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Mineral Resource

Lac Doré Project, Chibougamau, Québec, Canada

NI 43-101 TECHNICAL REPORT

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Report prepared for

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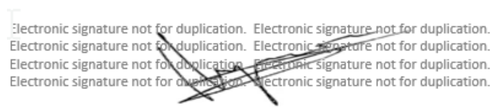
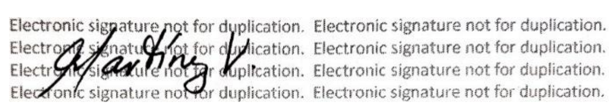
Coordinating Author	Luke Longridge PhD, P.Geo (BC), OGQ Temporary Permit No. 2199	
Contributing Author	Adrian Martinez PhD, P.Geo (ON, BC), OGQ Special Authorization	
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Certificates of Qualification

Certificate of Qualification – Dr Luke Longridge, Ph.D., P.Geo

I, Luke Longridge, Ph.D., P.Geo (BC), do hereby certify that:

- I am employed as a Senior Structural Geologist with the firm of CSA Global Consultants Canada Limited located at 1111 W Hastings Street, 15th Floor, Vancouver, BC, V6E 2J3.
- I was admitted to the Degree of Bachelor of Science with Honours (Geology), from the University of the Witwatersrand, Johannesburg, South Africa in 2007. I was admitted to the Degree of PhD (Geology) from the University of the Witwatersrand in 2012.
- I am a Professional Geoscientist (P.Geo.) registered with the Association of Professional Engineers and Geoscientists of British Columbia (APEBC, Licence No. 49259), and with a Temporary Geologist Permit from the Ordre des Géologues du Québec (OGQ, Permit No. 2199).
- I have worked as a geologist since my graduation 13 years ago, and I have over eight years' experience with vanadiferous titanomagnetite mineral projects in South Africa and Canada.
- I have read the definition of "Qualified Person" set out in National Instrument 43-101 ("NI 43-101") and certify that because of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for the purposes of NI 43-101.
- I have visited the Lac Doré Project on 10–13 September 2019.
- I am a co-author of the technical report titled: "NI 43-101 Technical Report on the Lac Doré Project, Québec, Canada" for VanadiumCorp Resource Inc., with an effective date of 29 October 2020, and signed and dated 10 December 2020 (the "Technical Report"). I am responsible for Sections 1 to 13 inclusive, and Sections 15 to 27 inclusive.
- As of the Effective Date of the Technical Report (29 October 2020), to the best of my knowledge, information, and belief, the technical report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.
- I am independent of the Issuer applying all the tests in section 1.5 of NI 43-101.
- I have read NI 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.
- I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

DATED this 10th day of December 2020 at Vancouver, Canada
["SIGNED AND SEALED"]

____
Luke Longridge, Ph.D., P.Geo

Certificate of Qualification – Dr Adrian Martinez Vargas, Ph.D., P.Geo.

I, Adrian Martinez Vargas, PhD., P.Geo. (ON, BC), do hereby certify that:

- I am employed as a Senior Resource Geologist with the firm of CSA Global Consultants Canada Limited located at 15 Toronto Street, Suite 401, Toronto, Ontario, Canada M5C 2E3.
- I graduated with a degree in Bachelor of Science, Geology, from the Instituto Superior Minero Metalurgico de Moa (ISMM), 2000. I have a Postgraduate Specialization in Geostatistics (CFSG) MINES ParisTech, 2005, and a PhD on Geological Sciences, Geology, from the ISMM in 2006.
- I am a Professional Geoscientist (P.Geo.) registered with the Association of Professional Geoscientists of Ontario (APGO, No. 2934) and the Association of Professional Engineers and Geoscientists of British Columbia (APEBC, No. 43008), and I have a Special Authorization from the Ordre des Géologues du Québec (OGQ) to practice in Québec.
- I have worked as a geologist since my graduation 19 years ago, I have experience with precious and base metals mineral projects in Cuba and Canada, including Mineral Resource estimation.
- I have read the definition of "Qualified Person" set out in National Instrument 43-101 ("NI 43-101") and certify that because of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
- I have not visited the Lac Doré Project.
- I am a co-author of the technical report titled: "NI 43-101 Technical Report on the Lac Doré Project, Québec, Canada" for VanadiumCorp Resource Inc., with an effective date of 29 October 2020, and signed and dated 10 December 2020 (the "Technical Report"). I am responsible for Section 14.
- I have had no prior involvement with the Property that is the subject of the Technical Report.
- As of the Effective Date of the Technical Report (29 October 2020), to the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.
- I am independent of the Issuer applying all the tests in section 1.5 of NI 43-101.
- I have read NI 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.
- I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

DATED this 10th day of December 2020 at Toronto, Canada
["SIGNED AND SEALED"]

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Adrian Martinez Vargas, PhD., P. Geo

Contents

Figures

Tables

Glossary and Abbreviations

Below are brief descriptions of some terms used in this report. For further information or for terms that are not described here, please refer to internet sources such as Wikipedia.

Glossary

azimuth	Drillhole azimuth deviation (from north).
clipping window	In case of display of 3D data at the plane, plus-minus the distance, within which the data is projected perpendicular to the image plane.
collar	Geographical coordinates of the collar of a drillhole or a working portal.
compositing	In sampling and resource estimation, process designed to carry all samples to certain equal length.
core sampling	In exploration, a sampling method of obtaining ore or rock samples from a drillhole core for further assay.
CSV	Digital computer file containing comma-separated text data.
cut off grade	The threshold value in exploration and geological resources estimation above which ore material is selectively processed or estimated.
de-clustering	In geostatistics, a procedure allowing bounded grouping of samples within the octant sectors of a search ellipse.
dip	Angle of drilling of a drillhole.
flagging	Coding of cells of the digital model.
FROM	Beginning of intersection.
geometric mean	The antilog of the mean value of the logarithms of individual values. For a logarithmic distribution, the geometric mean is equal to the median.
Geotic	Core logging and data management software for the exploration and mining industry.
histogram	Diagrammatic representation of data distribution by calculating frequency of occurrence.
ID2	Inverse distance weighting to the power of 2, a method of interpolating grade using variogram parameters associated with the samples' spatial distribution.
kriging	Method of interpolating grade using variogram parameters associated with the samples' spatial distribution. Kriging estimates grades in untested areas (blocks) such that the variogram parameters are used for optimum weighting of known grades. Kriging weights known grades such that variation of the estimation is minimised, and the standard deviation is equal to zero (based on the model).
lag	The chosen spacing for constructing a variogram.
Leapfrog	Software product for exploration and the mining industry.
Lidar	Light Detection and Ranging, a remote sensing method that uses light in the form of a pulsed laser to measure distances.
lognormal	Relates to the distribution of a variable value, where the logarithm of this variable is a normal distribution.
mean	Arithmetic mean.
median	Sample occupying the middle position in a database.
Nearest Neighbour	An interpolation method that selects the value of the nearest point and does not consider the values of neighboring points.

omni	In all directions.
percentile	In statistics, one one-hundredth of the data. It is generally used to break a database down into equal hundredths.
population	In geostatistics, a population formed from grades having identical or similar geostatistical characteristics. Ideally, one given population is characterized by a linear distribution.
probability curve	Diagram showing cumulative frequency as a function of interval size on a logarithmic scale.
pycnometry	A technique of measuring density of a sample using the volume displacement of gas and the mass of the sample.
quantile plot	Diagrammatic representation of the distribution of two variables; it is one of the control tools (e.g. when comparing grades of a model with sampling data).
quantile	In statistics, a discrete value of a variable for the purposes of comparing two populations after they have been sorted in ascending order.
range	Same as Influence Zone; as the spacing between pairs increases, the value of corresponding variogram as a whole also increases. However, the value of the mean square difference between pairs of values does not change from the defined spacing value, and the variogram reaches its plateau. The horizontal spacing at which a variogram reaches its plateau is called the range. Above this spacing there is no correlation between samples.
RL	Elevation of the collar of a drillhole, a trench or a pit bench above the sea level.
scatterplot	Diagrammatic representation of measurement pairs about an orthogonal axis.
SimShed	Software used to estimate pit shells.
sill	Variation value at which a variogram reaches a plateau.
SOQUEM Inc.	A Québec-based mineral exploration and project development company.
standard deviation	Statistical value of data dispersion around the mean value.
TO	End of intersection.
variation	In statistics, the measure of dispersion around the mean value of a dataset.
variogram	Graph showing variability of an element by increasing spacing between samples
variography	The process of constructing a variogram.
wireframe model	3D surface defined by triangles.
X	Coordinate of the longitude of a drillhole, a trench collar, or a pit bench.
Y	coordinate of the latitude of a drillhole, a trench collar, or a pit bench.

Abbreviations

%	percent
°	degrees
°C	degrees Celsius
µm	micrometre(s)
3D	three-dimensional
Al_2O_3	aluminium oxide
AMIS	African Mineral Standards
amsl	above mean sea level
C$	Canadian dollars
CaO	calcium oxide
CFILNQ	Chemin de fer d'intérêt local interne du Nord du Québec
CIM	Canadian Institute of Mining, Metallurgy and Petroleum
cm	centimetre(s)
Cr_2O_3	chromium(III) oxide
CRM	certified reference material
CSA Global	CSA Global Consultants Canada Limited
CV	coefficient of variation
d	diameter
Fe	iron
Fe_2O_3	iron(III) oxide (or ferric oxide)
g	gram(s)
G&A	general and administration
g/cm^3	grams per cubic centimetre
GPS	global positioning system
ha	hectare(s)
ICP-AES	Inductively coupled plasma-atomic emission spectroscopy
ICP-OES	Inductively coupled plasma-optical emission spectrometry
ID2	inverse of the squared distance
Issuer	VanadiumCorp Resource Inc.
Jalore	Jalore Mining Ltd
K_2O	potassium oxide
kg	kilogram(s)
km	kilometre(s)
kt	kilo-tonnes (or thousand tonnes)
kV	kilovolt
lb	pound(s)
LDC	Lac Doré Complex
LOI	loss on ignition
m	metre(s)

M	million(s) or mega (10^6)
McKenzie Bay	McKenzie Bay Resources Ltd
MERN	Ministére des Richesses Naturelles (Department of Natural Resources)
MgO	magnesium oxide
Mlb	million pounds
mm	millimetre(s)
MnO	manganese oxide
MRE	Mineral Resource estimate
Mt	million tonnes
Na_2O	sodium oxide
NI 43-101	National Instrument 43-101 Standards for Disclosure for Mineral Projects
NN	nearest neighbour
NTS	National Topographic System
OK	ordinary kriging
P_2O_5	phosphorous pentoxide
QAQC	quality assurance and quality control
SG	specific gravity
SGS	SGS Laboratories
SiO_2	silicon dioxide (or silica)
SOQUEM	SOQUEM Inc.
t	tonne(s)
t/m^3	tonnes per cubic metre
Ti	titanium
TiO_2	titanium dioxide
US$	United States dollars
V	vanadium
V_2O_5	vanadium pentoxide
VTM	vanadiferous titanomagnetite
WRA	whole rock analysis
XRF	x-ray fluorescence
y	year

1 Summary

1.1 Issuer and Terms of Reference

VanadiumCorp Resource Inc. ("VanadiumCorp" or the "Issuer") is a mineral exploration company located in Vancouver, Canada, with 100% ownership in the Lac Doré Vanadium, Iron and Titanium Project ("Lac Doré Project" or "the Project" or "the Property"), located 27 km east-southeast from the city of Chibougamau in Québec, Canada. VanadiumCorp is listed on the Toronto Venture Exchange (stock ticker VRB) and on the Frankfurt Stock Exchange (stock ticker NWN).

VanadiumCorp commissioned CSA Global Consultants Canada Limited (CSA Global) to complete a Mineral Resource estimate (MRE) and prepare a Technical Report on the Lac Doré Project. This Technical Report is based on internal company technical reports, testwork results, maps, published government reports and public information.

1.2 Location

The Lac Doré Property is located approximately 27 km east-southeast from the city of Chibougamau, in Eeyou Istchee James Bay Territory, Nord-du-Québec administrative region, Province of Québec, Canada (Figure 1). The Property comprises two discontinuous groups of claims that straddle the border between National Topographic System (NTS) map sheets 32G-16 and 32H-13, Lac Doré Main to the south, and Lac Doré North to the north. The centre of the Property lies at approximately Latitude 49°50'N, Longitude 74°0'W.

1.3 History

The Lac Doré magnetite deposit was discovered in 1948 through an aeromagnetic survey and has since been the subject of exploration by several companies with work carried out including mapping, channel sampling, drilling, metallurgical testwork, resource estimates, and feasibility studies. A large amount of historical data is available, but historical data considered relevant are:

- The results of an extensive drilling program carried out by SOQUEM Inc. (SOQUEM), beginning in 1979.
- A 1997 stripping and sampling program by McKenzie Bay Resources Ltd (McKenzie Bay), including sampling and assaying of 1734 diamond-cut samples along a series of northwest-southeast lines.
- Seven drillholes completed by McKenzie Bay on the ground held by VanadiumCorp (i.e. within the current project).
- Four drillholes completed by VanadiumCorp (recorded as PacificOre Mining in the assessment filing registry) in 2013. Although completed by VanadiumCorp, they are considered historical as they were not drilled as part of the most recent program.

1.4 Geology and Mineralization

The project area is located at the northeast end of the Abitibi greenstone belt which is host to several Archaean mafic intrusions, including the Lac Doré Complex (LDC) near Chibougamau, which has been emplaced into volcano-sedimentary host rocks and has in turn been intruded by the felsic Chibougamau Pluton.

The LDC is a layered mafic complex and is comparable to other better-known complexes such as the Bushveld Complex in South Africa, and the project area (located in the Layered Zone of the LDC) is underlain by anorthosite, gabbro, magnetitite, and pyroxenite in varying proportions.

Magnetite deposits in layered complexes such as at Lac Doré are formed through primary magmatic processes, and the magnetite-bearing units (as well as the intervening mafic rocks that may contain little amounts of magnetite) are generally continuous along strike. This is the case at Lac Doré, where magmatic layering has formed several zones of magnetite-rich or magnetite-poor lithologies. Based on detailed correlation of lithological units logged during the 2019–2020 exploration campaign, a magmatic stratigraphy comprising nine units has been defined (P0, P1, P2-LOW, P2-A, P2-PART, P2-B, P2-HW P3, P3-HW).

Mineralization is in the form of vanadiferous-titaniferous magnetite (VTM), which forms a significant proportion of the lithologies and in some cases may make up close to 100% of the lithological unit. Each of the mineralized zones varies in thickness across the ~3 km of strike, as outlined, but the overall the entire mineralized zone varies between 200 m and 300 m in thickness. The lithologies and overall magmatic stratigraphy, dip at approximately 50–60° to the southeast and have been drill tested to depths of at least 220 m below the surface.

The concentration of vanadium and titanium within the magnetite varies with stratigraphic height. The magnetite from stratigraphically lower units (P1, P2-LOW) are more enriched in vanadium, and have relatively low titanium levels, whereas stratigraphically higher levels (P3) have lower vanadium and higher titanium in magnetite. Titanium and vanadium levels in magnetite remain relatively constant within units and along strike.

1.5 Exploration

Other than drilling, VanadiumCorp carried out several ground magnetic surveys between 2009 and 2013, as well as an airborne light detection and ranging (LiDAR) survey in 2020. Several historical trenches were partially resampled for verification purposes in 2019, using channel sampling.

1.6 Drilling

Drilling at the Lac Doré Project was carried out in September and October 2019 by Miikan Drilling Ltd of Chibougamau. NQ diameter diamond drill core was delivered to VanadiumCorp's core facility in Chibougamau at the end of each shift. The drilling program and drilling contractors were managed by InnovExplo Consultants, who also provided consulting geologists who carried out the logging, sampling and database management at the project. Collars were surveyed by an independent surveyor. Downhole azimuth and dip measurements were taken every run using a Reflex gyro-based instrument.

Core was split using a diamond saw and sampled predominantly 1.5 m intervals. Samples were shipped to SGS Canada Inc.'s facilities in Val d'Or and Québec City, Québec for preparation, and were analysed using x-ray fluorescence (XRF) spectroscopy at SGS Canada Inc.'s Lakefield facility for Whole Rock Analysis. The suite of elements analysed includes SiO_2, Al_2O_3, Fe_2O_3, MgO, CaO, Na_2O, K_2O, TiO_2, P_2O_5, MnO, Cr_2O_3, V_2O_5, and loss on ignition (LOI).

1.7 QAQC

QAQC samples comprising 5% each of standards and blanks were included with each shipment. The certified reference materials (CRMs) used by VanadiumCorp were AMIS0567, AMIS0501, and AMIS0347. Blanks include both certified blank materials and silica sand. Results for CRMs and banks indicate no bias or contamination in the samples. Internal laboratory duplicate analyses show an excellent correlation between original and repeat analyses, indicating no nugget effect.

The Qualified Person is of the opinion that the data from the Lac Doré Project (with particular reference to 2019 drilling) is acceptable for Mineral Resource estimation. Analytical results are considered to pose minimal risk to the overall confidence level of the MRE.

1.8 Data Verification

Verification of historical data included resampling the 1997 trenches/channels originally sampled by McKenzie Bay (202 channel samples selected from 13 trenches), complete resampling of 2013 drill core (210 quarter-core samples), and twinning of several historical holes. Comparison of historical data with current data verifies and validates the use of the historical data.

A four-day visit to the Lac Doré Project was made by Dr Luke Longridge on 10–13 September 2019. During this visit, Dr Longridge inspected the project site, verified recent and historical drill collar locations, trench lines and channel samples, and reviewed logging, sampling and data capture procedures.

1.9 Metallurgical Testwork

Metallurgical testwork was limited to magnetic separation carried out using Davis Tube tests at SGS Canada Inc.'s facilities in Val-d'Or, Québec, to create magnetite concentrates which were then assayed to evaluate the iron, vanadium and titanium grades of the *c*oncentrates Samples were composited from pulp rejects previously prepared for assay. Samples were selected from all stratigraphic zones identified within the deposit

Magnetite content correlates with the iron content of the head grade, whereas vanadium contents vary by stratigraphic zone, with lower stratigraphic zones (P0, P1, P2-LOW) having elevated V_2O_5 values in the concentrate (~1.4% to 1.6% V_2O_5), with the stratigraphically highest zone (P3 having grades of ~0.8% to 1.0% V_2O_5). Iron grade of the concentrates varies but on average remains constant at ~62%. Titanium grades of the concentrates show a linear inverse correlation with the vanadium grade of the concentrate.

1.10 Mineral Resource Estimate

Mineral Resources were estimated within a tabular body of approximately 3,000 m x 250 m x 260 m, dipping at ~60° southeast, where diamond drillhole and surface channel samples were collected. Samples from both historical and current drillholes and surface channels were used for interpolation. A database consisting of collar, survey, assay and density information was provided. Data used was from 41 current drillholes completed in 2013 and 2019, with a total of 10,200 m, 44 historical drillholes from the SOQUEM and McKenzie Bay (1979 and 2001, respectively) campaigns, totalling 6,800 m, 33 historical surface trenches (completed by McKenzie Bay in 1997), totalling 7,400 m and 14 current trenches (resampling of historical trenches) totalling 4,000 m.

Topography was from a 2020 LiDAR survey completed by (PHB) surveyors.

The informing drillhole and channel data were validated before proceeding with the MRE, and the author did not identify any significant issues in the database.

Density measurements for all assayed samples from the 2019–2020 program were measured using gas pycnometry at SGS laboratories. For samples from previous campaigns, density has been calculated using the results of a regression through the specific gravity (SG) and Fe_2O_3 + TiO_2 data.

The geological interpretation was completed by Dr Longridge. Nine stratigraphic "units" were modelled, of which seven were considered mineralized. The geological interpretation does not completely separate high-grade samples from low-grade or barren intervals, owing to small-scale layering within each stratigraphic unit. This mixture of statistical populations produces high variability within domains and bimodality of histograms. The mixture of statistical populations was resolved by splitting each geological domain into two subdomains with high and low magnetite contents. These subdomains were defined using an indicator variable (mag) that takes the value "1" if the Fe_2O_3 is above 36.34 % or "0" otherwise.

Statistical analysis, interpolation, and validation was completed using 14 interpolation domains defined as either low or high magnetite content subdomains (mag == 0, and mag == 1, respectively) for each of the seven mineralized geological domains (CMPDOM 200 to 800).

Samples were flagged with its corresponding geology domain. A sample length of 1.5 m was selected for compositing the assay head grades and density.

Statistical and exploratory data analyses were completed for all the variables from each domain and subdomain, to describe the proportion of high and low-grade magnetite subdomains, statistical distributions of the variables, correlations, requirement for de-clustering, and to analyse univariate statistics such as mean and coefficient of variation (CV). Experimental variograms were calculated for all the variables interpolated, including density and the indicator variable mag. The maximum direction of continuity is horizontal and coincides with the geological domains. Experimental variograms were calculated along the orthogonal direction with dip→azimuth equal to 0→55, 55→325, and 35→145 for all the variables. No special transformation (logarithm or normal-score) was applied. It was found that experimental variograms are very similar in all interpolation domains and the same variogram model was used to interpolate all the variables. The model used for interpolation was fit with a nugget 0.25, and two exponential structures with sill 0.39, and 0.36, and ranges 14 m, 14 m, and 5 m, and 100 m, 100 m, and 14 m in the directions 0→55, 55→325, and 35→145, respectively.

Mineral Resources were interpolated in a block model with 10 m x 10 m x 10 m blocks, with the origin of coordinates at the point 570180 East, 5518710 North, and 200 Elevation, and 293, 220, 35 rows, columns and levels of blocks. The proportion below the topography surface was also calculated and assigned to each block. The overburden is minor and was considered immaterial.

Capped head grades and density values in drillhole composites were interpolated by domain and subdomains. The indicator variable representing the high-magnetite or low-magnetite subdomains was also interpolated by geology domain. The interpolation was with ordinary kriging (OK) in block support with 3 x 3 x 3 discretization points per block. Sample selection used to interpolate in each block was using up to six 1.5 m composites (9 m in total) from the three drillholes nearest to the block. However, the interpolation may be completed with two drillholes if an insufficient number of samples is found. The interpolation can also be completed with more than three drill holes if the total number of samples found on a single drillhole is less than six. This kriging plan was achieved by restricting the sample selection to six samples maximum per drillhole, using a minimum and a maximum number of samples equal to eight and 18, and a relatively flat search ellipsoid with a circular section with radius 220 m, and minor ellipse axis with a radius of 30 m. The search ellipse was in the direction of maximum continuity parallel to the strike of the geological domains. This large search ellipse size was intended to estimate using only one search pass, to reproduce the continuous mineralized layers as observed in drilling. Blocks interpolated with widely spaced data were assigned with a lower confidence in the resource classification.

Interpolation parameters were tested in random blocks. Head grades and density interpolated on the low-magnetite and high-magnetite subdomains were combined into a single value per block by summing their predicted grade in the two subdomains, multiplied by the proportion of the subdomains in the block.

Concentrate values (% magnetite and Fe_2O_3, V_2O_5 and TiO_2 of the concentrate) were not interpolated but were estimated from interpolated head grade values using regression formulae derived from the results of metallurgical testwork.

Block model validations were completed for all the variables interpolated in domains and subdomains. Validations consisted of visual validations along sections, comparison of average grade in composites and block model, swath plots, global change of support and validation of the preservation of correlations between variables.

It is assumed that vanadium will be extracted from the deposit via the conventional roast-leach process and cut-off grades and constraining pit shells were derived using by applying costs for mining, magnetite production, roasting and leaching, general and administration (G&A) and tailings disposal, applying recovery factors for magnetite production and the salt-roast process, and using a vanadium pentoxide reference price of US$7/lb, with no value attributed to TiO_2 or Fe_2O_3. These assumptions were used to create a "net value", and Mineral Resources were then reported using a net value cut-off of zero US$/t for in-situ material. Mineral Resources were constrained to an open pit optimized using SimShed with a constant slope of 45°. Blocks were also labelled with claims or concessions and all the blocks outside the VanadiumCorp property were excluded from this MRE.

Mineral Resources were classified using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) 2014 definition of Measured, Indicated, and Inferred Mineral Resources. Various aspects were taken into consideration for classification. Mineral Resources informed with close spacing drilling and channel samples with a distance between drillholes around 45 m or less were classified as Measured. Mineral Resources informed with drillholes and channel samples spaced between 50 m and 100 m apart were classified as Indicated. Blocks informed with drillhole data with spacing over 100 m or only with channel samples and a limited amount of drilling were classified as Inferred Mineral Resources. This classification was implemented by digitizing three-dimensional (3D) wireframes around areas based on the drillhole spacing and using the interpolations' kriging variances to guide the manual digitization.

Mineral Resources reported at a zero net value cut-off are shown in Table 1.

*Table 1: MRE at Lac Doré with an effective date of 27 October 2020 (*recovery not applied to V_2O_5 in concentrate)*

	Classification	Mt	V_2O_5 (%)	Fe (%)	TiO_2 (%)	Magnetite (%)	V_2O_5 (kt)	Fe (Mt)	TiO_2 (Mt)	V_2O_5 (Mlb)
Head Grade (in situ)	Measured	23.98	0.5	33.7	9.9	34.5	128	8.1	2.4	280
	Indicated	190.96	0.4	26.3	6.7	23.4	837	50.2	12.8	1,850
	Measured + Indicated	**214.93**	**0.4**	**27.1**	**7.1**	**24.6**	**965**	**58.3**	**15.2**	**2,120**
	Inferred	86.91	0.4	28.0	7.6	25.9	387	24.4	6.6	850
	Classification	**Magnetite concentrate (Mt)**	**V_2O_5 in concentrate (%)**	**Fe in concentrate (%)**	**TiO_2 in concentrate (%)**		**V_2O_5 in concentrate (kt)**	**Fe in concentrate (Mt)**	**TiO_2 in concentrate (Mt)**	**V_2O_5 in concentrate * (Mlb)**
Magnetite Concentrate	Measured	8.27	1.2	62.0	9.4		100	5.1	0.8	220
	Indicated	44.70	1.3	62.0	8.5		578	27.7	3.8	1,270
	Measured + Indicated	**52.82**	**1.3**	**62.0**	**8.7**		**678**	**32.8**	**4.6**	**1,490**
	Inferred	22.52	1.2	62.0	9.2		277	14.0	2.1	610

Notes:

- *Mineral Resources are estimated and reported in accordance with the CIM Definition Standards for Mineral Resources and Mineral Reserves adopted 10 May 2014.*
- *Sum of individual amounts may not equal due to rounding.*
- *Geological and block models used data from 41 drillholes drilled by VanadiumCorp in 2013 and 2019, in addition to 44 drillholes and 33 surface channel samples completed previously and verified through twinning or resampling in 2019–2020.*
- *The drill database was validated prior to estimation, and drillholes were flagged with interpolation domains (P1, P2-LOW, P2-A, P2-PART, P2-B, P2-HW, P3), composited to 1.5 m intervals, and capped for anomalously high and low-grade values. Quality assurance and quality control (QAQC) checks included insertion of blanks, certified reference materials pulp duplicates and umpire assays performed at a second laboratory.*
- *Head grades and densities were interpolated onto 10 m x 10 m x 10 m blocks using OK, owing to intercalations of high and low magnetite within broadly mineralized intervals, a high-grade or low-grade indicator was used, and separate interpolations carried out for high-grade or low-grade samples, with the proportion of high-grade mineralization within each block also interpolated using OK.*
- *All the estimates were validated visually using sections and 3D visualization, and using swath plots, comparison of averages in drill hole and blocks, and global change of support.*
- *Magnetite contents and concentrate grades were calculated using regression formulae deduced from Davis Tube results.*
- *Resource classification was done using wireframes digitized using kriging variance as a reference and correspond to Measured Resources having drillholes spacing <40 m, Indicated Resources having drillhole spacing between 40 m and 100 m, and Inferred Resources having a drillhole spacing >100 m.*
- *Mineral Resources are reported using a "net value" cut-off, calculated assuming an open-pit mining operation and extraction of saleable vanadium pentoxide flake from the magnetite concentrate via the salt-roast process. The calculation assumes a V_2O_5 price of US$7/lb, 85% recovery of magnetite to the concentrate, 75% recovery of vanadium in the roast/leach extraction process, and costs of US$3/t ROM (mining), US$15/t concentrate (magnetite concentrate production), US$55/t concentrate (roast/leach), US$2/t ROM (G&A) and US$1.5/t ROM (tailings disposal). A net-value equal to zero was used for reporting.*
- *Mineral Resources are constrained by a pit shell optimized with the software SimSched using the above parameters and including a cost of US$3/t for waste rock extraction and assuming maximum pit slope angles of 45°.*
- *Adrian Martinez, P.Geo (ON), OGQ Special Authorization, CSA Global Senior Resource Geologist, is the independent Qualified Person with respect to the MRE.*
- *Recoveries of V_2O_5, Fe_2O_3 and TiO_2 to the magnetite concentrate are variable.*
- *Mineral Resources are constrained by claim boundaries.*
- *VanadiumCorp is not aware of any environmental, permitting, legal, title, taxation, socio-economic, marketing, or political factors that might materially affect these MREs.*
- *These Mineral Resources are not Mineral Reserves as they do not have demonstrated economic viability. The quantity and grade of reported Inferred Resources in this MRE are uncertain in nature and there has been insufficient exploration to define these Inferred Resources as Indicated or Measured; however, it is reasonably expected that majority of the Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued explorations.*

1.11 Conclusions and Recommendations

VTM mineralization at the Lac Doré Project shows similarities to other magmatic VTM deposits associated with layered mafic intrusive complexes. In particular, the concentration of magnetite into several laterally continuous, tabular, stratiform zones, and the change in the ration of vanadium and titanium in the magnetite through the stratigraphy (from high-V_2O_5, low-TiO_2 layers in the lower layers to low-V_2O_5, high-TiO_2 in the upper layers) in typical of these deposit types.

During 2019 and 2020, VanadiumCorp has carried out drilling of 37 new diamond drillholes, as well as resampling of old drill core and surface channel samples. Mineral Resources have been estimated, using verified historical drilling and channel sampling information in combination with recent drilling and channel sampling results.

Mineral Resources have been reported (effective 27 October 2020) for the Lac Doré Project at a net value cut-off of zero (calculated assuming an open-pit mining operation and extraction of saleable vanadium pentoxide flake from the magnetite concentrate via the salt-roast process). Total Measured and Indicated Mineral Resources of 214.93 Mt at 0.4% V_2O_5, 27.1% Fe, 7.1% TiO_2 and 24.6% magnetite, and total Inferred Mineral Resources of 86.91 Mt at 0.4% V_2O_5, 28% Fe, 7.6% TiO_2 and 25.9% magnetite, have been estimated, as detailed in Table 1 and Table 17.

The following risks and uncertainties may affect the reliability or confidence in the exploration information and MRE:

- Not all historical drillhole collars have been re-surveyed by an independent surveyor, and downhole deviation data available for historical drillholes is limited to dip tests; however, those that have been located compare favourably with recorded locations
- Any quality assurance and quality control (QAQC) procedures associated with historical assay data have not been documented; however, comparison of the results of historical assays with recent values shows that they compare favourably
- Environmental considerations that may affect the Project and their influence on the potential economic viability of the Project have not been assessed
- Metallurgical and recovery parameters have not been fully assessed – the data presented on recoveries is estimated from Davis Tube recovery tests
- Permits and authorizations for advancement of the Project are not guaranteed.

The following opportunities have been identified with respect to further exploration:

- Infill drilling towards the northeast and southwest will allow Inferred Mineral Resources to be upgraded to a higher category
- The Lac Doré North licence area has additional mineralization that has not been fully assessed.

Currently, Mineral Resources have been defined with sufficient confidence to allow for more advanced studies to take place at Lac Doré Main, where future work should focus on metallurgical testwork, mining studies, environmental testwork, and other work necessary for advanced studies. This work is listed as Phase 1 below and the total cost of this phase is estimated at US$1,890,000.

Additional exploration work would focus on the Lac Doré North Property, and future work at Lac Doré Main would focus on metallurgical testwork and advanced studies. This work is listed as Phase 2 below and the total cost of this phase is estimated at US$350,000.

Note that Phase 2 is not contingent upon positive results from Phase 1.

Phase 1: Work required for prefeasibility or other advanced studies at Lac Doré Main:

- Detailed environmental studies and assessments of permitting requirements
- Metallurgical testwork including grind optimization
- Submission of core duplicate samples for QAQC
- Mining studies
- Infrastructure studies
- Detailed marketing studies.

Phase 2: Work required at Lac Doré North:

- Additional infill drilling, sampling, and assaying
- Mineral Resource estimation.

2 Introduction

2.1 Issuer

VanadiumCorp is a mineral exploration company headquartered in Vancouver, Canada, with 100% ownership in the Lac Doré Vanadium, Iron and Titanium Project, located 27 km east-southeast from the city of Chibougamau, in Eeyou Istchee James Bay Territory, Nord-du-Québec administrative region, Québec. VanadiumCorp also has 100% ownership of the Iron-T iron, titanium and vanadium property near Matagami, Québec, 100% ownership of the Lac Laura gold-copper project near Chapais, Québec, and has interest in and royalties for several other projects in Québec, Canada. VanadiumCorp is listed on the Toronto Stock Exchange-Venture Exchange (stock ticker VRB) and on the Frankfurt Stock Exchange (stock ticker NWN).

2.2 Terms of Reference

VanadiumCorp commissioned CSA Global to complete a MRE and prepare a Technical Report on the Lac Doré Project.

This report is in accordance with disclosure and reporting requirements set forth in National Instrument 43-101 – Standards for Disclosure for Mineral Projects (NI 43-101), Companion Policy 43-101CP, and Form 43-101F1. This Technical Report discloses material changes to the Property, particularly, an MRE at VanadiumCorp's Lac Doré deposit.

The Mineral Resource update has been prepared in accordance with CIM Definition Standards for Mineral Resources and Mineral Reserves (10 May 2014) as per NI 43-101 requirements. Only Mineral Resources are estimated – no Mineral Reserves are defined. The report is intended to enable the Issuer and potential partners to reach informed decisions with respect to the Project.

The principal author of this report is Dr Luke Longridge, CSA Global Senior Geologist. Dr Longridge has more than five years' experience in the field of vanadiferous magnetite deposits and is a Qualified Person according to NI 43-101 standards.

The Effective Date of this report is 29 October 2020. The report is based on technical information known to the author and CSA Global at that date.

The Issuer reviewed draft copies of this report for factual errors. Any changes made because of these reviews did not include alterations to the interpretations and conclusions made. Therefore, the statements and opinions expressed in this document are given in good faith and in the belief that such statements and opinions are not false and misleading at the date of this report.

2.3 Sources of Information

This technical report is based on internal company technical reports, testwork results, maps, published government reports and public information, in addition to items listed in Section 27 (References) of this report. The various studies and reports have been reviewed, evaluated, collated and integrated into this report by the author (Dr Luke Longridge) of CSA Global. The MRE has been carried out by Dr Adrian Martinez of CSA Global. The authors have taken reasonable steps to verify the information provided, where possible.

The authors also had discussions with the management and consultants of the Issuer, including:

- Mr Marc-André Bernier, géo. (QC), P.Geo. (ON), M.Sc., Senior Geoscientist, Table Jamésienne de Concertation Minière, regarding the geology and tenure of the Property
- Mr John Hewlett, Director of VanadiumCorp, regarding reasonable prospects for eventual economic extraction

- Mr Carl Pelletier, géo. (QC), Director & Consulting Geologist, InnovExplo Inc., regarding drilling, logging, and sampling procedures
- Réjean Girard, P. Geo, CEO of IOS Services Géoscientifiques inc., regarding historical drilling, sampling, and assaying.

This report includes technical information that requires calculations to derive subtotals, totals and weighted averages, which inherently involve a degree of rounding and, consequently, introduce a margin of error. Where this occurs, the Qualified Persons do not consider it to be material.

2.4 Qualified Persons

This report was prepared by the Qualified Persons listed in Table 2.

Table 2: Qualified Persons – report responsibilities

Qualified Person	Report section responsibility
Luke Longridge, Ph.D., P.Geo. (BC), OGQ Temporary Geologist Permit 2199 Senior Geologist, CSA Global	Sections 1 to 13 inclusive and Sections 15 to 27 inclusive; Property visit in 2019
Adrian Martinez Vargas, Ph.D., P.Geo. (BC, ON), OGQ Special Authorization Senior Resource Geologist, CSA Global	Section 14

The authors are Qualified Persons with the relevant experience, education, and professional standing for the portions of the report for which they are responsible.

CSA Global conducted an internal check to confirm that there is no conflict of interest in relation to its engagement in this project or with VanadiumCorp and that there is no circumstance that could interfere with the Qualified Persons' judgement regarding the preparation of the technical report.

2.5 Qualified Person Property Inspection

A four-day visit to the Lac Doré Project was completed by Dr Luke Longridge on 10–13 September 2019 as detailed in Section 12.1. Dr Adrian Martinez did not visit the Lac Doré Project. The authors consider Dr Longridge's 2019 site visit current under Section 6.2 of NI 43-101.

3 Reliance on Other Experts

The authors and CSA Global have relied on claim tenure information including online web-based land records from the Government of the Québec's online Mining Title Management System: GESTIM Plus (https://mern.gouv.qc.ca/english/mines/rights/rights-gestim.jsp), accessed on 15 September 2020.

The authors and CSA Global have relied upon VanadiumCorp and its management for information related to underlying contracts and agreements pertaining to the acquisition of the mining claims and their status and technical information not in the public domain. The Property description presented in this report is not intended to represent a legal, or any other opinion as to title.

4 Property Description and Location

4.1 Location of Property

The Lac Doré Property is located approximately 27 km east-southeast from the city of Chibougamau, in Eeyou Istchee James Bay Territory, Nord-du-Québec administrative region, Province of Québec, Canada (Figure 1). The Property comprises two discontinuous groups of claims that straddle the border between NTS map sheets 32G-16 and 32H-13, Lac Doré Main to the south and Lac Doré North to the north. The centre of the Property lies at approximately Latitude 49°50’N, Longitude 74°0’W.

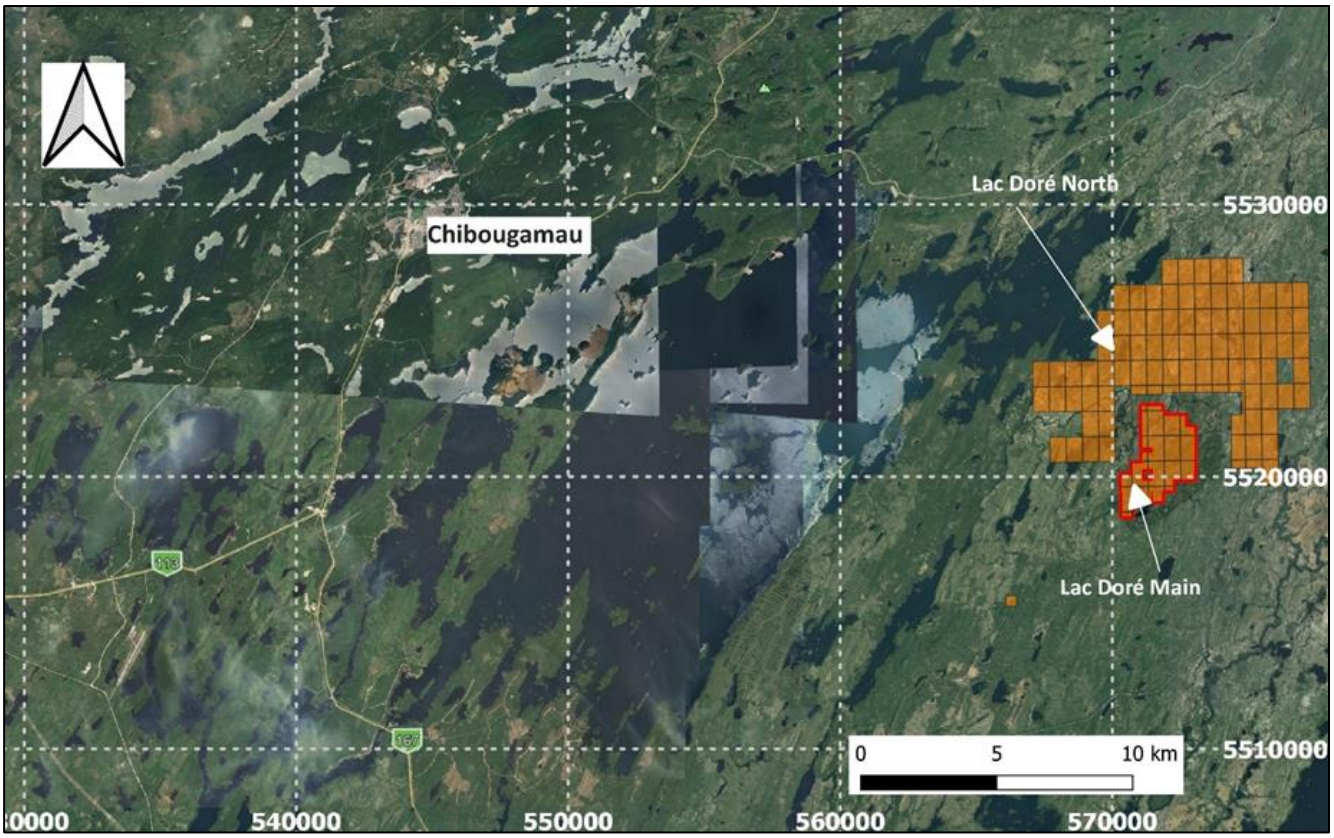

Figure 1: Location of the Lac Doré Project, approximately 27 km southeast of Chibougamau, Québec
Coordinate grids are NAD83/UTM18N.

4.2 Area of Property

The Lac Doré Property comprises two claim blocks, referred to as Lac Doré Main and Lac Doré North (Figure 2). The Lac Doré Main claims cover an area of 648.82 ha, and the Lac Doré North claims cover an area of 4,637.87 ha, with a total property area of 5,286.69 ha. The Property overlaps four townships, Lemoyne and Rinfret in the south and Roy and McCorkill in the north and occupies part of the southeast quadrant of the municipality of Chibougamau.

4.3 Mineral Tenure

The Lac Doré Property comprises a total of 114 map-designated cell claims and locally partial cell claims. These claims are separated into the Lac Doré Main area (23 claims) and Lac Doré North (91 claims). These two blocks are separated by a gap of approximately 1 km to the east and approximately 400 m to the north of Lac Doré Main (Figure 2), where claims are held by other parties.

