetic susceptibility measurements.

Q-Q plots are used to compare non-twinned data. If the two distributions being compared are similar, the points in the Q–Q plot will approximately lie on a 1:1 line. If the distributions are linearly related, the points in the Q–Q plot will approximately lie on a line, but not necessarily on the 1:1 line.

Figure 33 shows Q-Q plots generated from using all data within mineralization for domains 1, 2, 3 and 4. No new drilling was completed in domain 7 and it is therefore not included in the analysis. For all data there is a slight apparent bias to higher Fe% and Fem% grades in historic drilling above about 15% Fe. However, when divided into separate domains it is clear that the bias exists only in domains 3 and 4, with domain 1 (Northwest deposit) showing a very good match. The bias can be explained by new drilling in domains 3 and 4 being targeted at lower grade material rather than infilling known mineralization as in domain 1.

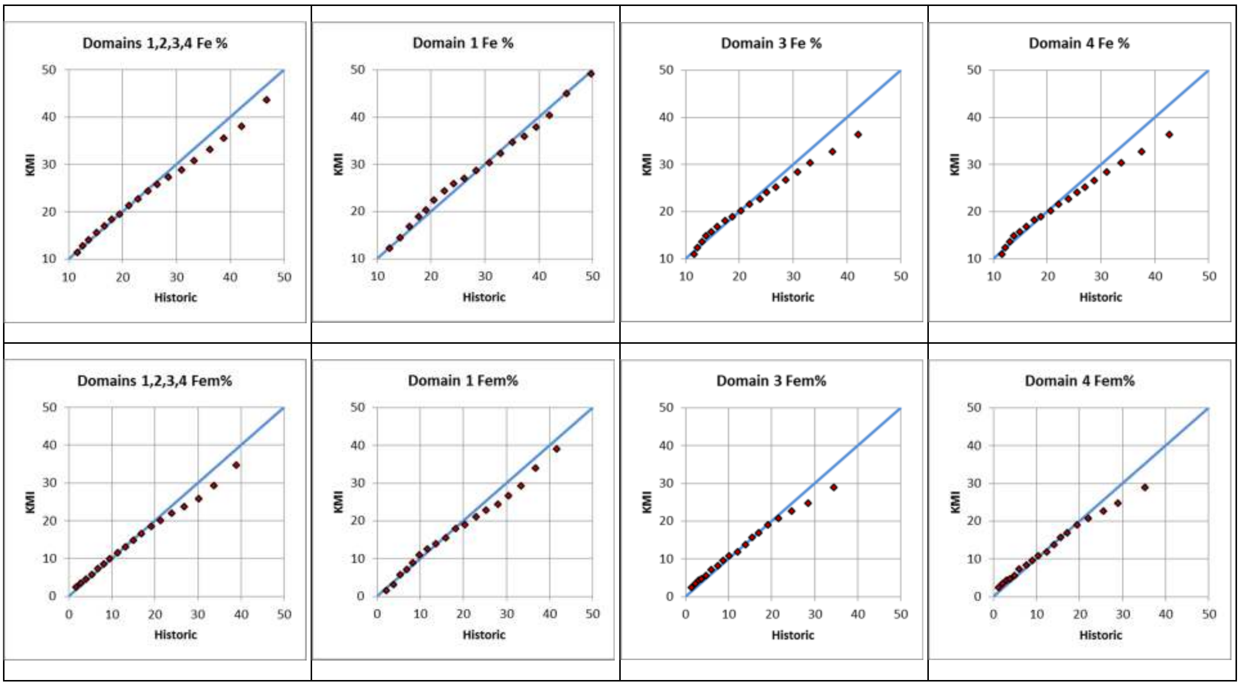


Figure 33. Q-Q Plots of 5m Composited Assay Data by Domain, All Data.

Apparent bias may also introduced by the fact that historical data was selectively sampled. To examine if this was affecting Q-Q analysis, another series of plots were produced only using composites with Fe grade greater than 20% (as a proxy for the cut-off of mineralization selectively sampled in historical drilling).

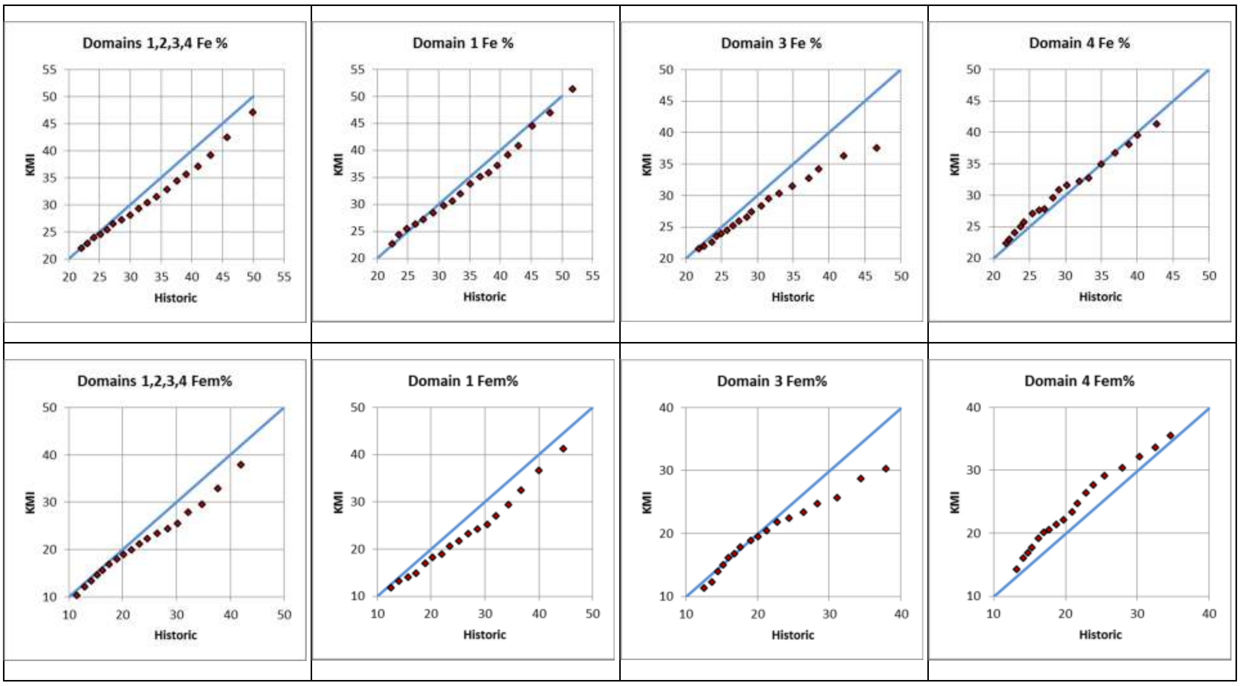


Figure 34. Q-Q Plots of 5m Composited Assay Data by Domain, High Grade Data (Fe >= 20%).

Figure 34 shows Q-Q plots by domain for high grade samples only. Data from all domains combined still shows bias towards higher grades in historic sampling. Individual domain plots show most of this apparent bias is from domain 3, with domains 1 and 4 giving very close correlation. New drilling in domain 3 was mostly targeted at lower grade mineralization.

The review of new drilling data has determined the following:

- New drilling confirmed the location and thickness of mineralized zones intersected by historical drilling.
- New drilling confirmed the tenor of mineralization in historic assays (as illustrated by Q-Q plots).
- Where additional sampling overlapped historical un-sampled intervals the grade has dropped but still holds some mineralization which is within the economic cut-off grade.
- Iron and magnetic iron values of the old and new drilling are similar, except for a possible smearing of grades due to large sample intervals in low grade, disseminated mineralization in historical drilling.

11 SAMPLE PREPARATION, ANALYSES AND SECURITY

Core from KMI drilling was sampled according to geological/mineralogical boundaries at no less than one-metre intervals within selected zones. All core was sawn in half or quarters using a diamond saw along orientation lines drawn by the geologist. Sample numbers along with the hole and intervals were recorded in a log book by the saw operator and input into the appropriate worksheets by the geologist. The flow chart for sampling and processing used by KMI is shown in Figure 35.

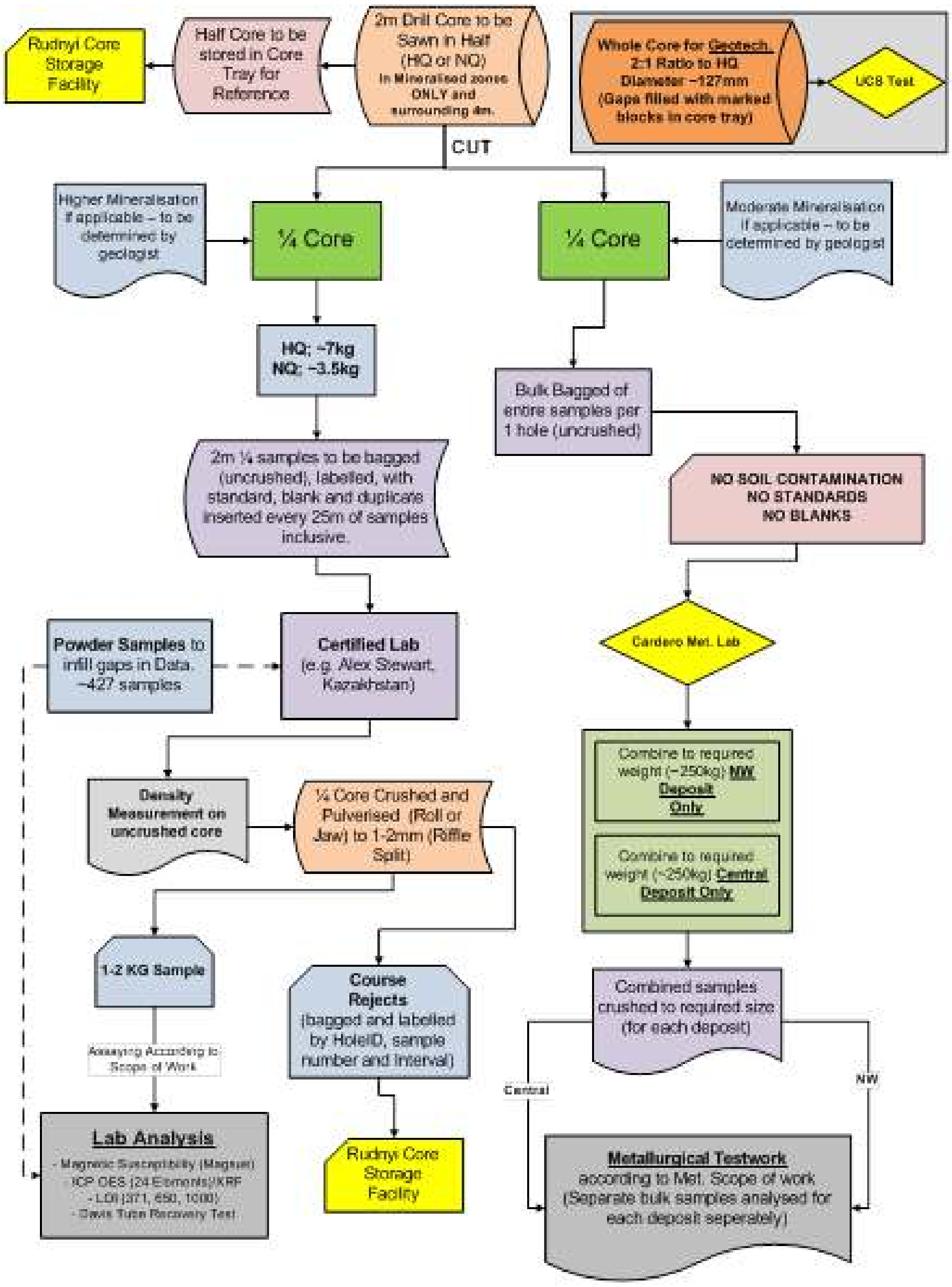


Figure 35. Sample Processing Flow Sheet, KMI Drilling.

11.1 ANALYTICAL METHODS AND PROCEDURES

Core samples from KMI drilling completed in 2011 were analysed at two laboratories in Kazakhstan: "Centrgeolanalit" in Karaganda (holes 2-1, 4-1 and 17-1) and "Sevkazgra Plus" in Kostanay (holes 6-1 and

7-2). Analysis for Fe, Fe mag, sulphur and phosphorous were carried out using wet chemical (titration) methods. Samples at Karaganda were also analysed for trace elements (P, Sb, Mn, Pb, Ti, Zr, As, W, Cr, Ni, Bi, Ba, Be, Mo, Sn, V, Cd, Y, Zn, Ag, Co, Sr and B) by Inductively Coupled Plasma Mass Spectrometry (ICP-MS). Fe analysis was carried out by digesting sample in hydrochloric acid and titrating the resulting solution using tin chloride.

Core samples from KMI drilling completed from 2012 onwards were prepared and analysed by ALS Global group laboratories in Kazakhstan and Russia. ALS laboratories operate a system of quality management and standard operating procedures that conforms with the requirements of the International Standards Organization (ISO) and requirements approved in the Russian Federation (GOST).

Sample preparation was carried out by ALS in their facility in Auezov, East Kazakhstan, with pulp samples forwarded to the ALS geochemistry laboratory in Moscow, Russia for analysis. Samples were prepared using the following steps:

1. Sample logged in management system and bar code affixed
2. Received sample weight recorded
3. Drying in oven at 105°C to remove excess moisture
4. Crushing to >70% passing 2 mm
5. Crushed sample split using riffle splitter, reject retained
6. Up to 250 g of crushed split pulverised to >85% passing 75 microns (pulp)
7. Pulp sample packaged and sent for analysis in ALS Russia.

Samples were analysed using the methods summarised in Table 10.

Table 10: Summary Table of Analysis Methods

ALS method code	Digest	Analytical technique	Elements
ME-ICP06	Lithium metaborate fusion	ICP-AES	Al, Al_2O_3, Ca, Cr, Fe, K, Mg, Mn, Na, P, Si, SiO_2, Ti
ME-ICP61	Four acid	ICP-AES	Ag, Al, As, Ba, Bi, Ca, Cd, Ce, Co, Cr, Cu, Fe, Ga, Hg, K, La, Li, Mg, Mn, Mo, Na, Nb, Ni, P, Pb, S, Sb, Sc, Se, Sn, Sr, Ta, Te, Ti, Tl, V, W , Y, Zn, Zr
DTR-FeRec MAG-SUS, OA-GRA05	-	Davis Tube Recovery	Fe content of fraction recovered by DTR, analysed by ICP-AES Magnetic susceptibility of pulp sample LOI at 1000°C

11.1.1 Davis Tube Test

Pulp sample split of 10 g was taken (up to 30 g if low grade) and the magnetic fraction recovered in a standard Davis Tube setup. If resulting magnetic fraction contained more than 1% pyrrhotite, it was treated with a mixture of sulphuric acid and hydrogen peroxide. To remove carbonates and silicates the magnetic fraction was treated with dilute nitric acid.

The magnetic fraction was dried, weighed, and a split taken. The split was digested in a mixture of hydrochloric and nitric acids and analysed for Fe by ICP-AES.

11.1.2 Fe and Fem Values Derived From Magnetic Susceptibility

Selective sampling of historical drill holes resulted in large gaps with no data in the assay database within low grade (<20% Fe) mineralization. To ameliorate the effects of these gaps, MA utilised historical down-hole magnetic susceptibility logging to derive values for magnetic Fe, and by regression, total Fe content.

Historical magnetic susceptibility logs were available as paper strip logs that were scanned, and the following process was carried out for each log:

- Data was supplied as digitised down hole logging traces converted by CAD package into text files with downhole depth and magnetic susceptibility log line position from origin.
- Scale for magnetic susceptibility was non-linear and was unable to be reliably converted into true magnetic susceptibility values.
- In some cases the original logs had a change of plotting scale part-way down the drill hole (usually from 10^{-3} CGS to 10^{-5} CGS). None of the intervals with changed scales were within mineralised zones.
- Susceptibility log depths had to be corrected because in most cases depths of susceptibility variations did not exactly match assays and geology. The majority of these errors were most likely the result of incorrect core depth marks, but adjusting sample intervals was not practicable. A spreadsheet based system was developed in Excel to correct susceptibility log depths based on assayed intervals.
- Correlation factors between susceptibility log scale value and assayed Fe magnetite % (Fem%) were derived graphically for each drill hole individually where there was sufficient data to do so. Best fit regression lines were found to be second-order polynomials rather than linear, and the analytical functions provided in Microsoft Excel were used to determine these.
- Fem% values were assigned to each susceptibility interval based on correlation factor, referred to in the database as Fem%_magsus
- Fe%_magsus grades were calculated from Fem%_magsus using a global correlation factor derived from a linear regression of assayed Fem% versus Fe% for the entire deposit:
  Fe%_magsus = Fem%_magsus / 1.0543 + 11.5
- Unsampled intervals in corresponding drill holes were divided into 1 m “pseudo-samples”
- Pseudo-samples were assigned Fem% and Fe% values using downhole compositing methods in Surpac and written back into the assay table in the database.

Details of the original procedures and equipment used for downhole magnetic susceptibility logging were not available, and it is not known what level of quality control was undertaken. However, after depth matching, logged susceptibility values showed good correlation with assayed data for the majority of drill holes (Figure 36 for example). MA considers the close correlation to be a validation of the historical susceptibility logging. The method of deriving Fem% values was not applied to any drill holes that had insufficient data, or where the correlation was found to be very poor (R^2 <0.75). In total, MA identified 56 historical holes for which a reliable estimate of magnetic Fe and total Fe content in unsampled intervals could be made from magnetic susceptibility logging.

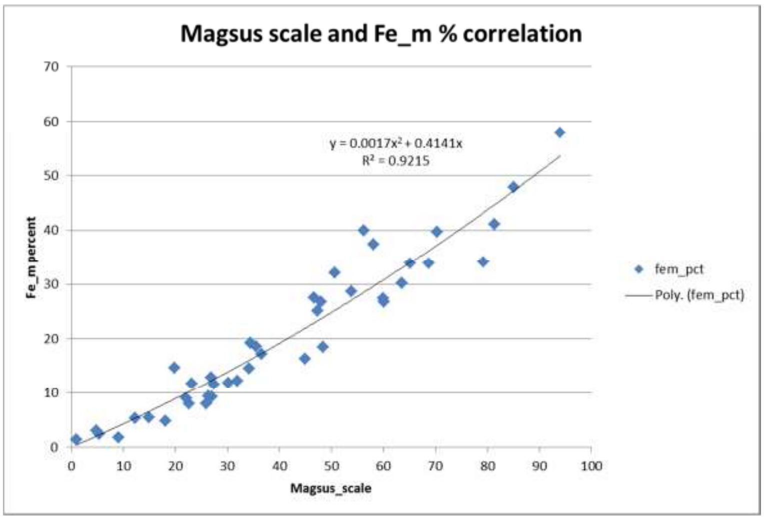


Figure 36. Scatterplot of Assayed Fem% versus Magnetic Susceptibility Logging With Fitted Polynomial Regression Line. Hole 484 (Northwest deposit)

11.2 QAQC PROCEDURES

Quality control on historical sampling was summarised in Dudina et al (1982) and comprised "internal Control samples" (field duplicates) and "external control samples" (inter-laboratory cross check samples). For both types of control samples, insertion rates were about 1 in 20 routine samples (5%).

No QAQC procedures were in place for the first five drill holes completed in 2011. KMI adopted sample QAQC procedures for sample batches submitted in and after 2012 that included insertion of certified reference materials, blanks and field duplicate samples into the routine sample stream.

11.2.1 Blanks and Field Duplicates

Blanks were inserted after each 20th routine sample, using a stockpile of unmineralized core. Field duplicates were initially added after each 25th sample, but the frequency was changed to every 20th sample in 2014.

11.2.2 Certified Reference Materials

Two different sets of certified reference materials (CRM) for iron ore were purchased:

1) Twenty-three (23) different CRM from Geostats Pty Ltd of Perth, Western Australia. CRM were supplied as 100 g quantities in sealed plastic bags and certified for total iron content. These were used in sample batches submitted from 2012-2014.

2) Three different CRM manufactured by Sevkazgra Plus laboratory in Kostany, Kazakhstan and certified for total iron and magnetic iron to Russian standards were supplied as 150 g packets in sealed plastic bottles and were used in sample batches submitted in 2014.

CRM were selected based on their characteristics matching the lithology and mineralization being drilled. They were similar in colour, mineralogy, oxidation and grades of the various metals being tested. Various grades were selected that covered the normal range of Fe% values encountered in mineralization. CRM were inserted into the sample stream after each 20th routine sample.

11.2.3 Inter-Laboratory Checks

KMI submitted two different sets of samples to two laboratories in Kazakhstan in 2013. 75 pulp rejects and corresponding quarter core samples were sent to the Faculty of Metallurgy and Mining at Rudny Industrial Institute and analysed for density and Fe_mag. Fe_mag analysis was performed according to Russian standard GOST 25114-82, for which full details were not supplied to MA. 88 pulp reject samples were sent to Ulba Metallurgical Plant in Ust-Kamengorsk and analysed for Loss on Ignition (LOI), sulphur by gas analyser and trace elements by ICP.

11.3 QAQC RESULTS

11.3.1 Historical Drilling

Historical duplicate results were compiled using mean absolute and relative percent errors on duplicate pairs for Fe total, S and P results classified by year and element content. No duplicate checks on Fe_mag were recorded.

Internal control samples yielded mean relative random errors between 0.59% and 1.03% for samples grading greater than 30% Fe, and between 0.81% and 3.05% for samples grading 10%-30% Fe. Sulphur and phosphorous gave larger mean relative errors around 5% and 9% respectively.

External control samples yielded mean relative random errors between 0.15% and 1.07% for samples grading greater than 30% Fe, and between 0.14% and 1.04% for samples grading 10%-30% Fe. Sulphur gave larger mean relative errors between 0.03% and 7.14%. Phosphorous data was not reported in the same document.

11.3.2 Drilling 2012-2014

Table 11 shows a summary of QC sample insertion rates for KMI drilling between 2012 and 2014.

Table 11. Summary of QC Sample Insertion, 2012-2014.

		Insertion rate, ratio	Insertion rate, percent
Total routine samples (not including QAQC)	3771		
CRM - Standards count (Fe mag)	44	86	1.2
CRM - Standards count (Fe total)	176	21	4.7
Blanks count	154	24	4.1
Duplicates count	176	21	4.7

11.3.2.1 Certified Reference Materials

Initial assessment of CRM performance for total iron was carried out using performance criteria specified on the CRM manufacturer’s certificates: results within 3 Standard Deviations (3SD) of the certified mean are deemed to have passed, with results outside this range deemed to have failed. However, using these performance gates resulted in an unusually high proportion of failures. Investigation of possible reasons for failures showed that for both Geostats and Sevkazgra CRM, certification was determined by different analytical techniques to the borate fusion ICP-AES method used by KMI.

Geostats CRM were certified using borate fusion-XRF, and Sevkazgra CRM were certified using wet chemical titration. Both these methods have relative precision errors of approximately ±1% (defined at ±2SD). ALS Global laboratory personnel confirmed that the effective relative precision at of the borate fusion-ICP-AES method for Fe is ±5% (at ±2SD), which defines much broader performance gates than using certified statistics. Control charts for CRM were re-plotted using ICP-AES analytical precision and ±3SD as the limit for failures, rather than the certified precision. This produces a much broader range for acceptable results than using the CRM certified precision.

Control charts for CRM submitted from 2012-2014 are shown in Figure 37 to Figure 44. Due to the large number of Geostats CRM used, results are plotted on two charts, one for 2012 drilling and the other for 2014 drilling. Sevkazgra CRM were inserted mostly within the 2013 drilling program.

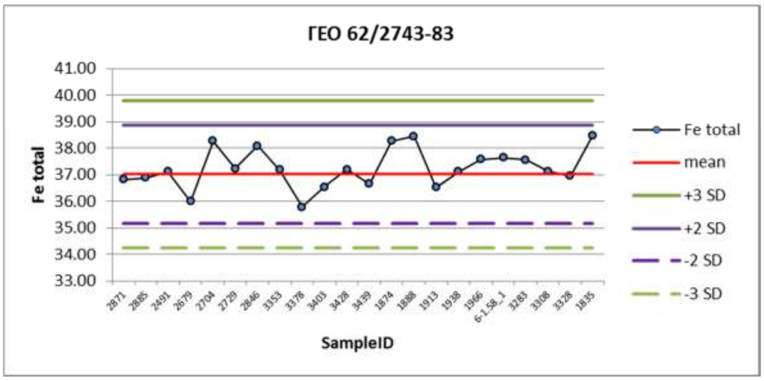


Figure 37. Fe_mag Control Chart, CRM 61/2743-83.

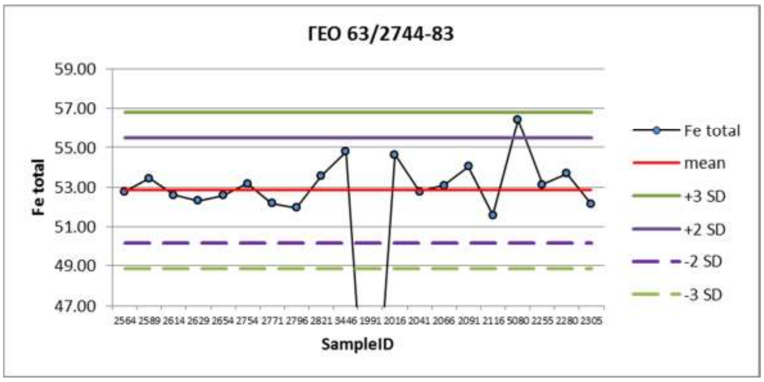


Figure 38. Fe_mag Control Chart, CRM 61/2744-83.

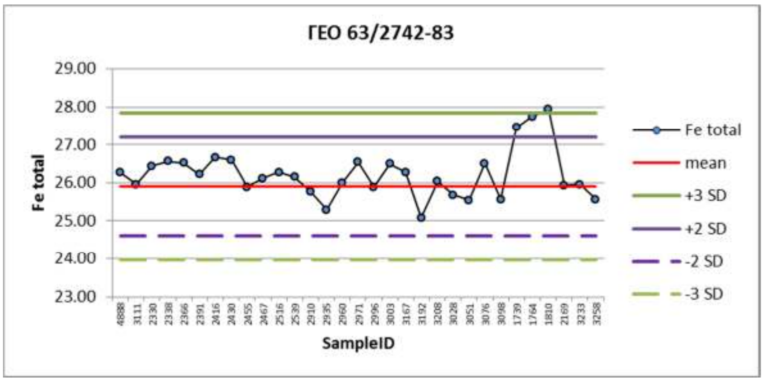


Figure 39. Fe_mag Control Chart, CRM 61/2742-83.

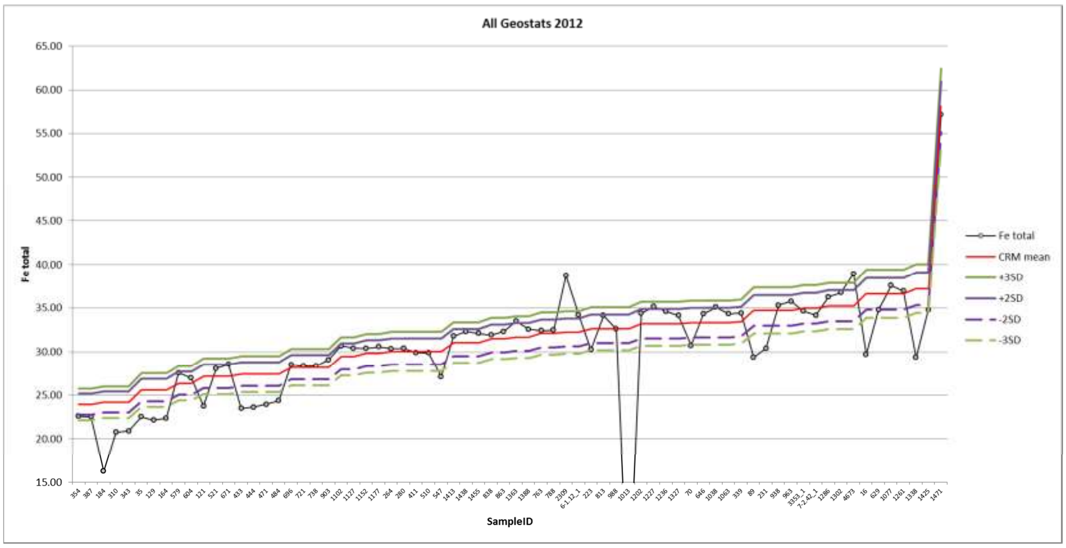


Figure 40. Fe total Control Chart, All Geostats CRM, 2012 Drilling

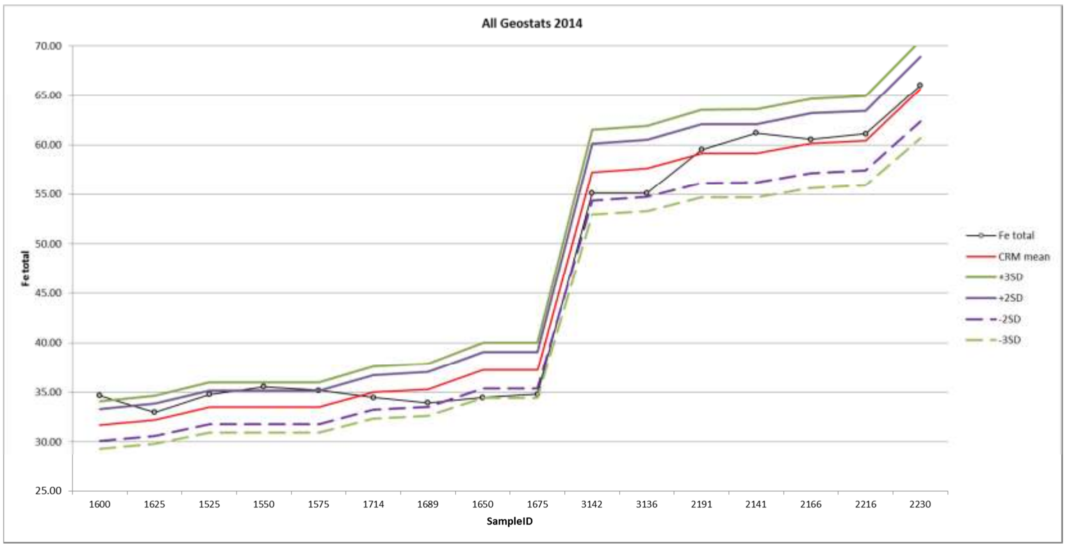


Figure 41. Fe total Control Chart, All Geostats CRM, 2014 Drilling

Control charts for magnetic iron CRM were plotted using the same performance gates for ICP-AES analysis, with a ±5% relative error. This is not strictly correct, because there will be an additional precision error produced by the process of magnetic fraction separation, as well as Fe analysis. However, the precision of Davis Tube separation is governed by a large number of factors and a single value for precision is not available. As with Fe total analyses, the certification of magnetic iron values in Sevkazgra CRM used a different method not directly comparable with Davis Tube separation.

