DMT Consulting Ltd
International Mining Consultants

Technical Report

On the

Martison Phosphate Project, Ontario, Canada

Re-issued on behalf of

Fox River Resources Corp.

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NOTICE TO READER

This report was originally prepared for PhosCan Chemical Corp. (“PhosCan”). It is being re-issued to Fox River Resources Corp. (“Fox River”). Fox River is a newly incorporated entity that acquired certain assets of PhosCan, including the Martison Phosphate Project (“the Project”) which is the subject of this report, in connection with a plan of arrangement (the “Arrangement”) among PhosCan, Fox River and others under the Business Corporation Act (Alberta).

As part of the Arrangement, certain assets of PhosCan were spun-out to Fox River in exchange for common shares of Fox River. The Arrangement was effective February 2, 2016.

All information in this report is with an effective date of November 30, 2014 and a re-issue date of April 11, 2016.

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Appendix A Hydrogeological Test Results (2008 & 2012)

TERMS OF REFERENCE AND PURPOSE OF THE REPORT

This report was originally prepared for PhosCan Chemical Corp. (“PhosCan”). It is being re-issued to Fox River Resources Corp. (“Fox River”). Fox River is a newly incorporated entity that acquired certain assets of PhosCan, including the Martison Phosphate Project (“the Project”) which is the subject of this report, in connection with a plan of arrangement (“the Arrangement”) among PhosCan, Fox River and others under the *Business Corporation Act* (Alberta).

As part of the Arrangement, certain assets of PhosCan were spun-out to Fox River in exchange for common shares of Fox River. The Arrangement was effective February 2, 2016.

In connection with the Arrangement, PhosCan transferred to Fox River all of its right, title and interest to the mining claims and leases comprising the Martison Project. Transfer documents have been executed and filed with the appropriate government offices, but re-registration is still in progress.

This technical report was prepared by DMT Consulting Ltd, UK, to summarize the site investigative work carried out by PhosCan on the Martison Project since early 2008 and the release of the Project PFS.

All information in this report is with an effective date of November 30, 2014 and a re-issue date of April 11, 2016.

This technical report was written by Qualified Persons (QP) as detailed below. The individuals, by virtue of their education, experience, and professional association, are considered QPs for this report, as defined in the Canadian Securities Administrators National Instrument 43-101 (NI 43-101), and are members in good standing of appropriate professional institutions.

The contract, pursuant to the preparation of this Report, permits Fox River to file this report as a technical report with the Canadian Securities Regulatory Authorities, in accordance with NI 43-101, Standards of Disclosure for Mineral Projects.

In preparing this report, DMT has relied on ownership information provided by Fox River. DMT has not researched property title or mineral rights for the Martison Project, and consequently expresses no opinion as to the ownership status of the Project, other than that provided by Fox River.

Except for the purposes legislated under provincial securities laws, any use of this report by any third party is at that party’s sole risk The user of this document should ensure that this is the most recent technical report for the property because it is no longer valid if a new technical report has been issued.

The responsibility for this disclosure remains with Fox River.

1 .EXECUTIVE SUMMARY

1.1 Introduction

DMT Group Consulting Ltd. ("**DMT**"), Nottingham, England, was originally retained by PhosCan Chemical Corporation ("**PhosCan"**); to prepare a new Mineral Resource Estimate and supporting independent Technical Report for the Martison Phosphate Project, near Hearst, Ontario.

PhosCan was a Toronto Stock Exchange-listed company engaged in the development of the Martison Phosphate Project ("**the Project**"). The Martison Carbonatite Complex ("**the Complex**"), which contains the Project's phosphate resources and the proposed mine site area, is located about 70 kilometres northeast of the town of Hearst, Ontario, in the James Bay Lowlands.

DMT has now been retained by Fox River Resources Corporation ("**Fox River**") and, at their request, the Technical Report has been re-issued to reflect the change of ownership of the Project from PhosCan to Fox River. This report, dated April 11, 2016, has been prepared by DMT on behalf of Fox River in compliance with National Instrument 43-101 - Standards of Disclosure for Mineral Projects ("**NI 43-101**"). Previous Technical Reports and resource estimates on the Project were filed by PhosCan on SEDAR on May 31, 2007 and again in April 2008, which was part of a Pre-Feasibility Study (the "**2008 PFS**") of the Project in June 2008, compiled by Jacobs Engineering, Florida.

This report is an amended version of the technical report titled "Technical Report on the Martison Phosphate Project, Ontario Canada" with an effective date of November 30, 2014 and an issue date of March 9, 2015. This report has been amended only to reflect the transfer of the Martison Project from PhosCan Chemical Corp. to Fox River Resources Corporation (**FOX**), and that there has been no material change to the Project status since the issue date in March 2015. None of the changes made in this amended report affect the authors' opinions, conclusions or recommendations, and the effective date remains November 30, 2014.

Fox River considers the 2008 PFS to be out of date such that it can no longer be relied upon.

This report provides an updated Mineral Resource Estimate ("**MRE**") arising from additional drilling, sampling and metallurgical testing carried out since the last technical report filed in April 2008, and summarises the technical information and data gathered on the Project from 2008.

A summary of the main technical configuration, conclusions and recommendations relating to the Martison Project, as outlined in the 2008 PFS, is given in Section 6 of this report.

The Project is situated in the large expanse of "low ground" southwest of Hudson/James Bay, referred to as the James Bay Lowlands. The property comprises very gently rolling terrain dominated by muskeg and black spruce swamp. There are no exposures of the source rock carbonatite or the surrounding country rock, and all geological data result from drilling information and interpretations from geophysical surveys. The aeromagnetic geophysical surveys in 1965 identified several anomalies at the Martison site. Subsequently, exploration work has concentrated on the largest of three anomalies, referred to as Anomaly A, the two other smaller anomalies are referred to as Anomaly B and C.

Differential weathering of the Complex has resulted in an irregular weathered, 'karstic – type', bedrock sub – outcrop of carbonatite, the depth of which varies significantly over short distances. Depressions in this carbonate rich igneous rock are filled with the weathered breakdown product of the carbonatite, which is effectively a palaeo–soil, referred to as a 'Residuum'. The Residuum is enriched in apatite and represents the bulk of the phosphatic material of economic interest.

Above the Residuum, but not as widely distributed, lies a further sub – outcrop of lateritic material which is similarly enriched in Niobium and other Rare Earth minerals.

DMT visited the property and core storage facility on October 22nd and 23rd 2014. The proposed mine site area was reachable only by air at that time of year, and remains undeveloped apart from the remnants of a series of drill pads and other cleared areas with local interconnecting access trails.

The purpose of this Report is to update and summarise the current Project status, and revise the previous (2007) resource estimate in light of the exploration, site investigation and metallurgical testwork that has been undertaken since early 2008, notably:

- drill and sample programmes undertaken during 2008, 2010 and 2012;
- ground geophysics survey in winter 2008-09;
- geotechnical site investigations in winter 2008;
- air and ground surveys during the winter of 2008 and 2012;
- hydrogeological investigations in winter 2008 and 2012;
- an Environmental Impact Assessment during 2008-09, and
- various metallurgical and processing test works and studies over a period of four years from 2008 to 2012.

1.1.1 Property Description & Location

The Complex, which contains the Project's phosphate and niobium resources, and proposed mine site area are located approximately 70 km northeast of the town of Hearst, Ontario, in the James Bay Lowlands. The mine site area is located in the "South of Ridge Lake" area (township) and centred about 50°18' 52" N., 83°24' 52" W. The site currently remains a 'winter access only' site for the purposes of further site works and advancement of the Project. The mining leases and claims formerly held by PhosCan and now transferred to Fox River cover a contiguous area of approximately 8,256 hectares ("**ha**").

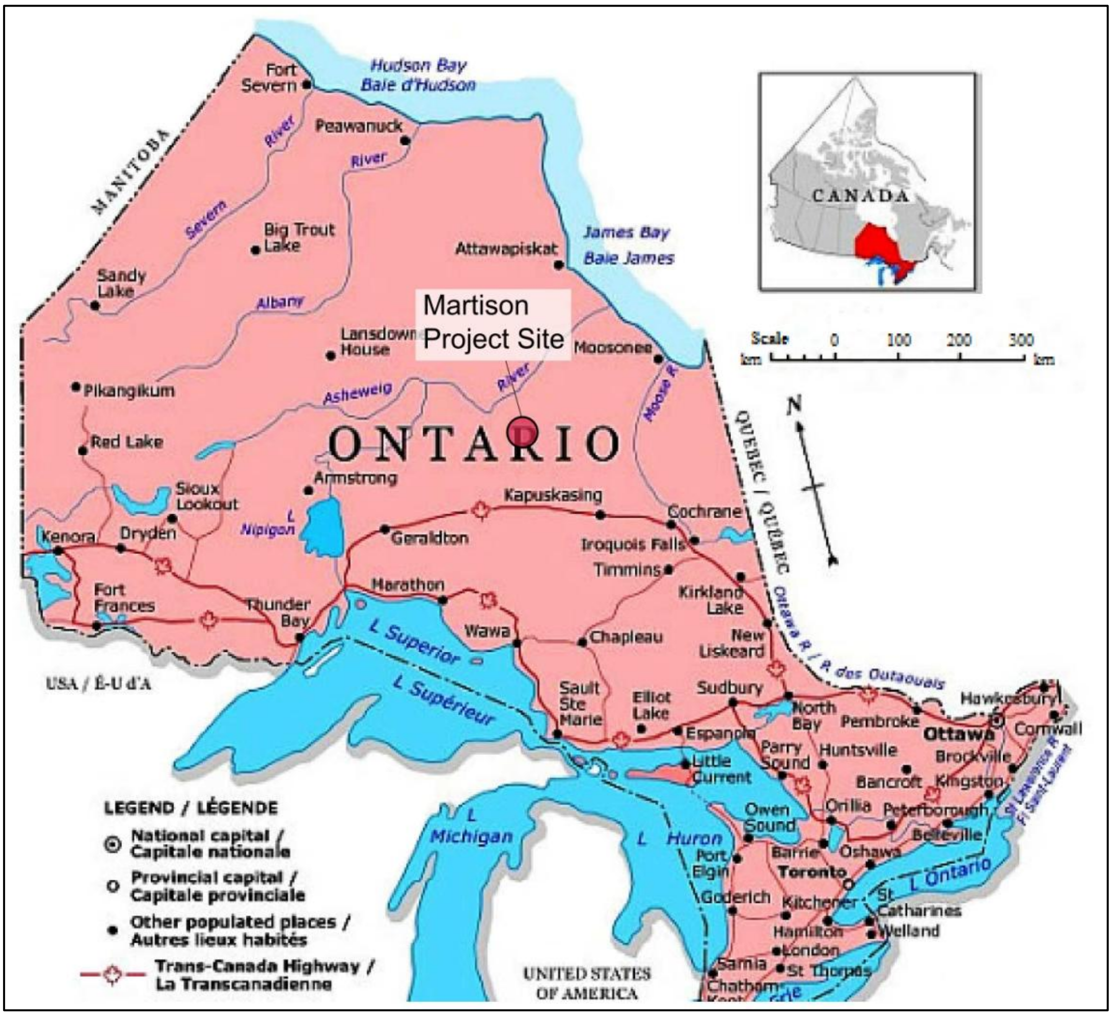
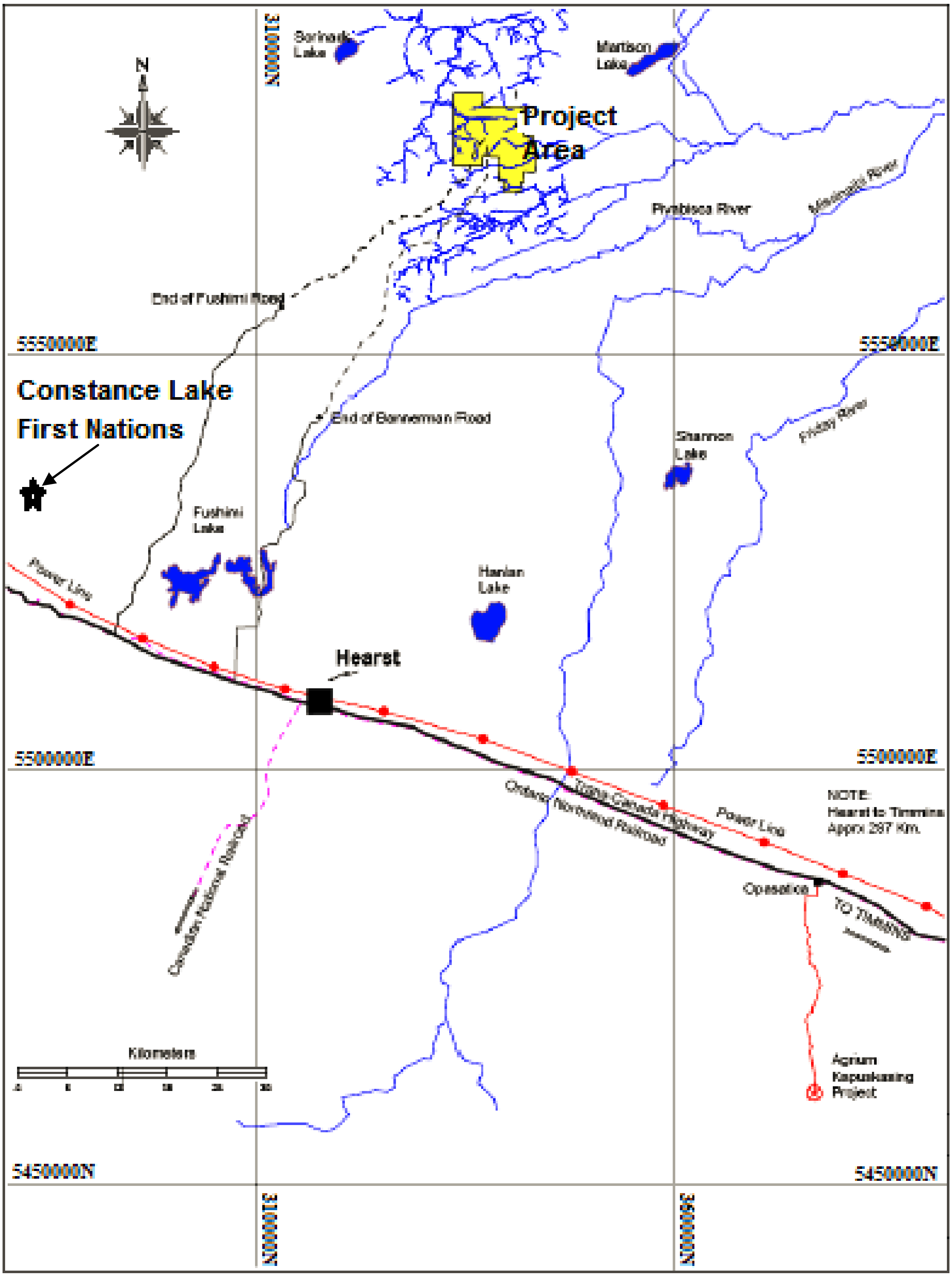


Figure 1-1 **Location of Martison Phosphate Project**

Several potential routes were studied as options for access to the Project site, only two proved to be realistically viable. One, identified as Bannerman Township Road, has been examined closely in past project studies, but the preferred access route to the Project site, and the one which has been used during past exploration programmes, is via the Fushimi Lake Road. The total length of this route from Hearst to the Project is approximately 112 kilometres ("**km**"), comprised of 26 km of Highway 11, 48 km on the Fushimi gravel road, and 38 km of a seasonally constructed snow and ice route which has been used for winter access to the deposit. This route is favourable since it has the approval of the Constance Lake First Nations ("**CLFN**") on whose tribal lands the Project is located. The CLFN reserve is located approximately 80km south west of the Project area (Figure 1-2).



Source: MNDM

Figure 1-2 **Martison Project Location and Access**

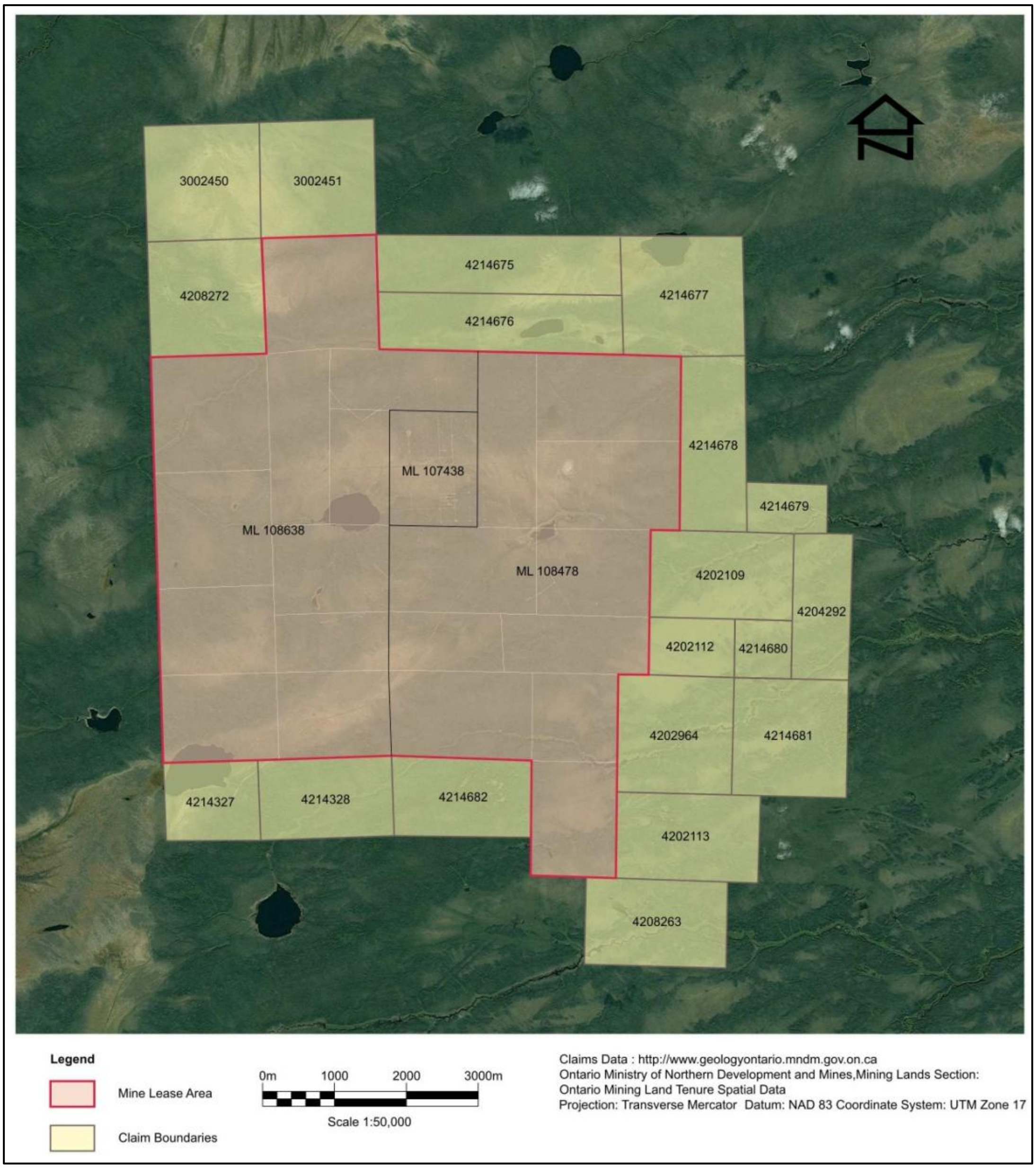
1.1.2 Land Tenure

The property consists of three contiguous mining leases:

- ML107438 (granted in September 2002);
- ML108638 (Clm 477) (granted May 1, 2011) and;
- M L 108639 (Clm 478) (granted May 1, 2011).

The leases total 266 units covering an area of 4256 hectares.

PhosCan also holds an aggregate pit permit to the south of the Project area approximately 33km west of Hearst and 27 km north of HWY 11 on the west side of the Fushimi Road. This is expected to provide suitable materials for the initial stages of the all season road construction.



Claims Data : http://www.geologyontario.mndm.gov.on.ca
Ontario Ministry of Northern Development and Mines,Mining Lands Section:
Ontario Mining Land Tenure Spatial Data
Projection: Transverse Mercator Datum: NAD 83 Coordinate System: UTM Zone 17

Figure 1-3 Martison Lease and Claims Map

1.1.3 Project Infrastructure

No project specific infrastructure exists at the Martison site other than a seasonal winter trail that is used, after construction of a snow and ice road, to connect the north end of the Fushimi Road with the project site (Figure 1-2). On site there are a series of drill pads and other cleared areas, and a network of interconnecting trails.

The Project site is currently only accessible in winter. A new access road would connect Highway 11 to the project location and would require approximately 90 km of combined new build and upgrading of the existing Fushimi roadway. The new build (approximately 45 km), using a different route to that currently used for winter access, would traverse through thin boreal forest and saturated shallow muskeg.

The underlying areas at the proposed project mine site, the open pit and associated infrastructure, (for example the waste dump, mine buildings, beneficiation plant, and tailings impoundment), are of saturated shallow muskeg perched on impermeable glacial till. A coordinated dewatering operation will be required for the development of the site infrastructure and operations.

An access 'corridor' leading from the mine site to the rail road at the south end of the Fushimi Road / Highway 11 junction would be expected to carry, in addition to the all-season access road, mine power line and a means to transporting phosphate concentrate.

1.1.4 History

The Martison Carbonatite Complex was initially identified during a Canada-wide airborne magnetic- electromagnetic survey carried out in 1965. In 1967, the large northern magnetic anomaly (Anomaly A) was covered by 98 claims staked by an unknown party, probably Goldray Mines Ltd. The existence of the Martison Carbonatite Complex was first formally interpreted in 1970 by the Ontario Department of Mines and Northern Affairs.

Between April 1980 and June 1981, Shell Canada Resources Limited staked 222 mining claims in a single contiguous block over the interpreted Martison Carbonatite Complex. Major drilling programs were conducted in 1981, 1982, 1983, and 1984 by various parties/owners.

Drilling in the 1980s tested much of the property with a 200 m grid of holes and included a 50 m grid of holes over two zones of significant phosphate mineralisation.

As part of a wider drill programme in 1984 a bulk sample generated approximately 65 t of the phosphate bearing Residuum recovered from the central part of Anomaly A for analysis and pilot plant testing. During 1993, Sherritt Gordon Ltd. (the then controlling party) allowed the Martison claim block to expire. In the same year, McKinnon Prospecting of Timmins, Ontario established a new claim block covering the Martison Carbonatite Complex.

In early 1997, PhosCan (formerly "MCK Mining Corporation" and before that "Hendricks Minerals Canada Limited") entered into an agreement with Baltic

Resources Inc. whereby each would earn 50% in the Martison property from Donald McKinnon, principal and owner of McKinnon Prospecting.

In 1999, 2001, 2002, 2008 and 2012 the Martison Carbonatite Complex area was further explored by drilling. PhosCan managed all five drilling programmes. With the exception of the 2001 Anomaly B programme and one single hole in Anomaly C, all the other drilling (20,408 m) was focussed on Anomaly A. The drill programmes of 2008 and 2012 included over 2000m of drilling for hydrogeological studies and geotechnical site investigations.

In total, close to 22,000 m of drilling has been completed on the Martison project (Table 1-1and Table 1-2).

Table 1-1: Anomaly A Drilling Programme Summary

Year	Company	No. of Holes	Meterage	Type and Comment
1981	Shell	3	278.8	DD*
1982	Shell	37	2,919.1	DD
1983	CAMCHIB	29	2,782.0	DD
1984	CAMCHIB	35	2758.5	DD (Includes three re-drills) & 2x Churn drillholes for metallurgical bulk sample
1999	MCK Mining	14**	1,698	DD (includes one re-drill)
2002	MCK Mining	6	943.2	DD
2008	PhosCan	34	4,888.3	Sonic (Cluster)- Metallurgical
2008	PhosCan	12	178.3	Auger / DD (Geotechnical)
2008	PhosCan	8	691.3	DD (Geotechnical - Includes two redrills)
2008	PhosCan	4	465.0	Auger (Hydrogeological)
2012	PhosCan	15	1,947.1	Sonic
2012	PhosCan	10	858.1	Auger (Hydrogeological)
Total		207	20,407.7	

* Diamond Drill

** Cargill funded six of the 14 holes drilled

Table 1-2: Anomaly B Drilling Programme Summary

Year	Company	No. of Holes	Meterage	Type and Comment
1981	Shell	2	275	DD
2001	Baltic	12	1,296	DD. (Includes one re-drill)
Total		14	1,571	

Significant phosphate beneficiation studies were completed pre-2008, using samples collected from the drill programmes in 1982, 1983, 1984, 1999, and 2002.

1.1.4.1 2008 Pre-Feasibility Study

In May 2008, the 2008 PFS was completed on the Martison Project focussing on the options for mining the phosphate resources from Anomaly A as an open pit, fully integrated, fertilizer producing operation.

The 2008 PFS examined two scenarios for the Project. The scenarios were differentiated by the types and quantities of fertilizers produced, the process technology for producing fertilizer solutions, and the sources of sulphuric acid used to make fertilizer solutions from the phosphate concentrate.

An open pit mine, a phosphate beneficiation plant and slurry pipeline configured to transport 1.16 million tonnes per annum (“**Mtpa**”) of phosphate concentrate to a phosphoric acid plant near the confluence of the Fushimi Road railhead and Highway 11 near Hearst were common to both scenarios. Each scenario had a 19.3 year mine life, based on the 2007 defined Measured and Indicated Phosphate Resources and a preliminary mine plan.

The 2008 PFS was completed prior to the 2008-2009 global economic recession. There have been significant changes to the global economies since the filing of the 2008 PFS, and specifically to the economics related to the fertilizer market. Therefore, PhosCan believes that the 2008 PFS configuration, conclusions and/or recommendations made therein can no longer be relied upon, and may be misleading with regard to project costs, economics and the financial models outlined.

1.1.4.2 Post - 2008 PFS Work

Since the filing of the 2007 Technical Report and the 2008 PFS, there has been a significant amount of additional site based exploration and project investigative work at Martison including: resource definition drilling and sampling, hydrogeological, geotechnical, geophysical and environmental studies, and laboratory based test work which are summarised in this Technical Report, primarily in Sections 9, 10,13 and 20.

Significant phosphate beneficiation studies were completed during 2010 and 2011 using samples collected from a drill program conducted in 2008. The drill programme was designed primarily to generate a large (+40 tonne (“**t**”)) bulk sample of the phosphate bearing residuum for pilot-scale testing of the phosphate processing.

Sampling, and metallurgical testing, primarily targeting the niobium rich lateritic horizon, commenced in 2010 using samples from existing pre-2008 and the 2008 drill programme. The 2012 sonic drill programme added definition and confidence to several parts of the phosphate and niobium bearing zones.

No updated MRE based on this additional work has been published prior to this report.

The updated MRE in this Technical Report encompasses all of the resource drilling since January 2008 (6,800m approximately), and includes those relevant analysed intersections from the other site investigation drilling (hydrogeological and geotechnical holes).

1.1.5 Geology

The Complex is situated in the large expanse of “low ground” southwest of Hudson / James Bay, referred to as the James Bay Lowlands. The property comprises very gently rolling terrain dominated by muskeg and black spruce swamp. There are no exposures of the carbonatite or the surrounding country rock and all geological data has resulted from drilling information and interpretations of geophysical surveys. Most carbonatites in Ontario are of Precambrian age and belong to two age groupings: 1,800 to 1,900 million years (“**Ma**”) (Paleo-Proterozoic) and 1,000 to 1,100 Ma (Meso-Proterozoic). It has not been established to which grouping the Martison Complex belongs, if either.

Differential weathering of the Martison Carbonatite Complex has resulted in an irregular weathered ‘karst’ type surface of carbonatite, the depth of which varies greatly over short distances. Depressions in this carbonate rich surface are filled with the weathered breakdown product of the carbonatite, a ‘Residuum’, which is effectively a palaeo – soil profile. This apatite rich Residuum represents the bulk of the phosphatic material of economic interest. Above the residuum lies a less consistent layer of lateritic material containing niobium mineralisation at levels of economic interest.

More recent glacial deposits, typical of the James Bay Lowlands, form a blanket of glacial till over the residuum / laterite sub – outcrop reaching up to 80m in depth.

Initial geophysical exploration of the Martison Carbonatite Complex identified three aeromagnetic anomalies. The exploration of resources at Anomaly A is the subject of this Technical Report; Anomaly B is approximately five km to the south east; and Anomaly C is approximately three km east south east of Anomaly A. Only Anomaly A is currently under consideration for the production of phosphate concentrate.

Within Anomaly A, the residuum material has typically been divided into two sub-units based on lithology and grade of the contained phosphate (“P_2O_5”) mineralisation: Unit 2A is unconsolidated and Unit 2B is consolidated (re-cemented) residuum material. A third and minor low grade type of material of partially weathered carbonatite is referred to as Unit 2C and occurs as lenses within the residuum, typically towards the basal contact with the relatively unweathered Carbonatite basement.

Almost all mineralogy studies, pre-2009, have been focused on the residuum and the components for the various flow streams resulting from beneficiation study programs. The minerals of the residuum fall into three classifications: primary, secondary, and detrital. The chief primary minerals are apatite, magnetite, pyrochlore, calcite, dolomite, barite, columbite, and occasional quartz.

1.1.6 Mineral Processing

1.1.6.1 Phosphate

Significant metallurgical test work has been carried out on material recovered from the Martison project. Initial testing took place at Lakefield Research of Canada Ltd, during the 1980’s. Further test work was largely conducted by Jacobs Engineering, Florida, US, who carried out bench and pilot scale testing. ERIEZ Magnetics laboratories, Erie, PA., US. also contributed to engineering studies with column cell and semi – pilot plant scale testing.

Prior to 2008 comprehensive beneficiation, batch and closed circuit bench tests were conducted to address preliminary mineralogy, primary grinding, desliming, scrubbing and high-intensity magnetic separation. Additional grinding and phosphate flotation pilot plant scale tests were conducted to finalize the beneficiation flowsheet. . Concentrate grades of up to 36% P_2O_5 were obtained with a P_2O_5 recovery of almost 81%.

Post 2008 phosphate beneficiation testing was carried out at both the Jacobs Engineering (Florida, US) and ERIEZ Magnetics, using sonic drill core samples collected from a number of locations within the Martison A anomaly (the 2008 drill programme). The testwork carried out is fully described in Section 13.

1.1.6.2 Niobium

Niobium is present in quantities of economic interest in the Martison complex, primarily in the form of pyrochlore ($(Na,Ca)_2 Nb_2O_6 (OH,F)$). Metallurgical testwork programmes have been conducted periodically since 1982 aimed at developing a beneficiation process to recover pyrochlore and to produce a high grade concentrate suitable for conversion to Ferroniobium.

Testwork conducted in 1984 by Lakefield Research using a large bulk sample gave excellent results and concluded that 57% niobium pentoxide (“**Nb_2O_5**”) concentrate could be produced with an overall niobium recovery of 60%.

However, no other metallurgical investigations conducted since 1984 have been able to reproduce these results when treating material representative of a likely future run-of-mine (“**ROM**”) blend.

Testwork conducted by Eriez in 2011-2012 on phosphate flotation tailings recovered from a composite sample of residuum material demonstrated that concentrates over 50% Nb_2O_5 were obtainable but only at a recovery level of 20% Nb_2O_5. A mineralogical study of the major waste streams identified opportunities to recover additional niobium values through optimisation of the desliming and niobium flotation processes.

1.1.7 Mineral Resources

Exploration work, limited to the winter months, has collectively accumulated close to 22,000 m of drill core for a total of approximately 8,170 samples analysed. The drillhole database consists of 199 holes, totalling 19,774 m, 4,495 assays and 512 composite control intervals for 18,833 m of composites. Of the 199 drillholes in the database, 90% have assays.

Extensive data verification and validation work was completed by DMT to confirm that the drillhole database was acceptable to support the resource estimation work. Overall, DMT is of the view that the drillhole database is acceptable for resource estimation work and that the global resource estimate will not change significantly in the future.

DMT classified the resources based on consideration of drillhole spacing, zone thickness, and grade continuity. Approximately 40% of Anomaly A has been classified as Indicated with the remainder placed in the Inferred category. No resources are currently classified as Measured. The decision to exclude Measured Resources for now is due, in part, to the variability of the bulk density of the various sub-lithotypes (2A, 2B and 2C) within the residuum which has not been established with sufficient confidence. The limited number of drill intercepts and apparent inconsistent identification of the residuum / carbonatite .basal contact has also contributed to the exclusion of a Measured Resource.

The Mineral Resources are reported within a conceptual (Whittle) open pit (i.e. Mineral Resources are constrained by mining and economic parameters).

DMT has prepared an updated Mineral Resource Estimate for the Martison Phosphate Project with a drillhole database cut-off date of 1st November, 2014. The MRE, with an effective date of 30th November, 2014, is presented in Table 1-3.

Anomaly A residuum contains an estimated 54.3 Mt of Indicated Mineral Resources at a grade of 23.4% P_2O_5 and 0.39% Nb_2O_5, and 83.5 Mt of Inferred Mineral Resources at a grade of 19.1% P_2O_5 and 0.41% Nb_2O_5.

The residuum resource is reported at a cut-off grade of 6% P_2O_5.

The laterite contains an estimated Indicated Mineral Resource of 9.3 Mt at 1.21% Nb_2O_5 and 7.2% P_2O_5 and an Inferred Mineral Resource of 6.3 Mt at 0.94% Nb_2O_5 and 4.8% P_2O_5 at a cut-off grade of 0.2% Nb_2O_5.

Based on the limited exploration drilling so far carried out, Anomaly B represents a target for further exploration currently estimated at between 35 Mt to 70 Mt of residuum containing 16% - 20% P_2O_5. The quantity and grade is conceptual in nature and there has been insufficient exploration to define a Mineral Resource. It is uncertain if further exploration will result in the target being delineated as Mineral Resource. It does not represent a Mineral Resource, does not have demonstrated economic viability and is disclosed with a potential quantity and grade, expressed as ranges, that is to be the target of future exploration.

Anomaly C is an early stage exploration target.

No resource estimate has been established for the Rare Earth Elements (“**REEs**”) due to the paucity of sample data, particularly from the historical drillholes and the limited and inconclusive metallurgical test work carried out.

Table 1-3: Martison Mineral Resource Estimate as of 30^{tht} November, 2014

Deposit	Resource Classification	Tonnes (Mt)	Phosphate Grade (% P_2O_5)	Niobium Grade (% Nb_2O_5)
Anomaly A Residuum	Indicated	54.3	23.4	0.39
	Inferred	83.5	19.1	0.41
Anomaly A Laterite	Indicated	9.3	7.2	1.21
	Inferred	6.3	4.8	0.94

Notes:

1) Canadian Institute of Mining, Metallurgy and Petroleum (“**CIM**”) definitions were followed for Mineral Resources
2) Mineral Resources are estimated at a cut-off grade of 6% P_2O_5 in the Residuum or 0.2% Nb_2O_5 in the Laterite
3) Mineral Resources are estimated at a Bulk Density of 1.9 t/m^3 (dry)
4) Phosphate Mineral Resources are estimated using a price of US$360 per tonne (basis 100% P_2O_5)
5) Niobium Mineral Resources are estimated using a price of US$30 per kilogramme (65% Nb_2O_5 concentrate)
6) Reported Mineral Resources are constrained within an economic pit shell generated using Whittle software
7) A minimum mineralisation width of five metres was used
8) Numbers may not total due to rounding.

1.1.8 Mining Operations

Currently there are no mining operations at the Martison Project.

1.1.9 Environmental Considerations

In November 2008 AMEC Earth and Environmental Ltd, Ontario, completed an environmental baseline study report (“**ESR**”) and an environmental impact assessment (“**EIA**”) of the project area and the proposed access corridor. (*AMEC - Environmental Study Report Martison Site All-season Access Road, PhosCan Chemical Corp. November 2008).* This comprehensive study was undertaken to facilitate permitting and permissions from all stakeholders towards the planned construction of the all–season access road which was due to commence in late summer of 2009.

The ESR was prepared in accordance with requirements of a Category “C” level Class Environmental Assessment, pursuant to the Class Environmental Assessment for Ministry of Natural Resource (“**MNR**”) Stewardship and Facility Development Projects.

The highest single profile environmental consideration is considered to be with regard to wildlife ‘species at risk’, and specifically caribou. Several caribou site-specific surveys were undertaken as part of the EIA in late September 2008, focusing on the mapping of late winter caribou habitat and potential movement corridors. Post glacial esker and esker-like systems, that frequently support extensive lichen patches, on which caribou feed in winter, are absent from this area. The observed winter feed areas were considered comparatively small and scattered, indicating limited food potential for caribou

1.1.10 Economic Analysis

No new economic analysis has been undertaken for this Report.

It is considered that the costs, economic analysis and financial models used in the 2008 PFS are sufficiently out of date that they can no longer be relied upon with any degree of confidence. Accordingly, Fox River does not consider the Project to be an “advanced property” for purposes of NI 43-101, as the economic viability of the Project is not supported by a current preliminary economic assessment, pre-feasibility study or feasibility study.

1.1.11 Conclusions

The Martison Phosphate Project has seen intermittent activity since the early 1980’s.

The work carried out by the former owner, PhosCan, began in 1999 (as MCK Mining) and following on from then PhosCan undertook a significant amount of additional site based and metallurgical test work to advance the Project. A Pre-Feasibility Study was completed on the Project in 2008. While aspects of the 2008 PFS may still be relevant to the Project, the costs, economic analysis and financial models used in the 2008 PFS are sufficiently out of date that they can no longer be relied upon with any degree of confidence.

Since 2008, PhosCan took to lease over 4,000 ha of the Martison property and held some 19 additional contiguous claims around these lease areas for a total project area of 8,256 ha.

An economically constrained Mineral Resource has been estimated by DMT for both the residuum and overlying lateritic material at the Martison Anomaly A deposit, for both phosphate and niobium mineralisation (Table 1-3).

DMT concludes that a significant Mineral Resource exists in the Martinson Anomaly A consisting of Residuum containing as estimated 54.3 Mt of Indicated Mineral Resources at a grade of 23.4% P_2O_5 and 0.39% Nb_2O_5, and 83.5 Mt of Inferred Mineral Resources at a grade of 19.1% P_2O_5 and 0.41% Nb_2O_5. The laterite contains 9.3 Mt of Indicated Resources at a grade of 1.21% Nb_2O_5 and 7.2% P_2O_5 and 6.3 Mt of Inferred Resources at a grade of 0.94% Nb_2O_5and4.8% P_2O_5 .

1.1.11.1 Additional Resource Potential

The Anomaly A deposit still remains open at depth in several areas, particularly in the northern part of the trough or valley feature running north west – south east and it is DMT’s opinion that reasonable prospects exist to add additional resources to the current resources with further drilling programmes.

Based on current borehole intersections and supportive evidence from recently applied ground geophysics, the Anomaly A deposit also appears to have potential for extension to the east and north east of the proposed open pit area.

Anomaly B represents a target for further exploration currently estimated at between 35 Mt and 70 Mt *in situ* tonnes at an average grade of approximately 16-20% P_2O_5.

Anomaly C remains an early exploration target.

While the Project remains 'winter access only' near future drilling programmes would have to be phased over several winter seasons.

No resource estimate has been established for the Rare Earth Elements ("**REEs**") due to the paucity of sample data, particularly from the historical drillholes and the limited metallurgical test work carried out.

1.1.11.2 Hydrogeological

The significant hydrogeological test work undertaken in 2008 and 2012 has demonstrated that the deposit aquifer conditions have measureable boundaries and a relatively slow recharge rate, which will allow for the design of a dewatering solution for a proposed open pit operation.

1.1.11.3 Metallurgical

Jacobs Engineering, Florida, has conducted bench and pilot scale testing on the bulk sample material recovered during the 2008 drill sample campaign. While pilot plants tests were unable to reproduce the results of the bench scale testing several runs achieved a concentrate assaying an average 36.9% P_2O_5 with a Minor Element Ratio[1] ("**MER**") of 0.09 and representing a P_2O_5 recovery of 72%.

The variability in recovery and concentrate grade of the pilot plants runs suggests that additional test work is required.

Niobium metallurgical test work conducted by Eriez Flotation Division in 2011-2012 on phosphate flotation tailings demonstrated that concentrates of over 50% Nb_2O_5 were obtainable but only at a recovery level of 20% Nb_2O_5 , however, opportunities exist in the flow sheet where improved recoveries may be made. The niobium tail presents the largest recovery opportunity with 14.9% of Nb_2O_5 available in coarse liberated pyrochlore and columbite.

1.1.11.4 Environmental

The EIA and further baseline studies that were undertaken (largely in 2007-08) for the site and access corridor were prepared to stringent government set levels. Notwithstanding any future changes in federal and/or provincial government legislation that may impact on the permissions and permitting of the Project, the fundamental environmental findings in the EIA will likely continue essentially intact or unchanged. Fauna and flora, habitats, heritage, archaeology and the socio-economic

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[1] Minor Element Ration is defined as $(\%Fe_2O_3 + \%Al_2O_3 + \%MgO) / \%P_2O_5$

environment will remain largely as observed in 2008. From this perspective, the study is considered by DMT to still have value and relevance to the Project.

1.1.11.5 First Nations

PhosCan engaged and worked in close cooperation with the local First Nations at Constance Lake whose tribal lands are directly impacted by the Project. PhosCan established a continual dialogue and transparency with the CLFN regarding the Martison Project which, if pursued through Fox River will, in DMT's opinion, likely continue to have a positive impact on the prospects for permitting and other permissions required for the Project going forward. CLFN have expressed their support for the further development of the Project.

1.1.12 Recommendations

The recent use of ground geophysics has demonstrated the ability of the method to model sub surface profiles and broad lithological boundaries. By adopting closer spacing between the scan lines and modifying the system (transponder) arrays greater detail may be added to the sub-surface model.

Based on the results of the limited programme implemented in 2008-2009, it suggests that the wider use of ground geophysics may be applied to explore and identify other potential target areas thus far relatively unexplored. For instance to the north and east of Anomaly A, and to include Anomaly B and Anomaly C.

For Anomaly A it is recommended that a ground resistivity programme be undertaken scan lines between 100-200m wide using modified arrays to allow greater depth penetration and improved sub – surface interpretation. The increased detail and 'ground – truthing' of the sub-surface will likely assist in planning and optimising the design of further resource drilling programmes.

Additional geological modelling is recommended to sub-domain the observed three grade populations and three lithologies (residuum, transitional residuum and re-cemented residuum) to determine if any correlation exists between grade, chemistry and lithology.

The geological model can be improved by further drilling. In this regard it is considered that the identified mineralised envelope will require in – fill drilling initially at an approximate 100 m grid spacing and, for those areas within the outlined pit shell, a drill spacing at 50 m centres is recommended.

The drill programmes should follow on from the ground geophysics field programme and, due to the restricted winter access, the drill programmes should be planned in manageable phases, each designed to be completed within the relatively short winter 'window'.

While the global bulk density values applied in this technical report resource estimate are considered adequate at this time, moisture content and porosities in the lithologies vary and small variations in bulk densities applied to the model have a significant impact on the estimated tonnages. As the project advances DMT recommends that more systematic bulk density testing is undertaken on at least the recognised lithologies and sub-lithologies (laterite, residuum, transitional residuum and re-cemented residuum). This will be an additional factor in increasing confidence levels to the resource model and resource categories for future mine planning.

Metallurgical test work

- Based on the findings of the further testwork programme, it is evident that sections of the PFS beneficiation flowsheet need to be revised. At this time it is recognised that the crushing circuit, the grinding and classification circuit, and the wet high intensity magnetic separation ("**WHIMS**") circuit require revisions.
- Additional work is required to improve the recovery of niobium both in the pre-treatment stages and the niobium recovery process.
- A continuous pilot plant will be required to verify the stability of the flowsheet and to generate a bulk niobium concentrate for further processing to Ferroniobium.
- If a combined / dual mineral recovery process of Phosphate and Niobium is to be considered then additional batch testing, mineralogical, laboratory and pilot plant testing are required to develop a single phosphate/niobium flow sheet.

For the project to advance beyond its current exploration stage, a complete review and revision of the project economics and financial models are required, which should be presented in a new Preliminary Economic Assessment (PEA) on the Project.

It is estimated that the proposed Anomaly A programme of metallurgical testwork (P_2O_5/Nb_2O_5 recovery flow sheet) and the **PEA** would form the first phase (Phase I) of the future work at an estimated cost of CAD$800,000.

Phase II would consist primarily of ground geophysics and a 25 hole, 3250m, drill programme (manageable in one winter programme), bulk density testing of selected samples generated therefrom, and geological modelling. Phase II is estimated to cost approximately CAD$2.9M.

The total budget for the proposed Phase I and Phase II work programme is estimated to be CAD$3.7M.

Further drill programmes of similar dimensions and cost to Phase II may follow in subsequent winter seasons, but these further programmes remain optional dependent on the outcome of the first two phases, including the PEA.

To move the project forward at an adequate pace, at some point after the initial phases of the outlined work programme are completed (including the PEA), consideration should also be given to revisit an earlier proposal for construction of an all-season road, to increase the available exploration and development time to this 'winter access only' site.

Table 1-4: Proposed Martison Anomaly A Exploration and Technical Study Programme and Budget Summary

Phase	Activity	Cost CAD$*
I	Metallurgical Flow Sheet Study for Commercial Recovery of Phosphate & Niobium (2 Phases) **Phase 1:** lab work to determine best flowsheet for integrated phosphate/Niobium process **Phase 2:** pilot plant runs to demonstrate new configurations	500,000
	Preliminary Economic Assessment	300,000
	Phase I Sub-Total	***800,000***
II	Ground Geophysics (High Sensitivity Resistivity) Approx. 20 profiles @ average length 1250 m (25,000m)	250,000
	Combined Sonic and Diamond Drilling Approx 25 holes@ average depth 130m (3,250m)	2,500,000*
	Bulk Density Testing	45,000
	Geological Modelling (Re-logging ; Variography Studies)	125,000
	Phase II Sub-Total	***2,920,000***
	Phase I & II Total	***3,720,000***

- Based on approximate overall and inclusive drill programme costs of CAD$770 p/metre (to include temporary winter road construction, temporary camp, supervision, sampling and logging etc.).

2 INTRODUCTION

2.1 Terms of Reference

DMT Group Consulting Ltd., Nottingham, England, was originally retained by PhosCan to prepare an independent Technical Report on their Martison Project, near Hearst, Ontario.

PhosCan was a Toronto Stock Exchange-listed company, engaged in the development of the Martison Project. The Martison Carbonatite Complex, which contains the Project's phosphate and niobium resources and the proposed mine site area, is located approximately 70 km northeast of the town of Hearst, Ontario, in the James Bay Lowlands. The project site is located in the "South of Ridge Lake" area and centred about 50°18' 52" N., 83°24' 52" W. The location currently remains a 'winter access only' for the purposes of further site works and advancement of the Project.

The mining leases and claims, which are in the process of being registered in the name of Fox River Resources Corp, together cover a contiguous area of approximately 8,256 hectares

This Technical Report was originally prepared on behalf of PhosCan and issued March 09 2015 in compliance with National Instrument 43-101 - *Standards of Disclosure for Mineral Projects* ("NI 43 101"), and superseded the Technical Report and resource estimate dated April 2008; *The Martison Phosphate Project, Preliminary Feasibility Study*, (Vol. 2) J. Spalding *et al.*

DMT has now been retained by Fox River and, at their request, the Technical Report has been re-issued to reflect the change of ownership of the Project from PhosCan to Fox River.

2.2 Sources of Information

DMT's Principal Geologist and Qualified Person ("**QP**") for this report, Mr Tim Horner *CGeol CEng P.Geo;* visited the Project between October 21 and October 23rd, 2014. Access to the property was by helicopter from Hearst airport. An inspection was also made of the Project core sample storage facility located east of Hearst on Highway 11. During the site visit, discussions about the property were held with the PhosCan CEO Mr Stephen Case.

Although the 2008 PFS was completed and filed in June 2008, many aspects of the 2008 PFS are considered to be out of date and should not be relied upon

The documentation reviewed, and other sources of information, are listed at the end of this report in Section 27.

3 RELIANCE ON OTHER EXPERTS

This report has been prepared by DMT Group Consulting Ltd. for Fox River Resources Corp. The information, conclusions, opinions, and estimates contained herein are based on:

- Information available to DMT at the time of preparation of this report,
- Assumptions, conditions, and qualifications as set forth in this report, and
- Data, reports, and other information supplied by the former owner, PhosCan, and other third party sources.
- Sections 1 – 12 (inclusive) and 14-27 (inclusive) of this Technical Report were prepared by Tim Horner (QP) of DMT. Section 13 was prepared by Edward 'Ed' Finch (QP) and Harold Wyslouzil (QP).