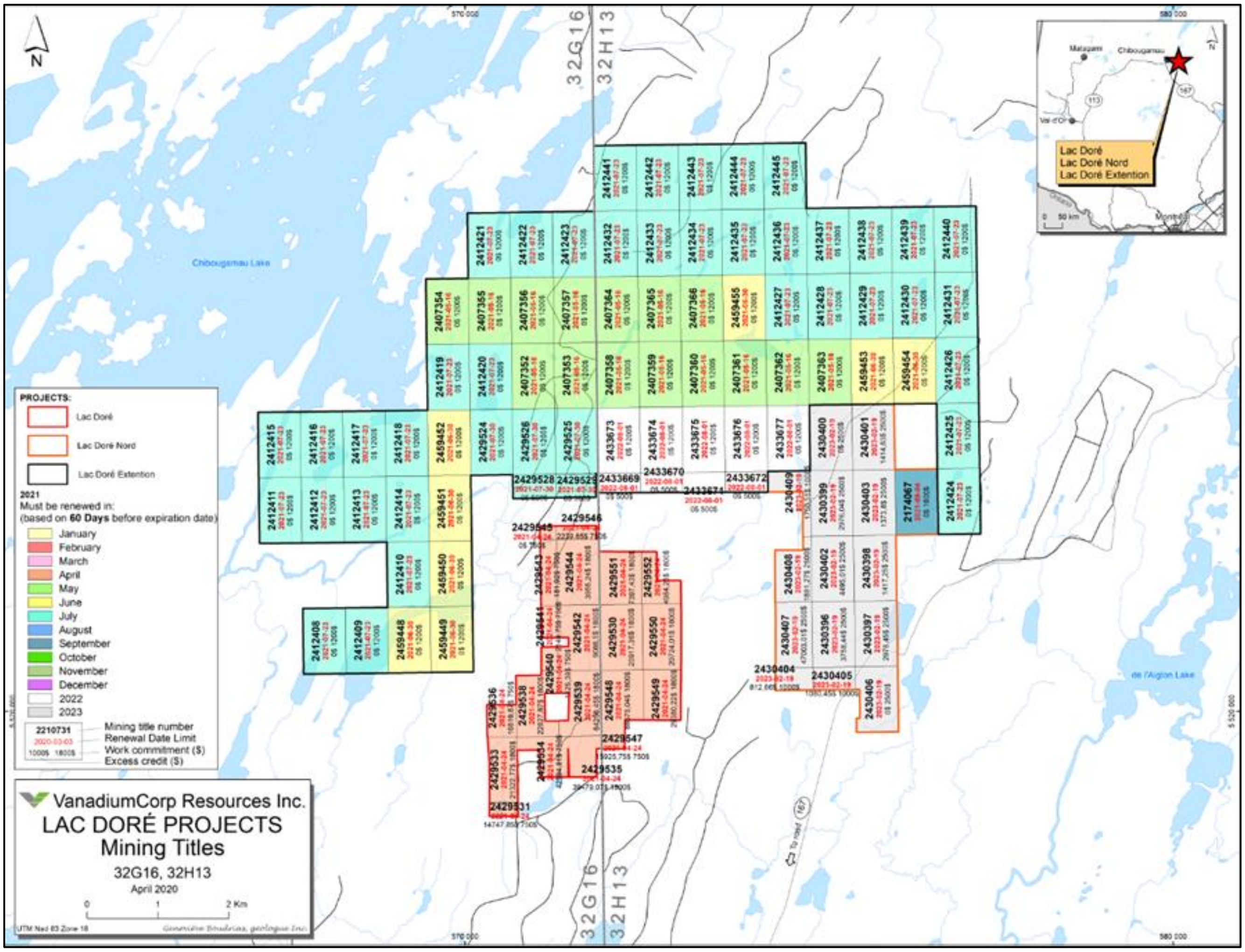

Figure 2: *Map of claims at Lac Doré showing the smaller Lac Doré Main block of claims and the larger Lac Doré North/Extension block of claims*

Note that a single claim owned by VanadiumCorp and located approximately 5 km southwest of the Lac Doré Main block, is not shown.

Two adjacent isolated cells, belonging to BlackRock Metals (CDC-2427688 and CDC-2427689; total area: 13.08 ha) are enveloped within the Lac Doré property, close to its southwestern end, and are due for renewal by 30 March 2022. An additional isolated cell (CDC-2429553; area 15.73 ha) belonging to VanadiumCorp lies approximately 5 km southwest of the Lac Doré Main block, 700 m to the east of BlackRock Mining Inc.'s Armitage iron-titanium-vanadium deposit, and surrounded by BlackRock claims. This cell is to be renewed by 25 February 2023.

There are no surface rights associated with the VanadiumCorp claims; however, because the Property is located on public lands, the claims grant a right of first refusal to obtain such surface rights within the property area, when required. A list of claims, including expiry dates, areas, current work requirements and current surplus credits dates is presented in Table 3.

Table 3: List of claims for the Lac Doré Project (Lac Doré Main and Lac Doré North claim blocks are listed separately)

Title no.	Area (ha)	Expiry date	Excess credit ($)	Required expenditures ($)
Lac Doré Main				
2429530	55.53	2021-06-23 23:59	20,917.36	1,800
2429531	7.64	2021-06-23 23:59	14,747.85	750
2429532	0.07	2021-06-23 23:59	0.00	750
2429533	36.70	2021-06-23 23:59	21,322.77	1,800
2429534	22.24	2021-06-23 23:59	42,594.81	750
2429535	31.42	2021-06-23 23:59	39,479.07	1,800
2429536	19.06	2021-06-23 23:59	16,819.87	750
2429537	0.02	2021-06-23 23:59	0.00	750
2429538	45.85	2021-06-23 23:59	22,827.87	1,800
2429539	50.05	2021-06-23 23:59	64,256.45	1,800
2429540	8.06	2021-06-23 23:59	1,525.39	750
2429541	10.54	2021-06-23 23:59	2,144.75	750
2429542	53.57	2021-06-23 23:59	9,088.50	1,800
2429543	21.42	2021-06-23 23:59	181.92	750
2429544	55.52	2021-06-23 23:59	3,955.24	1,800
2429545	4.47	2021-06-23 23:59	0.00	750
2429546	10.92	2021-06-23 23:59	2,239.65	750
2429547	6.11	2021-06-23 23:59	15,925.75	750
2429548	49.76	2021-06-23 23:59	88,375.04	1,800
2429549	37.90	2021-06-23 23:59	29,380.22	1,800
2429550	50.50	2021-06-23 23:59	20,724.01	1,800
2429551	44.77	2021-06-23 23:59	7,397.43	1,800
2429552	26.70	2021-06-23 23:59	4,984.25	1,800
Lac Doré North				
2174067	55.51	2021-11-03 23:59	-	1,800
2407352	55.49	2021-07-15 23:59	-	1,200
2407353	55.49	2021-07-15 23:59	-	1,200
2407354	55.48	2021-07-15 23:59	-	1,200
2407355	55.48	2021-07-15 23:59	-	1,200
2407356	55.48	2021-07-15 23:59	-	1,200
2407357	55.48	2021-07-15 23:59	-	1,200
2407358	55.49	2021-07-15 23:59	-	1,200
2407359	55.49	2021-07-15 23:59	-	1,200
2407360	55.49	2021-07-15 23:59	-	1,200
2407361	55.49	2021-07-15 23:59	-	1,200
2407362	55.49	2021-07-15 23:59	-	1,200
2407363	55.49	2021-07-15 23:59	-	1,200
2407364	55.48	2021-07-15 23:59	-	1,200
2407365	55.48	2021-07-15 23:59	-	1,200
2407366	55.48	2021-07-15 23:59	-	1,200
2412408	55.53	2021-09-21 23:59	-	1,200
2412409	55.53	2021-09-21 23:59	-	1,200

Title no.	Area (ha)	Expiry date	Excess credit ($)	Required expenditures ($)
2412410	55.52	2021-09-21 23:59	-	1,200
2412411	55.51	2021-09-21 23:59	-	1,200
2412412	55.51	2021-09-21 23:59	-	1,200
2412413	55.51	2021-09-21 23:59	-	1,200
2412414	55.51	2021-09-21 23:59	-	1,200
2412415	55.50	2021-09-21 23:59	-	1,200
2412416	55.50	2021-09-21 23:59	-	1,200
2412417	55.50	2021-09-21 23:59	-	1,200
2412418	55.50	2021-09-21 23:59	-	1,200
2412419	55.49	2021-09-21 23:59	-	1,200
2412420	55.49	2021-09-21 23:59	-	1,200
2412421	55.47	2021-09-21 23:59	-	1,200
2412422	55.47	2021-09-21 23:59	-	1,200
2412423	55.47	2021-09-21 23:59	-	1,200
2412424	55.51	2021-09-21 23:59	-	1,200
2412425	55.50	2021-09-21 23:59	-	1,200
2412426	55.49	2021-09-21 23:59	-	1,200
2412427	55.48	2021-09-21 23:59	-	1,200
2412428	55.48	2021-09-21 23:59	-	1,200
2412429	55.48	2021-09-21 23:59	-	1,200
2412430	55.48	2021-09-21 23:59	-	1,200
2412431	55.48	2021-09-21 23:59	-	1,200
2412432	55.47	2021-09-21 23:59	-	1,200
2412433	55.47	2021-09-21 23:59	-	1,200
2412434	55.47	2021-09-21 23:59	-	1,200
2412435	55.47	2021-09-21 23:59	-	1,200
2412436	55.47	2021-09-21 23:59	-	1,200
2412437	55.47	2021-09-21 23:59	-	1,200
2412438	55.47	2021-09-21 23:59	-	1,200
2412439	55.47	2021-09-21 23:59	-	1,200
2412440	55.47	2021-09-21 23:59	-	1,200
2412441	55.46	2021-09-21 23:59	-	1,200
2412442	55.46	2021-09-21 23:59	-	1,200
2412443	55.46	2021-09-21 23:59	-	1,200
2412444	55.46	2021-09-21 23:59	-	1,200
2412445	55.46	2021-09-21 23:59	-	1,200
2429524	55.50	2021-09-28 23:59	-	1,200
2429525	55.50	2021-09-28 23:59	-	1,200
2429526	55.50	2021-09-28 23:59	-	1,200
2429527	0.25	2021-09-28 23:59	-	500
2429528	20.07	2021-09-28 23:59	-	500
2429529	18.93	2021-09-28 23:59	-	500
2430396	55.53	2023-04-20 23:59	3,758.44	2,500
2430397	55.53	2023-04-20 23:59	2,978.45	2,500

Title no.	Area (ha)	Expiry date	Excess credit ($)	Required expenditures ($)
2430398	55.52	2023-04-20 23:59	1,417.25	2,500
2430399	55.51	2023-04-20 23:59	2,976.04	2,500
2430400	55.50	2023-04-20 23:59	-	2,500
2430401	55.50	2023-04-20 23:59	1,414.83	2,500
2430402	55.52	2023-04-20 23:59	4,495.01	2,500
2430403	55.51	2023-04-20 23:59	1,373.80	2,500
2430404	16.92	2023-04-20 23:59	812.66	1,000
2430405	19.13	2023-04-20 23:59	1,080.45	1,000
2430406	53.10	2023-04-20 23:59	-	2,500
2430407	48.38	2023-04-20 23:59	47,003.01	2,500
2430408	40.12	2023-04-20 23:59	1,891.27	2,500
2430409	24.66	2023-04-20 23:59	1,750.51	1,000
2433669	16.51	2022-09-30 23:59	-	500
2433670	16.82	2022-09-30 23:59	-	500
2433671	17.17	2022-09-30 23:59	-	500
2433672	17.41	2022-09-30 23:59	-	500
2433673	55.50	2022-09-30 23:59	-	1,200
2433674	55.50	2022-09-30 23:59	-	1,200
2433675	55.50	2022-09-30 23:59	-	1,200
2433676	55.50	2022-09-30 23:59	-	1,200
2433677	55.50	2022-09-30 23:59	-	1,200
2459448	55.53	2021-08-29 23:59	-	1,200
2459449	55.53	2021-08-29 23:59	-	1,200
2459450	55.52	2021-08-29 23:59	-	1,200
2459451	55.51	2021-08-29 23:59	-	1,200
2459452	55.50	2021-08-29 23:59	-	1,200
2459453	55.49	2021-08-29 23:59	-	1,200
2459454	55.49	2021-08-29 23:59	-	1,200
2459455	55.48	2021-08-29 23:59	-	1,200

The Lac Doré Main and Lac Doré North properties are made of map designated cells, the validity of which cannot be challenged by a third party, and are irrevocable by law, as long as the renewal obligations are fulfilled by the owner. All the claims (Figure 2) are in good standing with assessment work requirements being kept up to date.

Note that claims can be renewed for periods of two years beyond the expiration date, if work in excess of the amount required is carried out before the 60th day preceding the claim expiry date. Excess work from previous renewals can be credited and carried over to six subsequent periods. The claim under renewal must be located within a radius of 4.5 km from the centre of the claim from which the credits will be used. If the required work was not performed or was insufficient to cover renewal of a claim, the claim holder may pay an amount equal to the double of the minimum cost of the work that should have been performed. Additional details can be found at https://mern.gouv.qc.ca/english/publications/online/mines/claim/index.asp.

All claims are currently recorded 100% interest under:

VanadiumCorp Resource Inc.
2383 King George Hwy, Suite 208
Surrey, V4A 5A4, British Columbia, Canada
(GESTIM Client # 93181).

4.4 Tenure Agreements and Encumbrances

Within Québec, claims are valid until their renewal anniversary. Table 3 provides the anniversary dates and required credits. A total of $499,839.92 in assessment credits is currently available for Lac Doré and Lac Doré North, with required expenditures $148,450.00, although these are not evenly distributed. Renewal fees are $6,870 per two-year period, plus management cost.

Exploration titles in Québec are required to be renewed every two years, sixty days prior to their anniversary or up to their anniversary with a penalty. A fee is needed at each renewal. Renewal also requires filing of assessment credits accumulated from exploration expenditures. The management rules of assessment credits are complex. There are currently ample credits to renew the Lac Doré Main claim blocks. Additional exploration work will have to be carried out at the Lac Doré North claims block in early 2021 to allow for the renewal of the 68 claims set to expire between 15 July and 3 November 2021.

No liens or royalties are reported on the Lac Doré property by VanadiumCorp management.

4.5 Environmental Liabilities

To the Qualified Person's knowledge, there are two known environmental liabilities left by previous property holders, McKenzie Bay, on claims now held by VanadiumCorp. These liabilities are not legally transferable to VanadiumCorp; however, a proactive attitude to rehabilitation is planned by VanadiumCorp.

First is the reclamation plan regarding the overburden stripping work completed in 1997. A set of 36 trenches for a total length of 8,538 m were stripped or excavated on the deposit, of which 32 are located on the current VanadiumCorp Lac Doré Property. Since this stripping exceeded the allowed 10,000 m^3 limit, McKenzie Bay was requested to file a reclamation plan in order to obtain its permit. According to this plan, McKenzie Bay had to backfill any digging in excess of 1 m depth, and to replace topsoil upon it.

Second, McKenzie Bay had liability in regard to a surface lease for its Laugon Lake base camp. McKenzie Bay was expected to clean the site, remove septic tanks, and reclaim any soil contaminated by hydrocarbons. The camp site was reported to have been cleaned by BlackRock, except for the septic tank removal and contaminated soil remediation.

The cost of the trench rehabilitation was estimated in 1997 at $18,510, or about $35,000 in 2018 dollars.

5 Accessibility, Climate, Local Resources, Infrastructure and Physiography

5.1 Topography, Elevation and Vegetation

The general physiography of the area to the southeast of Lac Chibougamau comprises rolling hills and abundant lakes and rivers, with a total relief of approximately 190 m. The Lac Doré Main claims are located on a northeast-trending ridge with a maximum elevation of approximately 530 m above mean sea level (amsl), with lowlands to the northwest having an elevation of approximately 410 m amsl. The Lac Doré North claims are located across northeast to north-northeast trending ridges, with a maximum elevation of approximately 570 m amsl, are cut by a north-trending valley with an elevation of approximately 425 m amsl, and have lowlands with elevations as low as 380 m along the eastern shores of Lac Chibougamau. Forests cover over about 90% of the Property with the remaining 10% represented by lakes and rivers.

The overburden cover generally consists of glacial till, sand-and-gravel and clay, and modern alluvium varying in thickness from less than 1 m to locally more than 10.0 m (maximum depth is unknown as drilling has focused on areas with shallow overburden). The property is covered by immature second growth forest, dominated by black spruce and poplar, with minor birch, pine, aspen and alder undergrowth. Swamps and marshes occupy depressions in low-lying areas and natural bedrock exposures occur locally in areas of high elevation.

5.2 Access to Property

Chibougamau is an active mining and forestry centre which straddles Highway 167 and has a population of over 7,000 people. Chibougamau is serviced by an airport with daily regular scheduled direct flights to Montréal, Québec (Air Creebec).

The Lac Doré Property is easily accessible by an all-weather gravel road heading east from Highway 167 some 10 km east-northeast of Chibougamau. From this gravel road, smaller forestry roads can be taken to pass around the northern end of Lac Chibougamau, through both the Lac Doré North and Lac Doré Main claims. An additional route via forestry roads to the southwest connects to Highway 167N at 200 km, approximately 40 km south of Chibougamau. Numerous forestry roads give access to different areas on the Property.

5.3 Climate

Chibougamau has a humid sub-arctic continental climate with cool summers and no dry season. Climate conditions are fairly typical of the Canadian Shield; the temperature varies from an average minimum of -26°C in winter (January and February) to an average maximum of 22°C in the summer (July and August). Nevertheless, temperature extremes below -36°C or above 27°C can be expected within the respective seasons. Rainfall is usually frequent in the summer along with snowfall in the winter with total precipitation of 570 mm. The “warm” season usually lasts from mid-May to mid-September and the “cold” season from early December to early March.

Seasonally appropriate mineral exploration activities may be conducted year-round at the Property. Depending on local ground conditions, drilling may be best conducted during the winter months when the ground and water surfaces are frozen. Mine operations in the region can operate year-round with supporting infrastructure.

5.4 Infrastructure

5.4.1 Sources of Power

Hydroelectric power is readily available in the region, and the 735-kV line linking generation facilities located in western Eeyou Istchee James Bay Territory (northwest of Chibougamau) to Montréal and Québec (to the south) runs through Chibougamau, where a 735-kV substation is located.

5.4.2 Water

Québec and the Chibougamau region contain abundant water resources sufficient for mining operations.

5.4.3 Local Infrastructure and Mining Personnel

Chibougamau and the nearby city of Chapais (approximately 45 km drive west of Chibougamau) are copper and gold mining centres and have a combined municipal population of about 10,000 residents. The local Cree communities of Mistissini and Ouje-Bougoumou have a population of approximately 3,000 and 1,000 residents, respectively. In addition to regional mining, the local economy is based on forestry, tourism, energy, and an integrated service industry. Social, educational, commercial, medical and industrial services, as well as a helicopter base, airport and seaplane base are available at Chibougamau-Chapais.

A large and competitive skilled labour force, including mining personnel, is available in the Chibougamau area which is also well served by heavy equipment service and maintenance providers. Several companies specialise in mining services.

Chibougamau is also the railhead of Canadian National's Chemin de fer d'intérêt local interne du Nord du Québec (CFILNQ). A seaport is accessible at La Baie, one of three boroughs in the city of Saguenay, located approximately 300 km southeast of the Property, along the railroad.

5.4.4 Property Infrastructure

The Property has no infrastructure apart from several poorly maintained forestry roads.

5.4.5 Adequacy of Property Size

The area of the claims held by VanadiumCorp at this time appear to be sufficiently large for proposed exploration activities and infrastructure necessary for potential future mining operations (including potential tailings storage areas, potential waste disposal areas, and potential processing plant sites) should a mineable mineral deposit be delineated at the Property.

6 History

6.1 Historical Property Ownership and Exploration

The Lac Doré magnetite deposit was discovered by Dominion Gulf in 1948 through an aeromagnetic survey (Jenkins, 1955). Subsequent exploration work by several companies has included mapping, channel sampling, drilling, metallurgical testing, resource estimates, and feasibility studies. Table 4 summarises the previous ownership of the Project.

Note that the Lac Doré magnetite deposit is essentially contiguous with the adjacent Southwest Deposit (currently owned by BlackRock Mining Inc. – see Section 23 – Adjacent Properties) and that previous work as described below was not exclusively focused only on the Lac Doré property, as described in Section 4, but included the BlackRock property.

Table 4: Summary of ownership history of the Lac Doré Property

Company	Dates	Comments on activity carried out
Dominion Gulf	1948 to 1956	Discovery (aeromagnetic anomaly), mapping, trenching, sampling (Assad, 1956)
Trepan Mining Corporation	1957 to 1959	Mapping, ground magnetics, drilling (3 holes, no locations available – Derby, 1957)
Jalore Mining	1957 to 1961	Diamond drilling, magnetic surveys (Assad, 1958)
Québec Department of Natural Resources	1966 to 1977	Line cutting, geological mapping, ground magnetometer survey, bulk sampling, diamond drilling, metallurgical testing, resource estimates (Assad, 1967)
Continental Ore Corporation	~1971	Metallurgical Testing (Gabrielson et al., 1971)
SOQUEM	1977 to 1981	Line cutting, mapping, geophysical surveys, diamond drilling, resource estimation, metallurgical testwork, pit design
McKenzie Bay	1997 to 2002	Stripping, line cutting, mapping, channel sampling, ground magnetic surveys, metallurgical testing, drilling, feasibility study
Cambior Inc. (Option with McKenzie Bay)	1999	Mapping, re-logging, resource estimation, prefeasibility
Lac Doré Mining (subsidiary of McKenzie Bay)	2003 to 2008	Metallurgical testing
Blackrock Metals	2008 to present	Airborne magnetic and topographic survey, trenching, drilling, metallurgical tests, feasibility study
Novawest Exploration Inc. (subsequently Apella Resources, PacificOre Mining Corporation and then VanadiumCorp)	2007 to present	Drilling, metallurgical testing

6.2 Project Results – Previous Owners

Owing to the protracted history of ownership with several companies conducting detailed studies on the deposit, a large amount of data is available. However, much of this historical data is not verifiable, does not cover the current property boundaries as outlined in Section 4, or has been superseded by more recent work, is therefore not considered relevant. Drilling and other results which are considered relevant to the current project, are summarised below.

6.2.1 Historical Exploration by Jalore Mining Ltd

Six holes were drilled by Jalore Mining Ltd (Jalore) in 1958, of which four are completed within the current Lac Doré property boundaries (Table 5). Holes were sampled and were subject to Davis Tube testing, and results are available to VanadiumCorp. As no head assays were completed, these holes have not been used for Mineral

Resource estimation, but Davis Tube results have been used together with other historical and recent results to assess concentrate grades (see Section 13).

Table 5: Location of historical drillholes drilled by Jalore (collar locations are UTM18N, NAD83)

Drillhole name	Easting	Northing	Elevation	Depth (m)	Azimuth	Dip	Collar resurveyed
S-1*	570783.2	5519254	505.97	154.3	308	-35	No
S-3	572031.2	5520080	501.4	199.1	338	-35	No
S-4	572544.2	5520456	496.82	114.6	334	-35	No
S-5	571689.2	5519881	501.4	90.8	327	-35	No
S-6*	570931.6	5519305	519.68	159.8	336	-35	No
S-58-02	571404	5519515	512	214.58	333	-35	No

**Hole is partially or completely outside the current Lac Doré property boundaries.*

6.2.2 Historical Exploration by Québec Department of Natural Resources (MERN)

Between 1970 and 1974, 13 BQ diameter holes were drilled by the Québec Department of Natural Resources (Ministére des Richesses Naturelles or MERN), of which 11 are considered relevant and 10 lie within the current Lac Doré property boundaries (Table 6). Holes were logged by contract geologists and were subject to Davis Tube testing, with some holes also assayed for Fe_2O_3, TiO_2 and V_2O_5. The results of were captured digitally by IOS Services Géoscientifiques and are available to VanadiumCorp.

Table 6: Location of historical drillholes drilled by MERN (collar locations are UTM18N, NAD83)

Drillhole name	Easting	Northing	Elevation	Depth (m)	Azimuth	Dip	Collar resurveyed
S-7*	570783.2	5519254	502.65	183.49	330	-60	No
S-8	571081.2	5519321	530.35	168.86	330	-47	No
S-11	571762	5519934	495.62	87.17	320	-37	Yes
S-12	571799	5519951	493.19	120.7	324	-60	Yes
S-13	571841	5519976	489.8	114.91	324	-53	Yes
S-14	571878	5520013	489.8	107.59	324	-65	Yes
S-15	571948	5520062	489.8	86.87	324	-40	Yes
S-16	571996	5520093	490.12	99.67	324	-38	Yes
S-17	572064	5520202	492.97	64	324	-43	Yes
S-18	572177.5	5520218	501.3	139.29	324	-40	Yes
S-19	572268	5520244	505.08	94.79	324	-45	Yes

**Hole is partially or completely outside the current Lac Doré property boundaries.*

6.2.3 Historical Exploration by SOQUEM Inc.

SOQUEM completed a 19-hole drilling program beginning in 1979, all of which are located on the current Lac Doré property (Table 7). It is believed that the drill core from this program may be held by BlackRock Mining, but this has not been confirmed and the drill core has not been seen by the Qualified Person.

Samples were assayed for Fe_2O_3, TiO_2 and V_2O_5, and the assay results are available to VanadiumCorp. Samples were also subject to Davis Tube testing to determine the proportion and grades of magnetite concentrates. Most of the collars have been resurveyed using a differential global positioning system (GPS) or handheld GPS. A number of these drillholes were twinned for verification during the 2019–2020 exploration program (see Section 12).

Table 7: Location of historical drillholes drilled by SOQUEM (collar locations are UTM18N, NAD83)

Drillhole name	Easting	Northing	Elevation	Depth (m)	Azimuth	Dip	Collar resurveyed
S-21	571688	5519724	499.8	195.1	324	-50	Yes
S-22	571748.6	5519812	499.8	225	324	-50	Yes
S-23	571753	5519877	499.8	170.73	324	-50	Yes
S-24	572124.9	5520145	501.94	231	324	-50	Yes
S-25	571851.3	5519898	499.09	189	324	-60	Yes
S-26	572153	5520192	500.77	200.7	324	-50	No
S-27	571878	5520022	489.8	164.6	324	-50	Yes
S-28	571998	5520035	495.37	150.17	324	-48	Yes
S-29	572244.5	5520237	503.44	200.6	324	-45	No
S-30	572021	5520179	490.52	74.7	324	-45	Yes
S-32	572146.3	5520252	494.67	48.8	324	-45	Yes
S-33	572193.3	5520308	493.64	100.3	324	-45	Yes
S-34	572218.2	5520187	508.63	208.78	324	-45	Yes
S-35	572388.4	5520296	505.56	200.3	324	-45	Yes
S-36	572487.5	5520381	506.79	200.3	324	-45	Yes
S-37	572044.6	5520050	496.47	268.3	324	-65	Yes
S-79-20	571565.4	5519690	495.99	152.45	324	-50	Yes
S-79-31	572265.7	5520279	502.54	188.92	326	-47	No
S-79-38	571924.7	5519964	499.29	256.1	324	-60	Yes

6.2.4 Historical Exploration by McKenzie Bay Resources Ltd

A 1997 stripping and sampling program was carried out by IOS Services Géoscientifiques for McKenzie Bay. This included sampling and assaying of 1,734 diamond-cut channel samples along a series of northwest-southeast lines that were stripped of vegetation and overburden prior to channel sampling. A list of the channel sample/trench locations is given in Table 8. Trenches were carried out systematically along sections spaced every 100 m, and were sampled almost continuously, with gaps only related to topographic constraints or roads. Channels approximately 4 cm deep and 4 cm wide, and typically 3 m long, were cut using a diamond saw, and locations were marked with aluminium sample tags that remain visible (Section 12.1). The quality of these trenches is sufficient to consider them horizontal drillholes.

Table 8: McKenzie Bay channel sample/trench locations (collar locations are UTM18N, NAD83)

Trench name	Easting	Northing	Elevation	Length (m)	Azimuth	Dip
1050E	571498.1	5519584	495.46	225.97	320	0
1150E_1	571569.5	5519667	495.85	89.51	320	0
1150E_2	571484.8	5519770	498.12	54.22	320	0
1250E	571669.5	5519693	498.95	166.44	320	0
1350E_1	571772.7	5519723	505.21	148.93	320	0
1350E_2	571662.5	5519864	499.8	124.6	320	0
1450E_1	571851.9	5519786	509.18	108.57	320	0
1450E_2	571750.8	5519906	498.16	122.13	320	0
150E	570748.8	5519098	498.03	174.14	320	0
1550E	571927.7	5519851	508.17	437.24	320	0
1650E	572025.8	5519888	515.47	353	320	0

Trench name	Easting	Northing	Elevation	Length (m)	Azimuth	Dip
1750E	572032.5	5520035	496.88	255.8	320	0
1831E	572095.6	5520091	501.07	115.22	320	0
1850E	572033.6	5520186	491.36	155	320	0
1950E_1	572248	5520096	519.8	164.9	320	0
1950E_2	572131.8	5520227	495.75	128.26	320	0
200W	570504.5	5518833	481.73	206.7	320	0
2050E	572340	5520118	517.29	328.97	320	0
2150E	572375	5520245	507.65	246.63	320	0
2250E	572490.6	5520267	509.8	375	320	0
2350E	572540.5	5520358	510.06	340.52	320	0
2450E	572667.5	5520369	519.8	438	320	0
250E	570781.5	5519203	503.46	149.97	320	0
300W	570440.8	5518760	482.53	171.67	320	0
350E	570877.1	5519246	514.26	246	320	0
400W	570380.1	5518680	483.79	194.17	320	0
450E	571002.1	5519254	520.96	368.65	320	0
50E	570683.7	5519012	487.8	146.67	320	0
550E	571126.8	5519256	523.96	344.13	320	0
650E	571201.9	5519314	523.86	351.5	320	0
750E	571295.9	5519359	519.8	224.6	320	0
850E	571379.3	5519420	517.96	247.51	320	0
950E	571424	5519522	509.85	218	320	0

Note: Portions of trenches 250E, 350E and 450E or 550E fall outside VanadiumCorp claims.

The stripped lines and channel sample locations remain visible on surface (Figure 3), and a selection of the channel samples have been resampled for verification as part of the current (2019–2020) program (see Section 12), and the positions of the channels has been verified and resurveyed. Samples were assayed for Fe_2O_3, TiO_2 and V_2O_5, and were also subject to Davis Tube testing to determine the proportion and grades of magnetite concentrates. These results are available to VanadiumCorp.

Figure 3: Example of a 1997 channel as observed in 2019
Note the original sample tag in place (red circle).

Following the channel sampling work, McKenzie Bay completed drilling of 14 NQ size holes as part of follow-up work on the Project. Of these, only seven drillholes were completed on the ground held by VanadiumCorp. These have all be resurveyed using a handheld GPS and are listed in Table 9. Core was split using a hydraulic splitter and sampled under the supervision of IOS Services Géoscientifiques. Samples were subject to Davis Tube testing to determine the proportion and grades of magnetite concentrates, which were assayed for Fe_2O_3, TiO_2 and V_2O_5, and these results are available to VanadiumCorp. It is believed that the drill core from this program may be held by BlackRock Mining, but this has not been confirmed and the drill core has not been seen by the Qualified Person.

Table 9: McKenzie Bay drillhole locations (collar locations are UTM18N, NAD83)

Drillhole name	Easting	Northing	Elevation	Depth (m)	Azimuth	Dip
DDH-01	574593	5521388	448	168	320	47
DDH-05	572986	5520499	519.92	102	320	45
DDH-06	572714	5520513	507.96	168	320	45
DDH-07	574392	5521318	457	129	320	45
DDH-40	572396	5520439	500.76	150	320	60
DDH-42	572251	5520300	499.9	150	320	45
DDH-44	571622	5519813	499.71	150	320	60

Note: DDH-01 and DDH-07 are located on the Lac Doré North group of claims.

In 2013, VanadiumCorp (recorded as PacificOre Mining Corp. in the assessment filing registry) completed the drilling of four HQ diameter holes, totalling 600 m. These cores were stored at the offices of IOS Services Géoscientifiques in Saguenay, Québec, where they were viewed by Dr Longridge. The cores have since been moved to the VanadiumCorp facility in Chibougamau, Québec. Samples were assayed for Fe_2O_3, TiO_2 and V_2O_5, and were also subject to Davis Tube testing to determine the proportion and grades of magnetite concentrates. Although drilled by VanadiumCorp, they were not carried out as part of the current program and are thus considered historical.

A list of drillholes drilled in 2013 is provided in Table 10.

Table 10: List of drillholes completed by PacificOre Mining (VanadiumCorp) in 2013 (collar locations are UTM18N, NAD83)

Hole name	Easting	Northing	Elevation	Depth (m)	Azimuth	Dip
LD-13-01	572277	5520246	505.2	150	320	-50
LD-13-02	571924.7	5519964	499.3	150	320	-65
LD-13-03	571565.3	5519690	496	150	320	-50
LD-13-04	571395.5	5519531	512.76	150	320	-50

6.3 Historical Mineral Resource Estimates

Historical MREs have been completed by several project owners of iron-titanium-vanadium projects at or near the Lac Doré Property. However, the project/licence areas have changed since these were completed, and the estimates have not been carried out in accordance with CIM Definition Standards for Mineral Resources and Mineral Reserves (2014), nor reported in accordance with NI 43-101 Standards of Disclosure for Mineral Projects.

Therefore, none of the previous estimates are considered relevant to the current property and are not included in this Technical Report.

7 Geological Setting and Mineralization

7.1 Regional Geology

The Lac Doré project area is located at the northeast end of the Abitibi Sub-Province (or Abitibi greenstone belt) which is well documented and comprises the world's largest contiguous area of Archean volcanic and sedimentary supracrustal rocks and granitoids, covering an approximately 500 km x 350 km area in the south-eastern portion of the Archean Superior craton (Monecke et al., 2017). The Abitibi greenstone belt is primarily composed of east-trending submarine volcanic packages, which largely formed between 2795 Ma and 2695 Ma (Ayer et al., 2002; Leclerc et al., 2012).

The Precambrian rocks in the area are commonly covered by an overburden of Quaternary glacial deposits of variable thickness.

The volcanic packages of the belt are folded and faulted and typically have a steep dip, younging away from major intervening domes of intrusive rocks (Monecke et al., 2017). Major, crustal-scale, east-trending fault zones are prominent in the Abitibi greenstone belt (Figure 4).

The Abitibi greenstone belt is renowned for the abundance of copper-zinc and gold deposits (cf. Franklin, 1996; Lacroix, 1998) and hosts several large gold and base metal mines (e.g. La Ronde, Sigma-Lamaque, Noranda).

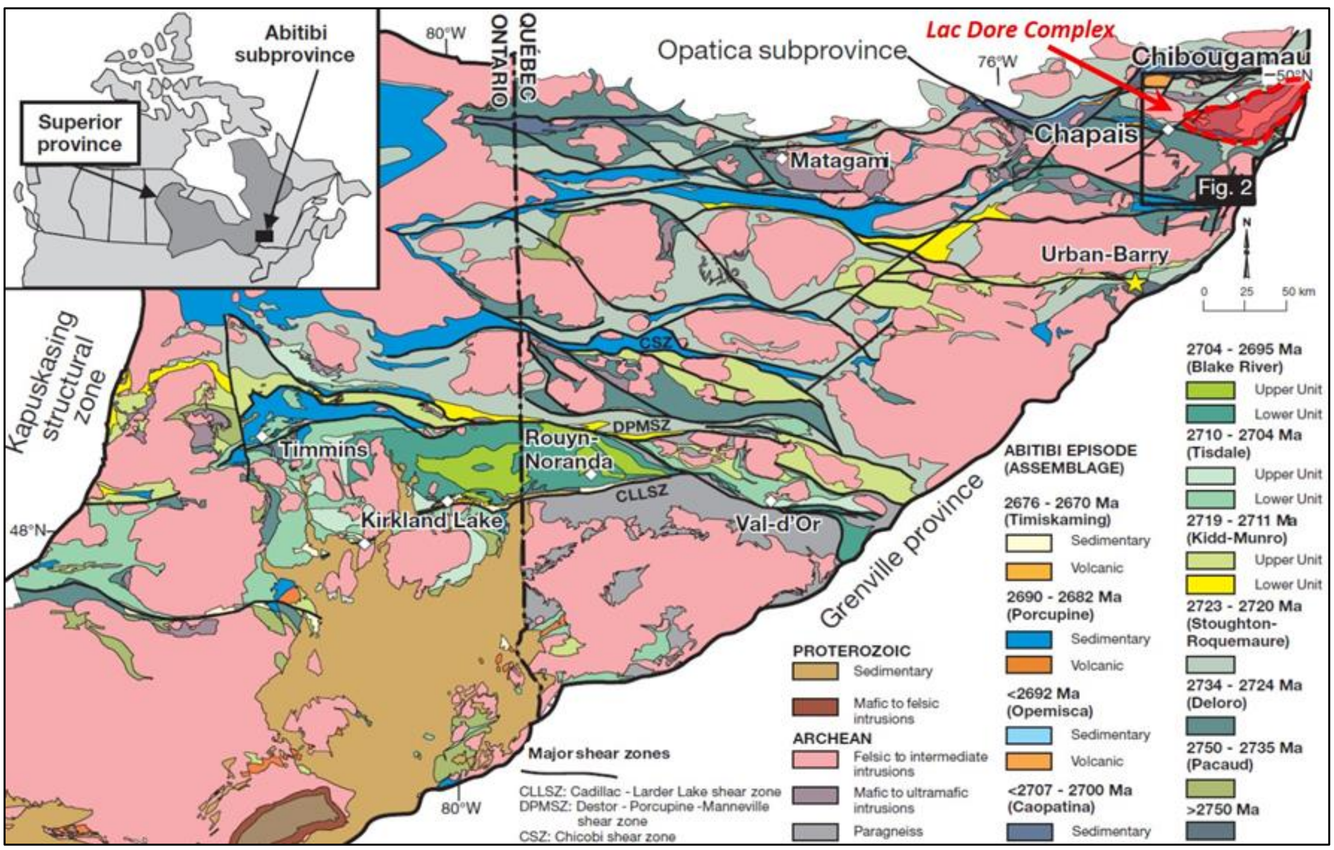

Figure 4: Geology of the Abitibi greenstone belt showing the location of the LDC

Upper-left inset shows location of the Abitibi greenstone belt in the Superior Province.
Source: Leclerc et al. (2012)

The Abitibi greenstone belt is also host to several Archaean mafic intrusions, including the Bell River Complex near Matagami, the Opawica River Complex near Desmaraisville, and the LDC and Lac Chaleur Complex near

Chibougamau. In the Chibougamau area, the LDC has been emplaced into the volcano-sedimentary stratigraphy (Figure 5), with which it is thought to be coeval and comagmatic (Allard, 1976). The LDC has in turn been intruded by the felsic Chibougamau Pluton.

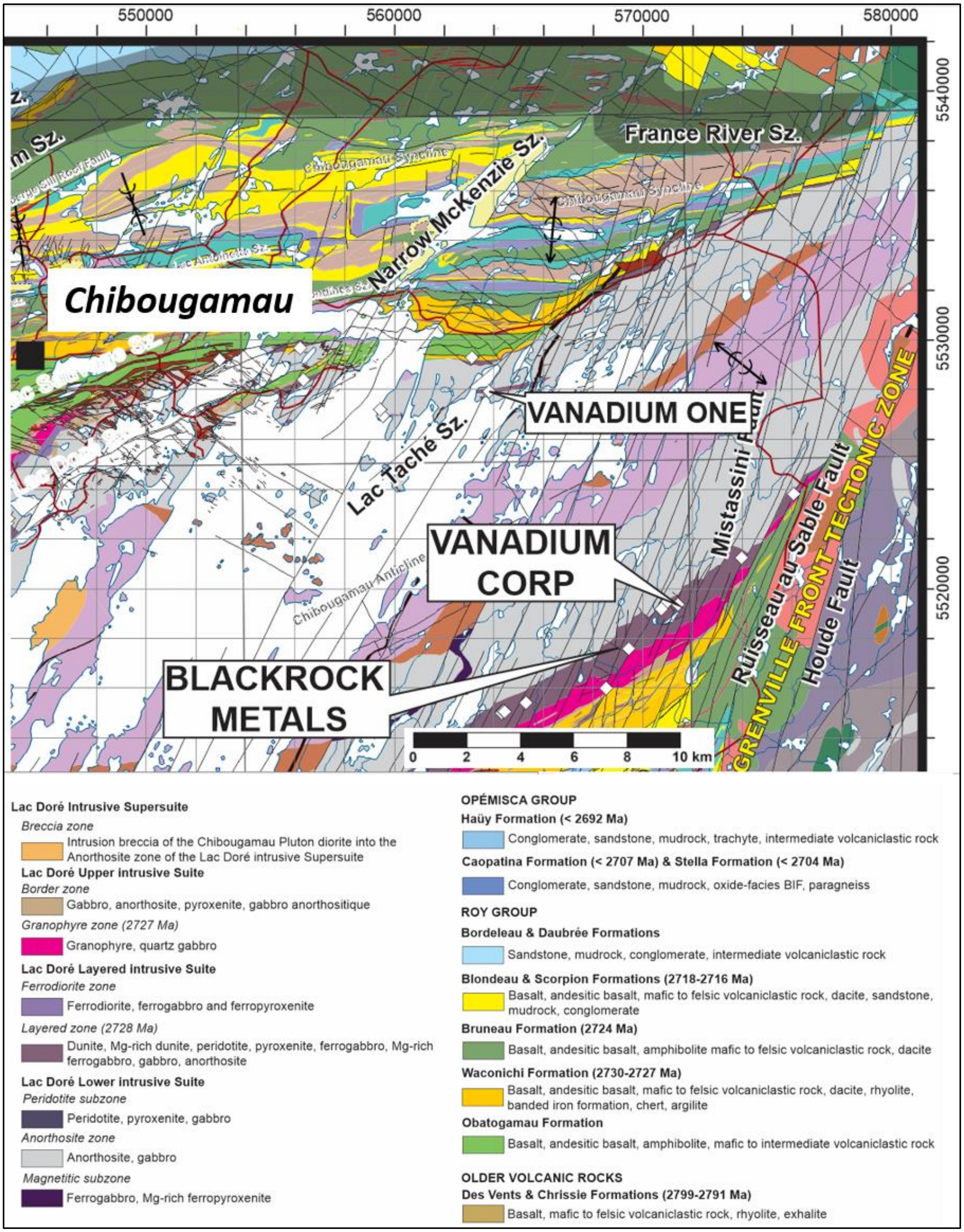

Figure 5: Regional geology of the Chibougamau area and the LDC, with the location of selected VTM deposits

The LDC is a layered mafic complex and is comparable to other better-known complexes such as the Bushveld Complex in South Africa, the Skaergaard Intrusion in Greenland or the nearby Bell River Complex in Matagami, Québec. The LDC differs from other complexes by the low grade regional metamorphism which has affected most of the complex, by its general tectonic setting in a volcanic greenstone belt, and by its Archean age (Allard, 1976).