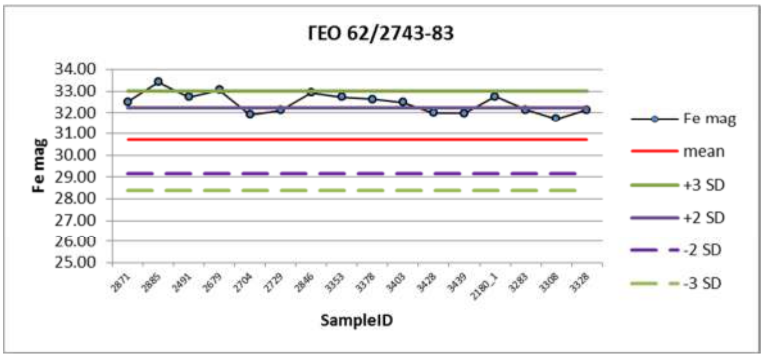


Figure 42. Fe_mag Control Chart, CRM 61/2743-83.

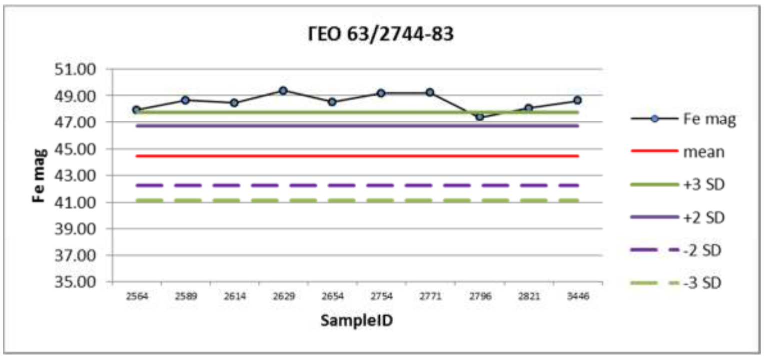


Figure 43. Fe_mag Control Chart, CRM 61/2744-83.

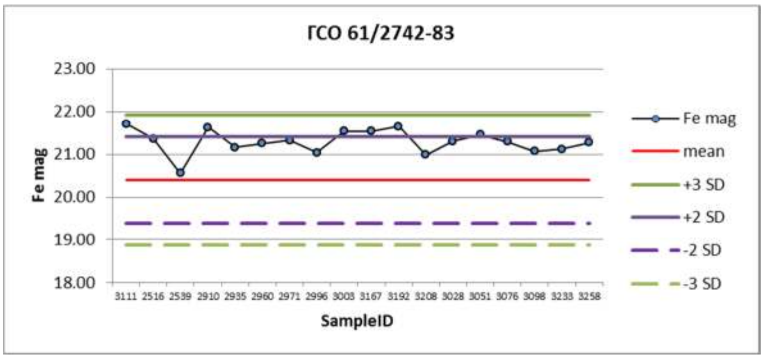


Figure 44. Fe_mag Control Chart, CRM 61/2742-83.

11.3.2.2 Field Duplicates

Relative Mean Difference (RPD) plots for Fe and Fe_mag analysis of field duplicates are shown in Figure 45 and Figure 46.

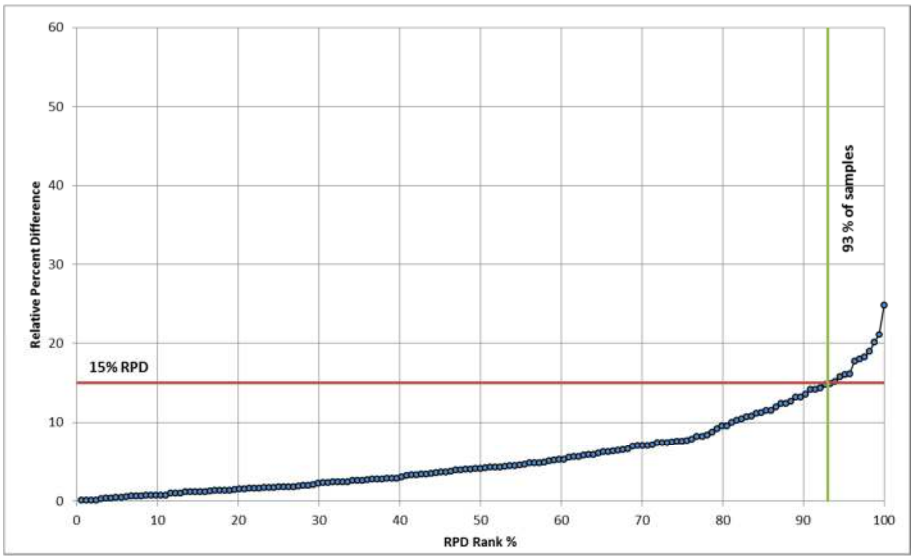


Figure 45. Ranked RPD plot, Fe_total.

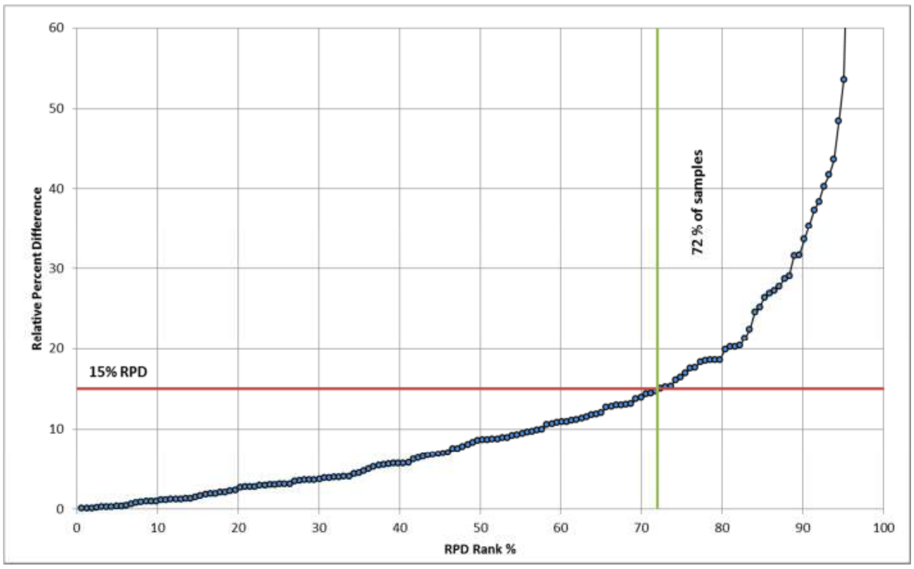


Figure 46. Ranked RPD plot, Fe_mag.

11.3.2.3 Field Blanks

Control chart for field blanks analyses is shown in Figure 47.

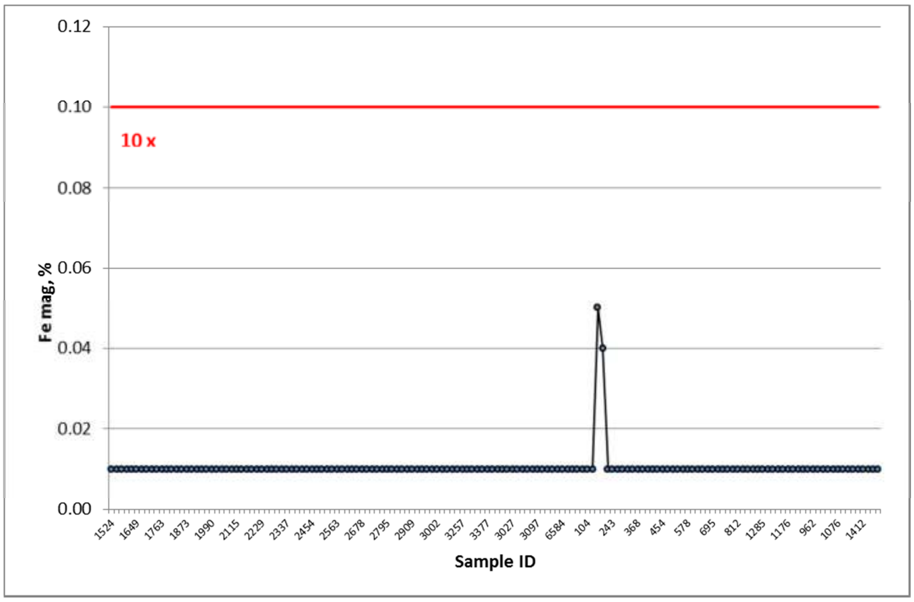


Figure 47. Field Blanks Control Chart.

11.3.2.4 Inter-Laboratory Checks

Rudniy Industrial Institute check analyses for Fe_mag compared with ALS results are shown as a scatterplot in Figure 48.

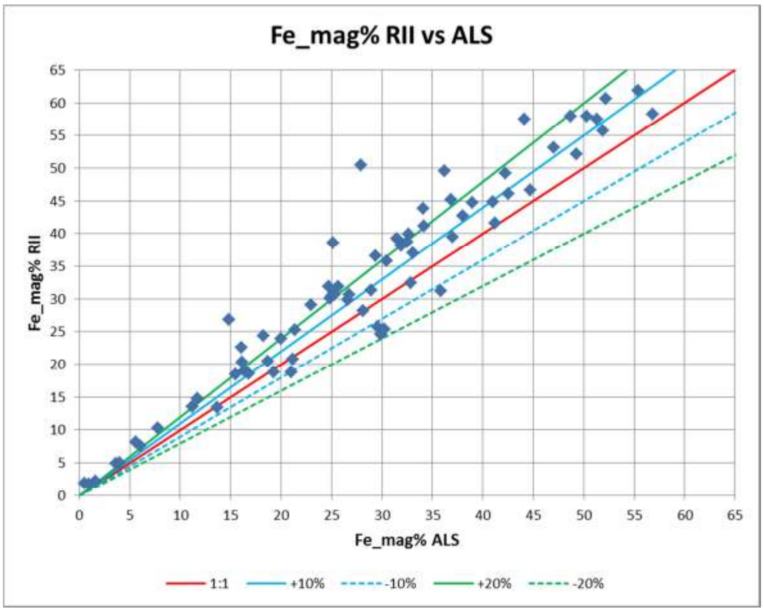


Figure 48. Fe_mag Results, Rudny Industrial Instite (RII) versus ALS.

Ulba Metallurgical Plant analyses showed a significant negative bias for all elements compared with ALS results for the same samples, and for three Geostats CRM inserted in the same batch. Investigation of the results by KMI revealed that the laboratory had no experience in analysing iron ore.

11.4 QAQC DISCUSSION

11.4.1 CRM – Fe Total

Control charts for Fe total produced from Sevkazgra CRM mostly fall within the ±3SD of precision limits of the borate fusion – ICP-AES analytical technique. One of the results for 63/2744-83 returned a value for Fe of 36.86% and was most likely actually 2743-83 mis-labelled in the data supplied to MA. There is no significant bias, or drift over time. Two results for 2742-83 are close to the +3SD upper limit of acceptable performance and the batches containing these samples should have been re-assessed.

Fe total control charts for Geostats CRM generally show poorer performance. The use of so many different CRM with similar certified means makes identification of labelling errors difficult, and also increases the chances that the wrong CRM was inserted. In addition, potential analytical errors such as drift, or other changes over time cannot be reliably assessed.

Results for 2012 sampling show a large proportion (20 out of 70, or 28%) of failures outside the ±3SD performance limits, and 10 of 70 (14%) samples between ±2SD and ±3SD. Some of these failures could potentially be attributed to mis-allocation of CRM sample numbers, or insertion of a different CRM to that indicated by the sampling record. Results for 2014 sampling generally lie within performance gates with 1 of 16 (6%) results outside ±3SD and 5 of 16 between ±2SD and ±3SD, but there are still potential sample numbering / CRM identification errors.

Table 12 shows details of those Geostats CRM results that fall outside ±3SD of their allocated CRM mean using analytical precision.

Table 12. Details of Geostats CRM Failures

Sample ID	Hole ID	Fe total	Sampling year	StandardID	CRM mean	ICP-AES Analytical Precision Error (relative 5%)				Comment	Relative % Difference
						+3SD	+2SD	-2SD	-3SD		
1013	17_3	0.01	2012	GIOP-98	32.63	35.08	34.26	31.00	30.18	Sample number mixup with blank?	-100.0
184	17_3	16.27	2012	GIOP-95	24.22	26.04	25.43	23.01	22.40	Sample number mixup ?	-32.8
310	17_3	20.77	2012	GIOP-95	24.22	26.04	25.43	23.01	22.40	Too low to match any other CRM	-14.2
343	17_3	20.92	2012	GIOP-95	24.22	26.04	25.43	23.01	22.40	Too low to match any other CRM	-13.6
129	17_3	22.15	2012	GIOP-102	25.60	27.52	26.88	24.32	23.68	Too low to match any other CRM	-13.5
164	17_3	22.37	2012	GIOP-102	25.60	27.52	26.88	24.32	23.68	Too low to match any other CRM	-12.6
35	16_1	22.54	2012	GIOP-102	25.60	27.52	26.88	24.32	23.68	Too low to match any other CRM	-12.0
433	16_1	23.49	2012	GIOP-96	27.44	29.50	28.81	26.07	25.38	Could be GIOP-94?	-14.4
444	16_2	23.65	2012	GIOP-96	27.44	29.50	28.81	26.07	25.38	Could be GIOP-94?	-13.8
121	16_2	23.77	2012	GIOP-103	27.19	29.23	28.55	25.83	25.15	Could be GIOP-94?	-12.6
471	9_1	23.97	2012	GIOP-96	27.44	29.50	28.81	26.07	25.38	Could be GIOP-94?	-12.6
484	23_1	24.37	2012	GIOP-96	27.44	29.50	28.81	26.07	25.38	Could be GIOP-94?	-11.2
547	23_1	27.15	2012	GIOP-93	30.04	32.29	31.54	28.54	27.79	Could be GIOP-103	-9.6
89	5_1	29.39	2012	GIOP-108	34.73	37.33	36.47	32.99	32.13	Could be GIOP 112, 114 or 93?	-15.4
1338	5_1	29.39	2012	GIOP-101	37.22	40.01	39.08	35.36	34.43	Could be GIOP-112 or 104?	-21.0
16	1_1	29.75	2012	GIOP-100	36.63	39.38	38.46	34.80	33.88	Could be GIOP-112 or 104?	-18.8
231	7_1	30.43	2012	GIOP-108	34.73	37.33	36.47	32.99	32.13	Could be GIOP 93?	-12.4
70	8_1	30.74	2012	GIOP-111	33.35	35.85	35.02	31.68	30.85	Could be GIOP-93 or 105?	-7.8
1600	18+50_1	34.65	2014	GIOP-99	31.70	34.08	33.29	30.12	29.32	Could be GIOP-108?	9.3
2309	??	38.71	2012	GIOP-107	32.23	34.65	33.84	30.62	29.81	could be GIOP-101?	20.1
4673	440a	38.94	2012	GIOP-109	35.26	37.90	37.02	33.50	32.62	could be GIOP-101?	10.4

11.4.1.1 Pulp sample re-analysis

In September 2014 it was decided that a selection of pulp reject samples from 2012 drill holes with the poorest CRM performance should be checked. Samples with more than 20% Fe from drill holes 17_3, 23_1 and 5_1 were re-analysed at ALS Moscow.

Results for Fe analysis are shown in a scatterplot in Figure 49, with results for Fem shown in Figure 50 . For Fe re-assays the majority of samples show a consistent bias with the original 2012 assays under-reporting by approximately 3-5% Fe compared with 2014 re-assays. This bias matches the absolute difference between CRM means and assay results for the failed CRMs from these drill holes as shown in Table 12. Results for Fem from the same set of samples, analysed by Davis Tube, show a very good correlation between original and repeat assays (with the exception of two points that appear to be sample numbering errors).

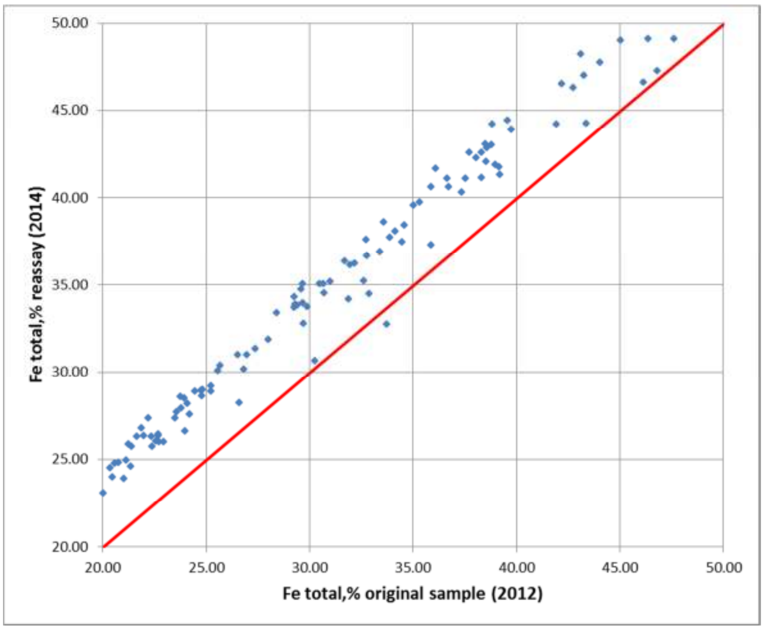


Figure 49. Scatterplot of 2014 Fe% check analyses of selected 2012 samples.

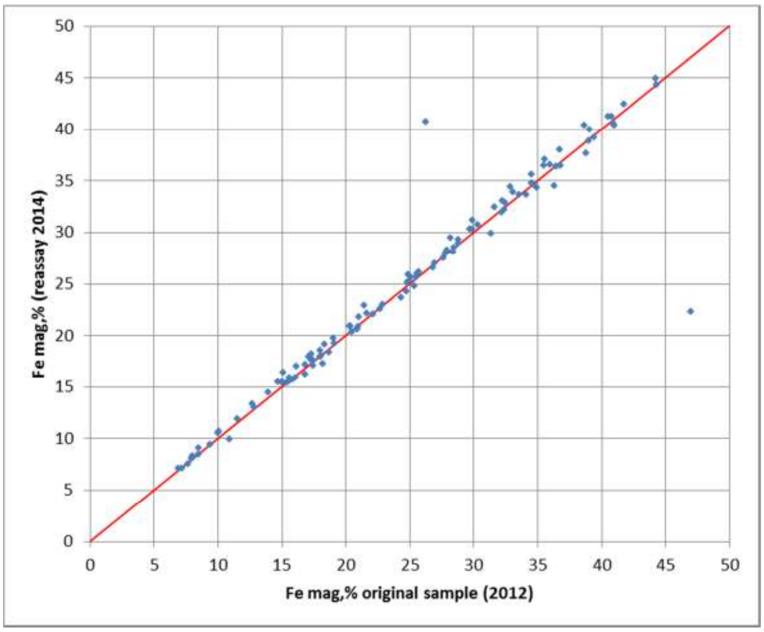


Figure 50. Scatterplot of 2014 Fem% check analyses of selected 2012 samples.

In MA's opinion the results for Fe show an analytical error rather than a sample management problem. This is supported by the observation that while Fe results show a consistent bias, Fem results are unaffected. The exact cause of the bias in Fe results is not known, and ALS Moscow are unable to track the cause of the error at this stage. However, the same issue does not appear to be affecting all 2012 sample batches, since more than 50% of CRM's gave results within performance limits. Almost all the failures outside ±3SD listed in Table 12 occur within batches from the first drill holes in early 2012.

The remainder of Geostats CRM failures most likely reflect poor QC sample management rather than any fundamental analytical error. This is supported by the observation that Sevkazgra CRM show reasonable results for Fe total, and that in general Geostats CRM from 2014 are also acceptable.

CRM failures also reflect a lack of attention to QC results at the time of analysis. Issues that are not solved by identifying mislabelled CRM samples should be investigated further as soon as results are received, including requesting a re-analysis of the batch. 2012 was the first time that QC samples had been utilised in the drilling program and a lack of understanding regarding their purpose may have contributed to poor QC sample management.

It is difficult to track the exact causes of CRM failures from batches submitted more than two years ago. Rigorous QC procedures were not being followed in early stages of the 2012 drilling program and failed CRM results were not followed up.

MA does not consider that the CRM failures constitute a material impact on assay data used for resource estimation. Seven drill holes from 2012 contain most of the CRM errors, all of which were targeted at confirming mineralization in historical drill holes. No global bias is indicated between KMI drilling and historical data.

11.4.2 CRM – Fe mag

Fe_mag results for Sevkazgra CRM show a consistent positive bias compared with the certified mean values. The magnitude of the bias changes from 4.3% relative at 20% Fe_mag to 9.2% relative at 44% Fe_mag. This bias is due to the difference in analytical technique used to certify the CRM. Since the Fe total results for the same CRM return reasonable results within analytical error, the difference must lie in the technique used to perform separation of the magnetic fraction. Two possibilities arise: 1) Russian standard method under-estimates magnetic iron by washing, or dissolving out some magnetic material; 2) Davis Tube method over-estimates magnetic iron by including some amount of non-magnetic iron minerals in the magnetic fraction.

The reason for the difference could only be determined by a program of comparative testwork on the same CRM using both techniques, followed by a full analysis of the separated magnetic fraction. Although this would be ideal, MA do not consider is necessary for the following reasons:

1) the primary commodity being estimated is Fe total, not Fe_mag.
2) magnetic separation is dependent upon a number of factors such as grind size, magnetic field strength used, time of sample processing and amount of agitation. It is to be expected that different methods have different results.
3) although a bias is present, the results plot in a consistent, narrow range of values for Fe_mag, indicating that the CRM are behaving as expected in terms of repeatability.

11.4.3 Field Duplicates

Field duplicate results show no consistent bias and a reasonable level of precision. Fe total (93% of duplicates with RPD less than 15%) apparently performs better than Fe_mag (72% of duplicates with RPD less than 15%), but the results are an artefact of the 'background' 10% non-magnetic Fe that most samples contain. At low Fe_mag grades the relative difference between duplicate pairs is smaller for Fe than for Fe_mag because of the addition of 10% Fe: a pair with 2% and 2.5% Fe_mag has a relative difference of 22.2%, whereas the same sample pair will have approximately 12% and 12.5% Fe total with a relative difference of 4%.

Duplicates results are also affected by a number of pairs (11 out of 163, or 6%) with very high RPD values that appear to be more likely due to sample mis-numbering. Removal of these pairs increases the proportion of duplicates below 15% RPD to 78%.

11.4.4 Blanks

Field blanks results show no significant effects of contamination, with all except one sample returning below detection limit results.

11.4.5 Inter-Laboratory Checks

Fe_mag results showed a positive bias of around 15% towards Rudniy Industrial Institute analyses compared with ALS Davis Tube results. Without full details of the exact analytical method used at Rudny, a comparison with ALS is difficult. As noted for CRM results above, it is expected that different methods will give different results for the amount of material recovered as a magnetic fraction due to the multiple variables involved.

No further comment on Ulba check analyses are considered necessary, except to highlight that inter-lab checks need to be performed at accredited laboratories using the same methodology as the original analyses.

11.5 QAQC CONCLUSIONS

Field duplicate results show no consistent bias and a reasonable level of precision. Field blanks results show no significant effects of contamination.

MA does not consider that CRM failures for Fe total analyses constitute a material impact on assay data used for resource estimation. Seven drill holes from 2012 contain most of the CRM errors, all of which were targeted at confirming mineralization in historical drilling. Possible effects on resource estimation are mitigated by the large quantity of surrounding data. No significant bias is indicated between KMI drilling and historical data.

Fe_mag analyses on CRM highlight the differences in results obtained by using different magnetic fraction separation techniques. Fe_mag results should be considered as recoveries under the conditions of the testing technique used rather than absolute determinations of magnetic iron.

11.6 QAQC RECOMMENDATIONS

MA recommends that KMI ensure the following QC procedures are implemented in any future drilling programs:

1) Selection of a maximum of five (5) different CRM for Fe total analysis with certified means and performance gates (±3SD) that do not overlap.
2) Definition of the expected precision and mean values if the analytical method being used is different to that used to certify the CRM.
3) Request laboratory to report received sample weights (this can assist with distinguishing CRM and routine samples that have been mis-labelled).
4) Ongoing monitoring of QC results (CRM, blanks and duplicates) on a batch-by-batch basis as soon as results are received. Mis-labelled samples should be fixed in the database, and any other issues addressed directly with the analytical laboratory.
5) Inter-laboratory checks should be undertaken at an internationally certified laboratory using the same analytical methods as were originally used.
6) Reporting of QAQC results at monthly (or longer) intervals to track any major changes in performance over time.

12 DATA VERIFICATION

12.1 DATA VERIFICATION PROCEDURES

12.1.1 Site Visit

Mr Vigar conducted a site visit from 26th to 30th March 2012. The visit consisted of visiting the laboratory in Karaganda, visiting the drill site of the current confirmation drilling program, inspecting drill core and the core storage in Rudniy and talking to the site geologists Sergey Debrov and Genadyi Shistak. The Karaganda lab was proposed to conduct the geological assaying for the project's requirements, however, it was decided following the visit that the laboratory was unable to meet the international standards required and a second laboratory in Moscow, (ALS Group) was chosen instead.

Mr Vigar also conducted a site visit from 3rd December to 9th December 2013. Time was spent with the site geologists to discuss and understand in detail the geology and problems associated with sampling, preparation, its logistics and requirements of Kazakh and international certified laboratory analyses.

MA located an historical drill collar (Figure 51), visited current drill sites (Figure 52, Figure 53), examined the core shed and core storage (Figure 54), original report files, and viewed and examined mineralized core (Figure 56, Figure 57). MA also visited the adjacent SSGPO operations.

Due to the thick overburden, there is no outcrop to view.

Figure 51. Drill collar of historical DDH 414
(Source: MA 2011)

12.1.1.1 Drill Site – DDH 7-2. DDH 16-1

MA representatives visited in October 2011 (Figure 52) to observe drilling start-up, and again in March 2012 (Figure 53). The first hole viewed was DDH 7-2, which located in the NW deposit and drilled towards 310° azimuth at -60° dip. A hydraulic Boart Longyear wire-line diamond drill rig was used, enclosed due to the cold weather. Drilling procedures were observed and drill core recovery was found to be satisfactory.

Figure 52. Core rig facing north – Drill hole DDH-7-2 (Source: MA 2011)

Figure 53. Drill hole DDH-16-1, looking north (Source: MA 2012)

12.1.1.2 Core Storage Facility

Visiting in 2012, MA noted that the core storage facility was inadequate in size for the then planned 4,270 m drill program, and was only considered as a temporary solution to store the core (Figure 54). Since that visit, a new core storage facility in Rudniy has been constructed and the core moved.

Figure 54. Lomonosovskoye Project Core storage (Source: MA 2012)

Figure 55. Drill core from DDH 16-1 at about 280 m (Source: MA 2012)

12.1.2 Independent Samples

No independent samples were collected due to the inability to deliver iron samples through local customs clearance. Historical and new drill core was viewed and evidence of iron mineralization noted (Figure 56, Figure 57).

Figure 56. Mineralized core – historical DDH C21-2 (Source: MA 2011)

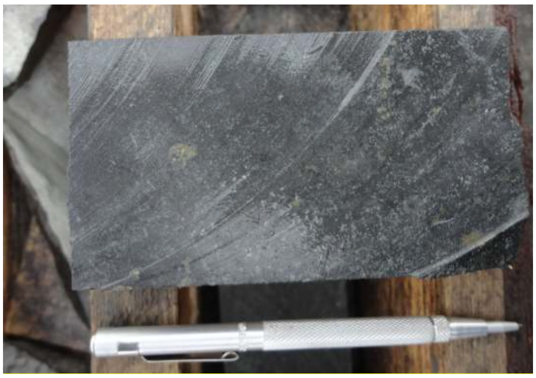


Figure 57. Mineralized core – new hole DDH 7-2 (Source: MA 2012)

12.1.3 Database Verification

The database was reviewed for all new and existing historical data relevant to the areas of mineral resource estimation described in this report. A list of duplicates was cross examined against the current database for missing samples in order to add additional assay results and verify historical drilling records. Repeated samples and overlaps were removed from the database for modelling and estimation purposes.

12.2 LIMITATIONS ON VERIFICATION

No independent validation sampling was conducted by MA due to the inability to export samples for assaying in an independent laboratory outside Kazakhstan on a timely manner. However mineralization was observed in the historical and new drill core (Figure 56, Figure 57).

12.3 OPINION ON ADEQUACY OF DATA

As previously discussed using basic statistics and Q-Q plots alongside a visual inspection of validation against historical drilling, there is a basic correlation that gives a good confidence in the historical assays. Historical drill holes from the first phase of drilling (pre-1960) have some potential issues with the reliability of spatial locations of mineralized intercepts due to the lack of down-hole surveys. The remainder of the historical data, and the data collected by KMI since 2010 is considered adequate for the purposes of resource estimation.

13 MINERAL PROCESSING AND METALLURGICAL TESTING

KMI plan to process Lomonosovskoye ore material in a beneficiation plant to separate its magnetite content to obtain concentrate, pellet or other value added product for sale to customers. Historical metallurgical testing carried out in Soviet times provided some process parameters to design a preliminary processing route and main beneficiation plant technology (see section 6.2.4 for details).