For the purpose of this report, DMT has relied on ownership information provided by Fox River. DMT has not researched property title or mineral rights for the Martison Project and expresses no opinion as to the ownership status of the property, other than that provided by Fox River.

It is understood by DMT that, in connection with the Arrangement, PhosCan transferred to Fox River all of its right, title and interest to the mining claims and leases comprising the Martison Project. Transfer documents have been executed and filed with the appropriate government offices, but re-registration is still in progress.

Except for the purposes legislated under provincial securities laws, any use of this report by any third party is at that party's sole risk.

4 PROPERTY DESCRIPTION & LOCATION

4.1 Location

The Martison Carbonatite Complex, which contains the Project's phosphate and niobium resources and the proposed mine site area, is located approximately 70 km northeast of the town of Hearst, Ontario, in the James Bay Lowlands. The project site is located in the "South of Ridge Lake" area (township) and centred on Long / Lat 50° 18' 52" N., 83° 24' 52" W. (UTM NAD 87 328300; 5576400). The site is currently accessible only in winter for the purposes of further site works and advancement of the Project.

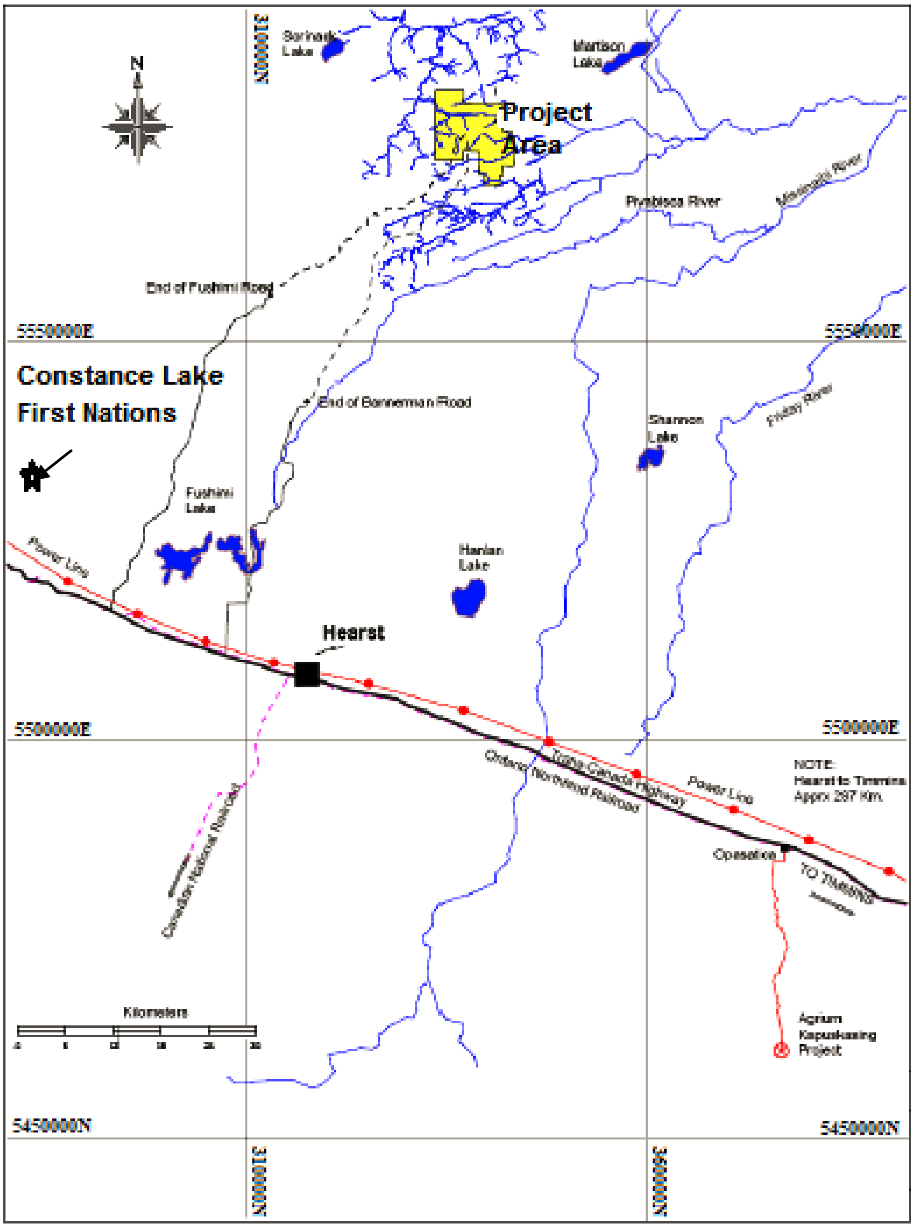


Figure 4-1 Project infrastructure

4.2 Land Tenure

The property consists of three mining leases numbers ML107438 (granted in September 2002), 108638 (Clm 477) and 108639 (Clm 478) (both granted May 1, 2011) and 19 unpatented contiguous mineral claims totalling 250 units, which together comprise approximately 8,256 hectares. The mineral leases and all claims are located within the “South of Ridge Lake” area, Porcupine Mining Division, Cochrane Land Titles & Registry Division, Province of Ontario, as shown on Claim Map G-1716 on record at the Provincial Recording Office, Sudbury, Ontario. The claims were registered in the name of either PhosCan or Baltic. Each company owned title to 50% of such lease and claims. PhosCan owned all of the issued and outstanding shares of Baltic, such that it owned, directly or indirectly, 100% of the Martison Project.

A complete claim listing is presented in Table 4 -1 and depicted on Figure 4-2, the details of which have been confirmed by DMT by reference to the Ontario Government Ministry of Natural Development, Mining and Fisheries (“**MNDMF**”) website, CLAIMap

DMT understands that the conveyance and transfer of the mining leases and claims is in the process of being registered in the name of Fox River Resources Corp,

Table 4-1: Martison Mining Lease and Mineral Claims as at 30/10/2014

Number	Type	Status	Expiry Date	Claim Units	Hectares
Surveyed					
ML 107438[2]	Lease	Active	2023-07-31	14	226.305
ML 108638[3]	Lease	Active	2032-04-30	123	1,950.968
ML 108639[4]	Lease	Active	2032-04-30	134	2,078.552
Estimated					
P3002450	Claim	Active	2015-06-27	16	256
P 3002451	Claim	Active	2015-06-27	16	256
P 4202109	Claim	Active	2015-04-10	15	240
P 4202112	Claim	Active	2015-04-10	6	96
P 42021 13	Claim	Active	2015-04-10	15	240
P 4202964	Claim	Active	2015-08-11	16	256
P 4208263	Claim	Active	2015-04-10	15	240
P 4208272	Claim	Active	2015-06-27	16	256
P 4204292	Claim	Active	2015-03-15	10	160
P 4214675	Claim	Active	2015-03-15	16	256
P 4214676	Claim	Active	2015-03-15	16	256
P 4214677	Claim	Active	2015-03-15	16	256
P 4214678	Claim	Active	2015-03-15	12	192
P 4214679	Claim	Active	2015-03-15	6	96
P 4214680	Claim	Active	2015-03-15	4	64

Number	Type	Status	Expiry Date	Claim Units	Hectares
P 4214681	Claim	Active	2015-03-15	16	256
P 4214682	Claim	Active	2015-04-16	15	240
P 4214327	Claim	Active	2015-04-16	9	144
P 4214328	Claim	Active	2015-04-16	15	240
19[5]				250[5]	8,256[6]

[1] The claim listing reflects renewals, applications made and claims acquired since the date of the Martison Technical Report (2008).

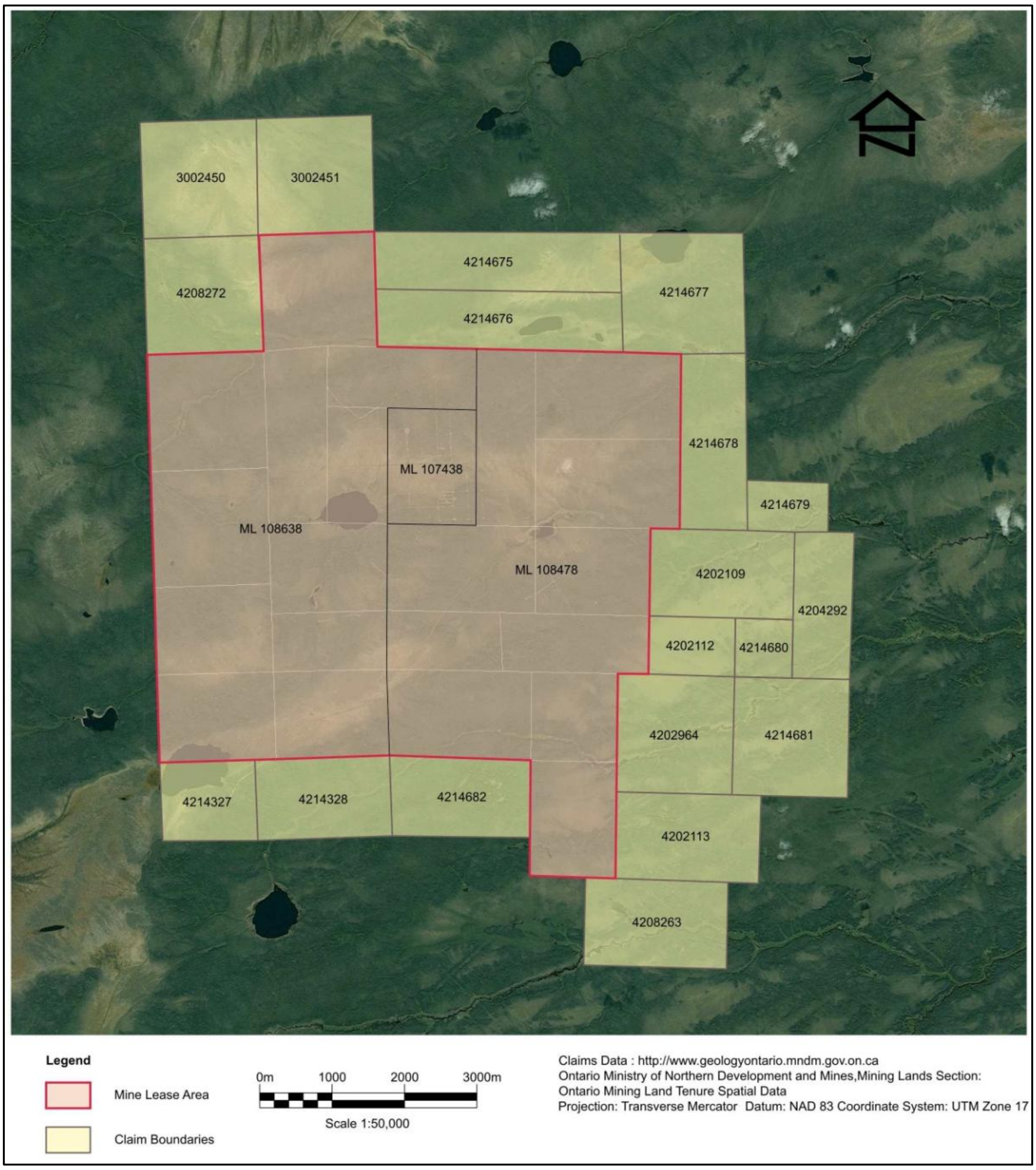
[2] By order of the Ontario Crown, Mining Lease 107415 was changed to 107438 on April 11, 2003.

[3] Comprising all of mineral claims P 4202106, P 4202107, P 4202108, P 4202110, P 4202111, P 4202961, P 4202962, P 4202963, P 4202965, P 4208262.

[4] Comprising all of mineral claims P 3002449, P 4202104, P 4202105, P 4208264, P 4208265, P 4208266, P 4208267, P 4208268, P 4208269, P 4208270, P 4208271.

[5] Mineral claims only.

[6] Mining lease and mineral claims



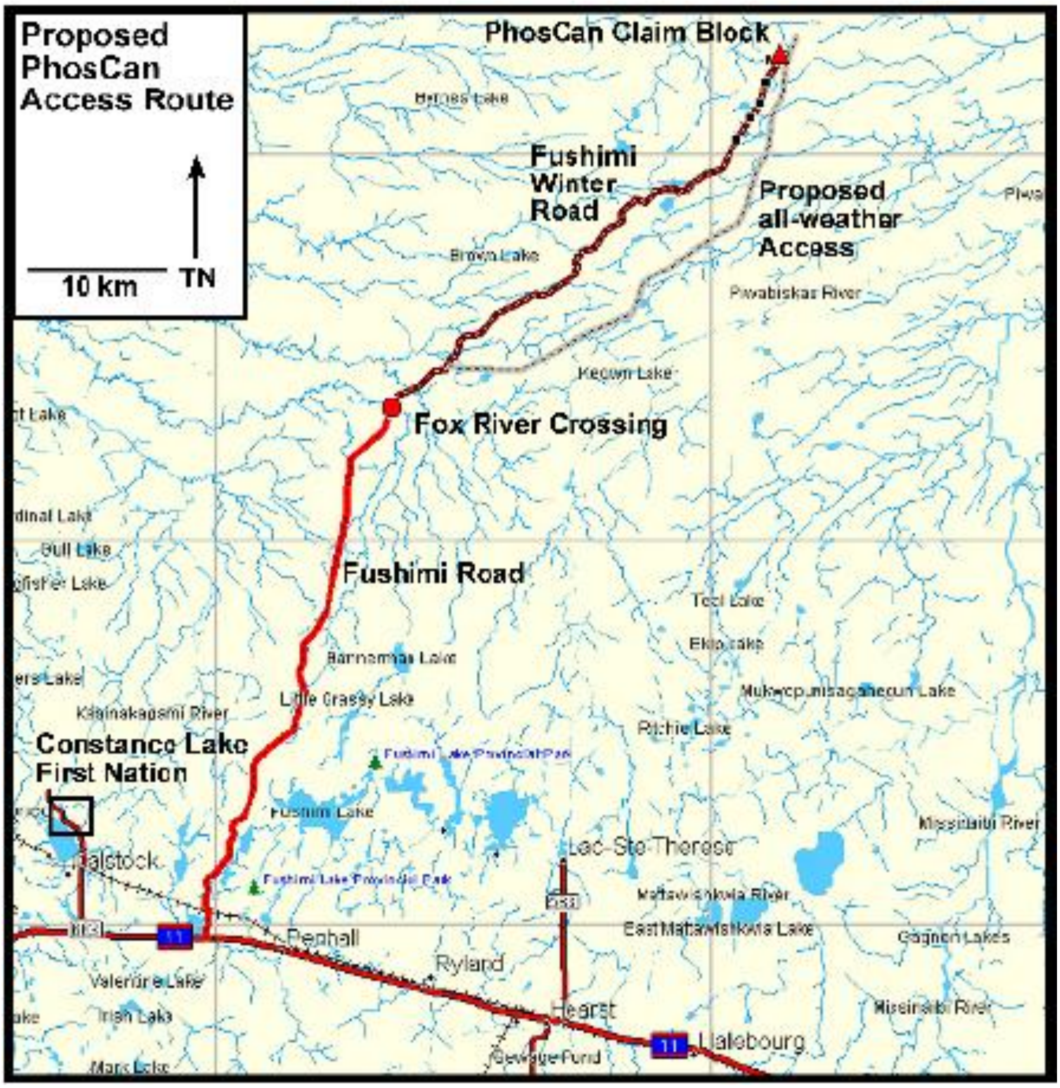
Claims Data : http://www.geologyontario.mndm.gov.on.ca
Ontario Ministry of Northern Development and Mines,Mining Lands Section:
Ontario Mining Land Tenure Spatial Data
Projection: Transverse Mercator Datum: NAD 83 Coordinate System: UTM Zone 17

Figure 4-2 **Martison Licence and claims map**

Within the mining lease, up to 10% of the surface rights are withheld for future public transportation routes. Also withheld, are unspecified areas for the future development of hydropower infrastructure, power transmission, and hydrocarbon pipeline corridors, as well as free use and passage upon all navigable waterways including access.

The mineral claims withhold surface rights up to 122 m around all lakes and rivers, including land under water, as well as reserving all sand, gravel, and peat deposits.

PhosCan also held an aggregate permit to the south of the Project area approximately 33km west of Hearst and 27 km north of HWY 11 on the west side of the Fushimi Road. This location is a former aggregate pit and a source of sand and gravel, which is expected will provide some suitable construction materials for the roads and mine site infrastructure (Figure 4-3). The PhosCan aggregate pit permit was approved by MNDM in July 2013 2009



Source: MNDM

Figure 4-3 Project Aggregate Pit Permit Location

The properties formerly controlled by PhosCan and its subsidiary, Baltic, are subject to a net sales returns (“**NSR**”) royalty held by the heirs and permitted assigns of Mr. Donald D. McKinnon (deceased) of Timmins, Ontario. The royalty amount payable is 1% of net sales returns on phosphate concentrate, additionally a production royalty is to be paid which varies with the price of phosphoric acid and is payable on each tonne of phosphate concentrate produced. Prior to the commencement of commercial production, Fox River may elect to acquire the 1% NSR royalty for a payment of CAD$3,000,000. Further, a NSR for Special Products of 2% of all special products sold is in place. “Special products” does not include any “ores” sold on the basis of their phosphate content, phosphate concentrate, any and all products manufactured downstream of the phosphate beneficiation plant, or any aggregate used for the purposes of the Martison Phosphate Project.

The Martison Phosphate Project property is located on lands which a First Nation: Constance Lake First Nations (“**CLFN**”) asserts are their traditional lands and which the First Nation asserts it holds as constitutionally protected rights. PhosCan entered into Exploration Agreements with CLFN regarding exploration and development of the Martison Project.

5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE & PHYSIOGRAPHY

5.1 Accessibility

The terrain overlying the Martison Phosphate deposit consists of spruce forest, wet muskeg, and numerous small lakes and rivers. The maximum reported depth for the lakes in the area is four metres. Local relief is minimal with variations of only a few metres, making the ground very poorly drained, alternating between wet and drier. The maximum relief over the Anomaly A deposit itself is reported to be 2.5m., although relief varies from a maximum height of 199 m above mean sea level (“**AMSL**”) in the south west of the project area to below 180 m in the North West. These conditions currently limit access to the site for field activities to only the winter season, necessitating the use of local construction contractors to maintain winter roads. The Martison deposit is located astride a major drainage divide with generally the western portion draining into the Albany River System and the eastern portion draining into the Moose River System.

To permanently access the site, construction of an all-season road from Highway 11 to the mine site will be required, consisting of approximately 90 kilometres of new build and upgraded existing roadway. The access road would need to be constructed prior to bringing equipment and materials to the mine area for site dewatering, pre-mining activities, and construction activities (Figure 4-3).

Preliminary construction work on the all–season road construction commenced in the summer of 2008 with preliminary upgrading of sections of the Fushimi Road, notably with a significant upgrade of the wooden single track, axle weight limited, Fox River bridge, which was dismantled and a wider, twin track, dual culvert pipe crossing installed to facilitate the transport of the required heavy equipment for the construction of the new access road (Figure 5-1). Subsequently no further construction work has been carried out on the road upgrade or any construction commenced on the northern (new build) section of the all–season access road.

Figure 5-1 Fushimi Road - Fox River culvert construction

After construction of the culvert crossing, the water flow rates were monitored periodically by Blue Heron Solutions of Sudbury, Ontario, and in September 2009 they reported that the culverts were adequately sized and that their installation does not impede either migration or spawning of local fish species (Brook Trout) because of low water velocities (less than 0.7 m/s).

5.2 Climate

The climate in the project area is typical of a mid-continental climate with long cold winters and short warm summers. Temperatures vary dramatically over short time intervals. The region experiences five months of often very cold winter and four months of warm summer.

The nearest national weather station, with substantial historical records, is located at Kapuskasing, about 125 km south east of the Project site. The period of records is from 1971 through 2000. At that location, the average annual temperature is 0.8° C, ranging from an average daily temperature of -18.7° C in January to 17.2° C in July. The average annual precipitation is 83.2 cm with the most occurring in July and the least in February. The average annual wind velocity is 12.6km/h from the south west. Sea level atmospheric pressure averages 101.6 kilopascals (“**kPa**”).

The site location in winter is somewhat exposed due to low relief and low stunted tree cover, and can be subject to very low temperatures with the associated wind chill. During the 2008 drill campaign, temperatures in January and February routinely fell below -30 °C at night, daytime temperatures were typically in the mid -20’s °C. In spring, thaw water typically ponds, particularly on the drill pad access roads due to the lack of topography and gradient around the site (Figure 5-2).

5.3 Local Resources

The Project is located approximately 70 km by air from Hearst, and is in close proximity to rail, power, highway and other industrial infrastructure. It is believed that, pending further study, sufficient water is available nearby the site for anticipated mining and industrial use, which will, in part, be provided by the pumping of the significant aquifer sources available at the mine site.

Local socio-economic resources are generally limited due to the paucity of population in the region. Basic food, lumber, exploration supplies, fuel, etc. can be purchased in Hearst, while other more technical supplies can be obtained in Timmins, Ontario (a long-established mining centre). The residents of Hearst are favourably committed to the responsible development of the natural resources of the region and are eager for new employment opportunities.

In the last several years when accessing the Project to conduct work programs, PhosCan and the CLFN have negotiated and entered into Exploration Agreements. . The CLFN community has played a significant role in supporting the development of the Project, in providing their approval for necessary access permits and with skilled and unskilled labour to assist during site related work activities. The continued support and cooperation of the CLFN is considered a requirement for advancing the Martison Project.

5.4 Infrastructure

No project specific infrastructure exists other than a seasonal winter trail that is used, after construction of a snow and ice road, to connect the north end of the Fushimi Road with the project site. On site there are a series of drill pads and other cleared areas, and network of interconnecting trails (Figure 5-2).

Figure 5-2 **View looking North West across the central part of Anomaly A**

As the site remains 'winter access only', the requirements for eventual advancement of the Project would, in the first instance, include the construction of an all year round access to the proposed mine site for construction of mine based infrastructure and for continuing access while in production. The access road would connect Highway 11 to the Project location and would require approximately 90 kilometres of combined new build and upgrading of the existing Fushimi roadway. The new build (approximately 45 km), using a different route to that currently used for winter access, would traverse through thin boreal forest and saturated shallow muskeg).

An all-season road access to the Martison exploration site would remove the uncertainty associated with seasonal winter route construction caused by the fluctuations in climatic conditions. Climatic trends over the last number of decades have been such that warmer winters occur with increased frequency. Warm winters make winter road construction much more difficult, and the roads are functional for a shorter period of time.

An all-season access road would be required prior to bringing equipment and materials to the mine area for site dewatering, pre-mining and construction activities.

The underlying areas at the proposed Project mine site, mine open pit and associated infrastructure (for example the waste dumps, mine buildings, beneficiation plant, and tailings impoundment area), are saturated shallow muskeg perched on impermeable glacial till. A coordinated dewatering operation will be required for the development of the site infrastructure and operations. Site preparation activities for the open pit mining area and beneficiation plant would necessarily include:

constructing impermeable perimeter berms, excavating the muskeg under the berm footprint, and backfilling with material to an elevation above grade.

An access ‘corridor’ leading from the mine site to the rail road at the south end of the Fushimi Road / Highway 11 junction would be expected to carry, in addition to the all-season access road, the mine power line, and a means to transporting phosphate concentrate to a load out / processing facility near the Fushimi Road railhead (Figure 4-3). This was anticipated in the 2008 PFS to be in the form of a slurry pipeline. However, this phosphate concentrate transport mode could possibly change in the light of any new economic study undertaken for the Project.

Equally, whether the phosphate concentrate is treated further in an integrated facility to produce phosphoric acid at a location near the railway head, or railed direct to a shipping port as a phosphate rock concentrate, would be subject to review and further technical and economic studies.

Separate from the mine site area, PhosCan holds aggregate claims to an area of known sand and gravel bearing ground which was used first by the local logging companies as a former quarry, providing material for the construction of the Fushimi Road (Figure 4-3).

DMT understands that the conveyance and transfer of the aggregate pit claims to Fox River is currently in progress.

5.5 Physiography

The local terrain is subdued with typical slope variations in the area south of the James Bay Lowlands transition being in the order of five metres vertical per 1,000 m horizontal, and in the area north of the transition being in the order of two metres vertical per 1,000 m horizontal. Typical elevations within the licence area are between 185m and 199m above mean sea level.

The Martison deposit is located astride a major drainage divide with generally the western portion draining into the Albany River System and the eastern portion draining into the Moose River System.

Landforms typical of the area are dominated by:

- Undifferentiated, mainly fine-grained till; and,
- Organic (peat land) terrain (or muskeg).

A large area of coarse (sand and gravel) glacio-marine sediments is known to the immediate northwest of the Project, but there is little or no overt surface expression of this area near the mine exploration site. Sandy materials with some gravels are, however, evidenced in a number of drillholes at the site, with the “sand” component in such holes ranging from 5% to 25%. These glacio-marine sediments would have been associated with the former Tyrell Sea which invaded the James Bay Lowlands following retreat of the last glacial period some 7,000 to 8,000 years ago.

Rock outcrops within a 50km radius of the project site are uncommon, and within 20 km of the site are rare, due to the low relief and the deeper sequence of sediments in this area.

6 HISTORY

6.1 Historical Ownership

Carbonatite complexes occur in several parts of Northern Ontario and some of them have been explored for minerals for many years. The Martison Carbonatite Complex was located by an airborne magnetic-electromagnetic survey in 1965 carried out by the Ontario Geological Survey and the Geological Survey of Canada. Also in 1965, ground surveys indicated a conductive zone approximately 500 metres long with a coincident magnetic anomaly. This work, along with a hole drilled in the anomaly, was conducted by a consortium that included Falconbridge Nickel Mines, Uranium Ridge Mines Limited, and Matachewan Consolidated Mines Limited.

The Martison Carbonatite Complex was originally and incorrectly referred to as the Martison Lake Carbonatite Complex. Martison Lake is located 15 km north east of the carbonatite complex. The Martison Carbonatite Complex is named after N.W. Martison, a Shell geologist who explored the area for petroleum in 1946.

In 1967, the large northern magnetic anomaly (Anomaly A) was covered by 98 claims staked by an unknown party, probably Goldray Mines Ltd. An airborne magnetometer survey was performed and the resulting anomaly was recommended for testing by drilling. This work was never performed and the claims were allowed to lapse. The existence of the Martison Carbonatite Complex was first formally interpreted in 1970 by the Ontario Department of Mines and Northern Affairs partly on the basis of the 1965 drillhole.

In 1980, Shell Canada Resources Limited staked 222 mining claims in a single contiguous block over the interpreted Martison Carbonatite Complex. In order to more precisely map the Complex, which is completely buried by overburden and contains no rock outcrops, an airborne geophysical survey was completed in February 1981. In March and April of 1981, five drillholes were completed, three were centred on Anomaly A and two on Anomaly B. Based on the interpreted results from this work, a large field campaign was planned for the 1982 winter season.

An additional 124 contiguous claims were staked in 1981 by Shell Canada. In late 1981, seismic and DC resistivity test surveys were completed on Anomaly A (between drillholes 81-03 and 81-04) to evaluate the methods for determining the thickness of the residuum. The tests were successful in outlining the carbonatite but unsuccessful in determining residuum thickness.

In February 1982, Shell Canada made the decision to sell the Martison property to Eastern Petroleum Corporation and Camchib Mines Incorporated, with Camchib being the operator for the joint-venture. However, pending the completion of the sale, the field programme was conducted under the direction of Shell Canada. The programme consisted of 38 drillholes (including one re-drill) completed between January 19 and April 5 using hole-spacings of 200m to 400 m. A total of 32 holes were completed using reverse-circulation ("**RC**") drilling methods and six using sonic drilling techniques. Lakefield Research of Canada Limited conducted beneficiation tests for the production of phosphate and niobium concentrates using sonic core from drillholes 82-32, 82-34, and 82-36.

The divestiture of the Martison property by Shell Canada was completed in December 1982.

The 1983 field programme, under the direction of Camchib, began on February 9 and drilling operations were complete by March 29. A total of 29 drillholes were completed using a mixture of sonic drilling techniques and reverse-circulation techniques where drilling conditions dictated. The sonic drilling methods permitted the collection of core for use in lithological descriptions and beneficiation testing. Additionally, geological, geochemical, geophysical, and geotechnical studies were completed in 1983. Comprehensive beneficiation batch and closed-cycle bench tests for phosphate and niobium concentrate production and additional residuum microscopic studies were completed.

In January 1984, Kilborn Limited completed a “Preliminary Capital and Operating Cost Estimate for an Open-Pit Mine/Mill Complex” at the Martison deposit. This work was completed on behalf of Camchib.

In 1984, from January 13 through March 29, a total of 37 drillholes were completed (including four re-drills) by two drilling contractors. Of this total, 15 holes were completed using a combination of a standard diamond-drill penetrating through the glacial till and Cretaceous sediments using a tricone bit and NQ coring through the residuum. Sonic drilling techniques were used to recover core from 17 holes. Five holes were completed using reverse-circulation methods. Unfortunately, the programme generally called for drilling to a predetermined depth of 76.2 m, regardless of the geology, and twenty two of the drillholes were “stopped” prematurely in the residuum for this reason. Additionally, drilling problems and/or equipment capacities forced the stoppage of another three holes in the residuum. During the drilling programme, a test was completed comparing drill cuttings recovered from the circulating medium with the chemical analyses of the core recovered over the same interval. This test indicated that the cutting’s analyses and the core analyses generally compared favourably.

Also in 1984, Camchib drilled two large, 48-inch (1.22 m) diameter churn-drillholes to collect a bulk residuum sample for beneficiation pilot-plant studies at Lakefield Research, Florida. The location for this bulk sample was selected adjacent to the drillhole 83-60. Technical problems forced the early abandonment of the first attempt at 32m, a second hole was stopped short of the target depth at approximately 70m, again due to technical problems. Approximately 65 t of residuum sample were received at Lakefield for sampling and testing.

During June to July of 1984, a sample of concentrate from Lakefield’s work was evaluated at the International Fertilizer Development Centre in Muscle Shoals, Alabama. The study tested the viability of producing phosphoric acid from the Martison concentrate by acidulation with sulphuric acid.

During the period from 1985 to 1987, no further field work was completed on the property. Camchib continued to study the merits of various production plans but was unable to conclude that it could penetrate the fertilizer market without a partner already engaged in the business. Thus, in 1987, Camchib formed a partnership with Sherritt Gordon Limited whereby Camchib contributed the Martison property and Sherritt the Kapuskasing deposit to a new entity in which each company held 50%.

In 1987, under contract to the Ontario Ministry of Northern Development and Mines, Jacobs Engineering and Blue, Johnson & Associates completed a summary evaluation of the prospects for development of the weathered carbonatite phosphate deposits in Ontario. Although the detailed study included both the Kapuskasing and Martison deposits, the study recommended that the Kapuskasing deposit be advanced as it was further developed.

In 1989, Camchib sold its 50% interest in Kapuskasing and Martison to Newphos Ltd., a wholly owned subsidiary of Central Capital Corporation (CCC). Work began in earnest on the Kapuskasing deposit following the sale. Due to the pre-occupation with Kapuskasing, interest in the Martison deposit diminished.

During 1993, Sherritt allowed the Martison claim block to expire through lack of timely filing of assessment work. In the same year, McKinnon Prospecting of Timmins, Ontario established a new claim block covering the Martison Carbonatite Complex.

The historical Martison drilling programmes are summarised in Table 6-1 and Table 6-2 below.

Table 6-1: Anomaly A – Historical Drilling Programme Summary

Year	Company	No. Holes	Total Metres	Type and Comment
1981	Shell	3	278.8	DD
1982	Shell	37	2,919.1	DD
1983	CAMCHIB	29	2,782.0	DD
1984	CAMCHIB	35	2758.5	DD (Includes 3 redrills) 2 x churn drill for metallurgical bulk sample

Table 6-2: Anomaly B – Historical Drilling Programme Summary

Year	Company	No. Holes	Total Metres	Type and Comment
1981	Shell	2	275	DD
Total		**2**	**275**	

6.2 MCK Mining (PhosCan) 1997-2006

In early 1997, MCK Mining Corporation, formerly named Hendricks Minerals Canada Limited, was reorganised to more aggressively pursue advanced mining projects. MCK entered an agreement with Baltic Resources Inc. whereby each would earn 50% in the Martison property from Donald McKinnon, principal and owner of McKinnon Prospecting, by completing work and issuing shares pursuant to an option and joint venture agreement. After having met all of the requirements under the option agreement, both MCK and Baltic earned their respective 50% ownership interest in Martison. Both parties signed the Martison Joint Venture Agreement which governed their relationships with respect to Martison and provided for production royalties to McKinnon (Section 4.2).

J.H. Reedman & Associates Ltd. completed a computer model for the Martison deposit and an “open-pit resource” estimate for a mining period of 10 years. This work was completed in early 1997 for McKinnon Prospecting (Section 6.4).

Also, in 1997, MCK Mining Corporation engaged MRDI to re-evaluate the previously collected data and to complete a Scoping Study for the Martison Project. The Scoping Study evaluated the geology, constructed a computer resource model, presented a “reserves” statement, and completed a project level estimate of capital and operating costs for the development and operation of a mine and beneficiation plant . The final report was issued in May 1998.

Using several contractors in 1997, MCK and Baltic examined fertilizer markets, regional sulphuric acid production and forecasts, regional freight rates, fertilizer manufacturing plant capital and operating costs, and alternative financing and tax handling schemes.

In January 1998, a brief field programme by MCK Mining Corporation evaluated the use of lake sediment samples as a carbonatite exploration tool. Although the lake sediment samples were collected and analysed, the programme was never completed to the point where definitive conclusions were published.

In late 1998, an agreement was reached between MCK Mining/Baltic Resources and Cargill Fertilizer, Inc. whereby Cargill would “purchase” six of the 13 drillholes scheduled for drilling in January 1999. Cargill would use the data generated from beneficiation tests on these six holes as well as other MCK/Baltic data to complete its own evaluation of the Martison deposit.

In 1999, from February 22nd to March 27th, a total of 14 drillholes (including one re-drill) were completed under the field supervision of MCK. All holes were continuously cored from the surface to total depth using triple-tube HQ coring technology. The locations of the holes were along the previously defined “economic axis” of Anomaly A and provided some infill drilling as well as corroboration of earlier work. Cargill’s report issued in October 1999 indicated a favourable result and held out the possibility of a simplified beneficiation process flowsheet as compared to earlier work. The report also generally confirmed earlier MCK resource estimates and recommended a slurry pipeline for concentrate transport to a rail siding at Hearst for drying and load-out prior to transport.

Also in 1999, an aeromagnetic survey was conducted over the Martison Carbonatite Complex (Figure 6-1).

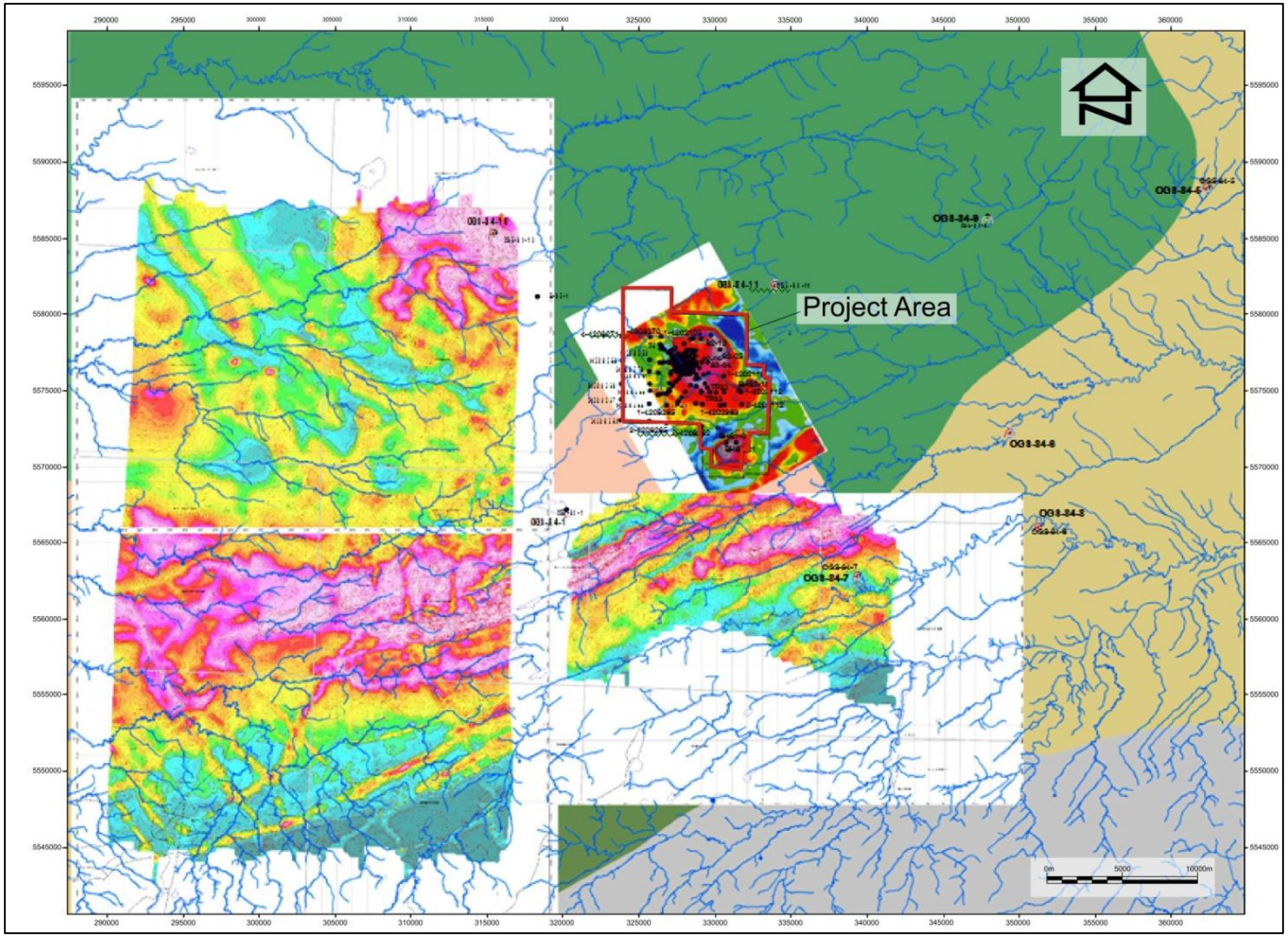


Figure 6-1 Aeromagnetic Survey – Martison Project & region. (SEM 1999)

From February 17th to April 3rd 2001, a total of 12 drillholes (one re-drill) were completed on Anomaly B of the Martison Carbonatite Deposit. This was the first drilling programme on this anomaly since the very first two holes (drillhole numbers 81-01 and 81-02) were drilled at Martison in 1981. All holes were continuously cored from the surface to total depth using triple-tube HQ coring technology. The drilling centres on this anomaly remain at about 200 m. Initial interpretations of this programme show geologic conditions and analytical results similar to Anomaly A.

In February 2002, a revised block model was prepared and a resource re-estimate were completed and reported by J.H. Reedman & Associates for the Martison Project, Anomaly A. This block model and resource estimate included the first use of re-interpreted lithological units from all previous drilling campaigns and the establishment of the nomenclature used for the 2008 Preliminary Feasibility Study. In 2002, from March 18 through April 2, a total of six drillholes were completed on the North West fringes of Anomaly A. All holes were continuously cored from the surface to total depth using triple tube HQ coring technology. The objectives of this programme were to test the residuum in this sparsely-drilled area and to examine the REEs and niobium-rich lateritic sediments in this location. A re-computation of resources issued in November 2002 includes the results of this programme and highlights the significant tonnage of niobium-rich material in the North West sector of Anomaly A in the laterite sediments.

In June 2002, Falconbridge Limited formed an alliance with MCK Mining and Baltic Resources to promote the development of Martison. Falconbridge’s interest was solely in the supply of sulphuric acid to the Project from its smelters in the Timmins and Sudbury areas.

MCK Mining reorganized its Board of Directors in January 2006, to facilitate the development of the company and of the Project andin July 2006, MCK Mining changed its name to PhosCan Chemical Corporation.

The following October (2006), PhosCan announced the initiation of a pre-feasibility study for the Project which was completed in June 2008.

In March 2008, PhosCan acquired all of the issued shares of Baltic, such that PhosCan, directly and indirectly, owned 100% of the Martison Phosphate Project.

From January to April 2008, PhosCan conducted a major field campaign to collect a bulk sample; to gather preliminary geotechnical information; to complete initial hydrological tests, and to begin the preparation of topographic maps of the Martison site and access corridor. Over 42 tonnes of residuum material was collected from seven drill sites and shipped to Jacobs Engineering in Lakeland, Florida, for beneficiation-process analysis and pilot-scale beneficiation testing.

Table 6-3: PhosCan Anomaly A Drilling Programme Summary (pre-2012)

Year	Company	No. Holes	Total Metres	Type and Comment
1999	MCK Mining (Baltic)	14*	1,698	DD (Includes one re-drill)
2002	MCK Mining (Baltic)	6	943.2	Metallurgical
2008	PhosCan	34	4,888.3	Sonic (Cluster)- Metallurgical
2008	PhosCan	12	178.3	Auger / DD (Geotechnical)
2008	PhosCan	8	691.3	DD (Geotechnical- Includes two re-drills
2008	PhosCan	4	465	Auger (Hydrogeological)
Total		**78**	**8864.1**	

* Includes six holes funded by Cargill

Table 6-4: PhosCan Anomaly B Drilling Programme Summary (pre-2012)

Year	Company	No. Holes	Total Metres	Type and Comment
2001	Baltic	12	1296	DD. Includes 1 redrill
Total		**12**	**1,296**	

6.3 Historical Mineral Resource Estimates

The information presented in this section is historical in nature and is presented for information purposes only. The information has been largely reproduced from the 2008 resource estimate submitted by J. Spalding. None of the studies discussed below have been validated or verified by DMT and it is understood that none of the historical resource estimates are in compliance with NI 43-101 guidelines. The results summarised below should not be interpreted as an endorsement of the study data or the estimates generated therefrom.

The terms used in the discussions below are historical and do not necessarily comply with the currently accepted definitions employed by the CIM or NI 43-101 guiding instruments.

A detailed history of the Martison Project is presented in the 2008 Technical Report. The development of the historical resource estimates of the Martison Anomaly A phosphate deposit is summarised below and in Table 6-5 and Table 6-6.

- In 1984 Camchib issued the first estimate and used the terms “proven”, “probable” and “possible” that contained minimal economic considerations. The estimate was conducted using a classical polygonal method with no consideration of lithological units.
- In 1997, on behalf of McKinnon Prospecting, J.H. Reedman & Associates prepared an estimate of the “Open Pittable Phosphate Resource” in the Martison Complex. Reedman used a self-written computer software suite (“**BORSURV**”) to construct a 3D block model using 25 m by 25 m by five metre blocks.

- In 1998, MRDI Canada, on behalf of MCK Mining Corporation, completed a “scoping study” for the Martison Carbonatite Complex. MRDI used a commercially available software system (MEDSYSTEM) to complete a 3D block model with blocks 25 m by 25 m by five metres in size.
- In 1999, under a joint exploration agreement between Cargill Fertilizer and the MCK/Baltic Joint Venture, Bete Inc. of Kingsport, TN, produced a resource estimate which included the results of the 1999 drilling and testing campaign.
- In 2002, in a report to Baltic Resources Inc., J.H. Reedman & Associates Ltd. reported both global phosphate resources and an “open pit resource” for the Martison Carbonatite Complex. These estimates included the results of the 2002 drilling campaign. Reedman again used ‘BORSURV’ to construct a 3D block model using 25 m by 25 m by five metre blocks.

Historically, the contained REE’s as Total Rare Earth Oxides (“**TREO**”) or as individual elements did not form part of a resource estimate due to a lack of interest or limitation of analytical information in the majority of the historical drillholes. However, since (and including) the drill programme of 2008, whole rock analyses have been carried out to include REE analysis.

Anomaly B has not been included in a resource estimate to date, and does not form part of this Technical Report or the MRE.

Table 6-5: Historical Resource Estimates for the Martison Project

Year	Consultant	P_2O_5 Cut Off Grade %	Nb_2O_5 Cut Off Grade %	'Mineable' Resource (Mt)	'Global' Resource (Mt)	Bulk Density (t/m3)	P_2O_5 Avg Grade %	Nb_2O_5 Avg Grade %
1974	IMC			62.5 (?)			19.6	
1984	Camchib	14	0.62		145		20	0.35
				56.0			24.2	0.44
1997	Reedman & Assoc.	10	-		127.25	2.0 (dry)	20.8	0.39
				53.4			20.9	0.35
1998	MRDI	10	-		155.6	2.3 (wet)	17.2	-
				54.8			22.9	-
1999	Bete Inc. (Cargill/MCK-Baltic)	10		68.2		1.85 (dry)	25.0	-
2002	Reedman & Assoc.	10	-		64.8	1.85 (dry)	23.4	0.36
		12 (Residuum)	-	45.4			25.4	0.35
		10 (Laterite)	-	3.7			12.4	0.83

Note: None of the above estimates conform to CIM Standards of Disclosure, are not NI43-101 compliant and are presented for information only.

6.4 Previous NI 43-101 Compliant Resource Estimates

In 2007, PhosCan released a phosphate resource estimate for the Martison Carbonatite Complex which was produced by James Spalding P.Geo. based on a 3D block model. No grade cut-offs based on P_2O_5 content were used in any of the estimating methods employed for the mineral resource estimate. Using only a Litho-Unit approach and consideration of sub-units 2A (Unconsolidated Residuum) and 2B (Consolidated or Re-cemented Residuum), which effectively isolated lower grade material to other sub-litho units (2C, for instance) and essentially imparts a P_2O_5 cut-off of approximately 10% for the resource (Table 6-6). This estimate was used as the basis of mine planning for the 2008 PFS where only the Measured and Indicated Resources (M&I) were considered in the mine planning evaluation.

In 2007/2008 no estimate was made of the Niobium bearing lateritic resource

Table 6-6: Previous NI 43-101 Compliant Resource Estimates

Year	Consultant	P_2O_5 Cut Off Grade (CoG) %	Measured & Indicated Resource Mt	Inferred Resource Mt	Bulk Density t/m^3	P_2O_5 Avg Grade %	Nb_2O_5 Avg Grade %
2008	J.Spalding (LaFleur)	Nominal 10% CoG using only 'Low' Grade (2A Unconsolidated Residuum) & 'High' Grade (2B Consolidated Residuum)	62.3		1.91* (dry)	23.5	0.34
				55.7	1.91* (dry)	22.7	0.34

* Estimated Global Bulk (Dry) Density (2A & 2B Lithotypes) from Spalding et al 2008

6.5 The 2008 Pre-Feasibility Study

In October 2006, PhosCan announced the initiation of a pre-feasibility study for the Project which was completed in June 2008.

The 2008 PFS focussed on the options for mining Anomaly A as an open pit, fully integrated, operation.

The 2008 PFS examined two scenarios for the Project. The scenarios were differentiated by the types and quantities of fertilizers produced, the process technology for producing fertilizer solutions, and the sources of sulphuric acid used to make fertilizer solutions from the phosphate concentrate.

An open pit mine, phosphate beneficiation plant, and slurry pipeline to transport 1.16 Mtpa of phosphate concentrate to a phosphoric acid plant near the confluence of the Fushimi Road, Highway 11 and rail head near Hearst were common to both scenarios. Each scenario had a 19.3 year period of operation, based on the 2007 estimated Measured and Indicated phosphate resources and a preliminary mine plan.

Scenario A examined the feasibility of producing 213,000 solution tonnes per year of super phosphoric acid ("**SPA**") and 461,000 solution tonnes of merchant grade acid ("**MGA**"), using phosphate concentrate for the mine site and sulphuric acid from base-metal smelters in northern Ontario and Quebec, at a proposed phosphate plant located west of Hearst, Ontario and 86 km south of the mine site. The MGA would be subsequently converted to 474,000 tpa of granular mono-ammonium phosphate ("**MAP**") at a proposed granulation plant located at Brandon, Manitoba. (MAP, an ammoniated phosphate product, is produced by reacting ammonia with phosphoric acid. Ammonia would be produced in the Brandon area and the projected long term cost was $ 400/t of ammonia delivered to the Brandon granulation plant).