7.2 Regional Tectonics and Structure

The rocks of the LDC and surrounding host stratigraphy have been affected by multiple deformation events and are folded into a succession of east-west trending anticlines and synclines. Lithological units tend to have steep to subvertical dips.

During the compressive accretion of the Abitibi-Wawa Terrane between 2.698 Ga and 2.690 Ga (Daigneault and Allard, 1990), the LDC was folded into a broad (km-scale) east-west trending anticline. The Lac Doré Project is found on the south-eastern limb of this anticline. The late Chibougamau pluton occupies the core of this Chibougamau anticline and truncates the LDC.

The LDC has also been affected by deformation and low-grade metamorphism related to the much younger Grenville Orogeny (c. 1.1 Ga). The Grenville front abuts the eastern edge of the Superior Province at Lac Doré.

Faults and shear zones in the region strike between northeast and east, although northwest-striking faults are also reported. Large scale synclines and anticlines are generally bound by regional syn-volcanic/syn-sedimentary and syn-tectonic east-west faults. Late northeast to north-northeast trending faults dissect the region and are either associated with, or reactivated by, the Grenvillian event.

7.3 Stratigraphy

Allard (1976) has subdivided the LDC into four zones, which are (from bottom to top):

- The Anorthosite Zone (Main Zone), composed of anorthosite and gabbro in variable proportions and estimated to have a maximum thickness of 3,000 m
- The Layered Zone, composed of bands of ferro-pyroxenite, magnetite-bearing gabbro, and titanium- and vanadium-bearing magnetitites, with an estimated maximum thickness of 900 m
- The Granophyre Zone composed of soda-rich leuco-tonalite
- The Border Zone, a discontinuous zone with gabbro and anorthosite, locally containing quartz, found in contact with the volcanic rocks of the Roy Group.

Vanadium-titanium mineralization in the LDC is contained in the lowermost part of the Layered Zone.

7.4 Prospect and Local Geology

The Lac Doré Project is underlain primarily by layered magmatic units of the Anorthosite Zone and Layered Zone of the LDC and is focused on magnetite-rich zones in the Layered Zone, comprising anorthosite, gabbro, magnetitite, and pyroxenite in varying proportions. The Project sits on the southeastern limb of a large-scale anticline (the Chibougamau Anticline – Figure 5), but the rocks within the Property area do not show any evidence of folding – rather, they have a dip of 50–60° to the southeast as the result of their position on this regional fold limb.

Magnetite deposits in layered complexes such as at Lac Doré are formed through primary magmatic processes, and the magnetite-bearing units (as well as the intervening mafic rocks that may contain little magnetite) are generally continuous along strike. This is the case at Lac Doré, where magmatic layering has formed several zones of magnetite-rich and magnetite-poor lithologies. These lithologies have been subdivided into four zones by previous workers, named the P0, P1, P2 and P3 units. This subdivision is based largely on correlating continuous zones of magnetite.

Based on detailed correlation of lithological units logged during the 2019–2020 exploration campaign, further refinements have been made to the subdivision of the lithologies, and the magmatic stratigraphy outlined in Table 11 has been developed for the Project. Each of the magmatic units defined in the stratigraphy is continuous along at least 3 km of strike (i.e. the entire strike length tested as part of the current exploration program).

Table 11: Stratigraphy of the Lac Doré Project – P0 is lowermost, P3-HW is the uppermost

Previous stratigraphy	Previous description	Current stratigraphy	Description
		P3-HW	Gabbroic to pyroxenitic unit above the P3 magnetite
P3	Magnetite-ilmenite bearing pyroxenite	P3	Magnetite-pyroxenite (10–50% magnetite), commonly with a massive band of magnetitite near the base (0–44 m, generally 10–25 m thick)
		P2-HW	A broad zone of alternating gabbro to anorthosite between the P2 and P3 zones (0–85 m, can be quite variable from 15–55 m thick)
P2	Magnetite and layered gabbros (main mineralized body)	P2-B	Upper massive magnetite band, 0–93 m, generally 15–25 m thick but quite variable
		P2-PART	Gabbroic parting between the massive magnetite bands P2-A and P2-B (0–60 m, generally 2–20 m thick)
		P2-A	Lower massive magnetite band (<1–107 m, generally 30–70 m thick)
		P2-LOW	Zone of banded magnetite and gabbro (cm-scale bands of massive to heavily disseminated magnetite) (2–140 m, generally 30–60 m thick)
P1	Anorthosite with abundant and thick beds of magnetite	P1	Bands of disseminated magnetite within an anorthosite to leucogabbro (1–43 m, generally 15–30 m thick)
P0	Anorthosite with small, scattered beds of magnetite	P0	Anorthosite with <10% magnetite, footwall the mineralized zone.

Magnetite distribution is controlled by magma chamber processes (see Section 8) and results in roughly tabular stratigraphic units enriched in magnetite. These may be broad zones (tens of metres thick) of massive, semi-massive and disseminated magnetite), or small narrow bands (1–2 m or less) of magnetite surrounded by barren gabbro, anorthosite or pyroxenite. The concentration of vanadium and titanium within the magnetite varies with stratigraphic height. The magnetite from stratigraphically lower units (P1, P2-LOW) are more enriched in vanadium, and have relatively low titanium levels, whereas stratigraphically higher levels (P3) have lower vanadium and higher titanium in magnetite. Titanium and vanadium levels in magnetite remain relatively constant within units and along strike.

Mineralization is in the form of VTM, which forms a significant proportion of the lithologies and in some cases may make up close to 100% of the lithological unit (i.e. forming a magnetitite layer).

The stratigraphic units described in Table 11 (above) that are mineralized (i.e. comprising over 10% VTM by weight) are the P1, P2-LOW, P2-A, P2-B and P3 units. There are low-grade or barren units (P2-PART, P2-HW) within the stratigraphy that generally contain less than 10% VTM, but that may locally contain small amounts of disseminated mineralization. The P0 and P3-HW units make up the footwall and hangingwall, respectively, of the entire mineralized zone and are generally unmineralized.

Each of the mineralized zones varies in thickness across the approximately 3 km of strike, as outlined in Table 11 (above), but overall the entire mineralized zone varies between 200 m and 300 m in thickness. The lithologies and overall magmatic stratigraphy dip at approximately 60° to the southeast and have been drill tested to depths of at least 220 m below the surface. It is likely that the units continue to extend below this depth.

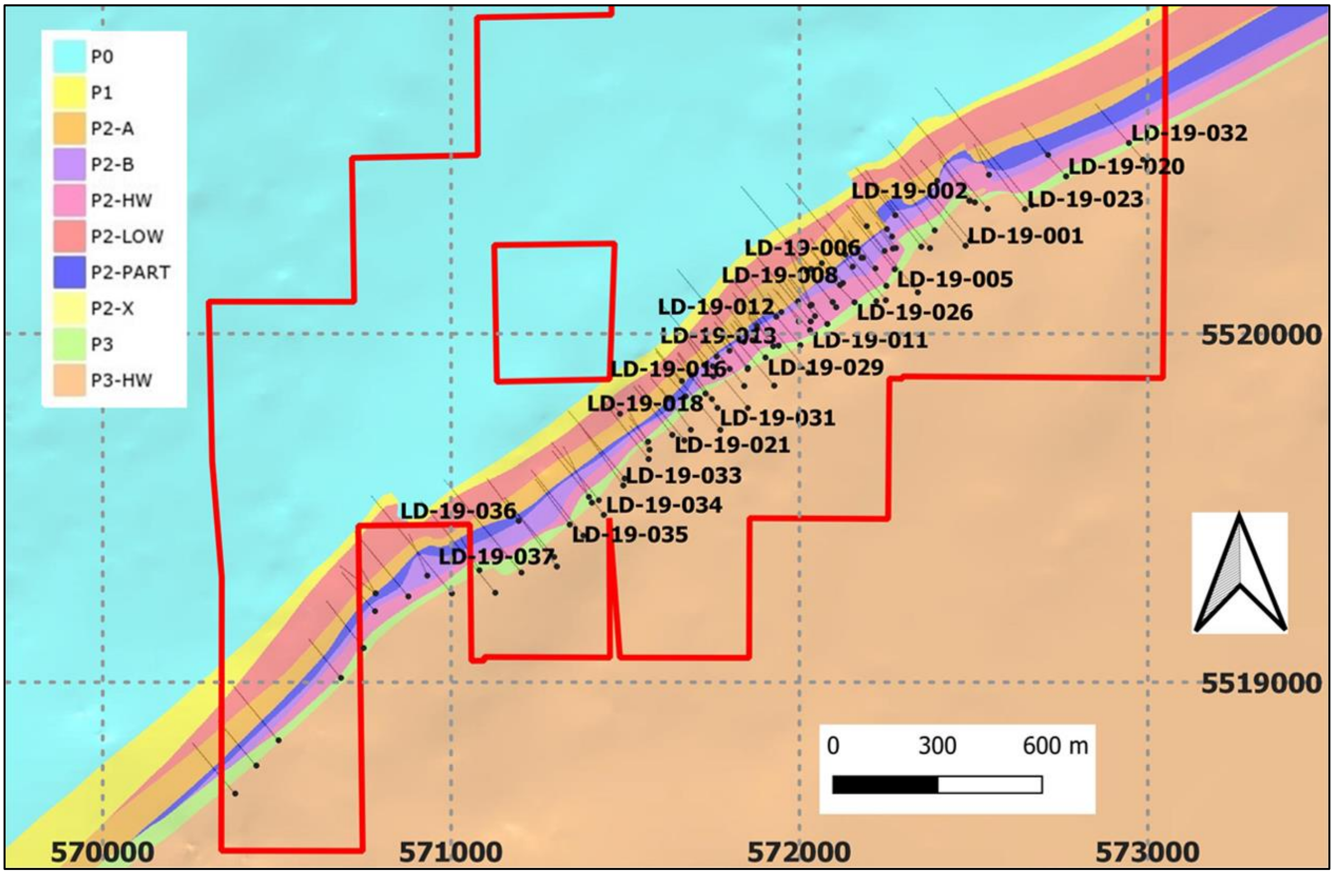

Figure 6: *Geological map of the Lac Doré deposit, showing the location of trench lines and drillhole traces and collars (2019 drillhole collars are labelled)*
Property boundary is shown by the red line.

7.5 Mineralization Styles

Magnetite mineralization at the Lac Doré Project is typical of magnetite deposits found in the upper portions of layered mafic intrusive complexes and shows similarities to magmatic VTM or ilmenite deposits found in the Bushveld Complex (South Africa) or the Skaergard Intrusion (Greenland). In these and other layered complexes, VTM and ilmenite deposits that form in the upper portions of the layered complexes have been subdivided into ilmenite-dominant deposits (generally in massif-type anorthositic host rocks) and magnetite-dominant deposits (generally in layered intrusions within gabbroic host rocks – Gross, 1996).

Crystallization of magnetite is initiated when the evolving magma becomes sufficiently iron-enriched to form oxide minerals. Crystallization and settling of magnetite results in localized lowering of the magma density from approximately 2.7 to approximately 2.5. This creates an inverted density stratification with denser overlying magma, resulting in overturn of the magma and resulting magma mixing, thereby precipitating additional magnetite. The repetition of this process leads to the formation of several stratified layers of magnetite, often with sharp bases and gradational upper contacts.

Because vanadium is compatible in the magnetite crystal structure, it fractionates into magnetite, thereby depleting the remaining magma of vanadium. This results in the lowermost magnetite-bearing units in layered complexes typically having the highest vanadium values (expressed as the oxide V_2O_5), with the V_2O_5 content of the magnetite gradually decreasing upwards through the stratigraphy (Figure 1). In some deposits, the lower layers can have V_2O_5 contents in excess of 3%, while this drops to below 0.3% in the upper layers. Conversely, titanium is less compatible in magnetite, and becomes more concentrated in the residual magma – hence the lower VTM layers have lower titanium contents (typically 7–12% TiO_2) than upper layers (up to 20% TiO_2), where ilmenite and even rutile may be observed.

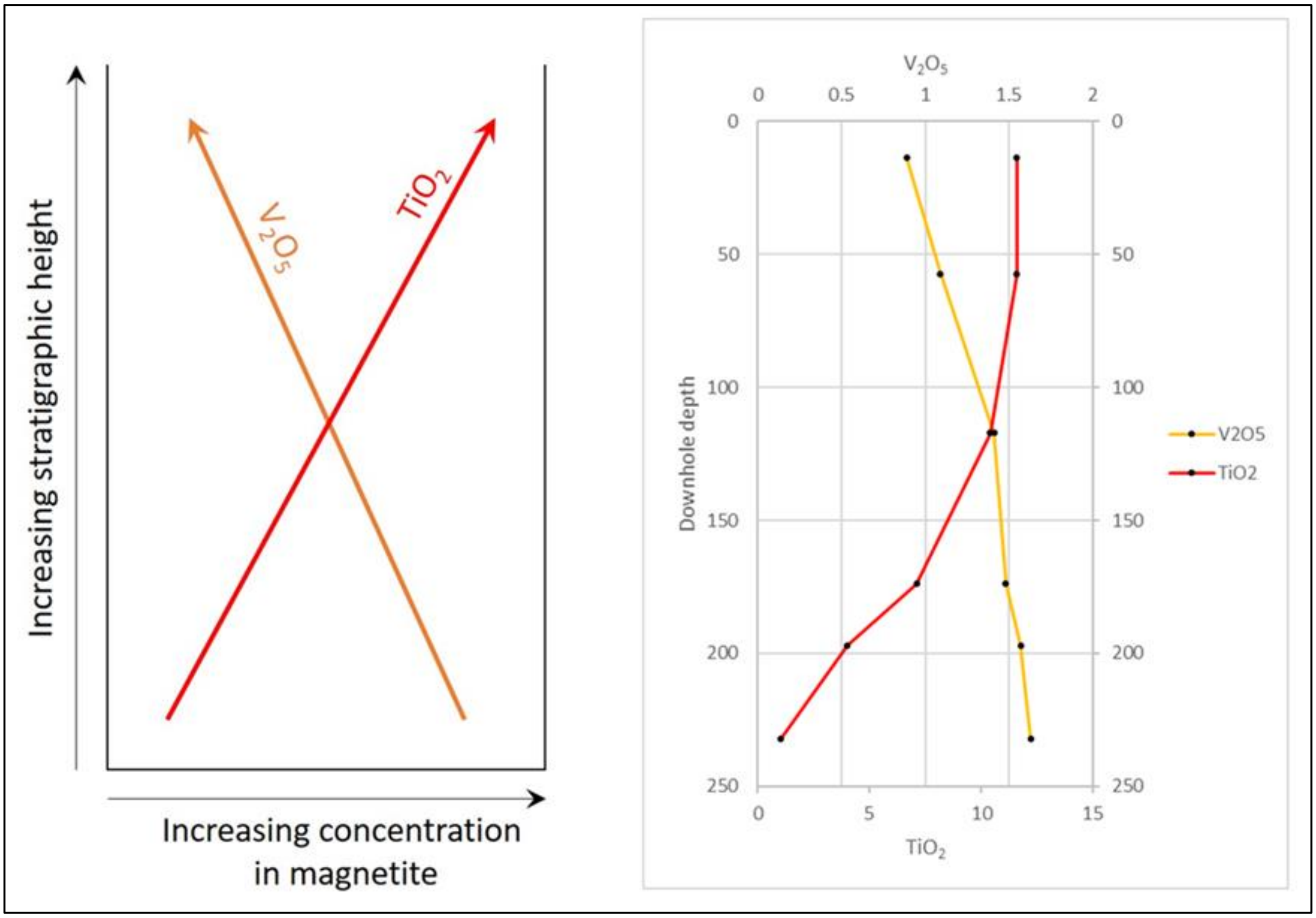

Figure 7: Schematic diagram showing the general increase in TiO_2 and decrease in V_2O_5 in magnetite with increased stratigraphic height in the upper portions of layered mafic complexes (left), compared to assays of Davis Tube concentrates from drillhole LD-19-008 (right)

8 Deposit Types

8.1 Genetic Models

VTM deposits are typically found in the upper, more fractionated portions of layered complexes, such as the Bushveld Complex (South Africa), the Panzhihua intrusion (China) and the Rio Jacaré intrusion (Brazil). These deposits are considered by Gross (1998) as a subtype of magmatic iron-titanium-vanadium oxide deposits, which consist mainly of titaniferous magnetite and ilmenite mineral assemblages hosted in layered and/or massive intrusions of leucogabbro, gabbro, norite, and rocks of intermediate composition.

The formation of VTM-enriched layers has been attributed to magma mixing events, resulting either from a breakdown of densely stratified liquid layers (i.e. overturn) or the influx of new magma (Harne and Von Gruenewaldt, 1995).

In these deposit types, magnetite crystallizes from iron-enriched magmas late in the fractionation history of the deposit and accumulates as stratiform layers at the base of the magma chamber. Vanadium (and to a lesser extent, titanium) is compatible in the magnetite structure and is incorporated into the magnetite during crystallization. Hence, depending on the concentration of vanadium (and titanium) in the magnetite, these deposits may have economic value.

8.2 Comparable Deposits

VTM deposits associated with layered mafic complexes are known from the Bushveld Complex (South Africa), the Panzhihua intrusion (China) and the Rio Jacaré intrusion (Brazil). All these layered mafic complexes host VTM mineralization in the upper portions of the layered complexes, and magnetite is currently mined from each of these layered complexes – for example, at Bushveld Minerals' Vametco Mine (South Africa) or at Largo Resources' Maracás Menchen Mine (Brazil).

9 Exploration

9.1 Exploration Completed by VanadiumCorp

Other than drilling, VanadiumCorp has carried out several ground magnetic surveys between 2009 and 2013, as well as an airborne LiDAR survey in 2020. As part of the 2019 program, several historical trenches were partially resampled for verification purposes, using channel sampling.

9.2 Ground Magnetic Survey

Ground magnetic surveys were all conducted by Geosig Inc. using two GSM-19WV Overhauser (neutron precession) magnetometers, a mobile and a stationary unit. Lines were spaced every 100 m, oriented N315°, plus a baseline and tie lines. The location of the station was measured with handheld GPS devices. A base station was established and calibrated at 57,000 γ, providing an accuracy of 1 γ. The magnetic survey provides good definition of the location of VTM mineralization, and additional processing is not warranted.

Isopleth maps and profiles were provided. No vertical or horizontal gradient was measured or calculated, and no modelling was conducted. Results from these surveys were merged and re-gridded as a single map (Figure 8).

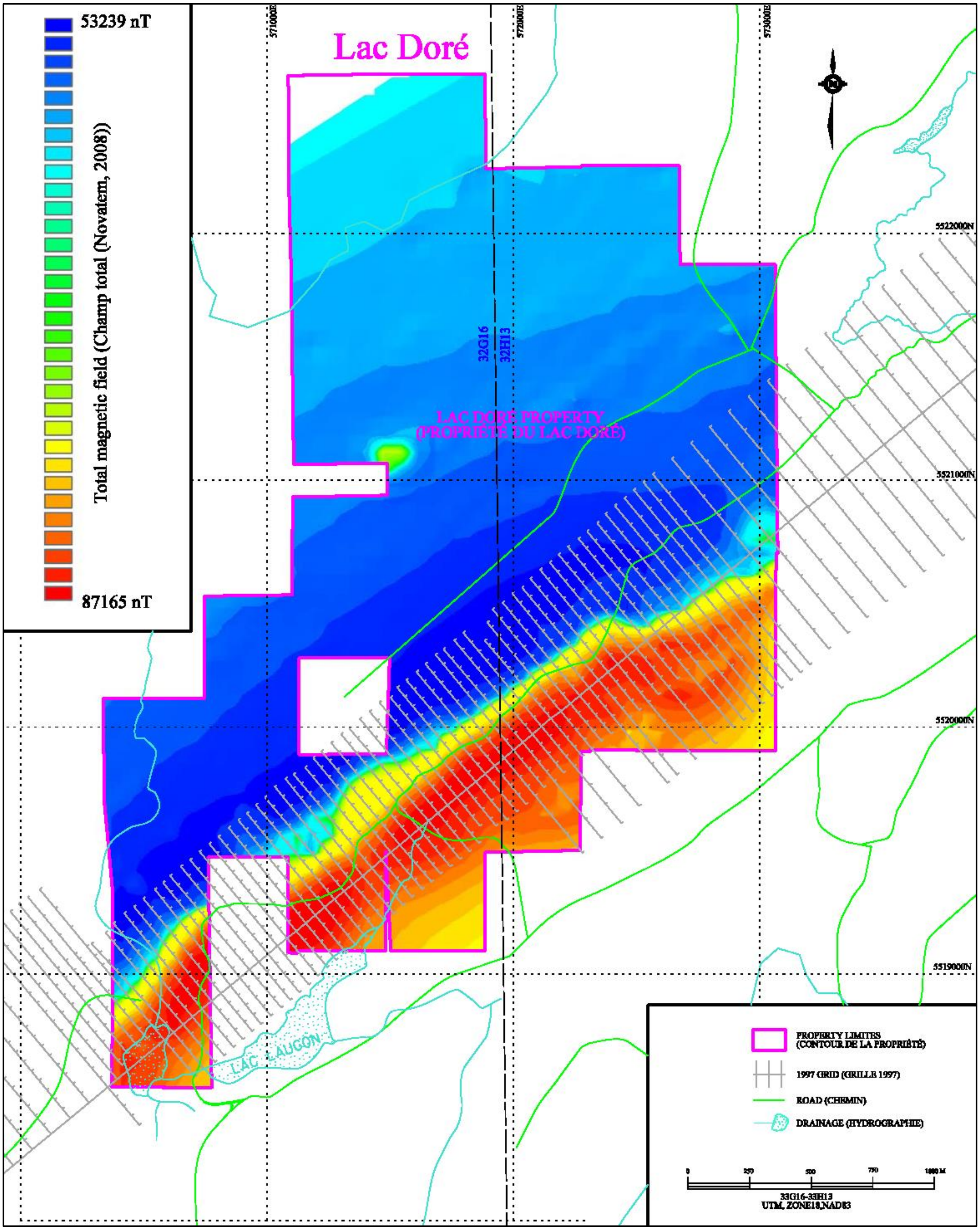

Figure 8: Ground magnetic map over the Lac Doré Property
Source: IOS, 2018

9.3 LiDAR Survey

An airborne LiDAR survey of the Property was carried out in June 2020 by Groupe PHB Inc. (Perron, Hudon, Bélanger Inc.). The LiDAR survey acquired 10 cm resolution ground elevation data in addition to high-resolution orthophotographs.

VanadiumCorp was provided with Raw and Classified LAS files, as well as GeoTiff and ECW files of orthophotos, and elevation contours in various formats (Figure 9). This data was used to generate the topography for the MRE.

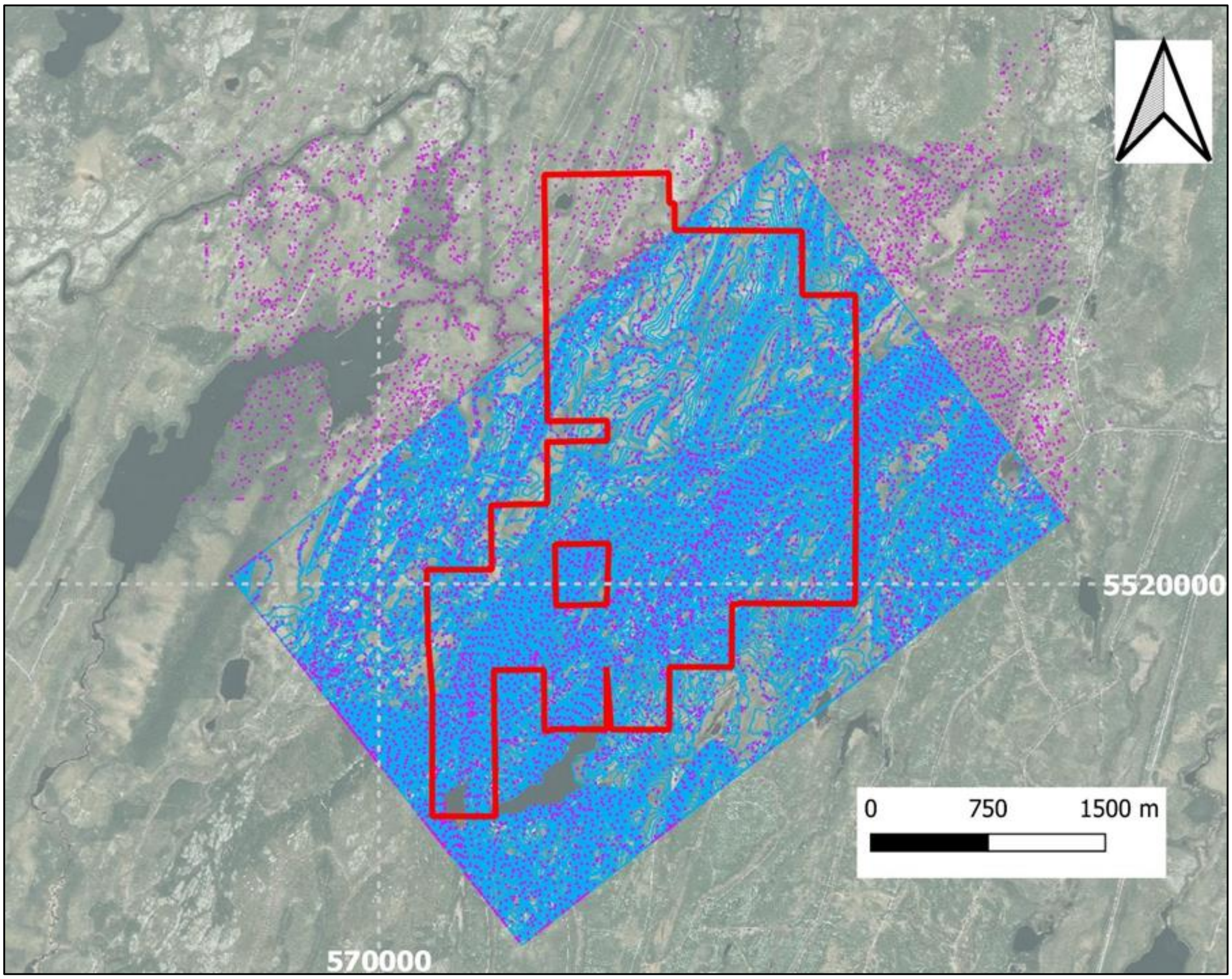

Figure 9: Map showing elevation points (pink) and contours (blue) from the LiDAR survey

9.4 Channel Sampling

Channel sampling was carried out by InnovExplo. Portions of 14 historical channels (Figure 10) were resampled using a diamond saw and assayed using the same procedures as for the drill core samples. These samples were used for verification of historical channel samples (see Section 12).

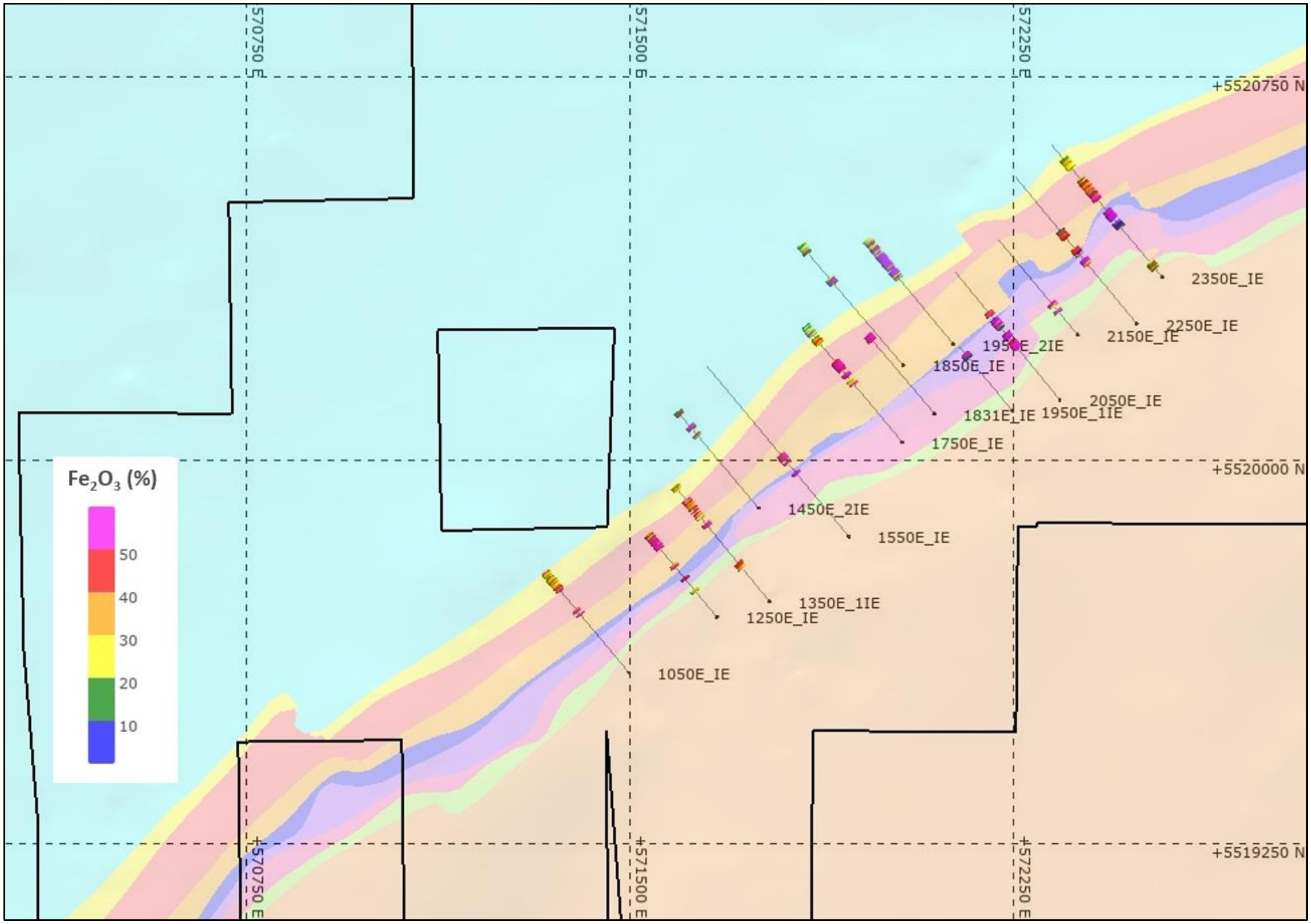

Figure 10: Location map of 2019–2020 channel samples (showing Fe_2O_3 grade), relative to channel sample/trench lines (grid is UTM18/NAD83)

10 Drilling

10.1 Historical Drilling

Historical drilling conducted by previous operators on the Lac Doré Property is discussed in Section 6 (History). Historical reports indicate that core recoveries were good, and that sampling was carried out using appropriate techniques. Downhole surveys, where carried out, were done using only dip tests with no azimuth information available.

10.2 Summary of Drilling by VanadiumCorp

Drilling at the Lac Doré Project was carried out in September and October 2019 by Miikan Drilling Ltd of Chibougamau, a joint venture between Chibougamau Diamond Drilling Ltd of Chibougamau, Eskan Company of Mistissini, and Nimsken Corp. of Ouje-Bougoumou, Québec. Two rigs were utilized drilling NQ diameter diamond drill core. Drill core was delivered to VanadiumCorp's core handling and logging facility in Chibougamau at the end of each shift. Core quality was excellent with recovery >95% for all holes drilled. The drilling program and drilling contractors were managed by InnovExplo Consultants, who also provided consulting geologists who carried out the logging, sampling and database management at the Project. Dr Longridge provided drill planning support, recommendations for logging codes, and regularly reviewed the database during the program.

A list of all drillholes drilled by VanadiumCorp during the 2019 program, their coordinates (easting and northing), length, and the dip and azimuth of the hole, are shown in Table 12. A total of 37 drillholes (9,601.8 m) were drilled.

Table 12: Drillholes drilled by VanadiumCorp in 2019 on the Lac Doré Property (coordinates are UTM18N, NAD 83)

Hole name	Easting	Northing	Elevation	Azimuth	Dip	Length (m)
LD-19-001	572476.9	5520253	507.1	320	-45	396
LD-19-002	572489	5520382	503.2	325	-45	222
LD-19-003	572349.8	5520249	508.2	320	-45	375
LD-19-004	572275.2	5520340	499.4	320	-45	240
LD-19-005	572273.4	5520185	508.4	320	-45	270
LD-19-006	572182.5	5520218	502.1	320	-45	237
LD-19-007	572220.9	5520093	516.9	320	-45	330
LD-19-008	572116.7	5520139	499.6	320	-45	246
LD-19-009	572105.4	5520076	502.6	320	-50	276
LD-19-010	572034.8	5520082	493.1	340	-45	261
LD-19-011	572030.5	5520010	497.1	320	-55	267
LD-19-012	571933.5	5520049	491.3	320	-45	228
LD-19-013	571940.3	5519966	499.8	320	-60	231
LD-19-014	571864.8	5519981	490.8	320	-45	178.8
LD-19-015	571851.8	5519901	496.9	325	-50	252
LD-19-016	571799.5	5519899	495.8	320	-45	192
LD-19-017	571726.8	5519909	492.6	325	-45	120
LD-19-018	571730.3	5519828	495.4	320	-45	180
LD-19-019	571672.9	5519820	499.3	320	-55	180
LD-19-020	572765.7	5520451	508.0	320	-60	201
LD-19-021	571635.1	5519709	496.7	320	-45	246

Hole name	Easting	Northing	Elevation	Azimuth	Dip	Length (m)
LD-19-022	571567	5519640	492.6	320	-45	282
LD-19-023	572647.6	5520358	518.6	320	-45	300
LD-19-024	572503.7	5520377	504.9	320	-60	240
LD-19-025	572249.5	5520137	514.1	320	-55	270
LD-19-026	572158.1	5520090	510.7	320	-60	291
LD-19-027	572079.9	5520028	500.2	320	-60	330
LD-19-028	572002.5	5519967	505.9	320	-60	300
LD-19-029	571902.5	5519932	498.2	320	-60	270
LD-19-030	571841.4	5519850	503.7	320	-55	285
LD-19-031	571764.7	5519787	498.3	320	-55	261
LD-19-032	572946.1	5520547	507.5	320	-45	201
LD-19-033	571494.3	5519564	493.2	320	-45	282
LD-19-034	571438.3	5519480	501.5	320	-45	330
LD-19-035	571340.4	5519452	520.4	320	-55	279
LD-19-036	571193.9	5519463	517.0	320	-45	210
LD-19-037	571303.5	5519332	519.6	320	-45	342

10.2.1 Core Logging

Following transport to the core logging facility, drill core was checked for recovery, measurement errors and placement errors by geological technicians and then metre intervals were marked. Cores were logged by a geologist who recorded lithology, alteration, mineralization, structure, as well as the interpreted stratigraphic zone (see Table 11). All logging was captured directly into digital format using Geotic Software hosted and managed by InnovExplo Consultants. The drillhole database (including assay and QAQC data and data validation) was managed in Geotic.

An exported database of all drillhole information (in Microsoft Access format) was provided by InnovExplo Consultants. Core logging procedures were reviewed by Dr Longridge during the site visit.

10.2.2 Core Sampling

Following the completion of logging, core was split into two halves at the VanadiumCorp facility in Chibougamau using a diamond saw. A geologist sampled the drill core. Sampling was done largely on 1.5 m intervals, although samples were taken respecting lithological boundaries, major structures, and magnetite mineralization, and sample widths vary between 0.3 m and 3.6 m. Core intervals for sampling were designated by the geologist during logging and marked for sampling.

The bottom half of the sampled core was returned to the core box and top half was placed in a sample bag with the corresponding sample tag and sealed with a zip tie. All bags are labelled. QAQC samples comprising 5% each of standards and blanks are included with each shipment sent to the laboratory.

The archived core is stored at the VanadiumCorp core storage facility in Chibougamau.

10.3 Surveying

10.3.1 Collar Surveying

Collars were surveyed by an independent surveyor based in Chibougamau (Paul Roy, Q.L.S., C.L.S). A list of preliminary drillhole coordinates was provided to the surveyor by InnovExplo geologists. A permanent control point (ST1) was set up on an outcrop and a reference GNSS base station receiver was set up at this control point for the duration of the survey. The exact position of the base station was calculated using the Precise Point Positioning service of Natural Resources Canada with over six hours of data from the GNSS receiver. Coordinates for ST1 are 5519453.63 N, 571347.60 E, 520.68 m elevation (UTM18N, NAD83).

A Leica GS15 GNSS RTK receiver was used as the base station. All borehole coordinates were calculated relative to the reference station. Drillhole collars for all 2019 drillholes, as well as resampled intervals of historical channel samples, were measured by a Leica GS18T and GS15 multi-frequency GNSS providing centimetre level accuracy.

Collars for historical drillholes and trenches were previously resurveyed under the supervision of IOS using a combination of a differential GPS and handheld GPS.

10.3.2 Downhole Surveying

Downhole azimuth and dip measurements were taken regularly (every run or approximately 3 m) by the drilling contractor using a Reflex™ gyro-based instrument that is appropriate for rocks with significant proportions of magnetite. Historical holes were only surveyed for downhole dip variation and do not have downhole azimuth information. This is not considered material given the relatively short lengths of drillholes and the broad zones of mineralization.

10.4 Significant Intervals

A list of significant intervals for holes drilled by VanadiumCorp in 2019 is presented in Table 13.