Confirmation drilling completed between 2010 and 2012 provided core samples to carry out metallurgical testing. Two samples (one from Northwest and one from Central) were sent to Cardero Materials Testing Laboratory (CTML), USA in 2012. A further three samples (two from Northwest and one from Central) were sent to SGS in Lakefield, Canada for sequential testwork. Work undertaken and results are summarised in the following sections.

13.1 CARDERO MATERIALS TESTING LABORATORY

KMI submitted two samples to CTML, USA in 2012 for detailed metallurgical testwork. The information supplied to MA did not include details of the samples selected, nor the basis for their selection: only that one sample was sourced from Central and the other from Northwest.

13.1.1 Testwork

CTML carried out a suite of tests, including:

- Ore Characterization (Chemistry, Mineralogy, and Hardness)
    - Certified assays by ALS
    - Bond Abrasion Index (AI) Test by SGS
    - Bond Rod Mill Work Index (RMWI) Test by SGS
    - Bond Ball Mill Work Index (BMWI) Test by Coleraine (CMRL)
    - Mineralogy
- Dry Cobbing conducted by Cardero (CMTL).
- Flow Sheet Development (Single- and two-stage grinding; work conducted at Coleraine Minerals Research Laboratory (CMRL)), including:
    - Davis Tube testing
    - Wet Low Intensity Magnetic Separation (LIMS)
- Froth flotation
- Elutriation

13.1.2 Results

Head assays for the two samples supplied are shown in Table 13. Mineralogical studies showed gangue to be dominated by augite (pyroxene) and magnetite, with lesser amounts of Fe-rich chlorite, pyrite, garnet, staurolite and calcite.

Both samples were classified as ‘soft’ according to Bond Abrasion Index, Bond Rod Mill Work Index and Bond Ball Mill Work Index tests.

Table 13. Analytical Results for Samples Submitted to CTML

Element	units	Central sample	Northwest sample
Al2O3	%	6.87	6.41
CaO	%	12.04	12.52
Cr2O3	%	0.01	0.01
Fe2O3	%	40.58	45.8
Fe	%	28.37	32.01
K2O	%	0.1	0.05
MgO	%	5.46	4.76
MnO	%	0.37	0.36
P2O5	%	1.38	0.14
SiO2	%	28.32	25.56
TiO2	%	0.49	0.33
LOI	%	2.44	3.02

The following summary of other test results is taken from a CTML report dated 22 July 2013:

“Two separate high quality magnetite concentrates were produced using two-stage laboratory-scale grinding and Wet Low Intensity Magnetic Separator (LIMS). First the samples were wet rod milled to an 80% passing size (P80) of ~120 microns and fed 3 passes (rougher, cleaner, re-cleaner) to a Wet LIMS; then the concentrate was wet rod milled to ~45 micron for the second stage and again concentrated by being passed 3-times through the wet LIMS. The Northwest concentrate had a 66.8% Fe grade (as measured by Coleraine FeTOT titration) at an overall iron unit recovery of 66.3%. The Central concentrate had a 68.9% Fe grade (as by Coleraine FeTOT titration) at an overall iron unit recovery of 77.9%. In addition, exploratory froth flotation tests indicate that sulfur can be reduced in the Northwest concentrate.”

CTML devised a process flowsheet involving two-stage grinding and 3-pass LIMS concentration as shown in Figure 58.

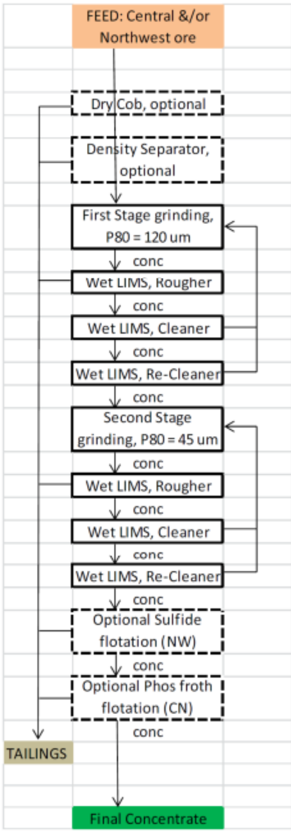


Figure 58. CTML Processing Flow Sheet.

13.2 SGS LAKEFIELD

KMI submitted three composite samples to SGS Laboratories in Lakefield, Ontario in 2013 for sequential metallurgical testwork. Two samples were selected from Northwest and one from Central.

13.2.1 Sample selection

A conceptual pit design and schedule based on the 2011 resource was completed in 2012 for the purposes of metallurgical sample selection. The end of Year 5 pit resulting from this work and collar coordinates of 2010-2012 drill holes are shown in Figure 59.

Composites were compiled using quarter core pieces taken from the drillhole intervals listed in Table 14. An additional composite sample (“Combined SP_3-7) was created by SGS through blending split material from Central SP 3-7 and NW SP 3-7 in a 50:50 ratio. This combined sample was intended to represent bulk material from both pits for the first five years of production.

The weighted average grade of an entire composite was defined to be greater than 20 % Fe total, which was the proposed cut-off grade. This means that composites contain a range of grades, including waste and low grade mineralization. Composites therefore represent material likely to be mined within selective mining units (SMU) in open pit mining operations – where internal waste cannot be separated from the ore.

Table 14. Metallurgical samples submitted to SGS, 2012

Hole ID	depth from	depth to	Fe %	Fem %	P %	S %	Composite sample ID	Composite sample weight (kg)
16_2	131.5	134.3	24.87	17.44	0.57	0.67	Central-SP_3-7	115.0
17_3	209.7	218.2	28.41	23.20	0.93	3.58		
18_1	127.8	152.8	27.49	19.56	0.94	2.14		
19_2	153	165.8	28.49	20.93	0.34	1.15		
4_2	323	333.6	32.18	21.05	0.03	1.29	NW-SP_3-7	114.6
6_1	231.2	270.3	29.47	18.19	0.08	3.02		
7_1	233.7	251.4	26.97	17.30	0.07	2.03		
6_2	514.7	529.3	25.76	11.13	0.03	2.72	NW-SP_8-19	112.3
7_2	399.7	426.5	29.35	18.55	0.05	3.51		
8_1	383.8	406	29.97	19.42	0.14	3.77		
9_1	280.9	284.9	28.74	23.06	0.10	2.97		

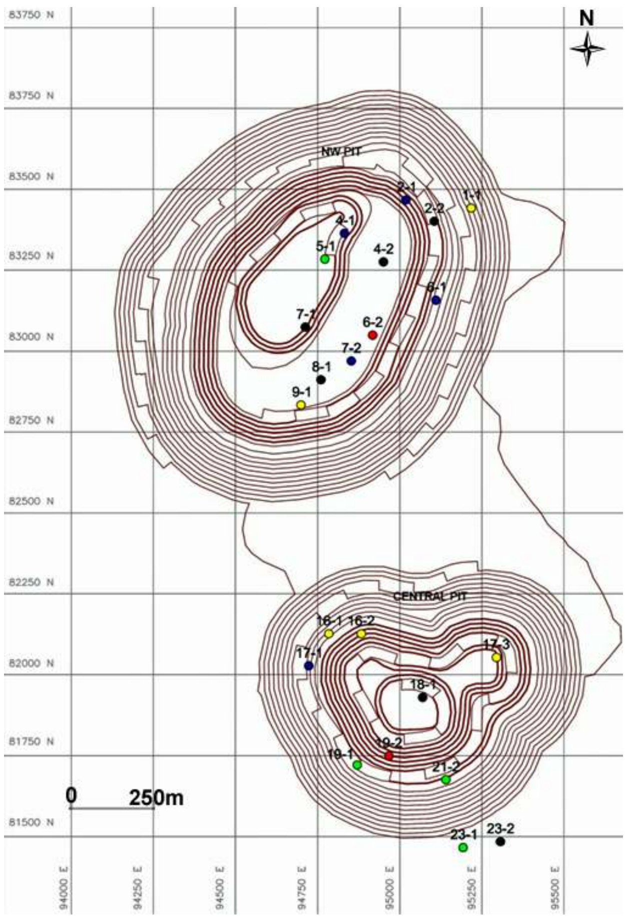


Figure 59: Conceptual pit shell used for 2012 metallurgical sample selection and 2010-2012 drill hole collars.

13.2.2 SGS Testwork

Samples were dispatched to SGS in Lakefield, Ontario in December 2013 and results were available in July 2014. SGS carried out the following suite of sequential tests on the three composite samples supplied by KMI plus the blended sample Combined SP_3-7:

- **Head Assays**
    - Beneficiation Testing
    - Cobber LIMS and MIMS Tests
    - Davis Tube Test
    - Cleaner Low Intensity Magnetic Separation (LIMS)

- **Mineralogy**
    - QEMSCAN Mineralogy
    - PMA Analysis
    - Electron Microprobe Analysis (EMPA)
    - QEMSCAN Data Processing

- **Grindability Testing**
    - Bond Ball Mill Grindability Test (BWI)
    - Bond Abrasion Test (AI)

- **Solid-Liquid Separation/Rheology**
    - Sample Preparation and
    - Flocculent Selection
    - Settling-Thickening Tests (Static and Dynamic Settling)
    - Vacuum Filtration (Standard)
    - Rheology (Thickener Underflow) – SGS Procedure – Pulp Temperature 15°C to 90°C

The original testwork program requested by KMI also included Bond Low-Energy Impact Test (CWI) on each of the samples. However, as this test requires full core material, it was removed from the scope of work.

13.2.3 Results

Head assays for composite samples are shown in Table 15. All samples show similar grades for Fe and Fem, with S higher in NW_SP_8-19 and P higher in Central SP_3-7.

Table 15. Head Assays for SGS Samples

SampleID	SiO2	Al2O3	Fe2O3	MgO	CaO	Na2O	K2O	TiO2	P2O5	MnO	Cr2O3	V2O5	LOI	Sum	Fe[1]	P[2]	Fem[3]	S	FeO
NW SP_3-7	26.9	5.57	39.8	6.06	13.8	0.24	0.04	0.27	0.16	0.30	<0.01	0.06	3.28	96.4	27.8	0.07	24.1	2.86	15.5
Central_SP_3-7	27.2	6.65	38.9	5.58	13.4	0.95	0.06	0.50	1.73	0.30	<0.01	0.19	2.89	98.4	27.2	0.76	27.8	2.28	13.6
NW SP_8-19	28.8	6.08	37.6	5.56	16.0	0.24	0.02	0.31	0.15	0.31	<0.01	0.06	3.34	98.4	26.3	0.07	22.1	3.18	13.3
Combined SP_3-7	27.4	6.10	38.9	5.96	13.7	0.60	0.03	0.37	0.91	0.31	<0.01	0.13	3.46	97.8	27.2	0.40	26.6	2.37	14.8

1 Fe grade calculated from the Fe_2O_3 WRA result
2 P grade calculated from the P_2O_5 WRA result
3 Fem by Satmagan represents the proportion of Fe_3O_4

Bond Ball Mill Grindability tests showed that NW SP 3-7 was significantly softer than the other samples, with a Ball mill Work Index (BWI) of 11.5 kWh/t, which was classified as soft. The BWI of the other three samples varied from 13.2 kWh/t (Combined SP 3-7) up to 15.0 kWh/t (Central SP 3-7), and were all classified as medium hardness. Bond Abrasion tests classified all samples as mildly abrasive.

Figure 60 shows mineral abundance data as determined by QEMSCAN and optical mineralogy. Magnetite is the major ore phase in all samples, with garnet, diopside, epidote, Fe-rich chlorite and pyrite comprising the majority of the remaining minerals. Iron is mostly contained within magnetite, pyrite, garnet, chlorite and diopside.

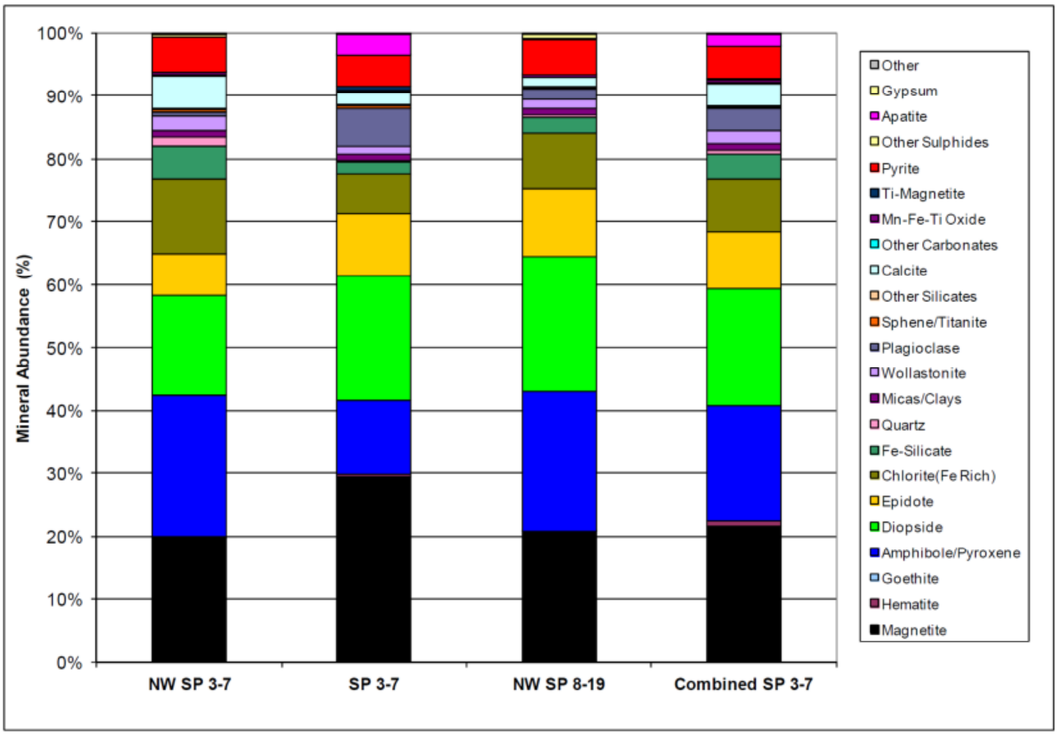


Figure 60. Overall Mineral Abundances for Composite Samples.

A concentrate grade of at least 65% Fe was the target for beneficiation testing. Optimum grind size was determined as 100% passing 75 microns (80% passing 50 microns), which yielded concentrates grading between 67.8 and 69.7% Fe. Across the four samples, weight recovery to the concentrate ranged from 21.3% to 29.2%, while Fe recovery ranged from 56.7% to 73.9%. Weight recovery was highest in the Central sample, reflecting the higher abundance of magnetite as the main Fe bearing phase. Full results of concentrate grades and recoveries are summarised in Table 16.

Preliminary cobber (coarse grind) tests on -10 mm and -3.5 mm fractions failed to produce coarse concentrates at the targeted grade of 55% Fe. SGS concluded that there was no benefit to be gained from including coarse concentrate production in the flow sheet.

Table 16. Final Concentrate Product Summary, SGS Testing.

Sample	Stream	K_{80} µm	Assay, % Fe[1]	SiO_2	Al_2O_3	P[2]	S	Sat[3]	FeO	Overall Rec, % Wt	Fe	Sat	FeO
NW SP 3-7	Final Conc	56	65.0	4.39	0.82	< 0.01	0.08	88.0	29.3	29.7	66.8	97.1	53.4
	Cleaner Tails*	50	13.8	34.1	7.03	0.12	3.86	1.05	11.8	43.5	20.1	1.6	30.4
	MIMS Tails	8,030	13.5	36.5	7.52	0.08	3.17	1.20	9.19	26.8	13.1	1.3	16.3
	Calc. Feed	-	28.9	25.9	5.31	-	2.55	26.9	16.3	100.0	100.0	100.0	100.0
	Direct Feed	7,286	27.8	26.9	5.57	0.07	2.86	24.1	15.5	-	-	-	-
Central SP 3-7	Final Conc	57	66.9	2.62	1.01	0.03	0.06	87.4	29.3	31.4	75.6	97.5	68.6
	Cleaner Tails	54	9.58	38.4	9.23	1.18	3.27	0.80	6.07	37.9	13.1	1.1	17.1
	MIMS Tails	7,743	9.72	39.4	9.61	0.84	3.96	1.20	6.19	30.7	11.3	1.4	14.2
	Calc. Feed	-	27.6	27.5	6.77	0.71	2.47	28.1	13.4	100.0	100.0	100.0	100.0
	Direct Feed	7,121	27.2	27.2	6.65	0.76	2.28	27.8	13.6	-	-	-	-
NW SP 8-19	Final Conc	65	65.5	4.20	0.95	< 0.01	0.12	88.9	29.3	25.3	62.3	97.1	55.4
	Cleaner Tails**	58	14.1	37.3	7.42	0.10	4.75	0.82	8.38	39.1	19.9	1.3	24.9
	MIMS Tails	7,956	12.7	37.7	8.67	0.06	3.45	1.00	7.56	35.6	17.7	1.6	19.7
	Calc. Feed	-	26.6	29.1	6.23	-	3.12	23.2	13.4	100.0	100.0	100.0	100.0
	Direct Feed	7,040	26.3	28.8	6.08	0.07	3.18	22.1	13.3	-	-	-	-
Combined SP 3-7	Final Conc	59	65.2	3.93	1.02	0.01	0.04	86.1	28.6	31.9	72.0	97.6	63.9
	Cleaner Tails	50	11.9	35.8	8.03	0.58	3.61	0.80	7.74	41.4	17.0	1.2	22.5
	MIMS Tails	7,408	11.4	38.1	8.60	0.48	3.76	1.20	7.21	26.7	11.0	1.2	13.6
	Calc. Feed	-	28.8	26.2	5.94	0.37	2.51	28.1	14.2	100.0	100.0	100.0	100.0
	Direct Feed	6,970	27.2	27.4	6.10	0.40	2.37	26.6	14.8	-	-	-	-

[1] Fe grade calculated from the Fe_2O_3 WRA result

[2] P grade calculated from the P_2O_5 WRA result

[3] Satmagan represents the proportion of Fe_3O_4

* Includes fourth stage cleaner LIMS tailings and hydroseparation overflow

** Includes fourth stage cleaner LIMS tailings

Figure 61 shows a conceptual flow sheet for processing of Lomonosovskoye ore material based on the results of SGS testing.

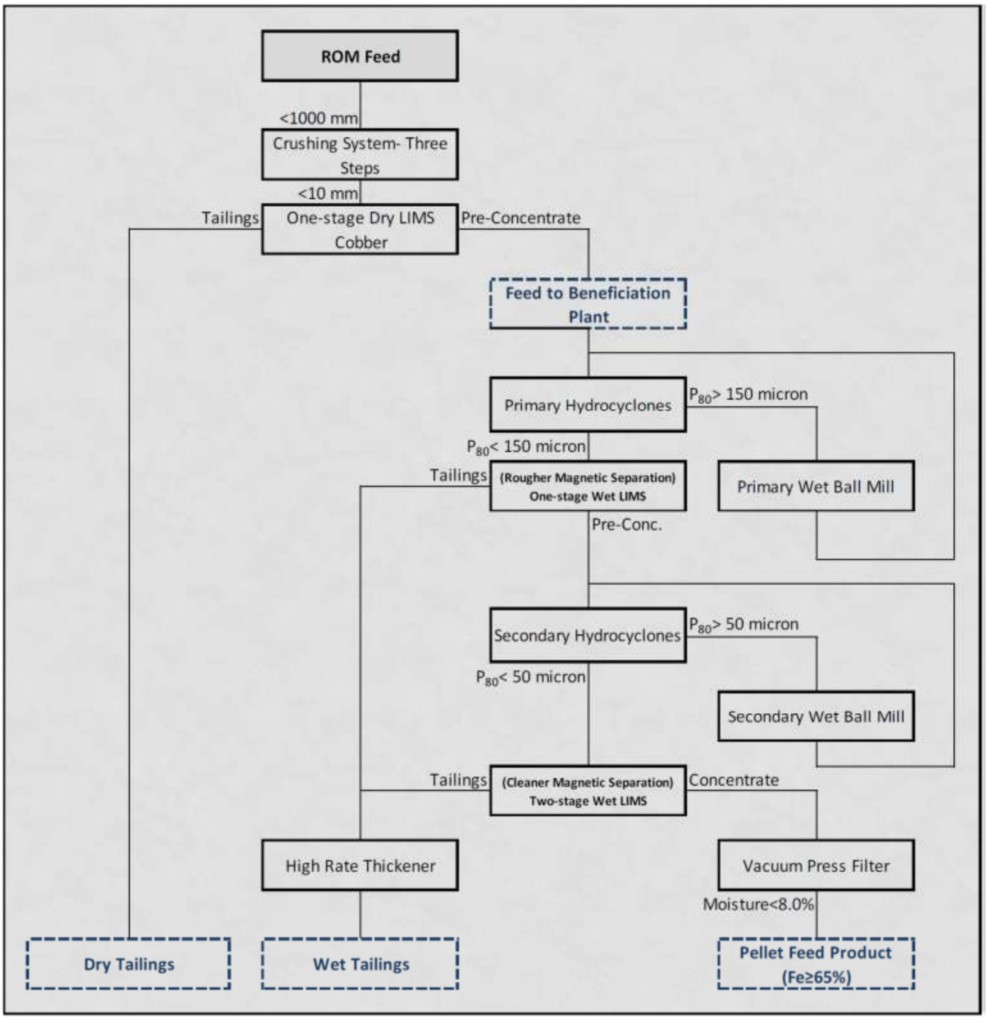


Figure 61. Conceptual Flow Sheet for Processing From SGS Results.

13.3 CONCLUSIONS

Testwork by CTML and SGS Lakefield produced similar results in terms of Fe recovery, with Central samples showing higher recoveries. This can be explained by the difference in sample mineralogy with Northwest generally having more Fe in non-magnetic minerals than Central (in particular Fe-rich chlorite). SGS results show that magnetic iron recoveries are almost identical in both deposits.

SGS and Cardero produced similar conceptual flow sheets for processing, involving 2-stage grinding and three-stage wet LIMS.

Samples selected for metallurgical testwork are broadly representative of the average grades of Fe, Fem, P and S in Central and Northwest. However, there is some variation in P and S content within the deposits and the metallurgical testing to date does not fully account for this. As part of the definitive feasibility study, additional testwork is currently underway to further establish the metallurgical performance of samples from Central and Northwest. Samples will be selected to determine variability in Fe, S and P content where possible. Results are expected to be available in H1 2015.

14 MINERAL RESOURCE ESTIMATES

This revised estimate for the Lomonosovskoye Project is based on an updated drill database from that used in the report prepared in compliance with National Instrument 43-101 - Standards of Disclosure for Mineral Projects ("NI 43-101"), which was dated April 17 2014. Mineralized zones have been re-interpreted in broad extent in light of new drilling results, but the same estimation method was utilised that includes an allowance for bulk open-pit or underground mining.

Two main deposits, the Northwest and Central deposits have been drilled from surface with diamond and RC drilling. The drill database includes data for an additional 33 drill holes compared with the April 17 resource.

14.1 APPROACH

Historical drilling data obtained between the 1950's to the 1980's and 55 drill holes completed by KMI since 2010 were used to estimate resources at the Lomonosovskoye Iron Project.

Mineralization domains were redefined by 3D wireframes using drill assay data, detailed geology logs and down-hole magnetic susceptibility logs. The deposit was divided into 5 estimation domains (Figure 62) based on mineralogy of skarn mineralization and continuity in 3D. A nominal 10% Fe cut-off grade, in conjunction with lithological logging, was used to define domains.

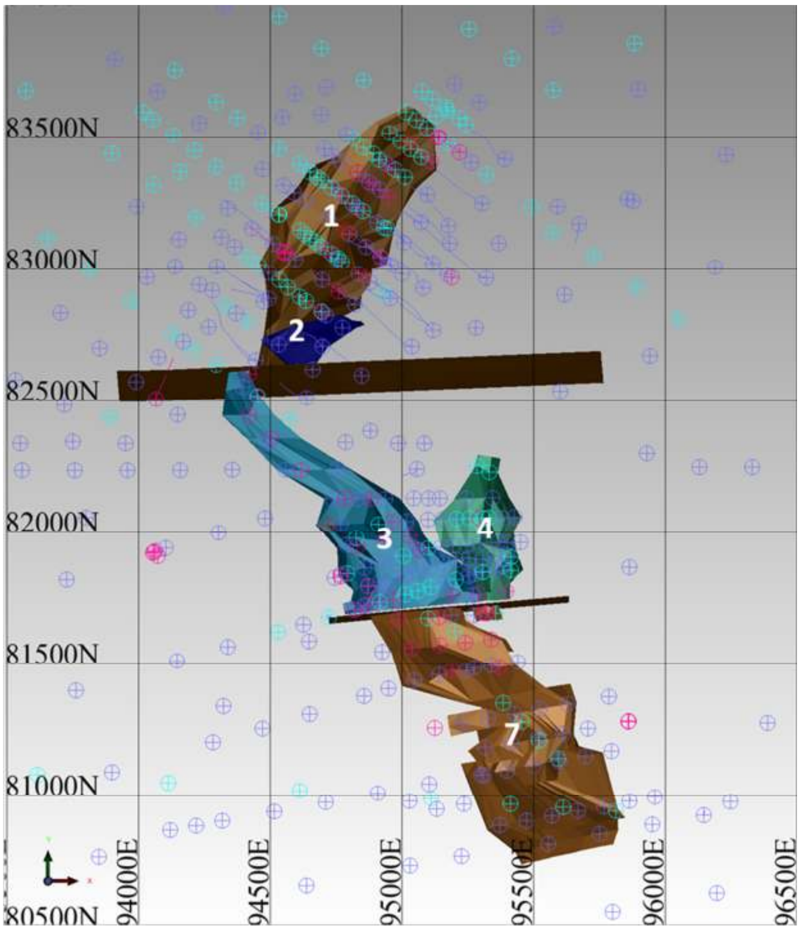


Figure 62: Plan View of Estimation Domains and Drill Hole Distribution in Vicinity of Mineralization.

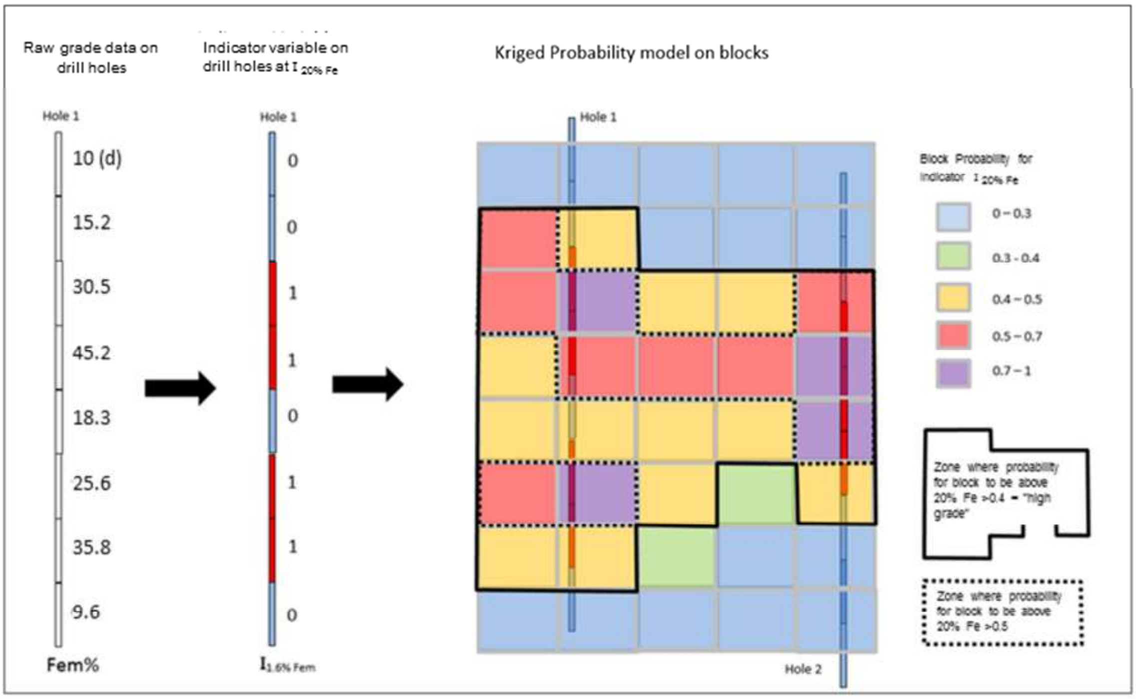
The following steps outline the methodology used for estimating Fe% and Fem% within defined mineralised domains:

- Informing sample composite grade indicators at 20% Fe cut-off (Fei20) were analysed by variography and estimated by kriging in each domain separately.
- Blocks in each domain were flagged as high grade or low grade sub-domains using a Fei20 cut-off value of 0.4 (40% probability of block grade being above 20% Fe).
- Informing sample composites were flagged as high grade or low grade depending on the Fei20 value of the blocks in which they were contained.
- Variography was analysed and modelled for Fe% and Fem% in all flagged high grade samples (including dummy assays) in each domain and Fe% and Fem% were estimated by ordinary kriging (OK) into flagged high grade blocks only.
- Variography was analysed and modelled for Fe% and Fem% in low grade samples, excluding dummy assays, in each domain and Fe% and Fem% were estimated by OK in low grade blocks only.
- Phosphorous and sulphur were estimated by OK using variogram parameters defined for each domain individually, but subdomains were not used. Neither phosphorous or sulphur show any correlation with Fe% and using grade subdomains defined by Fe was not considered appropriate.

Figure 63 shows the preliminary stages of the Fe and Fem estimation process in diagrammatic form. In the first stage (Figure 63a), indicators were assigned to down hole composite assays based on their value relative to the 20% Fe cut-off. These indicators were then kriged and a threshold value of 0.4 was used to define high grade and low grade subdomains in the block model. In the second stage (Figure 63b), all composites within the high grade subdomain were selected for use as informing samples for grade estimation by kriging. In the low grade subdomain, dummy samples were excluded from being used as informing samples for grade estimation.