Scenario B examined the feasibility of producing 754,000 solution tpa of MGA at the proposed chemical complex site near Hearst, Ontario, using sulphuric acid produced by a captive sulphur burning sulphuric acid plant. The waste heat from sulphur burning produces steam that would be used to generate electricity and evaporate water from the fertilizer solution. The MGA would be subsequently converted to 775,000 tpa of MAP at the proposed granulation plant at Brandon, Manitoba.

SPA and MAP were expected to be sold to grain farmers in areas such as Manitoba, Saskatchewan, North and South Dakota, Minnesota, Wisconsin, and Ohio where the Martison products would have enjoyed a freight advantage over producers that transported fertilizers to the target market area.

Phosphate rock, the major source of phosphorous for plant food, is relatively insoluble and in order to produce fertilizer solutions it is first necessary to react the phosphate rock with sulphuric acid to produce phosphoric acid and gypsum.

For Scenario A, 1.01 Mtpa of sulphuric acid was expected to be obtained from base metal smelters in northern Ontario and Quebec. In Scenario B, 346,000 tpa of molten sulphur was expected to be purchased from producers in western Canada and burned in a sulphuric acid plant to produce sulphuric acid and steam. The steam would be used to generate electrical power and to concentrate the phosphoric acid. The SPA and MGA produced at the Hearst plant site were expected to be shipped by tank car on the adjacent CN rail line. Sulphuric acid or sulphur was also expected to be shipped by rail to the Hearst plant site. Ammonia would have been received at the proposed Brandon plant site by tank car. MAP produced at the Brandon granulation plant would have been dispatched to customers by truck and by rail.

6.5.1 Comment

The 2008 PFS was completed on the Project more than six years ago, prior to the 2008-2009 global economic recession. There have been significant changes to the global economies since the filing of the 2008 PFS, and specifically to the economics related to the fertilizer market. Therefore, Fox River believes, and DMT concurs, that the 2008 PFS configuration, conclusions and / or recommendations made therein can no longer be relied upon, and may be misleading with regard to project costs, economics and the financial models outlined in the PFS.

7 GEOLOGICAL SETTING & MINERALISATION

7.1 Regional Geology

The Martison phosphate deposit lies in a geological province referred to as Precambrian volcanic and metamorphic rock sequences, which are over one billion years in age. It is an exceptional region, where crustal stability has occurred over extended periods of geological time. The occurrence of carbonatite deposits is the result of late magmatic injections of carbon dioxide gases, calcium and magnesium carbonate solutions, including associated crystalline apatite, magnetite and mica minerals, through conduits into volcanic vents. The subsequent exposure of the carbonatite rock for long periods of time to erosion and chemical weathering has resulted in the thick accumulation of a palaeo–soil residue called a "residuum" which has concentrations of relatively insoluble minerals such as phosphate bearing apatite, lying on top of the competent and largely unweathered surface of the carbonatite.

The Martison carbonatite is one of fifty known locations of the Central Ontario Carbonatite Complex found on the Kapuskasing structural high (located 110 km east of Martison) to the Albany Forks structural high, (located 260 km west of Martison). Almost all of the carbonatite bodies occur along recognisable major tectonic features. According to their ages, the carbonatite bodies belong to four groups; the two younger groups, dated 120 Ma and 570 Ma, are restricted to the Ottawa graben, whereas the two older groups, dated 1,100 Ma and 1,700 Ma, are situated along the Kapuskasing High and the Albany Forks and Carb structures.

A number of complexes have been examined for their mineral potential, they all contain apatite in the carbonatite phase between 5% to 25%, and some contain significant enrichments of apatite through leaching out of carbonates. Such enrichment occurs on the Cargill complex, located on a branch structure off the Kapuskasing High and at Martison.

The Kapuskasing Complex, located on Cargill Township, contains a very high grade residual phosphate deposit associated with a well-developed karst topography now buried under glacial lake clays. During karst development carbonates were dissolved from the carbonatite, and residual minerals, mainly apatite, were concentrated in sink holes and troughs. Sorting and reworking of the apatite-rich residuum by surface and subsurface water formed concentrations of nearly pure apatite sand, locally several tens of metres thick. Concentrations of rare earth minerals are present in a discontinuous thin blanket of secondary weathering products on top of the residuum. The Martison Complex is considered to have formed in very similar geological conditions to the Kapuskasing occurrence.

Agrium, a major North American fertilizer producer, successfully mined the high grade Kapuskasing phosphate occurrence (which lies approximately 120 km south east of Martison) from 1999 until 2013 to produce a phosphate rich concentrate for their Redwater fertiliser operations (Figure 4-1).

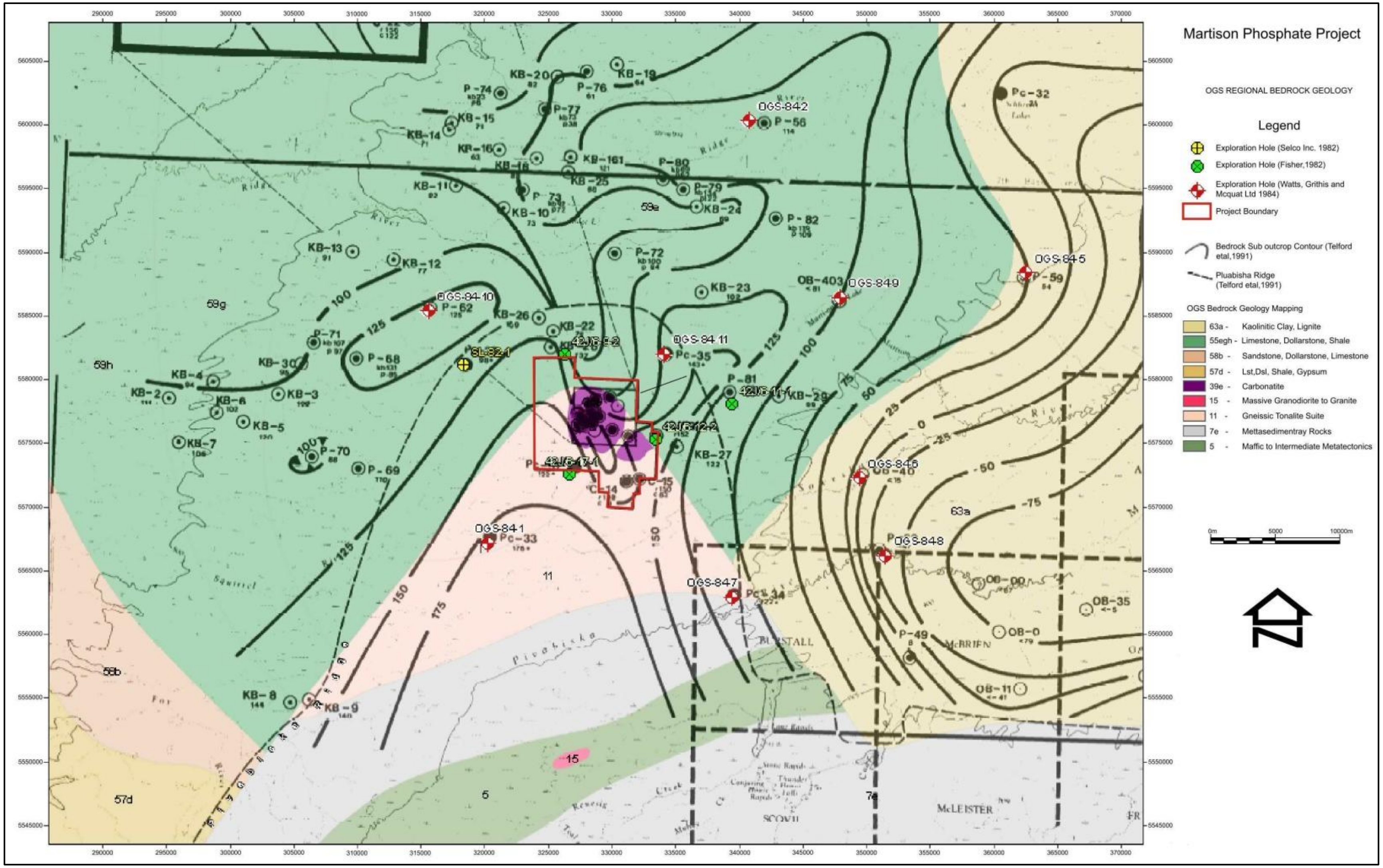


Figure 7-1: Regional Geology

The geology of the Martison deposit has been defined by exploration drilling, drillhole bulk samples and airborne and ground geophysics. It can be summarised as follows and schematically in Figure 7-3. The numbers and types of drillholes are shown in Table 10-1 and Table 10-2.

- Muskeg deposits varying between 0.5 m and four metres thick, averaging two metres.
- Glacial till composed of calcareous clay to coarse gravel (which is competent in a dry condition). It varies in thickness from 30 m to 90 m and averages approximately 50 m.
- Local occurrences of several metres thick, black, carbonaceous paleosoil,
- Cretaceous sediments (also referred to as Laterite) composed of lignitic peat, non-calcareous clays of various colours and silica sands which have correlative properties to the Mattagami Formation (Spalding et al., 2008; Sage, 1991) are often identified at the base of the till. They have a significant iron oxide component that turns the drill water red or orange. The thickness of these sediments corresponds well to areas where the depth to the residuum is greatest, which may be indicated valley fill within the trough created by the postulated fault (Spalding et al., 2008). (Note: This unit was referred to as Unit 3 in historical project literature).
- Weathered carbonatite residuum which is a silty, sandy palaeo-soil enriched by insoluble minerals (e.g. apatite) (lithotype 2A). Re-cementation by circulating phosphate rich fluids have typically formed higher grade zones of phosphate referred to as “Re-cemented or Consolidated Residuum” (lithotype 2B).
- Competent/fresh carbonatite. The contact between the fresh carbonatite and the residuum is gradational (lithotype 2C). The fresh carbonatite has an irregular, karstic-type geometry.

Differential weathering of the Martison carbonatite complex has resulted in an irregular surface of carbonatite which may vary greatly in topographic relief over short distances. Depressions in this carbonatite surface are filled with the weathered carbonatite residuum which represents the bulk of the material of economic interest (Figure 7-3). Calcium and Magnesium rich carbonates have been leached out of the silty sandy palaeo- soil leaving relatively insoluble minerals such as Apatite enriched in the remaining residual soil referred to as Residuum (lithoytype 2A). Phosphate values are enhanced by varying levels of enrichment as a result of re-cementation of phosphate rich fluids, this typically makes up the higher grade zones of the mineralization referred to as Re-cemented Residuum (lithotype 2B). Table 7-1 indicates the primary minerals in the residuum.

7.2 Property Geology

It has been postulated that the Martison Carbonatite Complex has been cut by a northwest-trending fault in the vicinity of Anomaly A. Evidence of this includes deformation and re-crystallisation of the carbonatite minerals, aeromagnetic interpretations, as wells as spatial analysis of the depth to the top of bedrock (Spalding et al 2008; Sage 1991). This trend was extended to the northwest to the Moose River Basin by Telford et al., (1991), who interpreted the trough (Figure 7-1, bedrock sub-outcrop contours).

Along the alignment of the conjectural northwest – south east striking fault, there is formed in the top of the bedrock a trough that deepens towards the northwest. This interpretation is supported both by drillhole data and ground geophysical evidence (Figures 7-2; 7-3).

The Martison Phosphate Project, as currently defined by past drilling campaigns, is composed of three magnetic anomalies / deposits of which Anomaly A is by far the most intensely explored and studied.

Anomaly A (Litho Units 2A and 2B) strikes approximately N 30° W and is without a definable dip. The current defined strike length is approximately 1,700 m with a width varying between 300 m and 600 m. The north east and south west edges of this anomaly zone are sharp due to the effects of the possible postulated faults and the resulting intensive weathering of the carbonatite in this fractured zone. However, the residuum resource in Anomaly A remains open to the north west, north east and east and at depth in its central and northern areas.

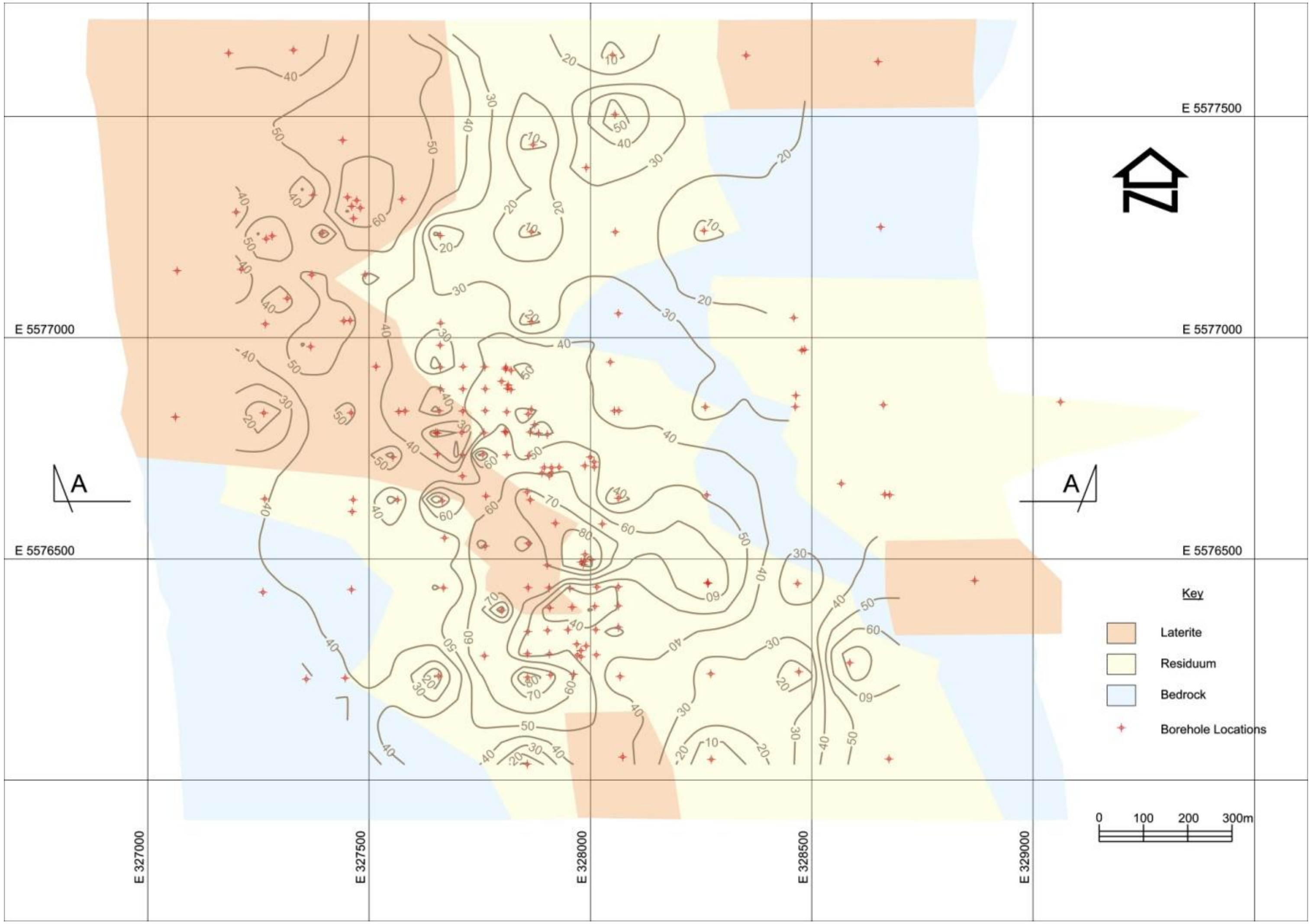


Figure 7-2: **Anomaly A Residuum thickness**

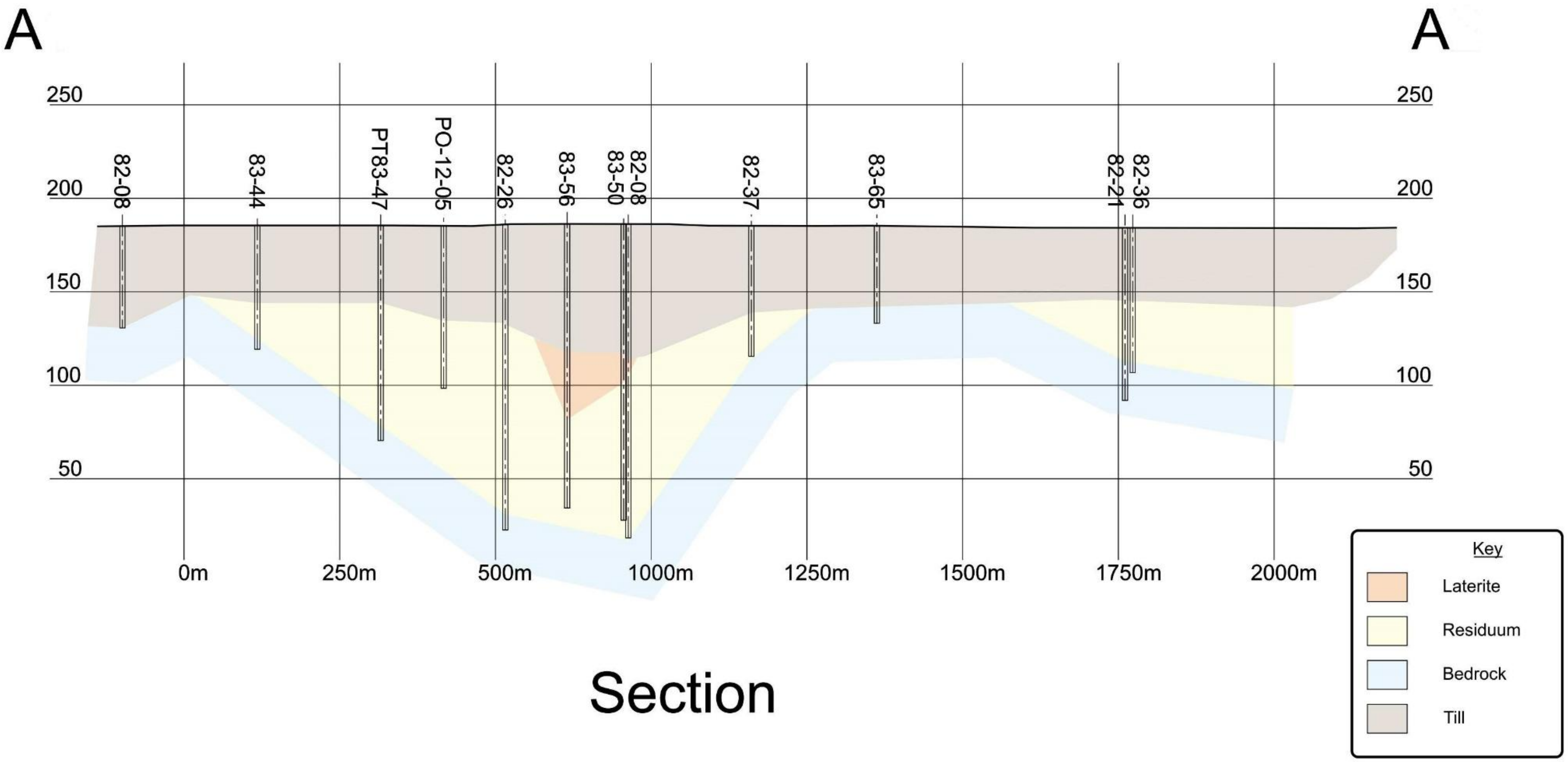
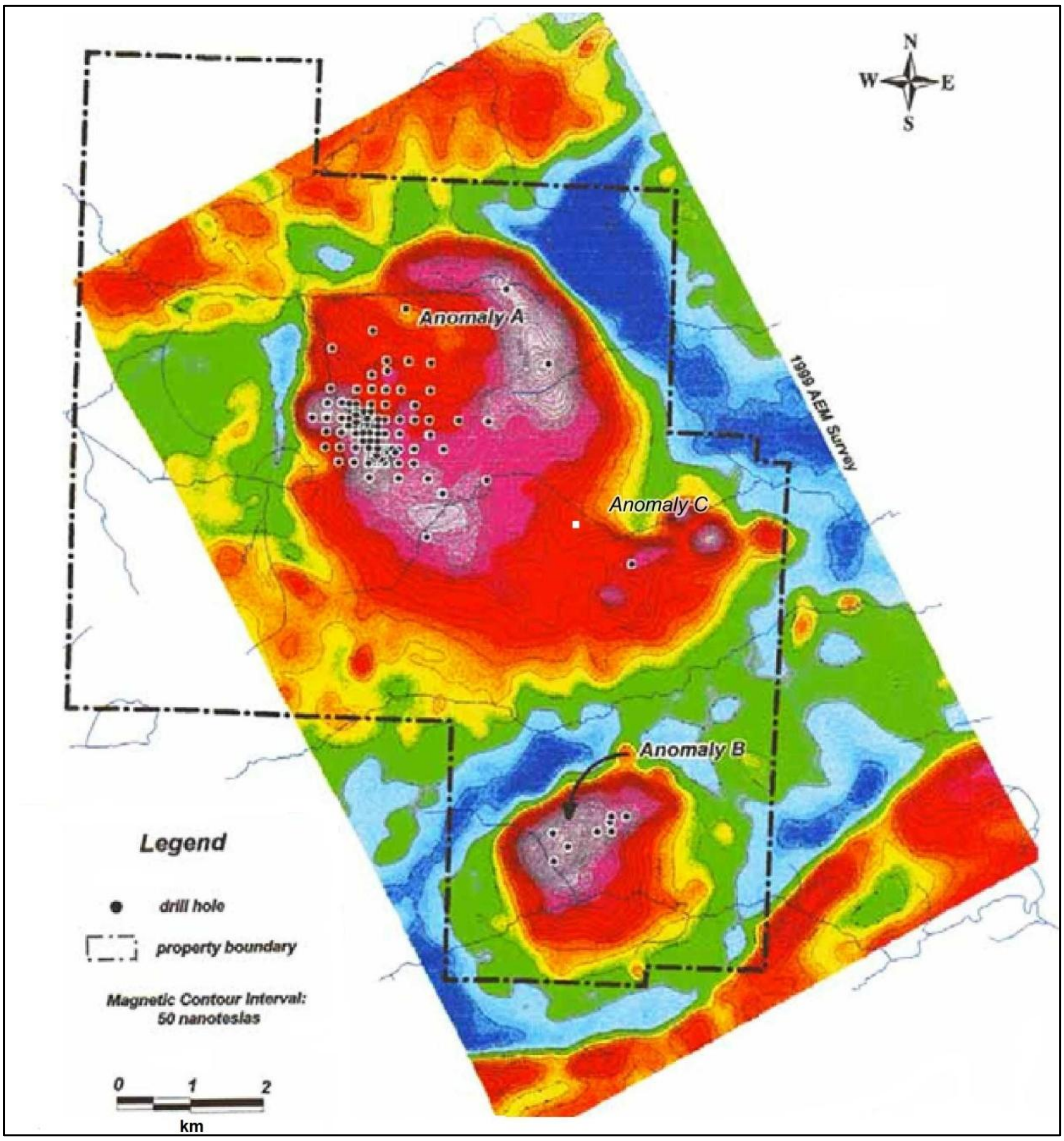


Figure 7-3: **Property Geology – Interpretive Section Anomaly A**

Anomaly B is located approximately five kilometres south of Anomaly A. An initial two holes were drilled in Anomaly B in 1981, no further work was carried out until 2001 when an additional 12 holes were drilled at approximately 200m spacing. Although not fully explored, Anomaly B is considered to have been developed by the same geological processes as Anomaly A. Several of the drillholes have intersected phosphate mineralisation of a similar level as Anomaly A, and an approximate average thickness of 18m of residuum is identified in the borehole logging, though the phosphate levels are generally lower and more irregular.

Anomaly C occurs as a significantly smaller magnetic anomaly approximately two kilometres to the east south east of Anomaly A. Only one hole appears to have been drilled in Anomaly 'C' in 1981 (Drillhole number 81-13), which apparently did not intersect any of the mineralised residuum. Since then no further drilling has been carried out on this anomaly (Figure 7-4).



Source: AEM Survey (1999)

Figure 7-4: Magnetic Anomalies A, B & C

As stated elsewhere in this report, virtually nothing is known of the primary carbonatite and surrounding country rock into which the carbonatite plug was intruded.

7.3 Mineralisation

Apatite is the principal phosphate bearing mineral of economic interest within the residuum; other minerals identified in the deposit are presented in Table 7-1.

The laterite is enriched in niobium, typically found in the form of pyrochlore, its occurrence is of economic significance and has been the subject of significant metallurgical test work and study to establish if it may be extracted economically.

Table 7-1: Principal Residuum Minerals

Phosphate Minerals		Iron Minerals	
Apatite	$Ca_5F(PO_4)_3$	Magnetite	Fe_3O_4
Hydroxyl apatite	$Ca_5F(PO_4)_3OH$	Goethite	$HFeO_2$
Florencite	Sr, Ce, Ca, $(PO_4)_2$, $(SO)_4F(OH)_5$, H_2 O	Ilmenite	Fe_3Ti0_2
Crandallite	Ca, Sr, Pb, Al, PO_4, OH, H_2O		
Pyrochlore	Na, Ca, Nb, Ta, O_6 F, OH		

8 DEPOSIT TYPES

It is postulated that the Martison phosphate-rich residuum deposit was formed by karstic weathering of the underlying carbonatite basement rock.

Karstic weathering of the carbonatite at depth would require the water table to have been lower in the area at some time in the past, likely prior to glaciation. One theory proposed to lower the water table would require the presence of a deep channel through the site in the location of the trough that exited through the surrounding gneissic rock to the north (Fisher, 1981). The presence of this deep trough is supported by the geological interpretations of the borehole data and the geophysics model generated as a result of the 2009 resistivity ground survey. Water table fluctuations in response to presumed changes in river level in such a channel would then allow periods of re-cementation of the residuum during high water table periods.

9 EXPLORATION

As part of the advancement of the Martison Project, technical investigations other than drilling (which is summarised in Section 10) have been undertaken and are presented below.

9.1 Ground and Air Survey (2008)

In March, 1983 a survey of 24 drillholes was carried out by T E Rody Limited. The co-ordinate system used was a local system that was later verified to be the "Shell Oil Grid System". Of the 24 drill-holes surveyed, 22 had co-ordinates identical to the "Shell" co-ordinates, while the remaining two holes (numbered 83-45 & 83-61) had co-ordinates only slightly different and were considered by the surveyor T.E Rody to be transcription errors.

A comprehensive ground survey in 2008 undertook a transformation of the "Shell Oil Grid System" to NAD 83 UTM. The survey was undertaken by Sutcliffe Rody Quesnel Inc. (SRQ) surveyors and engineers of Cochrane, Ontario (now expGeomatics). A total of 117 pre-existing drillholes (from 1981 to 1999), were surveyed in the field. Of these, direct evidence (pickets, flagging, PVC pipe etc.) was found for 37 holes. Precise positions for an additional 24 drillholes were derived from the 1983 survey mentioned above. The transformed "Shell" co-ordinates were used to navigate to the remaining drillhole locations by hand-held GPS. Most of these hole locations were consistent with visible drill pads or intersections of drill roads.

The 2008 survey addressed these following main key features:

- Co-ordinate System and Elevation Datum
- On-Site Control Monuments
- GPS Survey Operations
- Reconciliation with "Shell Oil Grid System" System
- Survey of existing drillholes (pre-2008)
- New Drill-Holes
- Other Surveyed Features
- Airborne Light Detection and Ranging ("**LiDAR**") Topographic Mapping (carried out by sub-consultant Terrapoint Canada Inc.)

The LiDAR survey covered PhosCan's leased Mining Claim (P1201625) and 17 recorded Mining Claims, for a total area of approximately 35 km^2. In addition, a proposed access road corridor was flown and mapped in the NAD 83 UTM system.

The corridor width was approximately one kilometre and length of approximately 40 km.

The LiDAR generated map included 0.5 m topographic contours, streams, lakes/ponds and roads/trails. A mean discrepancy of 20 cm was established in the licence area after ‘ground truthing’, ground truthing of the access corridor was not possible due to the paucity of control points (*Report of Survey Operations,* Sutcliffe Rody Quesnel Inc. Feb- Mar, 2008).

9.2 Geotechnical Site Investigations (2008)

The following is summarised from the report *“Preliminary Geotechnical Investigation Proposed Martison Phosphate Mine, Hearst, Ontario”,* September 2008 by AMEC Earth & Environmental.

AMEC Earth & Environmental, a division of AMEC Americas Limited (“**AMEC**”), was retained by PhosCan to provide engineering services for a preliminary geotechnical investigation for a proposed mine site development. The fieldwork for the investigation consisted of 12 shallow drillholes outside the proposed open pit footprint, six deeper drillholes within the open pit footprint, and 37 test pits. The drillholes were advanced to depths of up to 115.5 m below existing grade. The drillholes were put down by truck and track mounted drills between January 31st and March 11th, 2008. The test pits were excavated with an excavator between 10th and 15th of February 2008.

Table 9-1: 2008 Geotechnical Site Investigation Drill Summary

Boreholes	Total Holes	Total Metres Depth (m)	Average Depth (m)	Range (m)
GT08 01- GT08-12	12	178.3	14.8	12.8 -16.6
PT08-01-PT08-6	8 (including 2 redrills)	691.3	86.0	40.1 – 115.5
Total	20	869.6		

The deep drillholes (PT08-01 to PT08-06) were located around the perimeter of and within the proposed outline of the open pit. The shallow drillholes (GT08-01 to GT08-12) were located on the northwest, west and southwest areas outside the open pit area and were designed to probe the till only.

In addition to these drillholes, 37 test pits (TP08-01 to TP08-27), from 4.3m to 4.9 m deep, were excavated. The drillhole and test pit locations were determined by the SRQ 2008 ground survey, and are shown on Figure 9-1.

The determination of the location of the drillholes and test pits were designed to explore the soil conditions and engineering properties over a wide area of the Project site. In particular those areas which had been provisionally designated as potential locations for mine infrastructure, such as tailings dams, waste rock dumps and the beneficiation plant. The area to the east of the proposed open pit was not studied within this programme, as it has been indicated (in earlier drilling programmes and subsequently from the interpretation of the 2008 -09 ground geophysics profiles) that potential exists in this area for a further extension of the resource towards the north east, and therefore provisionally, no mine infrastructure would be located in this area.

The drillholes were advanced with track and truck mounted soils drill rigs and the drillhole logs included details of sampling, testing and the inferred stratigraphy. The test pits were excavated with a track mounted hydraulic excavator and the observations summarised.

Drillholes PT08-01, PT08-02A, PT08-03B, PT08-04, PT08-05 and PT08-06 were equipped with monitoring wells, installed on completion of the drillholes. The groundwater levels were measured at different dates in February and March 2008, and readings were indicated on the drillhole logs.

In addition, information was provided by Davidson Well Drilling, who installed and logged four wells for a pump test. The sampled drillholes (PT and GT series) provided information such as, soil identification, relative density or consistency, as well as indications about the engineering properties of the soils. The sampled drillholes were advanced using hollow stem augers and wireline coring. Tricone drilling techniques were utilised in Drillhole PT08-03A to a depth of 83.5 m, prior to coring.

Soil samples were recovered at pre-determined depth intervals using split spoon samplers. Standard Penetration Tests (“**SPT**”) were carried out in conjunction with split spoon sampling according to ASTM D-1586 procedure. The SPT results are recorded as 'N'- values. The soil samples were placed in plastic bags and delivered to the AMEC Sudbury office for further examination and testing.

Due to the generally dense to very dense nature of the existing fine-grained till deposit, hammer or auger refusal occurred at relatively shallow depths (less than 14 m below grade). Coring was undertaken in all deeper drillholes, except in Drillholes GT08-04, GT08-05, GT08-10, GT08-11, and GT08-12. Cores of the very dense soil were logged in the field and delivered to AMEC, Sudbury office for further examination and testing.

Field vane tests were also carried out in the drillholes to assess the in-situ shear strength of the cohesive soils; however, due to the dense nature of the in situ material, the use of field vanes was limited. Field vane tests were carried out in Drillholes GT08-02 and GT08-05.

The preliminary geotechnical site investigation established basic soil engineering parameters for the main soil types, the Till and Residuum, that will be used for construction or form foundations to infrastructure building and, will be the primary soils exposed during the open pit mining operations.

The use of imported fill materials of specified geotechnical characteristics will likely be required for specific applications (e.g. drainage, road and slab-on-grade base, etc.), where the on-site materials may not be appropriate. Further geotechnical investigation, including detailed field in-situ and laboratory testing, will be required to further identify the soil and rock engineering properties required to carry out the detailed geotechnical design.

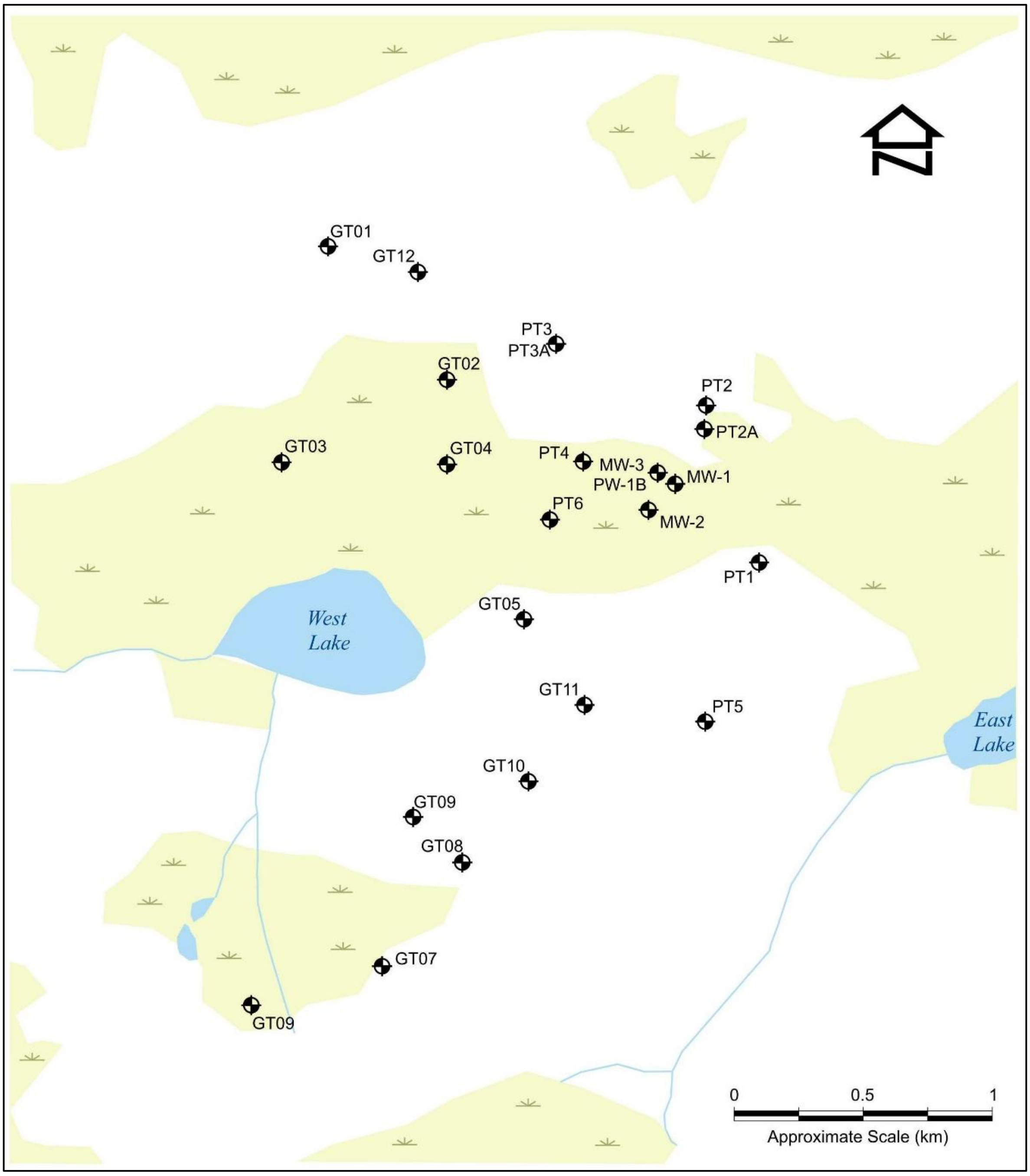


Figure 9-1 Hydrogeological and Geotechnical Site Investigation Borehole Locations 2008

9.3 Hydrogeological Investigations (2008)

In the winter of 2008, AMEC was also requested to complete a preliminary hydrogeological study at the proposed Martison mine site, focussing on the proposed pit area. This evaluation included supervision of a pumping well installation, completion of hydraulic conductivity testing at select intervals throughout the stratigraphic sequence, and a pump test programme to collect data to complete a preliminary evaluation of dewatering activities, both during construction and longer term production.

The programme consisted of the main elements below:

- Drilling, installation and development of eight monitoring wells and one pumping well, which included the use of geotechnical (PT series) holes drilled earlier during the same winter programme. The geotechnical holes were used as monitoring wells and holes PT08-1/02A/03A/04/05 and /06 were all installed with piezometers, and along with holes MW 01 and MW 02. (MW 03 was not installed).
- The elevations of the new wells were surveyed to facilitate the interpretation of ground water flow.
- A 72 hour aquifer response (i.e., the pump test) and a variable rate (step drawdown) test was carried out to determine efficiencies of the pumping well at five, 10, 15 and 20 litres per second (l/s) pumping rates.
- Pump-test and slug-test analysis to estimate transmissivity, storativity and hydraulic conductivity of the high-permeability aquifer zone encountered at a depth of approximately 100 m;
- Representative ground water samples from taken from the pumping well at 24 hour intervals during the 72 hour test to observe changes in water quality with respect to time during the pump test, and also to establish the suitability of the ground water quality for use in the anticipated beneficiation process. Samples were also collected from the 50mm diameter monitoring wells.

All the monitoring wells and the pumping well were installed near the base of the residuum or bedrock. The wells were installed using a dual rotary rig equipped with an air hammer bit.

For the monitoring wells, a temporary steel casing was driven down as the drilling advanced. During drilling of all the wells, significant water was produced from near the base of the residuum and into the weathered bedrock. In some cases the advancing casing was noted to cut off the water production as competent rock or cemented residuum was reached, indicating lower permeability layers were present beneath the production zones noted in the base of the residuum and weathered bedrock.

PW08-1b was installed as a nominal 150 mm diameter hole with a 1.8 m long, slot #18 screen at a depth of 99 m at the top of the bedrock. The monitoring wells were completed as nominal 50mm diameter wells in the HQ cored portion of the holes.

After 72 hours of constant pumping at 18 l/s, a drawdown of 2.83 m was measured at MW-01. Transmissivity values were estimated to be in the range of 300 m^2/day - 1,000 m^2/day. In addition, the monitoring wells 100 m and 125 m away recorded water level drawdowns of one metre and 0.5 m, respectively.

Table 9-2: 2008 Hydrogeological Site Investigation Drill Summary

Borehole ID	Total Holes	Total Depth m	Average Depth m	Range m
MW 01, 02, 03*	3	352	117	90 - 140
PW08- 01b	1	113		
	4	**465**		

* Drill steel in hole, hole sealed with bentonite.

The findings of the hydrogeological site investigation are included in an AMEC report titled "*Preliminary Geotechnical Investigation Report Proposed Martison Phosphate Mine Site Development Hearst, Ontario*" (2008) as well as a draft memo titled "*Hydrogeological Memorandum Proposed Martison Phosphate Mine Hearst, Ontario*", and are summarised here.

A productive water bearing stratigraphic unit appears to exist towards the base of the Residuum and the weathered bedrock. The transmissivity of this unit was estimated to be in the range of 300 m^2/day - 1,000 m^2/day. No significant change in the drawdown versus time curves was observed during the 72-hour pump-test, indicating that the neither the boundary of the high permeability zone, nor the aquifer recharge zone was reached during the 72-hour test.

Representative ground water samples collected from the pumping well showed that, in general, the ground water chemistry was consistent throughout the test and did not suggest any potential interaction with surface water or other sources, over the duration of the 72 hour test. Representative ground water samples were also collected from eight additional monitoring wells installed during the 2008 field programme. A review of the samples indicated that ground water quality was similar to that observed from the pumping test.

However, it was evident from the constructed drawdown versus time curves that the aquifer boundaries had not been reached within the 72 hr pump test (Appendix A Fig -1).

9.4 Hydrogeological Investigations (2012)

A multipurpose, nine-hole drilling programme was carried out between January and March 2012 which was designed to test the residuum geology to bedrock; conduct borehole geophysical surveys to further refine the subsurface geological units and, to install well screen and casing for future hydrogeological studies.

Table 9-3: 2012 Hydrogeological Site Investigation Drill Summary

Borehole ID	Total Holes	Total Depth m	Average Depth m	Range m
PW -12 – 01/	3	269.8	87	78.0-96.5
TW-01 /06	6	733.8	122.3	71.9 – 160.3
	9	**1003.6**		

The programme was again conducted by AMEC. The array of test wells were located generally along the margin of the main phosphate deposit (Anomaly A). The results are reported in an AMEC report entitled “Martison Phosphate Project – 2012 Critical Issues Study”, December 2012.

A Foremost DR-12 dual rotary and compressed air truck-mounted drill supplied by Davidson Well Drilling Ltd. of Wingham, Ontario was used. Overburden/residuum logging and sampling were conducted over approximately three metre lengths, several of borehole intersections have been added to the overall resource model and included as part of the resource data base. Samples were sent to ALS Canada Ltd. (ALS) of Timmins, Ontario for element and whole rock analysis.

Gamma ray borehole geophysics was conducted on all holes by Lotowater Technical Services Inc. of Paris, Ontario, during March 2012, to establish if the logging method may provide an additional useful tool in the identification of the main lithological units, specifically the lateritic layer. The results were inconclusive, the gamma borehole logs did show a response beneath the glacial till but was not clear enough to significantly differentiate between the primary lithological units i.e. the laterite and residuum.

AMEC observed that the main aquifer appears to be restricted to the weathered bedrock below the areas of thicker residuum, which comprise the deposit. This deposit forms a northwest-southeast trough of thicker residuum that deepens to the northwest. Pumping test information from wells installed as part of the 2012 programme outside the zone of thicker residuum indicate that the carbonatite rock that surrounds the deposit is of low to moderate permeability, with the hydraulic conductivity of the upper rock appearing to increase with proximity to the trough.

Within the trough, the aquifer at the base of the residuum/ top of weathered bedrock is highly productive. During pumping tests of wells completed in this aquifer, water levels responded in all the monitoring wells completed in this unit, indicated that the deposit is underlain by a single highly responsive well connected aquifer, generally within the top 20m of the weathered bedrock (Appendix A –Fig 2).

Observation of water production rates during drilling indicated that the residuum above the weathered bedrock produced significantly less water than the weathered bedrock, but the rate of water production generally increased with proximity to weathered bedrock.

The hydro-geologic properties of the bedrock aquifer were investigated through a seven day pumping test. Following the end of pumping, the aquifer was noted to recover slowly, indicating that there is no source of recharge or significant supply of water to the aquifer.

The properties of the bedrock surrounding the carbonatite deposit were investigated through a background review of historical exploration hole data filed by other companies and Ontario Geologic Survey reference hole drilling. The dataset was sparse; however, it indicated that the carbonatite is surrounded by granitic rock, which generally has a much lower hydraulic conductivity than measured in the weathered carbonatite as part of this programme.

Following the analysis of the pumping tests and other field data, a groundwater model was developed and calibrated to field observations of water levels and the response in the aquifer to the seven day pumping test. This model was then modified to enable predictive simulations of dewatering scenarios.

The results of the predictive modelling indicate that the mine can be dewatered by pumping from five pumping centres located around and within the deposit at combined pumping rates of between 23,000 m^3/day and 32,000 m^3/day.

There is a lack of useful, readily available data for other phosphate mines for comparison, particularly in Florida, where mines are present in high water producing aquifers and drawdown is a publically sensitive issue. In comparison to other Ontario mines, this pumping rate is an order of magnitude higher than the Detour, and Hollinger and McIntyre gold mines, and approximately one third of Victor diamond mine, which is also located in karstic bedrock. Limited pumping data from the Agrium open pit phosphate mine in Kapuskasing, Ontario, suggested pumping from this open pit mine was generally less than 10,000 m^3/day ; however, this operation has a permitted allowance to pump of up to 28,800 m m^3/day from the open pit for the purpose of dewatering (Ontario Ministry of the Environment, 2009)

The dewatering of the bedrock will also not effectively drain the overburden, and during the initial phases of excavation through the till, sumps will need to be employed to remove water during overburden stripping.

In 2012 the estimated cost of the dewatering wells, pump houses and piping was approximately $7.5 million, with operational costs of approximately $3 million per year, these costs therefore are indicative and should not be relied upon.

A water balance provided by PhosCan indicated that for a 5 Mtpa operation, the process plant, once operational, will need more water than is taken from the dewatering wells. It was assumed that all the water from the dewatering wells will be directed to the plant after the plant becomes operational. During the first year, however, dewatering will begin prior to plant operation when the overburden is being stripped. During this period, discharge from the dewatering wells is assumed to be discharge directly into the local environment.

Analysis of groundwater samples collected during the pumping tests, indicates that the groundwater is generally of good quality, and with the exception of phosphate and ammonia, meet the Provincial Water Quality Objectives, which are the standard criteria for discharging to surface water. The dataset of existing surface water quality data is poor, but generally indicates that the surface water features are also high in phosphate and ammonia, which appear to be naturally occurring in the area, and it may be possible to discharge the water to local creeks without treatment.

There are a number of uncertainties in the hydro-geologic understanding of the site, in addition to the lack of deep drilling near the mine to optimise dewatering well placement mentioned above. The most significant of these include: insufficient characterisation of the till to support environmental permitting, insufficient surface water characterisation to determine discharge requirements, confirmation of the bedrock valley to the north of the mine to confirm the conceptual model, and detailed elevation survey data of the 2008 monitoring wells to confirm groundwater flow directions.

9.5 Ground Geophysics (2008/2009)

In late 2008 and early 2009, Geophysics GPR International Inc., Mississauga, Ontario, were retained by PhosCan to undertake a ground geophysical survey of Anomaly A.

Six resistivity profiles were collected for a total length of approximately 12.45 km and over 39,000 data points. Induced Polarisation ("**IP**") data were collected along segments of Profile 2 and Profile 4.

Ground surface elevation is relatively level over the survey area, accordingly the survey area topography was assumed flat with a surface elevation of 190m.

Figure 9-2 indicates the location of the resistivity survey lines overlain on the satellite image of the site. The position of the profile lines were predetermined by GPS coordinates (UTM NAD 83 Zone 17). The coordinates along the profiles were recorded with a hand-held WAAS enabled GPS unit and should be accurate to within -/+ 10m.

Representative 2D resistivity profiles are shown in Figure 9-3 and Figure 9-4. The results were also provided in 3D CAD format.

Typically, the contact between the overburden and bedrock is well defined, as bedrock tends to be more resistive. The bedrock contact has less to do with a specific resistivity value than an increase in the resistivity gradient. The 250 Ohm m contact has been found to be a fairly common boundary for the overburden bedrock contact at a majority of other sites.

At this particular site the resistivity model has been interpreted in terms of three geological contacts, namely:

1) **Base of Overburden**: The overburden material was expected to comprise of two metre thick peat/muskeg with varying degrees of water saturation, underlain by 35m to 50m of silt to sand till.
2) **Clay:** Isolated pockets of Cretaceous age clay are known to exist in some areas. The areas of low resistivity have been identified as potential clay deposits.
3) **Top of Carbonatite (Bedrock):** The contact between overburden and bedrock material is typically a relatively well-defined increase in resistivity.

The profiles were interpreted in conjunction with each other and the borehole data. In general there was excellent agreement between the profiles and good agreement with the boreholes.

The resistivity profiles appear to show less irregularity than indicated in the drilling results. Some of the irregularity may also attributed to mistaken identification of cemented residuum as carbonatite basement. The result is the reporting of the end of hole depth of a borehole as bedrock rather than re-cemented residuum.

The profiles support the interpretation of the deep valley feature which appears to run north west-south east along the Anomaly A. This is demonstrated clearly in the south to north orientated Profiles #3 and #6, (Figure 9-4) and in the west to east orientated Profile #4 (Figure 9-3).

Profile #4 was extended (i.e. from the intersection of Line #6) to the east and shows that potential exists for additional residuum resources to be explored in this direction. Very little exploration drilling has been undertaken east of Line #6.

