

# **Chapter 1 – Introduction and Project Summary**

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# 1. INTRODUCTION

# 1.1 **Project Proponent**

The proponent, Victory Nickel Inc., is a Canadian Company with three sulphide nickel deposits containing significant NI 43-101 compliant Nickel Resources. Victory Nickel is focused on becoming a mid-tier nickel producer by developing its existing properties, Minago and Mel in Manitoba, and Lac Rocher in Northwestern Quebec. Victory Nickel Inc. is a 100% owner of the Minago Project. In August 2011, the company obtained an Environment Act License (EAL) No.2981 for the development of the Minago Project. An Amendment to the EAL No. 2981 is required to accommodate a new TWRMF.

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The Project is referred to as the Minago Project, Tailings and Waste Rock Management Facility (TWRMF).

# 1.2 Project Summary

The site is located within the Nelson River sub-basin, which drains northeast into the southern end of the Hudson Bay. The basin has two more catchments in the Minago River and the Hargrave River, which enclose the project site. There are two more tributaries, the William River and the Oakley Creek present at the periphery of the project area. The catchments of these two tributaries are within the Lake Winnipeg basin and drain northward into the Nelson River sub-basin.

The existing TWRMF is lying over a potential ore deposit and as such the company resolved to relocate the TWRMF to the west part of the property. The TWRMF is proposed to occupy a long, narrow water saturated muskeg/peat wetland within some forested areas approximately four kilometres northwest of the proposed pit. This lowland extends approximately 8km from the southwest to the northeast and is bound on the east and west by sub-parallel dolomite bedrock ridges, approximately 2.5km apart. The proposed TWRMF structures would be oriented between

the ridges, and along the lowland. All controlled discharges from the TWRMF will be directed to the Minago River. The general site plan is given in Figure 1.2-1.



Figure 1.2-1 General Site Plan

The Minago Property (Property) is located in Manitoba's Thompson Nickel belt on Highway 6, approximately 225 km south of Thompson and 100 km north of Grand Rapids, Manitoba, Canada.

The deposit has potential as a large tonnage, low-grade nickel sulphide deposit (25.2 Mt at 0.43% nickel (Ni), 0.20% cut-off grade) and contains 14.8 Mt million tons of marketable frac sand (Victory Nickel Inc., 2010). The potential of the Property is supported by a recent metallurgical test program, where a very high grade nickel concentrate was produced. The excellent recoveries for the ore from the open pit mine are substantiated by historical and current metallurgical testing data. This Environment Act Proposal (EAP) is planned for 31 Mt of Nickel Ore and 14.8 Mt of Frac Sand.

The deposit is overlain by 80 m of overburden (peat and clay), limestone, and sand, with a high open pit strip ratio. However, the 7.5 to 10 m sand layer just above the ultramafic ore bearing rock contains marketable hydraulic fracturing sand (frac sand), which will offset the cost of the stripping. The sandstone unit is amenable for use as frac sand in the oil and gas industry being comprised of small, round, uniformly sized silica sand particles.

The mine life is estimated to be 10 years, with concentrate production mirroring ore production. The frac sand, which will be mined and stockpiled at the start of mining, will be processed throughout the life of the mine and beyond. The first partial year's ore production (year 1) will be stockpiled pending commissioning of the Nickel Ore Processing Plant in year 2.

The Project includes an open pit bulk tonnage mining method, a 3.6 Mt/a Nickel Ore Processing Plant, and 1.5 Mt/a Frac Sand Plant producing various sand products, including 20/40 and 40/70 frac sand, and other finer-sized sands. The Project will be built over a three year period at a capital cost of \$596.3 million (Victory Nickel Inc., 2010; and Wardrop, 2009). The projected production schedule is detailed in Table 1.2-1.