It was assumed that the majority of unsampled intervals in historic data were considered to be below 20% Fe (approximately 10-11% Fem) based on visual estimates of magnetite content. Some unsampled intervals may represent zones of core loss, but detailed core recovery data has not been extracted from historic drill logs. However, none of the logged zones of extensive core loss are within mineralisation.

a)



b)

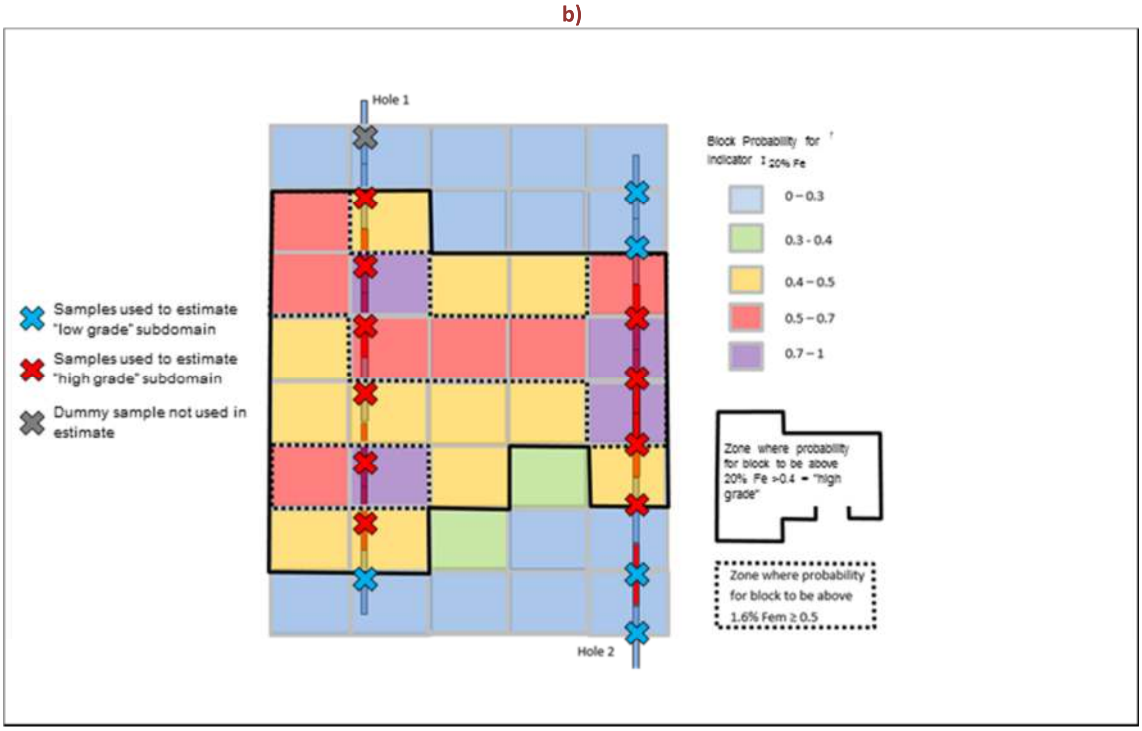


Figure 63. Diagram showing use of indicators to define estimation sub-domains and sample selection. a) Indicator and sub-domain definition; b) Informing sample selection.

Composites created from dummy waste assays (Fe%=10, Fem%=0) were allowed to inform high grade subdomain estimates on the premise that they effectively represent internal dilution within a block. Inclusion of dummy assays also prevents 'real' high grades over-influencing the estimate in unsampled areas.

Dummy waste assay composites were not used to inform low grade subdomain estimates. This is because within the low grade subdomain there are far more dummy assays than real low-grade assays and their inclusion would over-dilute the estimate. It was decided to allow only real low-grade data to inform all blocks in the low-grade subdomain.

14.2 SUPPLIED DATA

MA was originally supplied with drill hole data as Microsoft Excel spreadsheets. Historical raw data was translated from Russian into English by TOO Geoservice (TOO). MA imported supplied Excel spreadsheets into a new MS Access database for use in Surpac™. Additional data, such as new drill hole assays, historic and new down hole magnetic susceptibility data, and historic and new geological logging was supplied as Excel spreadsheets that were validated and imported into the new MS Access database. Database structure used is presented in Table 17.

Table 17: Master Database Structure

Table Name	Description
Collar	Location of hole id and collar coordinates
Assay	Drill hole assay results and Lithology
Survey	Down hole drill holes survey data
Lith_orig	Down hole geological logging data supplied by KMI
Magsus	Historic down hole magnetic susceptibility logs scanned from paper copies
Magsus_newholes	Down hole magnetic susceptibility log data for new holes supplied in .LAS format

The numbers of drill holes and sampled metres for historical and KMI drilling is summarised in Table 18 and database extents are summarised in Table 19. Note that historical drilling statistics includes a large number of drill holes not targeted at iron mineralisation from which no samples were taken, and which are outside the boundaries of KMI's exploration license. KMI drilling also includes holes drilled for geotechnical, or hydrological investigations away from mineralization that were not sampled.

Table 18: Drill Holes Summary

Phase of Drilling	No. of Drill Holes	Metres Drilled	No. Holes Sampled	Metres Sampled
Historical	560	206,768.43	174	28,978.33
KMI	86	21,762.76	50	6,801.5

Table 19: Database Extents

	Min	Max
Northing	70006	85425
Easting	85533	99134
RL	-1802	214.46

14.3 DIMENSIONS

The Lomonosovskoye Iron Deposit can be clearly separated into two main zones: the Northwest and Central deposits. The Northwest Deposit strikes 040° for 1,200 m dipping steeply (85°) towards east-southeast (128°) in the lower portion and at 60° in the upper portion. The overall horizontal width of the deposit is on average 460 m thinning to 200 m at either extremity. It continues to hold its horizontal width with depth until terminating with a vertical distance of approximately 1,400 m.

In contrast, the Central Deposit strikes south-southeast (145°) for a total length of 2,300 m. The Central Deposit is split into three estimation domains: North east (domain 4), North west (domain 3) and South (domain 7). Domains 3 and 4 are divided by what appears to an intrusive diorite body. Domains 3 and 4 are thick bodies of mineralisation with an overall east dip. Domain 7 dips to the southwest between 10° and 30° in the top 400 m and then more steeply (65°) below this depth. The change in dip direction from domains 3 and 4 to domain 7 is interpreted to occur at approximately 81700mN. However the evidence in drill holes to support this is somewhat ambiguous and the dip change may occur further south. The dip change is assumed to be marked by a major fault.

14.4 CUT-OFF GRADES

Original resource estimates were based on a 20% Fe cut-off grade for both areas. This is considered standard under Russian and Kazakh reporting rules, but coupled with a lack of Fe assays in the database and limited lithological data the mineralized zone model becomes very discontinuous geologically. Analysis of raw data statistics shows that a 20% Fe cut-off grade seems reasonable for the Northwest area, whereas a more realistic lower grade Fe cut-off for Central would be 10% (Figure 64). This allows for more continuous mapping and modelling of the mineralized body and can be compensated with an ore recovery loss factor, multiple estimation passes and block model and reporting constraints.

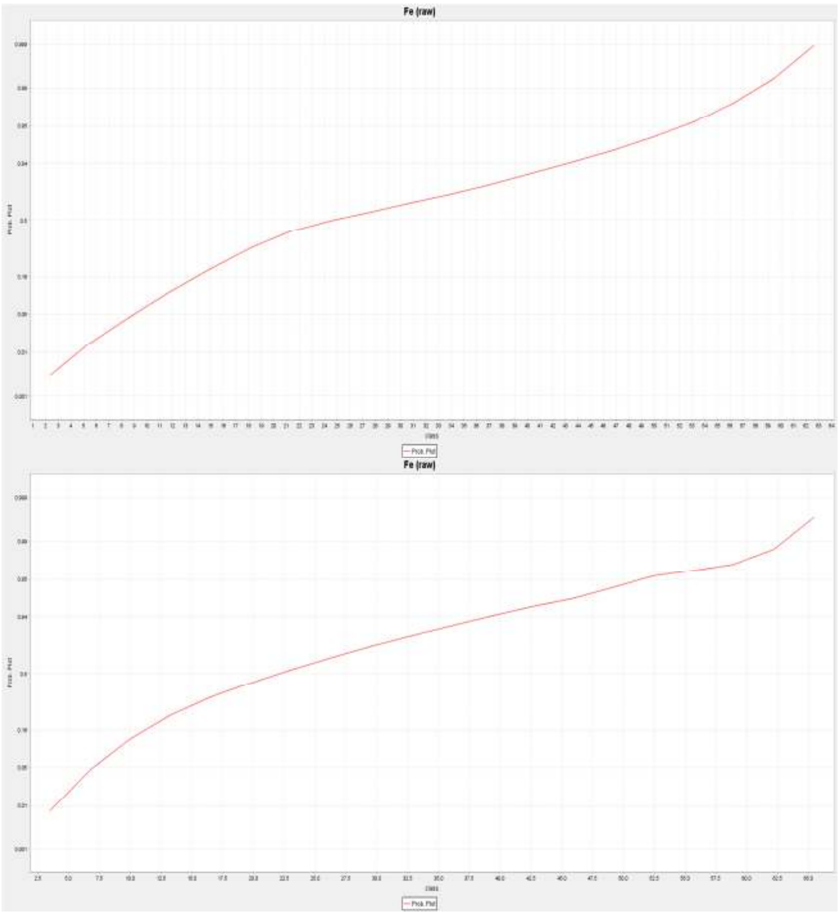


Figure 64: Probability plots for Northwest and Central Areas

14.5 GEOLOGICAL AND MINERALIZATION INTERPRETATION

3D geological and mineralization modelling is the visual representation, derived from geological data that has been captured and interpreted. A 3D model is a representation of interpretations from sparse, often insufficient data. As the information upon which it is based is not perfect, it cannot be an exact representation of reality, but can be a close approximation. The only time you will know with confidence what was in the ground is when it is mined out or perform very close grade control drilling during the mining process. Before that, the interpretation is from drill holes, trench samples, surface samples or mapping onto sections or plans.

A 3D geological model consists of the following:

- Drill holes in 3D space
- A topographical surface
- Any structural features e.g. faults
- A volume of the mineralized body constructed from plans and sections
- A block model with grades or other variables interpolated via geostatistics from the drill hole data.

It is important to keep in consideration the uses of the geological model before attempting a model. The assumptions on the interpretations must be checked and validated to ensure consistency.

Drill hole sections were displayed on screen using Surpac™, from which outlines of mineralisation domains were digitized as lines. The known geology, lithology and assay results from both the historical and current drilling were all considered. Section outlines were joined to create enclosed 3D 'wireframes' representing volumes of mineralization.

3D wireframes defining mineralization boundaries used in the April 17 resource used were re-interpreted, using new drilling results from 33 holes. Re-interpretation resulted in a reduction in the total number of domains as mineralization was proven to be more continuous than previously interpreted (Figure 65).

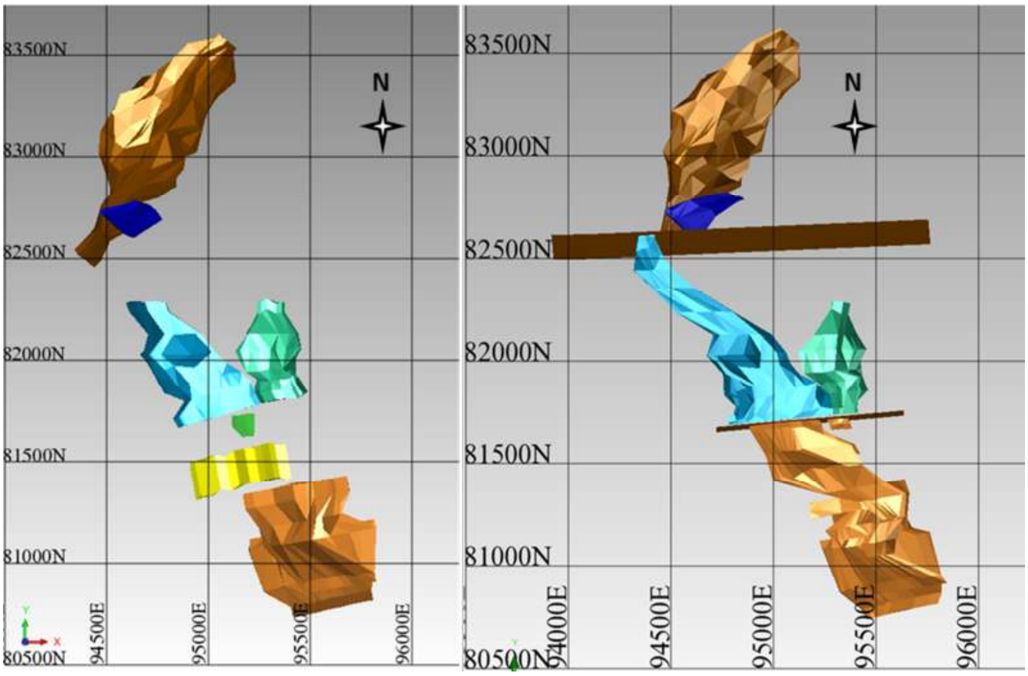


Figure 65. Comparison of Interpreted Mineralization Domains, April 17 Estimate (left) and This Estimate (right)

14.6 DATA PREPARATION AND STATISTICS

Statistical analysis of the drilling data was carried out using the Surpac™ software package. Prior to a statistical analysis grade domaining is normally required to delineate homogeneous areas of grade data. Statistical analysis does not take into account the spatial relationships of the data. In the case of Lomonosovskoye's resource estimate, the Northwest and Central deposits were modelled as separate domains due to contrasting geological and structural controls. Central was then further divided due to an interpreted change in dip across an east-northeast trending structure.

The Lomonosovskoye database was connected directly to Surpac™ (geological and mining software) for data display, down-hole compositing, wire framing of homogeneous grade domains and block model estimation.

14.6.1 Unsampled Intervals

The following procedure was undertaken using query functions in MS Access and drill hole functions in Surpac™:

- Entire drill hole interval interpreted to be within mineralized domain was tagged and a database table containing mineralized intervals created.
- Where there were no samples for an interval, but calibrated down-hole magnetic susceptibility data was available, 1 m samples were inserted with values for Fe% and Femag% estimated as described in section 11.1.2.
- Dummy values were inserted into the assay table representing remaining unsampled portions of drill hole intervals intersecting mineralized domains with values of Fe%=10 and Fem%=0 assigned as grades. This approach was used on the basis that selective historical sampling was targeted at >=20% Fe material so missing data for these grades are rare. The converse is also true, in that there are many missing intervals representing grade <20% Fe, even after the holes with down-hole magnetic susceptibility data are accounted for. Dummy values ensured that low grade/no grade intervals were included in compositing, thus preventing smearing of high grades and accounting for internal dilution.
- Where a sampled interval had a Fe% assay but no Femag% and was known to contain magnetite, a value for Femag% was estimated using a global correlation factor (Fe%_mag = Fe% * 1.0543 - 11.5).

The contribution of different Fe% data types used for estimation of material greater than 20% Fe is shown graphically in Figure 66. This shows the overall effect of dummy values and grade values derived from magnetic susceptibility on the resource, which is reported at a cut-off of 20% Fe. With the exception of domain 2 (the smallest domain by far), derived grade values account for less than 10% of the raw data used to create informing sample composites for estimation of material >20% Fe. Domain 1 contains more dummy values than the other domains, which reflects the strongly banded nature of mineralization where high grade and no-grade material is interleaved.

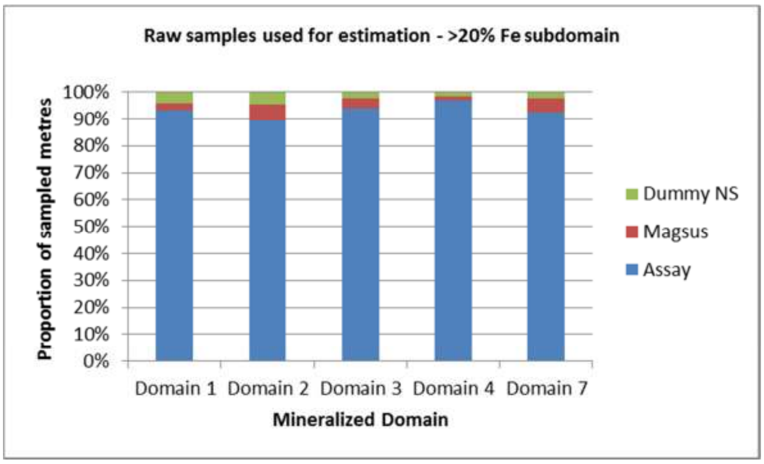


Figure 66. Contribution of different sample types to estimation of >20% Fe subdomain.

14.6.2 Compositing

The objective of compositing data is to obtain an even representation of sample grades and to eliminate any bias due to sample length (Volume Variance). Sample lengths in both Northwest and Central were variable, but are mostly between 1 m and 2 m (Figure 67).

Drill hole assays, including values derived from magnetic susceptibility measurements, and unsampled dummy values were composited downhole on 5 m intervals within mineralized domains using a 'best fit' function in Surpac™. Best fit varies the lengths of composites created within a drillhole within a specified tolerance (in this vase 75% of the selected composite length) so that the majority of the mineralized interval can be composited. Any shorter intervals remaining at the end of a drill hole are flagged separately.

Five metres was chosen as the composite length because it was above the majority of primary sample lengths for both Northwest and Central domains, but allowed for all statistic variables to stabilise.

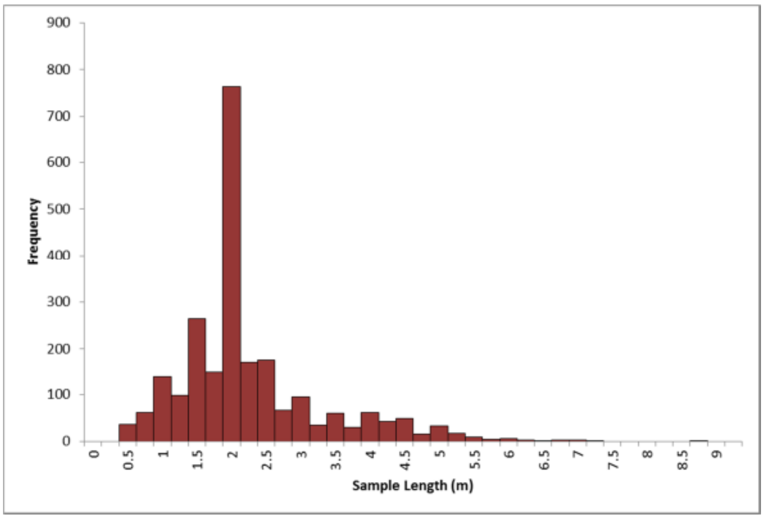


Figure 67: Histogram of Raw Sample Lengths in Mineralization

14.6.3 Grade indicators

Composites in each mineralized domain were assigned an indicator value of 0 or 1 depending on whether they were below or above a cut-off value of 20% Fe. 20% Fe was selected as a reasonable approximation of the natural break between high grade and low grade mineralization and also represents an approximate cut-off used for selective sampling.

14.6.4 Basic statistics

Basic statistics report the univariate statistical characteristics for each geological domain. The basic statistics are also used as a validation of the later resource estimates. Univariate statistics were generated for all mineralized domains at Lomonosovskoye.

Unweighted summary statistics of 5 m composites are presented in Table 20 and raw histograms are shown in Figure 68.

Table 20: Unweighted summary statistics, 5 m composites in mineralized domains

	Fe					Fe mag				
Domain	1	2	3	4	7	1	2	3	4	7
num_samples	3,234	97	1,621	1,013	1,003	3,210	97	1,621	1,013	1,003
min_fe	2.5	10.0	4.1	3.6	2.2	0.0	0.0	0.0	0.0	0.0
max_fe	62.1	54.8	62.5	53.5	66.4	57.3	49.1	55.5	44.4	58.9
av_fe	26.8	25.1	21.7	20.6	23.3	16.6	15.4	12.0	12.5	14.3
sd_fe	12.8	11.4	10.2	9.9	13.3	13.4	12.3	10.7	10.0	13.1
var_fe	163	130	103	99	176	181	152	114	101	171
CV	0.48	0.45	0.47	0.48	0.57	0.81	0.80	0.89	0.80	0.91

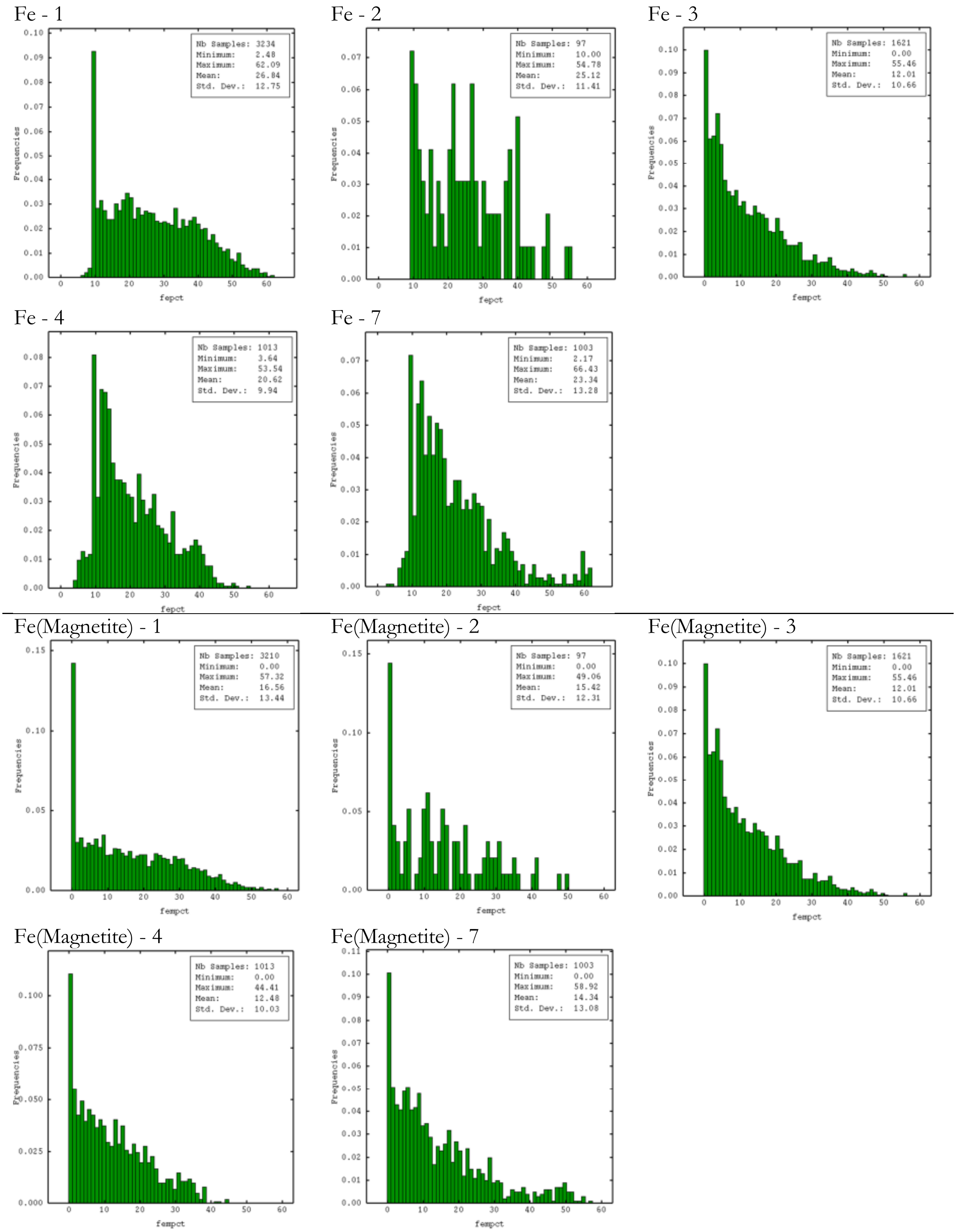


Figure 68: Histograms for Fe and Fe_mag in mineralized domains

The dominant feature of all the histograms is the spike at 10% Fe caused by the replacement of empty sample intervals with nominal 10% Fe grades. Histograms reveal that Fe distribution is not strongly skewed however there is some suggestion of bi-modality due to a mixing of higher and lower Fe grades within the skarn.

14.6.5 Grade capping

Capping is the process of reducing the grade of outlier samples to a value that is representative of the surrounding grade distribution. Reducing the value of an outlier sample grade minimises the overestimation of adjacent blocks in the vicinity of an outlier grade value. At no stage are sample grades removed from the database if grade capping is applied.

The distributions of Fe and Fe_mag on 5 m composites are not strongly skewed and as such there are no extreme values impacting mean or variance. Experimental variograms for Fe and Fe_mag are not much impacted by high value samples. No top cutting was considered necessary prior to estimation of grades.

14.7 INDICATOR MODELLING

Semi-variogram analysis was undertaken for Fei20 indicators within domains 1, 3, 4 and 7. Domain 2 contained insufficient data to allow meaningful spatial data analysis. Three dimensional (3-D) semi-variograms were generated using three orthogonal principal directions.

14.7.1 Variogram models – Fei20 grade indicator

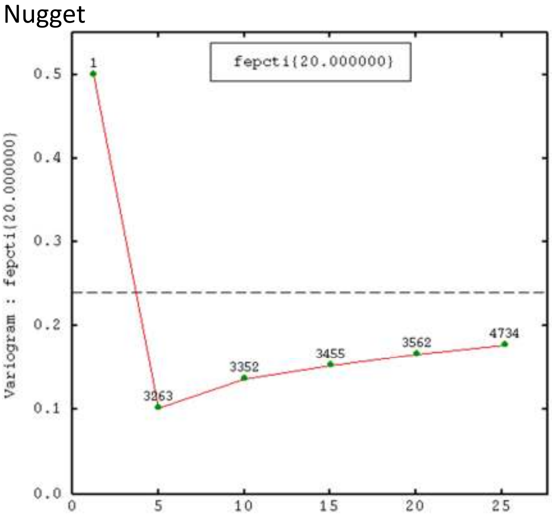
Fitted variograms model parameters are summarised in Table 21. Variograms of the Fe 20% Indicator in the four main domains are characterised by reasonably strong anisotropy with mineralisation in the plane of the mineralised zone significantly more continuous than in directions normal to the plane. Anisotropy ratios are in the order of 2-3:1. Nugget effect in the main four domains is in the range 12-20% of total variance; Nugget effect plus variance of the short range directional structure (30m or less) equates to 35-50% of the total variance. Thus, approximately half of the variance occurs at distances less than the average drill spacing.

Domain 1 variogram (and estimation parameters) were applied to domain 2.

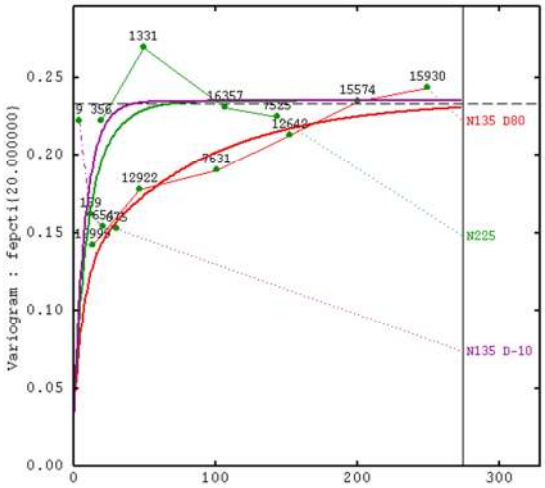
Table 21. Summary of variogram models and estimation parameters for kriging of Fe 20% Indicator.