Table 13: Significant intervals drilled by VanadiumCorp in 2019 (significance is considered >0.3% V_2O_5 over 0.5 m or more)

Drillhole name	From (m)	To (m)	Core length (m)	Estimated true thickness (m)	V_2O_5 (%)	Fe_2O_3 (%)	TiO_2 (%)	Zone
LD-19-001	54.50	58.70	4.2	3.8	0.47	45.24	12.68	P3
LD-19-001	94.30	103.70	9.4	8.6	0.56	54.71	12.44	P2
LD-19-001	108.90	122.10	13.2	12.1	0.65	61.99	14.20	P2
LD-19-001	126.50	139.40	12.9	11.9	0.66	58.01	12.84	P2
LD-19-001	161.30	164.90	3.6	3.3	0.66	56.23	11.93	P2
LD-19-001	185.10	214.50	29.4	27.1	0.67	53.09	10.65	P2
LD-19-001	218.00	225.50	7.5	6.9	0.78	59.34	10.86	P2
LD-19-001	231.30	233.80	2.5	2.3	0.71	53.05	9.26	P2
LD-19-001	240.00	244.70	4.7	4.1	0.69	50.07	8.78	P1
LD-19-001	251.60	257.40	5.8	5.0	0.64	47.49	7.88	P1
LD-19-001	269.00	278.50	9.5	8.2	0.55	40.12	6.55	P1
LD-19-001	289.00	292.70	3.7	3.2	0.78	55.20	8.81	P1
LD-19-001	307.00	318.10	11.1	9.6	0.54	38.17	5.77	P1
LD-19-002	10	20.5	10.5	9.5	0.53	55.13	12.95	P3
LD-19-002	85.1	104.3	19.2	17.4	0.66	58.19	12.73	P2
LD-19-002	119.9	152.3	32.5	29.4	0.66	53.18	10.57	P2
LD-19-002	154.5	160.8	6.3	5.7	0.77	55.78	10.55	P2
LD-19-002	165.3	176.6	11.3	10.2	0.7	49.13	8.74	P1
LD-19-002	181	185.9	4.8	4.4	0.54	38.41	6.52	P1
LD-19-003	7.5	14.3	6.9	6.2	0.57	59.96	14.4	P3
LD-19-003	34.2	51.3	17.1	15.5	0.59	57.1	13.22	P3
LD-19-003	92	99.2	7.2	6.5	0.63	53.74	11.95	P2

Drillhole name	From (m)	To (m)	Core length (m)	Estimated true thickness (m)	V_2O_5 (%)	Fe_2O_3 (%)	TiO_2 (%)	Zone
LD-19-003	141.4	168.9	27.5	24.9	0.65	51.44	9.74	P2
LD-19-003	178.1	198.4	20.4	18.4	0.69	50.41	8.89	P2
LD-19-003	210	222.3	12.3	11.1	0.61	42.65	7.04	P2
LD-19-003	228	232.6	4.6	4.2	0.78	54.04	8.89	P2
LD-19-003	242.4	242.9	0.5	0.5	0.8	52.6	8.99	P1
LD-19-003	248	252.7	4.7	4.2	0.51	35.47	5.5	P1
LD-19-003	255.7	261.2	5.5	5	0.51	36.73	5.52	P1
LD-19-003	314.3	316.5	2.2	1.9	0.43	28.29	4.79	P0
LD-19-004	2.2	10.2	8	7.3	0.59	46.34	8.22	P3
LD-19-004	44.1	51	6.9	6.3	0.97	70.13	11.76	P2
LD-19-004	91.5	104.8	13.3	12.1	0.56	40.34	6.65	P2
LD-19-004	112.5	116.5	4	3.6	0.76	53.91	8.65	P2
LD-19-004	137.5	157.5	20	18.1	0.45	33.18	5	P1
LD-19-004	187.3	189.6	2.3	2.1	0.43	29.7	4.68	P1
LD-19-005	25.1	27.9	2.8	2.5	0.43	52.76	11.84	P2
LD-19-005	35.1	38.9	3.9	3.5	0.7	68.94	16.75	P2
LD-19-005	54.2	56.9	2.8	2.5	0.6	57.42	13.48	P2
LD-19-005	59.6	76.5	16.9	15.3	0.51	53.92	12.55	P2
LD-19-005	79.8	80.6	0.8	0.7	0.71	61.9	15	P2
LD-19-005	83.1	84	0.9	0.8	0.55	54.8	12.9	P2
LD-19-005	88.1	108.7	20.6	18.7	0.53	52.68	11.55	P2
LD-19-005	121.3	135.9	14.6	13.2	0.61	53.21	11.56	P2
LD-19-005	143.2	173.7	30.5	27.6	0.69	53.59	10.59	P2
LD-19-005	181.4	202.4	21	19	0.74	51.62	9.32	P2
LD-19-005	211.6	214.3	2.7	2.4	0.67	45.97	7.71	P2
LD-19-005	218.3	223.4	5.1	4.6	0.59	42.16	6.79	P1
LD-19-005	227.6	230.1	2.5	2.3	0.81	56.86	9.11	P1
LD-19-005	243	254	11	10	0.48	35.11	5.28	P1
LD-19-005	257.4	259.5	2.1	1.9	0.34	26.24	3.81	P1
LD-19-005	262.5	265	2.5	2.3	0.34	25.22	3.72	P1
LD-19-006	4.0	6.0	2.0	1.8	0.58	58.25	13.55	P2
LD-19-006	12.0	20.7	8.7	7.9	0.54	54.03	12.07	P2
LD-19-006	27.4	28.7	1.3	1.2	0.67	57.00	14.00	P2
LD-19-006	34.1	103.9	69.8	63.3	0.68	56.04	11.41	P2
LD-19-006	110.2	127.5	17.3	15.7	0.71	51.33	8.91	P2
LD-19-006	134.9	145.5	10.6	9.6	0.59	41.95	6.84	P1
LD-19-006	150.4	154.5	4.1	3.7	0.83	57.00	9.22	P1
LD-19-006	168.6	179.4	10.8	9.8	0.48	34.60	5.21	P1
LD-19-007	19.5	25.5	6.0	5.4	0.31	49.38	11.14	P3
LD-19-007	30.0	35.4	5.4	4.9	0.34	52.32	11.92	P3
LD-19-007	56.4	58.7	2.3	2.1	0.47	55.90	14.04	P2
LD-19-007	138.8	220.3	81.5	73.9	0.64	55.49	11.72	P2
LD-19-007	227.0	248.1	21.1	19.1	0.73	51.48	9.10	P2

Drillhole name	From (m)	To (m)	Core length (m)	Estimated true thickness (m)	V_2O_5 (%)	Fe_2O_3 (%)	TiO_2 (%)	Zone
LD-19-007	256.2	266.5	10.3	9.3	0.60	42.07	6.98	P1
LD-19-007	281.5	294.6	13.1	11.9	0.45	32.94	4.88	P1
LD-19-008	2.4	37.6	35.2	31.9	0.45	52.21	12.67	P2
LD-19-008	43.1	71.3	28.2	25.6	0.6	56.29	12.64	P2
LD-19-008	79.6	120.5	40.9	37.1	0.69	53.77	10.64	P2
LD-19-008	129.8	138.1	8.3	7.5	0.71	52.32	9.03	P2
LD-19-008	140.3	149.2	8.9	8.1	0.61	45.18	7.51	P2
LD-19-008	156.9	167.8	10.9	9.9	0.57	41.29	6.56	P2
LD-19-008	172.2	175.8	3.6	3.2	0.78	55.63	8.67	P1
LD-19-008	191.1	203	11.9	10.8	0.49	34.89	5.28	P1
LD-19-008	230.2	234	3.8	3.4	0.44	31.44	4.54	P0
LD-19-009	51.0	76.9	25.9	22.4	0.42	52.63	12.56	P2
LD-19-009	81.5	168.2	86.7	75.1	0.66	56.56	11.71	P2
LD-19-009	175.5	194.4	18.9	16.4	0.67	50.75	9.09	P2
LD-19-009	204.0	219.0	15.0	13.0	0.57	41.44	6.74	P2
LD-19-009	225.2	228.9	3.7	3.2	0.85	60.23	9.68	P2
LD-19-009	250.3	253.9	3.6	3.1	0.59	43.15	6.52	P1
LD-19-010	9.9	105.8	95.9	86.9	0.56	53.57	11.81	P2
LD-19-010	115.2	120.4	5.2	4.7	0.80	58.62	10.77	P2
LD-19-010	125.0	141.5	16.5	15.0	0.73	50.82	9.01	P2
LD-19-010	149.0	161.8	12.8	11.6	0.58	41.51	6.90	P2
LD-19-010	167.7	174.2	6.5	5.9	0.58	41.22	6.64	P2
LD-19-010	185.6	189.6	4.0	3.6	0.48	34.14	5.42	P2
LD-19-010	195.6	203.2	7.6	6.9	0.45	32.64	4.98	P1
LD-19-010	227.9	230.5	2.6	2.4	0.65	44.47	6.54	P1
LD-19-011	58.2	81.9	23.7	19.4	0.42	54.21	13.11	P2
LD-19-011	86.4	118.8	32.4	26.5	0.59	58.65	13.69	P2
LD-19-011	135.2	153.1	17.9	14.7	0.68	56.26	11.50	P2
LD-19-011	161.7	184.9	23.2	19.0	0.73	55.37	10.50	P2
LD-19-011	190.8	211.7	20.9	17.1	0.65	47.62	8.19	P2
LD-19-011	221.6	232.3	10.7	8.8	0.61	43.73	7.21	P1
LD-19-011	238.4	242.0	3.6	2.9	0.84	58.65	9.37	P1
LD-19-011	255.7	260.4	4.7	3.9	0.55	39.79	6.04	
LD-19-012	11.4	85.8	74.4	67.4	0.63	51.52	10.39	P2
LD-19-012	90.7	103.5	12.8	11.6	0.68	48.48	8.73	P2
LD-19-012	110.1	117.2	7.1	6.4	0.64	45.04	7.55	P1
LD-19-012	122.0	125.3	3.3	3.0	0.83	56.54	9.40	P1
LD-19-012	141.3	156.5	15.2	13.8	0.48	34.50	5.21	P1
LD-19-012	196.0	200.5	4.5	4.1	0.44	31.67	4.52	P1
LD-19-013	89.2	115.2	26.1	20	0.61	58.43	13.56	P2
LD-19-013	142.4	185.2	42.8	32.7	0.73	55.72	11.21	P2
LD-19-013	191.8	209.7	17.9	13.7	0.7	51.63	9.01	P2
LD-19-013	216	225.3	9.3	7.1	0.6	42.7	7.04	P1

Drillhole name	From (m)	To (m)	Core length (m)	Estimated true thickness (m)	V_2O_5 (%)	Fe_2O_3 (%)	TiO_2 (%)	Zone
LD-19-014	15.7	23.2	7.5	6.8	0.54	55.43	13.28	P2
LD-19-014	30.4	93.9	63.5	57.6	0.67	54.51	11.31	P2
LD-19-014	99.6	116.9	17.3	15.7	0.61	45.77	7.86	P1
LD-19-014	123.5	132.8	9.3	8.4	0.57	41.59	6.66	P1
LD-19-014	137.7	141.4	3.7	3.4	0.82	57.21	9.16	P1
LD-19-014	157.0	167.6	10.6	9.6	0.50	36.27	5.44	P0
LD-19-014	176.2	178.8	2.6	2.4	0.39	28.65	4.17	P0
LD-19-015	4.7	7.4	2.7	2.3	0.44	49.4	12.57	P3
LD-19-015	73.3	80.7	7.4	6.4	0.49	50.74	11.83	P2
LD-19-015	88.4	136.5	48.2	41.7	0.68	54.73	11.26	P2
LD-19-015	146.9	150	3.1	2.7	0.41	31.96	5.31	P2
LD-19-015	180.2	193	12.8	11.1	0.52	37.63	5.97	P2
LD-19-015	223.5	234.4	10.9	9.4	0.5	35.72	5.36	P1
LD-19-016	2.90	24.70	21.8	19.8	0.43	49.76	11.66	P3
LD-19-016	51.30	60.20	8.9	8.1	0.55	55.37	12.89	P2
LD-19-016	66.90	102.25	35.4	32.1	0.66	53.73	10.63	P2
LD-19-016	108.20	124.50	16.3	14.8	0.67	49.35	8.45	P2
LD-19-016	132.90	133.90	1.0	0.9	0.83	61.70	10.30	P1
LD-19-016	141.00	150.70	9.7	8.8	0.61	43.08	7.08	P1
LD-19-016	155.85	159.40	3.6	3.3	0.82	57.08	9.18	P1
LD-19-016	173.70	183.00	9.3	8.4	0.56	39.56	6.09	P0
LD-19-017	6.30	50.40	44.1	40.0	0.65	51.76	10.09	P2-A
LD-19-017	55.15	61.75	6.6	6.0	0.60	42.15	6.89	P2
LD-19-017	82.85	103.60	20.8	18.9	0.48	34.60	5.12	P1
LD-19-018	10.3	17.7	7.5	6.8	0.41	54.34	13.22	P3
LD-19-018	21.8	44.9	23	20.9	0.51	56.49	13.56	P2
LD-19-018	74	118.9	44.9	40.7	0.62	50	9.32	P2
LD-19-018	124.4	132.2	7.8	7.1	0.61	44.96	7.07	P2
LD-19-018	135.8	138.5	2.7	2.5	0.82	58.59	9.07	P1
LD-19-018	148	153.9	5.9	5.3	0.54	38.73	5.78	P1
LD-19-019	38.25	43.20	5.0	4.0	0.68	60.64	14.22	P2
LD-19-019	47.80	63.85	16.1	13.2	0.68	57.88	12.66	P2
LD-19-019	67.25	96.90	29.7	24.5	0.64	48.13	8.85	P2
LD-19-019	106.75	113.70	7.0	5.8	0.49	37.40	5.55	P2
LD-19-019	119.85	122.80	3.0	2.5	0.90	60.30	9.73	P2
LD-19-019	134.25	145.35	11.1	8.3	0.50	34.71	5.25	P1
LD-19-020	115.30	137.20	21.9	16.8	0.72	55.31	10.93	P2
LD-19-020	139.30	147.10	7.8	6.0	0.76	55.38	10.46	P2
LD-19-020	153.70	173.30	19.6	15.0	0.68	49.48	8.59	P2
LD-19-020	184.60	197.00	12.4	9.5	0.60	43.39	6.98	P1
LD-19-021	12	43	31	28.1	0.44	49.6	11.6	P3
LD-19-021	48	63.3	15.3	13.9	0.46	47.21	10.36	P2
LD-19-021	81.8	122	40.2	36.4	0.62	51.55	10.08	P2

Drillhole name	From (m)	To (m)	Core length (m)	Estimated true thickness (m)	V_2O_5 (%)	Fe_2O_3 (%)	TiO_2 (%)	Zone
LD-19-021	128.1	151.5	23.4	21.2	0.46	36.78	5.68	P2
LD-19-021	158.5	171	12.5	11.3	0.39	32.1	4.39	P1
LD-19-021	185.2	188.4	3.2	2.9	0.56	41.5	5.99	P1
LD-19-021	200.3	206.3	6	5.4	0.49	34.4	5.2	P1
LD-19-021	209.8	212.1	2.3	2.1	0.29	22.05	3.21	P1
LD-19-021	232.9	236.2	3.3	3	0.62	38.36	6.42	P0
LD-19-022	42.9	60	17.2	15.5	0.48	52.88	12.62	P3
LD-19-022	102.9	132.5	29.6	26.8	0.59	48.46	9.23	P2
LD-19-022	143.5	164.9	21.4	19.4	0.45	35.05	5.39	P2
LD-19-022	173	185.7	12.7	11.5	0.42	33.04	4.67	P2
LD-19-022	195.7	204.1	8.4	7.6	0.51	39.57	5.51	P2
LD-19-022	218.1	227.4	9.3	8.4	0.49	35.18	5.28	P1
LD-19-022	232.5	235.8	3.3	3	0.28	21.73	3.18	P0
LD-19-022	252.5	255.3	2.9	2.6	0.41	30.73	4.03	P0
LD-19-023	18.70	30.30	11.6	9.3	0.59	59.12	14.72	P3
LD-19-023	52.70	56.40	3.7	3.3	0.59	58.18	13.23	P2
LD-19-023	69.00	80.80	11.8	10.6	0.69	60.26	13.90	P2
LD-19-023	97.90	112.20	14.3	12.9	0.67	58.54	13.11	P2
LD-19-023	130.70	135.80	5.1	4.6	0.71	59.63	12.61	P2
LD-19-023	149.50	160.80	11.3	10.2	0.65	52.82	10.81	P2
LD-19-023	168.50	193.00	24.5	22.2	0.65	51.23	9.51	P2
LD-19-023	199.50	204.50	5.0	4.5	0.83	60.43	10.90	P2
LD-19-023	213.00	230.90	17.9	16.2	0.69	50.00	8.63	P2
LD-19-023	240.50	251.10	10.6	9.6	0.62	43.99	7.22	P2
LD-19-023	257.50	268.70	11.2	9.4	0.49	34.44	5.22	P1
LD-19-024	25	36.5	11.5	8.8	0.51	52.91	11.89	P3
LD-19-024	104	109	5.1	3.9	0.73	65.65	14.88	P2
LD-19-024	113.6	117.1	3.5	2.7	0.58	53.86	11.16	P2
LD-19-024	127	136.9	9.9	7.6	0.62	52.49	11.27	P2
LD-19-024	151.7	157.3	5.6	4.3	0.73	58.9	12.38	P2
LD-19-024	172.3	186.3	14	10.7	0.72	53.48	10.57	P2
LD-19-024	191.8	198.1	6.3	4.8	0.8	57.36	10.61	P2
LD-19-024	203.7	219.4	15.7	12	0.72	51.07	9.4	P2
LD-19-024	225.2	235.2	10	7.7	0.48	35.89	5.72	P1
LD-19-025	1.50	10.20	8.7	6.7	0.34	43.97	9.27	P2
LD-19-025	26.00	27.70	1.7	1.3	0.36	52.88	10.66	P2
LD-19-025	30.40	33.50	3.1	2.4	0.36	47.79	10.46	P2
LD-19-025	45.15	63.00	17.9	13.7	0.43	54.73	12.75	P2
LD-19-025	63.95	66.35	2.4	1.8	0.35	43.50	10.62	P2
LD-19-025	67.80	75.85	8.1	6.2	0.47	53.64	13.68	P2
LD-19-025	78.90	86.00	7.1	5.4	0.48	51.71	13.29	P2
LD-19-025	101.90	105.10	3.2	2.5	0.41	43.99	10.37	P2
LD-19-025	110.65	138.60	28.0	21.4	0.53	54.24	12.55	P2

Drillhole name	From (m)	To (m)	Core length (m)	Estimated true thickness (m)	V_2O_5 (%)	Fe_2O_3 (%)	TiO_2 (%)	Zone
LD-19-025	140.70	141.65	1.0	0.8	0.73	67.00	15.40	P2
LD-19-025	153.30	216.9	63.6	48.7	0.69	56.39	11.48	P2
LD-19-025	223.60	224.55	1.0	0.8	0.88	59.10	10.70	P1
LD-19-025	227.30	233.40	6.1	4.7	0.68	48.53	8.40	P1
LD-19-025	246.00	260.60	14.6	11.2	0.58	41.46	6.72	P1
LD-19-026	77.9	96.2	18.4	14.1	0.47	56.51	13.93	P2
LD-19-026	101.4	210.5	109.1	83.6	0.61	53.64	11.37	P2
LD-19-026	217.3	235.9	18.6	14.2	0.66	48.64	8.33	P2
LD-19-026	243.5	262.0	18.5	14.2	0.52	36.81	5.97	P1
LD-19-026	274.0	287.4	13.4	10.3	0.46	32.67	4.95	P1
LD-19-027	76.5	78.9	2.4	1.8	0.42	54.98	13.39	P2
LD-19-027	87.0	94.9	7.9	6.1	0.48	56.38	13.95	P2
LD-19-027	115.5	216.5	101.0	77.4	0.65	56.53	11.98	P2
LD-19-027	224.2	241.7	17.6	13.4	0.72	52.31	9.06	P2
LD-19-027	250.2	256.2	6.0	4.6	0.67	48.35	7.79	P1
LD-19-027	260.1	262.5	2.4	1.8	0.81	57.43	9.05	P1
LD-19-027	271.8	286.5	14.8	11.3	0.39	29.32	4.29	P1
LD-19-027	309.7	313.4	3.7	2.8	0.53	35.88	5.32	P0
LD-19-028	88.5	91.3	2.8	2.1	0.53	66.63	16.54	P2
LD-19-028	97.7	120.1	22.4	17.2	0.48	57.96	14.22	P2
LD-19-028	129.4	167.4	38.0	29.1	0.59	56.46	12.62	P2
LD-19-028	181.9	218.3	36.4	27.9	0.70	55.98	11.05	P2
LD-19-028	220.5	226.9	6.4	4.9	0.77	56.75	10.39	P2
LD-19-028	233.4	250.9	17.5	13.4	0.68	49.54	8.47	P2
LD-19-028	256.6	264.3	7.7	5.9	0.58	41.73	6.78	P2
LD-19-028	268.5	270.6	2.1	1.6	0.82	57.56	9.23	P1
LD-19-028	281.7	299.6	17.9	13.7	0.39	28.55	4.25	P1
LD-19-029	5.00	33.30	28.3	21.7	0.44	54.15	13.16	P3
LD-19-029	84.30	89.20	4.9	3.8	0.48	53.29	12.49	P2
LD-19-029	93.10	183.00	89.9	68.9	0.67	56.62	11.71	P2
LD-19-029	214.90	234.05	19.2	14.7	0.52	37.16	6.04	P2
LD-19-029	246.00	253.50	7.5	5.7	0.55	39.90	6.04	P1
LD-19-030	39.5	43.9	4.4	3.4	0.40	51.81	12.46	P3
LD-19-030	100.2	115.5	15.3	11.7	0.45	49.74	11.54	P2
LD-19-030	124.3	139.2	14.9	11.4	0.57	55.92	12.85	P2
LD-19-030	144.4	184.1	39.7	30.4	0.63	50.30	9.71	P2
LD-19-030	189.8	209.3	19.5	14.9	0.71	51.54	8.84	P1
LD-19-030	216.0	226.8	10.8	8.3	0.60	43.30	7.07	P0
LD-19-030	233.1	237.5	4.4	3.3	0.81	56.73	9.09	P0
LD-19-030	264.3	282.0	17.7	13.6	0.45	32.87	4.92	P0
LD-19-031	53.1	63.1	10.0	8.2	0.38	55.25	12.77	P3
LD-19-031	78.5	99.8	21.3	17.4	0.52	55.78	13.31	P2
LD-19-031	133.1	146.2	13.1	10.7	0.67	58.01	12.72	P2

Drillhole name	From (m)	To (m)	Core length (m)	Estimated true thickness (m)	V_2O_5 (%)	Fe_2O_3 (%)	TiO_2 (%)	Zone
LD-19-031	150.4	192.7	42.3	34.7	0.64	51.42	9.93	P2
LD-19-031	197.0	216.8	19.8	16.2	0.61	45.60	7.51	P2
LD-19-031	227.5	239.6	12.1	9.9	0.56	41.00	6.48	P1
LD-19-031	245.2	251.7	6.5	5.3	0.57	41.53	6.47	P1
LD-19-031	258.8	259.3	0.5	0.4	0.65	47.60	7.36	P0
LD-19-032	109.9	142	32.1	29.1	0.62	46.78	8.88	P2
LD-19-032	149.2	153.1	4	3.6	0.62	47.24	7.11	P2
LD-19-032	165	177	12	10.9	0.5	34.89	5.42	P2
LD-19-032	178.5	183	4.5	4.1	0.32	24.77	3.56	P1
LD-19-033	39.00	47.55	8.6	6.9	0.38	51.61	12.33	P3
LD-19-033	89.70	98.80	9.1	8.2	0.49	53.45	12.42	P2
LD-19-033	115.55	118.50	3.0	2.7	0.61	58.13	12.99	P2
LD-19-033	122.30	148.00	25.7	23.3	0.60	48.81	9.40	P2
LD-19-033	152.15	164.00	11.9	10.8	0.46	36.87	5.80	P2
LD-19-033	166.95	178.40	11.5	10.5	0.49	37.34	5.76	P2
LD-19-033	186.00	198.40	12.4	11.4	0.39	31.44	4.41	P2
LD-19-033	214.70	224.00	9.3	7.9	0.48	34.82	5.36	P1
LD-19-034	101.15	107.00	5.9	5.3	0.43	56.85	13.91	P2
LD-19-034	130.60	139.00	8.4	7.6	0.40	44.05	10.21	P2
LD-19-034	142.40	149.10	6.7	6.1	0.49	52.55	12.03	P2
LD-19-034	156.40	175.50	19.1	17.3	0.60	52.69	11.69	P2
LD-19-034	180.80	215.25	34.5	31.3	0.55	41.90	7.29	P2
LD-19-034	221.50	230.30	8.8	8.0	0.55	40.05	6.43	P2
LD-19-034	235.20	237.90	2.7	2.4	0.81	55.91	8.97	P2
LD-19-034	248.30	255.40	7.1	6.4	0.57	40.01	6.08	P1
LD-19-035	32.9	39.4	6.5	5.3	0.25	46.42	9.04	P3
LD-19-035	47.5	100.6	53.1	43.5	0.43	48.01	11.09	P2
LD-19-035	104.9	107.5	2.6	2.1	0.53	55.43	11.48	P2
LD-19-035	110.3	154.9	44.6	36.5	0.65	54.12	11.61	P2
LD-19-035	164.2	193.1	28.9	23.7	0.67	51.63	9.77	P2
LD-19-035	199	218.6	19.6	16.1	0.59	43.51	7.17	P2
LD-19-035	224	232.3	8.3	6.8	0.54	39.47	6.11	P1
LD-19-035	247.8	255.9	8.1	6.6	0.53	38.06	5.77	P1
LD-19-035	262.6	264.9	2.3	1.9	0.51	36.42	5.46	P0
LD-19-035	273.9	277.9	4	3.3	0.32	23.59	3.5	P0
LD-19-036	4.80	6.05	1.3	1.2	0.70	63.10	14.30	P2
LD-19-036	17.75	24.20	6.5	5.9	0.63	56.21	12.25	P2
LD-19-036	27.60	48.90	21.3	19.3	0.58	48.93	9.02	P2
LD-19-036	50.65	63.35	12.7	11.5	0.66	48.30	8.21	P2
LD-19-036	83.50	91.70	8.2	7.4	0.51	37.88	5.85	P2
LD-19-036	97.40	100.50	3.1	2.8	0.62	45.51	6.84	P2
LD-19-036	113.00	124.60	11.6	10.5	0.49	35.19	5.38	P1
LD-19-037	79.5	95.5	16.0	14.5	0.46	54.03	12.79	P3

Drillhole name	From (m)	To (m)	Core length (m)	Estimated true thickness (m)	V_2O_5 (%)	Fe_2O_3 (%)	TiO_2 (%)	Zone
LD-19-037	99.2	105.4	6.2	5.6	0.65	63.02	14.47	P3
LD-19-037	194.5	245.7	51.2	46.4	0.67	53.92	10.80	P2
LD-19-037	254.0	273.1	19.1	17.3	0.60	45.01	7.40	P2
LD-19-037	288.0	297.8	9.8	8.9	0.50	38.17	5.63	P1
LD-19-037	303.7	315.9	12.2	11.1	0.50	36.08	5.40	P1
LD-19-037	325.5	328.5	3.0	2.7	0.35	25.30	3.70	P0

10.5 Interpretation

10.5.1 True Thickness

True thicknesses for mineralized intervals are reported in Table 13, and these vary between 0.4 m and 86.9 m depending on the unit. Generally, mineralized units are between 5 and 25 m in true thickness, although the overall (cumulative) true thickness of the entire mineralized zone (including unmineralized partings) is between 200 m and 300 m.

10.5.2 Mineralization Orientation

Mineralization is oriented in tabular zones striking northeast (050°) and dipping at approximately 60° towards the southeast.

11 Sample Preparation, Analyses and Security

11.1 Historical Sampling

Assays for historical campaigns were completed at various laboratories including Corem, Chimitec and ALS. Several methods were used, including Inductively coupled plasma-optical emission spectrometry (ICP-OES), inductively coupled plasma-atomic emission spectroscopy (ICP-AES), and XRF spectroscopy finish on lithium borate fusion disks. Although different methods have been used, comparison with recently acquired data shows a good correlation and different methods are not considered material to the MRE.

11.2 Sample Preparation and Security

Following sampling of half core, which is placed in a labelled sample bag with the corresponding sample tag and sealed with a zip tie, samples are packaged and stored at the VanadiumCorp Chibougamau core handling and logging facility prior to shipment. Access to this facility was limited to authorized persons working on the Project. A geologist is responsible for overseeing the transfer of samples from the core facility to the shipping company, which deliver the samples to SGS Canada Inc.'s preparation facilities in Val d'Or and Québec City, Québec for preparation.

Following completion of assays, samples (pulps and crush rejects) are returned to VanadiumCorp's new secured core storage facility located in Chapais, Québec.

Upon arrival the SGS facility, samples were dried as required and crushed to 75% passing 2 mm. A 1,000–1,500 g subsample was then split out and pulverized to 85% passing 75 µm and ~150 g subsample of that pulverized pulp was taken for head assays.

11.3 Analytical Method

Following preparation of pulverized pulps at SGS facilities in Val d'Or and Québec City, samples were shipped to SGS Canada Inc.'s laboratory at Lakefield, Ontario for Whole Rock Analyses. Analyses were carried out using XRF spectroscopy finish on a fusion disk (prepared using fusion of 0.2–0.5 g of sample with a lithium tetraborate/lithium metaborate mixture. The SGS facilities are ISO/IEC 17025 standard certified for the methods used, and all analytical methods include quality control materials at set frequencies with established data acceptance criteria. The suite of elements analysed includes SiO_2, Al_2O_3, Fe_2O_3, MgO, CaO, Na_2O, K_2O, TiO_2, P_2O_5, MnO, Cr_2O_3, V_2O_5, and LOI.

11.4 Density

Density measurements were carried out for all samples submitted for assay in 2019–2020. Density was done by means of gas pycnometry at SGS Canada Inc.'s laboratory at Lakefield, Ontario. Since no pore spaces or voids were encountered during drilling and the mineralization is hosted in fresh magmatic rock, this method is considered appropriate for this ore type.

11.5 Quality Assurance and Quality Control

11.5.1 Database

All logging, sampling, assay, survey and other relevant data from the 2019–2020 exploration program was captured by InnovExplo geologists into a database using Geotic software. In addition, all historical data was captured into this database, which is hosted on servers at the InnovExplo offices that are backed-up regularly.

InnovExplo regularly provided copies of the database to Dr Longridge during the course of the exploration program, which was verified against original assay certificates provided directly by SGS Laboratories, against historical records, to ensure the validity of the database.

11.5.2 Blanks

A total of 399 blanks were randomly inserted with samples sent for assay, representing ~5.1% of samples assayed. These were a mixture of certified blank silica chips (AMIS0681) and non-certified blanks. Results show that vast majority of the samples returned near-background values, indicating no contamination of samples (Figure 11). A few outliers are noted, particularly for Fe_2O_3 and TiO_2; however, these are likely to be the result of the use of non-certified materials for some of the blank samples inserted.

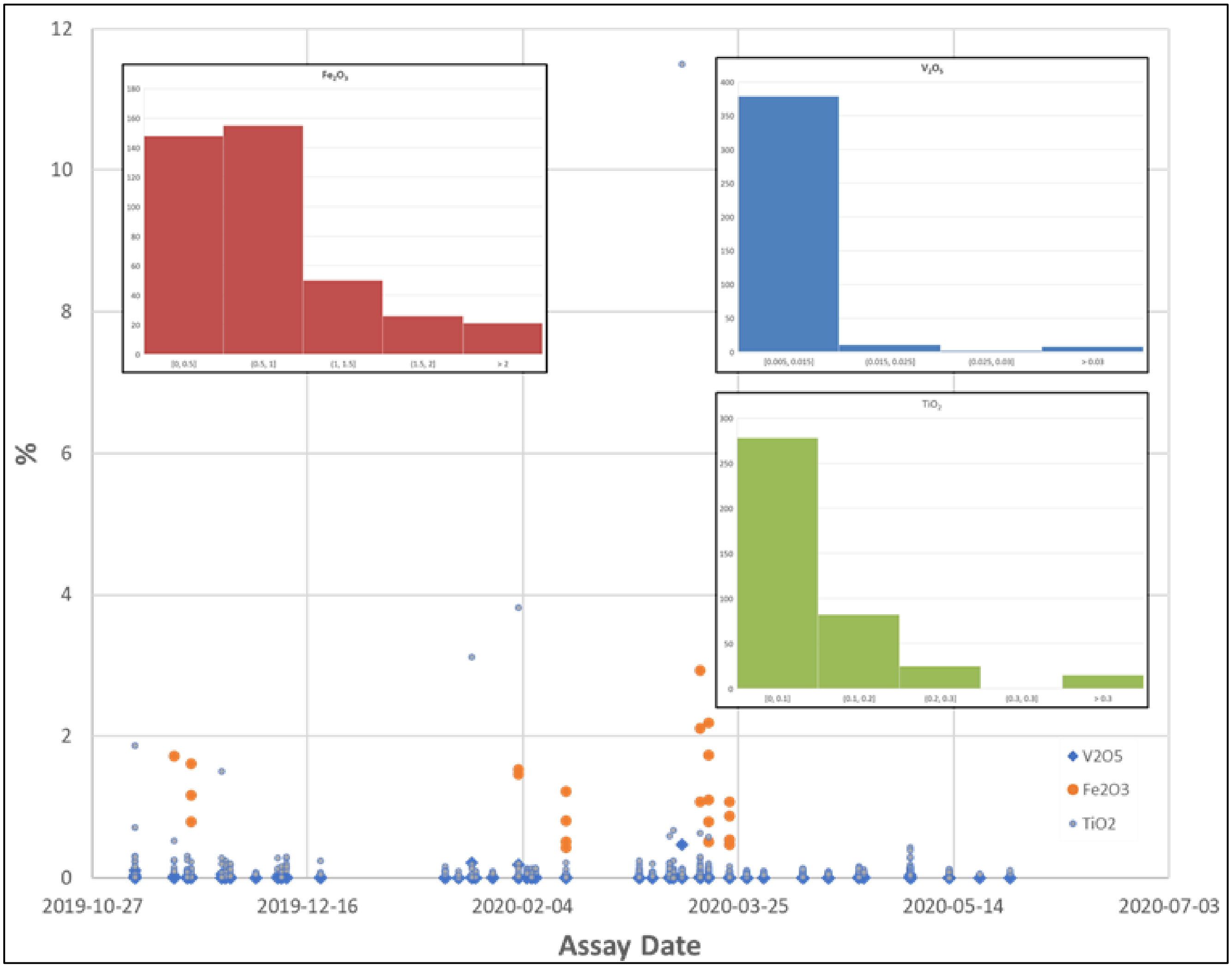

Figure 11: Plot of blank samples vs date of assay
Insets show histograms of blank values for Fe_2O_3, V_2O_5 and TiO_2.

11.5.3 Certified Reference Materials

CRMs that were used by VanadiumCorp in the course of the 2019–2020 drilling program are AMIS0567, AMIS 0501, and AMIS0347. All CRMs were ordered from African Mineral Standards (AMIS), a leading international ISO17034 accredited manufacturer and supplier of matrix-matched CRMs, and represent VTM deposits with similar grades of vanadium, titanium and iron to the Lac Doré deposit.

Results over the course of the 2019–2020 program are shown in Figure 12 (V_2O_5), Figure 13 (Fe_2O_3) and Figure 14 (TiO_2). Assays of CRMs agree well with certified values, with no bias identified in the assay data. A single outlier likely represents a mislabelled sample.

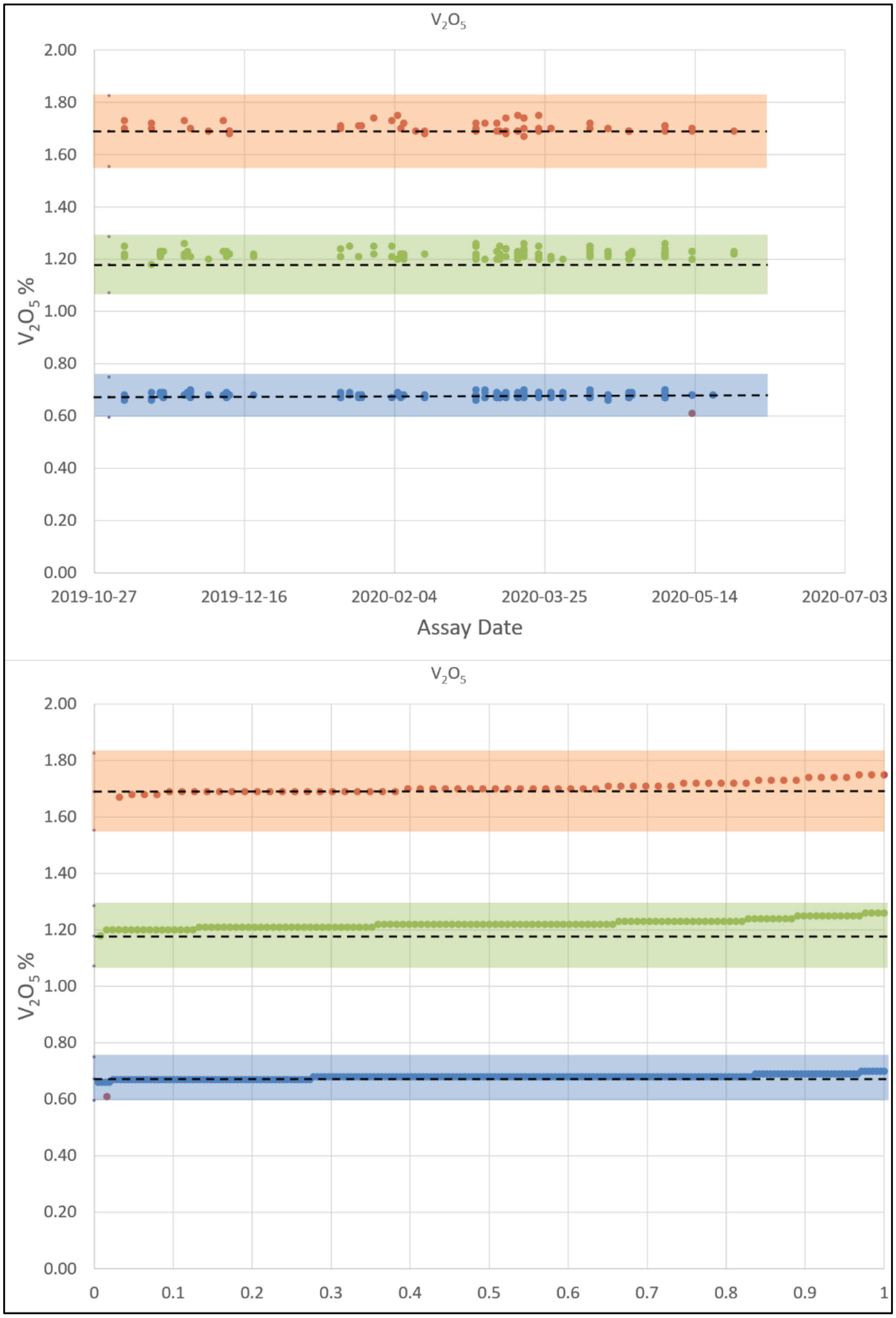

Figure 12: Results of CRM assays for V_2O_5

Top: Results plotted against date of assay. Bottom cumulative probability plot of all CRM results. Certified values and 2-sigma ranges for CRMs are shown by dashed lines and shaded areas, respectively.

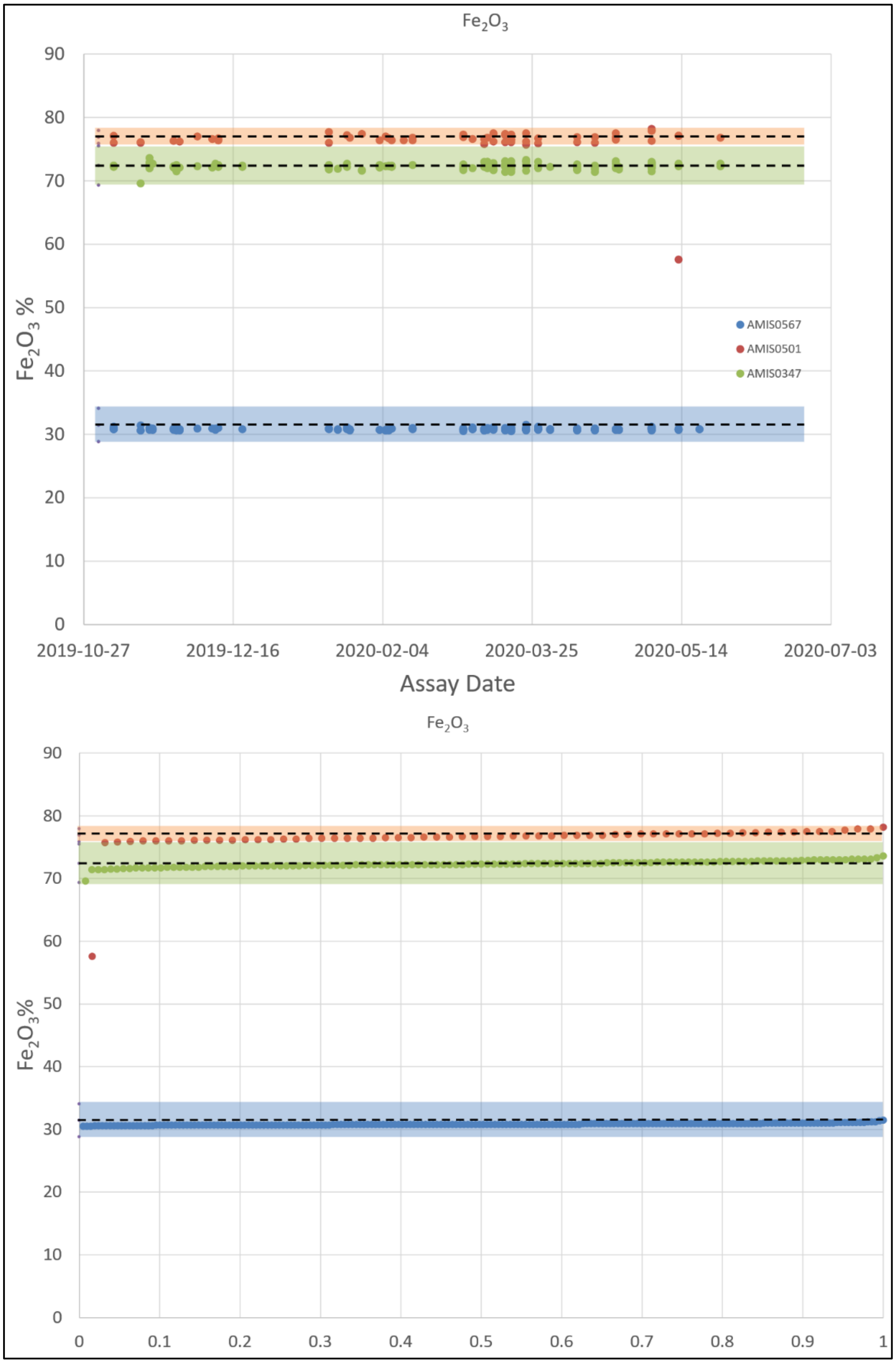

Figure 13: *Results of CRM assays for Fe_2O_3*

Top: Results plotted against date of assay. Bottom cumulative probability plot of all CRM results. Certified values and 2-sigma ranges for CRMs are shown by dashed lines and shaded areas, respectively.

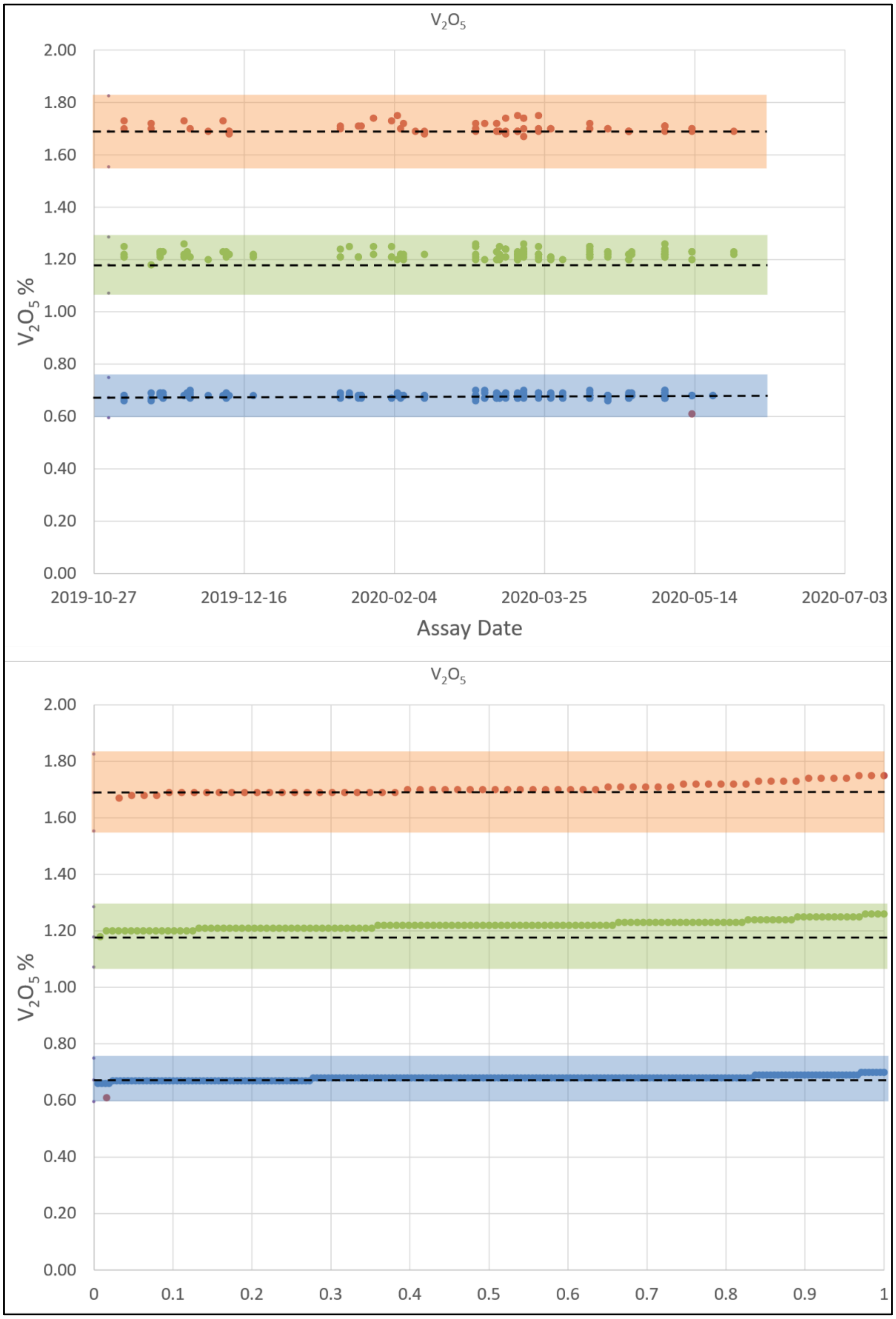

Figure 14: *Results of CRM assays for TiO_2*

Top: Results plotted against date of assay. Bottom cumulative probability plot of all CRM results. Certified values and 2-sigma ranges for CRMs are shown by dashed lines and shaded areas, respectively.