Unit (tonne)	Overburden	Dolomite	Country Rock	Mill (Ni) Production	Frac Sand Plant Production	Mill (Ni) Tailings to TWRMF	Frac Sand Tailings to TWRMF	Ultramafic (PAG) Waste Rock To TWRMF	Total Tailings to T&PAGWRM
Year - 2	6,600,000	29,653,000	0	0	0	0	0	0	0
Year - 1	2,685,000	41,066,000	3,389,000	0	285,000	0	68,000	2,026,000	68,000
Year 1		26,060,000	11,031,000	900,000	1,140,000	889,000	356,000	4,189,000	1,245,000
Year 2		13,928,000	12,465,000	3,600,000	1,140,000	3,555,000	356,000	5,896,000	3,911,000
Year 3		325,000	27,165,000	3,600,000	1,140,000	3,555,000	356,000	4,945,000	3,911,000
Year 4		0	27,200,000	3,600,000	1,140,000	3,555,000	356,000	4,100,000	3,911,000
Year 5		0	16,236,000	3,600,000	1,140,000	3,555,000	356,000	4,223,000	3,911,000
Year 6		0	11,043,000	3,600,000	1,140,000	3,555,000	356,000	5,218,000	3,911,000
Year 7		0	6,836,000	3,600,000	1,140,000	3,555,000	356,000	4,449,000	3,911,000
Year 8		0	786,000	3,600,000	1,140,000	3,555,000	356,000	613,0000	3,911,000
Year 9		0	0	3,600,000	1,140,000	3,555,000	356,000	0	3,911,000
Year 10		0	0	1,254,000	770,000	1,238,,000	240,000	0	1,478,000
Year 11		0	0	0	0	0	0	0	0
Total	9,285,000	111,032,000	116,147,000	30,954,000	11,315,000	30,567,000	3,512,000	35,659,000	34,079,000

 Table 1.2-1
 Production Schedule by Year and Product

Prepared by: JMH3 Checked by: JBH1

As previously configured, the proposed Project will comprise an open pit mine, a Nickel Ore Concentrating Plant, a Frac Sand Plant, and supporting infrastructure. The differences between the 2010 EAP and 2013 EAP (Amendment to the Environment Act License No. 2981 to accommodate the proposed TWRMF) are given in Table 1.2-2. Apart from the new location for proposed TWRMF and size difference, there are no significant changes proposed for the new TWRMF. The related supporting infrastructural components are given below (Table 1.2-2).

INFRASTRUCTURE/COMPONENT	CHANGES TO THE 2010 EAP AND EIS	NO CHANGES (as in the 2010 EIS)	COMMENTS
Tailings and Waste Rock Management Facility (TWRMF) for the co-deposition of tailings and ultramafic waste rock	Х		The proposed location of the proposed TWRMF is in between east and west dolomite bedrock ridges
Waste rock dumps and an overburden dump		Х	
Explosives Storage Facility		Х	
Water treatment systems		Х	
De-watering systems with associated pipelines and pumping stations		Х	
Roads and laydown areas		Х	
Staff accommodations and facilities		Х	
Open pit mining equipment, including trucks, shovels, loaders, and drills		Х	

INFRASTRUCTURE/COMPONENT	CHANGE	NO CHANGE (as in the 2010 EIS)	COMMENTS
Truck repair and maintenance facilities		Х	
Associated electrical and mechanical systems		Х	
Discharge system to Oakley Creek	Х		No discharges to Oakley Creek
Discharge system to Minago River	Х		100% discharge to the Minago River
Processing Plant (PPT)		Х	
PPT Input		Х	
PPT Output		Х	
PPT Reagents Type and Dosage		Х	
PPT Location		Х	
PPT Capacity		Х	10, 000+/day

Table 1.2-2	Infrastructure Components: 201	3 EAP/EIS compared to	2010 EAP/EIS (cont'd)
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INFRASTRUCTURE/COMPONENT	CHANGE	NO CHANGE (as in the 2010 EIS)	COMMENTS
Electrical Systems		X	
Overburden Removal	Х		Mechanical Means vs. Dredging
Design Basis	Х		The proposed TWRMF is designed for 31 Mt of Nickel Ore compared to 25.4 Mt in the 2010 EAP/EIS
ARD Characterization Data		Х	No Additional Data was used for contaminant loading modelling
Ultramafic Rock Quality		Х	36 Mt for existing and proposed
Life of the Min-Mill Throughout	Х		31 Mt vs. 25.4 Mt
Anticipated Mine Life	Х		10 Years Vs. 7 Full Years and 2 Partial Years
Proposed TWRMF Site	Х		To the new location
TWRMF Dam Height	Х		Proposed TWRMF Dam Height: North Dam = 13m with 2m freeboard, South Dam = 8m with freeboard compared to the TWRMF in the 2010 EAP/EIS of 23m