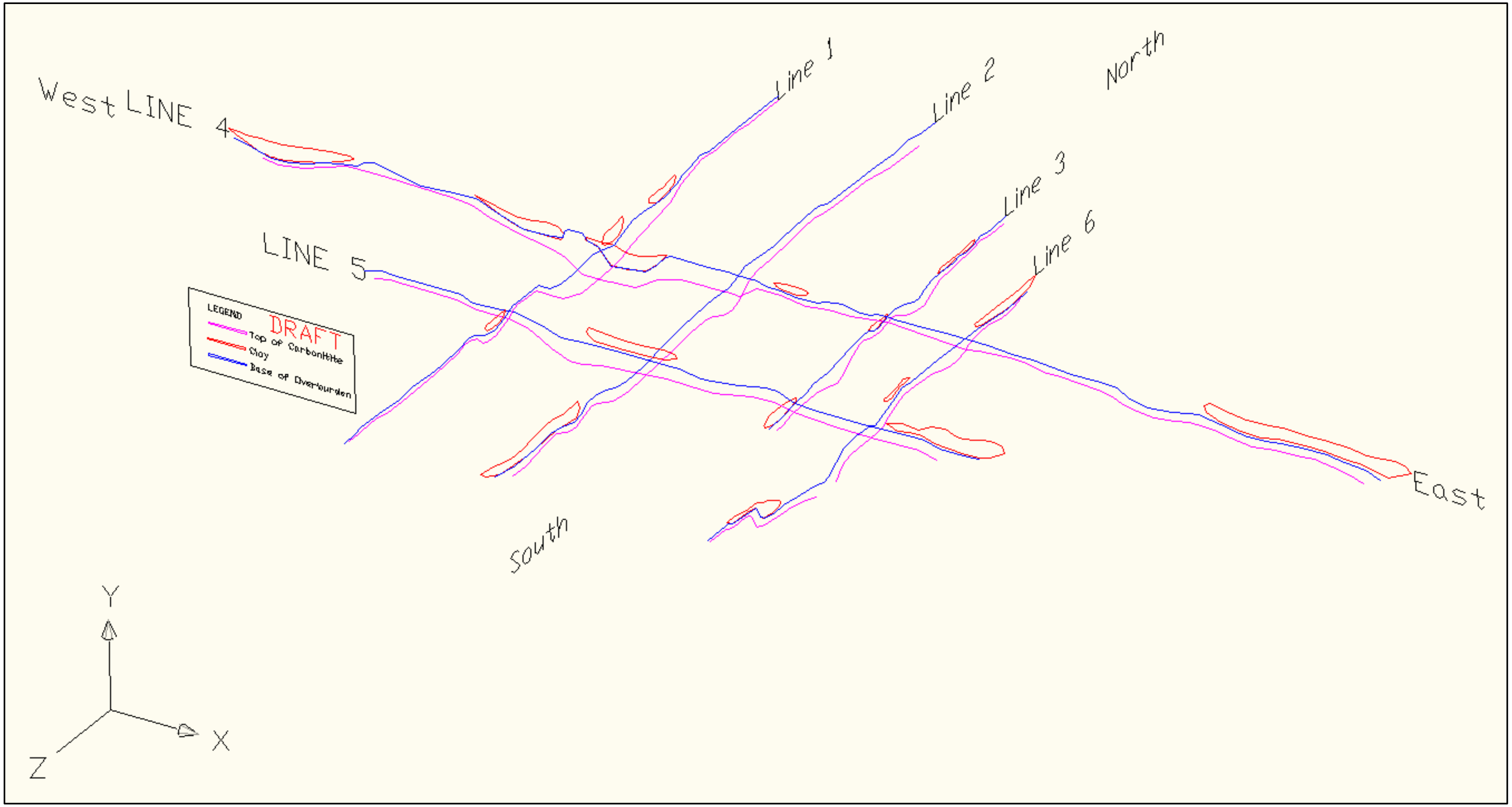


Figure 9-2 **3D interpreted resistivity profiles**

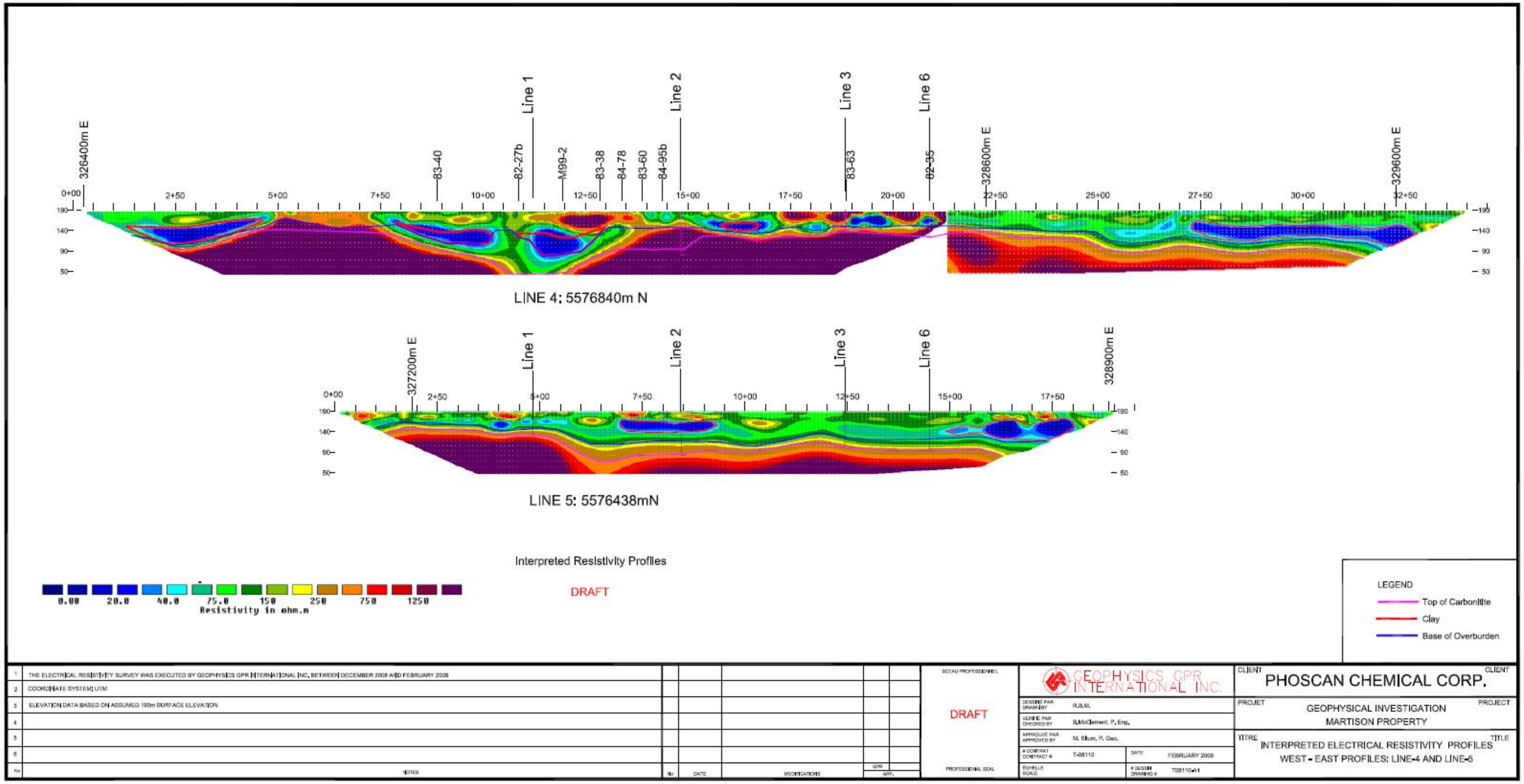


Figure 9-3 Resistivity Interpretation - Profile Lines 4 & 5 (GPR International Inc.)

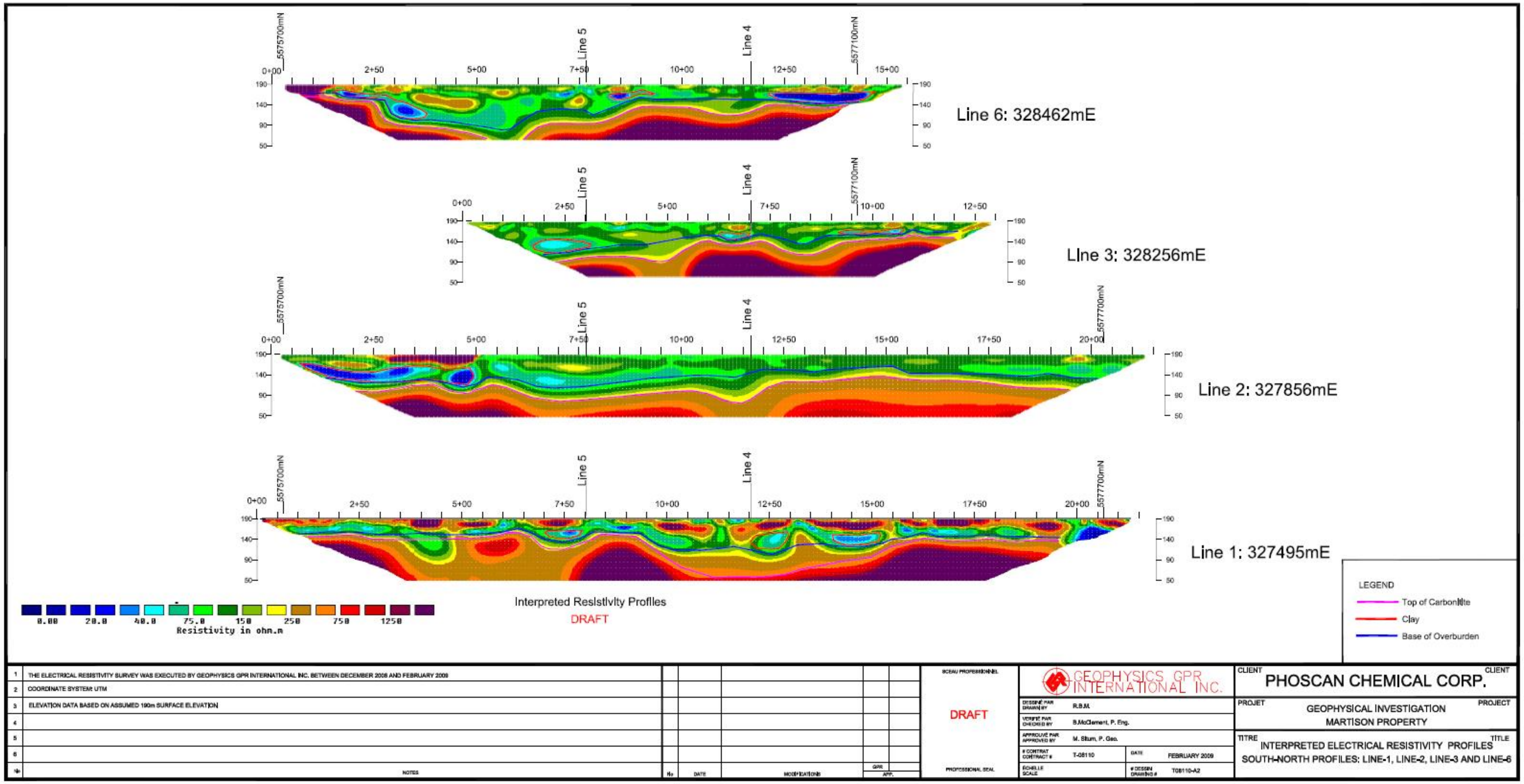


Figure 9-4 **Resistivity Interpretation - Profile Lines 1,2,3 & 6 (GPR International Inc.)**

10 DRILLING

PhosCan (and its predecessor companies) has undertaken drilling programmes in the winters of 1999, 2001, 2002, 2008 and 2012 at the Martison Phosphate deposit. PhosCan managed all five drilling programmes.

It is understood that in all drill programmes, the holes were drilled vertically, typically by large diameter diamond drill ("**DD**") core (HQ size), reverse circulation ("**RC**"), return air blast ("**RAB**"), auger or large diameter (6") sonic drill rigs. It is unlikely, therefore, that there is any significant deviation of the drilled holes in the absence of down the hole surveys.

In view of the nature of the formation palaeo-soils and relatively shallow depth of the drillholes, it is reasonable to assume that the holes did not significantly deviate and the drill intersection lengths represent the true thicknesses of the stratigraphy.

Early diamond drilling, from the 1980s, had recoveries in the 50% range using an NQ core tube size. In 1999 and 2002, recoveries increased to an average of 70% with an increased core tube size to HQ and using typically triple tube core barrels. After a study was conducted in 1984 comparing these results to core and drill cuttings, the similar grades suggest that the residuum material is relatively homogeneous.

Table 10-1 below provides a summary of the PhosCan resource drilling programmes for Anomaly A.

Table 10-1 does not include the 2008 hydrogeological and geotechnical drill programmes and the 2012 hydrogeological programme (summarised in Table 9-1, Table 9-2 and Table 9-3). Although most of these site investigation holes were drilled purposely on the edge, or outside, of the anticipated mining envelope, some of these holes intersected significant Residuum and were subsequently sampled to establish their level of mineralisation. As a result, several of these holes were included in the resource estimate database.

The Anomaly B drilling programme is presented in Table 10-2.

Only one hole (hole number 81-13, in 1981) has been drilled in Anomaly C.

Table 10-1: Anomaly A Resource Drilling Programme Summary

Year	Company	No. Holes	Total Length m	Type and Comment
1999	PhosCan (MCK Mining)	14*	1,698	DD (Includes one re-drill)
2002	PhosCan (MCK Mining)	6	943.2	DD
2008	PhosCan	34	4,888.3	Sonic (Cluster)- Metallurgical
2012	PhosCan	15	1,947.1	Sonic
Total		**63**	**9476.6**	

* Includes six drillholes funded by Cargill.

Table 10-2: Anomaly B Exploration Drilling Programme Summary

Year	Company	No. Holes	Total Length m	Type and Comment
2001	Baltic	12	1296	DD. (Includes one re-drill)

The historical holes drilled in Anomaly A were largely drilled in the 1980's on a 200m grid, with two smaller in-fill grids on a 50m spacing.

Current drillholes include those drilled in 1999 in a series of 100 m spaced drillholes within the main deposit area. In 2002, six holes tested the northern part of the deposit.

In 2008, seven clusters of sonic drilling (106 mm core diameter) collected over 42 t of material for metallurgical test work and pilot-scale testing of beneficiation; each cluster was comprised of four to six holes over a +/- 30 m radius area.

In 2012, a further programme was planned along similar lines to that which J. Spalding had proposed for winter 2009; however, for cost reasons this was again modified to a minimum number of 15 holes totalling just under 2,000 m. Conducted between January and March 2012, the programme provided additional material for metallurgical test work and better delineation of the main part of the deposit.

The historical and recent (PhosCan managed) drillhole locations are shown, by year date drilled, in Figure 10-1.

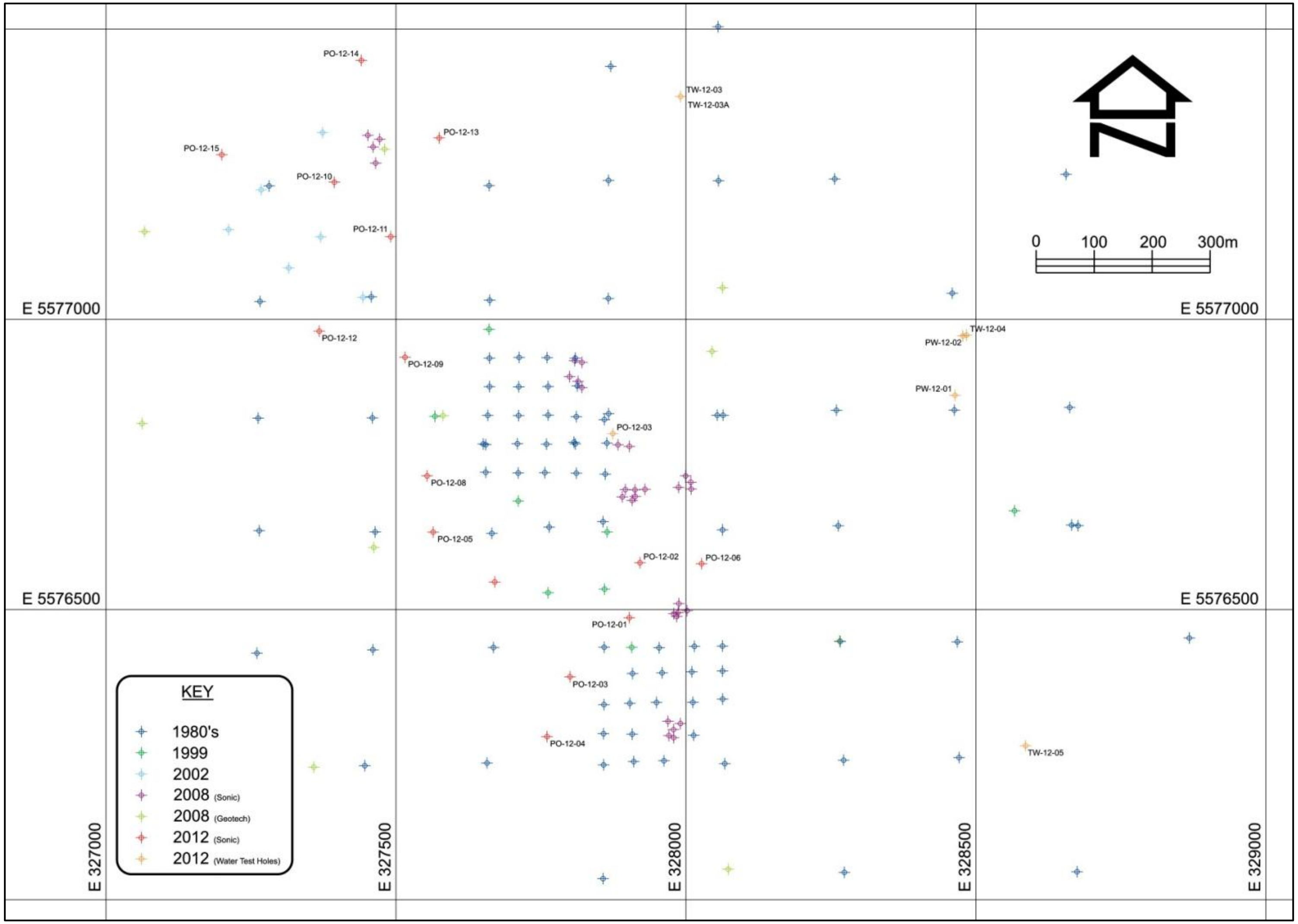


Figure 10-1 **Martison Anomaly A - Historical and Recent Drilling Programmes**

10.1 Reverse Circulation (RC)

Sample recovery utilising the RC method generally exceeded an estimated 90% with the sample loss generally confined to the high clay fractions which remain suspended in the circulating medium. No systematic records of sample recovery were kept as part of the programme records.

At appropriate intervals, generally 1.5 m, the material collected on the screens and the material from the decantation process was placed into a plastic bag and identified with a unique sample identification number. In the decantation process, two pails were used with the second pail allowing for the settling of fine particles from the overflow of the first pail. Samples were stored for shipment in dual-wrapped plastic bags which were identified with unique codes.

10.2 Sonic Drilling

The sonic drill technique typically utilises a winterised 300C ATV rig using 5’ and 10’ standard core barrels, drilling a 6” diameter hole (approximately 150 mm) to recover a 4” (approximately 100 mm) diameter core. The sonic drilling technique uses a mechanical oscillation to the drill head generating high frequency vibration to the cutting edge. The machines typically drill two to three times faster than conventional machines and provide continuous coring to 150 m, although some holes have been drilled by this method to over 200 m on this Project. In addition, the sonic method does not require the use of any traditional drilling additive (i.e., mud), using only water.

In response to what is largely a palaeo-soil profile and the type of deposit and mineralisation encountered, the sonic drilling has proved to be a very effective method of sample recovery for the local conditions. Core recoveries for sonic drilling in the residuum are typically in excess of 90%, although drill penetration rates and core recovery decline rapidly where the in-hole conditions become more variable with increasing levels of weakly weathered basement material. Typically, the sonic coring method cannot penetrate any distance into relatively unweathered basement carbonatite material; it therefore may be problematic for the geologist to decide if true basement has been reached or if intact large blocks or boulders within the soil/rock transition zone have been encountered.

The sonic drill tube encapsulates the core in a cylindrical clear plastic bag liner which is inserted in the core barrel before drilling commences. The core is extracted from the core barrel effectively wrapped in the plastic sheath, the upper and lower ends of the plastic sheath are tied off to prevent loss of sample. (This containment of the sample greatly assists the drill site geologists to maintain the integrity of an otherwise incompetent soil medium and to place the samples in the specially constructed core boxes.)

Due to the condensation build up and/or flash freezing that the core is subjected to in the sub-zero temperatures experienced at Martison in deep winter (day time temperatures at -25^{o}C to -30^{o}C are common, night time -35^{o}C to -40^{o}C), the core cannot be logged in any detail at the drill site other than to correctly record on shift drill logs and directly on the core boxes such information as drillhole and box number, from and to depth of all runs, any zones of notable core loss or other relevant drilling remarks. The core is stored on site at a central drill camp facility for later transport to the heated and well lit logging and sampling facility in Hearst.

Each core box is weighed empty before use and the tare clearly written on the box. The boxes are weighed again containing the drilled sample. This allows the geologist to keep a record of the total approximate weight of the sample being collected throughout the programme.

In the sonic drilling method, the rig was fitted with a “resonance generator” which produced a vertical oscillation that vibrated the drill stem. Cutting was achieved by tungsten-carbide buttons on the bit which was aided by the slow rotation of the drill string. No circulating medium (water or mud) was used. The sample was taken as an 8.5 cm to 10 cm core which is recovered by extracting the entire drill string; the core was extruded out of the barrel into a tubular plastic bag which was placed into a wooden core box. This sampling method provided very good cores of unconsolidated material, including loose sand. The chief operational difficulties were the inability to penetrate very far in hard material and the fact that the plastic core tube must be cut open to observe the drilled material. For the 2008 and 2012 drill programmes, the detailed logging and subsequent sampling was carried out in the heated and well lit facility in Hearst.

10.3 Diamond Drilling

Diamond drilling (“**DD**”) used simple tricone sampling methods through the till and Cretaceous Sediments while drilling ahead to a pre-selected NQ coring point. The drilling equipment used dual-tube technology and samples were collected from the circulating medium using the same procedures as described above for the RC drilling method. Samples were stored for shipment in dual-wrapped plastic bags which were properly identified with unique codes.

NQ coring was accomplished using standard DD equipment with a tricone bit and NW casing penetrating the glacial till and Cretaceous sediments before switching to ‘wire line’ coring near the residuum contact. The wire line used twin-tube core barrels to retrieve the sample after each core run. NQ core was sized at a nominal 4.75 cm. The core was logged in the field by a geologist as the material was retrieved.

HQ-sized coring typically recovered core sample from the surface to final depth. Upon recovery, all core was removed from the inner split-barrel and placed into core trays where it was logged and photographed. The core trays were then transported to Timmins for more detailed logging and core splitting.

In the Timmins core storage facility, the core was logged several times before being split and sent for chemical analysis. Unconsolidated material was split using a trowel while the consolidated material was split using a core saw. The core was sampled at intervals which reflected interpreted geological sub-units in the residuum.

Samples were prepared for shipment in properly identified wooden core boxes. While all core runs were 1.5 m length, samples submitted for analyses and testing were composites of these individual core runs.

10.4 Auger (Hydrogeological) Drilling

A series of 10 auger holes were drilled in 2012 primarily for the purpose of hydrogeological investigations providing follow–up studies from the initial pump testing in 2008. The auger holes were logged and sampled, and provided additional geological information on the deposit. Test Well ("**TW**") hole TW-12-02 in the northern extension of the mineralised footprint returned over 30 m of residuum averaging 24% P_2O_5 and over 40 m lateritic material averaging > 0.5% Nb. Pump Well PW-12-02 and TW-12-04 both intersected lower grade material to the east on the fringe of the main mineralised zone.

11 SAMPLE PREPARATION, ANALYSES & SECURITY

11.1 Introduction

In the 2008 NI 43-101 Technical Report, J. Spalding reviewed the history of the sample preparation, analysis and security relating to the Martison Project prior toPhosCan's involvement.

In Spalding's opinion, the Anomaly A sampling and the pre-laboratory sample preparation was carried out to industry standard practice, using procedures adopted widely within the phosphate minerals industry.

Routine methodology, including 'round robin' checks between the laboratories, indicate that based on the data reviewed by Spalding, no statistically significant analytical biases are evident. Spalding pointed out, however, that prior to 1999, when PhosCan effectively took over management of the drill programmes, no routine analysis for deleterious elements had taken place. These included Fe_2O_3, Al_2O_3, CaO, MgO, and acid insolubles ("**AI**"), referred to as the Minor Element Ratio ("**MER**") The MER is a measure of estimating the processing performance of the phosphate concentrate in the manufacture of phosphoric acid and the resulting acid quality. MER = $(\%Fe_2O_3 + \%\ Al_2O_3 + \%\ MgO) / \%\ P_2O_5$.

Since 1999, this deficit in the analytical record has been corrected and subsequent sample programmes have analysed for the MER components.

11.2 Sample Preparation

A number of sample collection and preparation methods were adopted by PhosCan depending on the type of sampling method used. The sample collection depended on what type of drilling method was used (Core, Reverse Circulation, Auger or Sonic type). Drill core, crushed rock and pulps have all been used as sample mediums and the sample preparation adopted accordingly. Samples from the sonic core drill programmes were typically by large spoon or hand -trowel depending on the sample material or required bulk. In 2008, the 'cluster' drilling programme, after a smaller analytical sample had been removed, the entire core of the selected intersections were bagged and crated for the intended bulk (42 t) sample.

In 2011, several of the 2008 and pre-2008 holes were re-sampled primarily to generate a larger bulk sample for analysis and metallurgical test work for the recovery of niobium mainly from the lateritic layers lying above the main phosphate bearing residuum. This re-sampling programme also provided another useful cross check on the analyses already carried out on these holes. Samples, of up to half core bulk, were removed over a selected sample length, typically one metre to 1.5 m, depending on the geology. The samples were then 'coned and quartered' to further composite the selected interval and to generate a duplicate should it be required. Finally, the samples, weighing up to 10 kg were double bagged in large heavy gauge clear plastic bags, with individual 'bar code' identification tickets inserted between the dual bag layers.

In 2012, the sampling procedure followed a similar methodology to that adopted in 2008 and 2011. The samples were selected based on visual lithology and / or drill interval and removed with hand-trowel sampling tools. Since bulk was not a pre-requisite for this sample programme, approximately one quarter to half core was removed. In those intersections or parts of sample runs where intact boulders were drilled, the rock core was broken using a hammer to provide a representative sample. Typically these intact pieces of rock were rarely more than 10 cm to 20 cm in length, unless the hole was stopped in relatively unweathered basement material.

The samples are bagged and tagged with a unique identification number using pre-printed, bar-coded tickets supplied from the contracted analytical laboratories. Ticket stubs are retained in the sample books with basic information of the bagged sample, such as date sampled, core box number, sample interval (from – to) and a very brief description of the sample material lithology.

The individual bagged samples are then weighed and a summary pre-printed laboratory 'chain of custody' dispatch sheet is completed to accompany the samples, which are typically crated in batches, to the assigned laboratory.

11.3 Analysis

Summaries of all analytical work are part of the current project data. Very detailed sample descriptions and analytical summaries are contained in the current Project records but not all certificates of analysis, see Table 11-1 for the summary of Project sample analysis.

Table 11-1: Historical Sample Analysis Programmes

Year	Total Samples Analysed	Laboratory	Analytical Methods	Elements Analysed	Analytical Certificates in Project Record
1981	238	X-Ray Assay Labs, Toronto	XRF	P_2O_5,La,Ce,Nb & Minor Elements	Yes
1982	708	Bondar-Clegg & Co, Ottawa, Ontario	XRF Gravimetric Colourmetric/XRF Peroxide Fusion/Dichromate	Nb, La P_2O_5 Nb_2O_5 Fe_2O_3	No
1983	900	Lakefield Research, Lakefield, Ontario	XRF	P_2O5, Nb_2O_5	Yes
	14 (Check samples)	X-Ray Assay Labs, Toronto	-	P_2O_5, Nb_2O_5	Yes
	38 (Composites)	Lakefield, Ontario	XRF	La	Yes
	8*(Composite check samples)	Atomic Energy, Canada	Neutron Activation	REE's	Yes
	21*(Composite check samples	Neutron Activation Services, Hamilton, Ontario & Hazen Research, Golden, California	Neutron Activation	REE's	Yes
1984	1036	Lakefield, Ontario	XRF	P_2O_5, Nb_2O_5	No
1999	356	Thornton, Tampa, Florida	AR**/AA*** AR/SP**** AR/Ceric Sulphate HCl/AA	MgO, Al_2O_3 P_2O_5 CaO Fe_2O_3	Yes
2002	149	Swastika Labs, Swastika, Ontario	Li Metaborate/HNO3 ICP	Whole Rock Whole Rock	Yes

*	Check samples of the 38 original composites sent to Lakefield (1983)
**	Aqua Regia
***	Atomic Absorption
****	Spectrophotometric

Table 11-2: Post 2008 (PFS) Sample Analysis Programmes

Year	Total Samples Analysed	Laboratory	Analytical Methods	Elements Analysed	Analytical Certificates in Project Record
2008	2204	ACME, Vancouver	4 Acid ICP-MS Analysis Phosphoric Acid Leach, ICP-ES analysis	Whole Rock	Yes
2011	934*	ALS Timmins/ Vancouver	ICP-AES	Whole Rock (& REE's)	Yes
	738	ALS Timmins/ Vancouver	XRF – 10	Nb	Yes
2012	908*	ALS Timmins /Vancouver	ICP-AES	Whole Rock	Yes

* Includes QA/QC blanks and standards inserted by PhosCan.

2011 was a sampling exercise of pre-existing core to complete the sample analysis not carried out as part of the original bulk sample drilling programme in 2008. This included taking samples of the 'overburden' (overlying residuum), 'Interburden' (waste within the residuum) and 'Basement' (below the residuum).

To reduce sample costs, the initial semi quantitative assay run of 2008 identified samples which was later (in 2011) used to target those intersections with anomalous Nb for more accurate quantitative analysis.

This sampling programme was designed to identify all material by chemical parameters rather than rely on subjective visual logging in material which proved difficult to separate in core samples. Much of this material was lateritic in appearance, and excluded the glacial till, which was easily identified in the field.

The 2011 sample set of 934 samples included drill core, crushed rock and pulps and was initially analysed for whole rock and REEs at ALS laboratories in Timmins and Vancouver. Later in 2011 part of the sample set (738 samples) was re-analysed only for niobium using XRF-10 analytical methods. ALS had established that the Nb reported higher using ME XRF-10 than the mass spectrometry methods, largely due to the highly resistive nature of the Nb element.

11.4 Sample Security

In the opinion of DMT, the handling, and the subsequent batching and crating of the samples to the assigned laboratories, was carried out to an acceptable industry standard. Core has been carefully handled and secured in wooden boxes, for the drill programmes since and including 2008, boxes were purpose built for both diamond core and the sonic drill programmes using lidded boxes which could be secured for transportation. Once the core was collected at the drill site the box lids were either nailed or screwed in place the boxes remained unopened until they arrived at the storage facility in Hearst. Once there the project geologists took custody of the core samples. The core box lids were re-secured after logging, photographing and sampling was completed. The sample core boxes, rejects and pulps were observed to be in secure, clean and well lit conditions at the Project storage facility in Hearst. The individual core boxes were clearly numbered and batched according to borehole identification. The core was safely stacked and strapped on palettes for ease of re-access to the retained sample.

11.5 QA/QC

In 2008 the sample programme was designed primarily to generate a large tonnage bulk samples for bench and pilot scale testing at Jacobs Engineering, Florida. Typical spoon / trowel channel samples were taken from the selected bulk sample intersections before dispatch to Jacobs. A total of 2,204 samples were analysed for whole rock at the ACME Laboratories in Vancouver. However, PhosCan did not insert any additional QA/QC samples in the form of blanks and standards into these sample runs. PhosCan, however, did carry out a series of check samples which from five of the seven holes drilled labelled with the suffix ‘A’, (83-61A , for example). In total 85 check samples were analysed. The samples were tested for P_2O_5 and the MER compounds (Fe_2O_3, Al_2O_3, MgO, CaO), and were found to be well within acceptable analytical variance and error.

In March 2011, the re-sampling programme, referred to in Section 11.3 incorporated either a blank (typically clear ground glass), a standard, or a sample duplicate which was inserted in the sample stream at a regular interval, typically every 10th sample.

Three types of standards were created for typical 2A, 2B (residuum) and CA (laterite) typical representative material using 30 pulp samples representative of the three material types. CDN Resource Laboratories Ltd of Langley B.C, coordinated the process and which included a ‘round robin’ of analyses by six separate laboratories. Smee and Associates (Geochemists), Vancouver, issued the Certificates of Analysis in November 2011. These standards were used in the 2012 for insertion into the sample streams resulting from the 2012 winter drill sampling programme.

Blanks were also obtained from an external laboratory source consisting of clean fine sand. In addition the laboratories used also ran their own standards and duplicates within the sample batch, copies of the analytical certificates are held in the project records.

11.6 DMT Comment

DMT is satisfied that the sampling methodology, sample preparation management and chain of custody have been undertaken to a recognised industry standard and are considered acceptable for use in the generation of a resource estimate for the deposit. Analytical work has been undertaken at industry certified analytical laboratories in Canada and the USA.

12 DATA VERIFICATION

In November 2006, J.S. Spalding, P.Geo. visually examined and photographed all the existing core in a core storage facility in Timmins, approximately 320 km by road southeast of Hearst. At the time of the examination, the available core represented over 75% of the entire length of core collected. In addition, cross-checks of the core against the database information were completed.

Spalding did not independently verify sample results, but reviewed sampling and analytical procedures. In addition, he examined the existing certificates of analysis for the various analytical campaigns which were submitted by various professional and reputable chemical laboratories in the United States and Canada (Table 11-1). Spalding then verified the transfer of the analytical data from the certificates to the database in approximately 10% of the samples for litho units 2A and 2B (200 samples checked).

In J.S. Spalding's judgment, the samples were handled and analysed in a professional manner consistent with industry standards and norms.

12.1 Independent Qualified Person Verification

In early 2012, all of the Timmins based core, borehole logs and analytical certificates and sample returns were transferred to the Hearst storage facility where the 2008 and 2012 drill samples were located; hence, all the project drill sample material is stored under one roof.

DMT examined a number of borehole logs and sample intervals against the original analytical certificates at the core at the storage facility in Hearst in October 2014. These were found to be in order and to an acceptable industry standard.

A number of drillhole positions were visited during the October 2014 site visit and the coordinates checked with a hand held GPS. These were found to be reasonably accurate (within a 10m radius of error) given the check method used.

Using the 2008 ground survey data it has been possible to plot the drillhole positions against satellite imagery of the site. The drilling grid is very evident on satellite imagery and the borehole positions as surveyed in 2008 line up closely with the known locations (Figure 12-1).

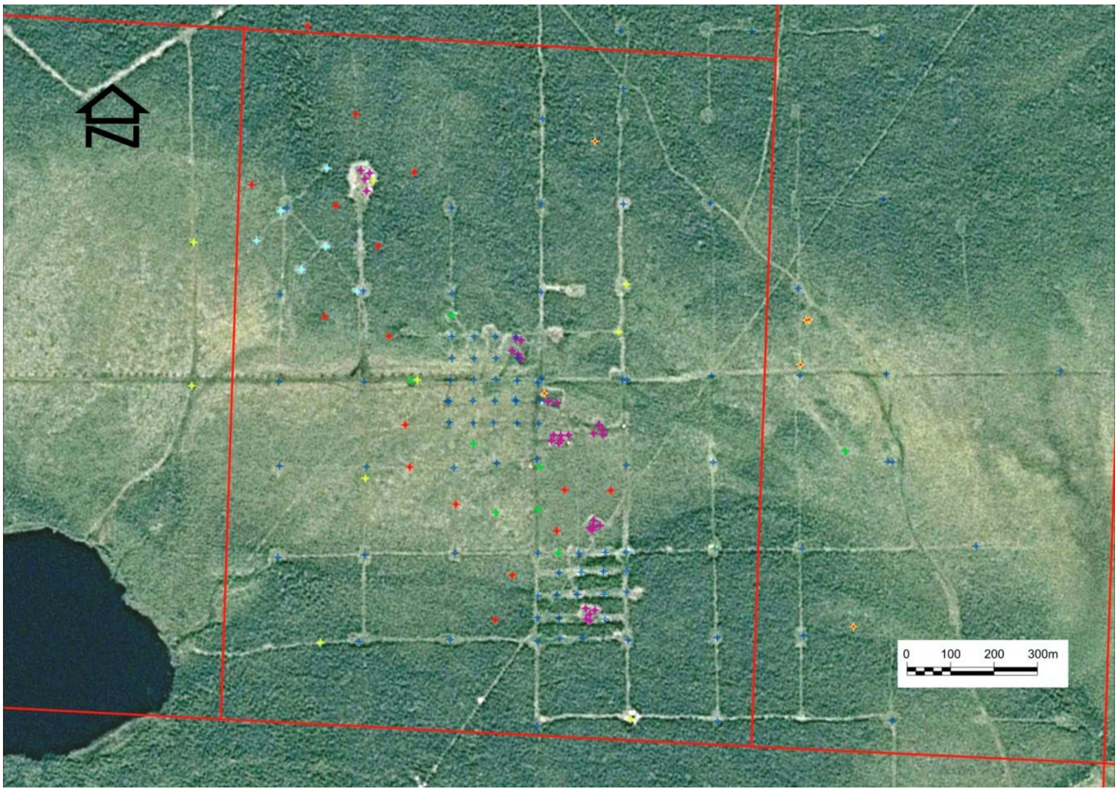


Figure 12-1 **Martison Borehole Surveyed Positions geo-referenced on a Project Air Photo Image**

During the site visit DMT checked a number of borehole logs for the recorded sample intervals against sample book entry (Borehole Number; From/To depths) and also checked the analytical data entries into the borehole data base against the data contained on the original analytical certificates. These were found to be in accordance with industry standard practice and no errors in data transfer were observed.

DMT did not undertake any independent verification sampling.

DMT is of the opinion that the database verification procedures comply with industry standards and are adequate for the purposes of Mineral Resource estimation.

13 MINERAL PROCESSING & METALLURGICAL TESTING

Jacobs was commissioned by PhosCan in 2006 to examine the exploitation potential of the Martison Phosphate Project with a view to producing marketable fertilizers.

A PFS was conducted by Jacobs and others and a report was issued in 2008.

The following sections 13.1.1 – 13.1.4 - Phosphate Beneficiation Testwork have been prepared by Edmund Finch (QP - MMSA). The Pre-2008 test work is summarised from the 2008 PFS.

The sections 13.2.1 – 13.2.6 on Niobium Recovery Testwork has been prepared by Harold Wyslouzil (P.Eng)

Pursuant to the 2008 PFS report, validation testing of the beneficiation process at the bench scale and pilot scale was performed in 2009-2010 using drill core samples from the 2008 bulk sample drilling programme.

13.1 Phosphate Beneficiation Testwork

13.1.1 Introduction

Significant historical metallurgical test work has been carried out on material recovered from the Martison Project. Initial testing took place at Lakefield Research of Canada Ltd, during the 1980's. Further test work was largely conducted by Jacobs Engineering, Florida, US, who conducted bench and pilot scale testing for the 2008 PFS and more detailed engineering feasibility studies thereafter. ERIEZ Magnetics laboratories, Pennsylvania, US, ("**ERIEZ**") also contributed to the detailed engineering studies with column cell and semi – pilot plant scale testing.

13.1.2 Historical Phosphate Beneficiation Studies

Prior to the completion of the 2008 PFS, the following testwork and studies were carried out.

1982: 31 comprehensive beneficiation, batch and closed circuit bench tests were conducted to address preliminary mineralogy, primary grinding, desliming, scrubbing and high-intensity magnetic separation. A concentrate grade of 32.0% P_2O_5 was obtained with a P_2O_5 recovery of 73.4%.

1983: Additional tests were conducted on a higher grade sample (25.1% P_2O_5). For these tests, a concentrate grade of 35.9% P_2O_5 was obtained with a P_2O_5 recovery of 80.4%.

1984: Seven grinding and eight phosphate flotation pilot plant scale tests were conducted to finalise the beneficiation flowsheet. A concentrate grade of 36.3% P_2O_5 was obtained with a P_2O_5 recovery of 80.7%.

2007/08: As part of the metallurgical engineering studies for the 2008 PFS Jacobs Engineering outlined the metallurgical test work that had been carried out by Lakefield Research on the Martison Project over the previous 25 year period. These data were the culmination of the six drilling programmes from 1981, 1982, 1983, 1984, 1999, and 2002.

The beneficiation plant was designed for four main processing areas (crushing, grinding, magnetic separation, and flotation) as well as tailings disposal, water recycle, and the reagent farm. The plant was designed for 3.13 Mtpa (dry) throughput to produce an annual concentrate production of 1.16 Mtpa.

The beneficiation plant design proposed by Jacobs was based largely on Lakefield's preferred flowsheet. Several modifications were made to the flowsheet to address differences in quality between the pilot plant sample, the average grade for potentially economic material ("**PEM**"), and engineering judgement. These modifications were:

- Added feed blending
- Added wet high intensity magnetic separation ("**WHIMS**") to accommodate lower grade mill feed.
- Eliminated rougher/scavenger flotation circuits due to ineffective conditioning with dilute pulps.
- Replaced cleaner/scavenger circuit with a classification step to recover coarse phosphate and reject fine gangue minerals.
- Replaced semi-autogenous grinding ("**SAG**") mill with less expensive equipment.

Jacobs recommended further batch and pilot scale studies using core samples from the 2008 bulk sample drilling programme.

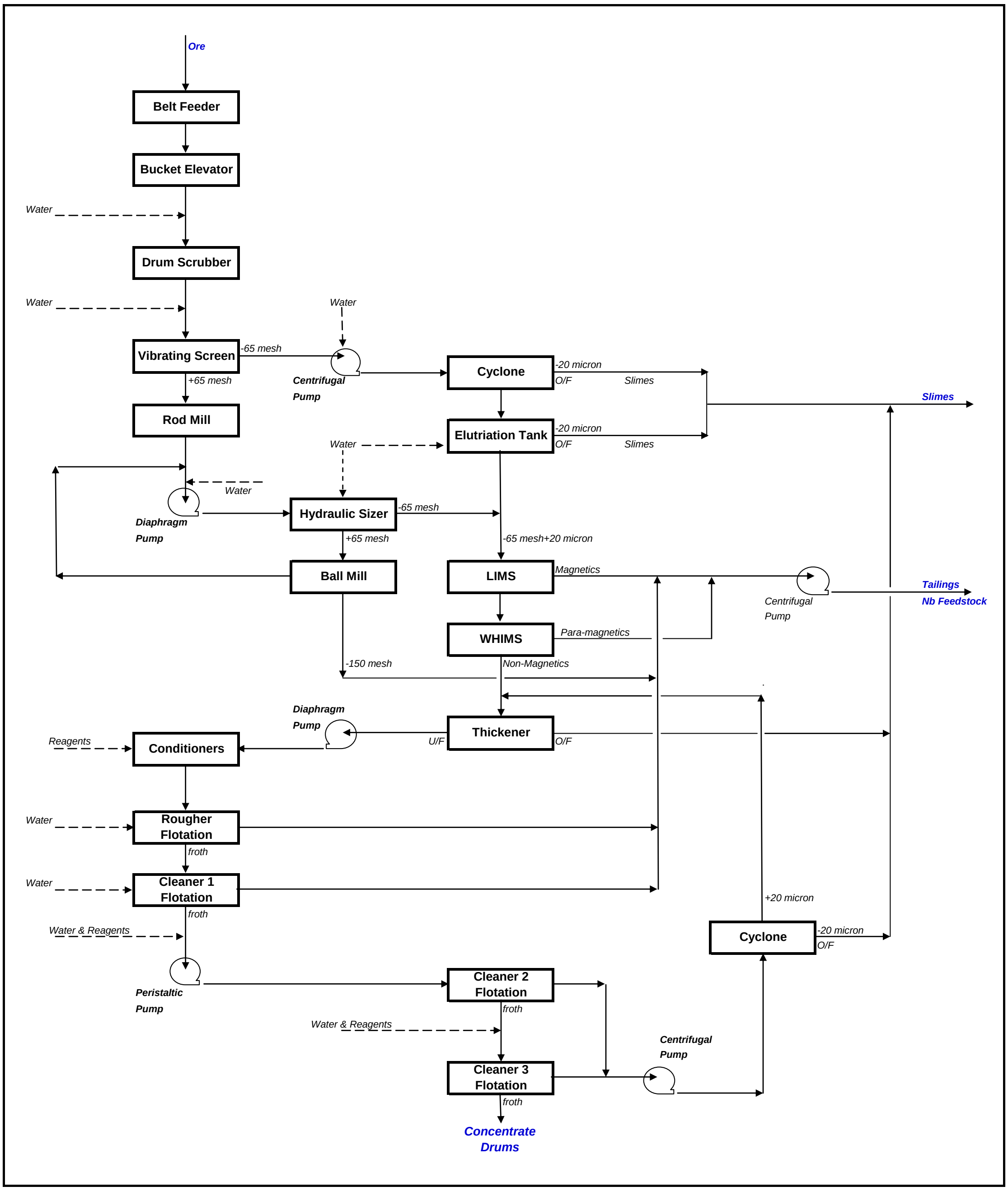


Figure 13-1 Beneficiation Process Flow Diagram

13.1.3 Phosphate Beneficiation Studies post-2008

Following the completion of the 2008 PFS, a further series of testwork was carried out by various parties as described below.

Phosphate beneficiation testing was carried out at both the Jacobs Engineering (locked cycle tests and pilot plant runs) and ERIEZ Magnetics (column cell, semi-pilot plant runs) using sonic drill core samples collected from seven locations within the Martison A anomaly (the 2008 drill programme).

Jacobs performed bench-scale beneficiation tests on different samples (which were determined from the CaO/P_2O_5 chemical ratios to identify non-mineralised from mineralised material), to supplement the 2009 beneficiation programme.

Two of the samples tested were unconsolidated residuum feed (from lower-grade material assaying approximately 20% P_2O_5) and a composite of 2A and 2B sub-lithotypes from an approximate 45:55 blend respectively, of lower-grade and higher-grade material, assaying approximately 25% P_2O_5.. These two samples were prepared by pilot plant equipment during the 2009 programme. The third sample was prepared fresh from the composite sample feed (2A+2B sub- lithotypes) to the 2009 pilot plant.

The 2A+2B flotation feed prepared by Jacobs' pilot plant was used to evaluate flotation reagents by laboratory tests and also to test column cell flotation.

13.1.3.1 Jacobs Engineering Bench-scale Tests (2009)

These series of tests were designed to confirm and/or improve the beneficiation flowsheet that was developed and described in the 2008 PFS report. Batch laboratory tests were performed to establish parameters for desliming, grinding, magnetic separation and flotation, prior to the set up and operation of the pilot plant. The pilot plant contained all the unit operations intended for the full scale plant and all of these unit operations were operated simultaneously.

The initial batch tests were performed on core samples (2A, 2B, and a mixture of 2A+2B sub-lithotypes) composited on the basis of the lithological criteria established for classifying mineralised material. (Table 13-1).

The core samples from each of the seven sites were ultimately crushed to pass 12.5 mm, coned and quartered, and stored in sealed plastic bags prior to pipe sampling each bag, to obtain a chemical composite of 2A+2B material for testing. These sampling and blending procedures were considered to meet industry standards required for processing these sample types.

Table 13-1: Chemical Criteria of Core Samples

Lithotype Designation	P_2O_5 %		CaO/P_2O_5
	Min	Max	
Waste 1	na	11.99	na
Waste 2	12.00	na	CaO/P_2O_5 <0.899, or >2.001
2A	12.00	25	$0.90 < CaO/P_2O_5 < 2.00$
2B	25.01	na	$0.90 < CaO/P_2O_5 < 2.00$

The test design for preparing flotation feed from each material type examined three grinds and three magnetic flux densities for the WHIMS. Results from this testing indicated that low intensity magnetic separation ("**LIMS**"), that removed ferromagnetic minerals, performed equally well at grinds of 105 µm, 212 µm, and 425 µm.