11.5.4 Laboratory Pulp Duplicates

Internal laboratory duplicate analyses for 235 samples were examined (~3.3% of all assays), the results of which are plotted in Figure 15 for Fe_2O_3, V_2O_5, TiO_2 and SG (density). It is evident that there is an excellent correlation between original and repeat analyses, indicating no nugget effect (as expected for the style of mineralization).

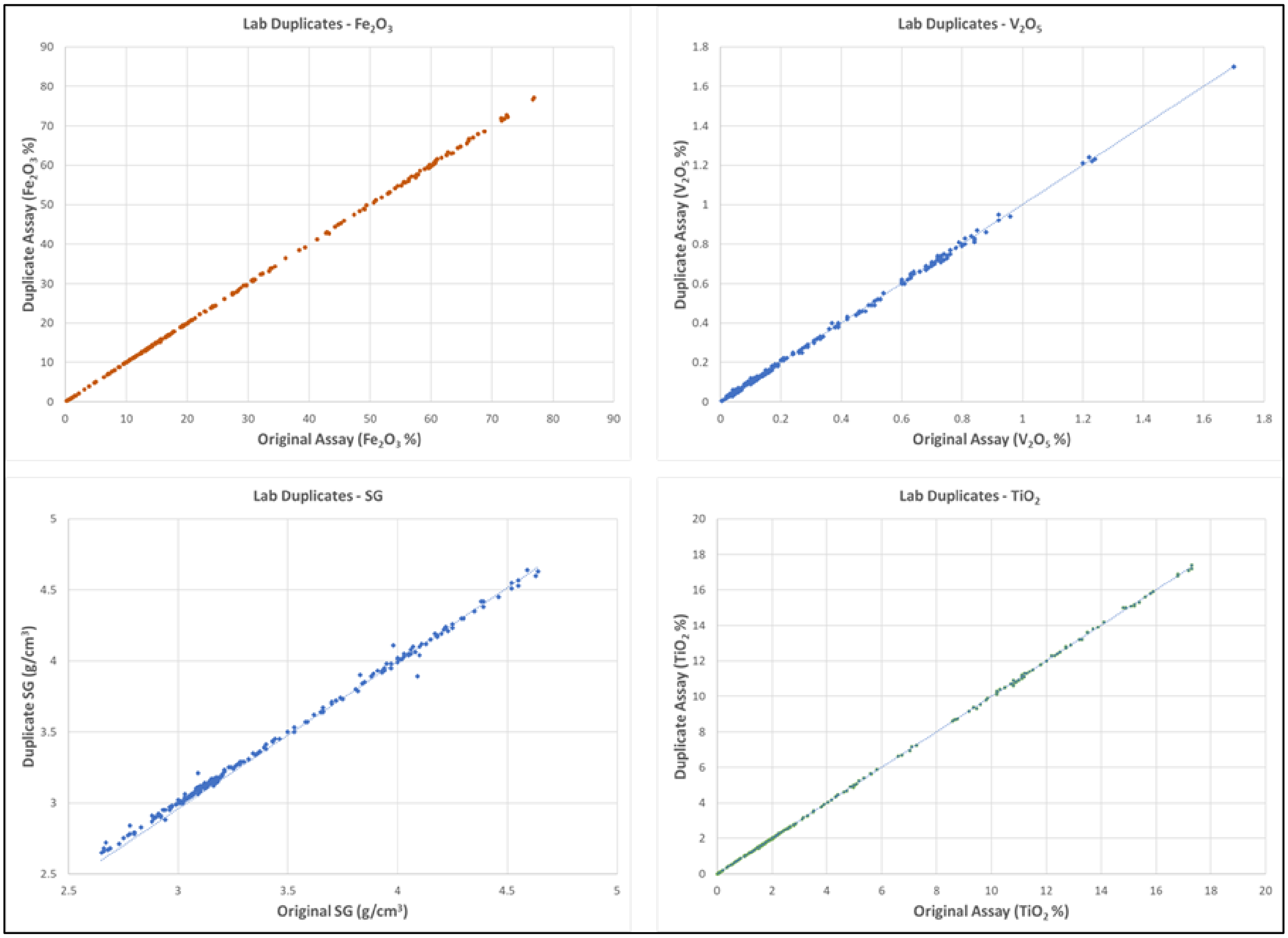

Figure 15: Plots of original vs lab pulp duplicate for Fe_2O_3, V_2O_5, SG (density) and TiO_2

Examining relative differences for laboratory duplicates shows that for Fe_2O_3, TiO_2 and SG, relative differences between original and duplicate measurements for almost all samples are less than 2% (Figure 16). V_2O_5 shows more variability, although 90% of samples have less than 10% relative difference, which is considered acceptable. Samples with higher relative differences are generally low-grade samples close to the detection limit.

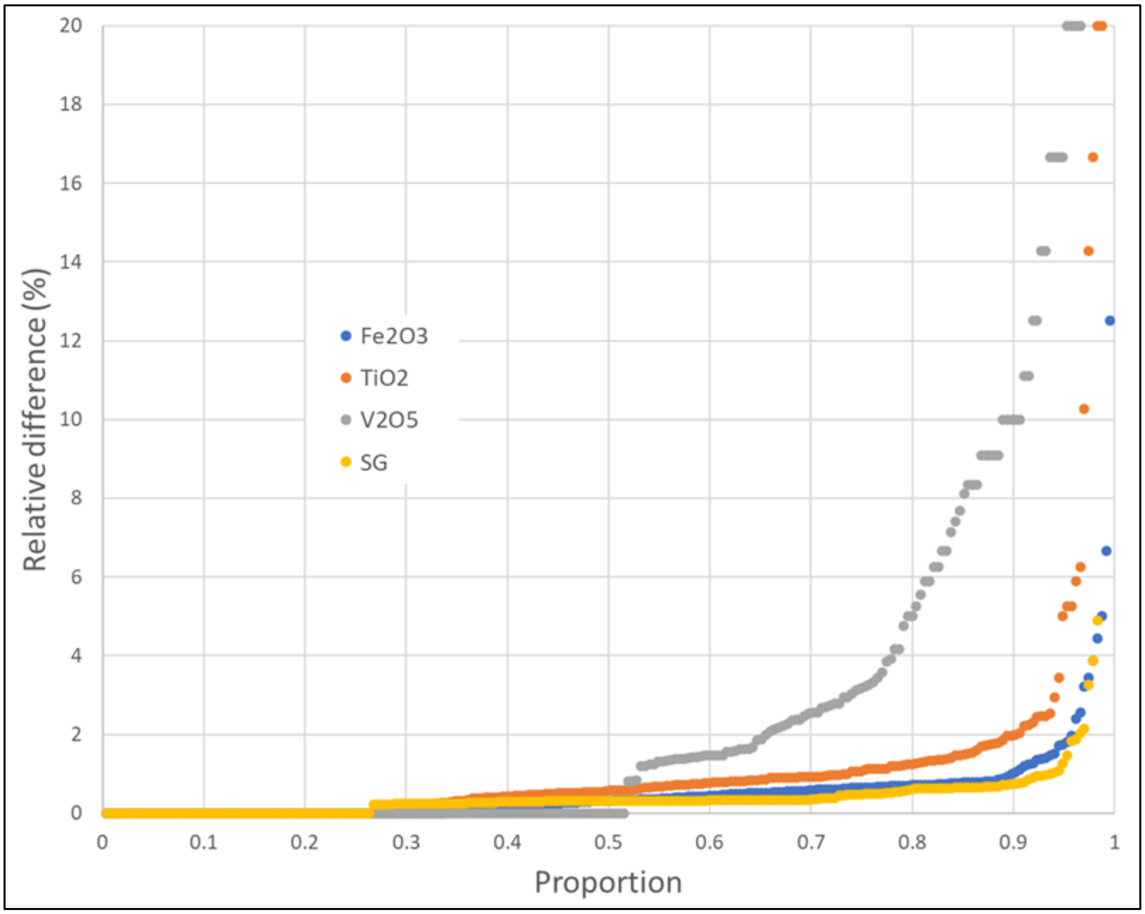

Figure 16: Cumulative probability of relative differences between original and duplicate assays for Fe_2O_3, V_2O_5, SG and TiO_2

11.6 Composite Duplicates

As part of the Davis Tube testing programme (see Section 13), 117 composite samples were submitted for Davis Tube testwork, which included re-assaying the samples. These 117 composites were created from 865 original pulp samples (representing ~8% of samples submitted as part of the 2019–2020 program). Comparison of the re-assayed samples with original assay results composited over the same interval shows that there is an excellent correlation between original and duplicate analyses, with >90% of samples having less than 4% relative difference between original and duplicate assays for Fe_2O_3, V_2O_5, and TiO_2 (Figure 17).

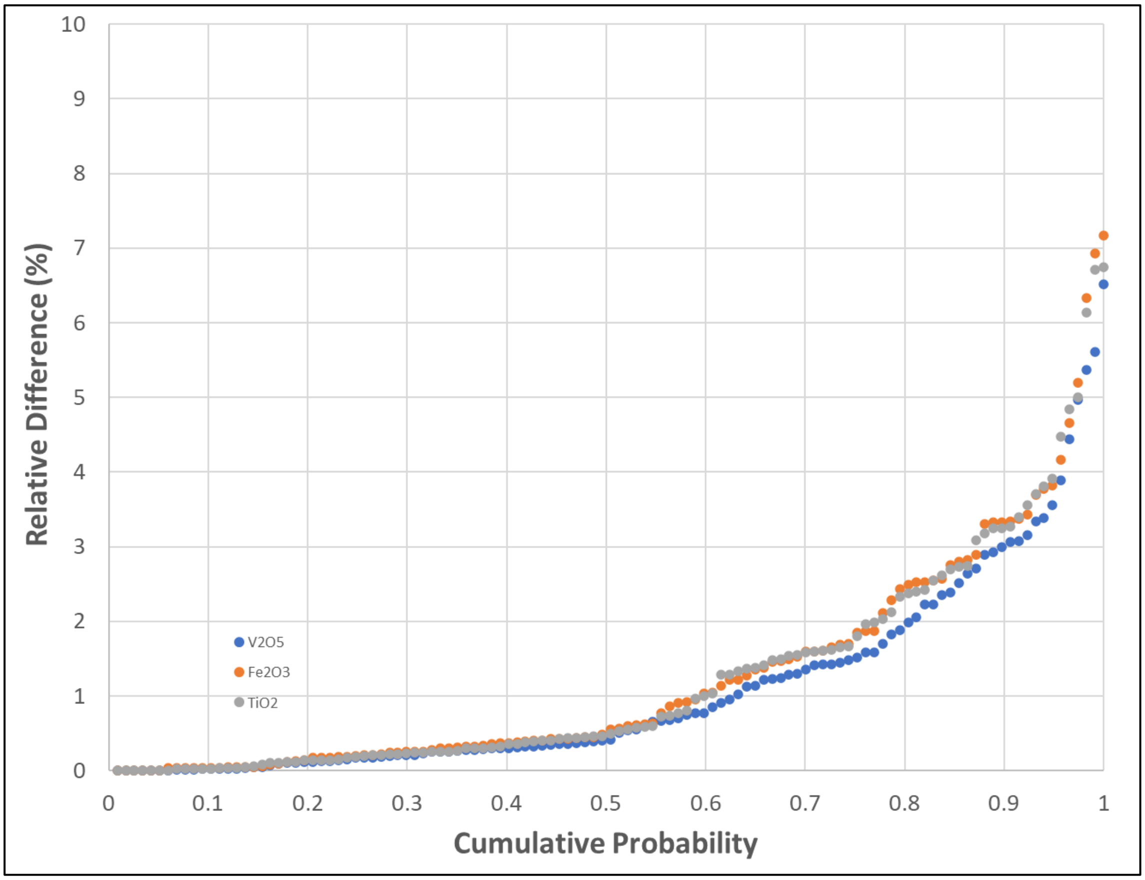

Figure 17: Cumulative probability of relative difference between composited original and duplicate (DT) results

11.7 Field Duplicates

Apart from the Davis Tube composites, no additional field duplicates or umpire samples or umpire samples were submitted as part of the 2019–2020 program. Given the results of the CRM program, results of composite duplicates, the correlation of recent and historical results, and the outcrops of visible mineralization in the field, the Qualified Person does not consider this to be material to the MRE. However, submission of field duplicates and umpire samples is recognised to be good practice and submission of 5% duplicates and 5% umpire samples is recommended as part of future work programs.

11.8 Qualified Person's Opinion on Sample Preparation, Security and Analytical Procedures

The Qualified Person and CSA Global believe the security and integrity of the core samples submitted for analyses during the 2019 diamond drill program is uncompromised, given the adequate record keeping, storage locations, sample transport methods, and the analytical laboratories' chain of custody procedures. Furthermore, it is Qualified Person's and CSA Global's opinion that the sample collection, preparation and analytical procedures undertaken on the Project during the 2019 diamond drill programs are appropriate for the sample media and mineralization type, the type and stage of project and, conform to industry standards.

Based on an assessment of the drilling sample analytical results and the available quality control information, the Qualified Person is of the opinion that the data from the Lac Doré Project (with particular reference to 2019 drilling) is acceptable for Mineral Resource estimation. Analytical results are considered to pose minimal risk to the overall confidence level of the MRE.

Although analytical methods and QAQC procedures for historical data are not available, the nature of the mineralization (disseminated to massive magnetite that is visible on surface and can be clearly identified using airborne magnetic surveys) as well as the validation of the data (see Section 12.2) means that the Qualified Person is of the opinion that it is considered suitable for use in Mineral Resource estimation. A minor amount of risk related to the historical data does exist, although all areas classified as Indicated or Measured Mineral Resources are supported by recent drilling.

12 Data Verification

12.1 Site Visit

A four-day visit to the Lac Doré Project was made by Dr Luke Longridge on 10–13 September 2019 when the VanadiumCorp drill program was underway. During this visit, Dr Longridge inspected the Project site, making note of recent and historical drill collar locations, trench lines and channel samples, inspecting active drill sites and reviewing drill core (Figure 18). Several outcrops of magnetite mineralization were inspected, and Dr Longridge reviewed logging and sampling procedures with InnovExplo geologists, as well as reviewing data capture in Geotic software.

Figure 18: Photographs taken during the September 2019 site visit

A: Collar of LD-19-036. B: Collar of S-36. C: Cleared trench with channel samples cut. D: Example of a sample tag for a channel sample. E: Drill rig in operation. F: Core from drillhole LD-19-024.

In addition to visiting the Project site, Dr Longridge viewed drill core from the 2013 drilling program where it was then stored at the IOS Services Géoscientifiques offices in Saguenay, Québec. The core has since been moved to the VanadiumCorp facilities at Chibougamau and was resampled during the 2020 program.

12.2 Data Verification

Data verification as carried out for various historical and current datasets used for the MRE is summarised in Table 14, and further details are given below.

Table 14: Data verification and validation procedures carried out for historical datasets

Data available	Year	Company responsible	Verification
Trenching	1997	McKenzie Bay	Trenches remain on surface and have been inspected by the Qualified Person and selectively resampled during 2019–2020.
Drilling	1958 to 1979	SOQUEM and earlier	Logging and sampling data available, selected drill core has been twinned. Collar locations verified.
Drilling – 14 diamond drillholes (2,187 m) – only 3 holes on the current property	2001	McKenzie Bay (drilling carried out by IOS)	Logging and sampling data available, collar locations verified.
Drilling (4 holes)	2013	PacificOre Mining	Assays available, collars have been verified, core has been resampled and has been inspected by the Qualified Person.
Drilling (37 holes)	2019	VanadiumCorp	Drill core inspected and collars verified.

12.2.1 McKenzie Bay Trench Resampling

As part of the 2019–2020 program, 202 channel samples were selected from 13 trenches and were resampled using a diamond saw. The results for Fe_2O_3 and V_2O_5 are shown in Figure 19, and show a good correlation between recent and historical samples, although several outliers do occur.

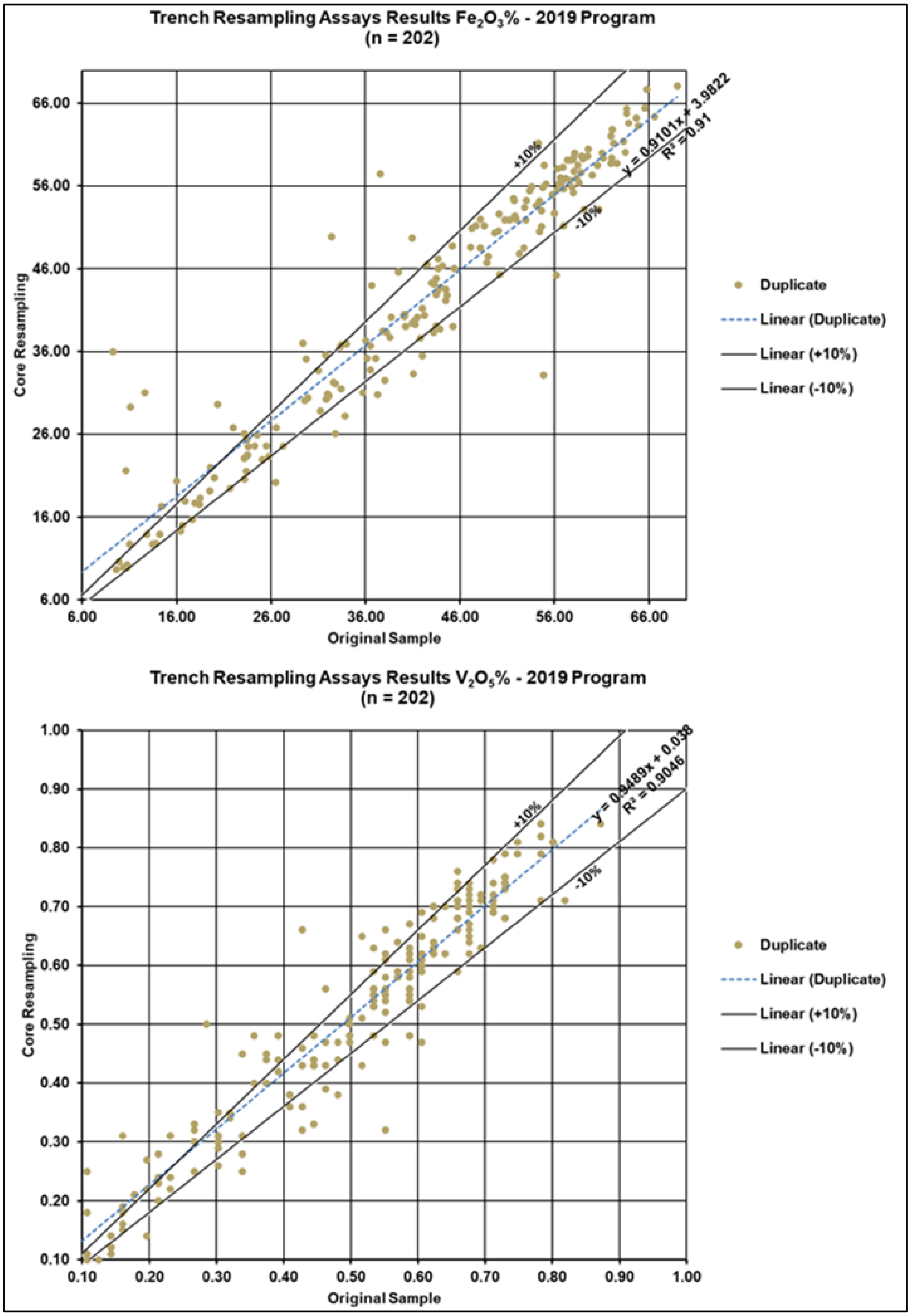

Figure 19: Results of resampling of 1997 trench channels during the 2019–2020 program

12.2.2 2013 Core Resampling

A total of 210 quarter core samples were selected from the 2013 drillholes by InnovExplo and re-assayed at SGS as part of the 2019–2020 program. Results for Fe_2O_3 and V_2O_5 are shown in Figure 20, and show an excellent correlation, with only one outlier for V_2O_5.

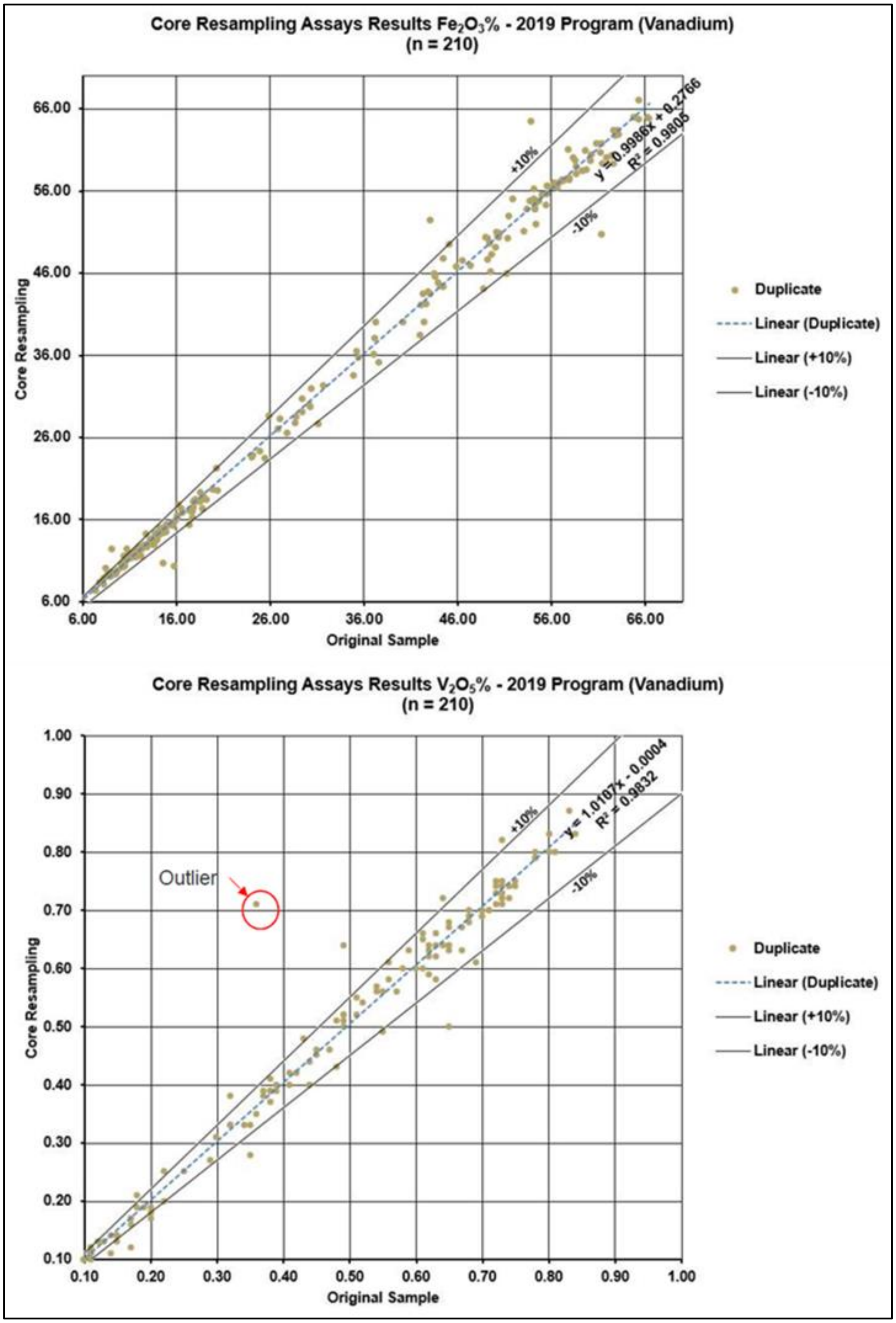

Figure 20: Results of resampling of 2013 core during the 2019–2020 program

12.2.3 Twinning of Holes

In 2013, VanadiumCorp (then PacificOre Mining) drilled four holes which are twins of selected SOQUEM drillholes, drilled in 1979. In 2019, VanadiumCorp twinned four more of the SOQUEM drillholes, including one hole which was a repeat twin (i.e. a twin of both a 2013 drillhole and a 1979 drillhole).

Downhole plots for V_2O_5 (*Figure* 21) and Fe_2O_3 (Figure 22) generally show excellent correlation between twinned holes, although some variability does occur. This variability is to be expected as holes are unlikely to be perfect twins, and sampling was done over larger intervals during the SOQUEM campaign.

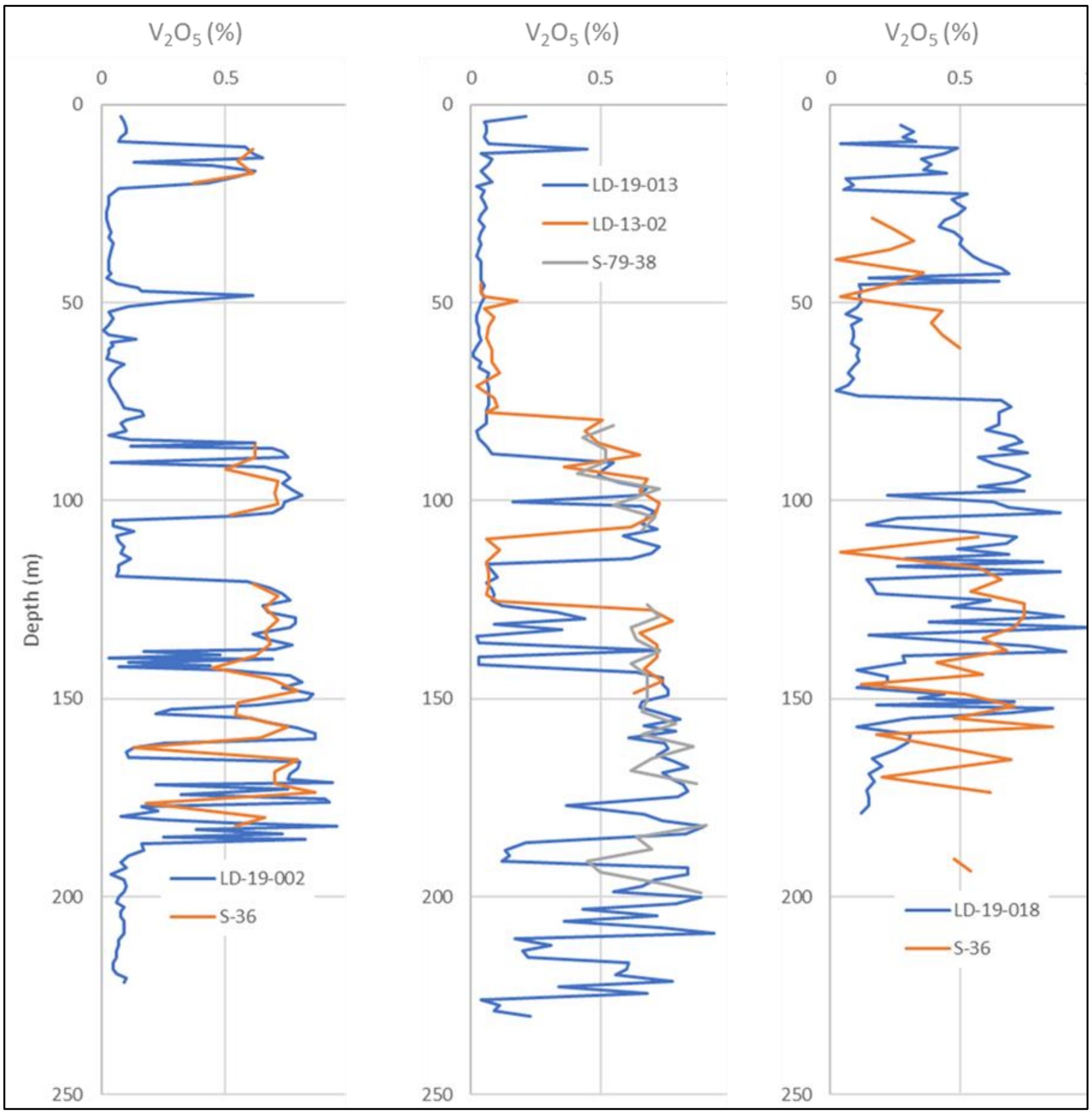

Figure 21: Downhole plots comparing V_2O_5 assay values between twinned holes

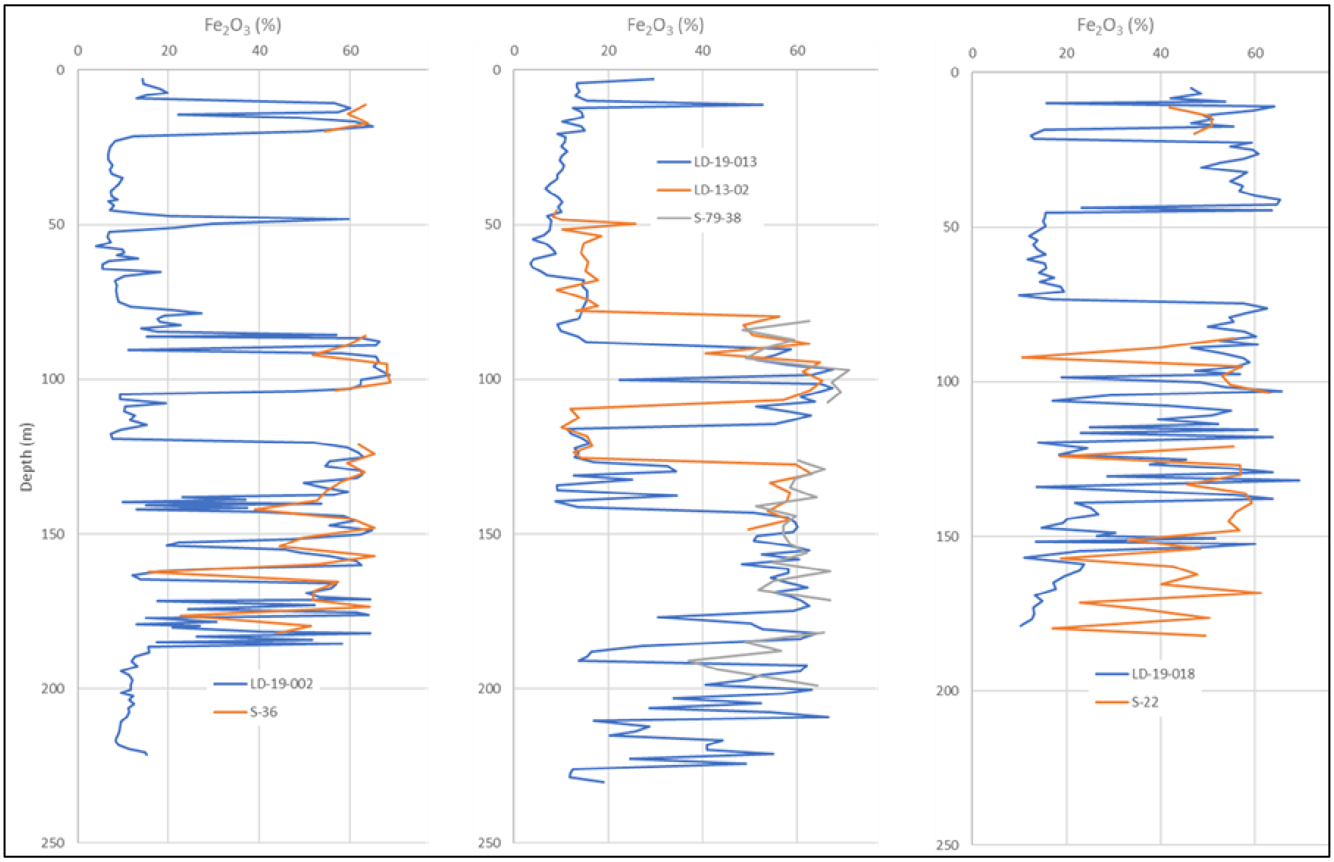

Figure 22: Downhole plots comparing Fe_2O_3 assay values between twinned holes

12.3 Qualified Persons Opinion

It is the opinion of the Qualified Persons for this report that the inspection of historical drillhole collars and comparison of historical data with current data verifies and validates the use of the historical data.

Both the historical and current data is considered adequate for the purposes of Mineral Resource estimation as described in Section 14.

13 Mineral Processing and Metallurgical Testing

Metallurgical testing carried out on the Project involves Davis Tube testing, which demonstrates the proportion of recoverable magnetite concentrate and the grade of the concentrate. Although the Project has been the subject of historical metallurgical testing by previous project owners, this is not considered current, and no comprehensive metallurgical testing program on recovery of vanadium (or other elements) from the magnetite has yet been completed.

13.1 Davis Tube Testing Procedures

Metallurgical testwork was carried out using Davis Tube tests to create magnetite concentrates which were then assayed to evaluate the iron, vanadium and titanium grades of the concentrates. Davis Tube magnetic separators (Figure 23) create a magnetic field which can extract magnetic particles from pulverized samples, and the percentage of magnetic and non-magnetic material in a sample may be determined. A 30–50 g aliquot of pulp sample is gradually added to the cylindrical glass tube which oscillates at 60 strokes per minute. As the sample progresses down the inclined tube, the magnetic particles are captured by the magnetic field. Wash water flushes the non-magnetic fraction out of the tube until only the magnetic fraction remains. Both the magnetic and non-magnetic fractions are dried and weighed to determine the percentage of magnetics in each sample.

Figure 23: A Davis Tube magnetic separator

Source: https://geneq.com/materials-testing/en/product/sepor/davis-tube-tester-11534

Davis Tube tests were carried out at SGS Canada Inc.'s facilities in Val-d'Or, Québec. The SGS facilities are ISO/IEC 17025 standard certified for the methods used, and all analytical methods include quality control materials at set frequencies with established data acceptance criteria. QAQC protocol was for two samples to be subject to repeat tests.

Samples were composited using pulp rejects from drill core samples previously prepared for assay. The samples had already been pulverized to 85% passing 75 µm. Composites were prepared using relative proportions based on weights of the core samples submitted (i.e. these are weighted-average composites). Each composite was further pulverized to 80% passing 38 µm, and a 20 g subsample was taken for Davis Tube testing. Samples were added to the Davis Tube and the tube was agitated for a period of four minutes, after which the magnets were interrupted, and the magnetic concentrate was collected. The tailings were collected in a pail. Both the magnetic concentrate and non-magnetic tailings were filtered, dried, and weighed. The two products were analysed for major elements SiO_2, Al_2O_3, Fe_2O_3, MgO, CaO, Na_2O, K_2O, TiO_2, P_2O_5, MnO, Cr_2O_3, V_2O_5, and LOI by XRF Whole Rock Analyses.

13.2 Sample Selection

Samples were selected from all stratigraphic zones identified within the deposit and were taken from a variety of locations across the deposit to give a broad characterization of concentrate grades across the Project area. Location of samples selected is shown in Figure 24.

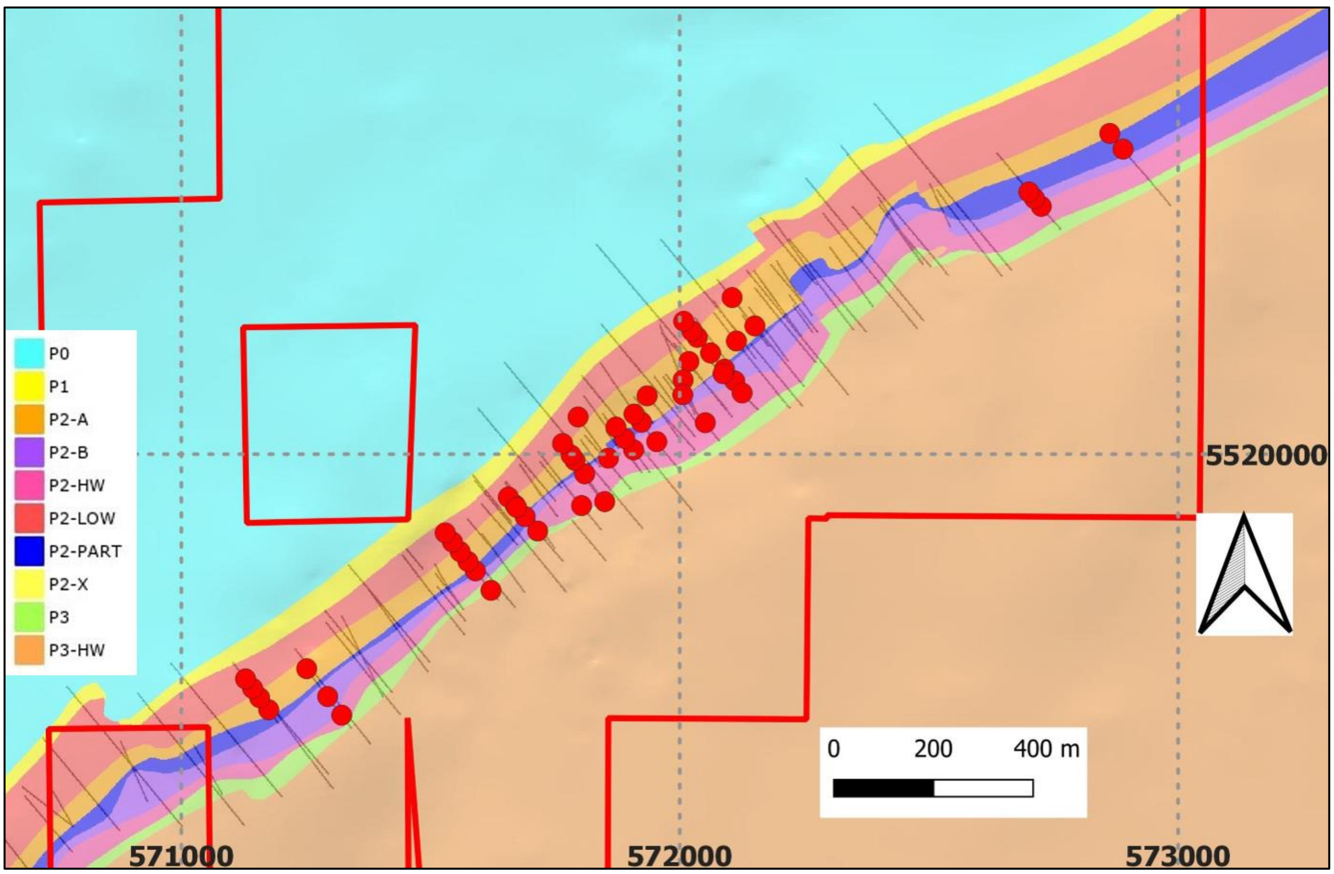

Figure 24: Location of composite samples (red circles) selected for Davis Tube testing

13.3 Comparison with Historical Davis Tube Testing

Davis Tube testwork was carried out for all historical drilling and trenching programs, and concentrates were assayed for Fe, TiO_2, and V_2O_5. Since data verification (Section 12) shows good correlation between assay results for recent and historical data, a comparison has been made between recent and historical Davis Tube results, in particular comparing concentrate grades. Direct resampling/twinning is not possible, but comparison of overall grade ranges (e.g. Figure 25) shows that concentrate grades are similar regardless of the testing campaign. Therefore, results are compared for all testwork campaigns to examine grade/concentrate relationships.

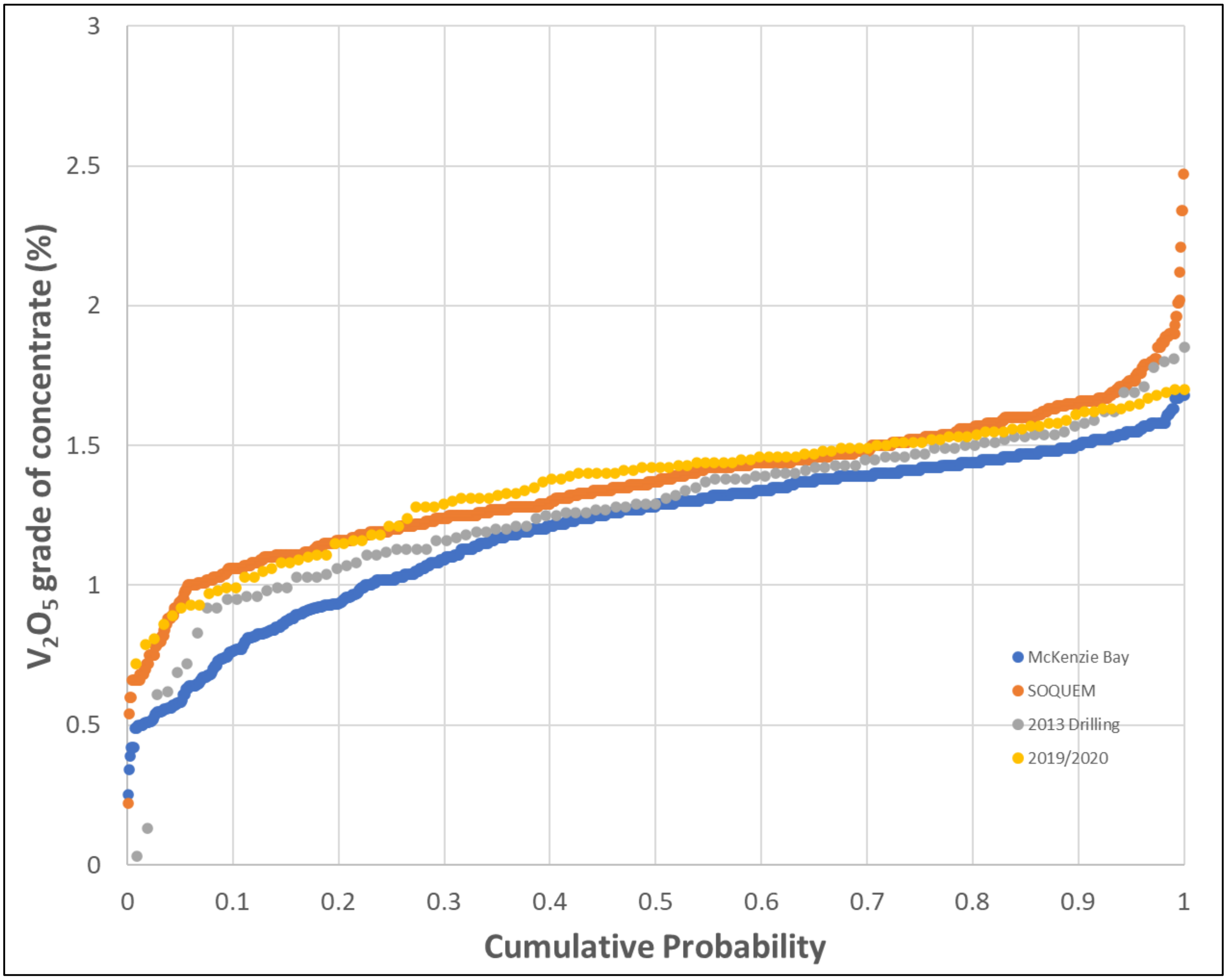

Figure 25: Cumulative probability plot comparing V_2O_5 concentrate grades between Davis Tube testing campaigns

13.4 Results

13.4.1 Magnetite Content of Concentrate

Magnetite content of the samples varies according to the iron content of the head grade (Figure 26). This is expected since magnetite (Fe_3O_4) comprises predominantly iron, although the deportment of iron to the concentrate does depend on the presence of iron-bearing silicates, and iron recoveries to the concentrate vary between ~50% and 90%.