	Domain	1 Fe Indicator 20%	3 Fe Indicator 20%	4 Fe Indicator 20%	7 Fe Indicator 20%
Variogram Model	Rotation (Isatis Geological Convention)	45/80/90	145/65/90	340/90/-90	320/-50/-90
	Nugget	0.035	0.04	0.05	0.05
	Str 1	0.09	0.1	0.07	0.1
	Str 2	0.11	0.11	0.125	0.099
	Total Sill	0.245	0.25	0.246	0.249
	Range1 U	20	35	14	20
	Range1 V	20	35	14	20
	Range1 W	20	30	40	20
	Range2 U	250	125	170	300
	Range2 V	50	125	170	300
	Range2 W	30	45	95	75
Search Parameters	Rotation	Dynamic anisotropy	Dynamic anisotropy	Dynamic anisotropy	Dynamic anisotropy
	Search Distance U	325	163	221	330
	Search Distance V	65	163	221	330
	Search Distance W	27	34	71	56
	Minimum samples	3	3	3	3
	Number of Sectors	4	4	4	4
	Maximum samples per sector	6	6	6	6
	Maximum total samples	24	24	24	40
	Discretisation	5x5x2	5x5x2	5x5x2	5x5x2
Kriging performance	Blocks in zone	56,273	19,406	8,338	28,327
	Blocks estimated	53,228	19,392	8,338	28,327
	Blocks estimated %	94.6%	99.9%	100.0%	100.0%

Nugget



Directional



Rotation (Isatis Geol Plane) 45/80/90

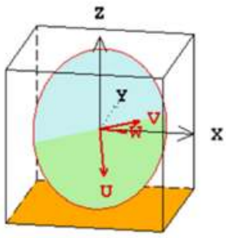
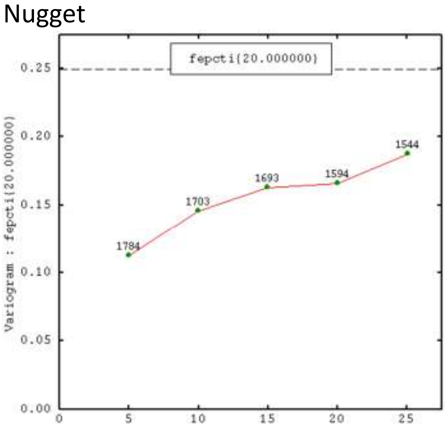
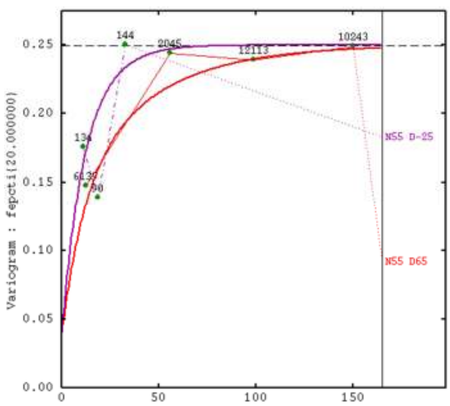


Figure 69: Variograms of Fe 20% Indicator- Zone 1

Nugget



Directional



Rotation (Isatis Geol Plane) 145/65/90

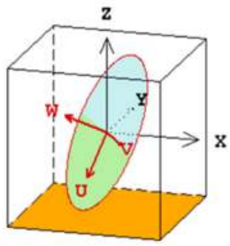
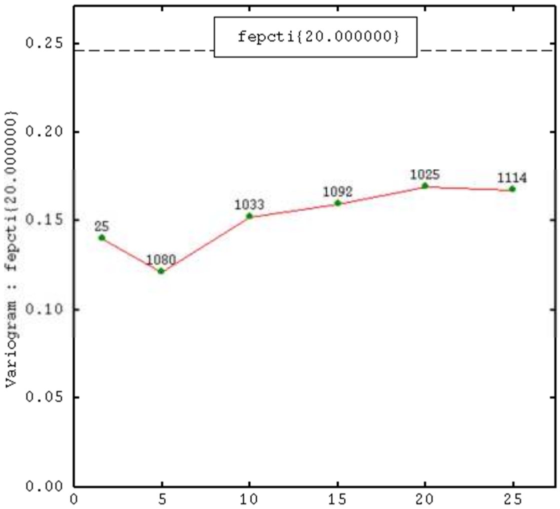


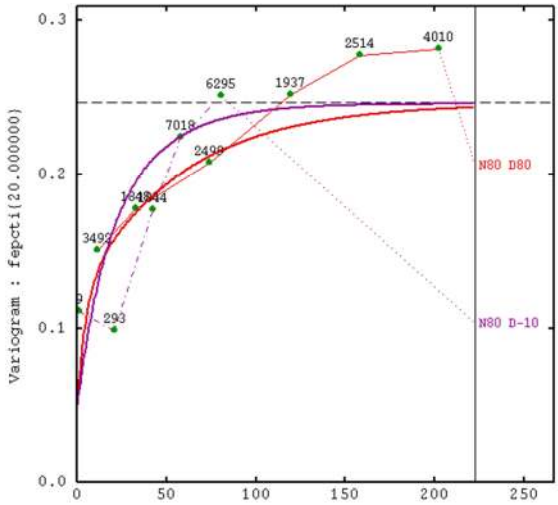
Figure 70: Variograms of Fe 20% Indicator- Zone 3

Nugget



Rotation (Isatis Geol Plane) 340/90/90

Directional



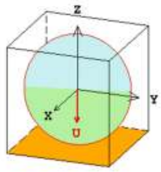
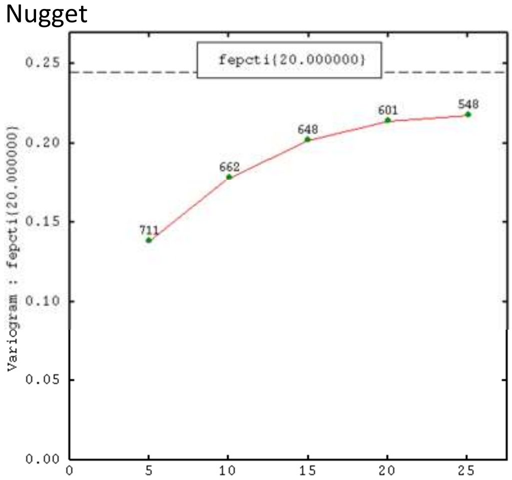


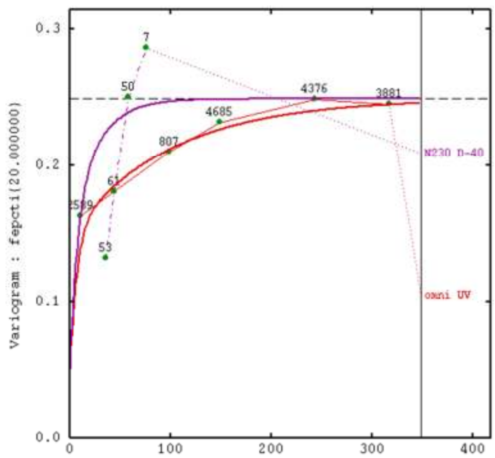
Figure 71: Variograms of Fe 20% Indicator- Zone 4

Nugget



Rotation (Isatis Geol Plane) 320/-50/-90

Directional



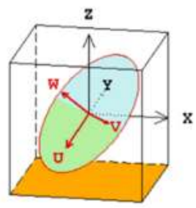


Figure 72: Variograms of Fe 20% Indicator- Zone 7

14.7.2 Estimation Parameters – Fei20 grade indicator

Search ellipse geometry is consistent with the variogram anisotropy and this is also consistent with the data configuration.

Variogram ranges were used as a starting point for determining search ellipse dimensions. While ideally search distances would be slightly longer than variogram ranges, in all domains this was insufficient to ensure that all blocks would be estimated. Therefore, search ellipse dimensions were expanded to allow more distant samples to be available for estimation and this eventually allowed more than 99% of blocks to be estimated in each domain. Search ellipse orientation was altered on a block-by-block basis to account for variation in strike and dip present in most domains. Final search parameters used are summarised in Table 21.

14.7.3 Definition of high grade subdomains

The probability threshold is a cut-off applied to the kriged indicator quantity on a block-by-block basis; the number of blocks above a higher probability threshold is necessarily less than the number of blocks above a lower threshold. A probability threshold of 0.4 implies a 40% probability for the block to be above the Indicator value, here 20% Fe.

The final set of 'MINDOM' domains is as follows:

- HIGH: Fei20 >0.4, inside domain wireframe
- MED: Fei20 <0.4 (includes all blocks inside domain wireframe and not HIGH)
- WASTE: outside of Zone wireframe

Independent verification of the chosen probability thresholds (and the resultant domains) was carried out by visual comparison with drill hole assays and the cross-section interpretations produced by Soviet geologists in the 1980's.

14.8 VARIOGRAM MODELS – GRADES

Division of each zone into high grade and low grade mineralised domains ('MINDOM') by the Fei20 Indicator modelling produced sub-sets of the data with lower variance due to reduced mixing of high grade and low grade samples. Summary statistics for high grade and low grade subdomains are given in Table 22

There is sufficient data in domains 1, 3, 4 and 7 for data analysis and variogram modelling. Mindom 2 HIGH and 2 LOW contain insufficient data for reliable analysis and the variogram model and search parameters of Mindom 1 HIGH and LOW are used. Fitted variogram models are summarised in Table 23 and Table 24.

Experimental variograms for Fe and Fe (mag) in the 4 main domains are of variable quality probably because of irregular drill spacing. The near-origin part of the variogram is not well informed by data, reflecting a shortage of close-spaced data other than in the down-hole direction. There is also uncertainty on the orientation of the anisotropy. The average orientation of the bounding wireframe has been used to identify the orientation however there may be other valid directions.

Fitted variograms for Fe and Fe_mag are characterised by reasonably strong anisotropy with mineralisation in the plane of the mineralised zone significantly more continuous than in directions normal to the plane. Anisotropy ratios are in the order of 3:1.

Nugget effect in the main 4 domains is in the range 12-20% of total variance; Nugget effect plus variance of the short range directional structure (30m or less) equates to 35-50% of the total variance. Thus, approximately half of the variance occurs at distances less than the average drill spacing.

Domain 1 variogram (and estimation parameters) were applied to domain 2.

Table 22: Summary statistics, 5m composites, MINDOM HIGH and LOW, zones 1, 2, 3, 4 and 7. Weighted by kriging.

MINDOM	1	1	2	2	3	3	4	4	7	7
	LOW Fe	HIGH Fe	LOW Fe	HIGH Fe	LOW Fe	HIGH Fe	LOW Fe	HIGH Fe	LOW Fe	HIGH Fe
Count	494	2,282	9	65	569	890	433	475	370	517
Minimum	5.9	2.5	10.1	10.0	4.1	4.7	3.6	3.9	2.2	6.2
Maximum	41.8	62.1	27.3	54.8	38.1	62.5	31.9	53.5	47.2	66.4
Mean	15.9	29.9	15.4	29.8	14.3	26.6	14.6	26.6	15.9	31.8
Std. Dev.	5.6	11.9	4.8	10.9	4.0	9.4	4.9	9.6	5.4	15.1
Variance	31	142	23	119	16	88	24	91	29	229
CV	0.35	0.40	0.31	0.37	0.28	0.35	0.33	0.36	0.34	0.48
	Fe (mag)	Fe (mag)	Fe (mag)	Fe (mag)	Fe (mag)	Fe (mag)	Fe (mag)	Fe (mag)	Fe (mag)	Fe (mag)
Count	494	2,266	9	65	569	890	433	475	370	517
Minimum	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	33.4	57.3	19.2	49.1	31.5	55.5	24.0	44.4	45.9	58.9
Mean	5.5	19.8	5.0	20.7	4.8	16.7	6.5	18.5	6.8	22.7
Std. Dev.	5.7	12.8	5.8	12.1	3.5	10.3	5.1	9.4	6.1	14.4
Variance	32	165	34	147	12	107	26	87	37	208
CV	1.03	0.65	1.16	0.59	0.72	0.62	0.77	0.50	0.89	0.63

Table 23: Summary of variogram models and estimation parameters for kriging of Fe and Fe (magnetite) grades, Domains 1-3

MINDOM		1 HG	1 HG	1 LG	1 LG	2 HG	2 HG	2 LG	2 LG	3 HG	3 HG	3 LG	3 LG
VARIABLE		Fe	Fe (mag)	Fe	Fe (mag)	Fe	Fe (mag)	Fe	Fe (mag)	Fe	Fe (mag)	Fe	Fe (mag)
Rotation (Isatis Geological Convention)		45/80/90	45/80/90	45/80/90	45/80/90	45/80/90	45/80/90	45/80/90	45/80/90	325/65/90	325/65/90	325/65/90	325/65/90
Variogram Model	Nugget	20	25	4	5	20	25	4	5	11	24	2	4
	Str1 type	Sph	Exp	Sph	Exp	Sph	Exp	Sph	Exp	Exp	Exp	Sph	Sph
	Str 2 type	Sph	Exp	Sph	Sph	Sph	Exp	Sph	Sph	Exp	Exp	Sph	Sph
	Str 1	67	70	6	7	67	70	6	7	35	16	5	3
	Str 2	55	69	23	22	55	69	23	22	41	66	9	5
	Total Sill	142	164	33	34	142	164	33	34	87	106	16	12
	Range1 U	20	20	30	30	20	20	30	30	18	18	18	18
	Range1 V	20	20	30	30	20	20	30	30	18	18	18	18
	Range1 W	20	20	30	20	20	20	30	20	18	18	18	18
	Range2 U	240	250	300	400	240	250	300	400	110	110	60	60
	Range2 V	60	120	140	200	60	120	140	200	110	110	60	60
	Range2 W	30	30	50	50	30	30	50	50	22	22	22	22
Search Parameters	Search Distance U	324	337.5	390	400	324	324	390	390	185	187	150	132
	Search Distance V	81	162	182	200	162	162	182	182	185	187	150	132
	Search Distance W	30	27	30	30	30	20	20	30	32	19.8	55	66
	Minimum samples	2	2	2	2	2	2	2	2	2	2	2	2
	Number of Sectors	6	6	6	6	8	8	8	8	6	6	6	6
	Maximum samples per sector	7	7	7	7	7	7	7	7	7	7	7	7
	Maximum total samples	42	42	42	42	56	56	56	56	42	42	42	42
	Discretisation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 24: Summary of variogram models and estimation parameters for kriging of Fe and Fe (magnetite) grades, Domains 4 and 7

MINDOM		4 HG	4 HG	4 LG	4 LG	7 HG	7 HG	7 LG	7 LG
VARIABLE		Fe	Fe (mag)	Fe	Fe (mag)	Fe	Fe (mag)	Fe	Fe (mag)
Rotation (Isatis Geological Convention)		45/80/90	350/80/-90	350/80/-90	350/80/-90	350/80/-90	320/-50/-90	320/-50/-90	320/-50/-90
Variogram Model	Nugget	16	16	7.5	8	27	26	10	10
	Str 1 type	Exp	Exp	Sph	Sph	Exp	Exp	Exp	Exp
	Str 2 type	Exp	Exp	Sph	Sph	Exp	Exp	Exp	Exp
	Str 1	25	21	6	4	30	30	6	8
	Str 2	49	48	9.5	13	174	153	15	19.5
	Total Sill	90	85	23	25	231	209	31	37.5
	Range1 U	8	8	10	10	18	18	18	18
	Range1 V	8	8	10	10	18	18	18	18
	Range1 W	8	8	10	10	18	18	18	18
	Range2 U	120	120	160	130	150	150	150	150
	Range2 V	120	120	160	130	150	150	150	150
	Range2 W	20	20	55	55	25	25	25	25
Search Parameters	Search Distance U	124	120	176	165	225	225	165	165
	Search Distance V	124	120	176	165	225	225	165	165
	Search Distance W	20	30	60.5	72	22.5	22.5	27.5	27.5
	Minimum samples	2	2	2	2	2	2	2	2
	Number of Sectors	6	6	6	6	6	6	6	6
	Maximum samples per sector	7	7	7	7	7	7	7	7
	Maximum total samples	42	42	42	42	42	42	42	42
	Discretisation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

14.9 ESTIMATION – GRADES

Fe% and Femag% in high grade subdomains were estimated using Ordinary Kriging and all the samples within the high grade subdomain, including sub-grade samples. Estimation criteria were a minimum of 2 informing samples and a maximum range of between 80 m and 300 m depending on the domains.

Fe% and Femag% in low grade subdomains were estimated using Ordinary Kriging and all samples within the low grade subdomain, including sub-grade samples, but with un-sampled intervals ignored.

Values for P % and S % were estimated for each domain using all available assays. There is no correlation between these elements and either Fe or Femag that would justify using Fei20 indicators to estimate separately in subdomains.

14.9.1 Block Model and Panel Size

The Block Model extents cover the combined Northwest and Central deposits and the dimensions and parameters for the 3D block model are shown below in Table 25. The combined deposit was defined for estimation using a block model with XYZ dimensions of 15m x 15m x 10m. Block dimensions were selected to be compatible with KMI’s requested mining unit size. Kriging neighbourhood analysis indicated that a block size of 20 m x 20 m x 5 m would be optimal, but in MA's experience the amount of conditional bias introduced by smaller blocks is generally exceeded by the estimation error and 15 m x 15 m x 10 m blocks are considered acceptable.

Table 25: Block Model Dimensions

Type	Y	X	Z
Minimum Coordinates	80675	93525	-1500
Maximum Coordinates	84185	96225	260
User Block Size	15	15	10
Min. Block Size	15	15	10
Rotation	0	0	0

14.9.2 Search parameters

Search ellipse geometry is consistent with variogram anisotropy and this is also consistent with the data configuration. With the exception of domain 1, search ellipses used were isotropic in the orientation of the average dip plane of each domain, with limited cross strike extents.

Variogram ranges were used as a starting point for determining search ellipse dimensions. While ideally search distances would be slightly longer than variogram ranges, in all domains this was insufficient to ensure that all blocks would be estimated. Therefore, search ellipse dimensions were expanded to allow more distant samples to be available for estimation and this eventually allowed more than 99% of blocks to be estimated in each domain.

Search ellipse parameters applied are summarised in Table 23 and Table 24. Search ellipse orientations were varied on a block-by-block basis using values for local dip and dip direction of mineralisation stored in the block model ("dynamic anisotropy"). This technique was necessary to honour the changes in orientation of domains, especially dip.

14.9.3 Informing samples

Due to the extensive extrapolation between drill hole and the selective nature of the sample data, only a small number of composites were permitted to inform the blocks. Between a maximum of 42 to a minimum of 2 informing composite samples were allowed. The search radius was divided into 6 sectors, with a maximum of 7 samples per sector allowed. This prevented block estimation from being over-influenced by individual drill holes.

14.9.4 Block model attributes

Table 26 shows the attributes created for the Lomonosovskoye block model.

Table 26. Block model attributes.

Attribute Name	Type	Decimals	Background	Description
ard	Character	-	undf	Acid Rock Designation - paf, naf or anc
ca_perc	Real	2	0	Calcium grade percent
code_rock	Character	-	undf	Rock Type-air,rock,cover,ore1,ore2,ore3,ore4,ore7,ore11, skarn, limest, tuff, tuffit, sandst, silst, diorite
density	Real	2	0	Dry Bulk Density calculcated from Fe%.
fe20_perc_ind	Real	2	0	kriged indicator for fe_perc > 20
fe_cbs	Real	2	0	conditional bias slope for fe_perc estimate
fe_mdist	Real	2	0	mean distance to sample for fe_perc estimate
fe_nsamp	Real	2	0	number of samples for fe_perc estimate
fe_perc	Real	2	0	Iron grade percent
fe_wom	Real	2	0	weight of mean for fe_perc estimate
inpit	Character	-	no	pit shell number - currently 19
femag_perc	Real	2	0	Magnetite iron grade percent
mcaf	Real	2	0	Mining Cost Adj Factor
p_perc	Real	2	0	Phosphorous grade percent
pcaf	Real	2	0	Processing Cost Adj Factor
ps_avg	Real	3	-99	mean distance to sample for P and S estimate
ps_kvar	Real	3	-99	Kriging variance for P and S estimate
ps_numsmp	Integer	-	-99	Number of samples for P and S estimate
rescat	Character		undf	Resource category. Meas=measured, ind=indicated, inf=inferred, unc = unclassified
s_perc	Real	2	0	Sulphur grade percent
weathering	Character	-	waste	Weathering Zone

14.9.5 Block model validation

Swath plots showing estimated block grades and composite sample grades averaged on vertical east-west oriented sections of 100m width are presented in Figure 73 to Figure 76. The estimated block grades generally reproduce the trends evident in the composite data, with some smoothing as expected due to change of support (points, blocks) and kriging.

The largest deviations (blocks vs. composites) occur where data are scarce. Estimated block grades reproduce the composite grades better in the high grade domains than in the low grade domains. This is attributed to there being more data available for estimation in the high grade domains, and the higher variability of composite grades in the low grade domains.

Figure 73: Swath plots showing estimated block grades and composite sample grades averaged on vertical east-west oriented sections of 100m width – Domain 1

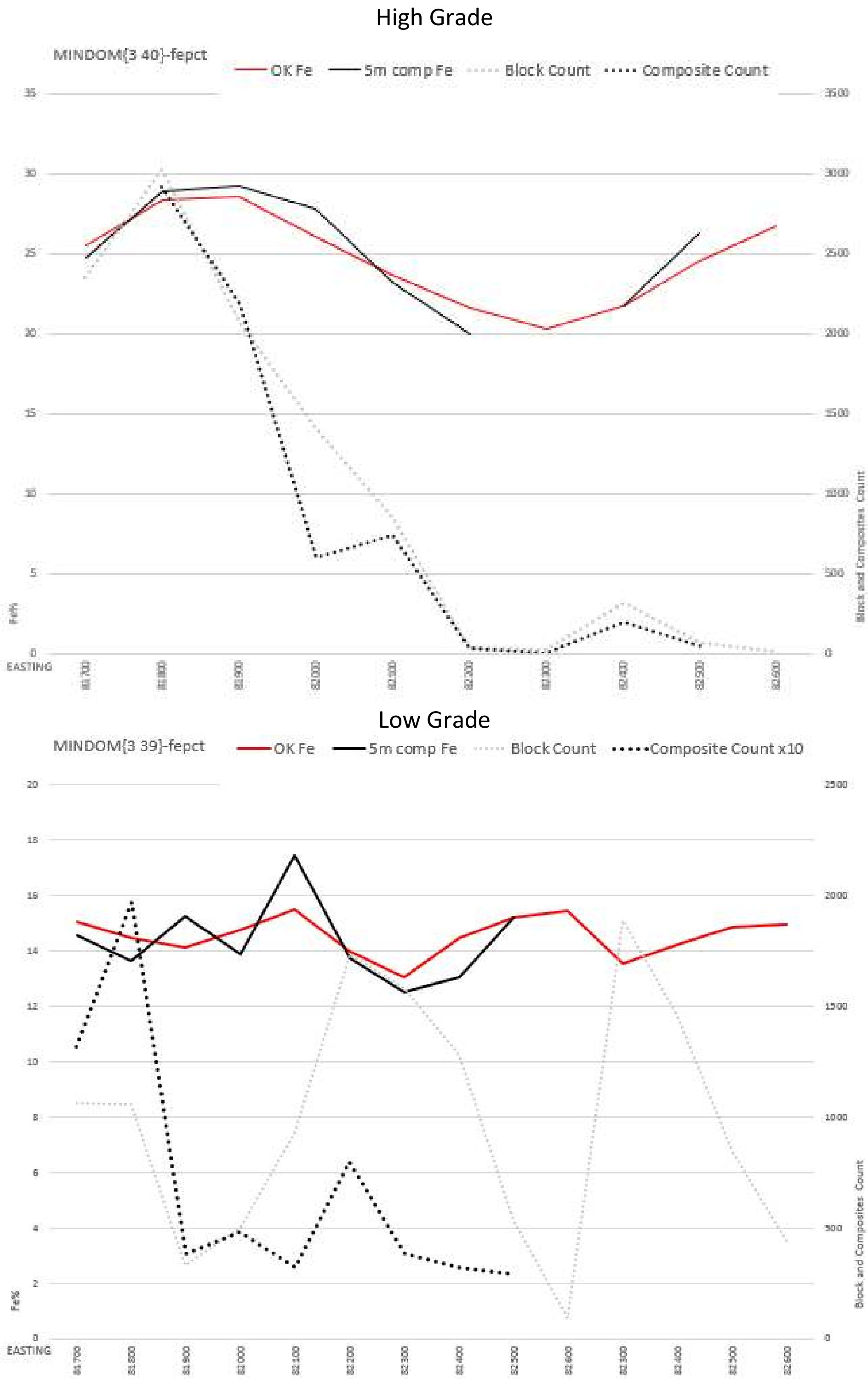
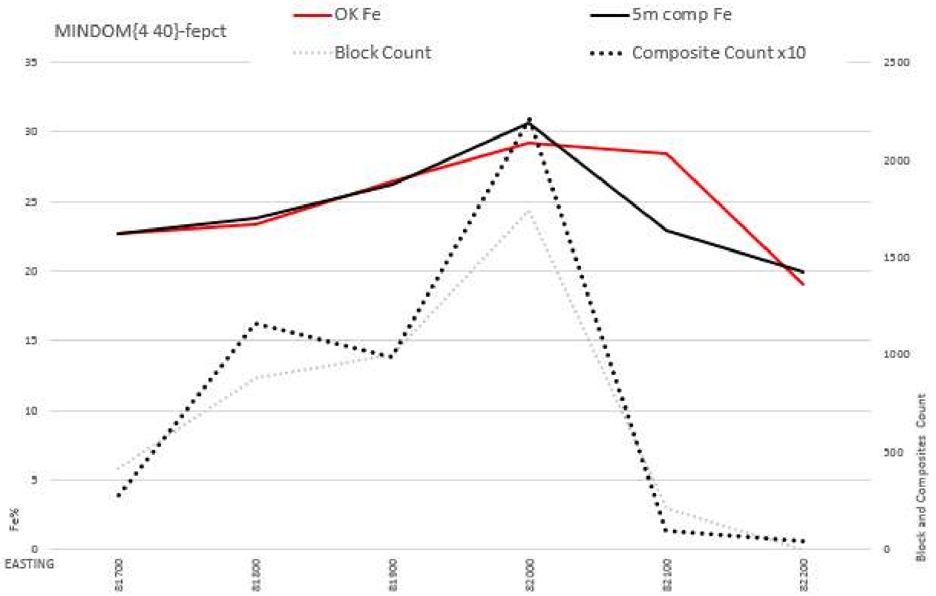


Figure 74: Swath plots showing estimated block grades and composite sample grades averaged on vertical east-west oriented sections of 100m width – Domain 3

High Grade



Low Grade

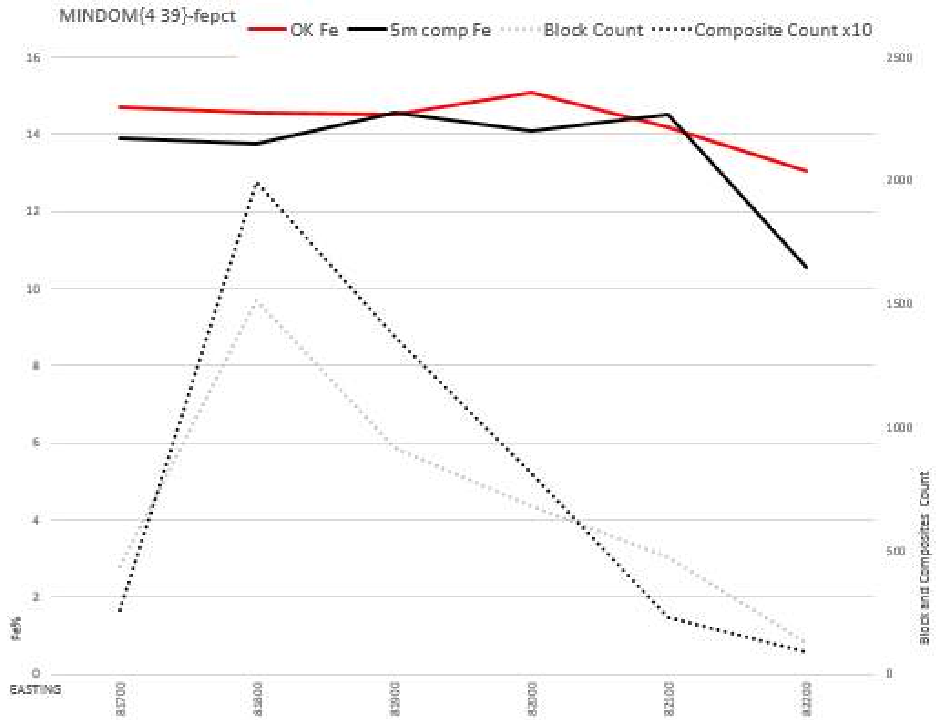
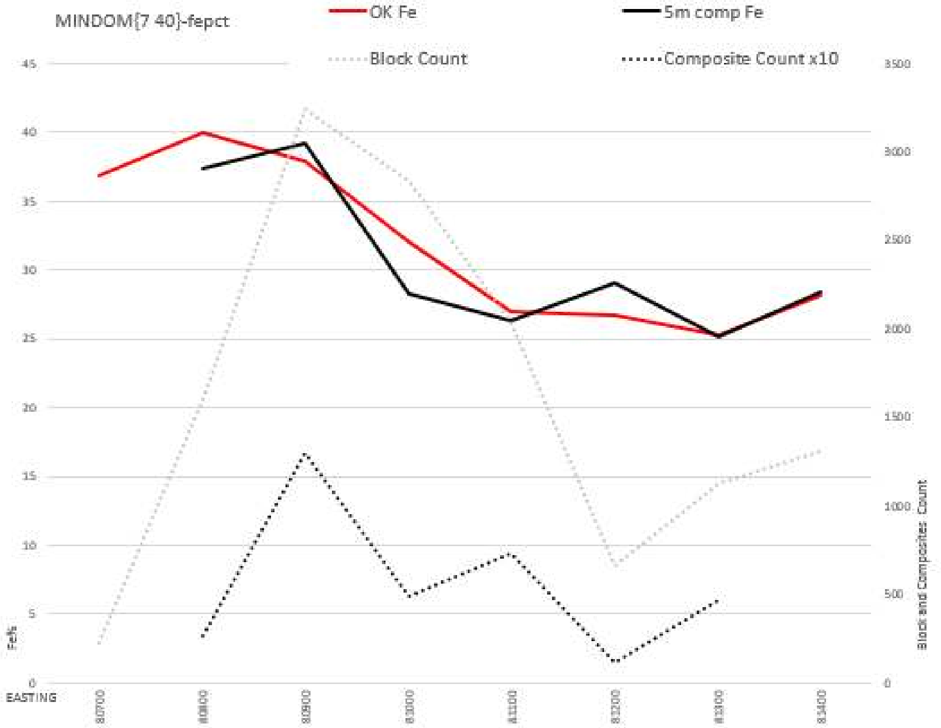


Figure 75: Swath plots showing estimated block grades and composite sample grades averaged on vertical east-west oriented sections of 100m width – Domain 4

High Grade



Low Grade

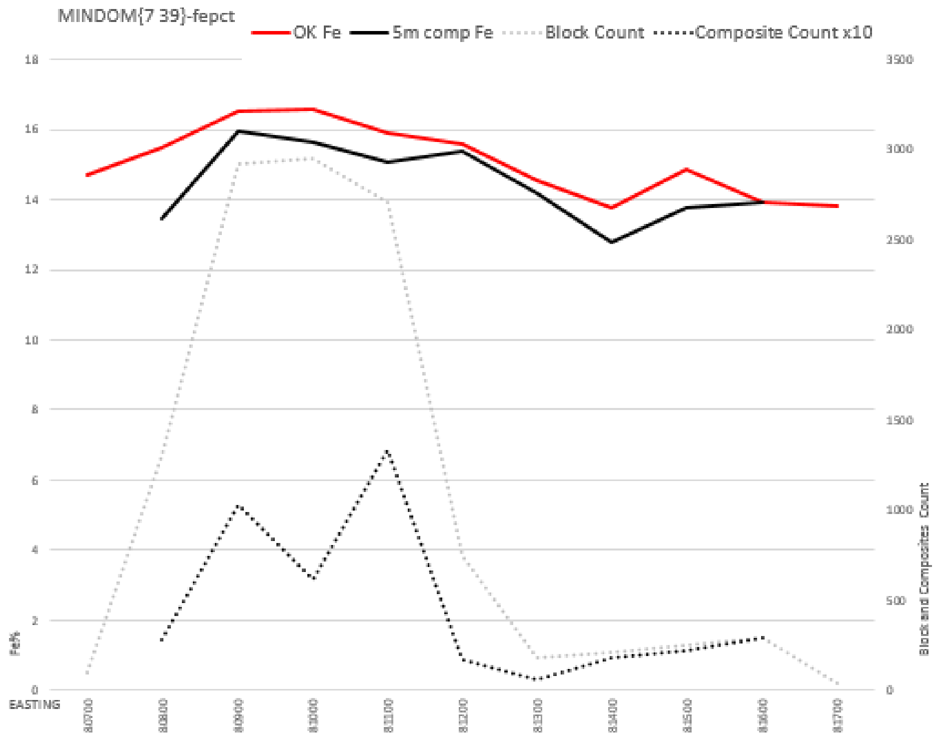


Figure 76: Swath plots showing estimated block grades and composite sample grades averaged on vertical east-west oriented sections of 100m width – Domain 7

14.10 BULK DENSITY

Density determinations on samples by ALS laboratories results were integrated into the model to give a more accurate reflection of the true density of the blocks containing mineralization. Plotting densities against Fe % assays shows a broad correlation between increasing Fe content and density, but data points are scattered too widely to produce a meaningful regression. Data from Northwest was more scattered than from Central, although the reason for this is not clear. Only new data from Central was used to define regressions.