The WHIMS unit for removal of the paramagnetic minerals, rejected (lost) more P_2O_5 as the grind became coarser. Increasing the WHIMS gauss setting from 8,000 to

12,000 resulted in an increase in the average iron rejection from 55% to 59%, and raising the gauss level from 12,000 to 20,000 caused the average iron rejection to increase from 59% to 63%. Although the WHIMS performance improved at 20,000 gauss, the improvement was not commensurate with the increased capital and operating costs of WHIMS with that capability.

A second series of tests developed the operating conditions for pilot plant desliming and confirmed that a 212 µm primary grind produced acceptable feed to the magnetic separation circuit, providing the WHIMS magnetic product was ground to ≤105 µm and passed through the WHIMS a second time. Flotation tests (one rougher stage and three cleaner stages) were performed on a blend of feed prepared from composite 2A and 2B material (approximately 45% 2A and 55% 2B) to examine flotation parameters and to establish the flotation performance from locked cycle tests using water from the Martison site (Figure 13-2).

Chemical analyses of these samples are shown following in Table 13-2.

Table 13-2: Chemical Analyses of Composite Lithotypes (2A and 2B) Pilot Plant Feed Material

Material Type	Sample	P_2O_5 %	Chemical Analyses			MER*
			Fe_2O_3	Al_2O_3	MgO	
2A	1	21.1	15.4	3.6	4.0	1.09
2A	2	20.3	15.5	3.9	4.1	1.16
2A	**Average**	**20.7**	**15.5**	**3.8**	**4.1**	**1.13**
2B	1	30.3	10.1	1.9	1.0	0.43
2B	2	29.9	10.6	1.9	1.1	0.45
2B	**Average**	**30.1**	**10.4**	**1.9**	**1.1**	**0.44**
2A+2B	**Calc.****	**27.9**	**14.2**	**3.1**	**2.8**	**0.86**

* MER = $(Fe_2O_3 + Al_2O_3 + MgO)/P_2O_5$

** 45% 2A and 55% 2B

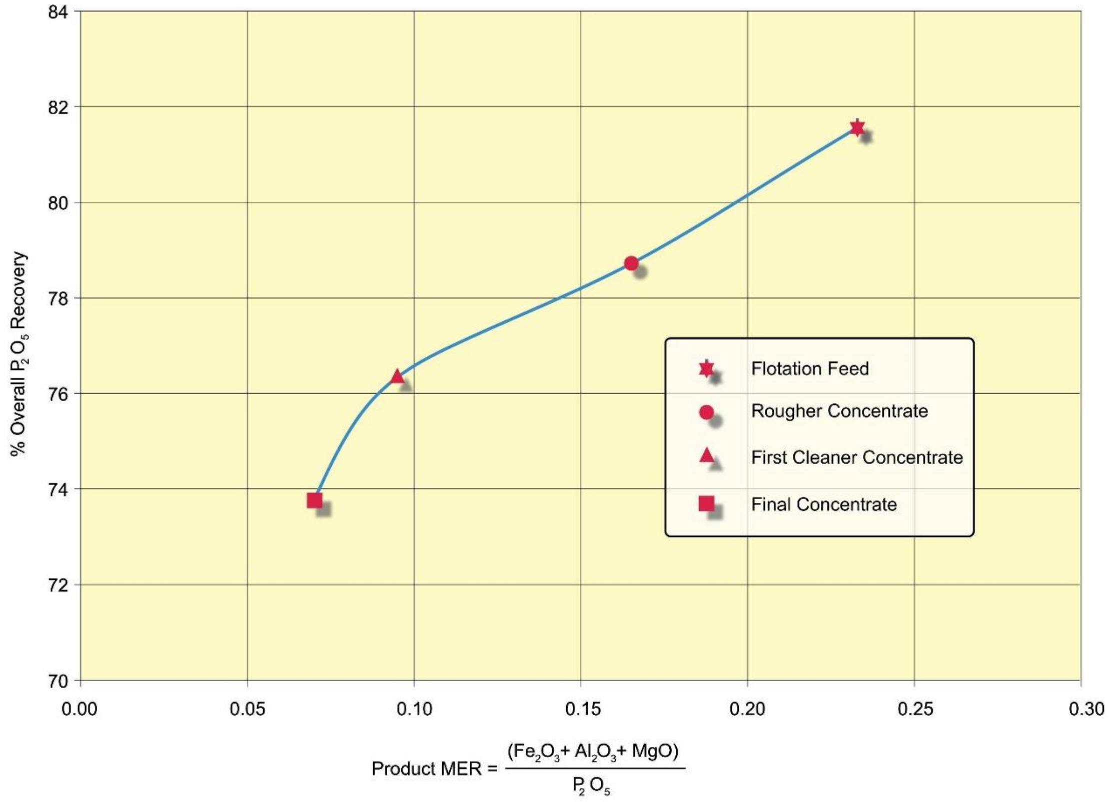


Figure 13-2 **Locked–Cycle Flotation Performance**

The 2009 bench scale testing:

- Confirmed the mesh of grind required for satisfactory beneficiation.
- Evaluated LIMS and WHIMS process characteristics prior to flotation testing.
- Evaluated currently available collector reagents.
- Optimised reagent conditioning and flotation control variables.
- Confirmed bench-scale results by locked-cycle tests using site water.

13.1.3.2 Jacobs Pilot Plant Testing (2010)

Of a completed 25 separate pilot plant runs, only 23 were counted and used for data comparisons since the flotation circuit was not completed during Run 1, and the WHIMS circuit was not operating correctly during Run 13. The same two-stage desliming circuit was used to remove natural slimes for all runs.

Pilot plant sampling was rigorously carried out on a time basis and the samples were reduced in size for chemical analyses according to accepted industry standards. Chemical analyses were conducted under the guidelines of the Florida Association of Phosphate chemists. Statistical, best fit, material balances were used to calculate the various process streams.

The first twelve runs used the grinding flowsheet presented in the 2008 PFS report. The test results indicated that the 2008 PFS grinding circuit was not well suited to the Martison material due to excessive generation of grinding slimes. An alternate grinding flowsheet, based on the rod mill in closed circuit with a Derrick screen, reduced the amount of grinding slimes and resulted in a better flotation performance.

Between runs 12 and 13 a new water header was installed in the second desliming stage. This installation improved desliming performance to the point that the desliming performance of subsequent runs was similar to that of the batch tests, with the exception that slightly more Al_2O_3 and MgO were rejected.

Comparison of results from the initial 12 Pilot Plant Runs using Flowsheet #1 (not including Test #1) with those obtained using Flowsheet #2 (not including Test #13 in the Flowsheet averages) are shown in Table 13-3. The best three runs (#17, 18. and 22.1) were chosen based on the optimal combination of exhibiting high P_2O_5 recovery and low MER. Flowsheet #2 (Figure 13-3) was seen to be the optimum Pilot Plant Flowsheet.

Table 13-3: Pilot Plant Summary -- Flowsheet #1 & #2

Run No.	Distribution %		Chemical Analysis %	
	Weight	P_2O_5	$\%P_2O_5$	MER
Flowsheet #1				
2	34.2	51.3	38.59	0.081
3	31.5	49.0	37.67	0.072
4	42.6	63.1	35.32	0.116
5	50.4	69.8	35.61	0.127
6	48.6	70.1	36.06	0.146
7	39.7	60.1	36.89	0.094
8	53.6	76.2	36.90	0.119
9	57.9	77.2	35.39	0.135
10	53.0	72.3	35.86	0.129
11	51.3	69.9	36.69	0.104
12	45.1	63.6	37.00	0.083
Average	46.2	65.7	36.54	0.110
Flowsheet #2				
13	62.9	81.9	33.76	0.173
14	44.9	64.8	38.01	0.089
15	45.8	67.5	37.11	0.091
16	51.2	73.4	36.23	0.107
17	51.9	72.1	37.37	0.077
18	52.5	72.5	37.11	0.092
19	55.5	76.0	36.62	0.120
20	58.6	79.2	35.24	0.120
21	52.5	73.2	36.02	0.103
22.1	52.2	72.5	36.37	0.093

Run No.	Distribution %		Chemical Analysis %	
	Weight	P_2O_5	$\%P_2O_5$	MER
22.2	48.0	68.1	37.12	0.107
23	44.6	63.9	37.53	0.072
24	43.5	64.1	37.22	0.096
Averages				
#14-24	**50.1**	**70.6**	**36.83**	**0.097**
#17,18,22.1	**52.2**	**72.4**	**36.95**	**0.087**

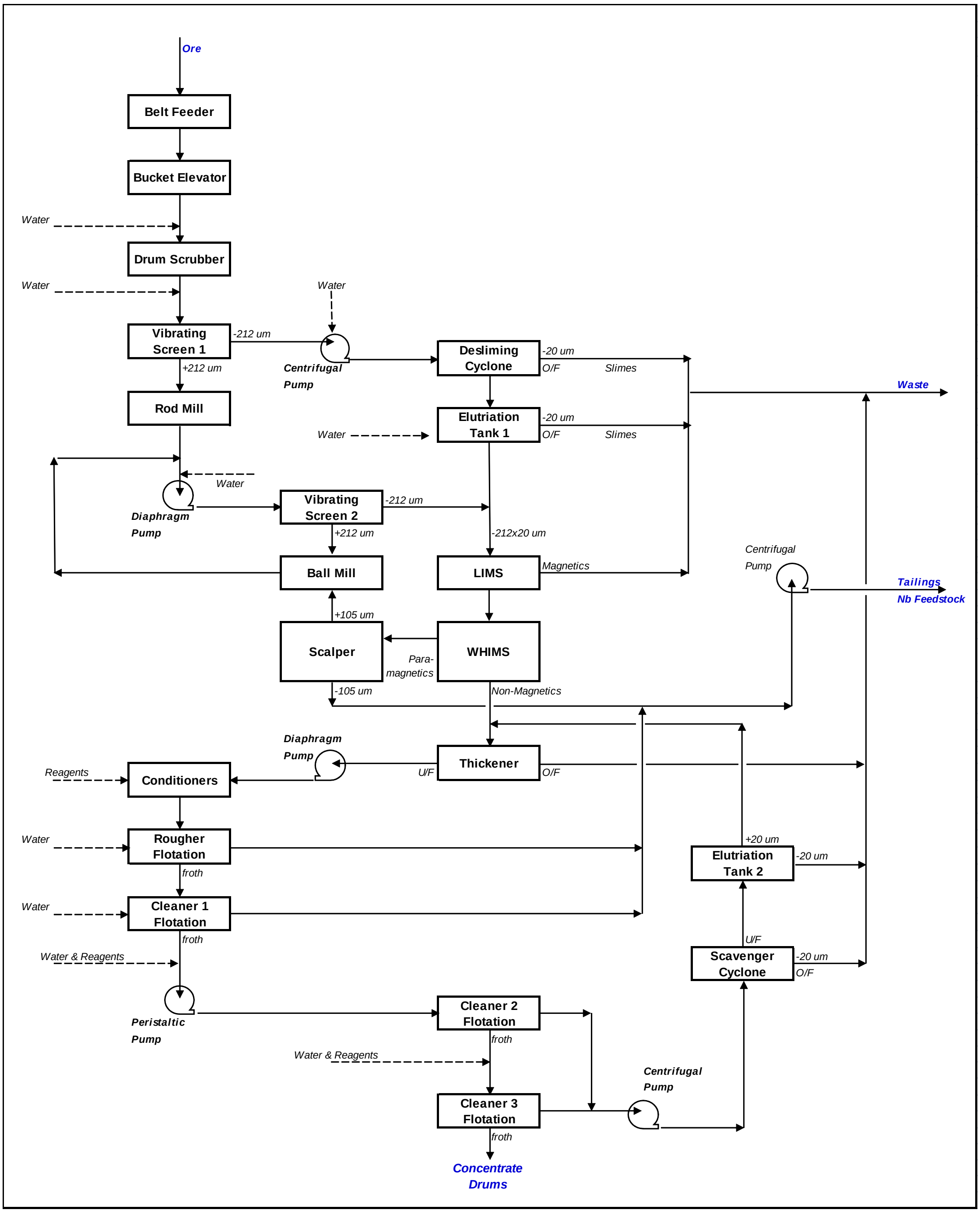


Figure 13-3 **Optimised Pilot Plant Flow Sheet # 2**

A comparison of the closed-circuit/locked-cycle bench results with those of pilot plant runs 17, 18 & 22-1, considered to be the three most optimal runs, is shown below in Table 13-4.

The comparison from a flotation standpoint only is also presented graphically in Figure 13-4.

Table 13-4: Bench Scale vs Pilot Plant Beneficiation of 2A+2B Composite Material

Products	% Distribution		$\%P_2O_5$	Chemical Analyses			MER
	Weight	P_2O_5		Fe_2O_3	Al_2O_3	MgO	
Locked-Cycle Bench Tests for Combined 2A+2B Material							
Slimes Waste	20	10	13.5	22.8	6.6	4.7	2.53
LIMS Magnetic Waste	10	3	8.8	42.7	2.0	3.3	5.43
WHIMS Magnetic Waste	9	4	13.0	26.6	3.5	4.0	2.62
Flotation Tail	13	8	15.2	12.4	7.9	7.2	1.81
Concentrate	49	74	38.2	1.7	0.6	0.4	0.07
Combined 2A+2B	100	100	25.3	13.4	3.1	2.7	0.76
Pilot Plant (Best Three Runs)							
Slimes Waste	18	10	15.3	21.5	8.3	5.0	2.27
LIMS Magnetic Waste	6	2	8.8	42.7	2.0	3.3	5.47
WHIMS Magnetic Waste	10	5	15	24.4	4.3	3.1	2.12
Flotation Tail	15	11	18.6	12.0	6.1	6.1	1.31
Concentrate	51	72	36.9	2.2	0.6	0.4	0.09
Combined 2A+2B	100	100	26.4	11.7	3.3	2.5	0.66

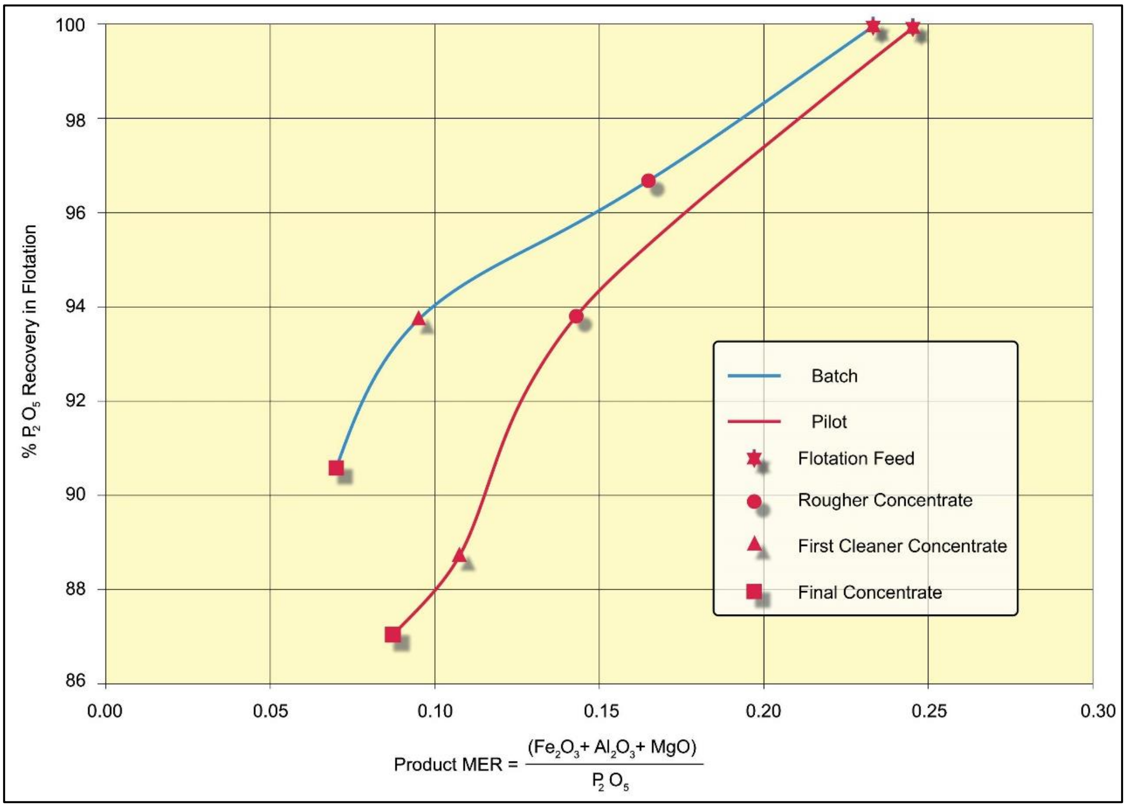


Figure 13-4 Bench Scale vs. Pilot Plant Flotation Performance Comparison of 2A+2B Composite Material

Grinding slimes contaminated the concentrate with Fe_2O_3, Al_2O_3, and MgO during flotation. The selectivity with the pilot plant flotation cells was such that it was not possible to make concentrate at the same grade and recovery as for the laboratory tests.

The variability of the pilot plant performance data and sensitivity to grinding slimes indicate that additional work is required to develop a beneficiation flowsheet that will produce acceptable grade concentrates on a reliable basis

The pilot scale tests attempted to examine column flotation but the testing was deferred because of insufficient sample. However, the pilot scale testing was successful in confirming the beneficiation design criteria.

13.1.3.3 ERIEZ Column Cell Testing (2011)

PhosCan authorized additional tests to supplement the 2009 beneficiation pilot plant programme. These tests included column cell flotation on fully deslimed 2A, 2B, and 2A+2B sub-lithotype material, and column cell flotation on partially deslimed 2A+2B material.

The column cell testing on fully deslimed 2A material identified that:

- Compared with locked cycle testing, the column cell gave 3% higher P_2O_5 recovery at a concentrate MER of 0.08.
- Column cell flotation of fully deslimed material required less collector reagent amounting to some significant savings on process costs.

Column cell testing on fully deslimed 2B material identified that:

- It gave an 80% recovery at a concentrate *Minor Element Ratio (MER) of 0.08.
- Reagent consumption was the same as for 2A material.

Column cell testing on fully deslimed 2A+2B material showed that the combined process savings compared to pilot plant tests was significant, estimated by ERIEZ to be approximately $8/t concentrate.

Based on the performance and reduced reagent usages, it was concluded that column cells are superior to mechanical cells for the samples tested.

13.1.3.4 Other Metallurgical Studies

Sizing the final concentrate, prior to acid production, was investigated as a possible approach to deal with the low-grade fines in the concentrate without reducing P_2O_5 recovery. Cyclone performance data were used to simulate the concentrate into fine and coarse fractions. Results indicate that the coarse fraction of the concentrate is suitable for conversion to SPA (Super Phosphoric Acid), while the fine fraction is suitable for producing 11:52 MAP (Monoammonium Phosphate) providing that the MER is <0.10.

If only a phosphate rock concentrate were to be produced it would be necessary for the concentrates to be dewatered and dried before transportation due to the severe, low temperature, Canadian winters. Filter leaf tests confirmed that fast cycle times, increased filtration rates and reduced cake moistures were achievable. In addition, FL Smidth flash drying tests demonstrated that this process was technically feasible.

13.1.4 Recommendations for Future Work

As a result of the more recent testwork, the following recommendations are made in order to advance the process engineering for the Project:

- Additional batch testing of composite 2A+2B material and feed to investigate ways of improving flotation selectivity is recommended.
- Further mineralogical studies should be carried out to characterize the grinding slimes remaining in the concentrate.
- Additional laboratory test work is required to quantify the <10 µm and >10 µm portions of the <20 µm fraction of the concentrate.
- If determined that it is economically feasible to recover niobium, then additional pilot plant testing should be conducted to develop a single phosphate/niobium flowsheet. Feed sizing and pilot scale column cells should also be considered.

The unconsolidated 2A sub-lithotype material is lower grade and more problematic to beneficiate than the consolidated higher-grade 2B sub-lithotype. Locked-cycle testing of 2A material is recommended. The results from this testing will provide a basis for judging whether 2A and 2B material can be mined and beneficiated separately, or whether they will require blending before beneficiation.

Based on the findings of the beneficiation programme, significant portions of the PFS beneficiation flowsheet will need to be revised when metallurgical engineering studies resume. At this time it is recognized that the crushing circuit, the grinding circuit (rod mill in closed circuit with screens), the classification circuit (additional desliming), the WHIMS circuit (needed to treat lower-grade material) and the flotation circuit (probable replacement of conventional flotation cells with column cells) require revisions.

13.2 Niobium Recovery Testwork

13.2.1 Introduction

Niobium is a rare, transition metal used in the production of high grade steel. It is vital as an alloying element in steels and super alloys, making the steel lighter, stronger and corrosion resistant. It is used extensively in the aerospace, energy and transportation industries.

Niobium does not occur naturally as a free metal, but is an essential component in a range of mineral species. The majority of these are oxide minerals; silicates of niobium exist but are rare. Niobium also substitutes for major ions in a number of other minerals, in which they have low concentrations. The vast majority of economically important species are oxides such as pyrochlore and columbite.

Pyrochlore concentrate is converted using a thermite process to ferroniobium. 92% of the niobium market is for this product. The remaining 8% of the market is for Vacuum Grade Ferroniobium, niobium metals and alloys and niobium based chemicals

Niobium, occurs in the Martison phosphate deposit primarily as pyrochlore in concentrations typically of less than 1% Nb_2O_5 but is also associated with other minerals such as columbite, ilmenite, Fe-oxides and rutile.

The lateritic overburden at Martison contains higher concentrations of niobium (>1% Nb_2O_5), but attempts at developing economic recovery processes for this material have been unsuccessful. The focus recently has been directed on developing a process to recover niobium from the waste streams generated by the phosphate beneficiation process.

13.2.2 Historical Testing Prior to 2009

The first niobium recovery tests using material from Martison dates back to 1982, when bench scale flotation tests were conducted by Lakefield Research[2] on a sample composed of three sonic drill-hole cores. The tests were preliminary in nature and served to demonstrate the technical feasibility of recovering commercial quality phosphate and pyrochlore concentrates from the ore.

A flowsheet, shown in Figure 13-5, was developed that included scrubbing, two-stage desliming, grinding, magnetic separation and sequential phosphate-pyrochlore flotation.

The phosphate rougher tailings and first cleaner tails were combined and treated with hydrochloric acid (“**HCl**”) and washed to remove residual reagents from the phosphate flotation stage in preparation for pyrochlore flotation.

The best results (tests 29 and 30) produced niobium concentrates ranging in purity from 41% Nb_2O_5 – 46% Nb_2O_5 with a recovery level of 30%-40% Nb_2O_5.

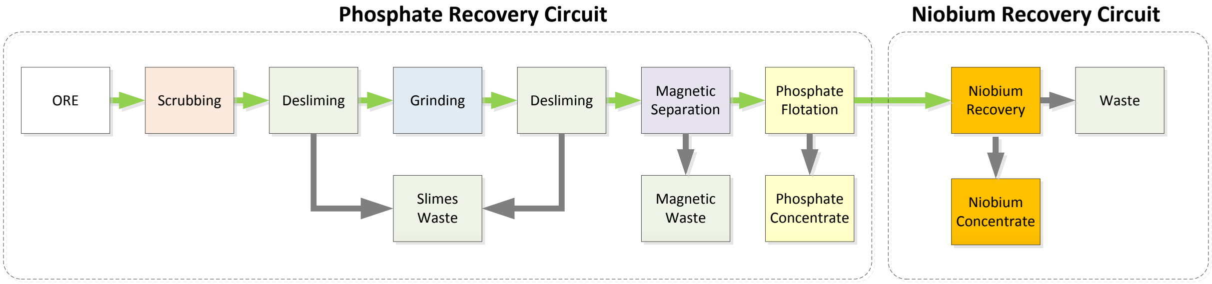


Figure 13-5 General treatment scheme for Phosphate and Pyrochlore recovery

Flotation of the pyrochlore was carried out under acid conditions using the flowing reagent scheme.

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[2] “An investigation into the Recovery of Phosphate and Pyrochlore from Martison Lake Samples”, Lakefield Research of Canada Limited, Lakefield, Ontario, June 11, 1982

Table 13-5: Typical reagent scheme and addition rates (1982)

Reagent	Dosage g/t	Purpose
HCl	600-1000	Pre-treatment to destroy residual reagents
Oxalic Acid	200-400	Gangue-mica depressant
H_2SiF_6	1000-2000	Pyrochlore activator
Duomac 3 / Ethofat (3:1)	200-400	Pyrochlore collector
Hydroxy-Quinoline	20-40	Selectivity aid

In 1983, a new bench scale flotation study including lock cycle tests, was carried out, on a sample composited from thirteen sonic drill-hole samples[3]. The study focused primarily on optimisation of the phosphate flotation circuit to minimize losses of niobium in the slimes and magnetic separation waste streams.

The 1983 composite sample was lower in niobium content and higher in iron and mica than the 1982 sample. The pyrochlore minerals were finer with 24% of the Nb_2O_5 contained in the slimes portion as compared to 16% in the 1982 sample. A mineralogical examination identified two major types of pyrochlore: one was a red mineral with flotation characteristics similar to hematite that was difficult to recover and one, a yellow mineral, which was readily floatable.

The basic flowsheet for phosphate recovery developed in 1982 was maintained but due to the increased quantity of slimes and the higher mica content, it was necessary to add an additional desliming stage and a mica pre-flotation step before pyrochlore flotation. The modified flowsheet is shown in Figure 13-6.

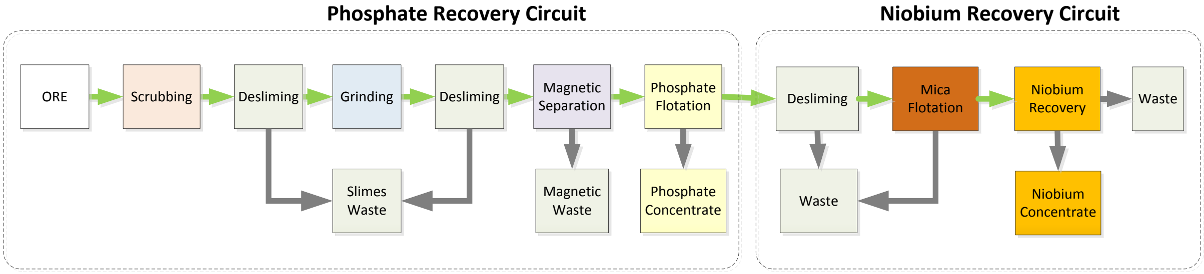

Figure 13-6 Modified treatment scheme for Phosphate and Pyrochlore recovery

The best results produced a concentrate containing 46.7% Nb_2O_5 with 30% Nb_2O_5 recovery.

Tests conducted at high temperature (50°C) improved the quality of the concentrate to 56.3% Nb_2O_5 but decreased the recovery to 12.5% Nb_2O_5. It was observed that the decrease in recovery was a result of loss of the red pyrochlore in the cleaning stages.

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[3] "The Recovery of Phosphate and Niobium from samples submitted by Camchib Resources Limited", Lakefield Research of Canada Limited, Lakefield, Ontario, Nov 22, 1983

Table 13-6: Typical reagent scheme and addition rates (1983)

Reagent	Dosage g/t	Purpose
Calgon	50	Dispersant used in desliming
MRL278	100	Nb_2O_5 depressant
T50	20	Mica Collector
MIBC	20	Frother
H2SO4	300	Acid to remove residual reagents
Oxalic Acid	575	Gangue-mica depressant
H2SiF6	1800	Pyrochlore activator
Duomac 3/ Ethofat (3:1)	400	Pyrochlore collector
Hydroxy-Quinoline	40	Selectivity aid

In 1984 a very extensive test campaign[4] was carried out that included large capacity bench scale and pilot scale tests. The sample used in this study was a 65 tonne bulk sample obtained from 48 inch diameter churn drill-holes.

The laboratory testwork was carried out to confirm the previous flowsheet for phosphate beneficiation and to further develop a process to recover Nb_2O_5. The pilot plant testwork was performed to confirm that the developed laboratory procedure is valid in a continuous operation.

The bulk sample was richer in phosphate and niobium and lower in iron and micas. Table 13-7 compares some key parameters for the three samples tested in 1982, 1983 and 1984.

Table 13-7: Comparison of Feed Samples tested in 1982, 1983 & 1984

Year	Chemical Analysis (Feed)			Slimes Content	
	P_2O_5 %	Nb_2O_5 %	Fe %	Mass %	Nb_2O_5 Dist. %
1982	22.3	0.72	9.85	20.0	16.8
1983	25.1	0.45	11.50	18.0	24.5
1984	27.2	0.83	9.30	15.0	8.5

The 1984 bulk sample contained a slightly lower total mass of slimes in the feed compared to prior samples, but significantly less niobium was present in this size fraction. This decreased the losses of Nb_2O_5 in the desliming stages making more pyrochlore available for recovery.

The lower mica content allowed the niobium flotation to be conducted without a mica pre-flotation step, simplifying the circuit.

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[4] “A laboratory and Pilot Plant Investigation of The Recovery of Phosphate and Niobium from Hole 60B samples submitted by Camchib Resources Limited”, Lakefield Research A Division of Falconbridge Limited, Aug 10, 1984

The presence of slimes was found to be detrimental to the recovery of pyrochlore and the flowsheet was modified to include additional desliming stages. The final flowsheet is shown in Figure 13-7.

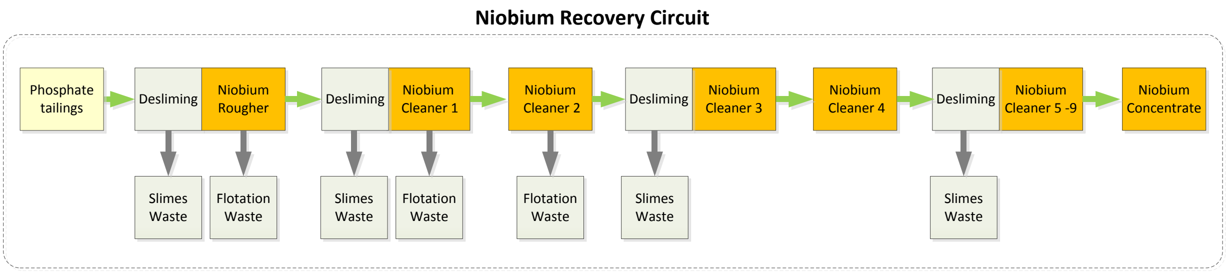

Figure 13-7 **Bench scale and pilot plant treatment scheme for pyrochlore recovery**

Using this flowsheet, it was possible to obtain a good quality pyrochlore concentrate containing 57% Nb_2O_5 with an overall niobium recovery of 60%. The metallurgical balance showing the complete beneficiation process for phosphate and niobium based on large batch tests is shown in Table 13.8

Table 13-8: **Results from large batch scale tests**

Product	Wt %	Analysis			Distribution		
		P_2O_5 %	Nb_2O_5 %	Fe %	P_2O_5 %	Nb_2O_5 %	Fe %
Phosphate Concentrate	58.99	37.10	0.10	1.65	79.7	6.9	10.5
Niobium Concentrate	0.88	1.82	57.50	2.71	0.1	59.5	0.3
Slimes Waste	15.49	19.06	0.47	12.30	10.7	8.6	20.6
Magnetic Waste	4.92	3.22	0.45	55.60	0.6	2.6	29.5
Floatation Waste*	19.72	12.46	0.96	18.42	8.9	22.4	39.2
Feed	**100.00**	**27.47**	**0.85**	**9.27**	**100.0**	**100.0**	**100.0**

* calculated

Table 13-9: **Typical reagent scheme and addition rates (1984)**

Reagent	Dosage g/t	Purpose
H_2SO_4	800	Acid to remove residual reagents
Oxalic Acid	1300	Gangue-mica depressant
H_2SiF_6	1350	Pyrochlore activator
Duomac 3/ Ethofat (3:1)	160	Pyrochlore collector
DPG	40	Promoter (composition unspecified)

The flowsheet was tested in the pilot plant using tailings generated by the phosphate pilot plant. A series of five continuous pilot plant runs were conducted at a feed rate of 100 kg/h. The pilot plant was unable to replicate the results from the bench scale tests. The final concentrate from the pilot plant campaign contained 20% Nb_2O_5 – 25% Nb_2O_5 with an Nb_2O_5 recovery between 45% - 59%.

The various tests carried out between 1982 and 1984 showed that the niobium recovery process is very sensitive to the presence of slimes. A very efficient desliming process to remove the -10µ size material is necessary for successful pyrochlore flotation. Increased levels of mica and iron affect the selectivity of the process as they tend to co-concentrate with the pyrochlore making it difficult to produce a high grade concentrate and may necessitate a separate mica flotation circuit.

The composition of the pyrochlore (red versus yellow) has a pronounced influence on the metallurgical performance as only yellow pyrochlore exhibited good flotation characteristics.

13.2.3 Recent Testing (2009 – 2012)

In 2009, a major beneficiation programme was carried out by Jacobs Engineering at Lakeland, Florida on behalf of PhosCan using samples obtained from a 2008 bulk sample drilling programme. The purpose of the pilot plant was to confirm and improve the beneficiation flowsheet that was developed and described in the 2008 PFS report.

The pilot plant concentrated phosphate minerals only and no niobium recovery tests were conducted. Samples of the phosphate flotation tailings and magnetic separation circuits were retained for future niobium testing.

In 2010, COREM, on behalf of IAMGOLD, former owners of the Niobec niobium mine, evaluated a 240 kg sample of pilot plant tailings generated by Jacobs Engineering with the aim of studying various methods of enriching the niobium[5]. A mineralogical examination determined that Niobium is present in form of ferrocolumbite and pyrochlore. The main gangue constituents are apatite, micas, goethite and carbonates. Liberation of pyrochlore is obtained between 150 and 106 µm.

The test programme examined gravity concentration (Mozley tables and Kelsey Centrifugal Jigs), magnetic separation and flotation as means to concentrate or pre-concentrate the pyrochlore minerals.

Gravity concentration makes use of differences in the specific gravity of minerals of a similar size, to affect a separation. The Mozley table tests and Kelsey jig showed that some upgrading of the flotation tailings was possible using gravity separation. The recovery of gravity rougher-scavenger of 57 % Nb_2O_5[6] was achieved, however, further upgrading of the concentrate resulted in severe loss in recovery.

A simple flowsheet was tested involving magnetic separation followed by de-sliming (cyclone) and gravity (Kelsey Jig) and a final scavenging gravity step. The gravity concentrate recovered 52% of the Nb_2O_5 and TaO_2 grading 2.5% Nb_2O_5 and 0.03% TaO_2. Gravity concentration can potentially be utilised as a “non-chemical” way to

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[5] “Pre-concentration of Pyrochlore minerals by Kelsey Jig – Final Report”, Corem, May 26, 2010

[6] The recoveries reported by COREM are calculated on the basis niobium content in the phosphate flotation tailings and do not take into account losses incurred in the preceding processing stages. Actual niobium recoveries, based on ROM feed are considerably lower.

reject lighter elements like mica, but as a primary method for recovery of pyrochlore it is not recommended.

A total of 12 flotation tests were performed by Corem. Test 10 employed a de-sliming step (cyclone) followed by sequential calcite and pyrochlore flotation. Four cleaner stages and four cleaner scavengers resulting in five final concentrates and one calcite concentrate from the up-front calcite flotation.

The reagent scheme was AKF2, MR206, sodium silicate, Amidon 1201C, which is similar to the approach used at Niobec. The calcite float was at pH 9, the roughers at pH 7 and the cleaners and scavengers at pH 2.5 to 4. The results were poor, 65% of the Nb_2O_5 reported in concentrates averaging 2.3% Nb_2O_5.

Test 12 utilised a modified flowsheet as shown in Figure 13-8. An additional stage of cleaning was added and the cleaner-scavenger stages were eliminated for all but the last cleaner stage.

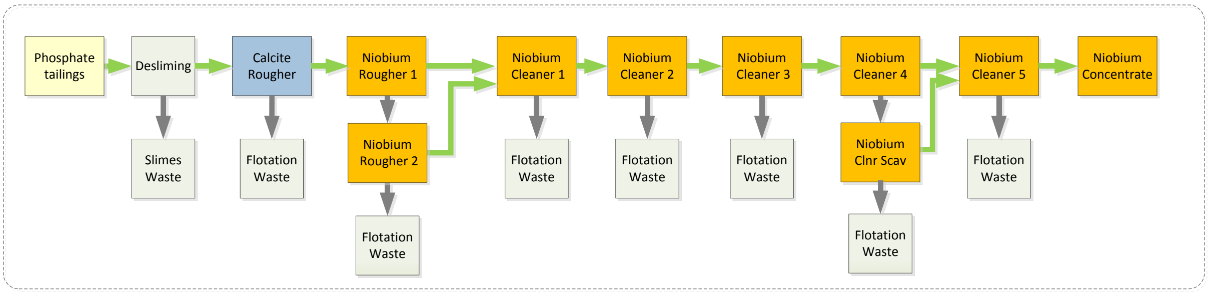

Figure 13-8 Corem niobium recovery circuit

The best results obtained at Corem, was a final concentrate of 43.4 % Nb_2O_5 obtained at the 5th cleaning stage, with an Nb_2O_5 recovery of 28.9%.

A niobium beneficiation programme[7], conducted from March 2011 - December 2012, on behalf of PhosCan was carried out by Eriez Flotation Division (“**EFD**”) initially using the laboratory facilities of SGS Mineral Services, Vancouver, BC and later transferred to EFD laboratories at Erie, PA, USA.

A total of five samples were used for testing over the course of the test programme and included:

- The phosphate flotation tailings blended with the magnetic concentrate from the wet high intensity separator obtained during the 2009/10 phosphate flotation pilot plant study,
- A sample of slimes waste collected in 2010 during feed preparation for phosphate column flotation testing,
- A sample of 2b ore, a high grade sample with low mica content and without any paramagnetic minerals,

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[7] “Development of a Niobium Flotation Process for Martison Phosphate Ore”, Final Report R211034-130304, Eriez Flotation Division, March 4 2013

- Phosphate flotation tailings collected from the column flotation tests carried out on 2a+2b ore, also without any paramagnetic minerals, and
- Phosphate flotation tailings collected from the column flotation tests carried out on 400 kg sample of 2a+2b ore, also without any paramagnetic minerals but ground to a coarser size

13.2.3.1 Sample 1: 2009/10 Pilot Plant Tailings

Sample 1 consisted of a blend of two waste streams; phosphate flotation tailings and paramagnetic WHIMS concentrate, collected during the 2009/10 phosphate flotation pilot plant tests conducted by Jacobs Engineering (Florida). The flowsheet used for phosphate recovery was essentially the same flowsheet developed by Lakefield Research in the 1980's.

This sample was used as the main feed stock for the preliminary flowsheet development tests conducted at SGS Minerals Services laboratory in Vancouver, BC. The average feed grade of the combined sample is shown in Table 13-10. The inclusion of the magnetic concentrate from the WHIMS separator significantly increased the level of iron and titanium of the sample.

Table 13-10: Pilot Plant Tailings

Analysis %							
P_2O_5	Nb_2O_5	SiO_2	Al_2O_3	Fe_2O_3	MgO	CaO	TiO_2
15.30	0.98	10.40	6.30	19.80	6.48	21.70	2.16

A preliminary flowsheet consisting of desliming and sequential apatite and pyrochlore flotation was studied. The conditions providing the best flotation of pyrochlore used fluosilicic acid and oxalic acid as activators, and a combination of NB-99 and Genagen OS-150, both from Clariant, as collectors. A defoaming reagent, Resipel AE-110 was used to improve control of the froth.

The best test produced a concentrate grade of 20.2 % Nb_2O_5 at a recovery level of 29.7 % Nb_2O_5, based on the feed to the niobium circuit. This equates to approximately 10.7% overall Nb_2O_5 recovery based on ROM ore. The main concentrate contaminants were SiO_2, Al_2O_3 and Fe and Ca oxides.

Due to the lack of any significant further improvement of the results, a decision to remove the paramagnetic minerals from the phosphate flotation tailings was made as it was believed these minerals were detrimental to the selectivity of the process.

The remaining samples were shipped to the EFD laboratories in Erie, PA for treatment using a high intensity magnetic separator to remove the paramagnetic minerals. Further flotation testing continued at Eriez. Despite removal of the paramagnetic minerals, the sample remained unresponsive. Several tests were conducted to evaluate the benefit of mica pre-flotation, but this also was unsuccessful.

As the samples were aged, the lack of flotation response was assumed to be due to sample degradation cause by sample aging. Further flotation testing of this sample was discontinued.

13.2.3.2 Sample 2: Slimes Waste

The slimes waste is a stream consisting of <20µm material, largely clays and iron oxides, that must be removed from the ore prior to phosphate flotation. Removal of the slimes represents a major source (>20%) of niobium losses.

Chemical analysis of the slimes sample is shown in Table 13-11.

Table 13-11: Slimes Waste

Analysis %							
P_2O_5	Nb_2O_5	SiO_2	Al_2O_3	Fe_2O_3	MgO	CaO	TiO_2
19.00	0.53	9.51	6.31	18.10	4.62	26.20	1.14

A series of fifteen preliminary niobium flotation tests (PF12–PF27) were conducted on the slimes material. Varying combinations of activators and collectors were tested, but none of the tests achieved any selectivity. The recovery of niobium was directly proportional to the mass recovery and very little upgrading of niobium values was observed. Due to the lack of any encouraging results, a decision was made to defer any further testing on this material.

13.2.3.3 Sample 3: Treatment of Lithotype 2b Sample

The Martison lithotype within the residuum, referred to as '2b' is very amenable to flotation, containing less iron and mica than the 2a+2b composite ore also tested. The '2b' type material is similar to the ore used in the 1984 study at Lakefield.

A series of six tests were conducted using the same flowsheet and chemistry that was utilized for the Pilot Plant tailings sample. A concentrate grade of 54% Nb_2O_5 was achieved at a recovery level within the niobium flotation circuit, of over 50%. Taking into account the losses in the feed preparation stages and phosphate flotation circuit, the actual recovery on the basis of ROM ore is estimated to be 16.5%.

No further optimisation tests were conducted on '2b' ore.

13.2.3.4 Sample 4: Fresh sample of combined 2a+2b Lithotypes

To address the question of sample aging, a fresher sample of 2a+2b material, recently generated from a parallel phosphate column flotation test programme was utilised.

It was evident from the flotation response and froth characteristics that the fresh sample was easier to treat than an aged sample. The higher mica content and higher slimes content made it difficult to achieve selectivity directly from the phosphate flotation tailings. It was necessary to use a modified flowsheet to achieve a final concentrate greater than 50% Nb_2O_5.

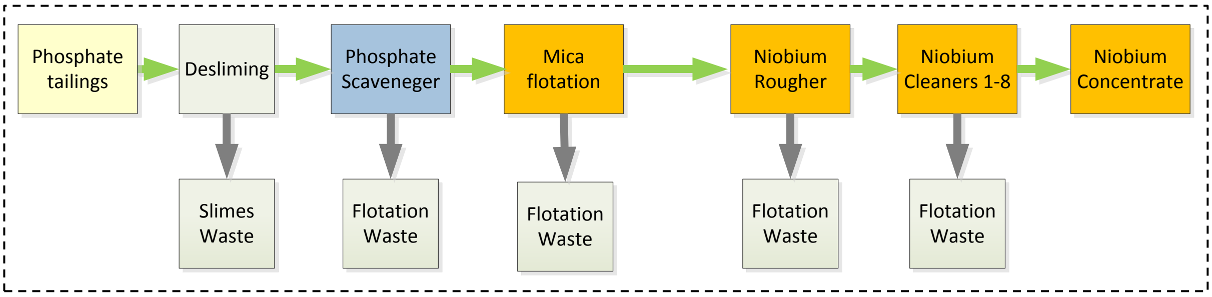

Figure 13-9 Niobium Recovery Circuit 2a + 2b Ore Modified Flowsheet

Test 135 achieved a concentrate grade of 51.9% Nb_2O_5 with a good level of recovery within the Niobium flotation stage. Losses in the various pre-treatment stages reduced the overall niobium recovery based on ROM ore to 13.5%. An evaluation of the niobium losses from various pre-treatment steps for the fresh 2a+2b sample is presented in Table 13-12.

Table 13-12: Distribution of Niobium to Various Waste Streams

Stream	Mass %	Grade % Nb_2O_5	Distribution % Nb_2O_5
Primary Slimes*	32.30	0.36	29.7
Mags. (lims)*	5.10	0.50	6.5
WHIMS Para Magnetics*	11.40	0.90	26.2
Phosphate Concentrate	34.50	0.06	5.3
Phosphate 2nd Cleaner Tails	6.50	0.19	3.2
Secondary Slimes	2.30	0.79	4.6
Phosphate Scav	0.80	0.48	1.0
Mica/Silicate Concentrate	1.50	0.76	2.9
Niobium Flotation Tails**	5.60	0.61	8.7
Niobium Concentrate	0.09	51.80	11.9
Calculated Feed	100.00	0.39	100.0

* Estimated values pending assay confirmation

** Includes losses in Cleaner tailings

The majority of the niobium losses (70%) occur in the feed preparation and phosphate flotation stages especially in the desliming and WHIMS separation steps.

Several tests were conducted aimed at reducing losses in these stages to increase the deportment of niobium to the niobium recovery circuit.

These included:

- Mineralogical examination of the paramagnetic fraction;
- Flotation of paramagnetic minerals together with Phosphate tailings;
- Magnetic fractionation of the WHIMS concentrate;
- Gravity concentration of the paramagnetic;
- Gravity concentration of the phosphate flotation tailings;

- Retreatment of the primary slimes in a second stage of cyclones to make a finer cut; and
- Retreatment of the captured fines.

The mineralogical study[8] showed that Pyrochlore accounts for 67.7% of the total Nb in the sample and columbite for 8.5%. Liberation of pyrochlore ranges from 78% to 68% for grain sizes of 209 µm, 46 µm and 8 µm. Assuming that all the liberated pyrochlore and columbite is recovered, it would account for approximately 52% and 3% of the total Nb in the sample, respectively. The remainder would theoretically be in the form of middlings with various minerals.

Several flotation tests of a mixture of paramagnetic minerals and phosphate flotation tails were conducted under combinations of the following conditions:

- with or without desliming;
- with or without phosphate scavenging; and
- with or without mica/silicates pre-floatation.

No good results were achieved with these tests. All of the conditions that were tested resulted in very high levels of TiO_2 in the concentrate.

To evaluate the possibility to selectively separate the ilmenite and pyrochlore using magnetic separation, a magnetic fractionation test was conducted on the paramagnetic concentrate. This test subjects the sample to different magnetic field strengths to determine the magnetic susceptibility of various minerals. Figure 13-10 shows the response of the two minerals to varying field strengths.

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[8] “An Investigation by High Definition Mineralogy into the mineralogical characteristics of A Niobium Tailing Sample” prepared for Eriez Manufacturing, SGS, September 14, 2010

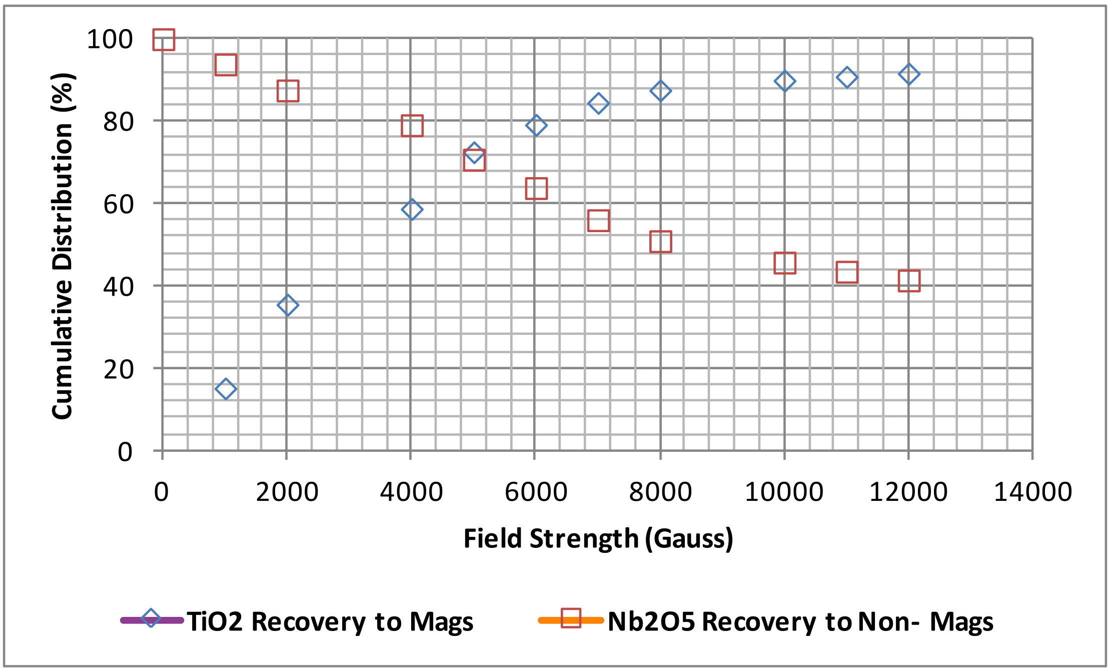

Figure 13-10 **Results of magnetic fractionation test**

While both the ilmenite and pyrochlore have magnetic susceptibility, the ilmenite is recovered more easily than the pyrochlore. At 5000 gauss, over 70% of the ilmenite reports to the magnetic fraction compared to less than 30% for the pyrochlore.