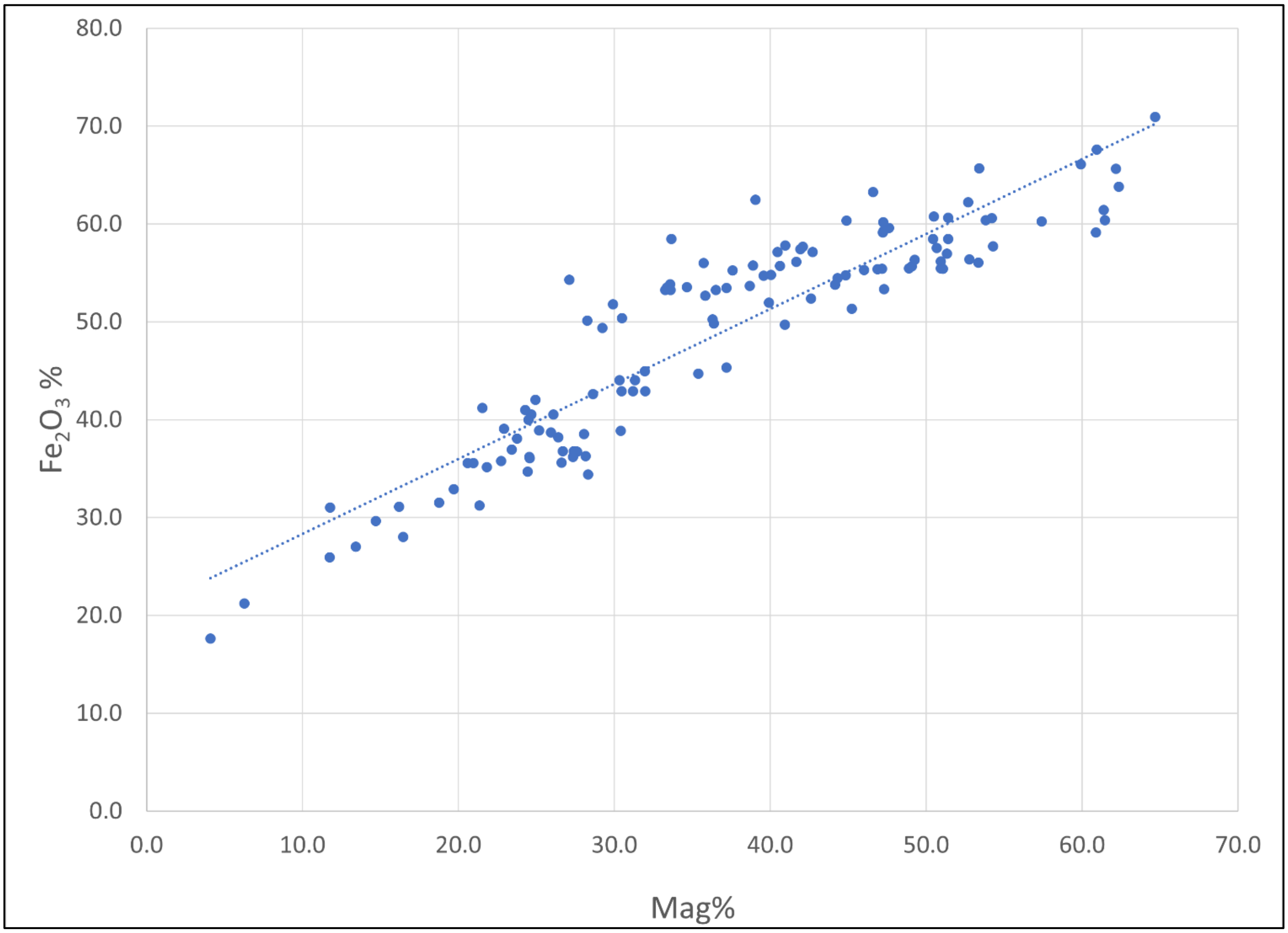

Figure 26: Correlation of magnetite content with the Fe_2O_3 head grade of the sample (2019/2020 results).

13.4.2 Vanadium Content of Concentrate

Vanadium contents vary by stratigraphic zone (Figure 27), with lower stratigraphic zones (P0, P1, P2-LOW) having elevated V_2O_5 values in the concentrate (~1.4% to 1.6% V_2O_5), while the stratigraphically highest zone (P3) has grades of ~0.8% to 1.0% V_2O_5.

Recovery of vanadium to the magnetite is directly dependent on the magnetite content of the sample (Figure 27).

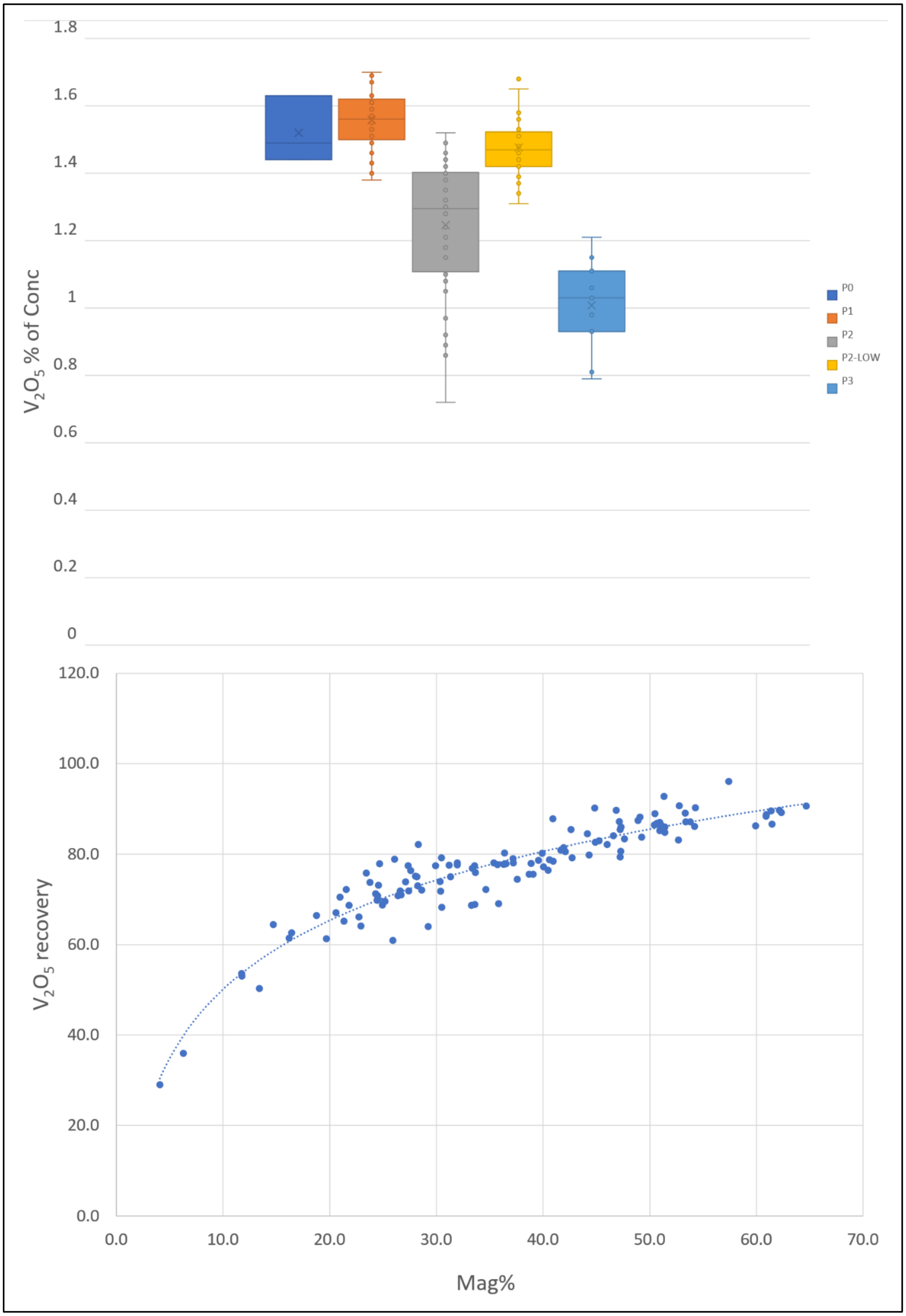

Figure 27: *Vanadium grades and recoveries at Lac Doré (2019/2020 results).*

Top: V_2O_5 grade of concentrates from various stratigraphic zones.

Bottom: Relationship between V_2O_5 recovery to the magnetite and the magnetite content.

13.4.3 Iron Content of Concentrate

Iron grade of the concentrate varies but on average remains constant (Figure 28).

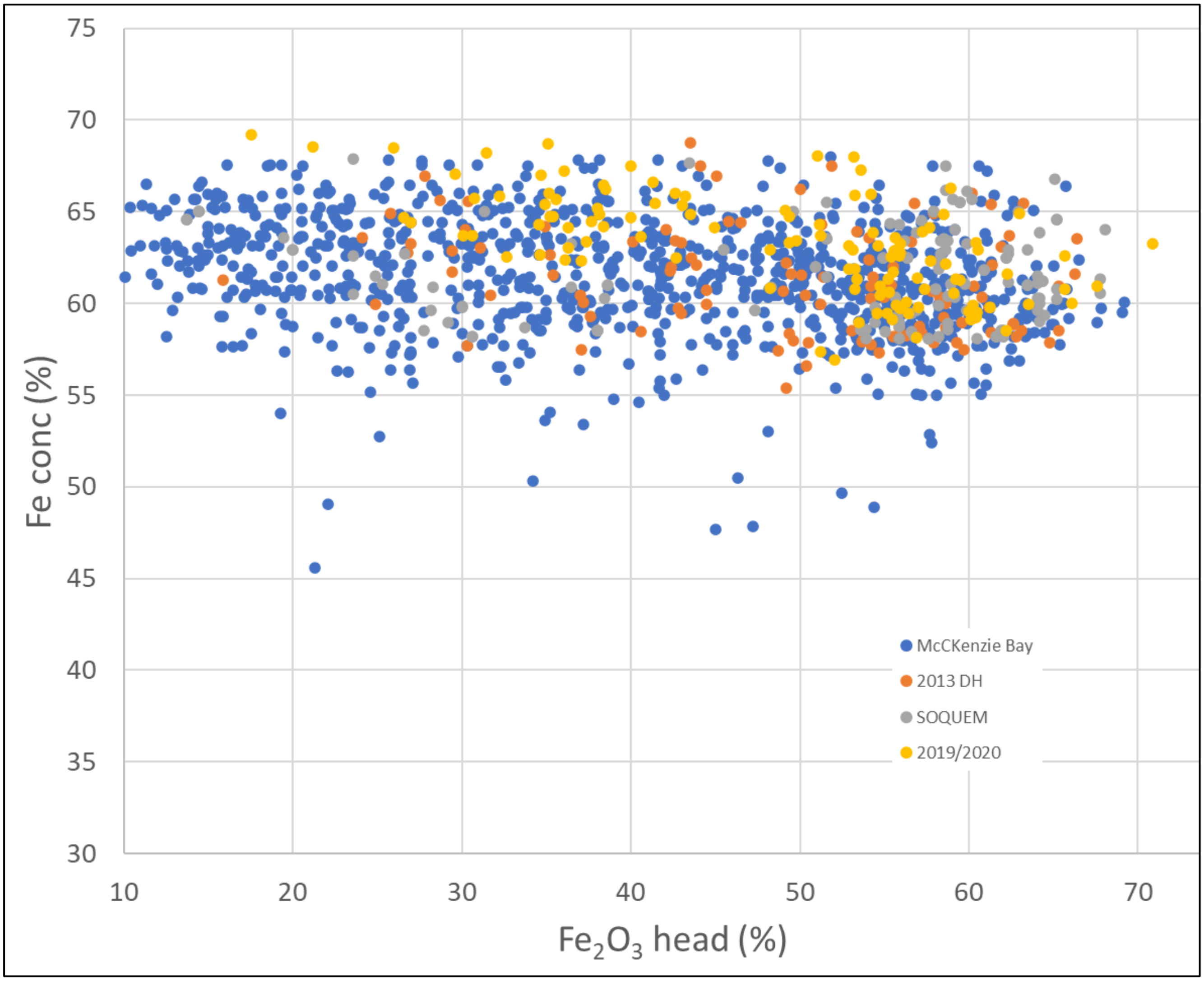

Figure 28: Relationship between Fe_2O_3 grade of the sample and the Fe grade of the concentrate, for all testing programs

13.4.4 Titanium Content of Concentrate

Titanium grades of the concentrates show a linear inverse correlation with the vanadium grade of the concentrate (Figure 29), as expected based on the vanadium and titanium profiles through similar deposit types (see Section 7.5).

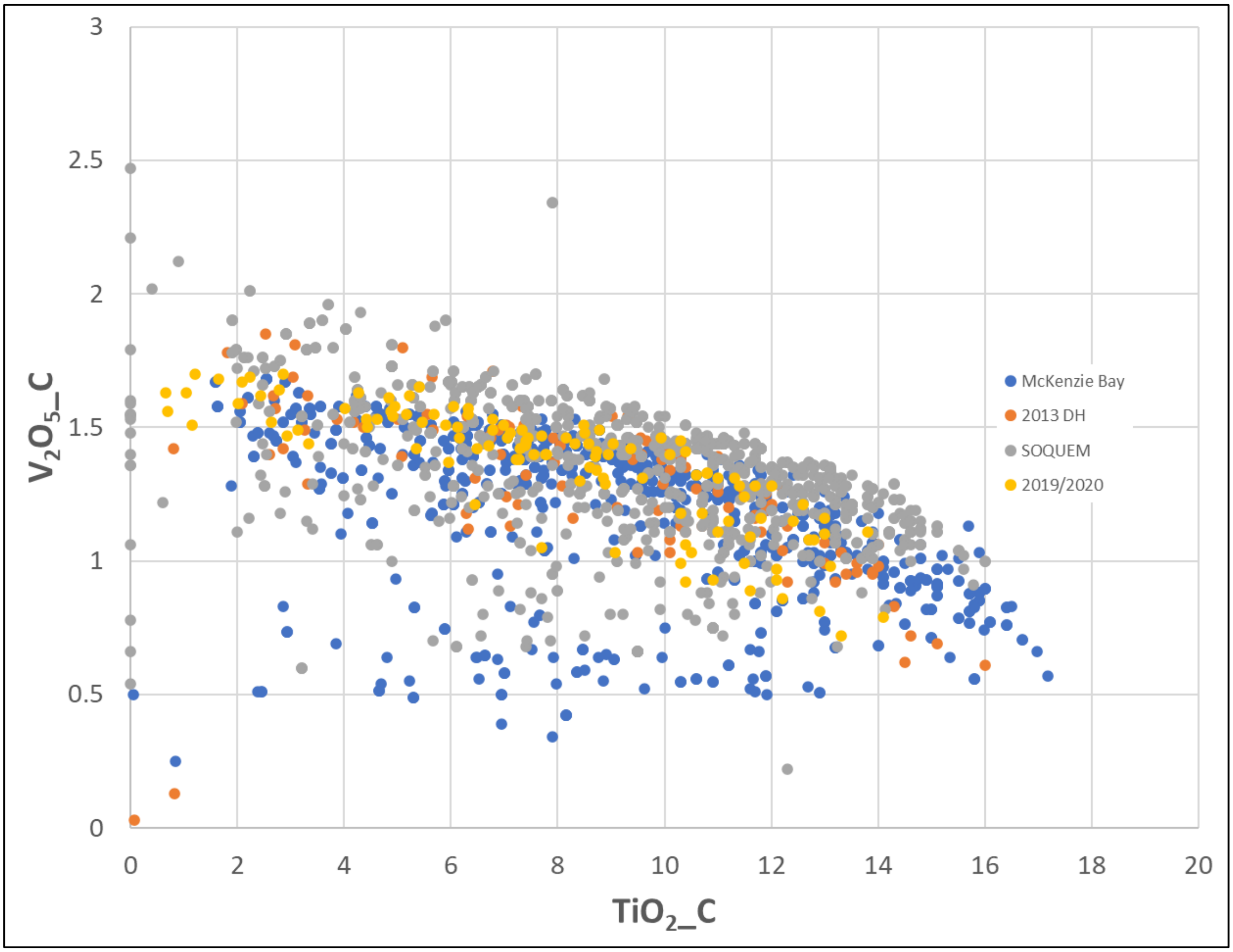

Figure 29: Inverse correlation between V_2O_5 and TiO_2 grades in the magnetite concentrates

14 Mineral Resource Estimates

14.1 Introduction

This MRE was prepared by Dr Adrian Martínez Vargas, P.Geo. and Senior Resource Geologist. The MRE was internally peer-reviewed by Mr Anton Geldenhuys, Principal Resource Consultant. Dr Luke Longridge, P.Geo. and Senior Structural Geologist, completed the interpretation of the estimation domains and contributed to the analysis of the prospect for eventual economic extraction. Dr Martinez, Dr Longridge, and Mr Geldenhuys are full-time employees of CSA Global.

Mineral Resources were estimated within a tabular body of approximately 3,000 m x 250 m x 260 m, dipping at ~60° southeast, where diamond drillhole and surface channel samples were collected. Samples from both historical and current drillholes and surface channels were used for interpolation (Figure 30).

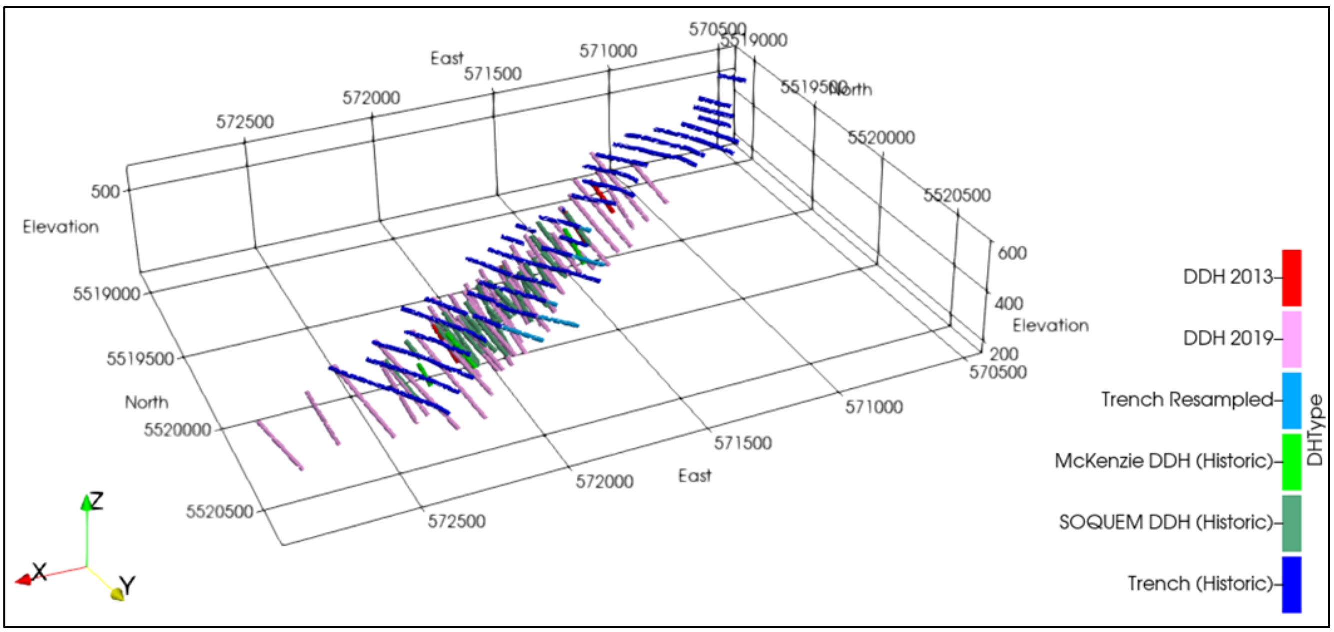

Figure 30: Drillhole data used for Mineral Resource estimation

VanadiumCorp provided the Qualified Person with a database consisting of:

- Collar and survey table with:
  - 41 current drillholes completed in 2013 and 2019, with a total of 10,200 m
  - 44 historical drillholes from the SOQUEM and McKenzie Bay (1979 and 2001, respectively) campaigns, totalling 6,800 m
  - 33 historical surface trenches (completed by McKenzie Bay in 1997), totalling 7,400 m
  - Current trenches (resampling of historical trenches), totalling 4,000 m.
- Assay table containing around 9,930 assay determinations of TiO_2 (%), Fe_2O_3 (%), and V_2O_5 (%). This table also contains 7,180 determinations of SiO_2 (%), Al_2O_3 (%), MgO (%), CaO (%), Na_2O (%), K_2O (%), P_2O_5 (%), MnO (%), and Cr_2O_3 (%).
- An interval table with 9,998 density determinations.
- A table with results of Davis Tube tests. This table contains 1,199 determination, with resulting magnetite content in the sample and the corresponding V_2O_5 (%), TiO_2 (%) and Fe_2O_3 (%) grades in the magnetite concentrate.

- Topography surface from a 2020 LiDAR survey completed by Perron Hudon Bélanger (PBH) surveyors.
- Property claims in GIS format downloaded from the Gestim website.

14.2 Data Validation and Preparation

The drillhole and channel data were validated before proceeding with the MRE. The validation consisted of:

- Review of the relations between tables, such as assay with drillholes not existing in the collar tables and drillholes without survey
- Check for overlap of drillhole intervals
- Check for overlap of drillhole traces
- Check for gaps and missing values in interval tables
- Check for inconsistencies in the values, for example, negative values or anomalously high assay results
- Check for overly short or long sample intervals.

The author did not identify any significant issues in the database. Minor issues were identified and corrected as follows:

- Current and historical channel samples overlap because current channel samples were collected over historical trenches. Sample overlaps create issues in the interpolation. This issue was corrected by retaining current channel samples when they extend beyond historical channels. Historical channels were favoured where both were present as they are more systematically sampled and have fewer gaps. Assay results in historical and current channels were visually compared, and they correlate well in most cases (also see Section 12.2 – Validation).
- There are many non-assayed intervals in the channels. These intervals are probably mineralized, as suggested by nearby drillhole intervals. Non-assayed intervals in channels were excluded from the database used for interpolation (i.e. they were ignored, rather than being given a zero value).
- Drillholes DDH-01, DDH-07, DDH-05, DDH-06, S-4, S-3, S-6, S-7, S-1, and S-2 were not assayed. However, nearby drillholes show the presence of mineralization. These drillholes were excluded from the MRE.
- Only TiO_2 (%), Fe_2O_3 (%), and V_2O_5 (%) were assayed systematically in all drillholes. Several other elements were assayed during the most recent drilling campaign but were not assayed in historical drillholes, and only partially assayed in historical trench samples. Intervals not assayed for SiO_2 (%), Al_2O_3 (%), MgO (%), CaO (%), Na_2O (%), K_2O (%), P_2O_5 (%), MnO (%), and Cr_2O_3 (%) were assigned with non-assigned number.
- Drillhole intervals that were not assayed for TiO_2 (%), Fe_2O_3 (%), and V_2O_5 (%) were assigned with the expected values of 1.8%, 12%, and 0.1%, respectively. These are average values in non-mineralized intervals.
- Davis Tube results were conducted on composites of different lengths. There are also many gaps with no Davis Tube results; however, the data were collected across the entire strike of the deposit, within all stratigraphic units and at different depths. This database is not appropriate for direct interpolation but is appropriate to deduce regression formulas that predict the magnetite content and concentrate grades from head grades (see below).
- A working database containing drillholes and channel samples was prepared and used for interpolating TiO_2 (%), Fe_2O_3 (%), V_2O_5 (%), SiO_2 (%), Al_2O_3 (%), MgO (%), CaO (%), Na_2O (%), K_2O (%), P_2O_5 (%), MnO (%), and Cr_2O_3 (%) head grades, and density (t/m^3).
- Densities for all samples from the 2019–2020 program were measured using pycnometry and correlated with Fe_2O_3 and TiO_2 assays to obtain a regression that was applied to assay data from previous programs (Figure 33) prior to interpolation.

- Since not all samples were subject to Davis Tube testwork, the results of Davis Tube tests for 2019 and previous samples have been used to estimate the magnetite content and the TiO_2 (%), Fe_2O_3 (%), and V_2O_5 (%) grades of the magnetite concentrate. Regression formulae are outlined below and were applied to the block model following interpolation of head grades.

14.2.1 Magnetite Content and Fe_2O_3 Grade of Magnetite

Magnetite content (as measured by Davis Tube magnetic separation) shows a strong correlation with the iron content of the sample, regardless of the drilling campaign (i.e. whether data is recent or historical). This is expected, since magnetite (formula Fe_3O_4) is comprised predominantly of iron, although in VTM deposits such as Lac Doré, titanium substitutes for some of the iron in the sample.

To estimate the magnetite content of samples, the following regression formula (Figure 31) was used:

$$Magnetite\ (\%) = 0.00001*(Fe_2O_3)^3 + 0.0036*(Fe_2O_3)^2 + 0.6906*Fe_2O_3 - 8.609$$

Samples with <16.0% Fe_2O_3 have been estimated to contain 3% magnetite.

Iron grade remains relatively constant in the concentrate, with most samples varying between ~55% Fe and ~68% Fe, with an average of 61.26% Fe and a mean of 61.62% Fe (for all previous samples), whilst samples from the 2020 metallurgical testwork have a mean of 62.42% Fe and a median of 62.39% Fe. The iron grade in the concentrate was considered as a constant 62% Fe (Figure 31, left).

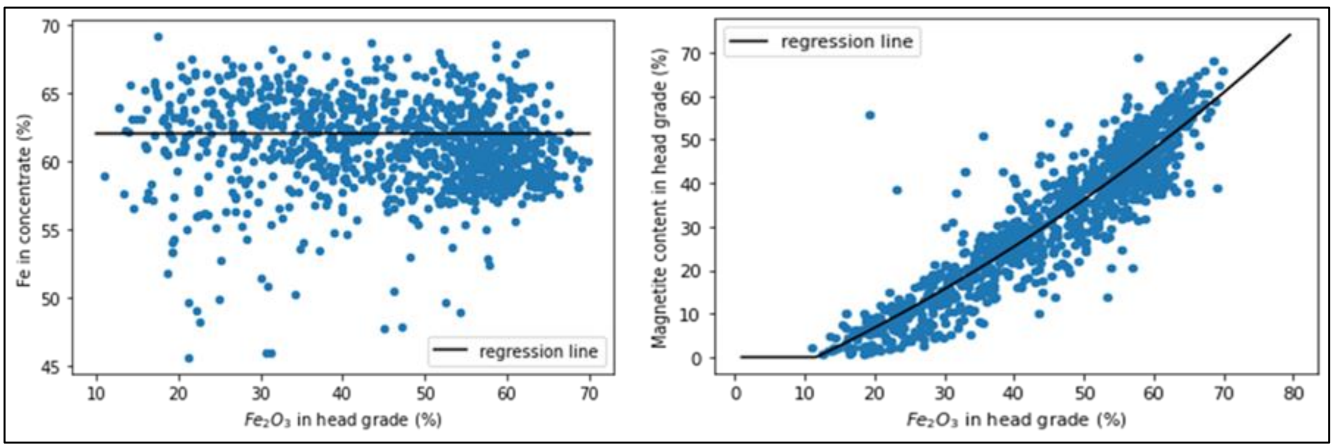

Figure 31: Regression of Fe in concentrate (left), and magnetite content in head grade (right), as a function of Fe_2O_3 in head grade

14.2.2 Vanadium Grade of the Magnetite

Vanadium is contained as a solid solution in magnetite. Results of Davis Tube tests show that the vanadium content of the magnetite is related to the vanadium head-grade of the sample and to the magnetite content of the sample. The 2020 Davis Tube results show that V_2O_5 recovery is related to the magnetite content of the samples (i.e. samples with higher magnetite contents will show better recoveries). Thus, the formula used for the calculation of the vanadium content in magnetite is:

$$(100/Mag\%)*((V_2O_5\ recovery)*(V_2O_5\ head\ grade)$$

where vanadium recovery is expressed as:

$$22*\ln(Mag\%)-0.5506)/100$$

Thus, the V_2O_5 content of the concentrate was calculated using the following regression formula:

*V_2O_5 in concentrate (%) = (100/Magnetite content) * ((22 * ln(Magnetite content)-0.5506)/100)* V_2O_5 head grade*

The V_2O_5 in concentrate was capped to 1.9% and was only calculated for magnetite content over 1%. Figure 32 shows a 3D view of the resulting regression surface, and the input data as points.

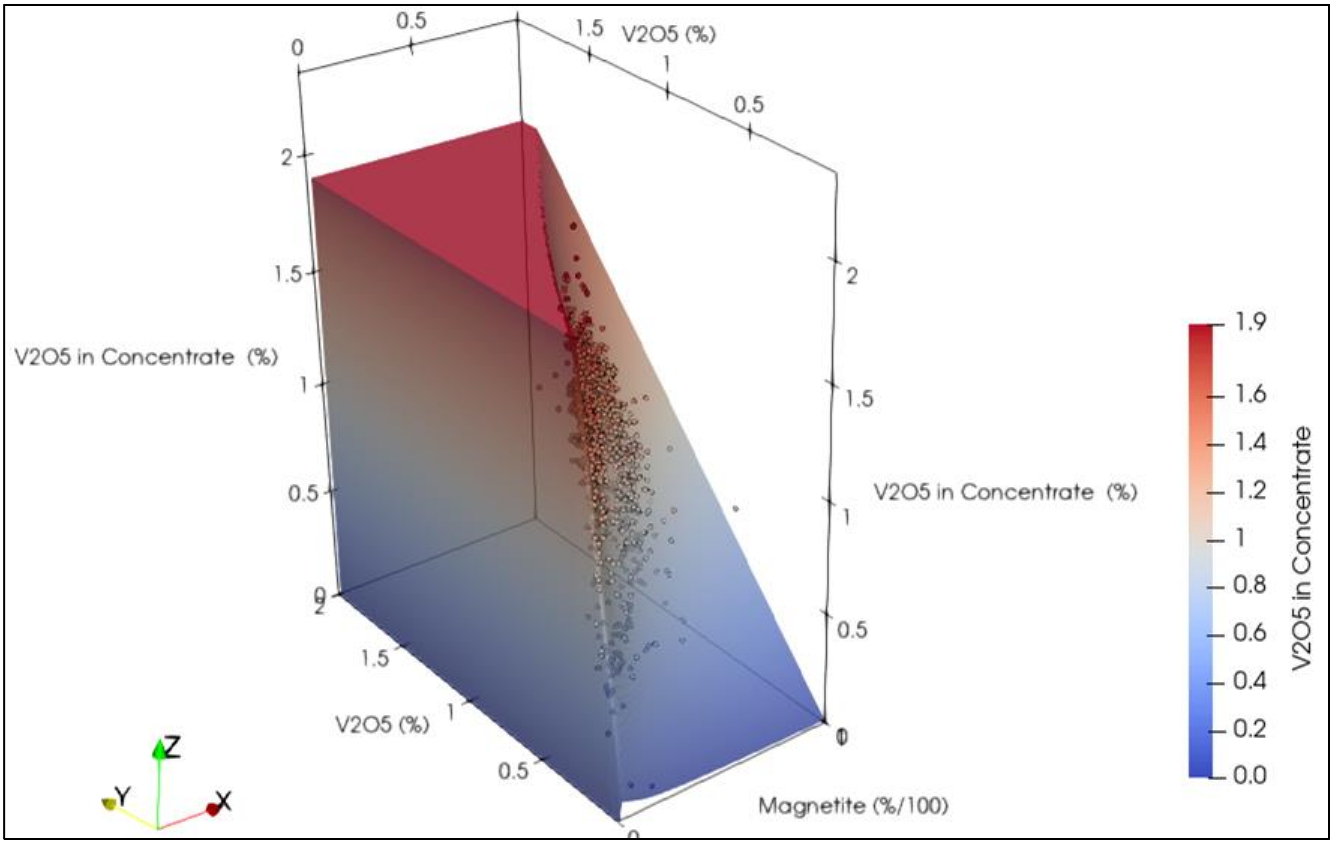

Figure 32: Scatterplot of magnetite content, V_2O_5 (%) in head grade and V_2O_5 in concentrate (%) (points), and regression surface of V_2O_5 in concentrate (%)

14.2.3 Titanium Grade of Magnetite

Although titanium is contained as a solid solution within the VTM, or within micro-scale exsolution lamellae of ilmenite within the VTM, and will thus be recovered in the magnetic concentrate, titanium present as larger ilmenite grains may also be separated from VTM during magnetic separation. Additionally, owing to the higher vanadium and corresponding lower titanium grades (and vice-versa) with stratigraphic height in the deposit, there is an inverse correlation between V_2O_5 and TiO_2 in the concentrate, expressed by the formula:

$$TiO_2\_C = -10.424(V_2O_5\_C) + 22$$

This formula was used to estimate the TiO2 grade of the concentrate, with the exception of samples with V_2O_5 (concentrate) < 0.6, where TiO_2 of the concentrate has been assumed to be 14%.

14.2.4 Density

Density determinations for all assayed samples from the 2019–2020 program (6,939 samples) were determined using gas pycnometry at SGS laboratories. Samples from previous drilling programs were either not subject to density determinations (e.g. those sampled by Apella Resources/VanadiumCorp in 2013) or had density determinations which were not considered reliable. The mineralized units at the Lac Doré deposit consist of variable amounts of gangue gabbro, anorthosite or pyroxenite (density approximately 2.7–3.3 g/cm^3) and titano-magnetite (density approximately 5 g/cm^3). These are competent lithologies with no voids, cavities or pore space are evident, and thus pycnometry is considered appropriate for density determination.

The 2019–2020 measured density correlates strongly with the sum of Fe_2O_3 and TiO_2 in the samples. Thus, for samples from previous campaigns (i.e. not measured in 2019–2020), density has been estimated using the regression of SG and Fe_2O_3 + TiO_2 data, expressed as the formula:

$$SG = 0.00008(Fe_2O_3 + TiO_2)^2 + 0.0109(Fe_2O_3 + TiO_2) + 2.8859$$

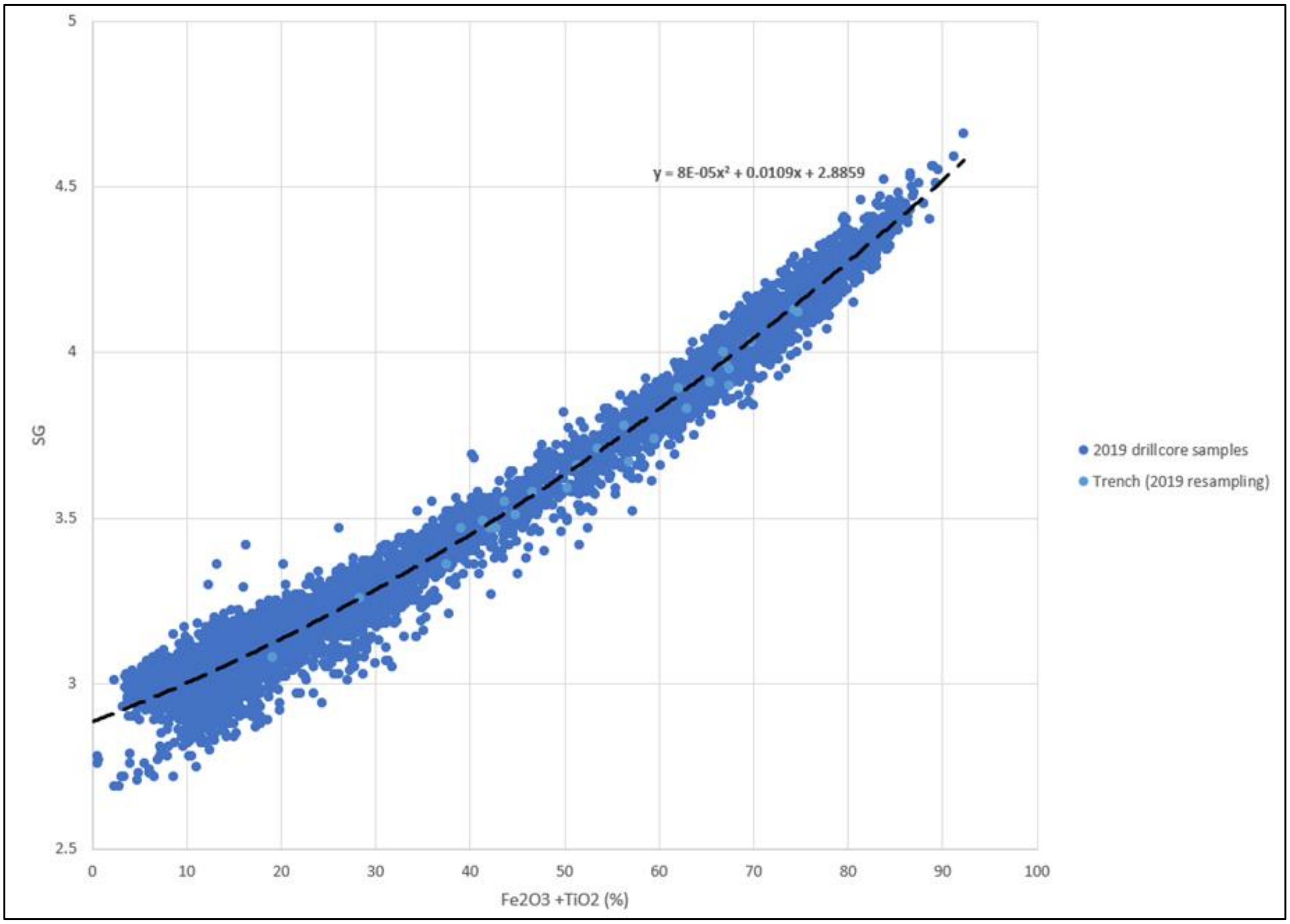

Figure 33: Correlation of SG measurements with Fe_2O_3 + TiO_2 assays for all samples taken from 2019–2020

14.3 Geological Interpretation

The geological interpretation was completed by Dr Longridge and reviewed by the author of this section to make ensure appropriateness for Mineral Resource estimation. Nine stratigraphic "units" were modelled (see Section 7.4). The correlation of these units is based largely upon layers enriched or depleted in magnetite, but also considers host rock or gangue mineralogy. The interpretation was based on lithological logging and Fe_2O_3 (%) and V_2O_5 (%) in head grade. Existing faults were also taken into account.

The model assumes several episodes of magnetite deposition from an iron-rich magma forming a sequence of subparallel (and originally sub-horizontal) magnetite-rich layers that have subsequently been tilted into their current orientation (dipping ~60° southeast). The units correspond to layers of equal spatiotemporal distribution of magnetite, and the Fe, V_2O_5 and TiO_2 concentrations within the magnetite remain relatively constant within each stratigraphic unit but vary between units (see Section 8).

The units were named P0, P1, P2-A, P2-B, P2-HW, P2-LOW, P2-PART, P3, and P3-HW, and coded with ID 100 to 900, respectively. The domains 100 (P0), and 900 (P3-HW) were considered barren and were not estimated.

Figure 34 and Figure 35 show plan and section views of the geological interpretation and drillhole composites. Each domain is defined by a 3D solid, cropped by the topography surface. Geological domains are wide enough to contain multiple composites, and composites intersect almost perpendicularly to the domains.