A more limited set of density data collected during historical drilling programs was used to produce non-linear regression lines for Central and Northwest deposits separately. When overlain on the new data, the lines produce a reasonable fit and show that a large proportion of data appears to under-estimate density with respect to Fe content (Figure 77). This may be due to the fact that laboratory density measurements are carried out on only small lengths of core and not on the entire submitted sample.

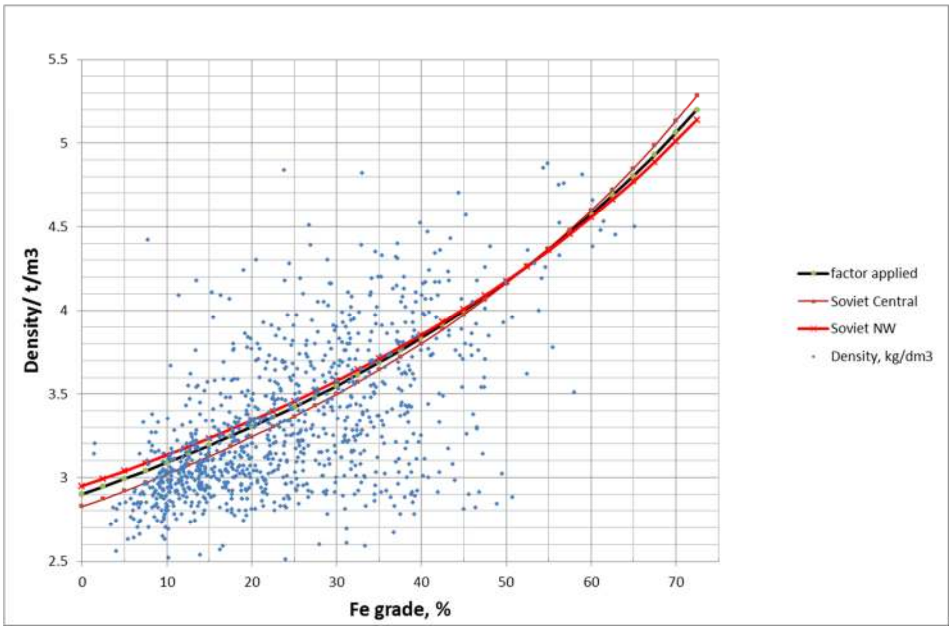


Figure 77. Correlation of Fe% and Density, Central Deposit.

The regression line equation density = 2.9 / (1-0.0061 x Fe%) was used to populate the density column within the block model for all blocks within mineralized domains. It is this density that has been used to estimate the total tonnes and grades for the resource estimate.

For all waste rocks (excluding overburden) a background density of 2.9 t/m^3 was assigned. This was determined from the average of all densities on non-mineralised rocks, although there was a large range of values. It was not possible to discriminate different average density values for different lithology/alteration types. The assigned density of 2.9 t/m^3 is considered reasonable for intermediate to mafic volcanics/volcaniclastics and intrusives.

14.11 CUT-OFF GRADES FOR RESOURCE REPORTING

Global grade-tonnage relationship for the Lomonosovskoye block model is shown in Figure 78. The flat portion of grade and tonnage curves on the left side of the chart reflects the 10% Fe boundary used to define magnetic iron mineralisation. An increase in cut-off grade from 10% to 25% Fe produces a marked decrease in tonnes, but only a small increase in average grade. Above 25% Fe cut-off, average grades increase more, but tonnes decrease at a higher rate.

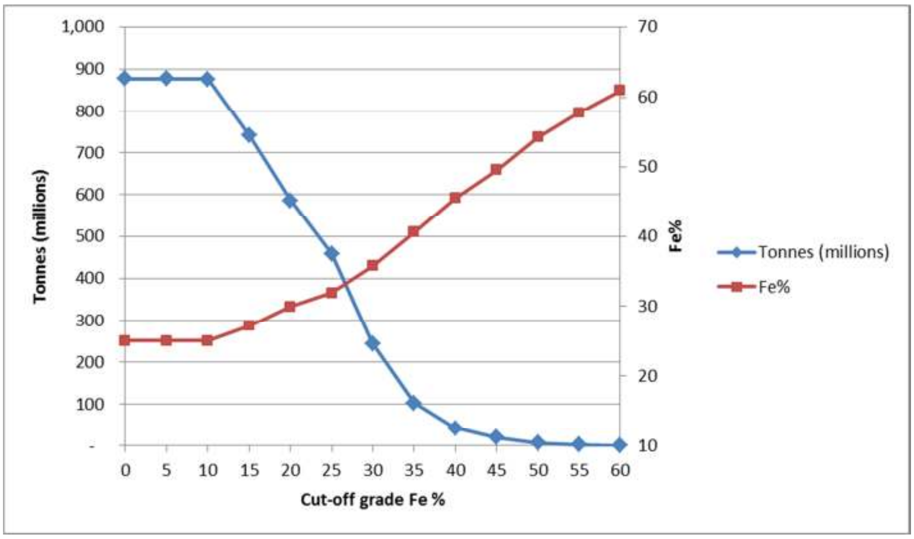


Figure 78. Global grade-tonnage curve for Lomonosovskoye block model.

A cut-off grade of 20% Fe is a requirement for the reporting of magnetite iron resources in Kazakhstan, regardless of depth and potential mining method. Historic and current production from open pit and underground iron ore mines in the same region as Lomosovskoye that demonstrates that the 20% Fe cut-off is viable. MA considers this to be reasonable because accounting for 100 m of overburden makes the economics of open pit and bulk underground mining methods similar. Sub-level caving techniques are used for underground mining of iron mineralization grading approximately 30% Fe at Sokolovsky (see section 23 Adjacent Properties for further details). The same average grade of 30% Fe at Lomonosovskoye is achieved using a 20% Fe cut-off (Figure 78).

MA would expect that grades lower than 20% Fe could be mined from an open cut, but there is insufficient information on the economics to use a lower cut-off in resource reporting at this stage.

14.12 RESOURCE CLASSIFICATION

Based on the study herein reported, delineated mineralization of the Lomonosovskoye Project is classified as a resource according to the definitions from CIM definition standards:

'A Mineral Resource is a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade or quality and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade or quality, continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling.

Mineral Resources are sub-divided, in order of increasing geological confidence, into Inferred, Indicated and Measured categories. An Inferred Mineral Resource has a lower level of confidence than that applied to an Indicated Mineral Resource. An Indicated Mineral Resource has a higher level of confidence than an Inferred Mineral Resource but has a lower level of confidence than a Measured Mineral Resource.'

A breakdown of the Lomonosovskoye Project resource estimate by resource category is provided in Table 27 and illustrated in Figure 79.

Table 27: Mineral Resource Estimate for Combined Lomonosovskoye, Effective Date of October 31, 2014, Cut-off 20% Fe

Class	Mt	Fe %	FeM %	P %	S %
Measured	66.6	27.57	19.11	0.46	2.66
Indicated	441.2	30.24	20.25	0.19	3.05
Measured & Indicated	507.8	29.89	20.10	0.23	3.00
Inferred	78.1	30.38	20.33	0.08	3.69

Fem% - percentage of magnetic Fe in mineralization

For the classification of Mineral Resources for the Lomonosovskoye Project, the following definitions were adopted and applied to each domain separately:

- Inferred resource category – within domain wireframes and with at least 2 informing samples.
- Indicated resource category – within domain wireframes and the maximum of 24 informing samples and Krig Slope greater than 0.1.
- Measured resource category – within domain wireframes and the maximum of 24 informing samples and a Krig Slope > 0.5.

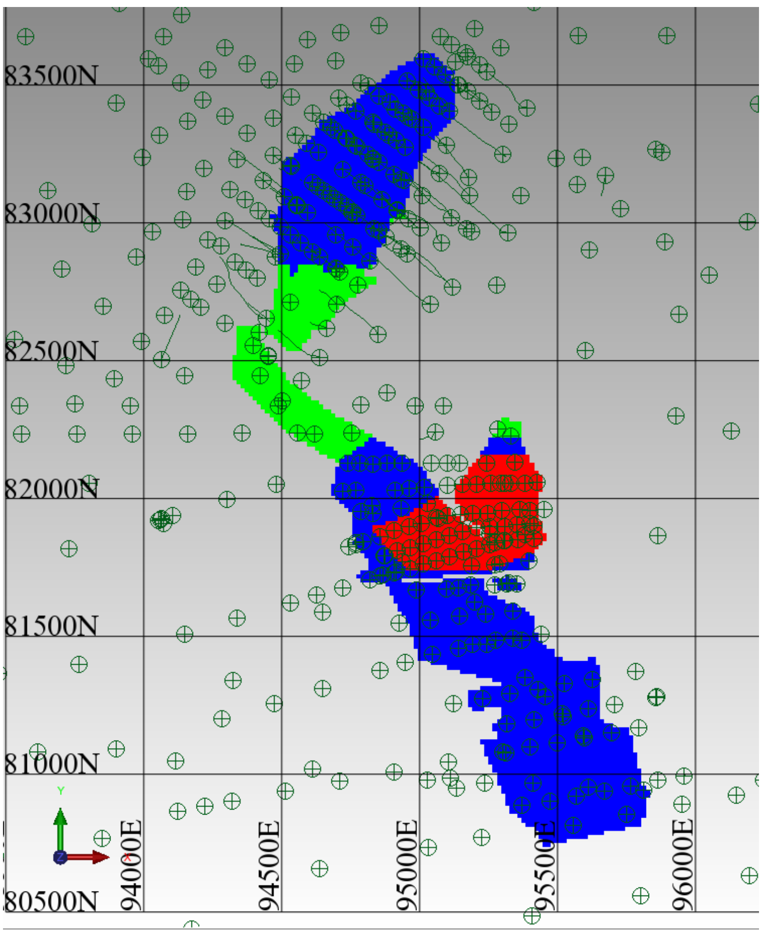


Figure 79. Project Overview, plan view showing drill traces, resource blocks by category (Measured (red), Indicated (blue) and Inferred (green).

14.13 MINERAL RESOURCE STATEMENT

From the data received as of October 2014, the resource estimate for Lomonosovskoye, effective date of October 31, 2014, stands as outlined below, above a cut-off grade of 20% iron (Table 28)

Table 28: Mineral Resource Estimate for Combined Lomonosovskoye, Effective Date of October 31, 2014, Cut-off 20% Fe

Class	Mt	Fe %	Fem %	P %	S %
Measured	66.6	27.57	19.11	0.46	2.66
Indicated	441.2	30.24	20.25	0.19	3.05
Measured & Indicated	507.8	29.89	20.10	0.23	3.00
Inferred	78.1	30.38	20.33	0.08	3.69

Fem% - percentage of magnetic Fe in mineralization

Notes to the Lomonosovskoye Mineral Resource Estimate need to read in conjunction with the table above:

1. The current resource estimate is based on holes drilled and assays received up to 31 October 2014;
2. The magnetic anomaly contours and historical geological cross sections were used to constrain and extend the resource estimation domains up to 50 m beyond last drill hole, where reasonable;
3. Three dimensional wireframes were constructed for geological domains in Northwest and Central deposits, using a 10% Fe cut-off grade. Interpretations were guided by 5 m bench composites, down hole magnetic susceptibility data, newly interpreted lithology logs and images of ground magnetic data;
4. Assay results were composited to 5 meter intervals down-hole within domains;
5. No grade caps were required for Fe, Fem, P or S
6. Block Model extents cover the combined Northwest and Central deposits, with a block size of 15mN x 15mE x 10mRL, without sub-blocking to reflect block open-pit or underground;
7. An Indicator approach was used to select blocks with a greater than 40% probability of being above a cut-off grades of 20% Fe within domains;
8. Grade was interpolated into a constrained block model using all 5 m sample composites within above or below 20% Fe blocks, including samples with a value below or above 20% Fe respectively. This is considered to represent the true “mining block” grade, including both internal and edge dilution. Ordinary Kriging estimation technique with anisotropy was applied;
9. Maximum search radius was varied by domain, from 120 m to 400 m with 2 minimum to 42 maximum informing samples;
10. Density of mineralisation was calculated using the formula: density = 2.9 / (1-0.0061x Fe%) taken from a nonlinear regression coefficient for density against Fe content for over 3000 samples;
11. Resources are reported above 20% Fe for both Deposits;
12. Inferred resource category – within domain wireframes and with at least 2 informing samples.
13. Indicated resource category – within domain wireframes and the maximum of 24 informing samples and Krig Slope greater than 0.1.
14. Measured resource category – within domain wireframes and the maximum of 24 informing samples and a Krig Slope > 0.5.

There is limited assay data available for other metals that occur within zones of iron mineralisation and which were assessed by Soviet exploration teams. In particular the metals copper, lead, zinc and vanadium were considered of potential economic significance. MA completed a brief study of the potential for these other metals to occur in economically extractable quantities. Grades for Cu and combined Pb+Zn are, on average, too low to be of interest (<0.2% for Cu and <1.75% for Pb+Zn). Vanadium grades are more promising and the limited assay data could be used to derive an Exploration Target for vanadium.

In addition to, and contained wholly within, the iron resource MA determined an Exploration Target for vanadium ranging between 40 Mt grading 0.14% V and 100 Mt grading 0.13% V. The Exploration Target was defined using KMI assay data collected since 2011, totalling 3,373 samples in 50 drill holes. The potential quantity and grade is conceptual in nature, and In MA's opinion the number of samples and their spatial distribution is not sufficient to define a Mineral Resource. It is uncertain if further exploration will result in the target being delineated as a mineral resource.

To obtain the minimum range limit, vanadium grades were assigned using nearest neighbour estimation with a maximum search radius of 75 m and anisotropic search ellipses parallel to the dominant orientation of mineralization in each domain. Blocks with vanadium grades above 0.1% were reported. The maximum range limit assumes a linear correlation between Fe and V that differs for Northwest and Central, which is supported by the available assay data. The Exploration Target is confined to Central deposit domains 3 and 4, with vanadium grades in Northwest mostly less than 0.05%.

14.13.1 Dilution and mining blocks

All 5 m sample composites within high grade blocks were selected, including samples with a value below 20% Fe. This is considered to represent the true "mining block" grade, including both internal and edge dilution. For each of the domains, the degree this dilution effects on the raw sample grades is shown in Table 29. Excluding domain 2 (too few samples), below cut-off samples are around 20% of the total and result in a drop in grade of about 3.8% Fe. The grade of this dilution averages 14.6% Fe. Note that this is based on raw informing data, not the kriged estimated block grades.

Table 29: Informing sample statistics, Fe% in high and low grade sub-domains

Subdomain	Statistic	Dom1	Dom3	Dom4	Dom7	Total
below 20	count	457	180	101	108	846
	Average Fe%	14.73	14.75	13.78	14.48	14.59
	% of total	20%	20%	21%	21%	21%
above 20	count	1817	718	374	404	3313
	Average Fe%	34.80	30.28	30.64	34.92	33.37
	% of total	80%	80%	79%	79%	80%
total	count	2274	898	475	512	4159
	Average Fe%	30.75	27.14	27.00	30.53	29.52
	Drop in Fe%	-4.05	-3.14	-3.64	-4.39	3.80

14.14 COMPARISON WITH PREVIOUS RESOURCE ESTIMATE

The previously published resource estimate for Lomonosovskoye effective April 2014 is shown in Table 30 above a cut-off grade of 20% Fe.

Table 30: Mineral Resource Estimate for Combined Lomonosovskoye April 2014, cut-off 20% Fe

Class	M Tonnes	Fe %	FeM%	P %	S %
Measured	63.9	30.5	21.30	0.29	3.01
Indicated	414.2	30.6	21.04	0.22	3.30
Measured & Indicated	478.1	30.5	21.10	0.23	3.30
Inferred	28.4	28.0	16.71	0.28	3.04

It is MA's opinion that the mineral resource estimates (Table 30) included in the April 2014 report have been largely verified by the new estimates (Table 28), with changes in tonnage and grade reflecting increased confidence and the use of an estimation methodology better suited to bulk surface and underground mining. New estimates are fully diluted for internal and edge mining dilution.

The new estimate represents an increase in tonnage of 6% and an increase in contained iron of 4% in the measured and indicated mineral resource categories over the estimates included in the April 2014 report. The most significant increase is in the Inferred category, with the addition of 50 Mt and an increase in grade from 28.4% to 30.4% Fe. The changes from the estimates in the April 2014 report relate to increased confidence levels from additional drilling, as well as changes in the interpretation of mineralisation geometry. This is particularly evident in the Measured category, which incorporates part of the Central deposit where the majority of new drilling has occurred.

15 MINERAL RESERVE ESTIMATES

This section is not applicable for this NI43-101 Report as insufficient economic analysis has been performed to allow conversion of resources to reserves.

16 MINING METHODS

This section is not applicable for this NI43-101 Report.

17 RECOVERY METHODS

This section is not applicable for this NI43-101 Report.

18 PROJECT INFRASTRUCTURE

This section is not applicable for this NI43-101 Report.

19 MARKET STUDIES AND CONTRACTS

This section is not applicable for this NI43-101 Report.

20 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

This section is not applicable for this NI43-101 Report.

21 CAPITAL AND OPERATING COSTS

This section is not applicable for this NI43-101 Report.

22 ECONOMIC ANALYSIS

This section is not applicable for this NI43-101 Report.

23 ADJACENT PROPERTIES

Four main properties in the region are considered significant to the Lomonosovskoye project (Figure 80). Sarbaisky-Sokolovsky open pit mines lie 10 km east, and the Kacharsky open pit mine is 35 km north of Lomonosovskoye respectively. South Lomonosovskoye and Davydovskoye are undeveloped deposits 8 km southwest and 30 km north-northwest of Lomonosovskoye respectively. Geology and magnetite mineralization of these deposits is considered similar to that of Lomonosovskoye. MA has not been able to verify that the mineralization described for the adjacent properties and notes that the descriptions of iron mineralization at these deposits is not necessarily indicative of the same on the Lomonosovskoye Project.

Figure 80: Location of Adjacent Properties
(Source: Google Maps 2011)

23.1 SOKOLOVSK- SARBAISKY / KACHARSKY

ENRC operates the mines at Sokolovsk-Sarbaisky and Kacharsky. Adjoining mining operations are registered to SSGPO, a vertically integrated business producing iron ore concentrate and pellets. The operations are centred on the town of Rudnyi which was established to support the iron ore operations. The centralised facilities are located near Rudnyi whilst the mines are located between 5 and 50 kilometres from the town. In April 2007, ENRC entered into a long-term contract with Magnitogorsk Iron & Steel Works OJSC, a leading Russian steel producer, that extends until 2016 (ENRC 2008).

The following descriptions are taken from the ENRC 2007 prospectus.

The principal mining assets of SSGPO are:

- Sokolovsky Underground Mine. The Sokolovsky deposit is located five kilometres north of Rudnyi. This business unit is responsible for mining the iron ore deposits that are scheduled to be mined using underground methods. These comprise underpit resources of the Southern and

Central areas and the Northern and Epicentre 6 production areas. In 2006, 1.56 Mt of iron ore was mined at a grade of 30.8% Fe using sub-level caving techniques.

- Sokolovsky-Sarbaisky Open Pit Mines. The Sarbaisky and Sokolovsky groups of deposits are located within five kilometres of each other. This business unit is responsible for the open pit operations at both Sarbaisky and Sokolovsky. In 2006, 9.8 Mt at 27.1% Fe was mined from Sokolovsky open pit and 9.9 Mt at 38.3% Fe from Sarbaisky open pit. The ore and waste are drilled, blasted and loaded into either railway trucks or off-highway trucks. Ore is transported to the central processing facilities by rail.

Figure 81: Lomonosovskoye Project Location relative to Sarbaisky Open Pit
(Source: Google Maps 2011)

- Kacharsky Open Pit Mine. This open pit is located 50 kilometres north of Rudnyi. In 2006, 15.3 Mt was mined at 32.2% Fe. The ore is railed to the central processing facility in Rudnyi. The iron ore deposit was covered by a very thick layer of recent sediments, up to 200 metres thick. The pit was 343 metres deep as of 2008 and was planned to be 700 metres deep by the end of the mine's life. One cut-back was planned. The ore and waste are drilled and blasted and then loaded into either railway trucks or off-highway trucks. An in-pit crushing and conveying system is planned to enhance material handling for mining from the deeper level.

Figure 82. SSGPO Sokolovsky Open Pit operation, facing north.
(Source: MA 2011)

Figure 83. : SSGPO Sokolovsky Open Pit operation
(Source: MA 2011)

23.1.1 Geology and Resources

The following descriptions are summaries in most part from the ENRC prospectus (2007).

ENRC describes the mineralization of its Sokolovsk- Sarbaskyi deposits as being hosted in Carboniferous carbonate sediments and extrusive volcanic rocks, underlain by porphyritic granitoid intrusions. ENRC considers that the economic mineralization is a result of highly iron-enriched, hot metasomatising fluids passing through the limestones and tuffaceous volcanics, along pre-existing faults and weak zones in the generally porous volcanic rocks, as a result of intrusion of granitoids.

All of the ENRC deposits are covered by sedimentary waste rocks with thicknesses varying from around 100 metres at Sarbaisky and Sokolovsky to up to 200 metres at Kacharsky. The mineralization host rocks are folded into large, generally open, fold structures. Both the Paleozoic rocks and the granitoids are affected by faulting. In some areas, the Palaeozoic sequences show evidence of weathering, and some collapse structures, and oxidation of the magnetite to martite and hematite.

The Sarbaisky and Sokolovsky deposits are situated on opposite limbs of an anticlinal structure, with a porphyritic granite intrusion between the remnant limbs of the partially eroded feature. The dip of the strata ranges from around 45 degrees to vertical or slightly overturned.

ERNC note that while there are local variations in all the deposits, they have similar genesis, and as a result can be described with certain general characteristics. The mineralization occurs as massive, banded, disseminated, and stockwork vein types in various portions of the deposits. The major iron bearing minerals are magnetite, pyrite, pyrrhotite, and, less commonly, markasite. Titanomagnetite occurs only in specific parts of the deposits.

Magnetite content of massive mineralization ranges from 60 to 80%, from 20 to 60% in banded mineralization, and from 20 to 55% in disseminated and stockwork vein mineralization types. The pyrite content of the mineralization varies between 0.1 and 15%. Concentrations of pyrite are generally highest at Sokolovsky. Hypogene alteration together with calcite forms veins of up to 0.5 metres wide.

23.1.1.1 Kacharsky

ENRC reported reserves and resources in compliance with JORC (2004) standards for the Kacharsky deposit in July 2007, as detailed in Table 31.

Table 31: Kacharsky - Ore Reserves and Mineral Resources -1 July 2007

Ore Reserve Category	(Mt Dry)	(% Fe)	(Mt Fe)
Proved	187.7	42.5	79.6
Probable	676.7	35.6	241.0
Total Proved & Probable	**864.4**	**37.1**	**320.6**
Mineral Resource Category	(Mt Dry)	(% Fe)	(Mt Fe)
Measured	204.6	44.5	91.0
Indicated	998.9	36.7	366.8
Total Measured & Indicated	**1203.5**	**38.0**	**457.8**
Inferred	**278.4**	**33.2**	**92.6**

(Source: ENRC 2007)

MA has not been able to verify that the mineralization described for Kacharsky and notes that the descriptions of the iron ore mineralization at Kacharsky is not necessarily indicative of the same on the Lomonosovskoye Project

Kacharsky was the largest deposit in the Turgai belt (Figure 20) but has been over taken in size by Sokolovsky. It is hosted by the Valerianovo supergroup. Mineralization is largely hosted by altered limestone lenses and beds, enclosed within porphyritic basalts and andesites and associated intermediate tuffs.

At Kacharsky, the host rocks have been extensively folded with fold axes along azimuths of between 10° and 50°. The limbs of the folds dip at angles varying between 15° and 70°. The wavelength of the folds range from 2 to 4 km, but are interrupted by extensive faulting of various directions and magnitude with displacements up to 300 m. Three main areas of mineralization have been outlined at the deposit. These zones comprise a total length of 4.5 km along strike, between 50 m and 2,000 m down dip, and between 7 m and 170 m in width. Forty distinct mineralized bodies have been defined in the Mineral Resources, with the higher grade of them being massive and stockwork vein types

MA has not been able to verify that the mineralization described for Kacharsky and notes that the descriptions of the ironmineralization at Kacharsky is not necessarily indicative of the same on the Lomonosovskoye Project.

23.1.1.2 Sokolovsky:

ENRC reported JORC compliant reserves and resources for Sokolovsky deposit in July 2007 as detailed in Table 32.

Table 32: Sokolovsky - Ore Reserves and Mineral Resources -1 July 2007

Ore Reserve Category		(Mt Dry)	(% Fe)	(Mt Fe)
Proved	Underground	16.9	39.0	6.6
Probable	Underground	231.4	31.3	72.5
	Open Pit	36.1	33.5	12.1
Total Probable		267.5	31.6	84.6
Total Proved & Probable		**284.4**	**36.7**	**91.2**
Mineral Resource Category		**(Mt Dry)**	(% Fe)	**(Mt Fe)**
Measured	Underground	85	48.5	41.2
Indicated	Underground	1,099.9	38.8	427.2
	Open Pit	35.6	34.5	12.3
Total Indicated		1,135.5	38.7	439.5
Total Measured & Indicated		**3,646.5**	**38.9**	**480.7**
Inferred	Underground	275.6	42.3	116.7
	Open Pit	11.1	26.6	3.0
Total Inferred		**286.7**	**41.7**	**119.7**

(Source: ENRC 2007)
MA has not been able to verify that the mineralization described for Sokolovsky and notes that the descriptions of the iron mineralization at Sokolovsky is not necessarily indicative of the same on the Lomonosovskoye Project

Mineralization at Sokolovsky is in stacked magnetite lenses distributed over a strike length of 5.6 km (Figure 19 & Figure 20). Sokolovsk is located on the eastern limb of a NNE-trending anticline that hosts the Sarbai deposit on its western limb. As with Kacharsky, the deposit is hosted by carbonates with lesser intercalated tuffaceous sediments, and by intermediate volcanics, in the middle unit of the Valerianovo supergroup. Unlike Kacharsky, the host sequence is intruded by the northeast elongated, 15 by 3.5 km Sarbai-Sokolovsk gabbro-diorite-granodiorite suite, which is bounded by a series of NNE-trending faults.

At Sokolovsky, mineralization has been traced for approximately 7.5 kilometres along its length, with widths varying from 180 to 650 metres. The Lower Carboniferous rocks were reworked during the middle and upper Carboniferous period, and this resulted in subsidence of the original rock mass creating conglomerates and breccias consisting of the original limestone and volcanic rocks with the resultant cavities filled with clay material. This has not affected the mineralization of the mining operations.

MA has not been able to verify that the mineralization described for Sokolovsky and notes that the descriptions of the iron mineralization at Sokolovsky is not necessarily indicative of the same on the Lomonosovskoye Project.

23.1.1.3 Sarbaisky:

ENRC reported JORC compliant reserves and resources for the Sarbaisky deposit in July 2007 as detailed in Table 33.

Table 33: Sarbaisky - Ore Reserves and Mineral Resources -1 July 2007

Ore Reserve Category	(Mt Dry)	(% Fe)	(Mt Fe)
Proved	42.2	38.9	16.4
Probable	78.9	33.8	26.7
Total Proved & Probable	**121.1**	**35.58**	**43.1**
Mineral Resource Category	(Mt Dry)	(% Fe)	(Mt Fe)
Measured	56.8	37.9	21.5
Indicated	805.4	37.4	301.0
Total Measured & Indicated	**862.2**	**37.43**	**322.5**
Inferred	**157.9**	**38.8**	**61.3**

(Source: ENRC 2007)
MA has not been able to verify that the mineralization described for Sarbaisky and notes that the descriptions of the iron mineralization at Sarbaisky is not necessarily indicative of the same on the Lomonosovskoye Project

The Sarbaisky deposit (Figure 19 & Figure 20, Figure 84) lies on the western limb of a regional anticline. The geological setting is similar to Sokolovsky. The SSGPO complex is located between the two deposits.

At Sarbaisky, three mineralization zones have been identified that are present in a complex of contact metasomatic formations, consisting of magnetite mineralization and barren skarns and hornfels. The zones are continuous along strike and dip, except where they are disrupted by faults and diorite intrusions. The eastern and western mineralized bodies are larger, similar in size at 1,700 metres and 1,900 metres strike length respectively, and 180 metres wide. Both orebodies have also been intersected at depths of over 800 metres. The smaller southeastern mineralized body is approximately 100 metres long, 170 metres wide, and has been drilled to depths of just less than 800 metres. Exploration in the 1980s has outlined a region of stockwork vein type mineralization, close to surface near the southern boundary of the current open pit.

MA has not been able to verify that the mineralization described for Sarbaisky and notes that the descriptions of the iron mineralization at Sarbaisky is not necessarily indicative of the same on the Lomonosovskoye Project.