A series of four tabling tests were carried out on samples of the WHIMS magnetic concentrate, to determine if minerals present in the magnetic fraction could be separated using gravity separation methods. The tests were conducted using a Deister Shaking table and showed separation between the different mineral species using gravity separation was possible. The test shows that for 80% niobium recovery, 70% of the silicates and 45% of the phosphate minerals could be rejected. The separation efficiency is shown in Figure 13-11.

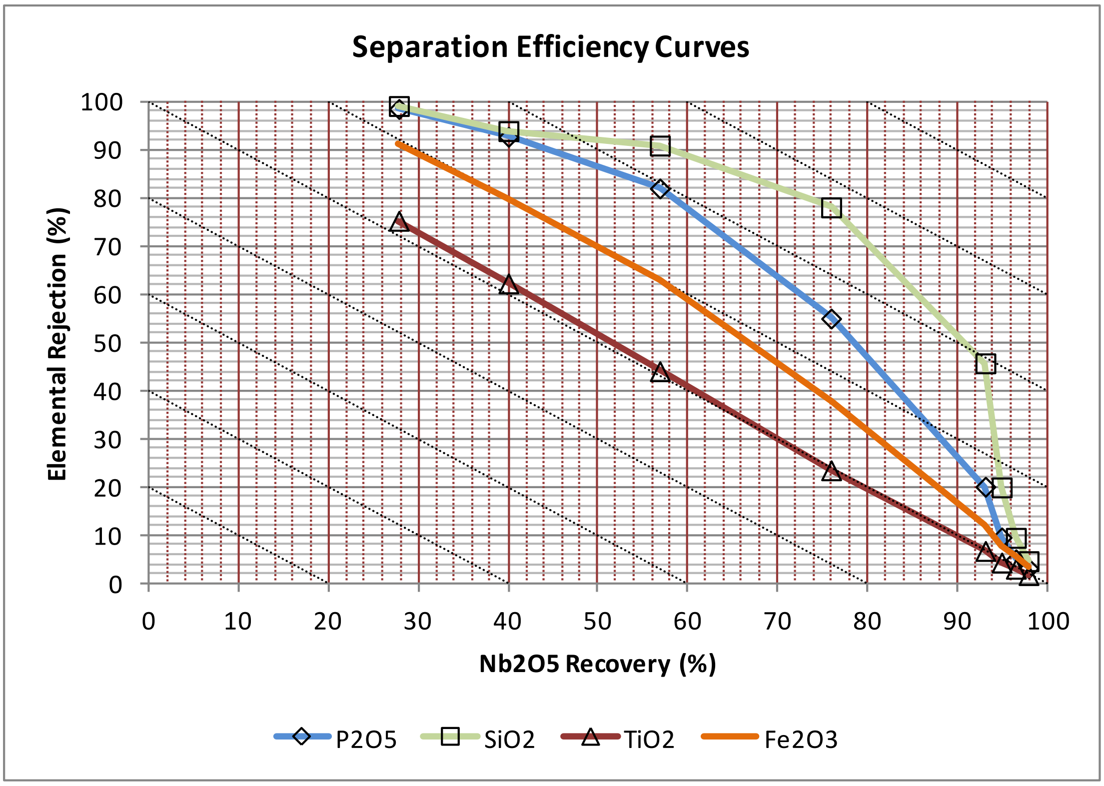

Figure 13-11 **Separation efficiency of shaking table**

A gravity separation test was conducted on a sample of phosphate flotation tailings to evaluate the benefit of using tables as an alternative to desliming with cyclones and sequential phosphate and mica flotation. The results show an increase in niobium recovery of 5% Nb_2O_5 for the same level of enrichment compared to desliming and flotation of the impurities. The gravity desliming approach has an added advantage of not requiring flotation chemicals which can interfere with the downstream niobium flotation process.

Niobium losses to the primary slimes account for almost 37% of the total ROM niobium content for this sample. By comparison, slimes Nb_2O_5 losses ranged from 8.5% to 24.5% in the tests conducted in 1982-1984 and 27% for the 2009 pilot plant study. Investigation revealed that this particular sample had been over ground resulting in abnormally high quantity of fines. Phosphate flotation require particles finer than 20 microns to be discarded to achieve specifications for product impurities.

Tests were carried out to reprocess these slimes in a second stage of cyclones to reject particles finer than 7 microns. The recaptured particles between 7 microns and 20 microns are sent directly to the niobium recovery circuit.

The results showed no preferential upgrading of the niobium in the second stage cyclone. Niobium deportment was the same as the solids deportment. Approximately 40% of the niobium lost in the primary desliming step can be recaptured by retreatment at a finer cut size.

Treatment of the recaptured fines by low intensity and medium intensity magnetic separators removed only a small amount of iron and titanium.

13.2.3.5 Sample 5: 400 kg sample of 2A+2B Material

An alternate flowsheet was developed based on the findings of the previous tests to reduce losses of niobium in the pre-treatment and phosphate flotation stages.

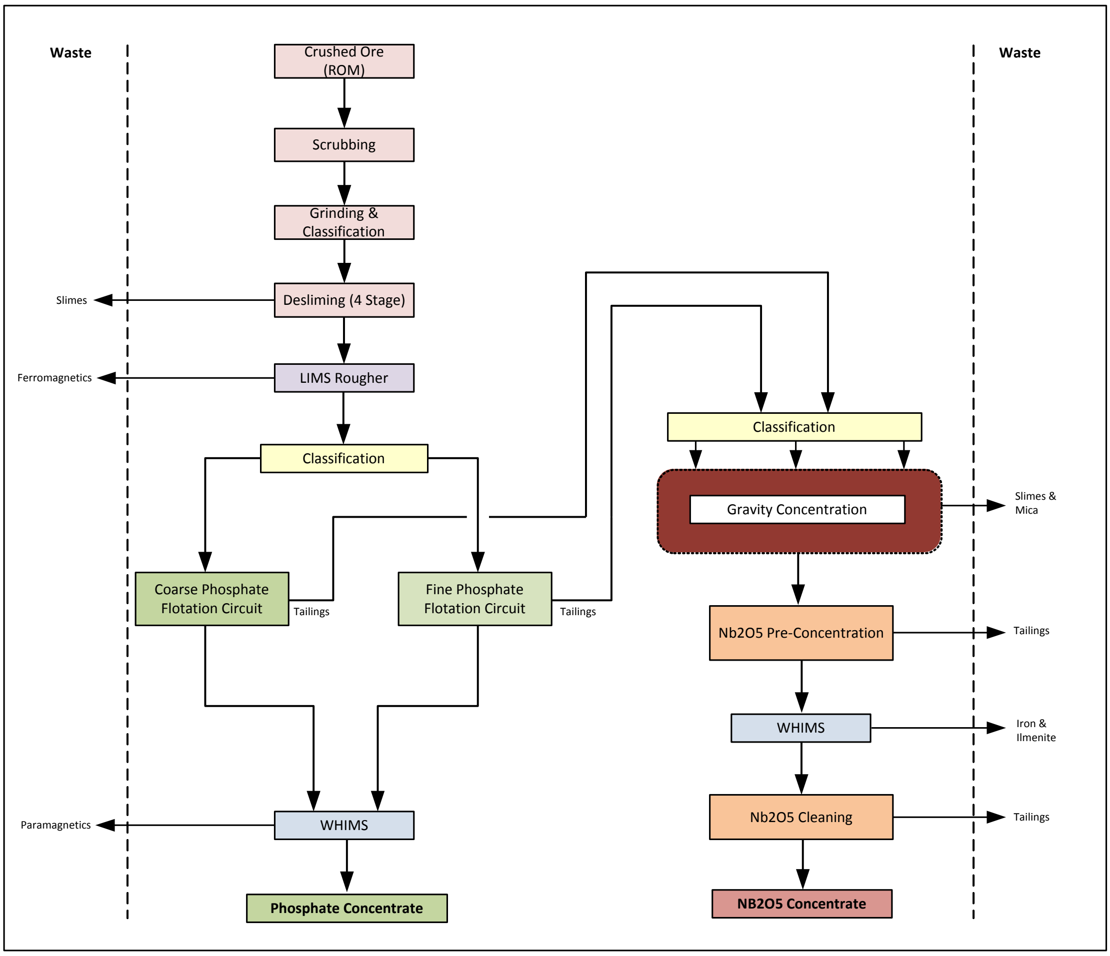

Figure 13-12 Alternate flowsheet for phosphate and niobium recovery

Using a 400kg sample of residual 2A, 2B and 2A+2B blended material (remnants from the 2009 pilot plant programme), a new niobium flotation feed sample was generated making use of the new flowsheet.

The redesigned phosphate flowsheet increased the niobium distribution to the niobium recovery circuit from 25% to 55% and increased the overall recovery of niobium to 21% based on ROM ore.

An alternate reagent scheme was developed that utilized hydroxamate as a collector for niobium in the rougher and first two cleaner stages. The second cleaner concentrate was treated by magnetic separation to separate iron and titanium minerals from the pyrochlore. The final stages of cleaning were carried out using an amine collector in an acid circuit to achieve the final concentrate grade.

Table 13-13: Final reagent scheme

Reagent	Dosage g/t	Purpose
Sodium hexametaphosphate	1000	Phosphate depressant
Hydroxamate	1000	Niobium Collector
Oxalic Acid	125	Gangue-mica depressant
H2SiF6	535	Pyrochlore activator
NB99	10	Pyrochlore collector
Genagen	4	Promoter

The final concentrate quality was approximately 50% Nb_2O_5. Simplified mass balance is shown in Table 13-14.

Table 13-14: Simplified Mass Balance

Products		Grade (%)		Distribution (%)	
	Mass % (overall)	Nb2O5	P2O5	Nb2O5	P2O5
ROM Ore	100.0	0.53	25.18	100.00	100.00
Slimes	19.0	0.61	16.60	21.77	12.52
Low Intensity Magnetic Waste	7.4	0.32	4.84	4.43	1.42
Combined Phosphate Concentrates	43.9	0.17	37.04	13.69	64.65
High Intensity Magnetic Waste	5.9	0.39	26.29	4.32	6.13
Combined Table Tailings	6.8	0.67	14.22	8.52	3.82
Niobium Concentrate	0.2	49.80	0.53	20.73	0.005
High Intensity Magnetic Waste	2.0	0.84	2.30	3.22	0.19
Total Combined Nb Flotation Tails	14.8	0.84	19.17	23.31	11.27

13.2.4 Mineralogy

A mineralogical analysis[9] was performed on five process streams in order to determine the form of the Nb losses. The desired outcome was to gain a better understanding of the mineralogy surrounding the Nb minerals and to give insight where modifications to the present flowsheet will allow maximum flotation recovery of pyrochlore (the main Nb mineral being targeted for recovery).

The five process streams submitted for mineralogical characterisation were:

- Primary Slimes (-20µm);
- Coarse Phosphate Concentrate (-355µm/+106µm);

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[9] "Eriez Phosphate Niobium mineralogical Characterization", XPS-process Mineralogy, Feb 13,2013

- Fine Phosphate Concentrate (-106µm);
- Niobium Flotation Tailings (-106µm); and
- Niobium Flotation Concentrate (-106µm).

Based on the distribution of Nb_2O_5 to the Nb waste streams, calculations were made to give an indication of the recovery opportunities. Liberated opportunities in the Primary Slimes are presented however all liberated pyrochlores and columbites in this sample average 8µm in grain size. This data is shown in Table 13-15.

Table 13-15: Recovery Opportunities Based on Eriez Nb_2O_5 Distribution

	Nb Tail	Fine PO_4 Concentrate	Coarse PO_4 Concentrate	Primary Slimes
Nb_2O_5 Distribution Eriez %	26.80	14.30	10.10	21.80
Nb in Pyrochlore/Columbite %	69.56	52.09	77.74	50.12
Liberated Pyrochlore/Columbite %	79.95	69.28	55.24	69.96
Average Grain Size of Liberated Material	68	51	114	8
Nb_2O_5 Recovery Opportunity %	14.90	5.16	4.34	7.64

The Niobium Tail presents the biggest opportunity with 14.9% of Nb_2O_5 available in coarse liberated pyrochlore and columbite. The next biggest opportunity is in the Primary Slimes however the pyrochlore and columbite grain size average is 8µm.

13.2.5 Summary & Conclusions

The recent testwork conducted on samples of 2A + 2B material has demonstrated that it is possible to produce high grade concentrates of Niobium. Several tests (EPF131, EPF135, EPF153, EPF171) produced a final concentrate greater than 50% Nb_2O_5. The recovery of Nb_2O_5 is very low for all tests, estimated to be about 20% based on ROM ore. By comparison, the tests conducted in 1984 produced a concentrate grade that was 57% Nb_2O_5 with 60% recovery on a sample that was significantly different from the 2A+2B composite.

The desliming, magnetic separation and phosphate flotation circuits rejected up to 75% of the niobium to waste streams using the standard flowsheet. Using the modified flowsheet, the losses were reduced to about 55%.

The niobium recovery flowsheet makes use of gravity concentration for desliming and removal of lighter elements, such as mica, instead of flotation. The pyrochlore flotation circuits uses hydroxamate as a niobium collector for the rougher and first two stages of cleaning. The second cleaner concentrate is treated by magnetic separation to separate iron and illmenite from the pyrochlore. Four additional cleaning stages using an amine at low pH are required to produce a final concentrate greater than 50%.

A mineralogical examination of the main waste streams identified an opportunity to recover additional niobium from the niobium flotation tailings and possibly from the slimes waste.

13.2.6 Recommendations for Future Work

Additional work is required to improve the recovery of niobium both in the pre-treatment stages and the niobium recovery process.

A continuous pilot plant will be required to verify the stability of the flowsheet and to generate a bulk niobium concentrate for further processing to Ferroniobium.

14 MINERAL RESOURCE ESTIMATES

14.1 Summary

DMT has built a new resource block model to estimate a Mineral Resource for the Martison Phosphate Project. The model was built with a drillhole database cut-off date of 1st November, 2014. The Mineral Resource Estimate, with an effective date of 30th November, 2014, and has an issue date of March 9 2015, is presented in Table 14-1.

Anomaly A Residuum contains as estimated 54.3 Mt of Indicated Mineral Resources at a grade of 23.4% P_2O_5 and 0.39% Nb_2O_5, and 83.5 Mt of Inferred Mineral Resources at a grade of 19.1% P_2O_5 and 0.41% Nb_2O_5. The residuum resources are reported at a cut-off grade of 6% P_2O_5.

The laterite contains 9.3 Mt of Indicated Resources at a grade of 7.2% P_2O_5 and 1.21% Nb_2O_5 and 6.3 Mt of Inferred Resources at a grade of 4.8% P_2O_5 and 0.94% Nb_2O_5.

The laterite resources are reported at a cut-off grade of 0.2% Nb_2O_5.

Table 14-1 Martison Mineral Resource Estimate as of 30th November, 2014

Deposit	Classification	Tonnes Mt	Phosphate Grade % P_2O_5	Niobium Grade % Nb_2O_5
Anomaly A Residuum	Indicated Resources	54.3	23.4	0.39
	Inferred Resources	83.5	19.1	0.41
Anomaly A Laterite	Indicated Resources	9.3	7.2	1.21
	Inferred Resources	6.3	4.8	0.94

Notes:

1) CIM definitions were followed for Mineral Resources
2) Mineral Resources are estimated at a cut-off grade of 6% P_2O_5 in the Residuum or 0.2% Nb_2O_5 in the Laterite
3) Mineral Resources are estimated at a Bulk Density of 1.9 t/m^3 (dry)
4) Phosphate Mineral Resources are estimated using a price of US$360 per tonne (basis 100% P_2O_5)
5) Niobium Mineral Resources are estimated using a price of US$30 per kilogramme (65% Nb_2O_5 concentrate)
6) Mineral Resources are constrained by a Whittle open pit
7) A minimum mineralisation width of five metres was used
8) Values for tonnage and grade may not add up due to rounding.

14.2 Geological Model

Three dimensional models of the geology in the Martison Project were constructed by DMT in Geovia Surpac v6.6. A topographic digital terrain model (“**DTM**”) was generated from LiDAR survey data provided by PhosCan.

Two wireframe models of the phosphate mineralised residuum in Anomaly A (based on a 6% P_2O_5 threshold) and five niobium mineralised laterite wireframes (based on a 0.2% Nb_2O_5 threshold) were used in geological and grade continuity studies to constrain the block model interpolation.

Capping (also known as cutting) was not used on the phosphate grades in the residuum as the presence of high grade outliers was minimal; it was capped in the laterite due to the disproportionate number of P_2O_5 high grade outliers. The niobium was capped in the laterite and residuum. Samples were composited to two metres. The Mineral Resource Estimate was estimated using the Inverse Distance Cubed (ID^3) method.

The definitions for Mineral Resource Categories used in this estimate are consistent with those set out in the Canadian Institute of Mining, Metallurgy and Petroleum 2010 Definition Standards on Mineral Resources and Mineral Reserves (“**CIM Definitions**”).

Anomaly A Residuum contains as estimated 54.3 Mt of Indicated Mineral Resources at a grade of 23.4% P_2O_5 and 0.39% Nb_2O_5, and 83.5 Mt of Inferred Mineral Resources at a grade of 19.1% P_2O_5 and 0.41% Nb_2O_5. The residuum resources are reported at a cut-off grade of 6% P_2O_5.

The laterite contains an estimated Indicated Mineral Resource of 9.3 Mt at 1.21% Nb_2O_5 and 7.2% P_2O_5 and an Inferred Mineral Resource of 6.3 Mt at 0.94% Nb_2O_5 and 4.8% P_2O_5 at a cut-off grade of 0.2% Nb_2O_5.

The Mineral Resources are reported within a conceptual (Whittle) open pit (i.e. they are constrained by economic and mining parameters in accordance with best practise).

Anomaly B represents a target for further exploration currently estimated at between 35 Mt and 70 Mt of residuum containing 16% - 20% P_2O_5. The quantity and grade is conceptual in nature and there has been insufficient exploration to define a Mineral Resource. It is uncertain if further exploration will result in the target being delineated as Mineral Resource. It does not represent a Mineral Resource, does not have demonstrated economic viability and is disclosed with a potential quantity and grade, expressed as ranges, that is to be the target of future exploration.

Anomaly C is an early exploration target.

14.3 Wireframe Modelling

14.3.1 Lithological Wireframe Modelling

Lithological wireframe models were created to facilitate geological understanding and controls on the mineralisation for Anomalies A and B. Wireframe models were generated for the till, laterite, residuum and bedrock (Figure 14-1 and Figure 14-2). Distinction was not made between the different lithotypes of residuum noted during logging (e.g. 2A – residuum, 2B – re-cemented residuum and 2C transitional residuum).

Cross-sections at a bearing of 090^o, at intervals usually of 50 m, were drawn through Anomaly A; because of drillhole spacing the most northerly sections were widened to a 100 m interval. Typically, drillholes within 25 m either side of the section line were incorporated into the section; the five most northerly sections brought in drillholes up to 50 m away. The geological model was extrapolated typically 200 m (but possibly extended due to geological continuity) and interpreted between drillholes and between sections.

The digitised interpretations were “snapped” to drillholes. For wire-framing purposes, a trend of 160^o or 340^o was considered optimal.

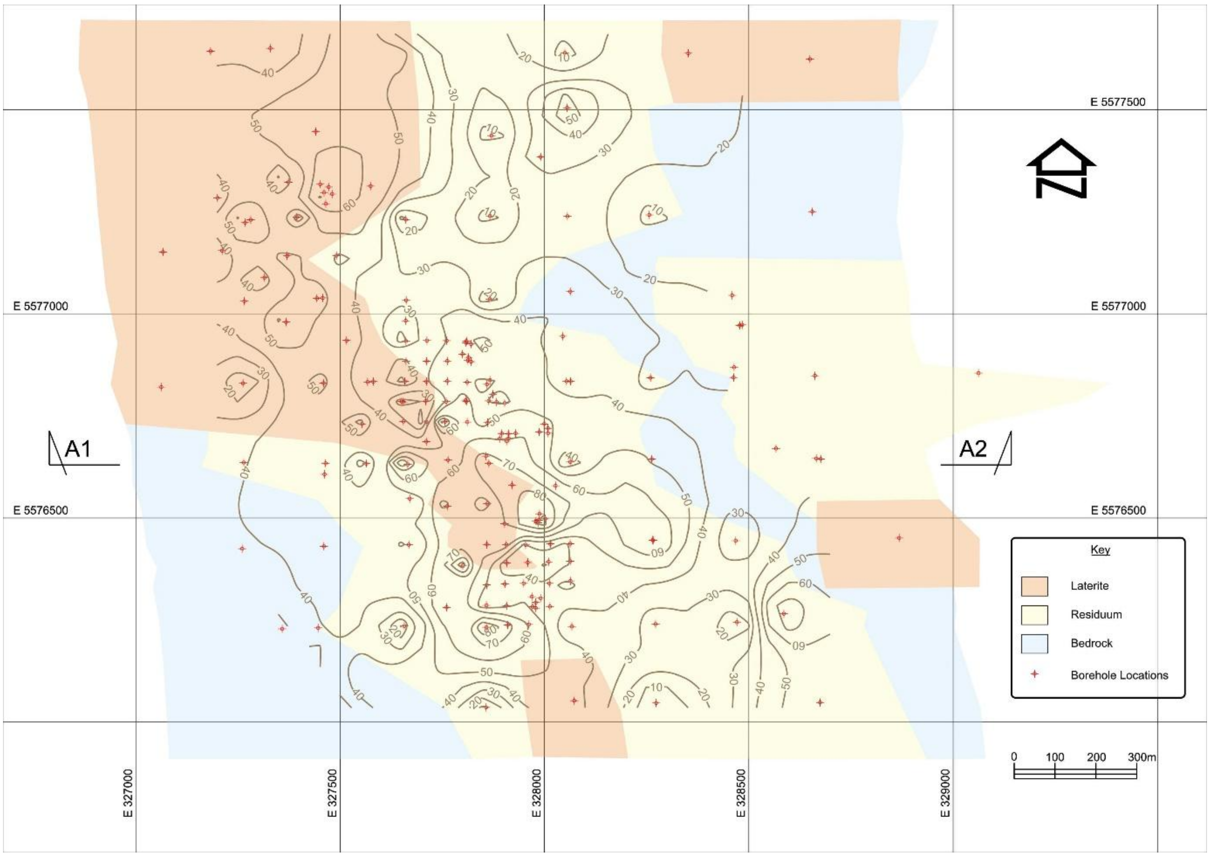
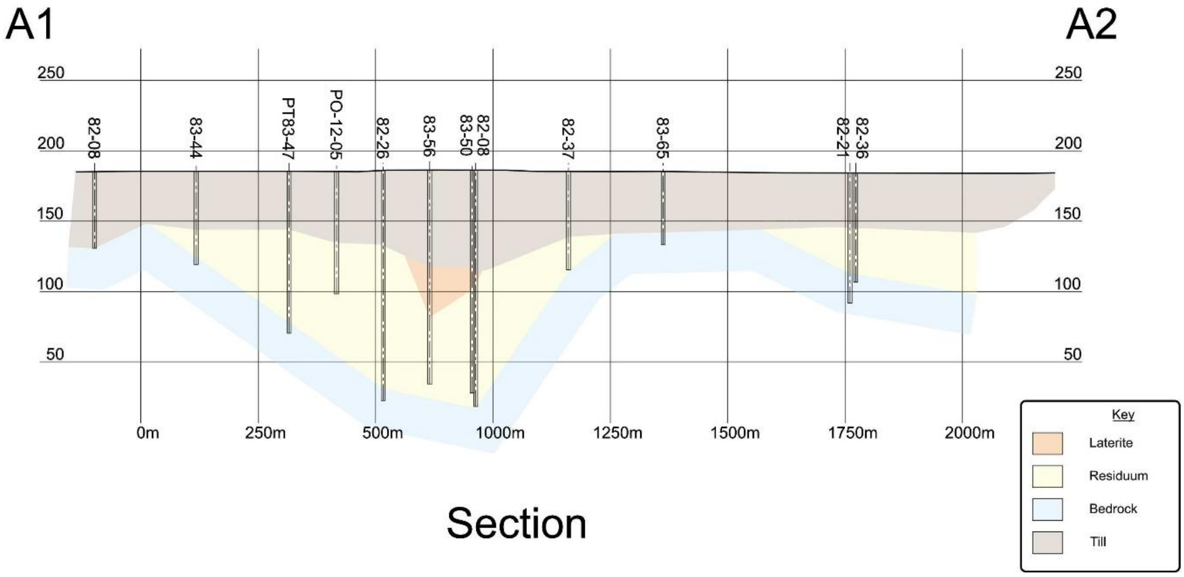


Figure 14-1 **Geological Wireframes – Plan View showing Residuum thickness contours**



Vert. exaggeration x3

Figure 14-2 Geological Wireframes - Section View (5576630N)

Figure 14-3 is a histogram plot of the phosphate assays within Anomaly A residuum and indicates a threshold of 6% P_2O_5 between the anomalous and background populations. Three anomalous sub-populations can be observed (6% - 20% P_2O_5, 20% - 26% P_2O_5 and 26% - 40% P_2O_5) which probably correspond with the residuum sub-types of 2C, 2A and 2B respectively.

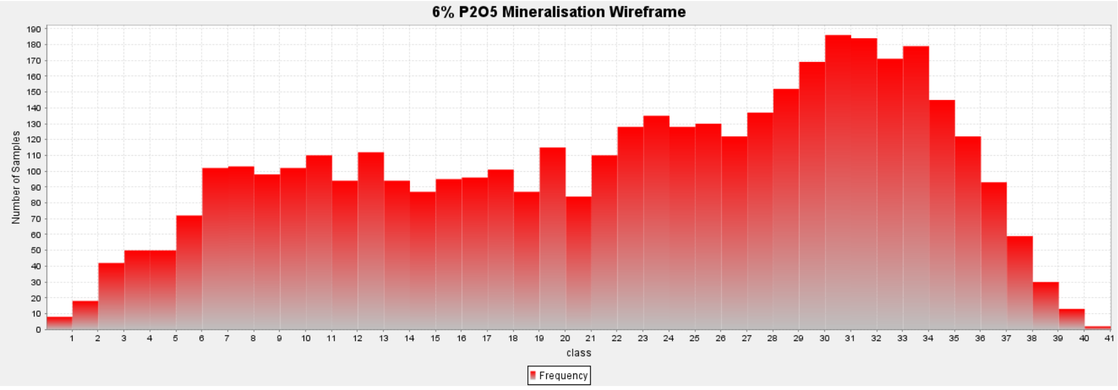


Figure 14-3 Phosphate (P_2O_5) Sample Frequency Histogram

Anomaly B geology was modelled utilising cross-sections at 200 m and 100 m intervals and extrapolation to 200 m along strike (taken at approximately 200°) and perpendicular to strike. Drillhole B6 has not been incorporated into the model due to suspect lithological logging and low phosphate assays. The western portion of Anomaly B residuum is overlain by laterite. Anomaly B residuum is open in all directions (north, south, east and west) and to depth in the south.

The wireframes were checked and validated for intersections, inconsistencies and closure.

14.3.2 Mineralised Residuum Wireframe Modelling

Wireframe models of the Anomaly A phosphate mineralised residuum were utilised in geological and grade continuity studies to constrain the block model interpolation. A threshold of 6% P_2O_5 was taken as the break between mineralised (i.e. anomalous) and non-mineralised (i.e. background) material. Mineralisation was interpreted between drillholes and between sections.

Two mineralised lenses at a threshold grade of 6% P_2O_5 were wireframed, east and west; the western lens is significantly larger and contains 92% of the total estimated Anomaly A resource and all of the estimated Indicated resource. The eastern lens contains only 8% of the total estimated resource and all the tonnage is in the Inferred category. For this reason the technical study of the resource data base in sections 14.6 through 14.9 refers to observations made within the larger western lens of Anomaly A only. (Figure 14-4 and Figure 14-5). The mineralised lenses contain some material below 6% P_2O_5 to preserve interpretation continuity.

A minimum thickness of five metres was employed to constrain the mineralisation.

Along trend and perpendicular to trend (i.e. strike and dip), continuity was generally limited to 200 m. (Note: extrapolation was extended in selected areas for reasons of geological continuity.)

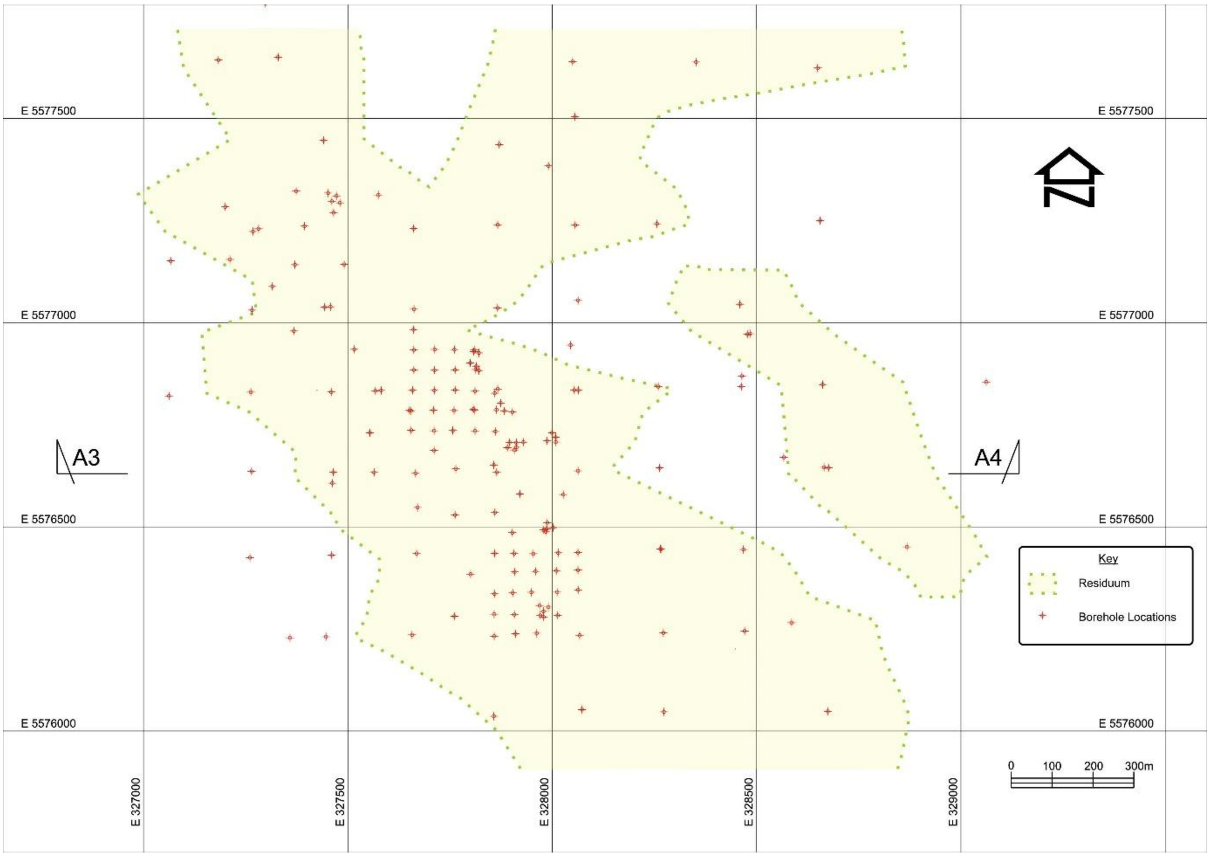
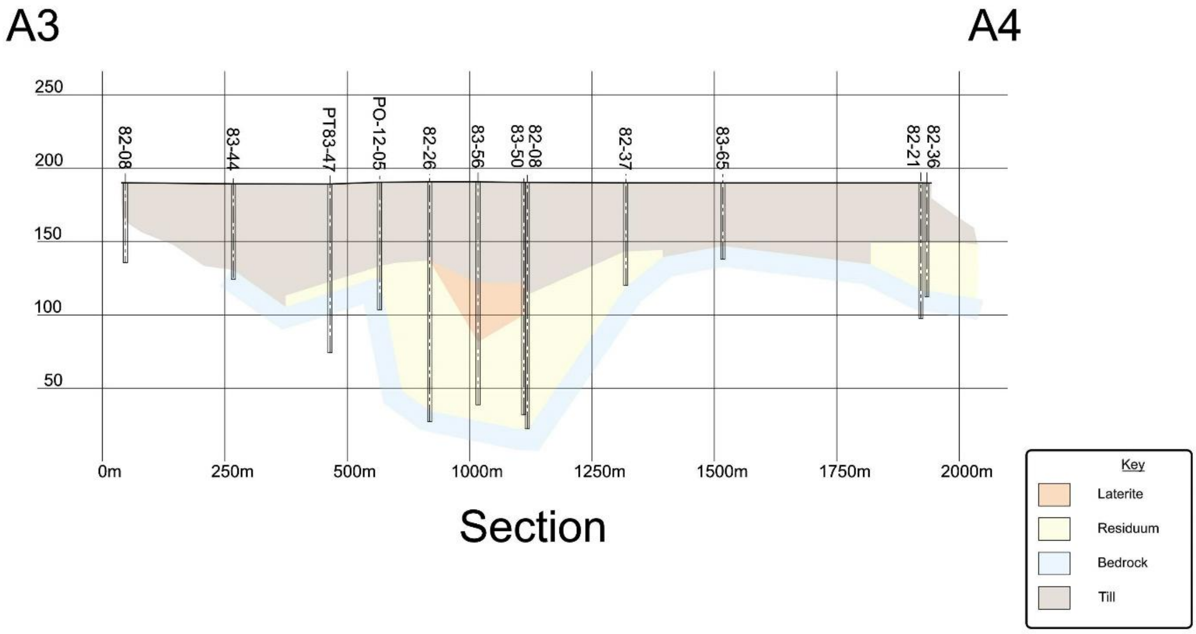


Figure 14-4 **Phosphate Mineralised Wireframes (=6% P_2O_5) – Plan View**



Vert. exaggeration x3

Figure 14-5 Phosphate Mineralised Wireframes (=6% P_2O_5) Section View (5576630N)

Anomaly B phosphate mineralisation was not modelled.

14.3.3 Topography

A digital terrain model (DTM) was created to represent the topographic surface from the LiDAR survey.

DMT assigned some 78 drillhole collar locations within the Anomaly A resource area of interest, the elevations were estimated from the LiDAR survey as they had not been accurately surveyed with regard to elevation. (An additional 13 drillholes outside the area of interest have an assumed elevation of 190 m.)

The drillholes in Anomaly B have been assigned an assumed elevation of 190 m.

14.4 Resource Database

One hundred and ninety-nine (199) drillholes for 19,774 m in the digital drillhole database (totalling 214 holes for 21,412 m) pertain to Anomaly A and were lithologically modelled to include 512 intercepts over 18,833 m, as shown in Table 14-2.

Ninety percent (90 %) of the Anomaly A drillholes intersected residuum (i.e. positive strike rate). The average residuum intersected was 48 m thick, approximately 50 m to 60 m deep below the till or till and laterite. Seventy-three (73) drillholes intersected the laterite with an average thickness of 19 m.

Table 14-2 Summary of Anomaly A Drill Hole Intersections Used for Lithological Modelling

Lithology	No. of Drillhole Intercepts	Average Depth from – to m	Average Thickness m	Total Length of Intercepts m	% of Total Intercepts by Length
Till	180	0 - 48	48	8,583	46%
Laterite	73	57- 76	19	1,355	7%
Residuum	165	57 - 104	47	7,781	41%
Bedrock (Carbonatite)	94	92 - 104	12	1,114	6%
Total	**512**			**18,833**	

The Anomaly A residuum lithological model captured 4,495 samples of which 4,332 had phosphate assays and 4,216 niobium assays. The assays in the residuum have an average assay grade of 21.44% P_2O_5 and 0.40% Nb_2O_5 (Table 14-3).

The laterite model has an average assay grade of 1.05% Nb_2O_5 and 6.11% P_2O_5.

Table 14-3 Anomaly A Lithological Wireframe Assay Statistics

Parameter	Lithological Domain				Total
	Till	Laterite	Residuum	Bedrock	
No. Samples	678	693	4,495	603	**6,469**
Mean Sample Length (m)	11.23	1.65	1.71	1.79	**2.71**
P_2O_5					
No. P_2O_5% Assays	358	631	4,332	477	**5,798**
Mean P_2O_5% Grade	1.28	6.11	21.44	5.06	**17.18**
Median P_2O_5% Grade	0.12	5.71	23.01	4.09	**16.12**
Min. P_2O_5% Grade	0.00	0.02	0.02	0.02	**0.00**
Max. P_2O_5% Grade	33.40	36.60	40.20	34.42	**40.20**
P_2O_5% Standard Deviation	3.92	4.57	10.45	4.18	11.87
P_2O_5% Coeff. of Variation	3.07	0.75	0.49	0.83	0.69
Nb_2O_5					
No. Nb_2O_5% Assays	357	631	4,216	440	**5,644**
Mean Nb_2O_5% Grade	0.05	1.05	0.40	0.22	**0.44**
Median Nb_2O_5% Grade	0.00	0.71	0.28	0.14	**0.26**
Min. Nb_2O_5% Grade	0.00	0.00	0.00	0.00	**0.00**
Max. Nb_2O_5% Grade	1.19	6.22	6.24	5.16	**6.24**
Nb_2O_5% Standard Deviation	0.17	1.01	0.39	0.45	0.55
Nb_2O_5% Coeff. of Variation	3.18	0.97	0.98	2.06	1.26

One hundred and sixty (160) of the drillholes were further utilised to model the Anomaly A mineralised residuum at a threshold of 6% P_2O_5, which incorporated 7,268 m of drill intercepts, as shown in Table 14-4.

Table 14-4 Summary of Anomaly A Drillhole Intersections used for Phosphate Modelling

Area	No. of Drillhole Intercepts	Average Depth from – to m	Average Thickness m	Total Length of Intercepts m
Total	160	46-104	45	7,268

The Anomaly A mineralised residuum wireframes captured 4,283 samples with 4,115 phosphate and 4,013 niobium assays, Table 14-5. The average sample length within the mineralised residuum wireframes was 1.7 m, the average phosphate sample grade was 22.30% P_2O_5 and the average niobium sample grade was 0.41% Nb_2O_5.

Table 14-5 Anomaly A Mineralised Residuum Wireframe Assay Statistics

Parameter	Mineralised Residuum Domain		Total
	West (No. 8)	East (No. 9)	
No. Samples	4,181	102	**4,283**
Mean Sample Length (m)	1.69	1.82	**1.69**
P_2O_5			
No. P_2O_5% Assays	4,014	101	**4,115**
Mean P_2O_5% Grade	22.36	20.01	**22.30**
Median P_2O_5% Grade	23.90	19.10	**23.80**
Min. P_2O_5% Grade	0.02	1.99	**0.02**
Max. P_2O_5% Grade	40.20	38.60	**40.20**
P_2O_5% Standard Deviation	9.89	11.63	**9.93**
P_2O_5% Coeff. of Variation	0.44	0.58	**0.45**
Nb_2O_5			
No. Nb_2O_5% Assays	3,913	100	**4,013**
Mean Nb_2O_5% Grade	0.42	0.20	**0.41**
Median Nb_2O_5% Grade	0.30	0.11	**0.29**
Min. Nb_2O_5% Grade	0.01	0.04	**0.01**
Max. Nb_2O_5% Grade	6.24	1.89	**6.24**
Nb_2O_5% Standard Deviation	0.41	0.24	**0.41**
Nb_2O_5% Coeff. of Variation	0.98	1.21	**0.99**

The residuum in Anomaly B has a typical depth of 64 m (varying between 28 m and 121 m below surface) below till or till and laterite, and has an average thickness of 39 m (varying between five metres and 72 m), see Table 14-6.

Table 14-6 Summary of Anomaly B Residuum Drill Hole Intersections

Lithology	No. of Drill Hole Intercepts	Typical Depth m	Average Thickness m	Total Length of Intercepts m
Residuum	12	64	39	466

The 157 phosphate assays in Anomaly B range between 2.0% and 37.5% P_2O_5, with a median grade of 18.6% P_2O_5 and a mean of 18.7% P_2O_5.

14.4.1 Niobium Mineralised Laterite Database

Fifty-seven (57) drillholes were also utilised to model the mineralised laterite at a threshold of 0.4% Nb_2O_5, which incorporated 1,008 m of drill intercepts, as shown in Table 14-7.

Table 14-7 Summary of Anomaly A Drillhole Intersections used for Niobium Modelling

Laterite Domain	No. of Drillhole Intercepts	Average Depth from – to m	Average Thickness m	Total Length of Intercepts m	% of Total Intercepts by Length
1	43	65 - 85	20	858	85
2	1	33 - 41	8	8	1
3	3	90 - 99	10	29	3
4	1	55 - 63	8	8	1
5	9	38 - 49	12	105	10
Total	**57**		**18**	**1,008**	

The five niobium mineralised laterite domain wireframes captured 531 samples with 480 phosphate and niobium assays, Table 14-8. The average sample length within the mineralised laterite wireframes was 1.8 m, the average phosphate sample grade was 7.31% P_2O_5 and the average niobium sample grade was 1.34% Nb_2O_5.

Table 14-8 Mineralised Laterite Wireframes Assay Statistics

Parameter	Mineralised Laterite Domain					
	#1	#2	#3	#4	#5	Total
No. Samples	438	6	18	5	64	**531**
Mean Sample Length (m)	1.79	1.32	1.59	1.52	1.63	**1.76**
P_2O_5						
No. P_2O_5% Assays	394	6	13	5	62	**480**
Mean P_2O_5% Grade	7.59	7.33	5.63	6.82	5.93	**7.31**
Median P_2O_5% Grade	6.90	6.94	4.86	6.24	5.58	**6.70**
Min. P_2O_5% Grade	0.10	3.23	3.41	5.47	0.02	**0.02**
Max. P_2O_5% Grade	36.60	11.74	10.03	9.72	17.85	**36.60**
P_2O_5% Standard Deviation	5.41	3.42	2.08	1.67	4.48	**5.21**
P_2O_5% Coeff. of Variation	0.71	0.47	0.37	0.24	0.76	**0.71**
Nb_2O_5						
No. Nb_2O_5% Assays	394	6	13	5	62	**480**
Mean Nb_2O_5% Grade	1.25	0.52	1.42	0.88	2.03	**1.34**
Median Nb_2O_5% Grade	0.95	0.44	1.04	0.87	1.69	**1.02**
Min. Nb_2O_5% Grade	0.01	0.32	0.00	0.53	0.60	**0.00**

Parameter	Mineralised Laterite Domain					
	#1	#2	#3	#4	#5	Total
Max. Nb_2O_5% Grade	6.22	1.04	4.31	1.17	6.19	**6.22**
Nb_2O_5% Standard Deviation	0.91	0.26	1.15	0.23	1.25	**1.00**
Nb_2O_5% Coeff. of Variation	0.73	0.50	0.81	0.26	0.62	**0.74**

14.4.2 Data Verification

DMT verified the drillhole database by checking for:

- Missing drillholes (82-31, 82-22 and 82-08 were subsequently input. The 14 drillholes drilled in 2001 on Anomaly B were also captured.)
- Missing and overlapping sample intervals (lithological logs and assay results) were captured and corrected respectively.
- Visual plotting of drillhole locations to determine any obvious errors.
- GPS comparison during the site visit of a number of drillholes with their given survey coordinates.

14.5 Bulk Density

Bulk densities for the Martison Project are based on empirical data from the Agrium Kapuskasing phosphate deposit, and a series of tests conducted in 1984 and 1999 on Martison samples. The 1984 tests were primarily series of wet volume displacement methods on competent materials. The 1999 tests were a series of manual packed-mould tests on unconsolidated residuum (which is particularly subject to “over packing” and often does not reflect actual in-situ porosity conditions).

The principal difficulty in estimating the bulk density for the residuum material is directly related to its geological history, in-situ porosity and resulting moisture content. Many drill logs and most core-sample descriptions portray the residuum, particularly the ‘recemented’ (2A) sub-lithology as being “vuggy” to “extremely vuggy”. This, by necessity, must reduce the estimated bulk density of the material from what might be expected of the same material in a less weathered state. Based on the testing results and anecdotal notes, the following conservative bulk densities and estimated moisture contents were determined by Spalding and have been utilised in the 2014 estimate. (Note: all tonnages are reported as dry tonnes unless otherwise stated.)

Table 14-9 Bulk Density

Lithology	Moisture Content %	Dry Bulk Density (t/m^3)
Till	10	1.89
Laterite	15	1.70
Residuum	15 – 11	1.90
Bedrock (Carbonatite)	10	2.12

14.6 Assay Capping (Cutting)

To avoid any disproportionate influence of random, anomalously high grade assays on the resource average grade, DMT has assessed the need for grade capping.

Histogram, probability and cumulative frequency plots of the phosphate assays within the mineralised residuum wireframes are presented in Figure 14-6, Figure 14-7 and Figure 14-8. The probability plot shows the 99th percentile of the assays is at 38% P_2O_5 and the cumulative frequency curve flattens at approximately 38% P_2O_5, indicating a possible capping level. Of the 4,115 phosphate assays, 45 (1.1%) have a grade of 38% P_2O_5 or above, which is not considered a significant proportion.

The very high grade assays (≥ 38% P_2O_5) can be observed throughout the domain (laterally and vertically) and show good continuity. Hence, DMT does not regard the high values as anomalous and therefore has not capped the assays for P_2O_5 in the Residuum.

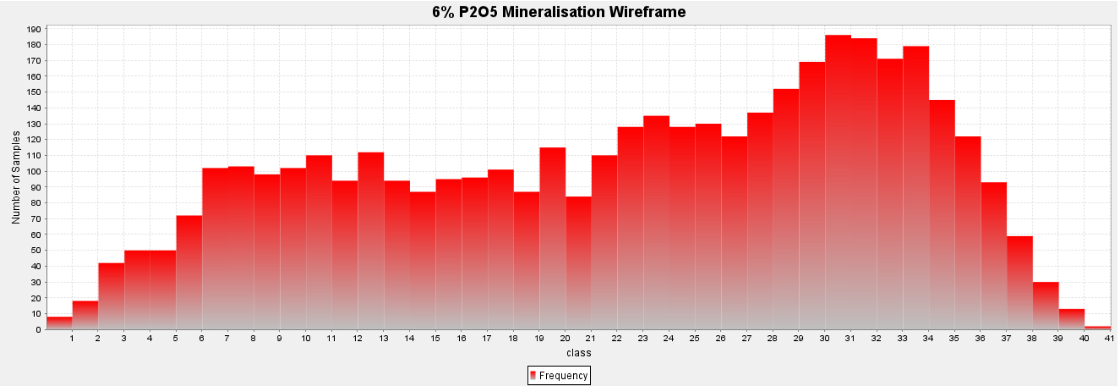


Figure 14-6 Mineralised Residuum P_2O_5 Sample Histogram

The histogram of phosphate assays encapsulated in Anomaly A indicates the presence of three sub-domains (6% - 20% P_2O_5, 20% - 26% P_2O_5 and 26% - 40% P_2O_5). These sub-domains correspond approximately with the residuum sub-types of 2C, 2A and 2B respectively.