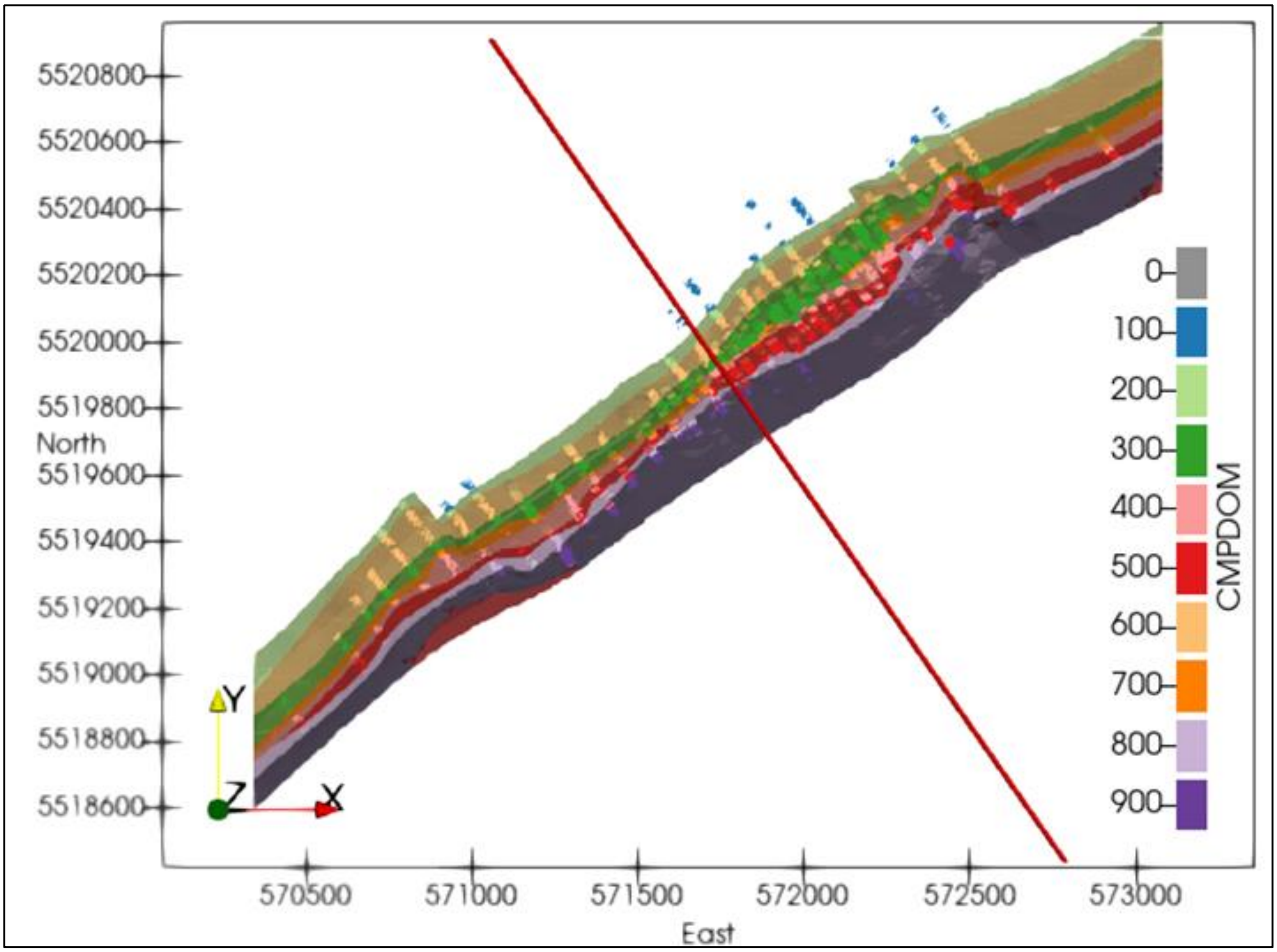

Figure 34: Plan view of the geological interpretation (semitransparent solids) and drillhole composites used for interpolation

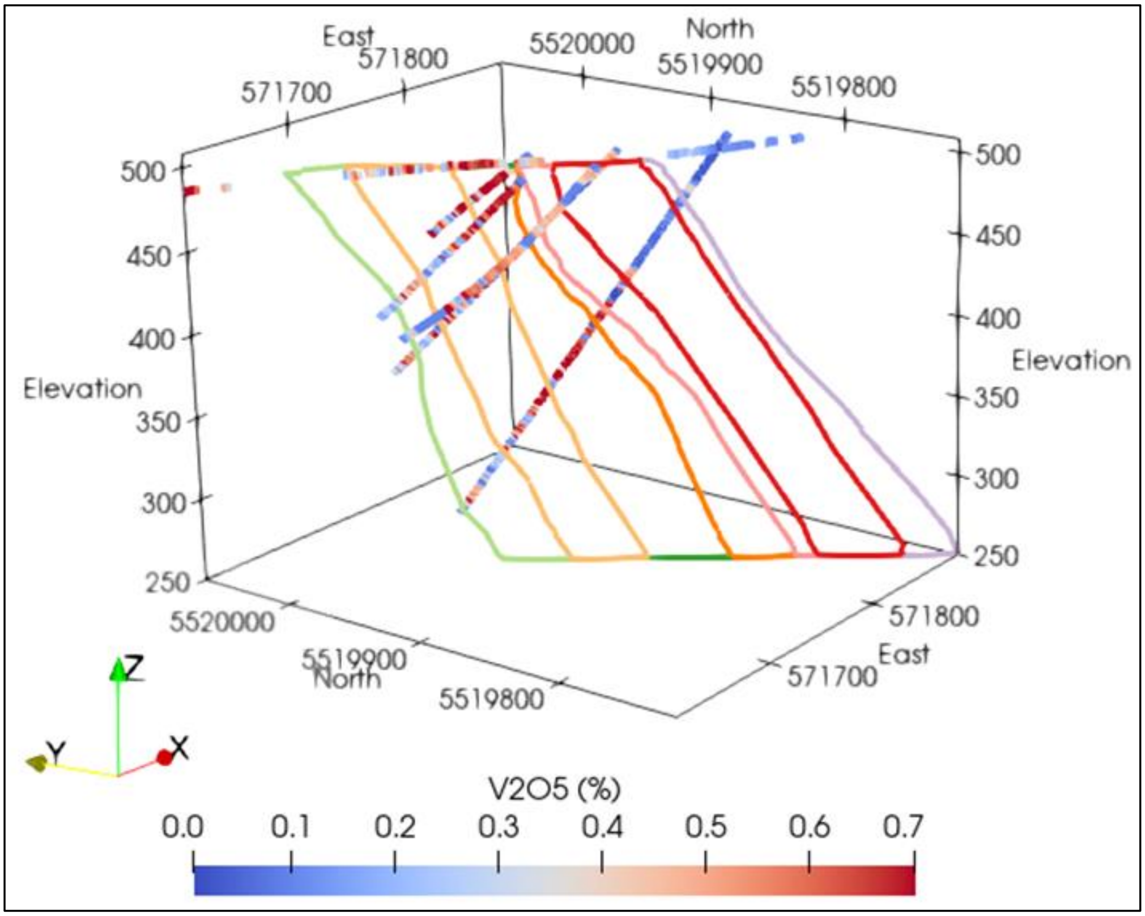

Figure 35: Section view of the geological interpretation and drillhole composites used for interpolation

Figure 35 shows that the geological interpretation does not completely separate high-grade samples from low-grade or barren intervals, owing to small-scale layering within each stratigraphic unit. This mixture of statistical populations is shown in Figure 36 and produces high variability within domains and bimodality of histograms. The mixture of statistical populations was resolved by splitting each geological domain into two subdomains. One subdomain represents high magnetite content, and the other corresponds to low magnetite content.

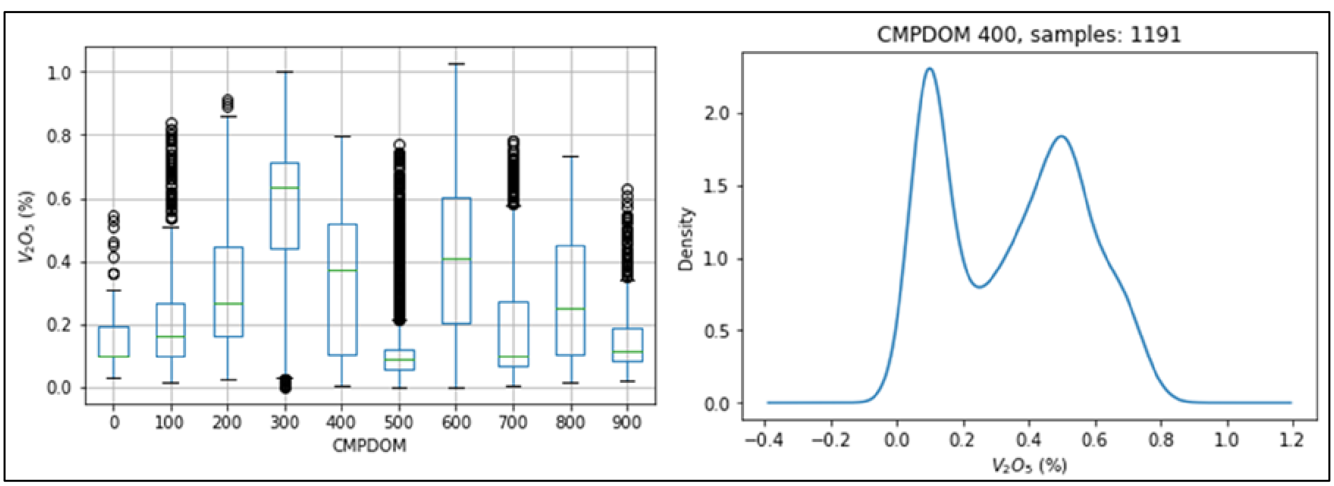

Figure 36: Examples of statistical plots used for exploratory data analysis of V_2O_5 (%) head grade
Left: Boxplot per geological domain. Right: Kernel histogram of domain 400.

The magnetite subdomains were defined using an indicator variable (*mag*) that takes the value "1" if the Fe_2O_3 is above 36.34% or "0" otherwise. This threshold was defined using clustering analysis on the multi-element dataset, followed by a classification using a classification tree. It was observed that the indicator $Fe_2O_3 \geq 36.34\%$ correctly separated the two populations (Figure 37). It was also observed that the changes in Fe_2O_3 grades across high-grade and low-grade magnetite subdomain contacts are not transitional but are generally fairly sharp.

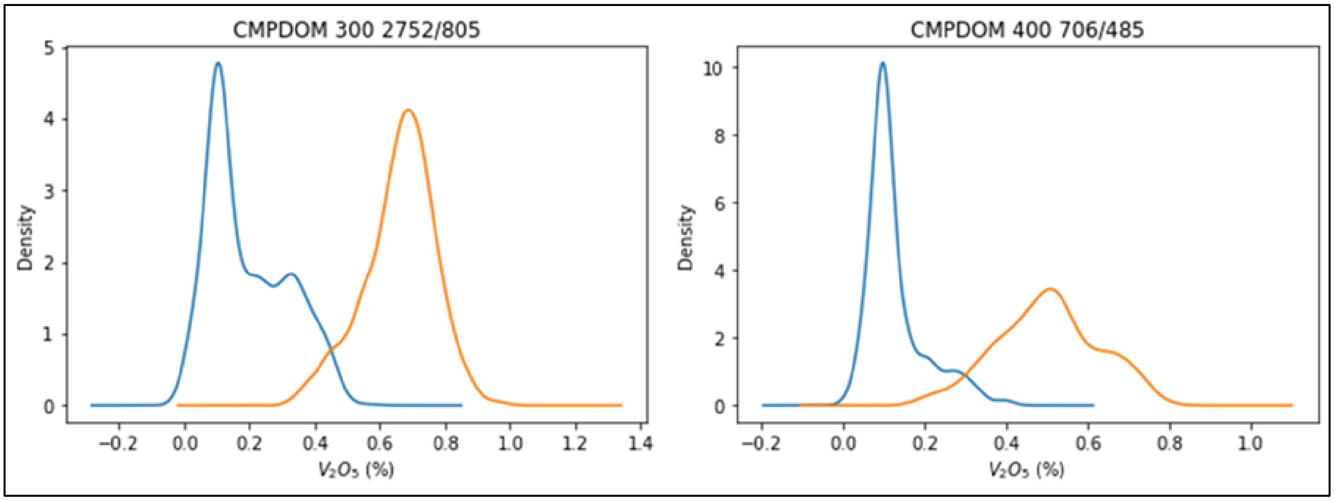

Figure 37: Kernel histograms of V_2O_5 (%) head grade in high-magnetite (orange) and low-magnetite (blue) subdomains within domains 300 (left) and 400 (right)

All the statistical analysis, interpolation, and validations were completed using 14 interpolation domains, which are defined as either low or high magnetite subdomains (mag = 0, and mag = 1, respectively) on each of the seven mineralized geological domains (ID 200 to 800).

14.4 Flagging and Compositing

Samples were flagged with corresponding geology domain (CMPDOM). The channel sample intervals were projected 1 m below the topography surface to ensure correct flagging by geology domain. Channel sample coordinates were restored after coding. Coding results were visually validated using 3D visualization of geology domains and composites.

Most sample intervals were collected at 1.5 m, and this was the sample length selected for compositing the assay head grades and density. Other interval tables, such as the concentrate grades obtained from the Davis Tube test results were neither composited, nor used for interpolation.

14.5 Statistical Analysis and Capping

Statistical and exploratory data analyses were completed separately for all the variables from each geology domain (CMPDOM) and magnetite subdomain (*mag*). The objective of these analyses was to describe the proportion of high and low-grade magnetite subdomains, statistical distributions of the variables, correlations, requirement for de-clustering, and to analyse univariate statistics such as mean and CV. Univariate statistics are useful to validate the estimate and to determine if linear interpolators, such as ordinary kriging, are appropriated.

Some observations resulting from the statistical and exploratory data analyses are:

- The relative proportion of high-grade magnetite vs low-grade magnetite is asymmetrical in most domains (Figure 38). However, high-magnetite samples in low-magnetite domains are clustered in flat lenses or layers (as expected given the stratigraphic nature of the deposit). These high-magnetite lenses are parallel to the geology domains and can be adequately estimated using flat search ellipses. Low-magnetite lenses in high-magnetite domains were also observed and can be modelled using the same approach.

- There is a strong linear correlation between head grade variables (Figure 39 and Figure 40).
- The elements of interest in high-magnetite subdomains show an almost perfect unimodal distribution with high symmetry and low CV, this makes it possible to interpolate with linear interpolators such as inverse distance weighting and OK (Figure 39).
- The elements of interest in low-magnetite subdomains also show a low CV, although histograms show a mixture of statistical populations (Figure 40). The author considers that further sub-domaining is however not required for interpolation.

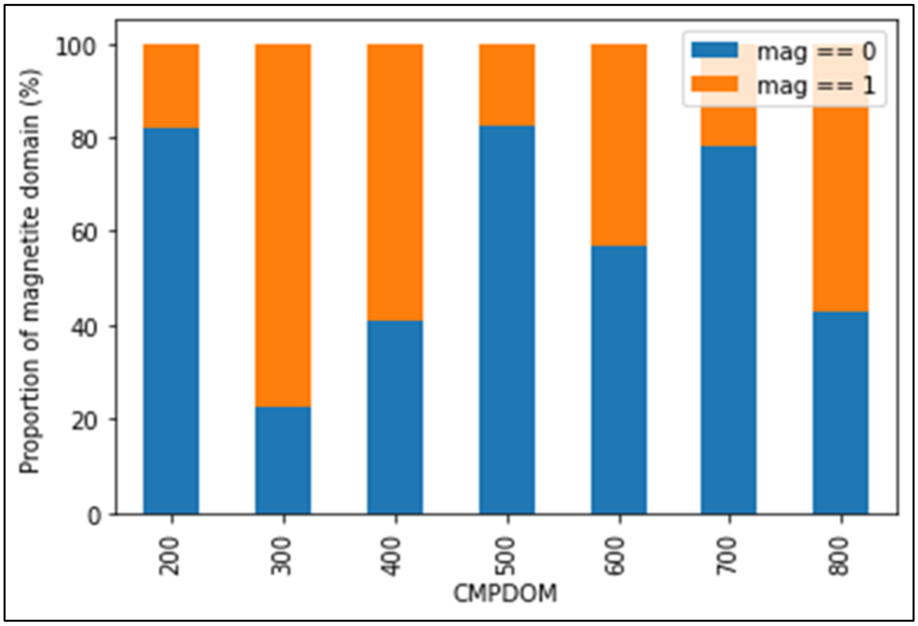

Figure 38: Proportions of low-magnetite (blue) and high-magnetite (orange) subdomains (mag) by domain (CMPDOM)

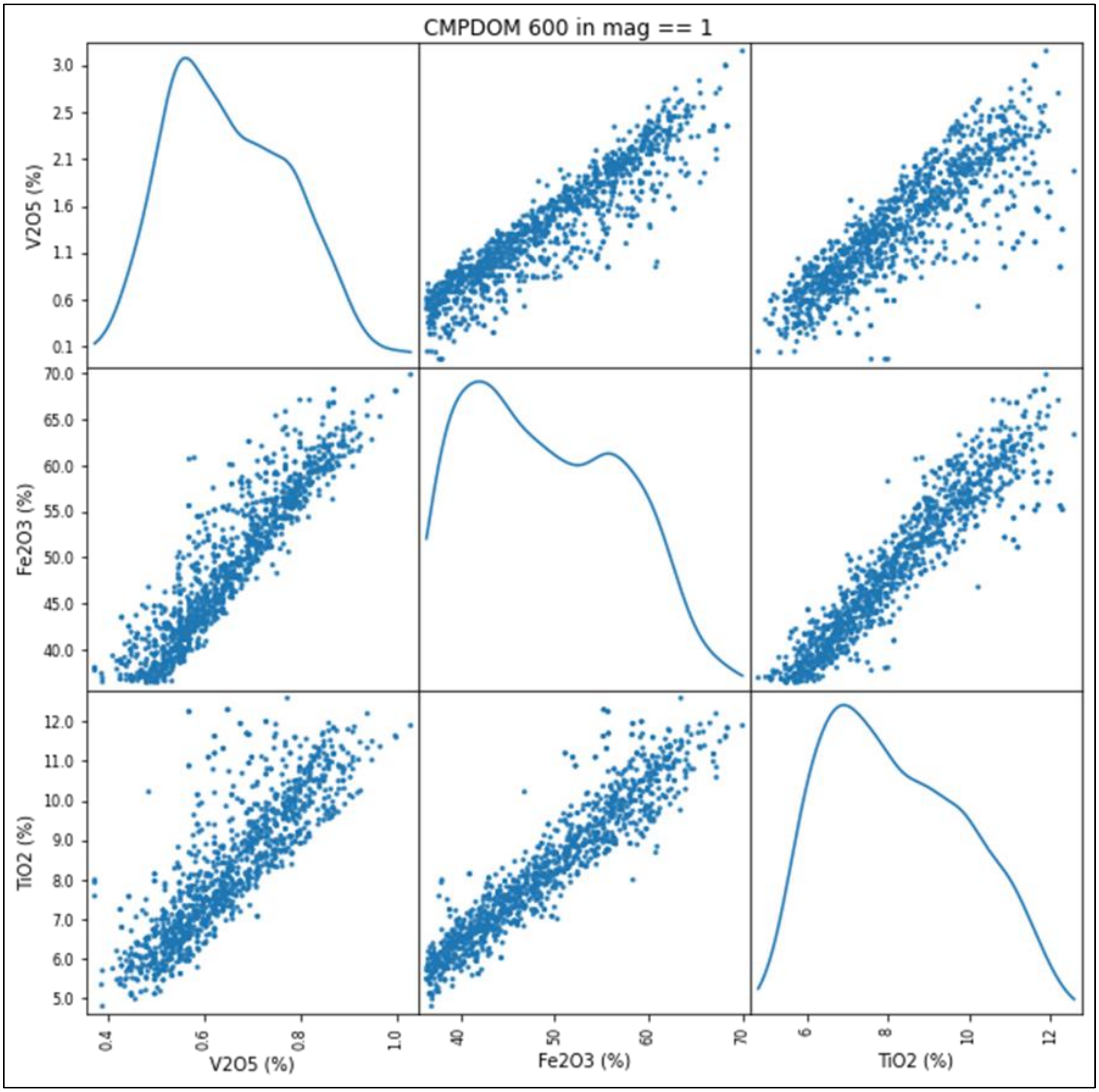

Figure 39: *Scatter matrix and kernel histogram of TiO_2 (%), Fe_2O_3 (%), and V_2O_5 (%) in domain 600 and high-magnetite subdomain (mag==1)*

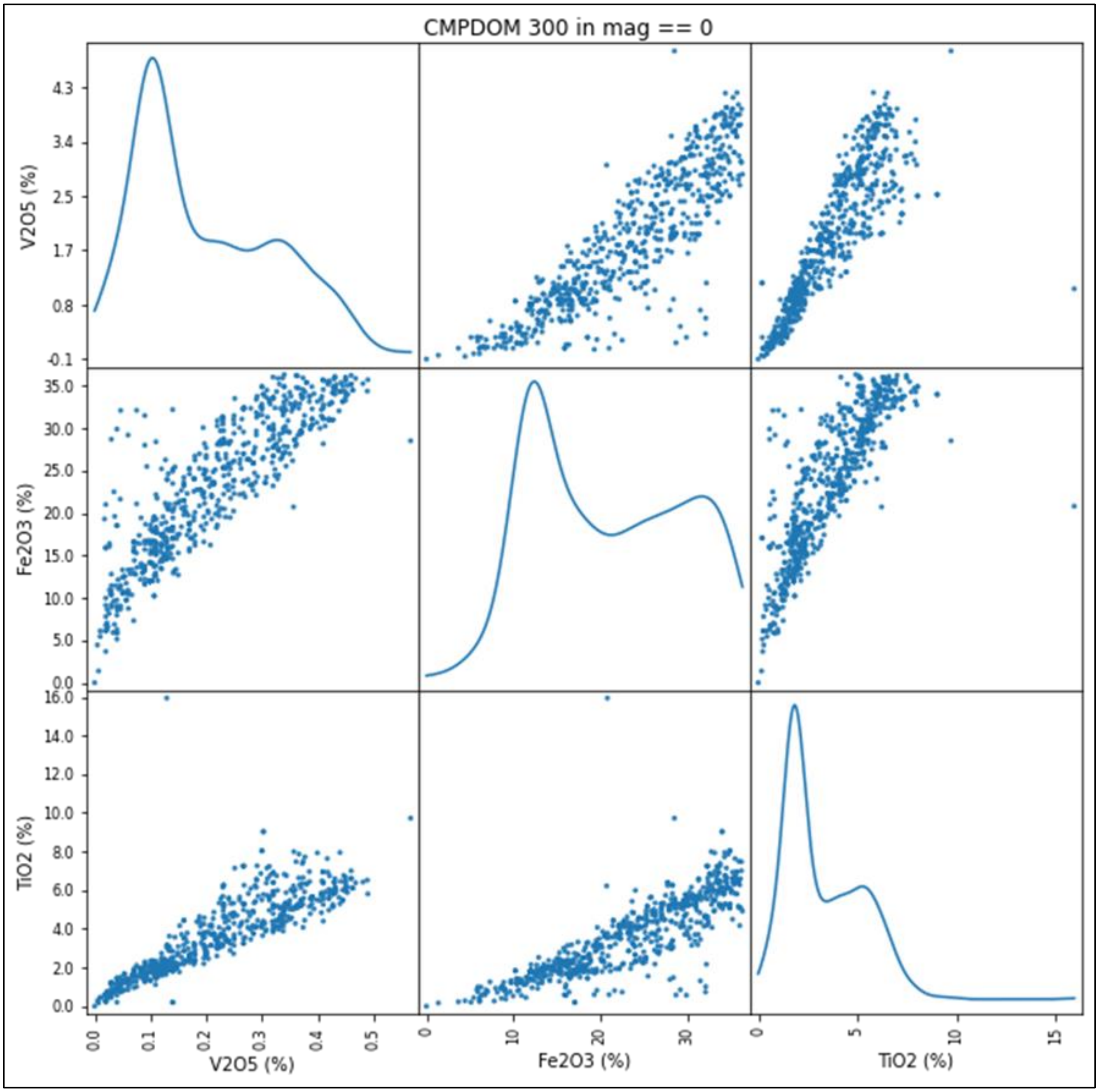

Figure 40: Scatter matrix and kernel histogram of TiO_2 (%), Fe_2O_3 (%), and V_2O_5 (%) in domain 300 and low-magnetite subdomain (mag==0)

Requirement for capping was reviewed using cumulative distribution functions. A capping value of 8% TiO_2 (%) was applied to the low-magnetite subdomains (*mag = 0*). CaO (%) was capped to the interval 4% to 14% in the domain *mag = 0*. K_2O (%) was capped to 0.5% in domain in *mag = 1*. MgO (%) was capped to a minimum value of 1% in *mag = 0*. MgO (%) in subdomain *mag = 1* was capped to a maximum of 3.5% in domain 200, and to a maximum of 7% in domains 300, 600, and 800.

14.6 Experimental Variography

Experimental variograms were calculated for all relevant variables, including density and the indicator variable *mag*. The maximum direction of continuity is horizontal, and its strike coincides with the geological domains (dipping ~60° southeast). Experimental variograms were calculated along the orthogonal direction with dip→azimuth equal to 0→55, 55→325, and 35→145 for all the variables. No special transformation, such as logarithm or normal-score transformation, was applied to the variables before calculating experimental variograms since most histograms are fairly symmetrical (not skewed).

It was found that experimental variograms are very similar in all interpolation domains (Figure 41). Similarly, the normalized experimental variograms from different variables showed a similar spatial structure (Figure 42). It was decided to use the same variogram model to interpolate all variables. This has the advantage that correlations between different variables tend to be preserved in interpolated blocks.

The model used for interpolation was fit with a nugget of 0.25, and two exponential structures with sill 0.39, and 0.36, and ranges 14 m, 14 m, and 5 m, and 100 m, 100 m, and 14 m in the directions 0→55, 55→325, and 35→145, respectively.

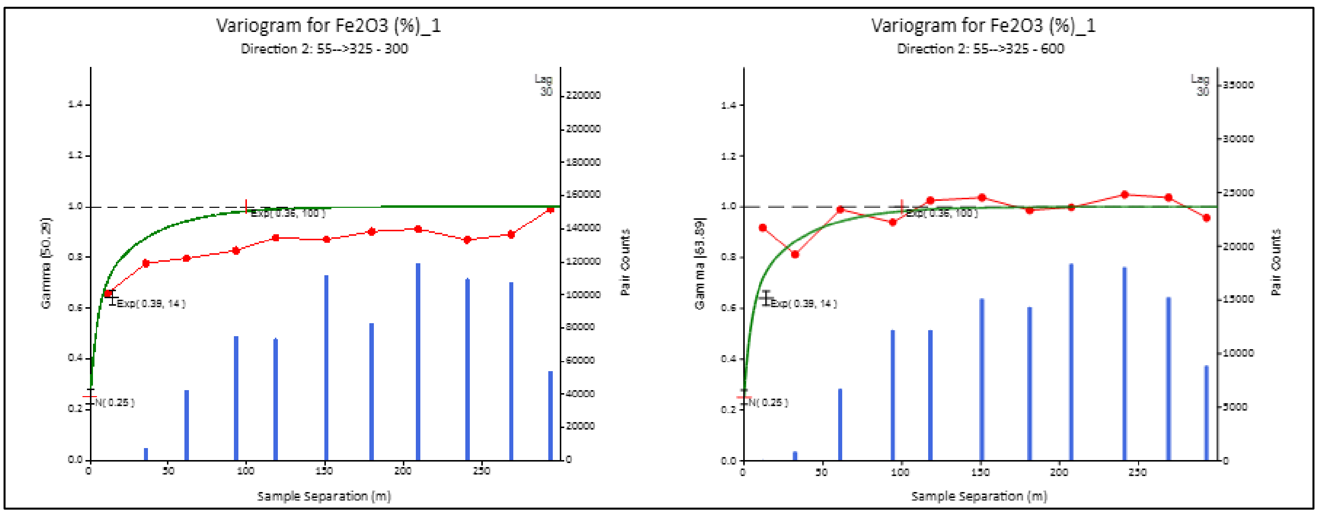

Figure 41: Experimental variogram of Fe_2O_3 along direction 55→325 in subdomain mag ==1, and domains 300 (left) and 600 (right)

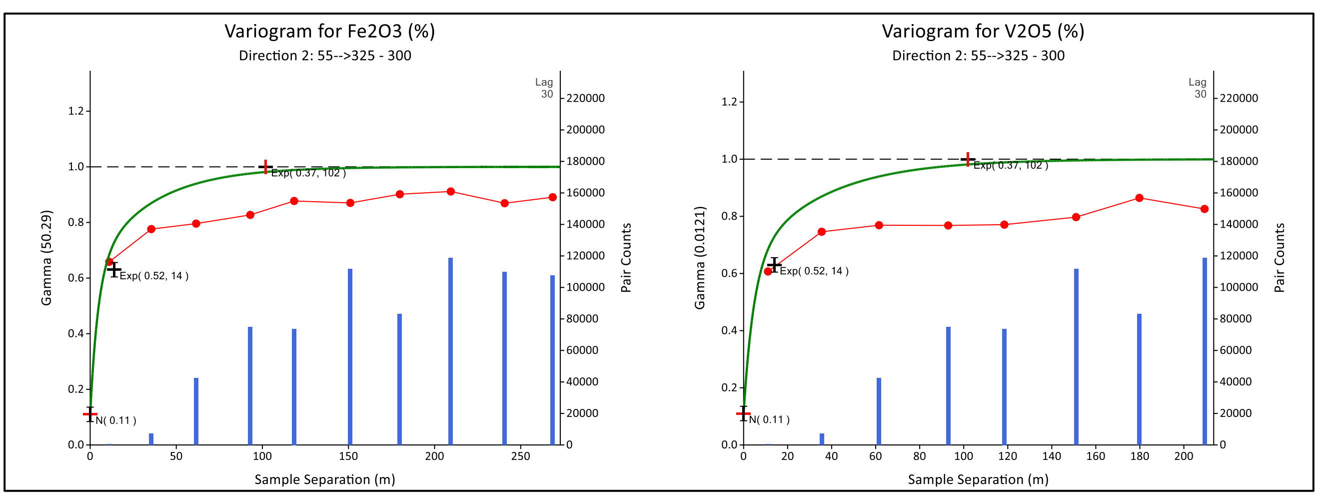

Figure 42: Experimental variogram of Fe_2O_3 (left) and V_2O_5 (right) along direction 55→325 in subdomain mag ==1, and domain 300

14.7 Block Model

Mineral Resources were interpolated in a block model with the following dimensions (Table 15).

Table 15: Block model dimensions (coordinates are UTM18N, NAD 83)

Dimension	Size	Origin coordinates	Number of rows
X	10 m	570180 East	293
Y	10 m	5518710 North	220
Z	10 m	200 m	35

This block size was selected based on the Qualified Person's experience of the mining block sizes used at similar deposits are exploited using open pit operations and based on using a block size is proportional to three to five times the drillhole spacing in well-drilled areas (Figure 43). Smaller block sizes were not considered to be selectively mineable based on the Qualified Person's experience with similar deposits.

Blocks were assigned to the domain with the highest proportion. The proportion below the topography surface was also calculated and assigned to each block. The overburden was not coded into the block model as it is minor and was considered immaterial.

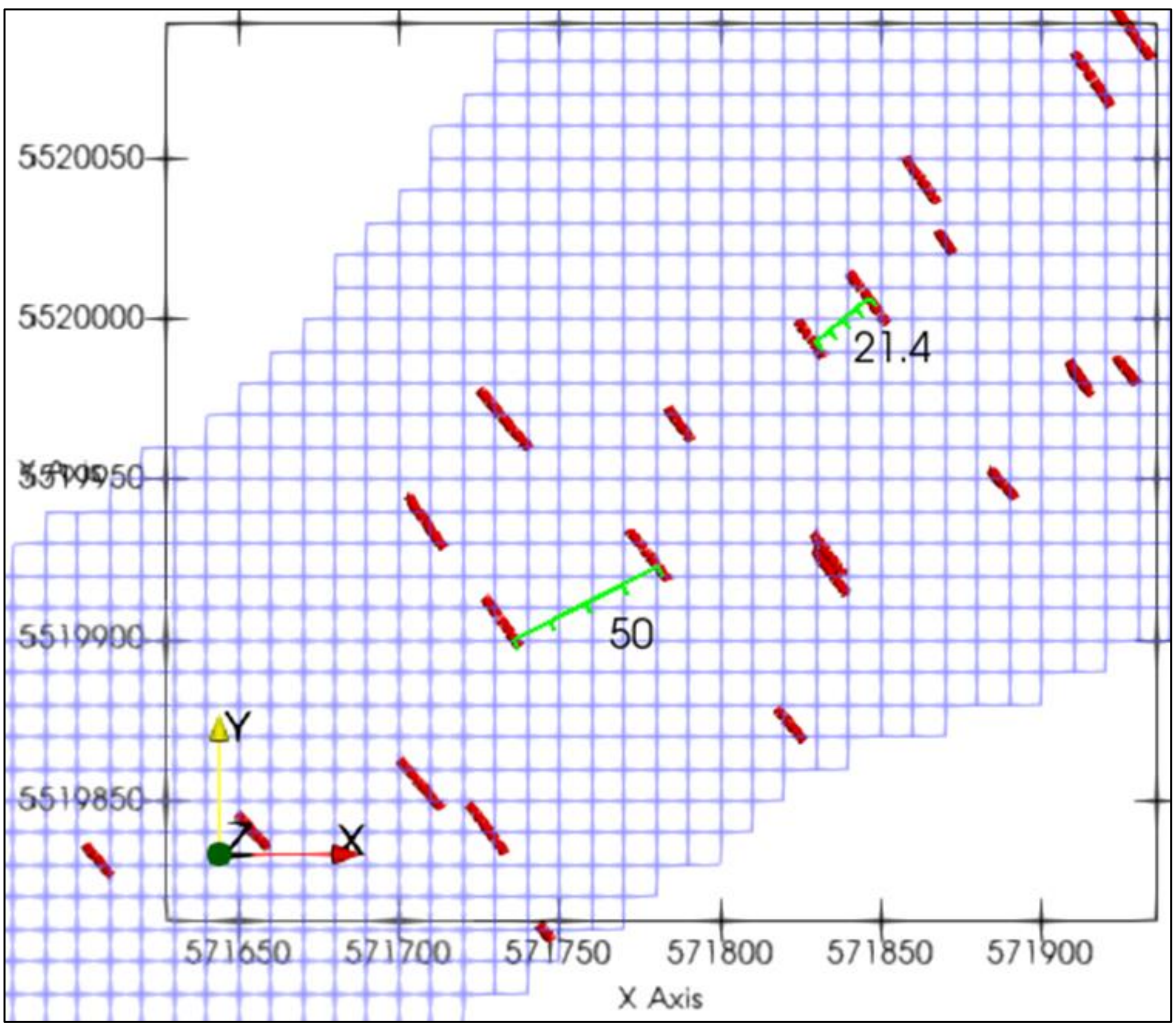

Figure 43: Horizontal section (20 m thick) along elevation 460 m showing block intersects (blue), drillhole intervals through the 20 m section (red) and the typical distance between drillholes (green)

14.8 Interpolation and Validation

Capped head grades and density values in drillhole composites were interpolated by domain (CMPDOM) and subdomains (mag). The indicator variable representing the high-magnetite or low-magnetite subdomains (mag) was interpolated by geology domain (CMPDOM). The interpolation was by OK in block support with 3 x 3 x 3 discretization points per block. Additional interpolations were completed with inverse of the squared distance (ID2) and nearest neighbour (NN) interpolators.

Sample selection used to interpolate each block used up to six 1.5 m composites (9 m in total) from the three drillholes nearest to the block. However, the interpolation may be completed with two drillholes if an insufficient number of samples are located. The interpolation can also be completed with more than three drillholes if the total number of samples located from a single drillhole is less than six. Kriging was achieved by restricting the sample selection to six composites maximum per drillholes, using a minimum and a maximum number of composites equal to eight and 18, and a relatively flat search ellipsoid with a radius of 220 m and minor ellipse axis with a radius of 30 m. The search ellipse was placed in the direction of maximum continuity, parallel to the strike of the geological domains. This large search ellipse size was intended to estimate using only one search pass, to reproduce the continuous mineralized layers as observed in drilling. Blocks interpolated with widely spaced data were assigned with a lower confidence in the resource classification.

Interpolation parameters were tested in random blocks. The test consisted of observing the sample selection and kriging weights applied. Figure 44 shows the test results using samples of domain 300 and the indicator variable mag.

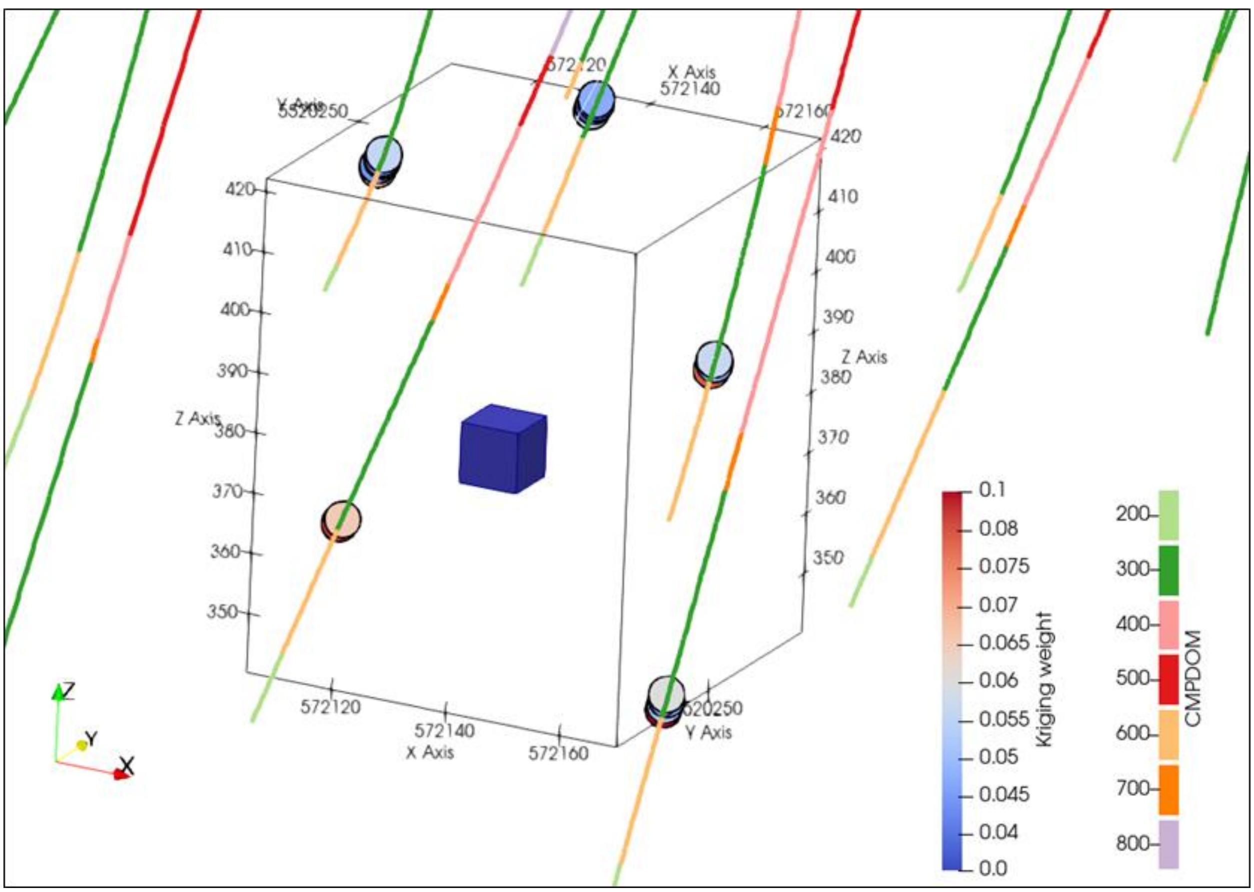

Figure 44: Interpolation test on a block with coordinates 572135 E, 5520245 N, 375 Z with composite samples of domain 300 and using OK

Note: The circles represent the samples selected and are coloured by OK weights.

Head grades and density interpolated in the low-magnetite and high-magnetite subdomains (mag = 0 and mag = 1) were combined into a single value per block by summing their predicted grade in the two subdomains, multiplied by the proportion of the subdomains in the block. The proportions of the subdomains *mag = 0* and *mag = 1* were obtained from the interpolated indicator variable *mag*. For example, the head grade reported for V_2O_5 is:

$$V_2O_5\ (\%) = (V_2O_5 \text{ in } mag = 1 * \text{proportion of } mag = 1) + (V_2O_5 \text{ in } mag = 0 * \text{proportion of } mag = 0).$$

The proportion of *mag = 1* has values between 0 and 1, with 1 indicating that the block is 100% populated with the high-magnetite population. The proportion of *mag = 0* is (1– *mag = 1)*.

The head grade TiO_2 (%), Fe_2O_3 (%), and V_2O_5 (%) from the subdomains combined were used to calculate the concentrate grades and percent of magnetite in the block using the regression formulae explained above (Figure 31, Figure 32).

Block model validations were completed for all variables interpolated in domains and subdomains. The indicator variable *mag* was validated by domain (CMPDOM). Validations were also completed with the final combined grade (i.e. merged results of high-magnetite and low-magnetite domains, as described above).

Validations consisted of:

- Visual validations along sections
- Comparison of average grade in composites and block model
- Swath plots
- Global change of support
- Validation of the preservation of correlations between variables.

Visual inspection of the estimate was completed mostly in vertical sections displayed in 3D. Figure 45 and Figure 46 show examples of visual validations. Sections slices were moved along the deposit to verify that the local grade was reproduced and that expected trends were captured in the model. Correlations between the block model variables were plotted in scatter plots and compared with scatter plots produced from drillhole composites. Variations in the correlation patterns were spatially inspected by selecting correlations in scatter plots and highlighting them in the model plotted in 3D (Figure 46).

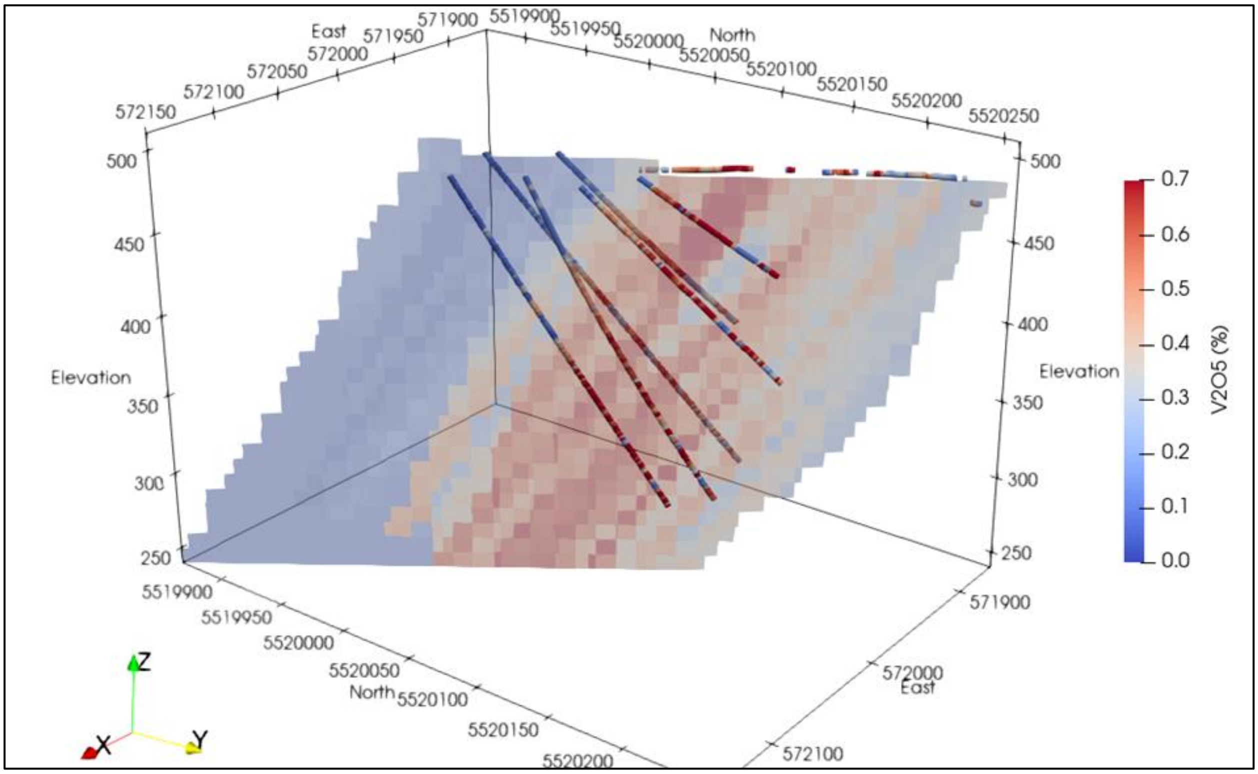

Figure 45: Visual inspection of the V_2O_5 (%) head grade along a vertical section

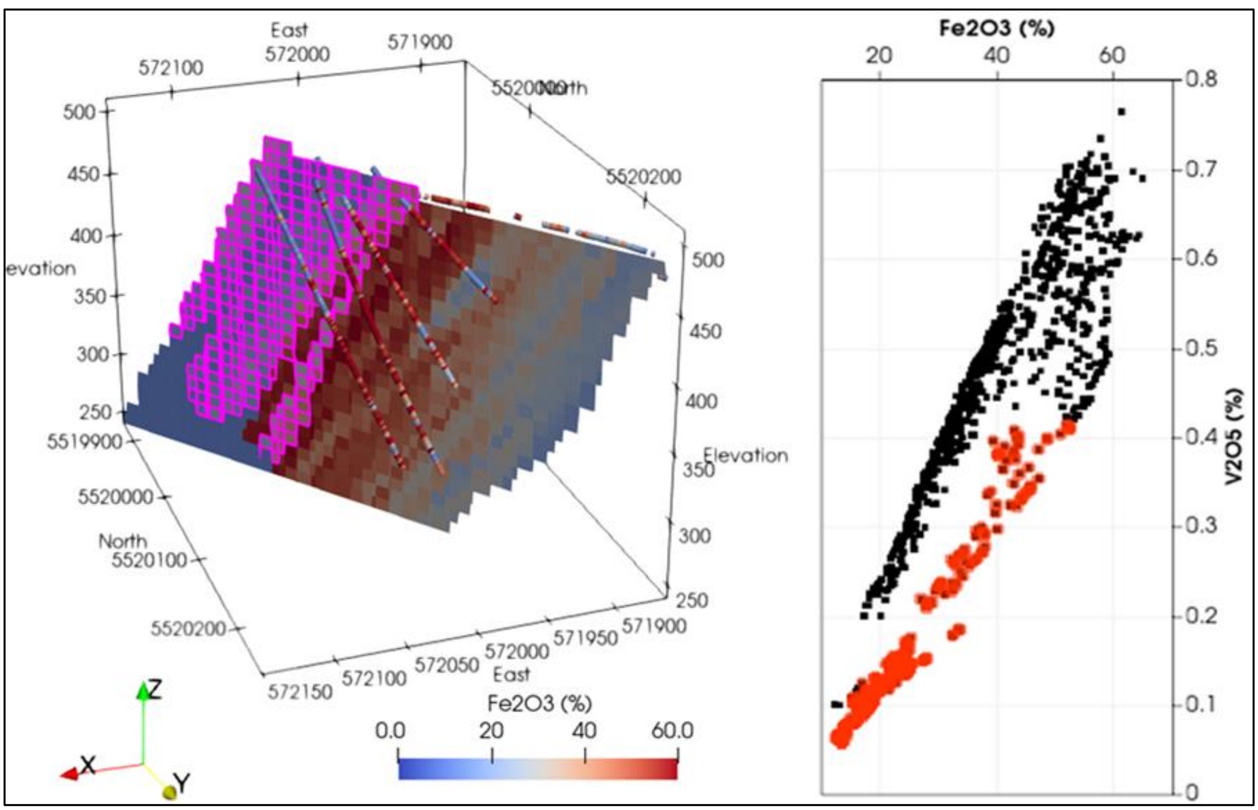

Figure 46: Visual inspection of correlation of spatial patterns between V_2O_5 (%) and Fe_2O_3 (%)

Note: Blocks selected in the scatterplot are shown in red, and their borders are highlighted in the block model.