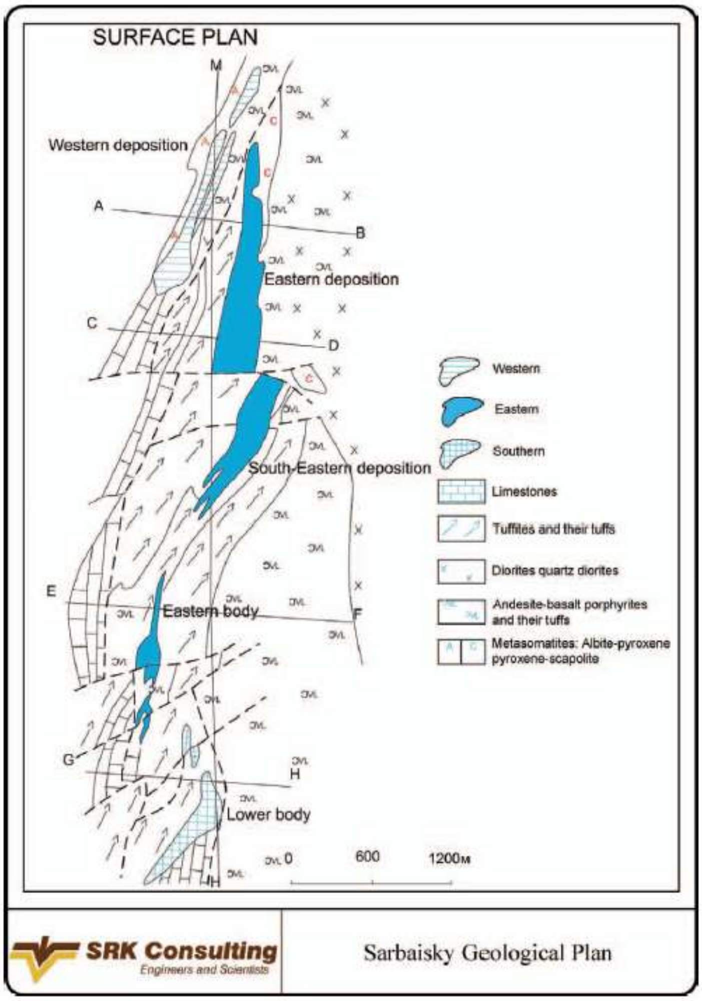


Figure 84: Sarbaisky (Sarbai) – Simplified Geology and Cross sections
(Source: ERNC 2007)

23.2 PRODUCTION FROM ENRC DEPOSITS

Table 34 lists the published production data from the adjacent mines (ENRC 2007).

Table 34: Production Statistics for the adjacent SSGPO Mining Operations

		Historical			
		2004	2005	2006	H1 2007
Mining					
Underground mining	**(Mt)**	3.1	2.0	1.6	1.2
Open pit mining	**(Mt)**	32.7	28.6	37.2	18.3
Total Mined*	**(Mt)**	**35.8**	**30.7**	**38.8**	**19.5**
Processing					
Concentrate Produced	**(Mt)**	15.4	12.9	16.1	8.3
Sales(4)					
Concentrate sold	**(Mt)**	5.2	4.7	7.0	3.6
Pellets sold	**(Mt)**	9.4	7.2	9.0	4.3

(Source: ENRC 2007)

The above statistics have been used to produce the results listed in Table 35 which indicates the weight recovery of concentrate at SSGPO is in the range 41.5% to 43%.

Table 35: Weight recovery of concentrate for the adjacent SSGPO Mining Operations

Year	2004	2005	2006	H1 2007
Total Mined Mt	35.8	30.7	38.8	19.5
Concentrate Produced Mt	15.4	12.9	16.1	8.3
Weight Recovery	43.02%	42.02%	41.49%	42.56%

This weight recovery is similar to most skarn type magnetite deposits including the Savage River deposit in Tasmania and Grange Resources' Southdown Project in Western Australia.

23.3 SOUTH LOMONOSOVSKOYE

South Lomonosovskoye is located 8 km southwest of Lomonosovskoye and lies along the same structural-stratigraphic trend. Host rocks comprise volcanics, tuffites, sandstone-tuffite and limestone near the contact with a diorite massif, which are covered by 100 m of Mesozoic-Quaternary sedimentary rocks. Bedding strikes north and dips between 45° and 60° towards the east.

The deposit consists of two main bodies of mineralization (Figure 85). The main body is situated in the transitional zone from limestone to tuffite and is represented by veinlet-disseminated mineralization. It has a strike length of 685 m, extends 70 m to 400 m down dip, is 4 m to 75 m thick and comprises 98% of the deposit. The second mineralized body is confined to a contact zone with diorite and consists of a stockwork of breccia-veinlet magnetite mineralization 150 m to 100 m along strike and 380 m to 560 m down dip. An oxidation zone contains powdery martite mineralization grading 50% Fe and higher.

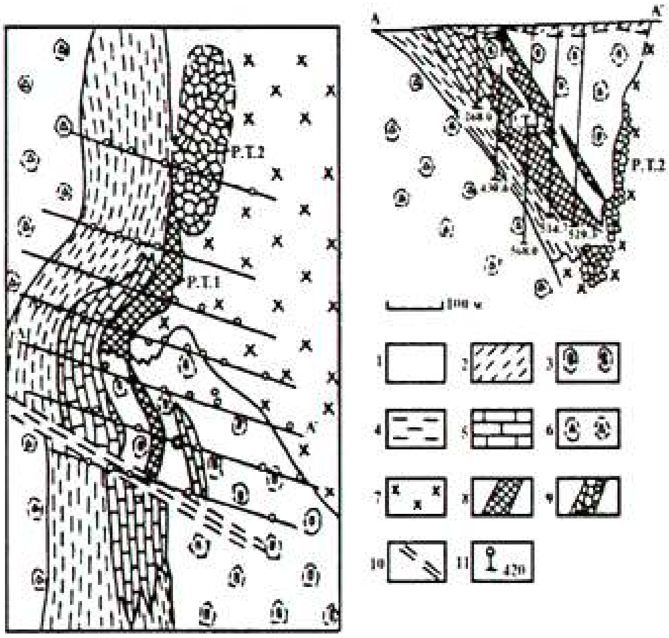


Figure 85. Map and Cross Section of South Lomonosovskoye.

Resources at South Lomonosovskoye were reported in 1968 from drilling data collected by Soviet exploration teams and reported using the Russian classification system (Table 36). In Table 36 categories C1 and C2 are considered approximately equivalent in terms of confidence to Indicated and Inferred resources respectively as defined in NI43-101 reporting standards. A summary of the resource estimate was supplied by KMI, but no details of the number of drill holes, or the estimation method used was included. MA considers it likely that a polygonal method of resource estimation similar to that used for Lomonosovskoye was applied.

Table 36. Resources at South Lomonosovskoye, 20% Fe cut-off.

Resources Category	Mineralisation, Mt	Fe %	S %	P %
C1	42.92	36.04	0.12	0.22
C2	10.96	36.04	0.12	0.22
TOTAL	**53.88**	**36.04**	**0.12**	**0.22**

Note: The Qualified Person has not done sufficient work to classify this historical estimate as current mineral resources, and the issuer is not treating this historical estimate as current resources.

The Qualified Person has been unable to verify the information supplied by KMI in regards to South Lomonosovskoye and that the information is not necessarily indicative of the mineralization on the Lomonosovskoye Project that is the subject of this technical report.

23.4 DAVYDOVSKOYE

Davydovskoye is located approximately 30 km northeast of Lomonosovskoye. The field comprises three defined iron deposits: Davydovskoye, Southern Svetlo-Dzharkul and Kuttuck (Figure 86). MA was not provided with detailed descriptions of the geology, but the deposits occupy similar stratigraphic positions to Lomonosovskoye, near the moderately dipping contact between limestones and overlying tuffaceous and volcanic rocks. Davydovskoye is the largest and lowest grade of the three deposits, with Southern Svetlo-Dzharkul the highest grade.

Information is available only for total resources for all three deposits, which is shown in Table 37 at cut-off grades of 15% and 20% Fe. These resources are classified in the Soviet system as C2 plus P1, which are approximately equivalent to Inferred and Exploration Target categories in NI43-101 reporting. The Qualified Person has been unable to verify the information supplied by KMI in regards to South Lomonosovskoye and that the information is not necessarily indicative of the mineralization on the Lomonosovskoye Project that is the subject of this technical report.

Table 37. Total Resources at Davydovskoye Mineral Field (Samohvalov, 1991)

Cut-off grade Fe%	Resources C2+P1	
	Mt	Fe % Grade
15	1470.7	20.12
20	550.8	24.15

Note: The Qualified Person has not done sufficient work to classify this historical estimate as current mineral resources, and the issuer is not treating this historical estimate as current resources.

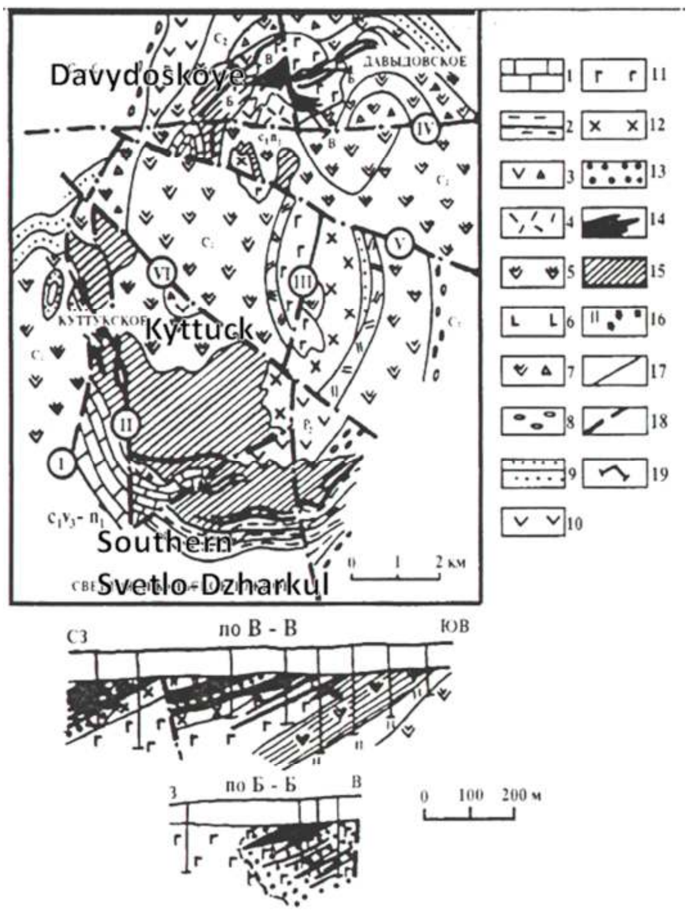


Figure 86. Geological Map and Cross Sections of Davydovskoye Mineral Field.

24 OTHER RELEVANT DATA AND INFORMATION

No other information or data is considered relevant to this report.

25 INTERPRETATION AND CONCLUSIONS

25.1 INTERPRETATION

The Lomonosovskoye Project contains significant magnetite iron mineralization in two deposits comprised of five adjacent domains that have similar geological settings to the nearby operating magnetite iron ore open pit and underground mines in the Rudniy region.

Historical work to date outlined skarn iron mineralization at the Northwest Deposit and the Central Deposit beneath 100 m of overburden and extending to 1600 m depth in the Northwest Deposit, and some 900 m at Central.

Drilling by KMI carried out from 2011-2014 comprised eighty-six (86) drill holes totalling 25,311.26 m, which confirmed historical drilling results and extended the volume of mineralization leading to this resource estimate.

Two main aspects of the geology are yet to be resolved: the location, orientation and nature of the structural zone separating Northwest and Central deposits, and the location and orientation of the postulated fault separating northern and southern parts of Central deposit with opposing dip directions.

This revised estimate was based on historical drilling, plus the drilling undertaken by KMI since 2011. At this stage no additional drill holes are planned.

Mineralization domains used in the April 2014 estimate were redefined by 3D wireframes using drill assay data, detailed geology logs, down-hole magnetic susceptibility logs and extensive discussions with on-site geologists. The deposit was divided into blocks above and below 20% Fe using an indicator approach. Grades and mineralization percentages were then estimated by Ordinary Kriging into blocks 15x15x10 m in size within each domain.

While there have been a number of metallurgical programs through the history of the project, further metallurgical testing is required. A metallurgical program is currently being undertaken by KMI as part of a definitive feasibility study with results expected in 2015.

MA notes that the Lomonosovskoye Project has a favourable location due to its proximity to transportation routes, and sources of water, gas, and power supply, which have been established with the regional mining complex based in Rudniy. This may allow a reduction in capital expenditure and may reduce the cost of production if the project proceeds to development through the use of shared infrastructure.

The Legal Opinion states that there is a remote risk of the Competent Authority will not approve the transfer of Subsoil Use Contract rights. MA believes the revised ownership structure has largely off-set this risk.

In terms of the project's potential economic viability, as the Project is considered to be in Advanced Exploration stage prior to Preliminary Economic Assessment, it is not at a stage to discuss risk in terms of potential economic viability. There are however reasonable prospects of eventual economic extraction by combined open pit and underground methods.

25.2 CONCLUSIONS

The QP makes the following observations and conclusions regarding the Lomonosovskoye Project:

- Significant skarn type iron mineralization exists at the Lomonosovskoye Project.
- The mineralization occurs in 3 main types – disseminated, veins and massive.

- The formula used to calculate density based on Fe grade has been changed to a nonlinear regression that better fits the data.
- The Lomonosovskoye Project has a very favourable location due to its proximity to transportation routes and infrastructure.
- Historical drill-holes were validated by new drilling and close examination of the statistics between old and current drilling has deemed that the historical holes are suitable to be included in this resource estimate.
- The techniques applied in the sampling, logging and storing of core are deemed appropriate.
- The mineralization remains open at depth and along the lateral extents in certain areas.
- Selective sampling within historical drilling required a weighting factor to be applied to the estimation model.

26 RECOMMENDATIONS

MA recommends the following activities be conducted to improve the accuracy of future mineral resource estimates and thus reserves, mine design and production schedules:

- Review paleo-weathering depth profile and effects at the top of mineralization, particularly on magnetite. This may be achieved by close spaced micro-seismic or georadar, but further investigation is required to determine the most suitable method.
- To increase confidence in the interpretation and improve the volume of measured category for the first few years of planned production, line spacing of 100 m should be closed to 50 m with drill holes targeted to open-pit depths (approximately 450-500 m).
- Drilling should also be focused on those areas that are likely to provide the limits to mine design, e.g. where the mineralization envelope cuts the walls of the potential pit.
- Develop and implement rigorous QAQC procedures for all any additional drilling including down-hole geophysics.
- Develop and maintain a validated database of all drill hole data.

An estimated budget for the above recommendation is as follows:

Northwest infill drilling: 10 infill sections, 6 holes each to 400m downhole depth = 27,000m

Central infill drilling: 8 infill sections, average 8 holes each to 400m downhole depth = 25,600m

Drilling costs: HQ core = US$114/m

Downhole geophysics = US$25.8/m

Sample preparation and analysis (assume 2m samples, top 100m of each hole not sampled) = US$113/sample.

Table 38. Approximate budget for recommended additional work.

Activity	Amount	Cost per unit (US$)	Total cost (US$)
Drilling	49,600m	114/m	5,654,400
Downhole geophysics	49,600m	25.8/m	1,279,680
Sample analysis	18,600 samples	113/sample	2,115,120
Database development			20,000
QAQC procedures			Costs absorbed in-house
Total			**9,069,200**

26.1 WORK PROGRAM AND BUDGET

The work program for H1 2015 consists of a Definitive Feasibility Study (DFS). The DFS is being coordinated by Wardell Armstrong International as lead technical consultant and is expected to be completed by mid-2015. Wardell Armstrong International is an independent mining consultancy providing specialized geological, geotechnical and hydrogeological mining advice as well as bringing environmental and social experience to mining projects worldwide across all commodities. The full scope of work for the DFS includes:

- review of the geological data and preparation of an updated resource model;

- technical support to all site investigation works including geological, hydrogeological, and geotechnical drilling;
- geotechnical analysis and design for the open pit slopes and waste dump;
- hydrogeological and site water balance modelling;
- design of the tailings storage facility;
- ESIA management and social impact assessment;
- mine closure and rehabilitation planning;
- ore reserves, life of mine plan, mining method and optimisation;
- metallurgical testwork and process and plant design;
- project infrastructure planning;
- CAPEX/OPEX costing development and benchmarking;
- project financial modelling, analysis and market studies; and
- preparation of the DFS document.

Respectfully submitted,

Andrew James Vigar

BAppSc Geo, FAusIMM, MSEG

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28 DATE AND SIGNATURE PAGE

This report titled "Independent Technical Report on the Lomonosovskoye Iron Project, Republic of Kazakhstan" and dated 14th January 2015 was prepared and signed by the following authors:

Dated 3rd November 2015 at Hong Kong

Andrew James Vigar

BAppSc Geo, FAusIMM, MSEG

Qualified Person

29 CERTIFICATES OF QUALIFIED PERSONS

CERTIFICATE ANDREW J VIGAR

I, Andrew James Vigar hereby certify that:

I am an independent Consulting Geologist and Professional Geoscientist residing at 97 Isaac Street, Spring Hill, Queensland 4000, Australia with my office at Level 4, 67 St Paul's Terrace, Brisbane, Queensland 4001, Australia (Telephone +61-7-38319154).

I graduated from the Queensland University of Technology, Brisbane, Australia in 1978 with a Bachelor Degree in Applied Science in the field of Geology. I have continuously practised my profession as a Geologist for the past 32 years since graduation, in the fields of mineral exploration, mine geology and mineral resource estimation. I have held senior positions with Emperor Gold, Western Mining Corporation, Costain Australia and Conzinc Riotinto of Australia Ltd ("CRA") (now Rio Tinto Limited) prior to commencing full-time consulting in 1996. I have been involved in consulting to the minerals industry both independently (Vigar & Associates and now Mining Associates Pty Ltd, and Mining Associates Limited) and as an employee of the international consultancy, SRK Consulting.

My specific experience concerning the Lomonosovskoye Iron Project is my extensive experience in bulk mineral deposits in general and iron deposits in particular; including a detailed technical review and resource estimate for the Sishen deposits (Republic of South Africa), and Hope Downs (Western Australia), and reviews of various hematite and magnetite deposits in the Philippines, Indonesia, Papua New Guinea and Australia.

I was elected a Fellow of the Australasian Institute of Mining and Metallurgy ("The AusIMM") in 1993. My status as a Fellow of The AusIMM is current. I am a Member of the Society of Economic Geologists (Denver). I am recognized by the Australian Securities and Investments Commission and the Australian Stock Exchange as a Qualified Person for the submission of Independent Geologist's Reports.

I am responsible for all Sections of this Technical Report.

I have visited the Lomonosovskoye Iron Project site from 26th to 30th March 2012 and from 3rd December to 9th December 2013.

For the purposes of the Technical Report entitled: "Independent Technical Report on the Lomonosovskoye Iron Project, Republic of Kazakhstan" dated 14 January 2015, of which I am the author, I am a Qualified Person as defined in National Instrument 43-101 ("the Policy").

I have read the Policy and this technical report is prepared in compliance with its provisions. I have read the definition of "qualified person" set out in the Policy and certify that by reason of my education, affiliation with a professional association (as defined in the Policy) and past relevant work experience, I fulfil the requirement to be a "qualified person" for the purposes of the Policy.

At the effective date, to the best of my knowledge, information and belief, the portions of the technical report that I am responsible for contain all scientific and technical information that is required to be disclosed in order to make this report not misleading.

I have no direct or indirect interest in the properties which are the subject of this report. I do not hold, directly or indirectly, any shares in KMI Capital Inc. or other companies with interests in the iron exploration assets of KMI Capital Inc. I am independent of KMI Capital Inc. as described in Section 1.5 of the Companion Policy 43-101CP.

I do not hold, directly or indirectly, any shares in Safin Element GmbH, ("the Vendor"), or other companies with interests in the iron exploration assets of the Vendor. I am independent of the Vendor.

With the exception of the co-authorship of an independent valuation report dated December 2011, and a previous independent technical report dated 12 April 2012, I have had no prior involvement with the property which is the subject of this report. I do not hold any direct interest in any mineral tenements in Kazakhstan.

I will receive only normal consulting fees for the preparation of this report.

Dated at Hong Kong this 14th day of January 2015.

Respectfully submitted,

Andrew James Vigar

BAppSc Geo, FAusIMM, MSEG

30 GLOSSARY OF TECHNICAL TERMS

This glossary comprises a general list of common technical terms that are typically used by geologists. The list has been edited to conform in general to actual usage in the body of this report. However, the inclusion of a technical term in this glossary does not necessarily mean that it appears in the body of this report, and no imputation should be drawn. Investors should refer to more comprehensive dictionaries of geology in printed form or available in the internet for a complete glossary.

"200 mesh"	the number of openings (200) in one linear inch of screen mesh (200 mesh approximately equals 75 microns)
"Au"	chemical symbol for gold
"block model"	A block model is a computer based representation of a deposit in which geological zones are defined and filled with blocks which are assigned estimated values of grade and other attributes. The purpose of the block model (BM) is to associate grades with the volume model. The blocks in the BM are basically cubes with the size defined according to certain parameters.
"bulk density"	The dry in-situ tonnage factor used to convert volumes to tonnage. Bulk density testwork is carried out on site and is relatively comprehensive, although samples of the more friable and broken portions of the mineralized zones are often unable to be measured with any degree of confidence, therefore caution is used when using the data. Bulk density measurements are carried out on selected representative samples of whole drill core wherever possible. The samples are dried and bulk density measured using the classical wax-coating and water immersion method.
"cut off grade"	The lowest grade value that is included in a resource statement. Must comply with JORC requirement 19 "*reasonable prospects for eventual economic extraction*" the lowest grade, or quality, of mineralized material that qualifies as economically mineable and available in a given deposit. May be defined on the basis of economic evaluation, or on physical or chemical attributes that define an acceptable product specification.
"diamond drilling, diamond core"	Rotary drilling technique using diamond set or impregnated bits, to cut a solid, continuous core sample of the rock. The core sample is retrieved to the surface, in a core barrel, by a wireline. The drill core is taken from the drill site to a secure compound at the Company's field camp and is logged by the geologist. The drill core is then split into two equal halves along its long axis, with one half being sampled at predetermined intervals, collected in calico bags and sent for analysis. The remaining half-core is retained in core boxes and stored on site for future reference. Core sizes are PQ3 (ø 83mm) from surface to approximately 50 metres depth, then HQ3 (ø 61mm) to the end of the hole.
"down-hole survey"	Drillhole deviation as surveyed down-hole by using a conventional single-shot camera and readings taken at regular depth intervals, usually every 50 metres.
"drill-hole database"	The drilling, surveying, geological and analyses database is produced by qualified personnel and is compiled, validated and maintained in digital and hardcopy formats.
"g/t"	grams per tonne, equivalent to parts per million
"g/t Au"	grams of gold per tonne
"gold assay"	Gold analysis is usually carried out by an independent ISO17025 accredited laboratory by classical 'Screen Fire Assay' technique that involves sieving a 900-1,000 gram sample to 200 mesh (~75microns). The entire oversize and duplicate undersize fractions are fire assayed and the weighted average gold grade calculated. This is one of the most appropriate methods for determining gold content if there is a 'coarse gold' component to the mineralization.
"grade cap, also called top cut"	The maximum value assigned to individual informing sample composites to reduce bias in the resource estimate. They are capped to prevent over estimation of the total resource as they exert an undue statistical weight. Capped samples may represent "outliers" or a small high-grade portion that is volumetrically too small to be separately domained.
"inverse distance	It asserts that samples closer to the point of estimation are more likely to be similar to the sample at the estimation point than samples further away. Samples closer to the point of

estimation”	estimation are collected and weighted according to the inverse of their separation from the point of estimation, so samples closer to the point of estimation receive a higher weight than samples further away. The inverse distance weights can also be raised to a power, generally 2 (also called inverse distance squared). The higher the power, the more weight is assigned to the closer value. A power of 2 was used in the estimate used for comparison with the OK estimates.
“JORC”	The Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, 2004 (the “JORC Code” or “the Code”). The Code sets out minimum standards, recommendations and guidelines for Public Reporting in Australasia of Exploration Results, Mineral Resources and Ore Reserves. The definitions in the JORC Code are either identical to, or not materially different from, those similar codes, guidelines and standards published and adopted by the relevant professional bodies in Australia, Canada, South Africa, USA, UK, Ireland and many countries in Europe.
“JORC Inferred Resource”	That part of a Mineral Resource for which tonnage, grade and mineral content can be estimated with a low level of confidence. It is inferred from geological evidence and assumed but not verified geological and/or grade continuity. It is based on information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drillholes which may be limited or of uncertain quality and reliability.
“JORC Indicated Resource”	That part of a Mineral Resource for which tonnage, densities, shape, physical characteristics, grade and mineral content can be estimated with a reasonable level of confidence. It is based on exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes. The locations are too widely or inappropriately spaced to confirm geological and/or grade continuity but are spaced closely enough for continuity to be assumed.
“JORC Measured Resource”	That part of a Mineral Resource for which tonnage, densities, shape, physical characteristics, grade and mineral content can be estimated with a high level of confidence. It is based on detailed and reliable exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes. The locations are spaced closely enough to confirm geological and grade continuity.
“kriging neighbourhood analysis, or KNA”	The methodology for quantitatively assessing the suitability of a kriging neighbourhood involves some simple tests. It has been argued that KNA is a mandatory step in setting up any kriging estimate. Kriging is commonly described as a “minimum variance estimator” but this is only true when the block size and neighbourhood are properly defined. The objective of KNA is to determine the combination of search neighbourhood and block size that will result in conditional unbiasedness.
“lb”	Avoirdupois pound (= 453.59237 grams). Mlb = million avoirdupois pounds
“Ma”	Million years
“micron (μ)”	Unit of length (= one thousandth of a millimetre or one millionth of a metre).
“Mineral Resource”	A concentration or occurrence of material of intrinsic economic interest in or on the Earth’s crust in such form, quality and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade, geological characteristics and continuity of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge. Mineral Resources are sub-divided, in order of increasing geological confidence, into Inferred, Indicated and Measured categories when reporting under JORC.
“Mo”	Chemical symbol for molybdenum
“molybdenum assay”	Molybdenum analysis is usually carried out by an independent ISO17025 accredited laboratory. The sample is dissolved in Aqua Regia (3:1 HCl:HNO3) and analysis is carried out by Inductively Coupled Plasma - Optical Emission Spectrometry (ICP-OES) method.
“nearest neighbour estimation” “Inferred”	Nearest Neighbour assigns values to blocks in the model by assigning the values from the nearest sample point to the block attribute of interest. that part of a Mineral Resource for which tonnage, grade and mineral content can be estimated with a low level of confidence. It is inferred from geological evidence and assumed but not verified geological and/or grade continuity. It is based on information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill

	holes which may be limited or of uncertain quality and reliability.
“ordinary Kriging estimation, or OK”“Indicated”	Kriging is an inverse distance weighting technique where weights are selected via the variogram according to the samples distance and direction from the point of estimation. The weights are not only derived from the distance between samples and the block to be estimated, but also the distance between the samples themselves. This tends to give much lower weights to individual samples in an area where the samples are clustered. OK is known as the “best linear unbiased estimator. The kriging estimates are controlled by the variogram parameters. The variogram model parameters are interpreted from the data while the search parameters are optimised during kriging neighbourhood analysis.
“oz”	Troy ounce (= 31.103477 grams). Moz = million troy ounces
“QA/QC”	Quality Assurance/Quality Control. The procedures for sample collection, analysis and storage. Drill samples are despatched to ‘certified’ independent analytical laboratories for analyses. Blanks, Duplicates and Certified Reference Material samples are included with each batch of drill samples as part of the Company’s QA/QC program. Mining Associates, as part of database management, monitors the results on a batch-by-batch basis.
“RC drilling”	Reverse Circulation drilling. A method of rotary drilling in which the sample is returned to the surface, using compressed air, inside the inner-tube of the drill-rod. A face-sampling hammer is used to penetrate the rock and provide crushed and pulverised sample to the surface without contamination. 1 metre samples are collected in a plastic bag from the bottom discharge chute of a cyclone. Sub-sample splits are collected in calico bags using a ‘jones-type’ riffle splitter to obtain a 3-4kg subsample for submission to the laboratories for analyses. RC is carried out using a face-sampling hammer with a bit diameter of 5¼” (ø 135mm).
“survey”	Comprehensive surveying of drillhole positions, topography, and other cadastral features is carried out by the Company’s surveyors using ‘total station’ instruments and independently verified on a regular basis. Locations are stored in both local drill grid and UTM coordinates.
“t”	Tonne (= 1 million grams)
“variogram”	The Variogram (or more accurately the Semi-variogram) is a method of displaying and modelling the difference in grade between two samples separated by a distance h, called the “lag” distance. It provides the mathematical model of variation with distance upon which the Krige estimation method is based.
“wireframe”	This is created by using triangulation to produce an isometric projection of, for example, a rock type, mineralization envelope or an underground stope. Volumes can be determined directly of each solid.