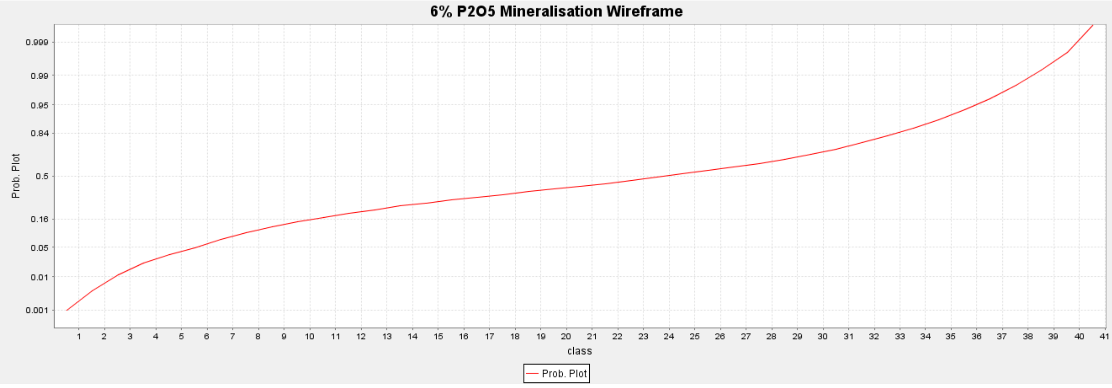


Figure 14-7 Mineralised Residuum P_2O_5 Sample Probability Plot

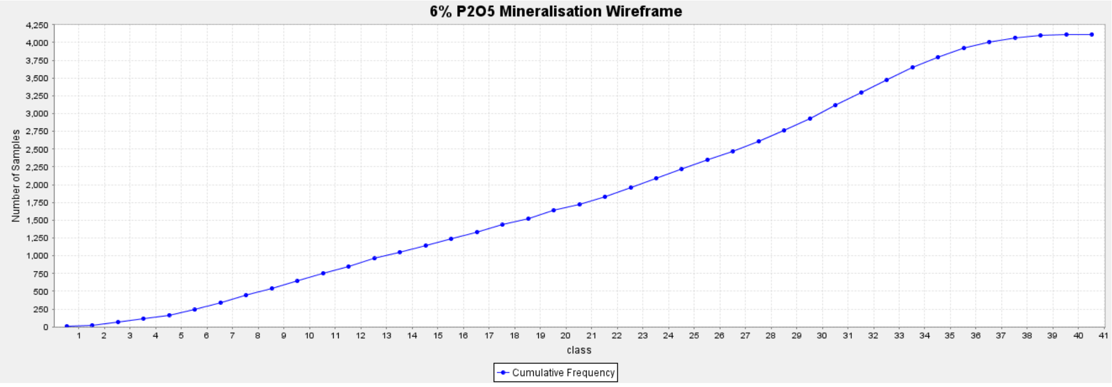


Figure 14-8 Mineralised Residuum P_2O_5 Sample Cumulative Frequency

Population distribution plots of the niobium in the mineralised residuum are presented in Figure 14-9, Figure 14-10 and Figure 14-11.

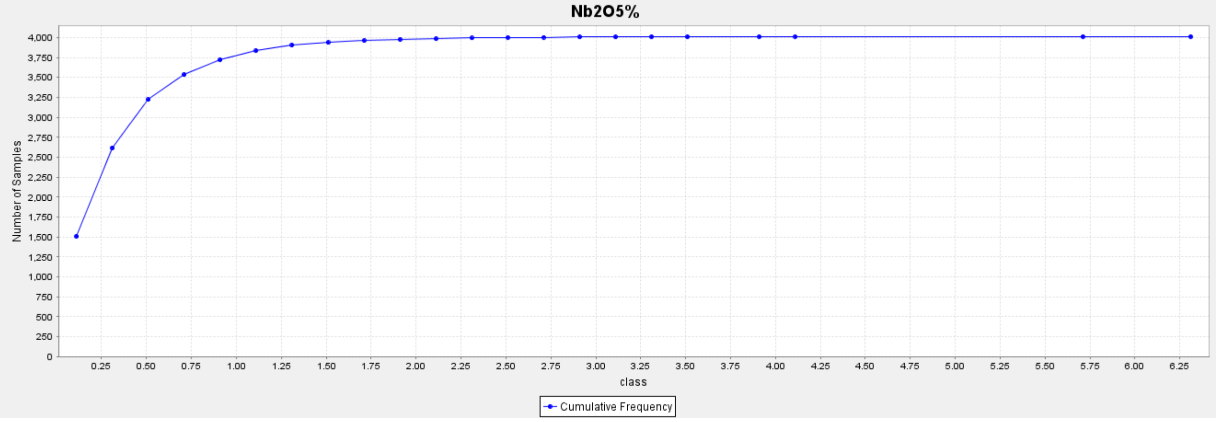


Figure 14-9 **Mineralised Residuum Niobium Cumulative Frequency**

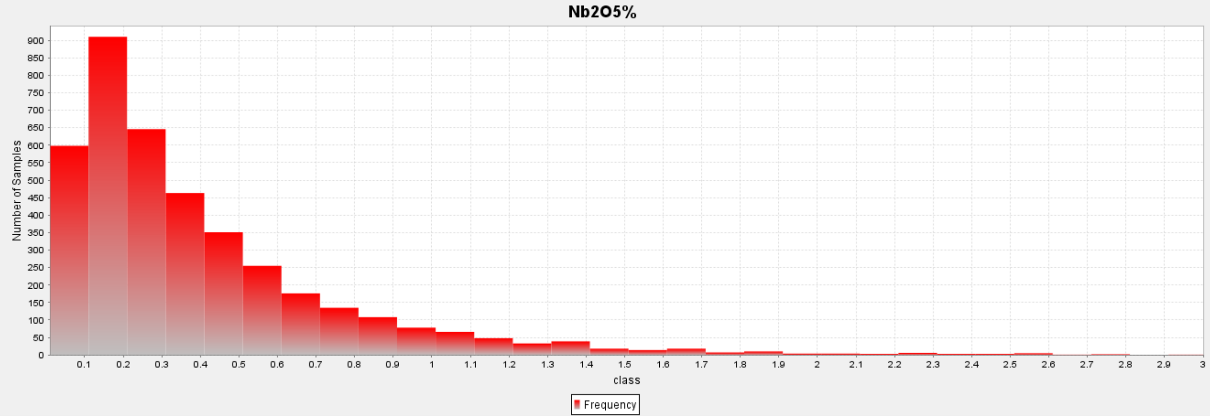


Figure 14-10 **Mineralised Residuum Niobium Histogram**

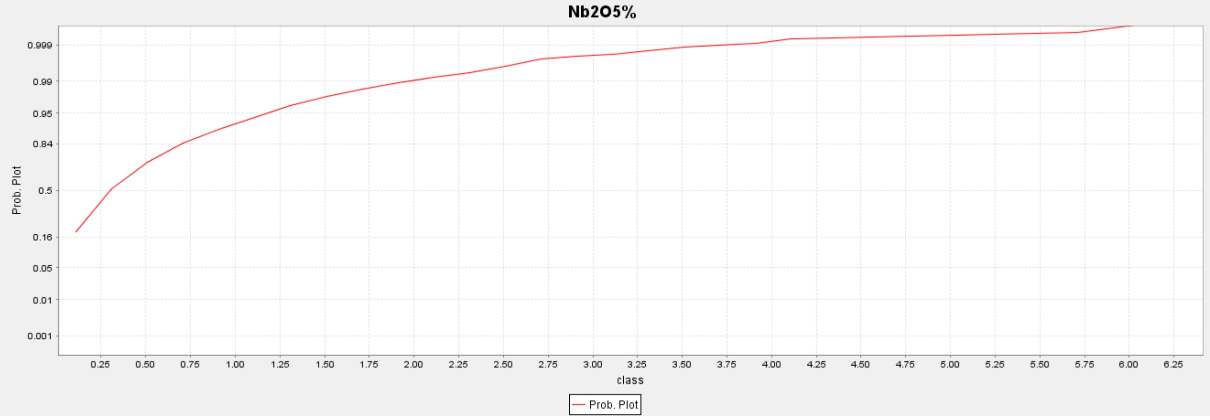


Figure 14-11 **Mineralised Residuum Niobium Probability Plot**

Population distribution plots of the niobium in the laterite are presented in Figure 14-12, Figure 14-13 and Figure 14-14.

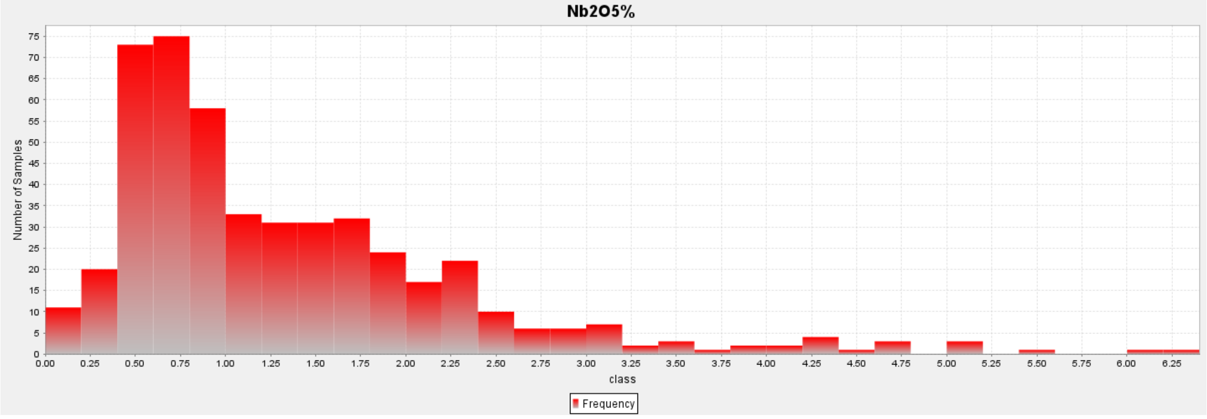


Figure 14-12 **Mineralised Laterite Niobium Histogram Probability Plot**

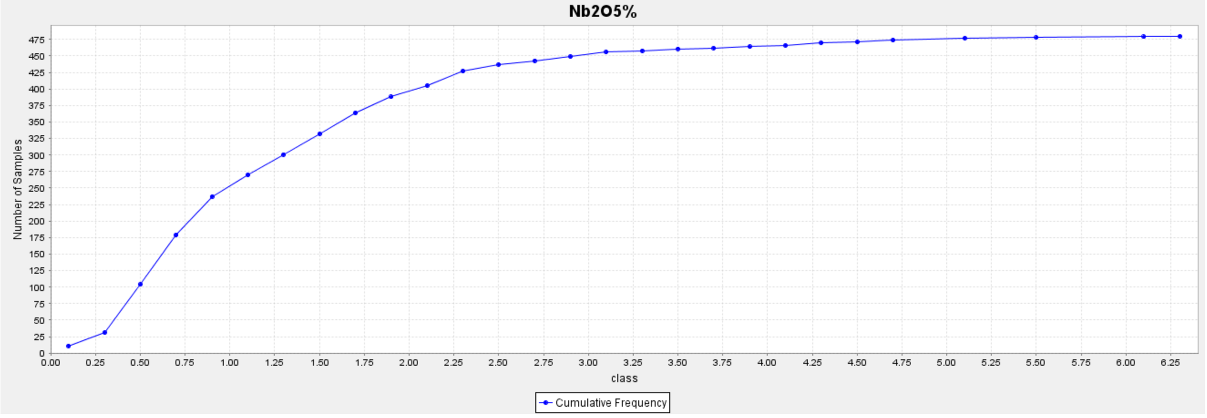


Figure 14-13 **Mineralised Laterite Niobium Cumulative Frequency Plot**

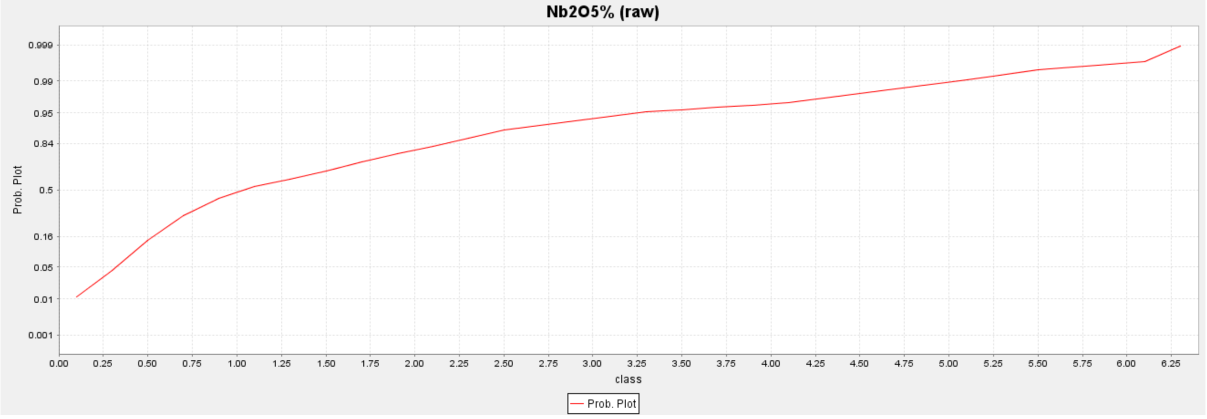


Figure 14-14 **Mineralised Laterite Niobium Probability Plot**

Population distribution plots of the phosphate in the laterite are shown in Figure 14-15, Figure 14-16 Figure 14-17.

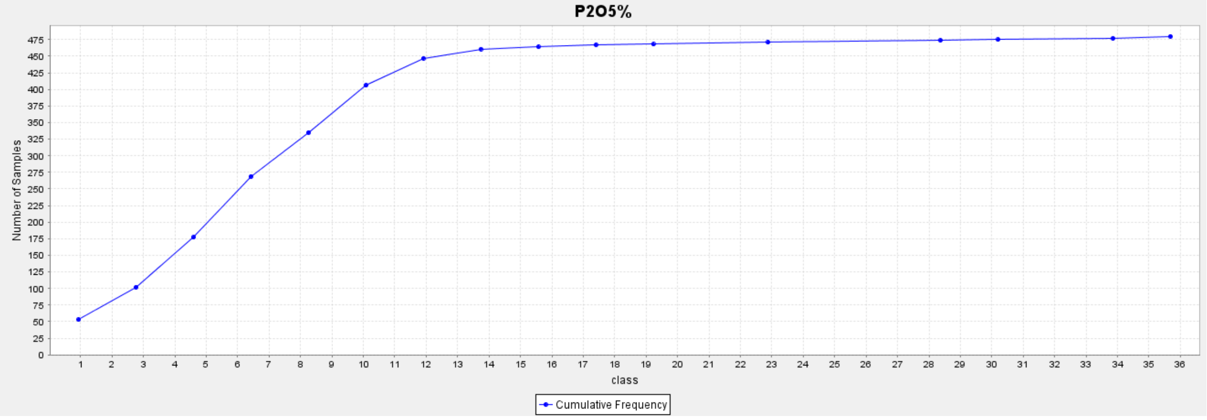


Figure 14-15 Mineralised Laterite P_2O_5 Sample Cumulative Frequency

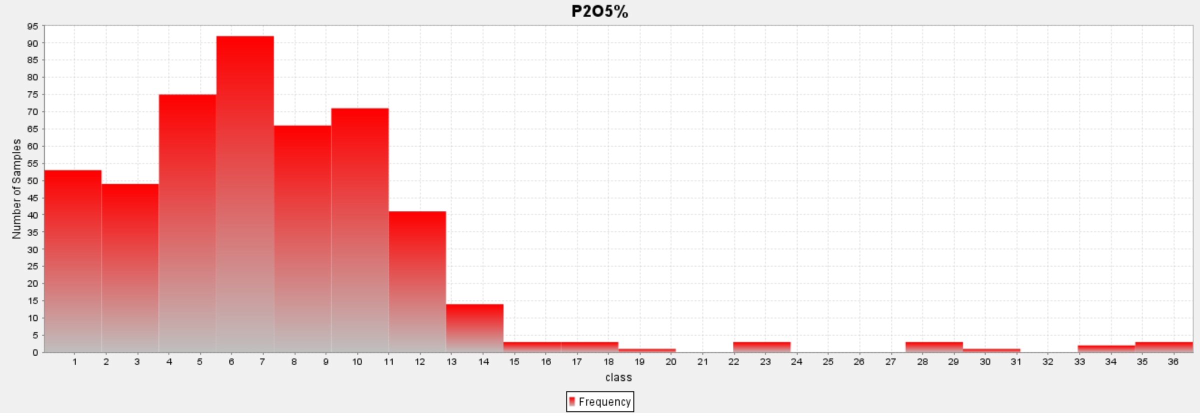


Figure 14-16 Mineralised Laterite P_2O_5 Sample Histogram

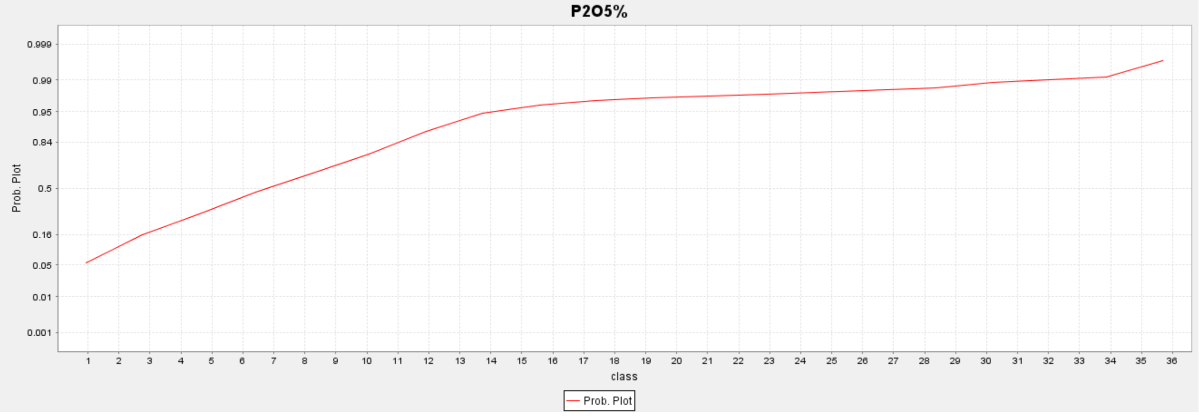


Figure 14-17 Mineralised Laterite P_2O_5 Sample Probability Plot

Table 14-10 summarises the population distribution characteristics and capping levels selected by DMT.

Table 14-10 Population Characteristics and Capping Levels

	Mineralised Laterite		Mineralised Residuum	
	P_2O_5%	Nb_2O_5%	P_2O_5%	Nb_2O_5%
Break in Histogram	15%	3.2, 3.4 or 3.8%	None	2.0
Cumulative Frequency Curve Flatten	14%	3.1%	38%	1.7
95% Probability	14%	3.3%	36%	1.2
99% Probability	31%	5.0%	38%	2.0
Capping Level	**15%**	**3.2%**	**None**	**2.0**
No. Capped Assays	200 (42%)	24 (5%)	0	127 (3%)

No bias was observed between phosphate grade and sample length in the Anomaly A Residuum mineralised lens, see Figure 14-18 and Figure 14-19.

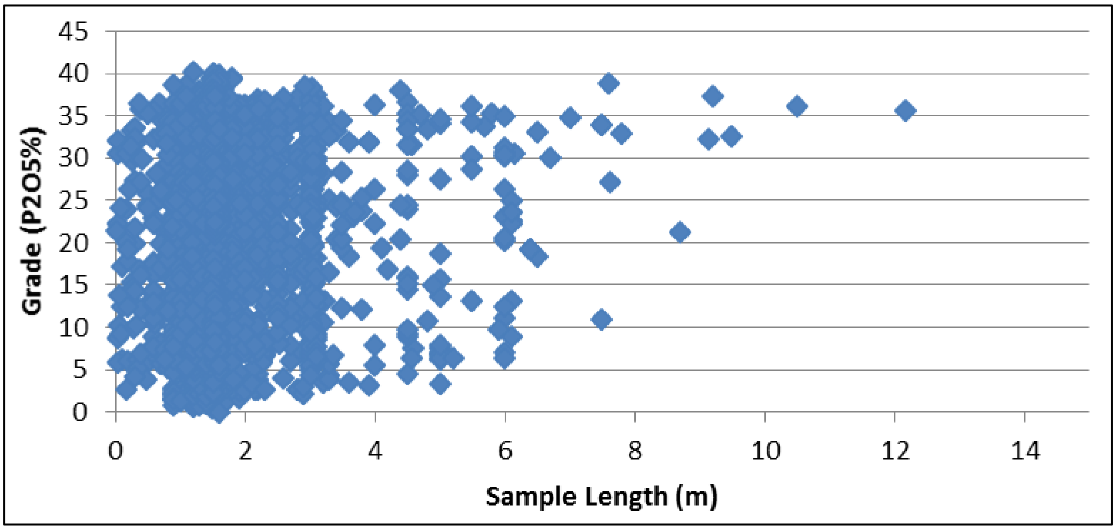


Figure 14-18 Anomaly A Phosphate Mineralised Lens Grade v Length (6% P_2O_5)

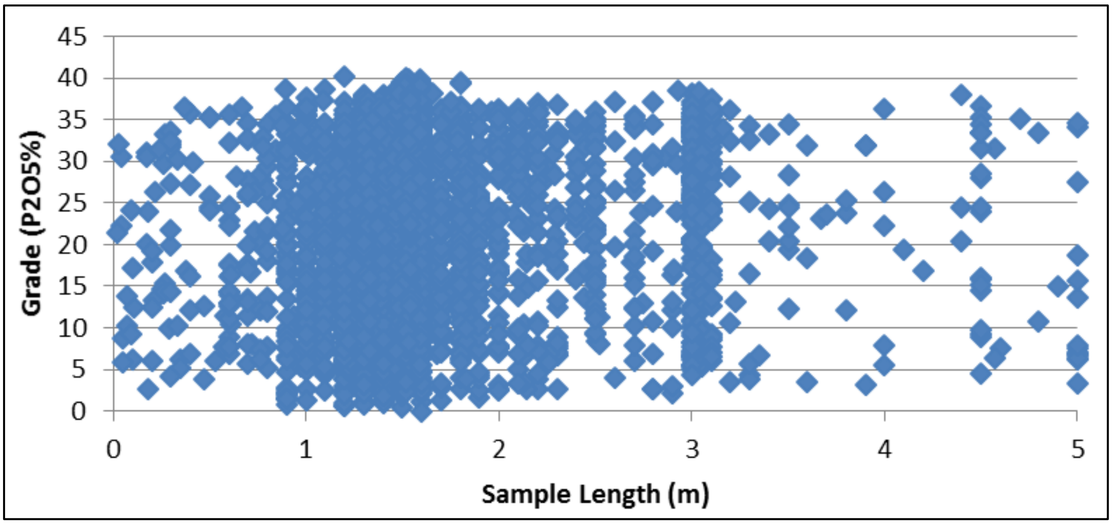


Figure 14-19 Anomaly A Phosphate Mineralised Lens Grade v Length (6% P_2O_5) - enlarged

14.7 Assay Interval Compositing

A two metre down-the-hole ("**DTH**") sample composite length was selected to reduce the variability of the data and to maintain geological definition of the mineralisation. The minimum composite size used in the resource estimate was 1.5 m (75%).

Orphan composites less than 1.5 m long were removed from the database. The average grade of the discarded short composites and the grade of the composites minus the short composites were examined with respect to the average grade of interpolation composites to ensure that removing the short composites did not introduce a grade bias.

The majority of sample lengths range between 1.4 m and 1.7 m, with the majority taken at 1.5 m. Given this distribution and the thickness of the mineralisation, DMT chose to composite to two metre lengths. Assays within the mineralisation domains were composited starting at the first mineralised wireframe boundary from the drillhole collar and resetting at each new wireframe boundary. The mineralised residuum composite statistics are presented in Table 14-11, and the mineralised laterite composite statistics in Table 14-12.

Table 14-11 Anomaly A 2 m Composite Descriptive Statistics by Domain

Parameter	Mineralised Residuum	
	Total	
	P_2O_5	**Nb_2O_5**
No. of Composites	3,445	3,330
Mean P_2O_5% Grade	22.59	0.41
Median P_2O_5% Grade	23.91	0.31
Min. P_2O_5% Grade	0.26	0.02
Max. P_2O_5% Grade	39.64	2.00
P_2O_5% Standard Deviation	9.55	0.34
P_2O_5% Coeff. of Variation	0.42	0.83

Table 14-12 Mineralised Laterite 2 m Composite Descriptive Statistics

Parameter	Mineralised Laterite Domain					
	#1	#2	#3	#4	#5	Total
P_2O_5						
No. of Composites	351	4	9	4	51	**419**
Mean P_2O_5% Grade	7.29	7.39	5.55	6.82	6.07	**7.10**
Median P_2O_5% Grade	7.09	7.25	5.46	6.18	5.89	**6.89**
Min. P_2O_5% Grade	0.23	3.63	3.46	5.87	0.05	**0.05**
Max. P_2O_5% Grade	15.00	11.43	9.04	9.04	14.50	**15.00**
P_2O_5% Standard Deviation	3.45	3.43	1.86	1.49	4.08	**3.54**
P_2O_5% Coeff. of Variation	0.47	0.46	0.33	0.22	0.67	**0.50**
Nb_2O_5						
Mean Nb_2O_5% Grade	1.15	0.52	1.35	0.88	1.93	**1.24**
Median Nb_2O_5% Grade	0.88	0.43	1.54	0.91	1.90	**0.96**
Min. Nb_2O_5% Grade	0.01	0.36	0.31	0.60	0.63	**0.01**
Max. Nb_2O_5% Grade	3.20	0.84	2.45	1.11	3.20	**3.20**
Nb_2O_5 Standard Deviation	0.71	0.22	0.68	0.21	0.85	**0.82**
Nb_2O_5 Coeff. of Variation	0.62	0.42	0.50	0.24	0.44	**0.64**

14.8 Grade Trend Analysis

DMT contoured the phosphate mineralisation grade and thickness in Anomaly A to evaluate any trends as a geological composite (i.e. all of the samples from one drillhole as intersected by the wireframe are composited into one value for that intersection). A minor trend was observed in the thickness, corresponding with a depression/trough in the bedrock (which may be related to a regional structure in the basement), see Figure 14-20. A minor high grade trend was also observed in the direction of bedrock trough/thickness, see Figure 14-21.

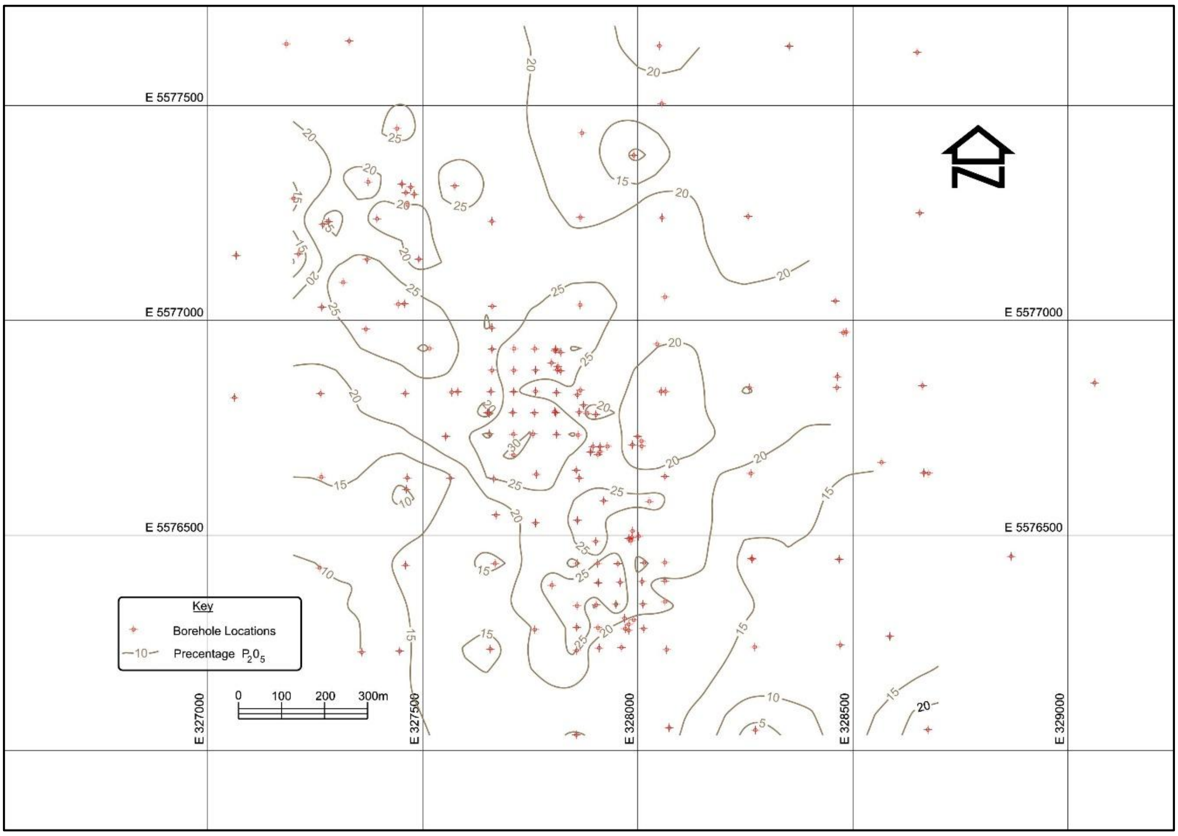


Figure 14-20 Martison Anomaly A P_2O_5 Grade Contours

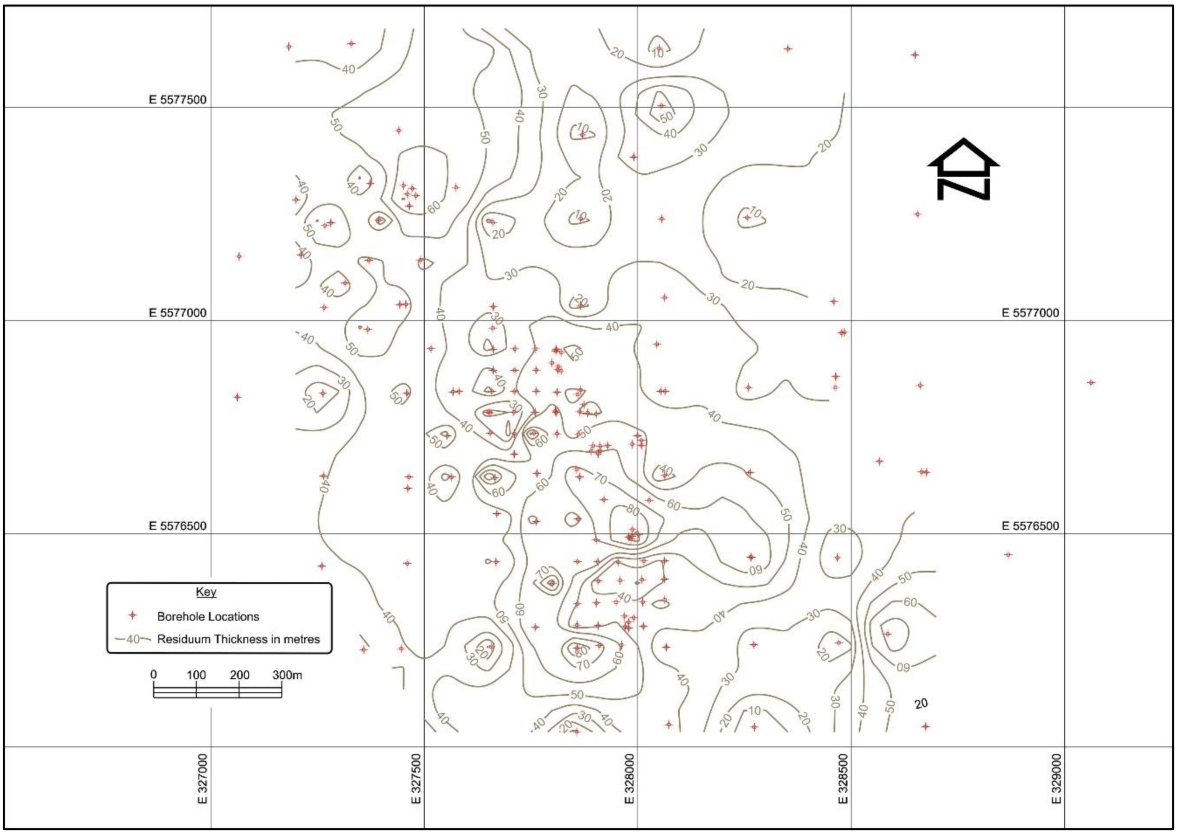


Figure 14-21 Martison Anomaly A Residuum Thickness Contours

14.9 Mineralisation Continuity & Variography

Phosphate mineralisation continuity and variography for Anomaly A Residuum and niobium mineralisation in the laterite was analysed by DMT using Geovia Surpac based on the two metre DTH composite data; Table 14-13 summarises the parameters used and derived. The experimental directional variograms were modelled using a spherical model.

Table 14-13 Variography Summary

Parameter	Anomaly A Residuum Phosphate Domain	Laterite Niobium Domain
No. Composites	3,355	419
Bearing	120^o	130^o
Plunge	0^o	0^o
Dip	0^o	0^o
Nugget	0.22	0.15
Sill	0.63	0.43
Range	196	120
Major : Semi-Major Ratio	2	1
Major : Minor Ratio	2	2

The phosphate in the residuum has an anisotropic (ellipsoid) search radius with a major/semi-major ratio of 2, a semi-major/minor ratio of 2, and a search radius of 200 m. The phosphate variography parameters were assumed to be indicative of the other elements (including niobium) in the residuum.

The Nb_2O_5 in the laterite has an anisotropic (ellipsoid) search radius with a major/semi-major ratio of 1, a semi-major/minor ratio of 2, and a search radius of 120 m. The Nb_2O_5 variography parameters were assumed to be indicative of the other elements (including phosphate) in the laterite.

An anisotropic (ellipsoid) search radius with a major/semi-major ratio of 2, a semi-major/minor ratio of 2 and a search radius of 200 m with a nugget effect of 0.22 has been taken as indicative of the deposit as a whole.

14.10 Block Model

The Martison Anomaly A block model incorporates an area of 2,200 m (easting) by 3,000 m (northing) by 320 m (height) in 10 m x 10 m x 10 m blocks. The model was not inclined or rotated. Table 14-14 summarises the block model parameters, extents and dimensions.

Table 14-14 Block Model Parameters

Parameter		Value
Block Model Origin	Easting	326,600
	Northing	5,575,700
	Z	-100
Parent Block Size (m)	X	10
	Y	10
	Z	10
Minimum Block Size (m)	X	5
	Y	5
	Z	5
Bearing	0	
Plunge	0	
Dip	0	

14.11 Interpolation Search Parameters and Grade Interpolation

Grade interpolation was performed on a parent block basis by using ID^3. The search orientations and ellipsoids are presented in Table 14-15. A minimum number of three samples and a maximum number of 15 samples were used to estimate block grades.

A search radius of 200 m and maximum vertical search distance of 16 m (derived from the variogram range) was applied in a search ellipse bearing 120^o, not dipping or plunging with a major/semi-major ratio of 2, a semi-major/minor ratio of 2 for the first pass. The search radius and vertical search distance was increased to 400 m and 32 m in the second pass and 600 m and 48 m in the third pass to ensure all blocks within the mineralised wireframes were populated.

In the laterite, a search radius of 120 and a maximum vertical search distance of 42 m were applied in a search ellipse bearing 130^o, not dipping or plunging with a major/semi-major ratio of 1, a semi-major/minor ratio of 2 for the first pass. The search radius was increased to 400 m in a second pass to ensure all blocks within the mineralised wireframes were populated (the vertical search distance was not increased in the second pass as 42 m was deemed to be sufficient).

The grade interpolation respected individual lens boundaries as “hard boundaries” to prevent the influence of assays in different domains and possible subsequent smearing.

Table 14-15 Block Model Search Passes

Parameter	Mineralised Residuum		Mineralised Laterite	
	Search Radius m	Vertical Search Distance m	Search Radius m	Vertical Search Distance m
1st Pass	200	16	120	42
2nd Pass	400	32	240	42
3rd Pass	600	48	360	42

14.12 Resource Classification

The definitions for resource categories used in this report are consistent with CIM definitions. Under the CIM classification system, a Mineral Resource is defined as:

…"a concentration or occurrence of natural, solid, inorganic or fossilised organic material in or on the Earth's crust in such form and quantity and of such grade or quality that it has reasonable prospects for economic extraction.

"The location, quantity, grade or quality, continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling."

Resources are classified into Measured, Indicated and Inferred categories based upon increasing geological confidence.

Resource classification within mineralisation envelopes are generally based on drillhole spacing, grade continuity, and overall geological continuity. The distance to the nearest composite and the number of drillholes are also considered in the classification.

The following sets out the criteria used for Mineral Resource classification

- A block must fall within the Whittle pit shell, below the topography; and
- within the 6% P_2O_5 mineralised wireframes and over the 6% P_2O_5 cut–off grade; or
- within the laterite wireframe and over the 0.2% Nb_2O_5 cut–off grade; and
- An Indicated Mineral Resource block must be within 100 m of an informing sample and in a continuous area of blocks within 100 m of a sample; or
- An Inferred Mineral Resource must be within 200 m of an informing sample.

DMT has not classified any part of the Anomaly A Mineral Resource as Measured due to the uncertainty of the assumed bulk densities used, the preliminary level of data regarding moisture content and possible over-compression of the bulk test samples, as they will directly affect volume/tonnage conversion factors and will have implications for mine planning.

Anomaly B is classed as a target for exploration as the quantity and grade is conceptual in nature and there has been insufficient exploration to define a Mineral Resource. It is uncertain if further exploration will result in the target being delineated as a Mineral Resource. It does not represent a Mineral Resource, does not have demonstrated economic viability and is disclosed as potential quantity and grade, expressed as ranges, of a potential mineral deposit that is to be the target of future exploration.

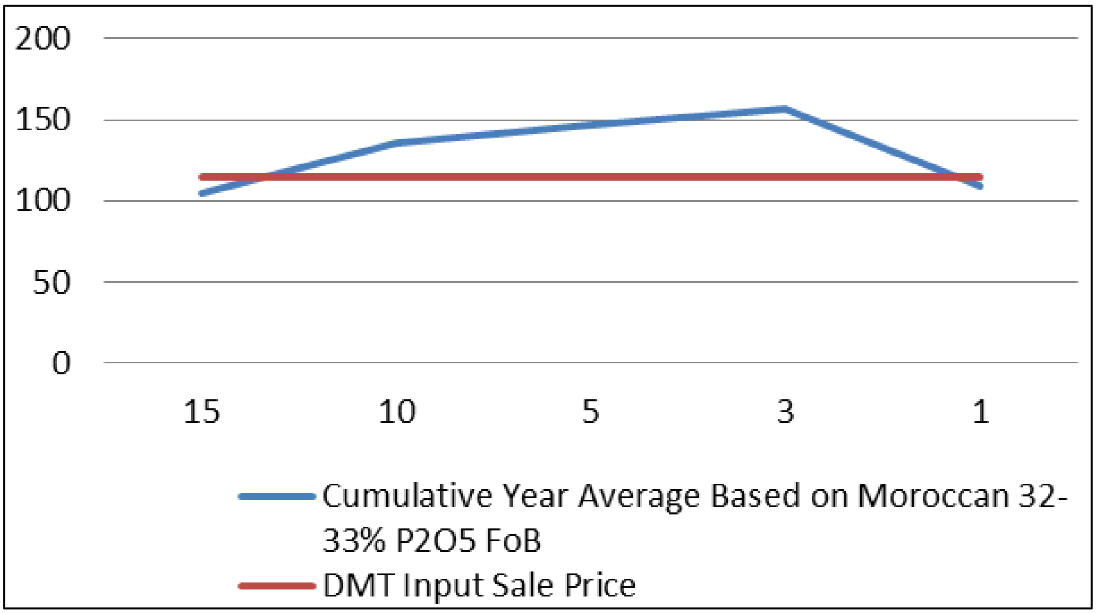
14.13 Commodity Price Assumptions

14.13.1 Phosphate

Where it is tied to the fertiliser industry, the phosphate market fluctuates seasonally. Consequently, typical sources for long term forecasts of phosphate prices aren't used.

Moroccan phosphate rock concentrate is typically used as the benchmark for worldwide phosphate pricing, based on a 32%-33% P_2O_5 FOB concentrate.

DMT studied the average Morocco phosphate prices over 15, 10, 5, 3 and 1 year periods. Based on the study, DMT selected an average sale price of US$115/t for a 32-33% P_2O_5 concentrate, as illustrated in Figure 14-22.



Source: Fertilizer Week; Fertilizer International; World Bank. Index Mundi, http://www.indexmundi.com/commodities

Figure 14-22 Rock Phosphate Historical Cumulative Average Sale Price in US$/t (1999-2004)

DMT has used a sale price of US$360/t P_2O_5 for a 100% concentrate, based on the US$115/t sale price for Moroccan P_2O_5 at 32% rock phosphate. For Martison, DMT has assumed that the final product will be 100% P_2O_5.

$$(115 \div 32) \times 100 = 360$$

14.13.2 Niobium

In the early 2000s, niobium prices remained relatively flat in the US$12.00 to US$13.50/kg range .Given the robust economic growth in emerging markets, particularly in the 'BRIC' economies (Brazil, Russia, India and China), and increased usage intensity of niobium in the steel making process, niobium prices rapidly increased to US$32.63/kg in 2007 and have since remained in excess of US$30/kg.

Given the absence of an actively traded market and lack of price disclosure for competitive reasons, few research analysts make predictions about future niobium prices and those who make such predictions behave rather conservatively. DMT have adopted a niobium price of $30/kg for the resource estimate as illustrated in Figure 14-23.

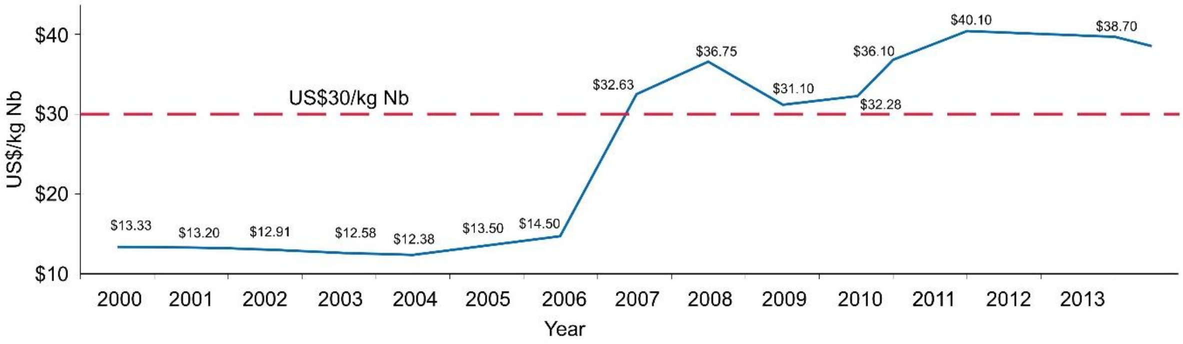


Figure 14-23 **Historical niobium price performance**

14.14 Whittle Assumptions

DMT used the block model and a set of technical and economic input assumptions, summarised in Table 14-16 to create a preliminary open pit shell using Whittle software in order to constrain the estimated Mineral Resources to input parameters that demonstrate reasonable prospects for eventual economic extraction.

Table 14-16 **Whittle Assumptions**

Input Parameter	Units	P_2O_5	Nb_2O_5
Pit Wall Slopes	Degrees	23	23
Mining Cost	US$/t	2	2
Mining Extraction*	%	100	100
Mining Dilution*	%	0	0
Processing and G&A Costs	US$/t	8	8
Processing Recovery	%	70	20***
Final Product Concentration	%	100	50
Price	US$/t	360**	30,000

* Mining dilution and mining extraction were used as Whittle assumptions but not as inputs to calculate the cut-off grade or to report Mineral Resources

** A price of USD 360/t P_2O_5 is based on a 100% final product concentrate using a base price of US$115 for a 32% P_2O_5 product.

*** Nb recovery based on reported metallurgical test data

14.15 Cut-off Grade Assumptions

The preliminary open pit shell provides a constraint for the reported open pit resources based on the CIM definition of Mineral Resources to have “reasonable prospects for economic extraction” and resulted in an open pit cut-off grade of 6% P_2O_5 being estimated.

All classified ore blocks located between the surface and the Whittle pit shell with grades greater than 6% P_2O_5 were included in the reported Mineral Resource. While there are additional blocks located outside of the open pit shell but within the wireframe models, DMT is of the opinion that the amounts are insignificant at this stage when considering their mining potential.

The portions of the wireframes that fell within the open pit shell and below overburden (‘Till’ lithotype) were considered to have reasonable prospects for economic extraction, thereby qualifying as a Mineral Resource.

Table 14-17 and Table 14-18 illustrate the Mineral Resource sensitivity by cut-off grade (as constrained by the Whittle pit) for the mineralised residuum and laterite respectively.

Table 14-17 Mineralised Residuum Sensitivity by Cut-Off Grade

Cut-Off Grade (% P_2O_5)	Tonnage (Mt)	Phosphate Grade (% P_2O_5)	Niobium Grade (% Nb_2O_5)
0	144	20.5	0.4
2	144	20.6	0.4
4	144	20.6	0.4
6	**144**	**20.6**	**0.4**
8	140	21.0	0.4
10	134	21.4	0.4
12	126	22.2	0.4
14	115	23.0	0.4

Table 14-18 Mineralised Laterite Sensitivity by Cut-Off Grade

Cut-Off Grade (% Nb_2O_5)	Tonnage (Mt)	Niobium Grade (% Nb_2O_5)	Phosphate Grade (% P_2O_5)
0.0	16	1.1	6.2
0.2	**16**	**1.1**	**6.2**
0.4	16	1.1	6.2
0.6	13	1.2	6.3
0.8	8	1.5	6.9
1.0	7	1.6	6.9

14.16 Model Validation

DMT carried out a number of block model validation procedures including:

- Volume comparisons;
- Statistical comparisons;
- Visual comparisons of block grades versus composite grades; and
- Comparing individual block and composite grades.

Differences between the wireframe and block model volumes were small enough to be considered insignificant (Table 14-19). The small differences in wireframe and block model volumes may be due to the minimum sub-blocking size.

Table 14-19 Volume Comparison

	Anomaly A Mineralised Residuum	Mineralised Laterite
Wireframe Volume (m^3)	86,081,743	10,185,061
Block Model Volume (m^3)	85,901,875	10,035,125
% Difference	0.21%	1%

A comparison of the descriptive statistics for the raw assays, composites, and blocks for the lenses modelled are summarised in Table 14-20. It can be seen that the mean grades between the raw assays, composites, and block grades match reasonably well, suggesting that there is little bias present in the estimate.

Model validation has also visually compared drillhole sample grades, supporting composite grades and block model grades (Figure 14-24 and Figure 14-25). Overall, DMT found good correlation in both vertical sections and plans. All blocks within the domains have been filled with grade, bulk density, number of informing samples and distance to nearest informing sample. The blocks are also coded as whether they are reported within the Whittle Pit and whether they lie above or below the topography and rock type.

On the basis of its review and validation procedures, DMT is of the opinion that the block model is valid and acceptable for estimating the Mineral Resources.