Validation of global averages was completed by comparing the block model's mean values with drillhole data mean values. The NN interpolation was used as a de-clustered estimator of the local and global average grades of drillhole composites. Table 16 shows an example of the comparison between the NN estimator of the de-clustered mean and OK and ID2 estimates of V_2O_5.

Table 16: Comparison of the mean of V_2O_5 in interpolations with the composite mean estimated with NN

CMPDOM	V_2O_5 high-grade magnetite (%)			V_2O_5 low-grade magnetite (%)			V_2O_5 (%) (subdomain combined)		
	OK	ID2	NN*	OK	ID2	NN	OK	ID2	NN
200	0.58	0.58	0.58	0.25	0.25	0.26	0.33	0.32	0.33
300	0.66	0.66	0.66	0.22	0.22	0.24	0.55	0.55	0.55
400	0.48	0.49	0.49	0.14	0.13	0.14	0.34	0.34	0.34
500	0.45	0.46	0.44	0.09	0.08	0.09	0.17	0.17	0.17
600	0.63	0.63	0.63	0.26	0.25	0.27	0.41	0.41	0.41
700	0.57	0.58	0.57	0.10	0.09	0.11	0.23	0.23	0.24
800	0.42	0.42	0.43	0.13	0.12	0.12	0.29	0.29	0.29

**NN is the de-clustered mean calculated with the NN estimator.*

The NN estimate was also used as the local estimator of the de-clustered mean on composites to generate swath plots. Examples of swath plots are shown in Figure 47.

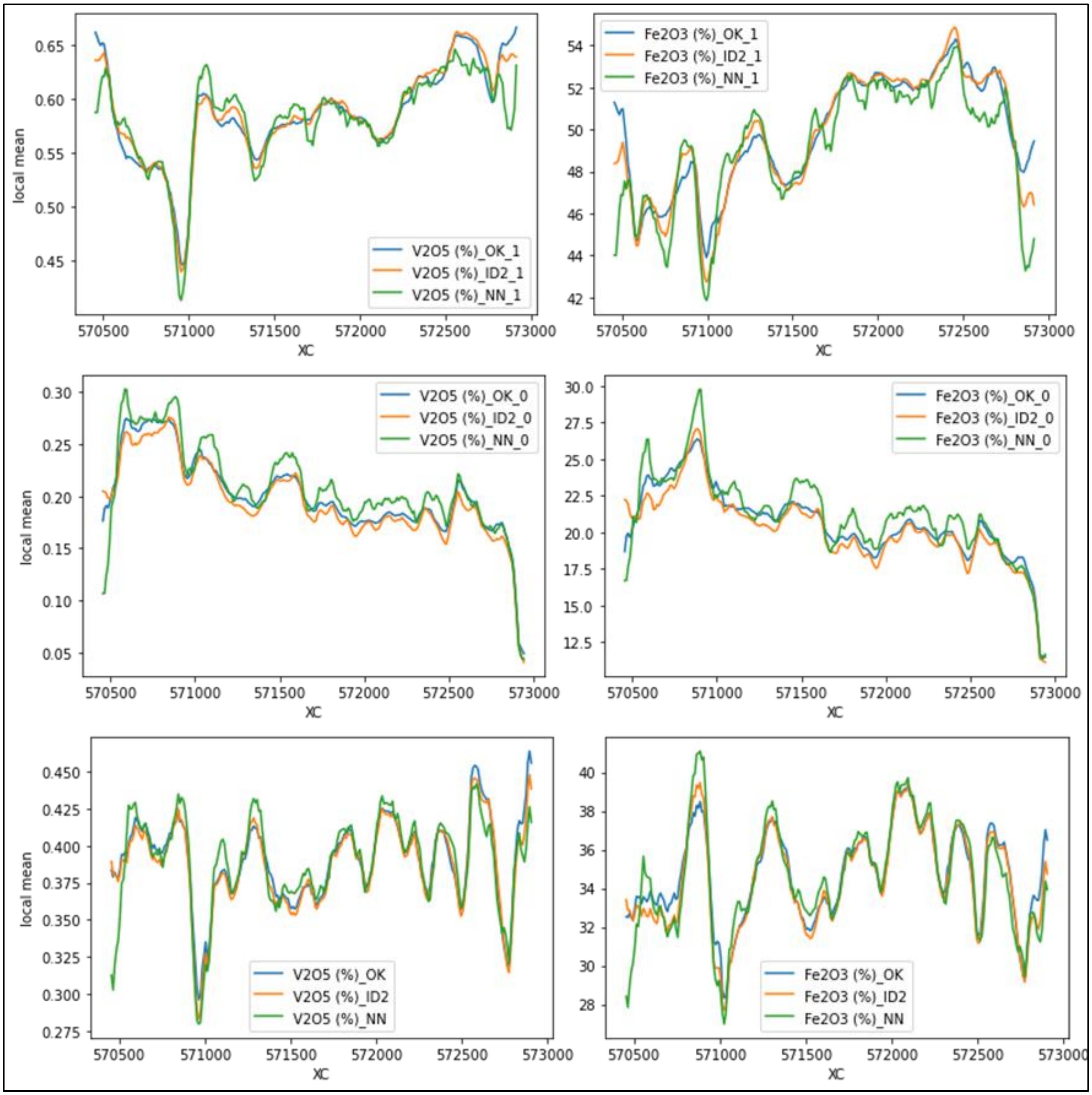

Figure 47: Swath plots of V_2O_5 (left) and Fe_2O_3 (right) in high-magnetite (upper row), low-magnetite (middle row) and combined (bottom row) subdomains

Note: NN estimate is considered the local de-clustered mean of drillhole composites.

Global change of support validations were calculated directly using drillhole composites, using the same variogram used for interpolation but rescaled to actual variable variance. Examples of global change of support are shown in Figure 48.

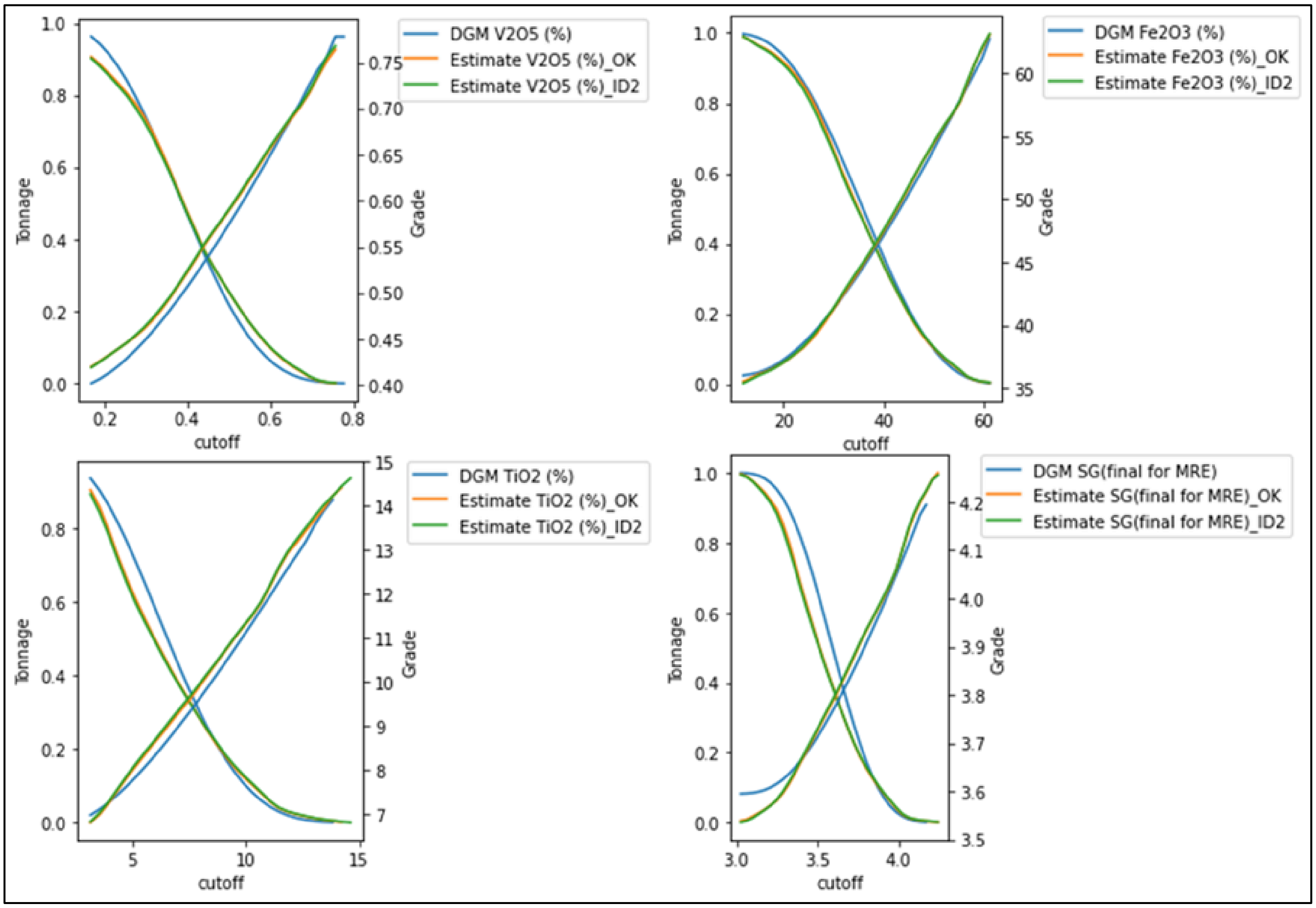

Figure 48: Global change of support of TiO_2 (%), Fe_2O_3 (%), V_2O_5 (%), and density interpolation in high and low-grade subdomains combined

14.9 Prospects for Eventual Economic Extraction, Classification, and Reporting

It is assumed that vanadium will be extracted from the deposit via the conventional roast-leach process. In this process, the mineralized material is crushed and milled, and a magnetite concentrate is separated using magnetic separation. Thereafter, the concentrate is roasted in the presence of a sodium salt, forming a soluble vanadium compound that is then leached in water and precipitated and treated to form vanadium pentoxide (V_2O_5).

Therefore, no value was attributed to TiO_2 or Fe_2O_3 contained in the concentrate. A vanadium pentoxide reference price of US$7/lb was selected (see Section 24).

Assumed costs were as follows:

- Mining = US$3/t mined
- Producing a magnetic concentrate = US$15/t mined
- Roasting and leaching = US$55/t of magnetite concentrate.
- G&A = US$2/t mined
- Tailings disposal = US$1.5/t mined.

The following recoveries were assumed:

- Recovery of magnetite to the concentrate = 85%
- Recovery of V_2O_5 from the concentrate via roasting and leaching = 75%.

The total cost of producing a pound of V_2O_5 is variable since it depends on magnetite content and V_2O_5 grade in the concentrate. The above assumptions were used to estimate a "net value", which is the difference between the V_2O_5 value in the *in-situ* rock minus the total cost to extract this V_2O_5. Mineral Resources were then reported using a net value cut-off of zero US$/t for *in-situ* material.

Mineral Resources were constrained by an open pit optimized using SimShed, with a constant pit slope angle of 45°. Blocks were also labelled with claims or concessions and all the blocks outside the VanadiumCorp property were excluded from this MRE.

Mineral Resources were classified using the CIM (2014) definition of Mineral Resources into Measured, Indicated, and Inferred Mineral Resources. Various aspects were taken into consideration for classification, including:

- Mineralization has been observed at surface and its continuity at depth was verified with drilling.
- The informing data are of acceptable quality since it was mostly acquired by the Issuer, following industry standards.
- Historical drilling was verified with twin drilling and resampling of channel samples.
- The geological interpretation was based on geological evidence.
- A large number of density determinations have been carried out, minimizing the risk of tonnage estimation
- Mineralization shows high continuity, and known structures are well defined in the model.
- An extensive Davis Tube testwork program was completed using sample composites. This allows prediction of the properties of the mineralization in the concentrate with reasonable confidence.

Mineral Resources informed with close-spaced drilling and channel samples, with a distance between drillholes of approximately 45 m or less, were classified as Measured. Mineral Resources informed with drillholes and channel samples spaced between 50 m and 100 m were classified as Indicated. Blocks informed with drillhole data with spacing over 100 m or only with channel samples and a limited amount of drilling were classified as Inferred Mineral Resources. This classification was implemented by digitizing 3D wireframes around areas based on the drillhole spacing and using kriging variances to guide the manual digitization. The Mineral Resource classification is shown in Figure 49.

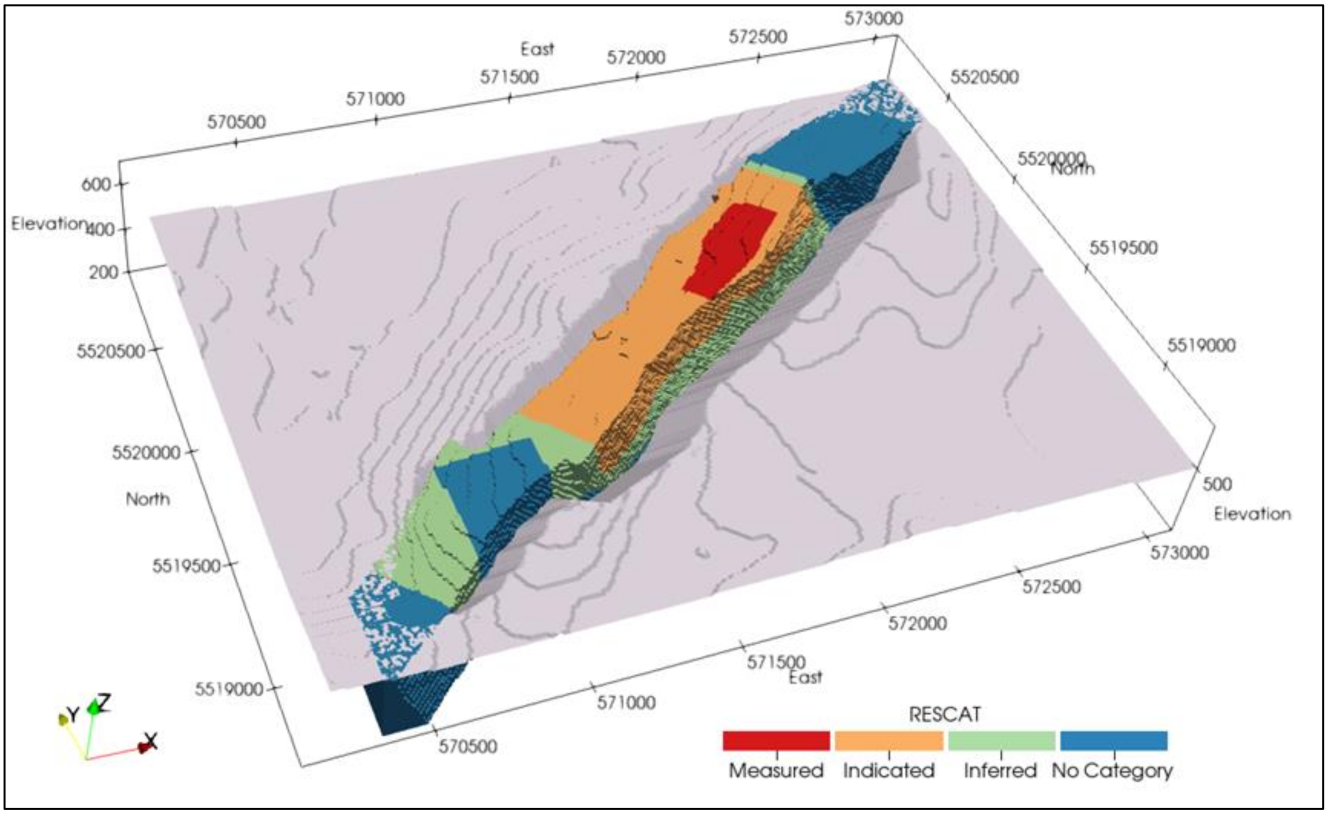

Figure 49: 3D view of classification and reporting pit shell

The Qualified Person is not aware of any risk factor that may impact the MRE (e.g. environmental or permitting risk). Market studies have however not been completed for this Project. Another risk is that some areas (Inferred classification) have been informed with only channel samples and limited diamond drilling.

Mineral Resources reported at a zero net value cut-off are shown in Table 17. This cut-off is sensitive to the V_2O_5 price. However, there is little impact on the total V_2O_5 contained in concentrate and total tonnage if the V_2O_5 price remains over US$6/lb (Figure 50). Figure 51 shows the distribution of V_2O_5 contained in concentrate per estimation domain. Most resources are contained in domains 300 and 600 (Figure 34).

*Table 17: MRE at Lac Doré with an effective date of 27 October 2020 (*recovery not applied to V_2O_5 in concentrate)*

	Classification	Mt	V_2O_5 (%)	Fe (%)	TiO_2 (%)	Magnetite (%)	V_2O_5 (kt)	Fe (Mt)	TiO_2 (Mt)	V_2O_5 (Mlb)
Head Grade (In situ)	Measured	23.98	0.5	33.7	9.9	34.5	128	8.1	2.4	280
	Indicated	190.96	0.4	26.3	6.7	23.4	837	50.2	12.8	1,850
	Measured + Indicated	**214.93**	**0.4**	**27.1**	**7.1**	**24.6**	**965**	**58.3**	**15.2**	**2,120**
	Inferred	86.91	0.4	28.0	7.6	25.9	387	24.4	6.6	850
	Classification	**Magnetite concentrate (Mt)**	**V_2O_5 in concentrate (%)**	**Fe in concentrate (%)**	**TiO_2 in concentrate (%)**		**V_2O_5 in concentrate (kt)**	**Fe in concentrate (Mt)**	**TiO_2 in concentrate (Mt)**	**V_2O_5 in concentrate* (Mlb)**
Magnetite Concentrate	Measured	8.27	1.2	62.0	9.4		100	5.1	0.8	220
	Indicated	44.70	1.3	62.0	8.5		578	27.7	3.8	1,270
	Measured + Indicated	**52.82**	**1.3**	**62.0**	**8.7**		**678**	**32.8**	**4.6**	**1,490**
	Inferred	22.52	1.2	62.0	9.2		277	14.0	2.1	610

Notes:

- *Mineral Resources are estimated and reported in accordance with the CIM Definition Standards for Mineral Resources and Mineral Reserves adopted 10 May 2014.*
- *Sum of individual amounts may not equal due to rounding.*
- *Geological and block models used data from 41 drillholes drilled by VanadiumCorp in 2013 and 2019, in addition to 44 drillholes and 33 surface channel samples completed previously and verified through twinning or resampling in 2019–2020.*
- *The drill database was validated prior to estimation, and drillholes were flagged with interpolation domains (P1, P2-LOW, P2-A, P2-PART, P2-B, P2-HW, P3), composited to 1.5 m intervals, and capped for anomalously high and low-grade values. QAQC checks included insertion of blanks, CRMs, pulp duplicates and umpire assays performed at a second laboratory.*
- *Head grades and densities were interpolated onto 10 m x 10 m x 10 m blocks using OK, owing to intercalations of high and low magnetite within broadly mineralized intervals, a high-grade or low-grade indicator was used, and separate interpolations carried out for high-grade or low-grade samples, with the proportion of high-grade mineralization within each block also interpolated using OK.*
- *All the estimates were validated visually using sections and 3D visualization, and using swath plots, comparison of averages in drillhole and blocks, and global change of support.*
- *Magnetite contents and concentrate grades were calculated using regression formulae deduced from Davis Tube results.*
- *Resource classification was done using wireframes digitized using kriging variance as a reference and correspond to Measured Resources having drillholes spacing <40 m, Indicated Resources having drillhole spacing between 40 m and 100 m, and Inferred Resources having a drillhole spacing >100 m.*
- *Mineral Resources are reported using a "net value" cut-off, calculated assuming an open pit mining operation and extraction of saleable vanadium pentoxide flake from the magnetite concentrate via the salt-roast process. The calculation assumes a V_2O_5 price of US$7/lb, 85% recovery of magnetite to the concentrate, 75% recovery of vanadium in the roast/leach extraction process, and costs of US$3/t ROM (mining), US$15/t concentrate (magnetite concentrate production), US$55/t concentrate (roast/leach), US$2/t ROM (G&A), and US$1.5/t ROM (tailings disposal). A net value equal to zero was used for reporting.*
- *Mineral Resources are constrained by a pit shell optimized with the software SimSched using the above parameters and including a cost of US$3/t for waste rock extraction and assuming maximum pit slope angles of 45°.*
- *Adrian Martinez, P.Geo (ON), OGQ Special Authorization, CSA Global Senior Resource Geologist, is the independent Qualified Person with respect to the MRE.*
- *Recoveries of V_2O_5, Fe_2O_3 and TiO_2 to the magnetite concentrate are variable.*
- *Mineral Resources are constrained by claim boundaries.*
- *VanadiumCorp is not aware of any environmental, permitting, legal, title, taxation, socio-economic, marketing or political factors that might materially affect these MREs.*
- *These Mineral Resources are not Mineral Reserves as they do not have demonstrated economic viability. The quantity and grade of reported Inferred Resources in this MRE are uncertain in nature and there has been insufficient exploration to define these Inferred Resources as Indicated or Measured; however, it is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued explorations.*

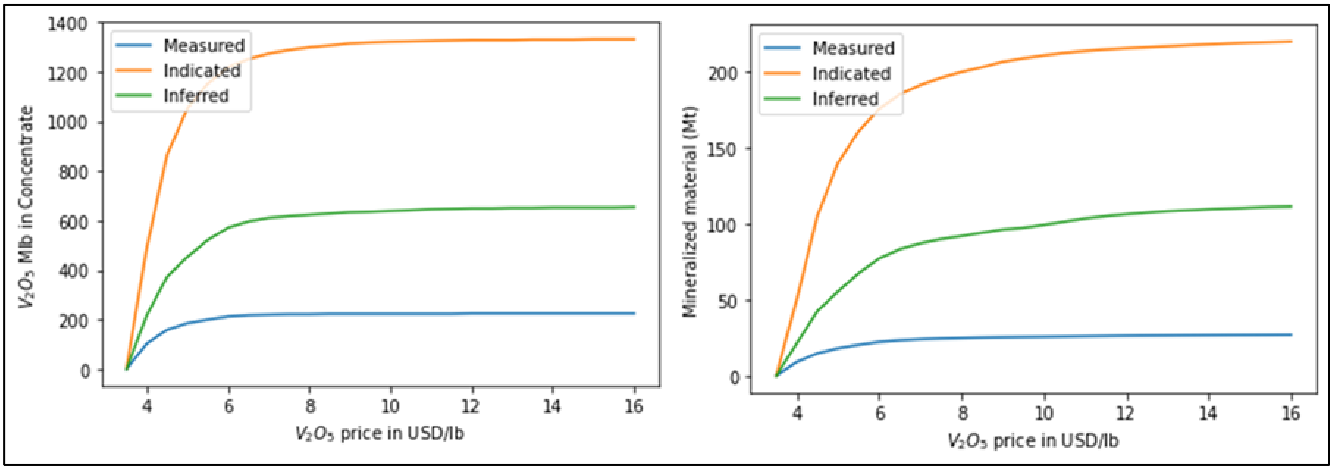

Figure 50: Resources contained at zero net value cut off as a function of V_2O_5 price
Left: V_2O_5 contained in concentrate. Right: Tonnes of mineralized material.

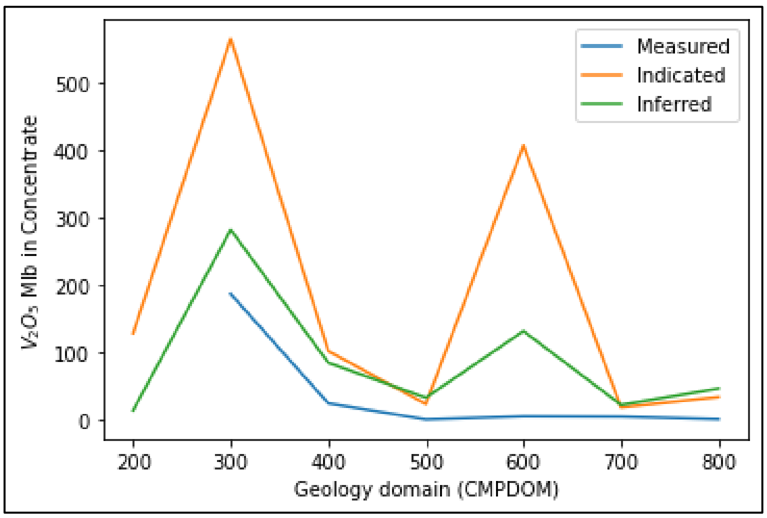

Figure 51: V_2O_5 (Mlb) contained in concentrate per geological domain

15 Mineral Reserve Estimates

This section is not applicable to the current report.

16 Mining Methods

This section is not applicable to the current report.

17 Recovery Methods

This section is not applicable to the current report.

18 Project Infrastructure

This section is not applicable to the current report.

19 Market Studies and Contracts

This section is not applicable to the current report.

20 Environmental Studies, Permitting and Social or Community Impact

This section is not applicable to the current report.

21 Capital and Operating Costs

This section is not applicable to the current report.

22 Economic Analysis

This section is not applicable to the current report.

23 Adjacent Properties

The Lac Doré Property's Main claims block is surrounded by BlackRock Mining Inc. (Blackrock) claims with a narrow strip (400 m) of claims belonging to BlackRock separating it from the Lac Doré North claims block to the north, and a broader strip (~1,300 m) to the east separating the Lac Doré Main claims from the Lac Doré North claims.

To the southwest, the limit of the Lac Doré Main claims block is very close (100–120 m, corresponding to the irregular claim 5277107) to the outline of the claims acquired by Blackrock that covers their Southwest iron-titanium-vanadium deposit. In addition, two adjacent isolated cells, belonging to BlackRock (CDC-2427688 and CDC-2427689) are enveloped within the Lac Doré Main claims block, and are due for renewal on 30 March 2022.

The deposit delineated here on the Lac Doré Main property is contiguous with the adjacent Southwest Zone deposit owned by Blackrock (Figure 52), which together with the Armitage Zone has been the subject of a Mineral Resource estimation and 2014 Feasibility Study (Allaire et al., 2014).

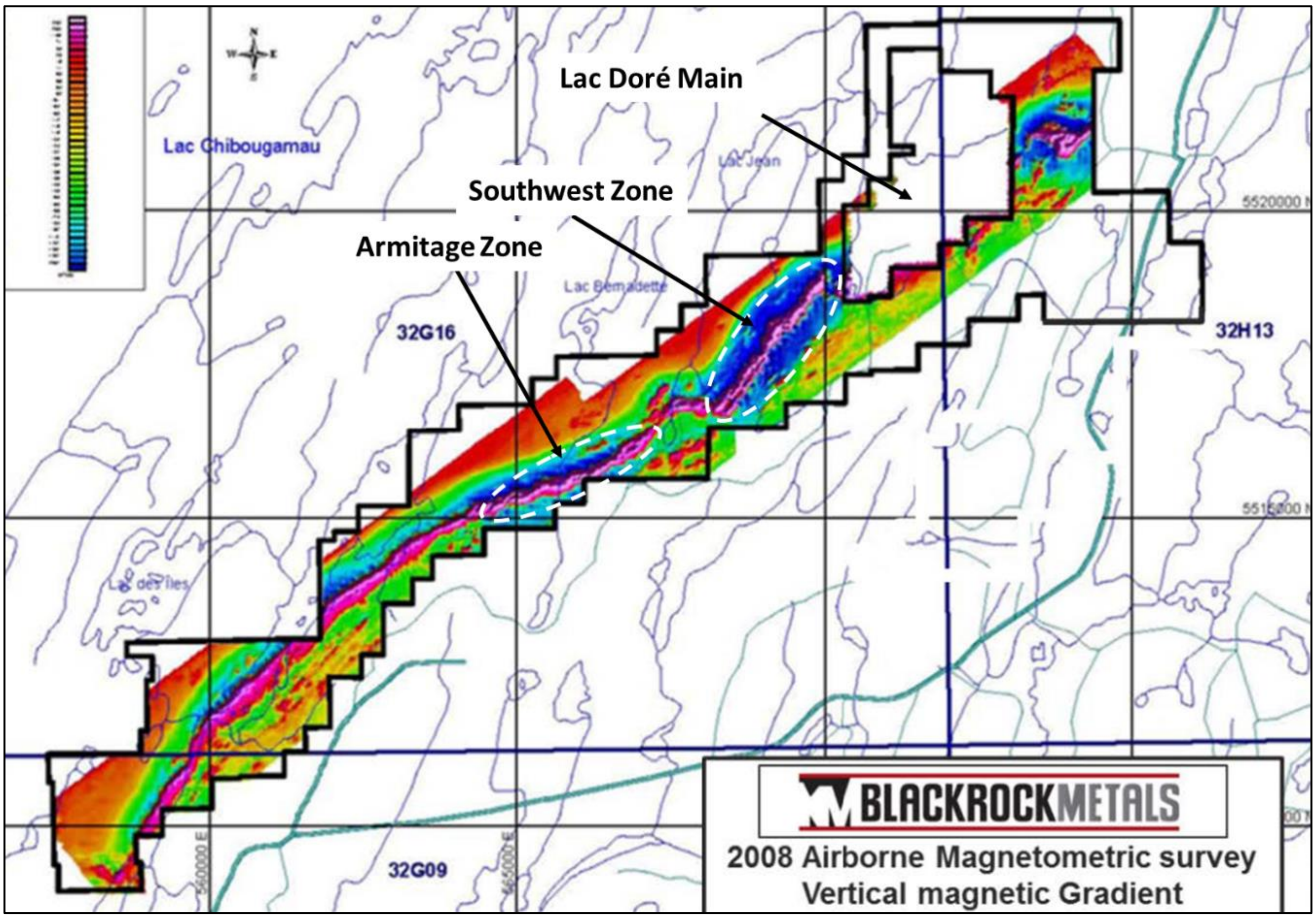

Figure 52: Location of the Blackrock Southwest Zone and Armitage Zone deposits, as delineated by aeromagnetic data, shown relative to the Lac Dore Main property boundary
Source: Allaire et al., 2014

The Lac Doré North claims block is bordered to the west and north by claims held by Spearmint Resources Inc. as part of their Lac Chibougamau vanadium project. Another isolated cell (CDC-2529281) owned by Kode Mineral

Exploration Ltd which expires on 7 December 2021, is embedded into the Lac Doré North claims block, near its east boundary.

An isolated cell (CDC-2429553) belonging to VanadiumCorp lies within the Blackrock Mining Inc. property, very close to its Armitage iron-titanium-vanadium deposit, and is due for renewal by 25 February 2023.

24 Other Relevant Data and Information

24.1 Metal Pricing Assumptions

No detailed market studies or contracts have been carried out owing to the early-stage nature of the Project. However, some assumptions have been made regarding vanadium pricing for use in defining the constraining pit shell.

Although iron, vanadium and titanium are included in the magnetite concentrate, it is assumed that only vanadium will have value, and that this will be extracted from the magnetite concentrate via a salt-roast process to produce >98% V_2O_5 flake. Over the past decade, European prices for V_2O_5 flake have varied from a low of $2.5/lb in January 2016 to a peak of $28.8/lb in November 2018, with prices generally in the range of $5/lb to $7/lb. Chinese prices may differ slightly from European process but show similar trends. A long-term average of $7/lb is assumed for reasonable prospects of economic evaluation, which is below the three-year trailing average, but slightly above a longer-term trend of ~$6/lb.

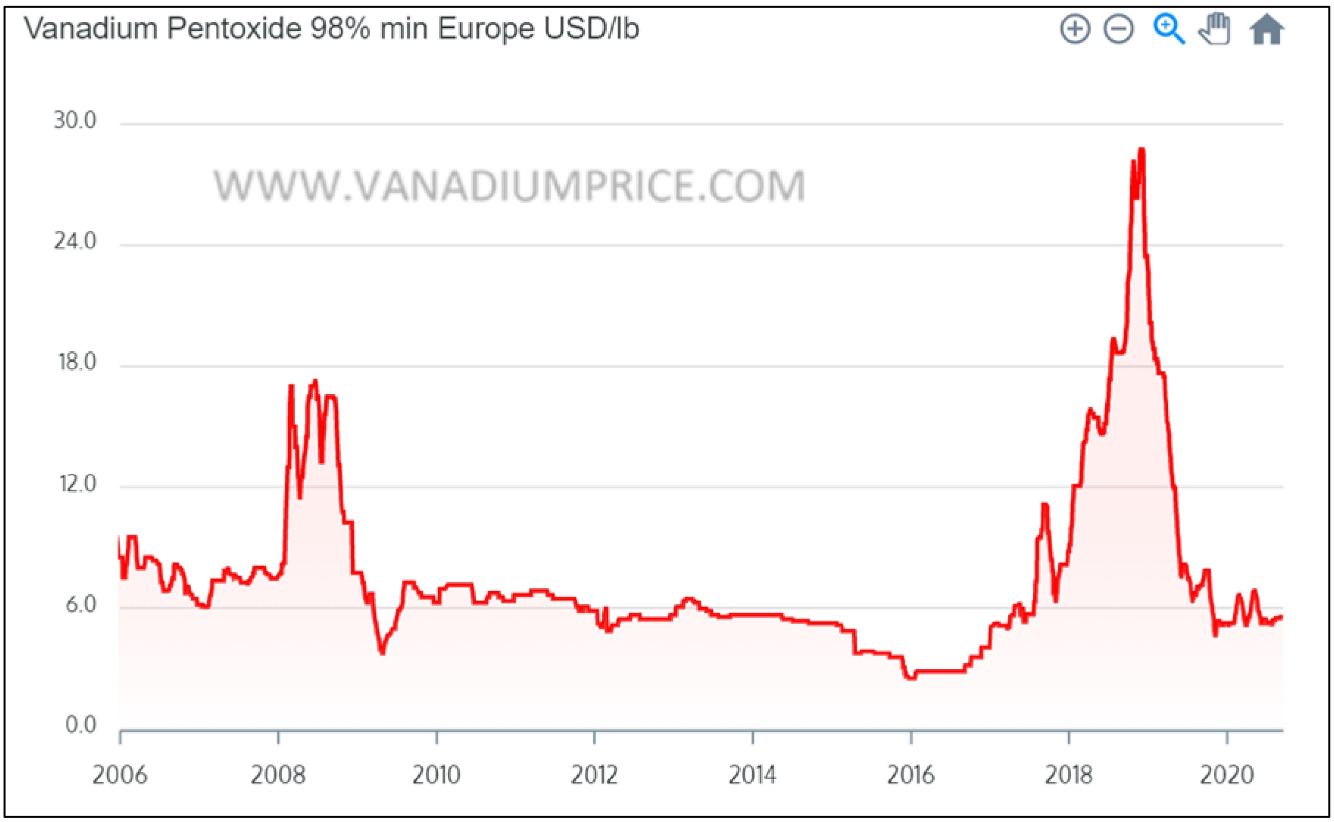

Figure 53: Vanadium pentoxide prices (>98% V_2O_5, Europe, US$/lb) between 2006 and 2020

25 Interpretation and Conclusions

VTM mineralization at the Lac Doré Project shows similarities to other magmatic VTM deposits associated with layered mafic intrusive complexes. In particular, the concentration of magnetite into several laterally continuous, tabular, stratiform zones, and the change in the ration of vanadium and titanium in the magnetite through the stratigraphy (from high-V_2O_5, low-TiO_2 layers in the lower layers to low-V_2O_5, high-TiO_2 in the upper layers) in typical of these deposit types.

Several stratigraphic zones of mineralization have been identified, all strike northeast, dip at 50–60° to the southeast, and cumulatively have a true thickness of between 200 m and 300 m.

During 2019 and 2020, VanadiumCorp has carried out drilling of 37 new diamond drillholes, as well as resampling of old drill core and surface channel samples. Drill core samples were assayed, and composite samples were subjected to Davis Tube magnetic concentration and assaying of the concentrates. A significant amount of historical drilling data is also available for the property, and this data has been verified and validated. Mineral Resources have been estimated using verified historical drilling and channel sampling information in combination with recent drilling and channel sampling results.

Mineral Resources have been reported (effective 27 October 2020) for the Lac Doré Project at a net value cut-off of zero (calculated assuming an open pit mining operation and extraction of saleable vanadium pentoxide flake from the magnetite concentrate via the salt-roast process). Total Measured and Indicated Mineral Resources of 214.93 Mt at 0.4% V_2O_5, 27.1% Fe, 7.1% TiO_2 and 24.6% magnetite, and total Inferred Mineral Resources of 86.91 Mt at 0.4% V_2O_5, 28% Fe, 7.6% TiO_2 and 25.9% magnetite, have been estimated, as detailed in Table 1 and Table 17.

The grades and tonnages of Inferred Resources in this estimation are based on limited geological evidence and sampling that is sufficient to imply but not verify geological and grade continuity, and there has been insufficient exploration to define these Inferred Resources as an Indicated or Measured Resource. It is reasonably expected that majority of the Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.

The following risks and uncertainties may affect the reliability or confidence in the exploration information and MRE:

- Not all historical drillhole collars have been resurveyed by an independent surveyor, and downhole deviation data available for historical drillholes is limited to dip tests; however, those that have been located compare favourably with recorded locations.
- Any QAQC procedures associated with historical assay data have not been documented; however, comparison of the results of historical assays with recent values shows that they compare favourably.
- Metallurgical and recovery parameters for the magnetite concentrate have not been fully assessed – the data presented on recoveries is estimated from Davis Tube recovery tests.
- Environmental considerations that may affect the project and their influence on the potential economic viability of the Project have not been assessed.
- Permits and authorizations for advancement of the Project are not guaranteed.

The following opportunities have been identified with respect to further exploration:

- Infill drilling towards the northeast and southwest is expected to allow Inferred Mineral Resources to be upgraded to a higher category
- The Lac Doré North licence area has additional mineralization that has not been fully assessed.

26 Recommendations

The following recommendations are made with respect to future work on the Property.

Currently, Mineral Resources have been estimated with sufficient confidence to allow for more advanced studies to take place at Lac Doré Main, where future work would focus on metallurgical testwork, mining studies, environmental testwork, and other work necessary for advanced studies. This work is listed as Phase 1 below.

Additional exploration work would focus on the Lac Doré North Property, and future work at Lac Doré Main would focus on metallurgical testwork and advanced studies. This work is listed as Phase 2 below.

Note that Phase 2 is not contingent upon positive results from Phase 1.

Phase 1: Work required for prefeasibility or other advanced studies at Lac Doré Main:

- Detailed environmental studies and assessments of permitting requirements
- Metallurgical testwork including grind optimization
- Submission of a selection of core duplicate samples for additional QAQC
- Mining studies
- Infrastructure studies
- Detailed marketing studies.

Phase 2: Work required at Lac Doré North:

- Additional infill drilling, sampling, and assaying.
- Mineral Resource estimation.

A budget for this future work is outlined in Table 18.

Table 18: Estimated budget for future work programs

Recommended work		**Details**	**Estimated cost (US$)**
Phase 1: Work required for prefeasibility or other advanced studies at Lac Doré Main	Environmental studies		1,000,000
	Metallurgical testwork including grind optimization, vanadium extraction testing	50 samples for grind optimization, five samples for vanadium extraction testwork	500,000
	Submission of core duplicates	400 samples	40,000
	Mining studies		150,000
	Infrastructure studies		100,000
	Detailed marketing studies		100,000
	Total estimated costs – Phase 1		**1,890,000**
Phase 2: Work required at Lac Doré North	Additional drilling	Estimated 10 drillholes (2,000 m) for an Inferred MRE	200,000
	Sampling and assaying	1,000 samples	100,000
	Mineral Resource estimation		50,000
	Total estimated costs – Phase 2		**350,000**
GRAND TOTAL			**2,240,000**

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