APPENDIX 1 HISTORICAL DRILL HOLES

hole_id	Easting	Northing	RL	max depth	year drilled		hole_id	Easting	Northing	RL	max depth	year drilled
1	95108.28	81789.88	199.95	270	1950		2	94652.28	83117.7	202.46	480	1950
3	95572.22	83139.29	201.88	126.6	1950		4	95204.96	81817.79	199.99	303	1950
5	95012.68	81760.96	200.93	275.7	1950		6	94914.58	81732.19	201.32	295.25	1950
8	94692.14	83087.69	202.44	473.95	1951		7	95306.79	81847.47	200.7	156.4	1951
10	94931.82	82906.86	200.35	207	1951		11	94612.63	83147.9	202.09	501.4	1951
12	94532.26	83208.04	202.6	495.8	1951		13	94372.05	83327.75	203.16	135.05	1951
14	95199.21	81623.22	201.62	302.8	1951		15	94529.87	81620.66	203.27	794.5	1951
16	94722.12	81676.48	202.48	300	1951		17	95413.25	81902.75	202.48	103.45	1951
22	94771.56	83277.49	200.31	373.2	1951		39	94932.2	83157.41	193.92	149.85	1951
41	94891.64	83437.73	199.86	350.25	1951		8A	94672.1	83102.78	202.42	314.8	1951
20	94532.5	82957.03	203.71	505.6	1952		23	94052.22	83569.28	204.62	143.6	1952
24	94211.69	83448.58	204.56	142.75	1952		26	94452.79	83017.2	203.83	223.15	1952
27	94612.18	82894.86	202.93	301.05	1952		28	94693.52	82837.06	201.76	241.1	1952
34	94410.85	82800.41	203.54	242.15	1952		37	94693.09	83336.49	200.6	289.05	1952
38	94850.96	83222.03	199.87	467.85	1952		43	94533.42	83957.17	202.29	134.8	1952
44	94693.51	83837.21	201.71	145	1952		45	94853.46	83718.06	200.1	133.35	1952
46	95013.97	83597.2	200.43	194.9	1952		47	95172.07	83478.35	199.92	145	1952
48	95322.92	83357.57	199.62	125	1952		49	95493.6	83236.28	200	103.6	1952
51	95730.79	83051.27	201.27	144.5	1952		52	95890.96	82931.12	201.99	144.35	1952
53	96049.98	82810.45	200.53	127.25	1952		54	94533.63	83456.91	202.72	486.2	1952
9	94772.29	83027.82	201.29	241.75	1953		18	94131.17	83509.76	204.31	142.15	1953
19	94292.29	83387.97	204.08	137.1	1953		31	94731.56	83307.92	203	520.8	1953
35	94811.29	83250.05	200.35	409.55	1953		36	94651.44	83367.45	201.08	113.8	1953
83	94135.5	83756.06	203.26	131.3	1953		84	94294.57	83636.2	203.71	134.5	1953
106	94853.23	83461.26	199.88	324.65	1953		11A	94631.27	83133.58	202.18	540	1953
12A	94534.41	83206.58	202.54	580	1953		9A	94733.96	83058.07	201.8	280	1953
21	95075.08	83675.78	201.16	159.35	1954		29	95114.42	83646.87	200.96	209.55	1954
30	95166.53	83617.54	200.59	270.4	1954		32	95242.53	83550.01	199.96	233.85	1954
33	94373.32	83576.75	200	289	1954		42	95033.48	83453.6	199.82	536.5	1954
40	94953.66	83517.51	200.15	318.5	1954		57	94813.45	83497.49	199.9	150.2	1954
55	95094	83537.04	200.09	415.45	1954		65	95382.6	81349.54	201.11	162.55	1954
62	94412.26	83046.31	204.01	286.25	1954		67	95520.76	81207.36	201.3	245.35	1954
66	95454.02	81278.79	201.2	256.85	1954		71	95094.27	84039.15	201.34	140.6	1954
70	94933.74	84160.66	201.61	135.8	1954		73	95415.84	83799.75	201.61	116.65	1954

hole_id	Easting	Northing	RL	max depth	year drilled		hole_id	Easting	Northing	RL	max depth	year drilled
72	95253.51	83911.54	201.46	129.9	1954		90	93570.62	83677.98	203.01	135.15	1954
74	95574.57	83679.69	202.43	113.8	1954		92	94054.8	83319.57	204.92	130.7	1954
91	93898.28	83437.31	204.16	146.65	1954		98	93812.28	82996.61	204.42	138.55	1954
93	94216.52	83198.56	204.83	162.5	1954		101	94292.53	82636.54	204.27	158	1954
97	93652.27	83116.65	201.43	145.25	1954		105	95054.13	83567.42	200.17	286.4	1954
99	93972.65	82875.93	206.59	137.55	1954		109	94912.48	83414.38	199.9	514.75	1954
100	94131.88	82755.82	205.21	151.2	1954		111	94158.06	83369.21	205.07	132.25	1954
102	94451.68	82517.36	201.9	145.4	1954		134	95883.57	83858.02	201.25	221	1954
107	94572.58	82426.72	198.75	115.7	1954		136	94676.26	83349.37	200.74	357.75	1954
110	94206.35	82693.2	205.08	153.15	1954		138	94467.66	83247.08	202.25	510	1954
112	94015.02	83597.83	204.15	139	1954		140	94611.82	83397.65	201.1	309.65	1954
113	95012.33	83348.14	199.7	377	1954		965	93614.29	81079.76	204.32	148.15	1954
115	93890.91	82435.71	205.98	125.45	1954		967	94612.48	81017.1	200.96	149.2	1954
129	95594.38	81139.24	201.3	10	1954		969	95611.02	80953.39	201.36	103.1	1954
135	95015.04	84099.92	201.64	146.15	1954		1128	95812.71	80940.96	201	119.65	1954
137	95256.72	84161.11	201.47	138.7	1954		1130	95411.74	80966.6	201.48	107.7	1954
139	94330.9	82860.47	214.46	147.3	1954		1241	95354.41	81690.9	201	650	1954
966	94112.81	81047.72	203.11	120.95	1954		37A	94693.09	83336.49	200.6	280.6	1954
968	95111.37	80986.25	200.83	106.2	1954		64	95206.02	82051.88	198	242.5	1955
59	95005.01	81907.59	200.93	355	1956		60	95100.26	81938.17	199.94	281.75	1956
58	95307.31	82054.49	198	235	1957		1245	95413.8	81852.41	201.98	401.9	1959
141	94995.19	83485.05	199.8	395.9	1960		142	94974.44	83375.6	199.8	601	1960
143	95072.65	83424.69	199.8	696.1	1960		1761	95256.82	82053.39	197.7	360	1960
1762	95330.35	82055.44	197.7	380.3	1960		1764	95097.86	81672.4	201	349.7	1960
1765	95284.37	82252.04	197.5	328.75	1960		1766	95331.13	82226.7	197.5	332.5	1960
149	95059.94	81774.99	200.3	723.65	1961		151	94756.68	83041.75	201.45	794.45	1962
153	94826.63	81975.13	198.08	718.9	1962		154	94911.36	82029.37	197.9	727.1	1963
164	95130.44	83584.15	199.8	344	1963		166	95172.9	83605	199.8	296.75	1963
156	95219.48	83575.06	199.8	462	1964		158	94635.92	82877.1	202.6	1120	1964
159	94942.97	83155.69	199.8	798.15	1964		160	94566.4	82928.99	203	505.6	1964
168	94793.06	81841.83	199.15	848.4	1964		155	95099.91	82048.5	197.7	427.7	1965
172	94914.17	83301.96	199.87	607	1965		174	94719.76	83194.22	201.03	555	1965
175	95199.4	83704.54	201.3	165	1965		180	95293.75	83634.92	202.05	448	1965
181	94633.16	83256.49	201.13	601.1	1965		182	94834.82	83359.85	200.02	411.1	1965
192	95498.34	81113.38	201.55	771.3	1965		193	93757.03	82234.4	206.55	157.45	1965

hole_id	Easting	Northing	RL	max depth	year drilled		hole_id	Easting	Northing	RL	max depth	year drilled
195	95695.79	81148.85	201.3	900	1965		198	95591.88	83236.8	200.55	628.65	1965
200	93154	82231.99	204.12	129.9	1965		169	94492.62	82985.89	203.78	810	1966
178	93358.07	82233.53	204.35	161.75	1966		183	93557.13	82233.95	206.25	131.2	1966
184	93956.51	82234.85	205.85	170.1	1966		185	94157.32	82233.88	204.35	163.2	1966
186	94355.87	82236.76	202.75	139.7	1966		187	94556.7	82236.72	201.45	155	1966
188	94754.5	82238.9	201	840	1966		190	95055.5	82240.2	200.85	717.15	1966
201	94768.58	83406.83	200.18	372.6	1966		202	94550.8	83317.21	201.61	663.8	1966
203	94800.09	83135.06	200.48	1000	1966		205	94835.53	82980.23	201.22	1020	1966
207	94370	82830.77	204.11	790	1966		212	95338.85	81492.24	201.2	800	1966
218	95301.49	81078.02	201.3	468.2	1966		204	94919.21	83044.81	200.15	874	1967
206	94313.52	83122.53	204.22	246.1	1967		208	94530.2	82712.3	202.1	1200	1967
210	94774.42	82775.22	198.75	1390	1967		211	95142.19	81455.81	200.85	522.9	1967
223	94704.89	83455.86	200.42	636.5	1967		224	94873.94	83330.26	199.83	729.3	1967
226	94956.1	82888.07	199.28	1093.6	1967		228	95280.54	82775.38	199.82	137.75	1967
230	95600.99	82536.03	202.55	143.3	1967		232	93761.98	81396.56	204.22	151.4	1967
237	94337.96	81564.62	202.5	145.3	1967		235	94145.97	81508.6	203.75	209.1	1967
239	94817.94	81704.66	199.69	146.8	1967		238	94625.95	81648.64	202.87	146.4	1967
244	94120.4	80865.86	202.25	134.05	1967		241	95863.2	81865.4	201.25	108	1967
246	94317.24	80901.22	201.75	122.9	1967		245	94218.82	80883.54	202	132	1967
249	94710.94	80971.94	201.17	136.9	1967		247	94514.09	80936.58	201.25	141.8	1967
251	95104.64	81042.66	201.21	121	1967		250	94907.79	81007.3	201.15	120.5	1967
256	95930.06	82298.49	202.11	124	1967		254	96388.7	81274.8	199.7	133.5	1967
258	96330.06	82245.99	200.39	120.2	1967		257	96130.03	82245.97	200.94	114.1	1967
263	93589.6	84035.41	202.65	157.8	1967		260	96530.09	82245.91	199.85	122.6	1967
266	94070.2	83676.31	203.75	142.4	1967		265	93910	83796.01	203.1	146.7	1967
269	94615.94	84640.04	201.65	151.9	1967		267	94230.4	83556.61	204.05	142.5	1967
272	95096.54	84280.85	201.62	146.2	1967		271	94036.34	84400.58	201.8	148.7	1967
274	95577.14	83921.66	202.45	135	1967		273	95416.94	84041.39	202.5	143	1967
278	96230.74	83433.15	200.95	145.2	1967		276	95897.54	83682.2	201.75	122.2	1967
282	96858.71	82963.8	200.31	135.6	1967		280	96538.31	83203.26	200.62	158.7	1967
285	93832.73	80200.6	201.49	164	1967		283	93439.02	80129.88	202.11	124.3	1967
289	94620.15	80342.04	201.35	148.5	1967		287	94226.44	80271.32	201.25	153.8	1967
293	95407.57	80483.48	201.05	116	1967		291	95013.86	80412.76	201.21	136.1	1967
297	96194.97	80628.92	201.02	134	1967		295	95801.27	80558.2	201.18	135.8	1967
233G	94278.95	82917.14	204.5	338.2	1967		299	94788.2	83510	200.75	143.7	1967

hole_id	Easting	Northing	RL	max depth	year drilled		hole_id	Easting	Northing	RL	max depth	year drilled
303	95399.3	81096.26	201.3	913	1978		307	95429.03	81306.39	201.3	750	1978
308	95627.65	81344.15	201.3	674.7	1978		309	95046.48	81434.77	200.9	513.3	1978
310	95243.8	81471.22	201	630.1	1978		311	95440.86	81506.01	201.25	331	1978
339K	93080.69	80545.09	203.9	148.3	1978		341K	93847.72	80765.3	203.1	126.5	1978
342K	94855.38	81376.02	201	125	1978		343K	94648.39	81308.17	201.4	156.4	1978
344K	94471.23	81253.77	201.3	143.2	1978		345K	94281.71	81200.19	202.5	144.4	1978
346K	92354.46	80632.19	203	134.5	1978		347K	93897.9	81088.87	204	117.3	1978
349K	91868.57	80820.03	204.4	136.8	1978		350K	92671.35	81050.58	203.2	136.9	1978
351K	93401.06	81256.21	203.4	125	1978		352G	93380.4	82652.27	201.08	10	1978
353K	93342.34	81699.74	204.3	123	1978		355K	93726.03	81817.72	205.7	145	1978
356K	94103.64	81938.14	203.8	139	1978		357K	94302.57	81997.78	203	142	1978
358K	94480.22	82052.82	201.25	135.9	1978		359K	93529.45	82577.4	204.9	134.8	1978
360K	93716.4	82481.18	206	149.1	1978		361K	93849.8	82698.52	206	134.8	1978
301	95568.82	80920.59	201.3	1469.1	1979		302	95766.53	80955.57	201.3	929.6	1979
304	95598.21	81131.5	201.3	1024.64	1979		306	95229.4	81272.59	201.25	504.6	1979
313	95273.57	81685.01	200.65	302	1979		318	95308.17	81848.24	200.7	484.91	1979
319	94908.46	81881.93	198.3	1598.1	1979		321	95297.6	81956.17	197.4	820	1979
320	95193.2	81944.18	197.6	2000	1979		324	95427.6	82058.43	198	355.7	1979
322	95400.97	81957.22	198.5	430	1979		325	94829.41	82126.18	197.4	660	1979
326	95044.11	82127.89	197.1	517.6	1979		331	94394.34	82553.8	202.5	1211.7	1979
332	94661	82618.58	198.43	1394.5	1979		334	95079.89	82926.23	198.52	1374	1979
336	95072.8	83179.15	199.85	929.8	1979		337	95096.95	83281.6	199.95	791.1	1979
338	95674.31	83171.98	201.05	1500	1979		370	95856.3	83267.27	200.9	123.7	1979
324P	95427.63	82057.23	198	355.7	1979		319P	94908.47	81881.9	198.3	1598.09	1979
348K	94592.95	83667.15	204.8	175.5	1979		340K	93701.83	82832.55	203	149	1979
362/4G	95380.6	81870.07	201.08	10	1979		354K	93407.34	81967.4	204.8	134.1	1979
363K	94146.93	82444.75	204.7	138.4	1979		362K	93989.97	82571.1	206	124	1979
365K	94323.64	83996.35	202.35	134	1979		364K	94138.74	83010.4	205.05	144	1979
367K	95817.05	84241.37	202	170.3	1979		366K	95495.86	84477.5	202	134	1979
369K	95334.72	84596.52	201.25	133.3	1979		368K	94229.45	84544.41	201.8	132	1979
370K	95877.57	83258.1	200.9	123.69	1979		371K	96188.6	83006.26	201	125.3	1979
372G	96550.66	82738.36	201.08	10	1979		373K	95617.4	82901.85	202.5	157.8	1979
374K	95940.7	82669.85	201.8	219	1979		375K	95902.68	84644.39	201	142	1979
376K	95736.66	84300.51	201.8	141.8	1979		377K	95975.86	84122.7	202.4	184.3	1979
378K	95656.13	84359.97	201.7	144	1979		379K	94564.45	84316	201.4	127.2	1979

hole_id	Easting	Northing	RL	max depth	year drilled		hole_id	Easting	Northing	RL	max depth	year drilled
380K	95368.15	83098.66	200.62	140.2	1979		382/1G	95381.43	81867.2	201.08	10	1979
382/2G	95274.18	81838.52	201.08	10	1979		382/3G	95271.56	81758.78	201.08	10	1979
382CG	95255.03	81873.47	201.08	10	1979		385/1G	95096.63	84290.16	201.08	10	1979
385/2G	95243.4	84177.93	201.08	10	1979		385/3G	95264.66	84180.81	201.08	10	1979
385/4G	95437.86	84430.06	201.08	10	1979		385CG	95257.22	84175.4	201.08	10	1979
386/1G	95364.77	84194.56	201.08	10	1979		386/2G	95318.8	84188.25	201.08	10	1979
386/3G	95292.94	84184.69	201.08	10	1979		386/4G	95219.17	84186.11	201.08	10	1979
386/5G	95293.31	84182.59	201.08	10	1979		386CG	95243.15	84174.23	201.08	10	1979
327	95244.1	82129.6	197	529	1980		330	94709.6	82822.27	201.36	1600	1980
401	94736.08	83429.46	200.39	279	1980		392	94696.76	82957.1	202.35	1132.9	1980
404	94828.68	83235.43	200.05	511.2	1980		405	94906.05	83176.89	200.05	740	1980
406	95007.77	83100.88	199.4	793.5	1980		417	94430.75	83156.34	203.45	320.3	1980
418	94509.56	83095.96	203.15	443.7	1980		451	95186.06	81684.91	201.29	313	1980
457	95327.28	81290.82	201.37	703.06	1980		403A	94736.68	83309.11	200.3	365.7	1980
335A	95116.53	83020.81	198.48	1153	1980		501K	94230.35	82939.86	204.66	145.69	1980
390	95389.97	83416.97	199.73	762.9	1981		393	95263.1	83402.81	199.92	705.7	1981
398	94938.55	83400.41	199.87	447.69	1981		399	95177.11	83165.51	199.19	1146.3	1981
402	95182.09	83099.9	199	1200	1981		407	95171.15	82978.63	199.8	1330.5	1981
409	94958.32	83016.39	200.13	822	1981		411	95000.78	82982.31	199.75	1100	1981
414	94877.65	82949.28	201.23	1108.88	1981		413	94753.81	83038.16	201.45	880.43	1981
420	94819.8	82863.6	200.6	1281.6	1981		419	94594.03	83036.83	203.1	1172	1981
426	94494.21	82887.97	203.6	790	1981		424	94294.78	83009.81	204.76	277.3	1981
433	94937.12	82127.53	197.5	606.77	1981		432	94738.49	82126.95	197.79	412.4	1981
435	94767.86	82029.83	198.04	398.5	1981		434	94788.35	81951.05	198.41	346	1981
441	94961.11	81898.37	198.13	600	1981		442	95060.92	81930.04	198	594.9	1981
443	95149.05	81940.77	197.92	487	1981		444	95245.36	81945.96	197.9	573.8	1981
445	95365.01	81958.44	198	548.8	1981		446	94855.62	81719.55	201.15	232.1	1981
447	94937.19	81770.05	200.52	304.2	1981		448	95157.77	81805.15	199.51	449.5	1981
449	95254.35	81833.16	200.11	480	1981		450	95356.46	81851.68	201.19	539.3	1981
452	94949.12	81404.43	200.8	481.6	1981		458	95523.43	81328.62	201.44	755.81	1981
470	95372.5	80886.28	201.18	996.5	1981		472	95669.65	80938.75	200.91	869.84	1981
473	95960.89	80993.14	200.7	796.5	1981		474	95556.06	80814.56	201.04	1600	1981
476	95751.33	80852.01	200.59	856.5	1981		478	95950.9	80888.14	200.35	407.8	1981
479	96147.7	80923.76	200.71	683.8	1981		484	94965.67	81822.66	197.84	540	1981
485	95013.43	81837.03	198.48	750	1981		486	95060.95	81851.17	197.23	441	1981

hole_id	Easting	Northing	RL	max depth	year drilled		hole_id	Easting	Northing	RL	max depth	year drilled
487	95109.04	81865.96	197.14	460	1981		488	95156.6	81879.7	197.11	446.1	1981
489	95205.12	81893.97	198.07	500	1981		490	95253.71	81896.95	198.11	496.2	1981
491	95308.31	81896.19	197.86	484	1981		492	95401.65	81910.57	201.18	453.1	1981
493	95351.67	81904.46	198.89	600	1981		551	89601.72	80601.14	206.8	198	1981
552	90400.04	80598.72	205.84	125.5	1981		553	91197.1	80601.03	205	143.2	1981
554	91600.41	80602.03	203.9	163	1981		555	88804.67	80602.24	206.6	193	1981
556	88617.96	79195.23	204.7	178.6	1981		557	89417.28	79193.95	203.4	120	1981
558	90215.6	79196.04	205.4	136.5	1981		559	91014.92	79194.75	205	142.5	1981
560	91418.62	79195.33	204.6	125.3	1981		562	92620.67	79196.62	203.7	145	1981
563	94431.03	79583.06	201.7	143.2	1981		564	95841.37	79177.13	201.05	132	1981
565	96638.72	79187.69	201.2	155.2	1981		566	97439.98	79192.04	200.3	126	1981
567	97036.65	80603.43	199.5	131.2	1981		570	88592.72	78392.89	203.8	231	1981
571	89392.14	78390.75	202.1	220	1981		572	90193.63	78392.93	201.1	134.3	1981
573	90993.05	78390.79	201	137.4	1981		574	91791.9	78399.68	201	131	1981
575	92592.77	78402.44	202.3	134	1981		576	93393.36	78400.01	201.7	143	1981
577	94195.02	78397.17	201.3	163.7	1981		578	94986.53	78392.52	201.4	132.8	1981
579	95792.7	78396.11	201.8	119	1981		580	96595.68	78399.97	200.8	142	1981
581	97388.14	78402.41	200.6	127.2	1981		582	89372.21	77598.11	203.7	162.8	1981
583	90181.9	77600.54	201.9	129	1981		584	90979.11	77597.01	201.1	134.6	1981
585	91782.01	77600.64	201.1	135	1981		586	92577.21	77604.21	202.4	137	1981
587	93375.96	77598.28	201.1	153.5	1981		588	94176.93	77601.25	202.5	128.1	1981
589	94974.62	77596.33	201.8	137.6	1981		590	95774.46	77599.72	201.4	133.5	1981
591	96576.59	77595.31	200.3	147.5	1981		592	97377.42	77598.68	200.35	141.8	1981
593	89374.26	76800.81	203.5	118.8	1981		594	90176.2	76798.12	203.2	136.4	1981
595	90979.44	76799.49	202.5	145	1981		596	91777.22	76799.67	202.7	144	1981
597	92578.01	76797.36	202.2	166.5	1981		598	93375.8	76800.06	201.4	147.8	1981
599	94162.86	76794.14	202.2	132.1	1981		600	94971.98	76795.73	202.5	137.8	1981
603	88007.61	80603.34	203.4	180	1981		604	87819.64	79193.15	206.3	150	1981
605	87791.23	78390.7	205.5	125.5	1981		606	88571.02	76799.44	205.3	122.6	1981
607	88575	77601.64	205	166.3	1981		608	87769.08	76802.12	207.5	118.5	1981
610	87765.3	77599.21	206.1	126.4	1981		440A	94855.16	81862.46	198.86	501.5	1981
411A	95000.78	82982.31	199.75	1308.29	1981		502K	95100.33	82128.98	197.1	264.4	1981
503K	94186.89	82841.45	205.1	154	1981		504K	94030.89	82966.45	206.46	152.3	1981
505K	93992.81	83238.14	205.6	138.2	1981		506K	94073.6	82666.61	205.86	159.5	1981
507K	94153.11	83113.07	205.92	160.5	1981		508K	94337.66	83231.15	203.5	136	1981

hole_id	Easting	Northing	RL	max depth	year drilled		hole_id	Easting	Northing	RL	max depth	year drilled
509K	94469.4	83379.81	202.42	146	1981		510K	94265.48	82778.57	204.6	150	1981
511K	94454.09	83519.07	203.3	130.2	1981		512K	94694.01	83587.78	200.6	177.7	1981
513K	94712.62	83691.62	201.05	131.3	1981		514K	94545.95	83578.24	202.5	133.3	1981
515K	93800	82055.7	201.51	134.4	1981		516K	94322.3	81337.2	202.8	135.5	1981
517K	94646.2	81585.8	200.62	146.4	1981		519K	94924.5	81545.7	200.62	102.9	1981
520K	94636.59	80657.48	201.15	148	1981		521K	95029.66	80731.63	201.1	129	1981
522K	95226.19	80768.7	201.25	104.5	1981		523K	95785.17	81372.34	201.04	112.2	1981
524K	95028.98	80976.66	201.2	116.4	1981		396	95302.51	83249.18	199.51	1007.9	1982
394	94364.92	83084.99	204	642	1982		416	95117.82	82766.44	198.22	1714.8	1982
400	94863.37	83085.83	199.98	740	1982		421	95037.05	82705.42	197.8	1501.3	1982
425	94474.75	82876.02	203.57	498.5	1982		427	94697.78	82706.06	198.5	1497.8	1982
428	94847.08	82594.9	197.7	1399	1982		430	95320.83	82964.03	201.89	1400	1982
431	94638.35	82510.14	197.7	1367.87	1982		436	95016.41	82041.54	197.7	901.2	1982
437	95155.85	82051	197.7	487.1	1982		438	95205.34	82051.35	197.7	486.2	1982
439	95380.57	82053.54	197.7	418.92	1982		453	95274.56	81484.48	201.1	299	1982
459	95314.99	81181.9	201.21	710.91	1982		460	95414.05	81198.07	200.82	710.27	1982
461	95517.4	81219.63	201.24	703.6	1982		462	95611.86	81235.19	201.36	500.7	1982
463	95706.31	81252.77	201.28	558.4	1982		480	95144.1	82128.22	197	567.5	1982
481	95344.1	82130.45	197.5	665	1982		482	94444	82653.57	202.85	890.5	1982
483	95795.15	81167.94	201.12	840	1982		494	94917.65	81808.47	198.66	450	1982
495	94743.3	81825.3	198.79	359	1982		496	95450.3	81960.27	200.8	791.86	1982
497	95311.07	81077.62	201.28	1018.1	1982		498	95472.22	80901.89	201.21	900.56	1982
499	95864.82	80978.32	201.08	753.5	1982		561	91809.72	79194.87	203.1	164	1982
568	97837.77	80605.6	199.9	131	1982		601	95771.95	76798.53	201.4	159.5	1982
602	96571.03	76794.04	200.7	152	1982		615	89256.58	74761.96	205.7	110.9	1982
616	90059.45	74765.77	205.8	131.5	1982		617	90859.85	74761.89	205.8	140	1982
618	91659.86	74761.87	204	120.5	1982		619	92457.5	74760.91	203.2	140	1982
620	93257.19	74762.41	203.9	128.5	1982		622	89424.92	73960.51	203.8	126.1	1982
623	90214.96	73961.59	203.9	164	1982		624	91306.8	73967.14	203.8	146	1982
625	92116.29	73968.29	205.1	132.5	1982		626	92911.84	73971.32	204.6	153.6	1982
627	93724.2	73970.4	201.3	147	1982		628	89506.76	73161.37	203	110	1982
629	90309.29	73161.12	203.8	142.1	1982		630	91109.09	73155.57	202.9	126.5	1982
631	91908.77	73158.09	202.8	127.9	1982		632	92707.41	73161.82	201.7	128.1	1982
633	93508.5	73157.16	201.4	128.7	1982		638	90291.47	72349.88	201.2	120.2	1982
639	91090.61	72351.8	201	120	1982		640	91891.12	72350.9	201.1	138.1	1982

hole_id	Easting	Northing	RL	max depth	year drilled		hole_id	Easting	Northing	RL	max depth	year drilled
642	92288.91	72352.73	202.3	141.6	1982		643	92702.85	72347.4	202.5	123.3	1982
644	93498.34	72351.06	201.6	122.3	1982		653	91071.87	70761.13	199.4	111.5	1982
701	94171.64	80437.03	201.2	1300.1	1982		1001	88458.14	74357.71	205.8	1023.8	1982
1002	88724.27	73313	205.3	906.5	1982		1003	87967.42	73139.49	204.9	665.8	1982
416A	95117.82	82766.44	198.22	1587.5	1982		518K	94869.57	81793.48	198.79	192.8	1982
525K	94168.84	82724.51	204.95	221.3	1982		305	95234.36	80966.28	201.8	1227.3	1983
464	95132.84	80947.24	201	1423	1983		465	96248.79	80975.59	201.6	1189.2	1983
466	96936.9	82154.85	199.7	1181.5	1983		467	97063.37	84939.58	199.5	608.3	1983
468	97351.37	84379.28	199.8	1057.5	1983		636	87103.95	72272.27	206.36	122	1983
646	85973.56	70758.31	205	108	1983		647	86372.86	70761.56	204.4	123	1983
648	85533.06	70757.57	205.1	132.3	1983		649	87880.35	70762.27	201.8	126	1983
650	88498.76	70006.27	200.2	145	1983		651	89474.02	70762.11	200	132.5	1983
652	90273.67	70760.62	198.8	130	1983		654	92804.87	70251.88	165.9	168.1	1983
655	92939.3	70316.77	196.5	161.7	1983		656	93119.99	70408.27	197.3	142.8	1983
657	92282.77	71822.41	201	133	1983		658	92467.23	71900.55	201.8	132	1983
659	92191.57	72117.63	202.6	143	1983		660	92373.35	72199.83	202.7	145.3	1983
661	96945.01	85126.21	200.2	206	1983		662	96855.48	85271.28	200.6	154	1983
663	96781.29	85425.28	200.9	163	1983		702	93270.34	78163.31	202.1	1122	1983
703	94067.52	78162.36	201.5	1134	1983		705	93621.74	77332.27	201.6	1101.9	1983
706	93720.71	79519.31	203.3	1108.4	1983		1006	93191.4	71343.28	199.5	992.6	1983
1008	92365.05	72722.15	202.2	1046.7	1983		611	86057.87	75077.81	203	122	1984
469	97160.56	84766.18	199.7	1138	1984		613	85615.84	74607.14	211.7	123	1984
612	86861.43	75077.3	203	131.3	1984		621	85836.15	73955.86	205	128.6	1984
614	88449.88	75078.28	207.3	137	1984		635	86044.05	72608.4	207.2	104	1984
634	85655.45	72722.33	208.6	124.2	1984		641	89482.68	70458.95	117.5	117.5	1984
637	88455.67	70347.33	201.1	135.4	1984		665	91649.02	70907.95	199.4	140	1984
645	90273.53	71207.92	199.8	178	1984		667	92231.42	71062.64	198.3	162	1984
666	91072.47	70356.9	199.4	122	1984		680	93750.51	82342.36	206.8	137.5	1984
679	93548.86	82337.16	205.3	139	1984		682	94488.09	82336.75	200.1	142.8	1984
681	93950.02	82337.07	206.2	137.4	1984		684	94880.62	82382.75	197.7	134	1984
683	94786.39	82340.46	197.8	136.6	1984		686	95085.52	82336.24	197.6	133.5	1984
685	94984.84	82335.99	197.7	127.8	1984		691	97546.84	82334.49	199.7	139.2	1984
687	95085.52	82336.24	198.8	153.6	1984		693	98340.55	82462.13	199.5	135.9	1984
692	97948.79	82331.82	199.6	149.7	1984		695	99134.25	82589.77	201.1	124	1984
694	98737.4	82525.95	200.9	140	1984		707	94591.07	83288.88	201.4	285.6	1984

hole_id	Easting	Northing	RL	max depth	year drilled		hole_id	Easting	Northing	RL	max depth	year drilled
704	94869.42	78164.19	201.3	1293.7	1984		1004	93539.53	70196.2	196.7	1103.3	1984