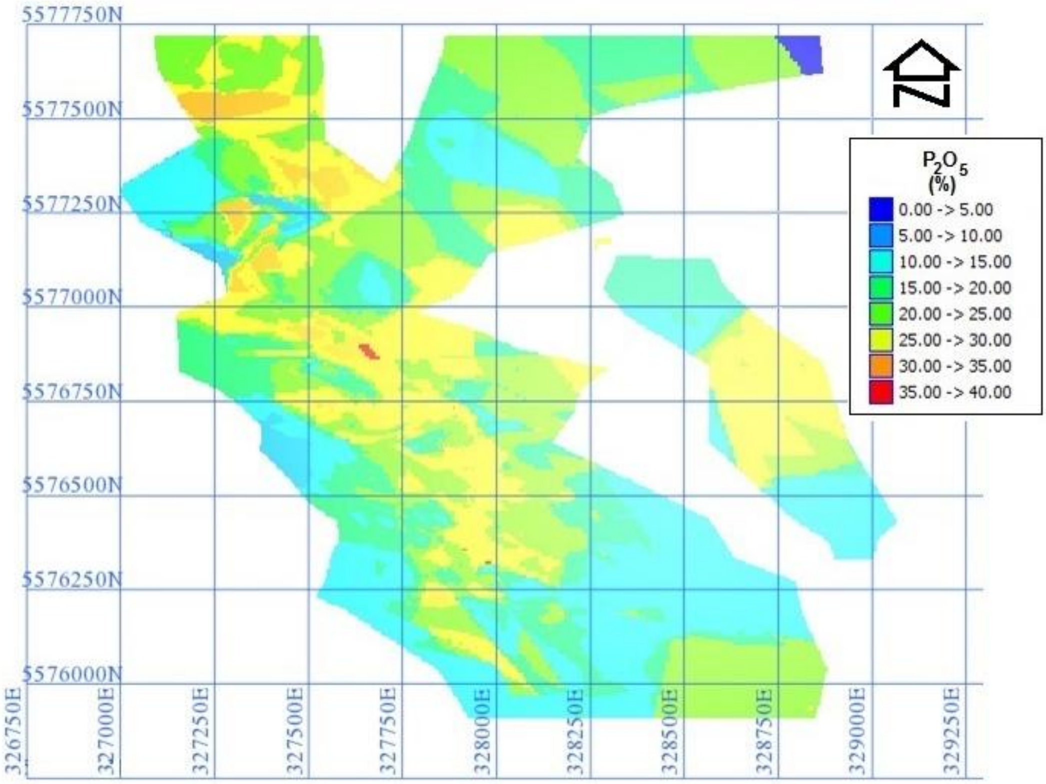


Figure 14-24 **Anomaly A P_2O_5 Grade Model**

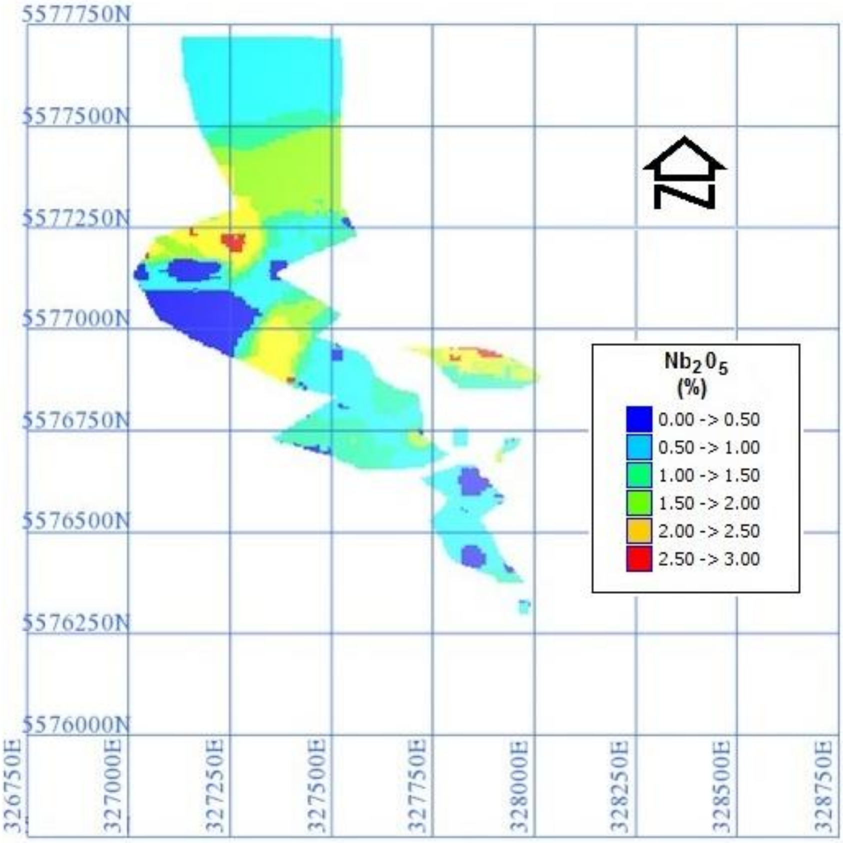


Figure 14-25 **Anomaly A Nb_2O_5 Grade Model**

Table 14-20 Composite and Block Model Comparison

Parameter	Assay	Composite	Block Model
Anomaly A Mineralised Residuum Domain			
Mean P_2O_5% Grade	22.30	22.59	20.36
Median P_2O_5% Grade	23.80	23.91	20.61
Min. Grade P_2O_5% Grade	0.02	0.26	0
Max. Grade P_2O_5% Grade	40.20	39.64	38.30
P_2O_5% Standard Deviation	9.93	9.55	6.97
P_2O_5% Co-eff. Of Variation	0.45	0.42	0.34
Anomaly A Mineralised Laterite Domain			
Mean Nb_2O_5% Grade	1.34	1.24	1.06
Median Nb_2O_5% Grade	1.02	0.96	0.80
Min. Nb_2O_5% Grade	0.00	0.01	0.11
Max. Nb_2O_5% Grade	6.22	3.20	2.94
Nb_2O_5% Standard Deviation	1.00	0.82	0.55
Nb_2O_5% Co-eff. Of Variation	0.74	0.64	0.52

14.17 Mineral Resource Estimate

DMT has prepared a Mineral Resource estimate for the Martison Project with a drillhole database cut-off date of 1st November, 2014.

The Mineral Resource estimate has an effective date of 30th November, 2014 and has an issue date of March 9 2015.

Table 14-22 summarises the Mineral Resource estimate for the Martison Project as of 30th November, 2014. Anomaly A Residuum contains as estimated 54.3 Mt of Indicated Mineral Resources at a grade of 23.4% P_2O_5 and 0.39% Nb_2O_5, and 83.5 Mt of Inferred Mineral Resources at a grade of 19.1% P_2O_5 and 0.41% Nb_2O_5. The residuum resources are reported at a cut-off grade of 6% P_2O_5.

The laterite contains 9.3 Mt of Indicated Resources at a grade of 7.2% P_2O_5 and 1.21% Nb_2O_5 and 6.3 Mt of Inferred Resources at a grade of 4.8% P_2O_5 and 0.94% Nb_2O_5.

The laterite resources are reported at a cut-off grade of 0.2% Nb_2O_5.

The previous NI 43-101 compliant Resource estimate (Spalding *et al* – 2008) is shown in Table 14-21 for comparison.

Table 14-21 Previous NI 43-101 Compliant Resource Estimates

Year	Consultant	P_2O_5 Cut Off Grade %	Measured & Indicated Resource Mt	Inferred Resource Mt	Bulk Density t/m^3	P_2O_5 Avg Grade %	Nb_2O_5 Avg Grade %
2008	J.Spalding (LaFleur)	'Low' Grade Nominal 10% (2A Unconsolidated Residuum)	62.3		1.91 (dry)	23.5	0.34
		'High' Grade Nominal 10% (2B Consolidated Residuum)		55.7	1.91 (dry)	22.7	0.34

Note: Does not include any resource estimate for laterite

Table 14-22 Martison Mineral Resource Estimate as of 30th November, 2014

Deposit	Resource Classification	Tonnes (Mt)	Bulk Density t/m^3	Phosphate Grade (P_2O_5 %)	Niobium Grade (Nb_2O_5 %)
I Anomaly A Residuum	Indicated	54.3	1.91 (dry)	23.4	0.39
	Inferred	83.5		19.1	0.41
Anomaly A Laterite	Indicated	9.3		7.2	1.21
	Inferred	6.3		4.8	0.94

Notes:

1) CIM definitions were followed for Mineral Resources
2) Mineral Resources are estimated at a cut-off grade of 6% P_2O_5 in the Residuum or 0.2% Nb_2O_5 in the Laterite
3) Phosphate Mineral Resources are estimated using a price of US$360 per tonne (basis 100% P_2O_5)
4) Niobium Mineral Resources are estimated using a price of US$30 per kilogramme (65% Nb_2O_5 concentrate)
5) Mineral Resources are constrained by a Whittle open pit
6) A minimum mineralisation width of five metres was used
7) Numbers may not add up due to rounding.

The ID^3 method, paired with the 5 m sub-block size at the boundaries gave a high level of resolution in the resource estimate and ensured that the internal waste remained distinct.

The Martison Mineral Resource classification is based on the following criteria:

- Mineralised residuum blocks above a 6% phosphate cut-off grade; and
- Mineralised laterite blocks above a 0.2% Nb_2O_5 cut-off grade; and
- Above the Whittle Mineral Resource Pit shell, below the topography; and
- Within 200 m of an informing sample.

Anomaly B as an Exploration Target has been estimated from the volume of the residuum lithological wireframe of the residuum at a bulk density of 1.9 t/m^3 and an average grade of 18% P_2O_5 (derived from the assays within the residuum). It represents an Exploration Potential of 35 Mt to 70 Mt containing 16% - 20% P_2O_5.

Table 14-23 Martison Exploration Potential as of 30th November, 2014

Deposit	Classification	Tonnes (Mt)	Bulk Density t/m^3	Grade (P_2O_5 %)
Anomaly B	Exploration Target	35 - 70	1.91 (dry)	16 - 20

The quantity and grade is conceptual in nature and there has been insufficient exploration to define a Mineral Resource. It is uncertain if further exploration will result in the target being delineated as Mineral Resource. It does not represent a Mineral Resource, does not have demonstrated economic viability and is disclosed with a potential quantity and grade, expressed as ranges, that is to be the target of future exploration.

14.18 Conclusions

In DMT's opinion the Martison phosphate Anomaly A deposit is open in several directions, particularly to the North West, to the east and north east and, at depth north along trend of the basement trough. Anomaly A deposit is open at depth in those areas which have been inadequately drilled due to some early drilling programmes stopping holes at too shallow depth (i.e. while still in residuum). The basement topography appears to be highly variable (for instance as seen in the logging results of the 2008 'cluster' hole drilling) ; and, due also to the inability with some drill methods to be able to conclusively differentiate visually between transitional residuum and weathered bedrock, DMT believe there is potential for the Mineral Resource to be increased.

In DMT's opinion, the grade and thickness of the phosphate mineralised residuum is dependent on the degree of weathering and recementation of the basement carbonatite, therefore it is important that the controls on weathering (i.e. structural weaknesses) are identified to target areas of mineralisation. In areas where sparse drill information exists (for instance to the east of Anomaly A, Anomalies B and C) there is the opportunity to optimise drill targets by first using ground geophysical methods.

The lack of more reliable bulk density data from the deposit under study precludes the classification of Measured Mineral Resources at this stage; this could be relatively quickly and cheaply rectified using samples derived from the next phase of drilling.

14.19 Recommendations

DMT would recommend that further work at Martison is warranted to advance the project forward and to increase the confidence level of the geological model.

14.19.1 Site Based Exploration Activities

Based on the results of applied ground geophysics in 2008-2009 the use of the method is recommended but by adopting closer spacing between scan lines (profiles spaced 100-200m apart) and modifying the system arrays, greater detail may be added to the interpreted sub – surface model, in particular for the important basal Residuum / Carbonatite contact of Anomaly A. The increased detail and 'ground – truthing' of the sub-surface will assist in planning and optimising the design of future resource drilling programmes.

The ground geophysics can be used as a relatively inexpensive exploration method in future programmes to identify other potential target areas thus far relatively unexplored, for instance Anomaly B and Anomaly C.

It is recommended that, following a review of the interpretation of the Anomaly A programme geophysics data, an in-fill drilling programme is designed to follow up and verify the interpreted model, particularly with regard to confirming the depth to the Carbonatite bedrock.

This programme of drilling will also provide fresh samples required for the Bulk Density testing.

Initially an approximate 100m grid spacing is proposed in those areas where the basal contact is least well defined, and further in-fill drilling at a spacing of approximately 50m centres is recommended to follow for detailed geological modelling. This would be considered a later phase of work (Phase III) and is not included in the summary budget estimate in Table 14-23.

The drill programmes would follow on from the ground geophysics field programme and, due to the restricted winter access, the drill programme(s) should be planned in manageable phases, each designed to be completed within the relatively short winter 'window' of 9 -12 weeks. The first drill programme would consist of approximately 25 holes (approximately 3250m), manageable in one winter season, using a combination of sonic and diamond coring methods.

14.19.2 Other Geological Studies and Test Work

Additional geological modelling is recommended to sub-domain the observed three grade populations and three sub-lithologies (residuum, transitional residuum and re-cemented residuum) to determine if any correlation exists between grade, chemistry and lithology. This will involve a review of borehole logs in the data base and some re-logging of existing core samples to harmonise and standardise the lithological interpretation.

While the global bulk density values applied in the resource estimate are considered adequate for this level of study, moisture content and porosities in the lithologies vary. Small variations in bulk densities applied to the model have a significant impact on the estimated tonnages. As an additional factor in increasing confidence levels to the resource model and resource categories, DMT recommends that more systematic bulk density testing is undertaken on at least the main recognised lithologies and sub-lithologies (laterite, residuum, transitional residuum and re-cemented residuum).

The above recommended resource based investigative and study / test work (Phase II) is estimated to cost approximately CAD$ 2.9 million, as summarised in Table 14-24. This table does not include the cost of other important metallurgical test work and / or the recommended PEA, which would make up Phase I of the work programme budget. The overall recommended future work budget costs are summarised in Table 26-1.

Table 14-24 Anomaly A - Geological Resource Exploration and Study Programme and Budget Summary

Phase	Activity	Cost CAD$
II	Ground Geophysics (High Sensitivity Resistivity) Approx. 20 profiles @ average length 1250 m (25,000m)	**250,000**
	Combined Sonic and Diamond Drilling Approx. 25 holes@ average depth 130m (3250m)	**2,500,000***
	Bulk Density Testing	**45,000**
	Geological Modelling (Re-logging ; Variography Studies)	**125,000**
	Total	**2,920,000****

*Based on approximate overall and inclusive drill programme costs of CAD$770 p/metre (to include temporary winter road construction, temporary camp, supervision, sampling and logging etc).

** Does not include the cost of other Metallurgical Test work / Studies or PEA which will constitute Phase I (see Table 26-1).

15 MINERAL RESERVE ESTIMATES

No Mineral Reserves have been estimated for the Martison deposit.

Fox River does not consider the Project to be an “advanced property” for purposes of NI 43-101, as the economic viability of the Project is not supported by a current preliminary economic assessment, pre-feasibility study or feasibility study.

16 MINING METHODS

This section is not applicable.

17 RECOVERY METHODS

This section is not applicable.

18 PROJECT INFRASTRUCTURE

This section is not applicable.

19 MARKET STUDIES & CONTRACTS

This section is not applicable.

20 ENVIRONMENTAL STUDIES, PERMITTING & SOCIAL OR COMMUNITY IMPACT

A summary of environmental baseline activities completed to date is presented below.

20.1 Environmental Baseline Study

AMEC completed an Environmental Baseline Study Report (“**ESR**”) of the project area and of the proposed access corridor in November and December 2008.

These reports are entitled “Environmental Study Report Martison Site All-season Access Road” (November 2008) and “*Environmental Baseline Report, Martison Phosphate Project Mine Exploration Site”,* (December 2008).

AMEC conducted a terrestrial biophysical inventory of the proposed site access route to characterise and evaluate the existing environment and to provide baseline data as input to prefeasibility designs and to support the EA process and permitting for the PhosCan Project.

The inventory comprised of a review of existing data sources directly relevant to the study area, as well as a number of specific field surveys, which were conducted during the summer of 2008. The existing data sources were used to obtain a general understanding of the biophysical site characteristics.

Existing information on flora and fauna of the study area was also applied in the development of preliminary habitat delineations and in the design of specific wildlife surveys.

Field surveys were completed during the period of June 23 to July 4, 2008.

AMEC’s EIA and the study report on the proposed route access corridor covered such topics as:

- Landforms, geology and soils
- The vegetation communities
- Wildlife; mammals, birds, amphibians, and reptiles, the aquatic environment and fisheries resources
- Species at risk.
- Hydrology and water quality
- Cultural heritage and archaeology
- Land use and socio-economic environmental use.

This comprehensive study was undertaken to facilitate permitting and permissions from all stakeholders to construct the all – season access road to the site ahead of a planned 2009 exploration programme.

The ESR was prepared in accordance with requirements of a Category “C” level Class Environmental Assessment, pursuant to the Class Environmental Assessment for Ministry of Natural Resource (“**MNR**”) Stewardship and Facility Development Projects.

Before the MNR could issue any permits granting rights to Crown lands, through which the proposed all-season access road extension was to be constructed, a Class EA needed to be carried out. The Class EA for this Project, as described above, was “screened” by MNR to a category “C” level. This category of EA applies to those projects where there is a “potential for medium to high negative environmental effects and/or public or agency concern”. The screening was based on a project description submitted to the MNR by AMEC Earth & Environmental on behalf of PhosCan in June 2008.

In choosing the access route alternatives to study, the primary distinguishing factors, in selection of the Fushimi Road Extension over that of the Bannerman Road Extension, were a slightly shorter new-build section, and more importantly expressed preference by the CLFN for the Fushimi Road Extension, who indicated that this option was consistent with their developing land use plans for their traditional territories.

Category “C” level EAs are required to provide the following:

- The purpose and rationale for the Project;
- A project description;
- An evaluation of project alternatives and selection of a preferred alternative;
- A description of the local natural and socio-economic environments, that could be affected by the Project;
- Documentation of government agency, First Nation, and general public consultation, concerns, and responses to those concerns; and,
- A detailed “Project Plan”, including project descriptions and designs, project phases, and assessment of environmental effects, proposed mitigation measures, and monitoring and follow-up programs.

Category “C” Class EAs provide for two mandatory public consultation phases, one following release of the draft ESR, and one following release of the final ESR, together with a Notice of Commencement and a Statement of Completion. The purpose of the EA process is to engage the various stakeholders having an interest in the Project, to ensure that an opportunity is made to consider all materials and views pertinent to the decision making process, with the intent of defining a better Project. Permits for construction cannot be issued until the Class EA process is completed.

Subsequent to submission of the Project Description to MNR in June 2008, the Premier of Ontario announced the Far North Planning Initiative (“**FNPI**”) on July 14, 2008. This initiative is intended to protect natural habitats and ecosystem functions of the Far North planning area, while at the same time providing for sustainable economic development. First Nation goals and aspirations are a central theme of the

FNPI. The planning initiative is expected to take approximately 10 to 15 years to complete, and when completed is expected to result in the setting aside of an estimated 225,000 km^2 of land for conservation purposes, amounting to more than half of the Northern Boreal Lands. In the interim it is expected that new projects in this area (including this Project located at its southern fringe) would be subject to rigorous environmental review, to ensure that Project development is fully supported by local First Nation communities (in this case the CLFN), and that it is not likely to compromise the broader initiatives of the Far North undertaking. In fact, one of the principal reasons for MNR's decision to screen the Fushimi Road Extension Class EA to a more onerous "C" level, rather than to a "B" level was because of the introduction of the FNPI.

Within the context of the Far North Planning Initiative, the three key aspects affecting this Project are:

- More rigorous environmental review, including enhanced opportunity for government agency, First Nation, and general public review;
- First Nation support; and,
- Protection of woodland caribou, as a designated Species at Risk.

As indicated above, one of, if not the principal reasons for MNR's decision to screen the undertaking to a Category "C" level was because of the FNPI. By subjecting the Project to this more onerous level of environmental assessment, there is a more rigorous assessment of alternatives, more detailed requirements for defining the Project and assessing its environmental effects, and greater opportunity for government agency, First Nation, and general public consultation.

In terms of First Nation consultation and Project support, PhosCan had already initiated a detailed programme of First Nation consultation and inclusiveness in Project planning long before the FNPI was released. Selection of the preferred access route alternative was largely a CLFN planning initiative. Design and construction of the road was expected to be a CLFN joint venture undertaking, and the CLFN has and continues to express its strong support for the Project.

It should be acknowledged that this environmental baseline study was undertaken in 2008 to stringent government set levels. The time period over which this Class EA study is considered effective is five years. The MNR Statement of Completion was issued in January 2009, which is valid for 5 years, during which time construction work on the access route can commence. The permissions expired in January 2014 without any construction work having been undertaken.

Government legislation and ruling aside, the fundamental environmental findings in AMEC's EA study are expected to remain intact or unchanged. Fauna and flora, habitats, heritage, archaeology and the socio-economic environment are, and likely will remain, largely as observed in 2008, from this perspective the study is considered by DMT to still have value and relevance to the Project.

20.2 Caribou Surveys

Several caribou site-specific surveys were undertaken in late September 2008, focusing on the mapping of late winter caribou habitat and potential movement corridors. Identifying late winter caribou habitat is imperative for mitigating and minimizing the risk of impacting local caribou around the Project site.

An aerial (helicopter) survey was undertaken in late September 2008 (from September 10 to 14) to map important caribou habitat attributes. Lichen patches were documented within a 50 km long by four km wide survey zone, centred southwest of the mine exploration site. All lichen patches observed within the extent of the survey were comparatively small and scattered, indicating limited food potential for caribou. The reason for this is that esker and esker-like systems, that frequently support extensive lichen patches, are absent from this area.

20.3 Cultural Heritage, Archaeology and Traditional Ecological Knowledge and Traditional Activities

Ethno-historic documentation of CLFN use of lands in the general vicinity of the Project area, and associated archaeological studies, were carried out for the CLFN by the Mackenzie Ward Group, Professor Scott Hamilton from Lakehead University, and White Spruce Archaeology during mid-2008. Additional traditional land use and occupancy data were assembled by Wolverine & Associates Inc.

The general findings from the above studies included the following:

- Much of the landscape in the general vicinity of the mine exploration site are difficult to access and generally resource poor;
- Area access by CLFN members is generally in winter, by snowmobile and snowshoes for the purpose of hunting and trapping;
- Fisheries values are low; and,
- No archaeological sites were found.

Traditional land use and occupancy and Traditional Ecological Knowledge (TEK) of the area is held by the members of the CLFN.

No culturally significant areas or archaeological sites have been identified within the mine exploration site vicinity or the proposed Fushimi extension access corridor.

21 CAPITAL & OPERATING COSTS

This section is not applicable.

Fox River does not consider the Project to be an “advanced property” for purposes of NI 43-101, as the economic viability of the Project is not supported by a current preliminary economic assessment, pre-feasibility study or feasibility study.

22 ECONOMIC ANALYSIS

This section is not applicable.

23 ADJACENT PROPERTIES

There are no currently known or identified carbonatite complexes within 50 km of the Martison Complex.

The nearest known similar deposit is the Kapuskasing Carbonatite Complex (Cargill Township) located approximately 120 km to the southeast of the Martison Project which hosted an active mine owned by Agrium of Calgary which recovered phosphate (apatite) from 1999 until 2013.

24 OTHER RELEVANT DATA & INFORMATION

No additional information or explanation is necessary to make this Technical Report understandable and not misleading.

25 INTERPRETATION & CONCLUSIONS

The Martison Phosphate Project has seen intermittent activity since the early 1980's.

The work carried out by PhosCan began in 1999 (as MCK Mining) and since that time the company undertook a significant amount of additional site based and metallurgical test work to advance the Project.

Exploration work, limited to the winter months, has collectively accumulated close to 22,000 m of drill core for a total of approximately 8170 samples analysed.

Although some sections remain relevant to the Project, the 2008 PFS is no longer valid and should not be relied on.

Since 2008, PhosCan took to lease over 4,000 ha of the Martison property and held some 19 additional contiguous claims around these lease areas for a total project area of 8,256 ha.

The drillhole database consists of 199 holes, totalling 19,774 m, 4,495 assays and 512 composite control intervals for 18,833 m of composites. Of the 199 drillholes in the database, 90% have assays.

Extensive data verification and validation work was completed by DMT to confirm that the drillhole database was acceptable to support the resource estimation work. Overall, DMT is of the view that the drillhole database is acceptable for resource estimation work and that the global resource estimate will not change significantly in the future.

A constrained resource has been estimated for both the residuum and overlying lateritic material at the Martison Anomaly A deposit, which includes both phosphate and niobium mineralisation (Table 14-21).

An extensive amount of work has been done to build 3D wireframes for the residuum and laterite deposits. The resource wireframes are based on approximately a 6% P_2O_5 cut-off grade within the residuum and approximately a 5 m minimum thickness, and a 0.2% Nb_2O_5 cut-off grade within the laterite. Some exceptions were made locally to preserve the resource wireframe continuity.

DMT classified the resources based on consideration of drillhole spacing, zone thickness, and grade continuity. Approximately 40% of Anomaly A resources were classified as Indicated with the remainder placed in the Inferred category. No resources are currently classified as Measured. The decision to exclude Measured for now is due, in part, to the variability of the bulk density of the various sub-lithotypes (2A, 2B and 2C) within the residuum which has not been established with sufficient confidence. Some uncertainty also remains regarding the basal Residuum / Carbonatite contact and this has also influenced the decision not to classify Anomaly A resources as Measured at this time.

DMT concludes that a significant Mineral Resource exists in the Martison Anomaly A consisting of Residuum containing as estimated 54.3 Mt of Indicated Mineral

Resources at a grade of 23.4% P_2O_5 and 0.39% Nb_2O_5, and 83.5 Mt of Inferred Mineral Resources at a grade of 19.1% P_2O_5 and 0.41% Nb_2O_5. The laterite contains 9.3 Mt of Indicated Resources at a grade of 1.21% Nb_2O_5 and 7.2% P_2O_5 and 6.3 Mt of Inferred Resources at a grade of 0.94% Nb_2O_5 and 4.8% P_2O_5 .

It is DMT's opinion that reasonable opportunity exists to add additional resources to the current resources with further drilling programmes, in that the Anomaly A deposit still remains open at depth in several areas, particularly in the northern part of the trough or valley feature running north west – south east.

Based on current borehole intersections and supportive evidence from recently applied ground geophysics, the Anomaly A deposit also appears to have potential for extension to the east and north east of the proposed open pit area.

Anomaly B is an exploration target currently estimated at between 35 Mt and 70 Mt *in situ* tonnes at an average grade of approximately 16-20% P_2O_5.

Anomaly C remains an early stage exploration target.

No resource estimate has been established for the Rare Earth Elements ("**REEs**") due to the paucity of sample data, particularly from the historical drillholes and the limited metallurgical test work carried out

While the Project remains 'winter access only' the drilling programmes would have to be phased over several winter seasons.

The significant hydrogeological test work undertaken in 2008 and 2012 has demonstrated that the deposit aquifer conditions to have measureable boundaries and a relatively slow recharge rate, which will allow for the design of a dewatering solution for a proposed open pit operation.

Substantial further metallurgical testwork has been carried out since the completion of the PFS, the results of which suggest that further work is merited.

Jacobs Engineering, Florida, has conducted bench and pilot scale testing on the bulk sample material recovered during the 2008 drill sample campaign. While pilot plants tests were unable to reproduce the results of the bench scale testing several runs achieved a concentrate assaying an average 36.9% P_2O_5 with a Minor Element Ratio[10] ("**MER**") of 0.09 and representing a P_2O_5 recovery of 72%. The variability in recovery and concentrate grade of the pilot plants runs suggests that additional test work is required.

Niobium metallurgical test work conducted by Eriez Flotation Division in 2011-2012 on phosphate flotation tailings demonstrated that concentrates (>50% Nb_2O_5) were obtainable but only at a recovery level of 20% Nb_2O_5, however, opportunities exist in the flow sheet where improved recoveries may be made.

A mineralogical analysis was performed on five process streams in order to determine the form of the Nb losses. The desired outcome was to gain a better understanding of the mineralogy surrounding the Nb minerals and to give insight

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[10] Minor Element Ration is defined as $(\%Fe_2O_3 + \%Al_2O_3 + \%MgO) / \%P_2O_5$

where modifications to the present flowsheet will allow maximum flotation recovery of pyrochlore (the main Nb-bearing mineral being targeted for recovery).

Based on the distribution of Nb_2O_5 to the Nb waste streams, calculations were made to give an indication of the recovery opportunities. The niobium tail presents the largest recovery opportunity with 14.9% of Nb_2O_5 available in coarse liberated pyrochlore and columbite. The next largest recovery opportunity is in the primary slimes.

The EIA and further baseline studies that were undertaken for the site and access corridor (largely in 2007-08) were to stringent government set levels. Notwithstanding any future changes in federal and/or provincial government legislation that may impact on the permissions and permitting of the Project, the fundamental environmental findings in the EIA will likely continue essentially intact or unchanged. Fauna and flora, habitats, heritage, archaeology and the socio-economic environment will remain largely as observed in 2008. From this perspective, the study is considered by DMT to still have value and relevance to the Project.

PhosCan engaged and worked in close cooperation with the local First Nations at Constance Lake whose tribal lands are directly impacted by the Project. PhosCan’s continued dialogue and transparency with the CLFN regarding the Martison Project has in the past had a positive impact on the permitting and other permissions required for the Project. CLFN have expressed their support for the further development of the Project and it is anticipated that a similar approach by Fox River will maintain the good relationship with CLFN and continue to foster positive feedback for the Project.

In DMT’s opinion, further geological, metallurgical and other engineering studies are warranted to advance the Project.

26 RECOMMENDATIONS

DMT would recommend that further work at Martison is warranted to advance the project forward as discussed below.

26.1 Site Based Exploration Activities

Based on the results of the limited field programme implemented in 2008-2009, the use of ground geophysics demonstrated the ability of the method to model sub - surface profiles and broad lithological boundaries. By adopting closer spacing between the scan lines (100-200m spacing) and modifying the system (transponder) arrays greater detail may be added to the sub-surface model and in particular to the important Anomaly A basal contact between Residuum and Carbonatite. It also suggests that the wider use of ground geophysics may be applied to future programmes identifying other potential target areas thus far relatively unexplored, for instance in preliminary surveys of Anomaly B and Anomaly C. The increased detail and 'ground – truthing' of the sub-surface will likely assist in planning and optimising the design of future resource drilling programmes.

It is recommended that following review of the interpretation of the geophysics data that an in-fill drilling programme is designed to follow up and confirm the interpreted model, particularly with regard to confirming the depth to the Carbonatite bedrock. Initially an approximate 100m grid spacing is proposed in those areas where the basal contact is least well defined.

This programme of drilling will also provide fresh samples required for the Bulk Density testing.

The drill programmes would follow on from the ground geophysics field programme and, due to the restricted winter access, the drill programme(s) should be planned in manageable phases, each designed to be completed within the relatively short winter 'window' of 9 -12 weeks.

26.2 Other Technical Studies and Test Work

To consider if a combined / dual mineral recovery process of Phosphate and Niobium is economically viable, then additional batch testing, mineralogical, laboratory and bench testing are required to develop a single phosphate/niobium flowsheet.

DMT recommends that to allow the project to be advanced beyond its current exploration stage, a complete review and revision of the project economics and financial models are required at the detail typically associated with a Preliminary Economic Assessment ("**PEA**").

It is estimated that the proposed Anomaly A programme of metallurgical testwork (P_2O_5/Nb_2O_5 recovery flow sheet) and the **PEA** would form the first phase (Phase I) of the future work at an estimated cost of CAD$800,000.

Additional geological modelling is recommended to sub-domain the observed three grade populations and three sub-lithologies (residuum, transitional residuum and re-cemented residuum) to determine if any correlation exists between grade, chemistry and lithology. This will involve a review of borehole logs in the data base and some re-logging of existing core samples to harmonise and standardise the lithological interpretation.

While the global bulk density values applied in this technical report resource estimate are considered adequate at this time, moisture content and porosities in the lithologies vary and small variations in bulk densities applied to the model have a significant impact on the estimated tonnages. As the project advances DMT recommends that more systematic bulk density testing is undertaken on at least the recognised lithologies and sub-lithologies (laterite, residuum, transitional residuum and re-cemented residuum). This will be an additional factor in increasing confidence levels to the resource model and resource categories for future mine planning.

Phase II would consist primarily of ground geophysics and a 25 hole, 3250m, drill programme (manageable in one winter programme), bulk density testing of selected samples generated therefrom, and geological modelling. Phase II is estimated to cost approximately CAD$2.9M.

The total budget for the proposed Phase I and Phase II work programme is estimated to be CAD$3.7M.

Further drill programmes of similar dimensions and cost to Phase II may follow in subsequent winter seasons, but these further programmes remain optional dependent on the outcome of the first two phases, including the PEA.

To move the project forward at an adequate pace, at some point after the initial phases of the outlined work programme are completed (including the PEA), consideration should also be given to revisit an earlier proposal for construction of an all-season road, to increase the available exploration and development time to this ‘winter access only’ site.

Table 26-1 Proposed Martison Anomaly A Exploration and Technical Study Programme and Budget Summary

Phase	Activity	Cost CAD$
I	Metallurgical Flow Sheet Study for Commercial Recovery of Phosphate & Niobium (2 Phases) **Phase 1:** lab work to determine best flowsheet for integrated phosphate/Niobium process **Phase 2:** pilot plant runs to demonstrate new configurations	500,000
	Preliminary Economic Assessment	300,000
	Phase I Sub-Total	***800,000***
II	Ground Geophysics (High Sensitivity Resistivity) Approx. 20 profiles @ average length 1250 m (25,000m)	250,000
	Combined Sonic and Diamond Drilling Approx 25 holes@ average depth 130m (3,250m)	2,500,000*
	Bulk Density Testing	45,000
	Geological Modelling (Re-logging ; Variography Studies)	125,000
	Phase II Sub-Total	***2,920,000***
	Phase I & II Total	***3,720,000***

- Based on approximate overall and inclusive drill programme costs of CAD$770 p/metre (to include temporary winter road construction, temporary camp, supervision, sampling and logging etc.).

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Date and Signature Page

This report titled “Technical Report on the Martison Phosphate Project Resource Estimate, Canada” with an effective date of November 30 2014 and a signed date of April 11, 2016 was prepared and signed by the following authors:

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Principal Consultant (Geology)

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PRACTISING MEMBER
1934

Edmund Finch QP
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P. Eng.
Senior Consultant (Metallurgy)

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
H. E. WYSLOUZIL

Certificate of Qualified Person

Timothy Horner

I, Timothy Horner, P.Geo, do hereby certify that:

1) I am a Geologist employed in the position of Principal Geologist by DMT Group Consultants Ltd, Nottingham, England.
2) I am a graduate of the University of Wales, Cardiff, UK with a B.Sc. in Geology, obtained in 1977, and of the Camborne School of Mines, Cornwall, England with a M.Sc in Mining Geology obtained in 1984;
3) I am a member in good standing of the Association of Professional Engineers and Geoscientists of Ontario (member ID1934), and a Fellow of the Geological Society of London (Membership No : 1007371) and a Chartered Engineer (C.Eng) registered through the Institute of Materials, Minerals and Mining (IoM^3)
4) I have worked as a geologist and / or engineering geologist continuously since 1978;
5) I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined by NI 43-101) and past relevant work experience, I fulfil the requirements to be a "qualified person" for the purposes of NI 43-101;
6) I have participated in the preparation of the report entitled "Technical Report on the Martison Phosphate Project, Ontario, Canada" with an effective date of November 30 2014 and a re-issue date of April 11, 2016. I am responsible for all sections in this report excluding Section 13 (Mineral Processing and Metallurgical Testing).
7) I am independent of Fox River Resources Corp. but was previously involved with the project in 2008, when I was a consultant to PhosCan and formed part of the project team during the 2008 drilling programme. I worked for PhosCan thereafter as a consultant geologist and project manager until February 2009. I also led the project management team from November 2011 to April 2012 for the 2012 winter drill programme, for this I was seconded to PhosCan from my (then) employer Golder Associates Ltd (Mississauga, Ontario).
8) I state that, as at the date of the certificate, to the best of my qualified knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading;
9) I have no personal knowledge, as of the date of this certificate, of any material fact or material change which is not reflected in this Technical Report;
10) I am independent of the issuer as defined in Section 1.5 of NI 43-101;
11) I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form;

This eleventh day of April , 2016

Original signed and sealed

(Signed) "T. Horner"

Timothy Horner, P.Geo.

Certificate of Qualified Person

Edmund Finch

Edmund P. Finch – QP #01398

Address: 1007 State Road 540 West, Winter Haven, FL USA 33880

Telephone: (863) 297-8181

E-Mail: efinch4@tampabay.rr.com

I Edmund Finch do certify that:

1) I am a Metallurgical Engineer serving as president of ED FINCH AND ASSOCIATES INC., a company specializing in mineral beneficiation projects within the mining industry, with an office at 1007 State Road 540 West, Winter Haven, FL 33880.

2) I have a Professional Degree (1967) and a Master’s Degree (1969) in Metallurgy from the Colorado School of Mines and a MBA (1972) from the University of Denver.

3) I have been a registered QP (#01398 - Mining and Metallurgical Society of America) in Metallurgy since March 2011.

4) My relevant experience includes:

   - Project Engineer for 8 years at the Colorado School of Mines Research Institute specializing in laboratory and pilot plant process development for most all common minerals.
   - Chief Metallurgist over a 4 year period for several operating companies in the Florida Phosphate field.
   - Self-employed consultant for the last 32 years primarily in the Phosphate Industry. Projects included overseeing core processing facilities in Florida, Mexico, Peru, Venezuela, and Australia, participating in various phosphate feasibility and due-diligence studies on all five continents throughout the world, and assisting in various phosphate plant start-ups and operation in Florida, Canada, Jordan, Saudi Arabia, and other countries.

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

6) I have participated in the preparation of the report entitled “Technical Report on the Martison Phosphate Project, Ontario, Canada” with an effective date of November 30 2014 and a re-issue date of April 11, 2016. I am responsible for the portion of Section 13 - Mineral Processing and Metallurgical Testing, pertaining to the phosphate process design test work completed since the issuance of the 2008 NI 43-101 Preliminary Feasibility report. The objective of this new work was confirm and/or improve upon the beneficiation flowsheet developed and described in the 2008 Preliminary Feasibility report.

7) I am independent of Fox River Resources Corp. but was previously involved with the project in 2009-2011 when I oversaw bench and pilot plant testing at Jacobs Engineering SA. in Lakeland FL and column cell testing at ERIEZ Manufacturing in Erie PA during the new 2009 Beneficiation Program. In that capacity I served as a technical advisor, on site at the laboratories, to oversee the beneficiation procedures for processing the various ore samples, for analyzing the resulting products, and for recording all pertinent data.

8) I state that, as at the date of the certificate, to the best of my qualified knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading;

9) I have no personal knowledge, as of the date of this certificate, of any material fact or material change which is not reflected in this Technical Report;

10) I am independent of the issuer as defined in Section 1.5 of NI 43-101;

11) I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form;

This eleventh day of April, 2016

Original signed and sealed

(Signed) “E. Finch”

Edmund P. Finch, MMSA

Certificate of Qualified Person

Harold Wyslouzil

Harold Wyslouzil, P. Eng.
11367 E Dreyfus Ave
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Email: hwyslouzil@gmail.com

I, Harold Wyslouzil, P.Eng, do hereby certify that:

1) I am an independent Metallurgical Engineer with an office situated at 11367 E Dreyfus Ave, Scottsdale, AZ 85259, USA. I am a part time Technical Advisor and Executive Director. Global Business Development for Eriez Flotation Division,7168 Venture Street, Delta, BC V4G 1G1Canada
2) I am a graduate of Queen's University at Kingston, Ont. Canada with a B.Sc. in Mining Engineering (Mineral Processing) obtained in 1979;
3) I am a member in good standing of the Association of Professional Engineers and Geoscientists of British Columbia (member ID120840) ;
4) I have worked as a mineral processing engineer continuously since graduation from university in 1979;
5) I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined by NI 43-101) and past relevant work experience, I fulfil the requirements to be a "qualified person" for the purposes of NI 43-101;
6) I have participated in the preparation of the report entitled "Technical Report on the Martison Phosphate Project, Ontario, Canada" with an effective date of November 30 2014 and a re-issue date of April 11, 2016. I am responsible for the portion of Section 13 - Mineral Processing and Metallurgical Testing, pertaining to the development of a niobium recovery process.
7) I am independent of Fox River Resources Corp. but was previously involved with the project in 2011 - 2012 when I oversaw bench scale testing at SGS in Vancouver, BC and at ERIEZ Manufacturing in Erie PA. In that capacity I served as a technical advisor, on site at the laboratories, to oversee the beneficiation procedures for processing the various ore samples, for analyzing the resulting products and for recording all pertinent data.
8) I state that, as at the date of the certificate, to the best of my qualified knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading;
9) I have no personal knowledge, as of the date of this certificate, of any material fact or material change which is not reflected in this Technical Report;
10) I am independent of the issuer as defined in Section 1.5 of NI 43-101;
11) I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form;

This eleventh day of April, 2016

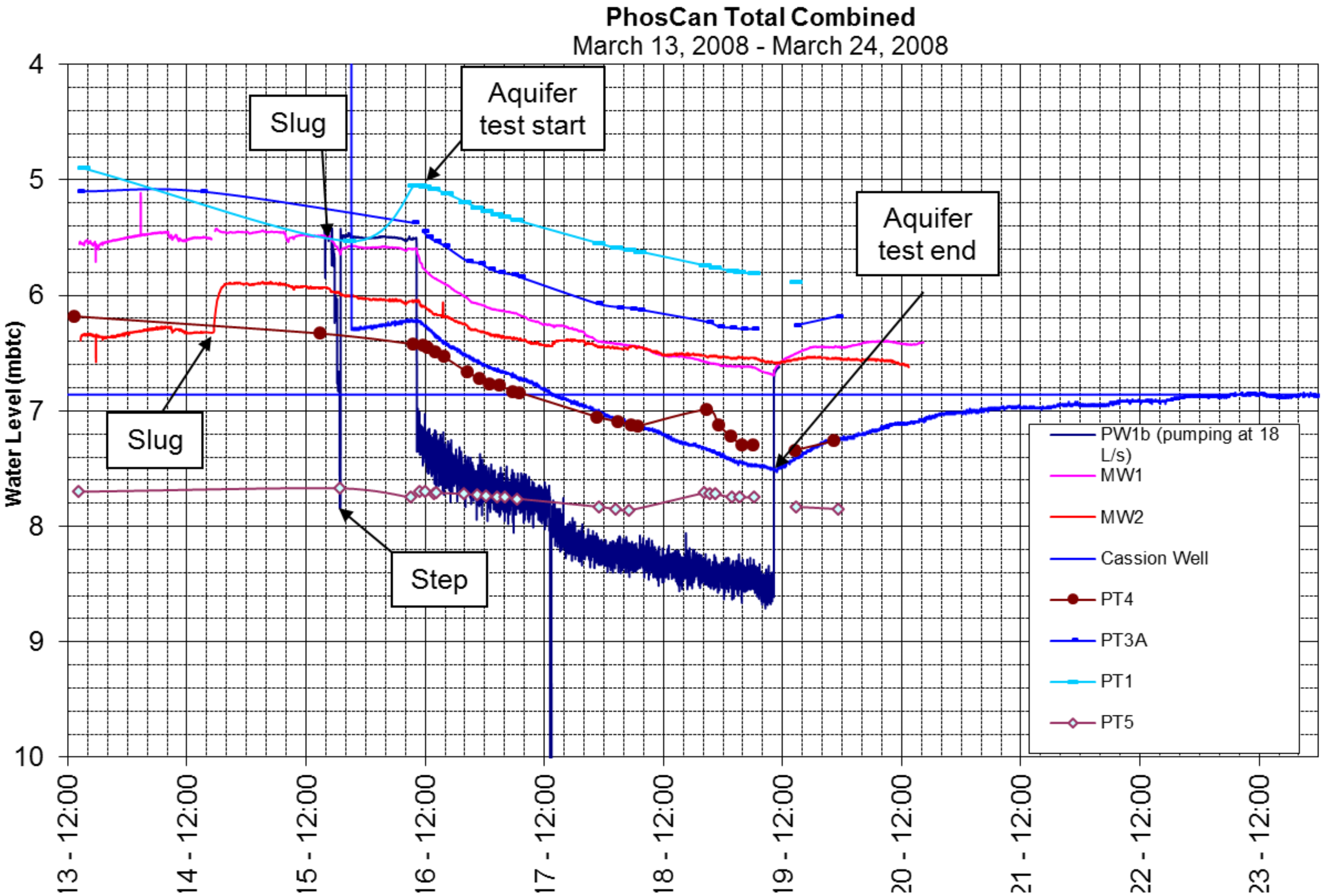
Original signed and sealed

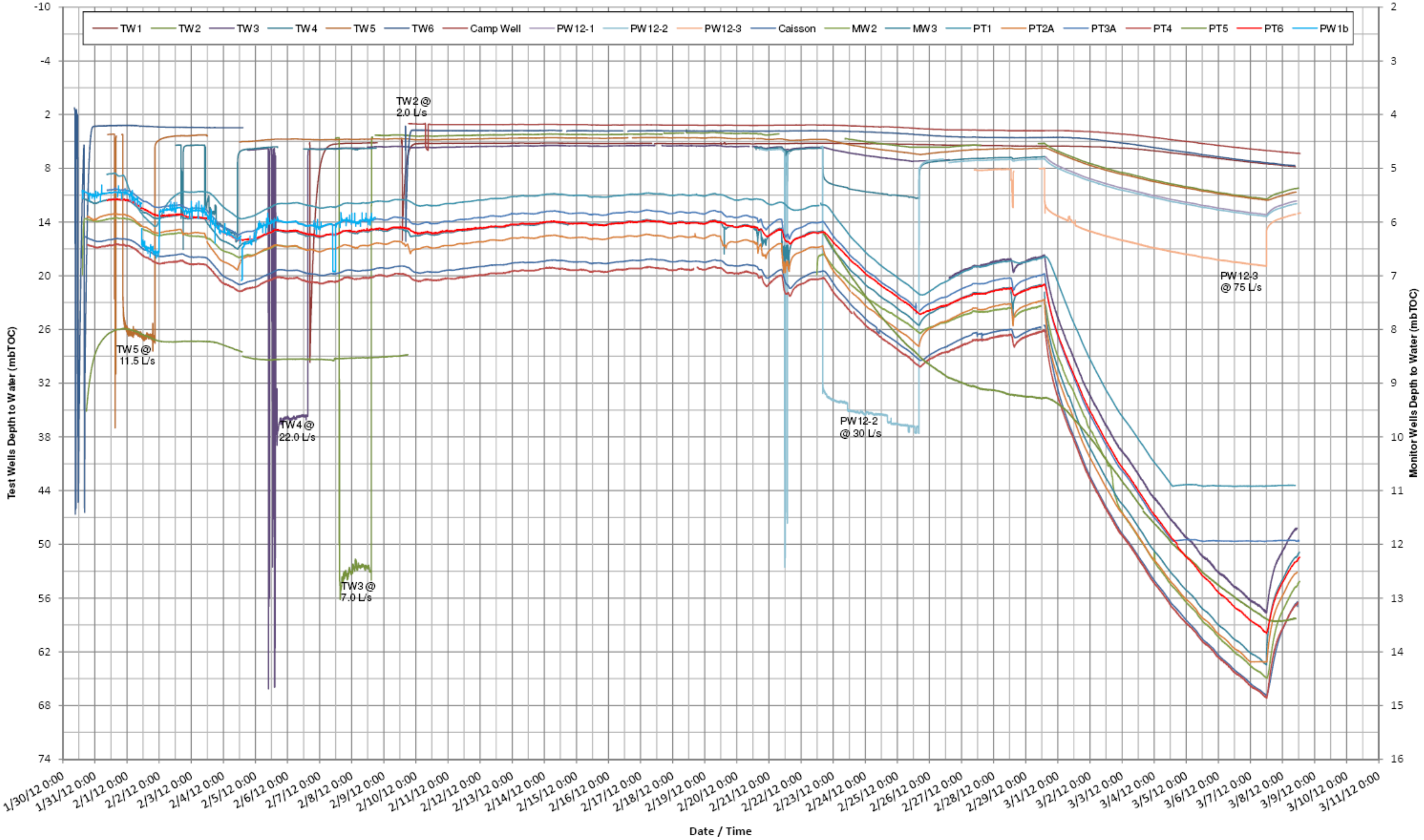
(Signed) "H. E. Wyslouzil"

Harold Wyslouzil, P.Eng.

Appendix A

Hydrogeological Test Results (2008 & 2012)


PhosCan Total Combined
March 13, 2008 - March 24, 2008
Water Level (mbtc)
4
5
6
7
8
9
10
13 - 12:00
14 - 12:00
15 - 12:00
16 - 12:00
17 - 12:00
18 - 12:00
19 - 12:00
20 - 12:00
21 - 12:00
22 - 12:00
23 - 12:00
Slug
Aquifer test start
Aquifer test end
Slug
Step
PW1b (pumping at 18 L/s)
MW1
MW2
Cassion Well
PT4
PT3A
PT1
PT5


TW1
TW2
TW3
TW4
TW5
TW6
Camp Well
PW12-1
PW12-2
PW12-3
Caisson
MW2
MW3
PT1
PT2A
PT3A
PT4
PT5
PT6
PW1b
TW2 @ 2.0 L/s
TW5 @ 11.5 L/s
TW4 @ 22.0 L/s
TW3 @ 7.0 L/s
PW12-2 @ 30 L/s
PW12-3 @ 75 L/s
Test Wells Depth to Water (mbTOC)
-10
-4
2
8
14
20
26
32
38
44
50
56
62
68
74
Monitor Wells Depth to Water (mbTOC)
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
Date / Time
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