INFRASTRUCTURE/COMPONENT	CHANGE	NO CHANGE	COMMENTS
		(as in the 2010 EIS)	
TWRMF Size (ha)	Х		Proposed Area = 595ha; 2010 EAP/EIS TWRMF Area is 219.70 ha
Polishing Pond (PP) location	Х		
PP Size (ha)	Х		Proposed TWRMF = 120ha; Existing = 75 ha
TWRMF Decant Systems		Х	Proposed systems for the TWRMF mimic the original design as detailed in the 2010 EAP/EIS
Polishing Pond (PP) Discharge Systems to the Minago River	Х		Same Systems
Number of engineered Dyke/Dams	Х		Proposed TWRMF = 2; Existing = 4 Note: the other two dykes for the proposed TWRMF are natural ridges
Spillway Provisions		Х	Same spillway provisions

INFRASTRUCTURE/COMPONENT	CHANGE	NO CHANGE (as in the 2010 FIS)	COMMENTS
Construction Material Characteristics		X	Same construction material characteristics; meets Clause 17 of MB Conservation Environment Act Licence No. 2981 (stipulating that a clay seal comprising at least 1.00m of clay with permeability less than 1 x 10 <sup><math>7</math></sup> m/s.
TWRMF Deposition Quantities	Х		The proposed TWRMF will receive approximately 34.1 Mt of Nickel and frac sand tailings and 36 Mt of ultramafic PAG waste rock vs. 27 Mt of Nickel and 36 Mt in the 2010 EAP/EIS
Tailings Characteristics		Х	The nickel and frac sand tailings will be deposited a conventional slurry at approximately 45/55% Solid/Liquid Ratio as in the 2010 EAP/EIS
Ultramafic Rock Placement in the TWRMF		Х	Same placement systems as in the 2010 EAP/EIS

INFRASTRUCTURE/COMPONENT	CHANGE	NO CHANGE	COMMENTS
		(as in the 2010 EIS)	
End of Pipe Monitoring Point/Final Effluent Discharge Point		Х	The End of Pipe monitoring point will be at the PP. Effluent will meet discharge criteria: The Metal Mines Effluent Regulations (MMER), 2002, last amended in 2012
Winter Discharges route to the Minago River (Nov. – April)		Х	Effluent will be pumped to a channel near the Minago River and will naturally flow to the Minago River (as in the 2010 EAP/EIS)
Spring and Summer Months Discharges to the Minago River (May – October)		X	Effluent will be pumped to approximately 4 kilometres towards the Minago River and will be discharged into the muskegs and let to flow naturally to the Minago River (Same as in the 2010 EAP/EIS)
Monitoring and Surveillance Requirements		Х	Same as in the 2010 EAP/EIS
Open Pit Mine Size		Х	Same as in the 2010 EAP/EIS (190 ha)
Closure Considerations		Х	Same as in the 2010 EAP/EIS

Table 1.2-2	Infrastructure Components:	2013 EAP/EIS compared to	2010 EAP/EIS (cont'd)
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INFRASTRUCTURE/COMPONENT	CHANGE	NO CHANGE (as in the 2010 EIS)	COMMENTS
Effluent Discharge	Х		For the 2013 EAP/EIS, the End of Pipe Effluent will be discharged to the Minago River only. The 2010 EAP/EIS called for discharge to the Minago River (100% during Nov. – April; 70% during May – October; and Oakley Creek (0% during Nov – April and 30% during May – October.
Seepage Management		Х	Pumpback systems will be installed to pump seepage back to the TWRMF (Same as in the 2010 EAP/EIS)
Design Seepage Quantity for the TWRMF	Х		The proposed TWRMF Seepage rate will be 23 cubic metres compared to 250 cubic metres in the 2010 EAP/EIS
Mine Dewatering Effect on Oakley Creek		Х	No effect (Same as in the 2010 EAP/EIS)
Mine Dewatering System Location		Х	Similar to the 2010 EAP/EIS as the open pit mine location is unchanged

INFRASTRUCTURE/COMPONENT	CHANGE	NO CHANGE (as in the 2010 EIS)	COMMENTS
Water Quality Effects on the Minago River		X	Discharges from the PP to the Minago River will meet MMER Criteria and in the Aquatic habitat, the water quality will meet MB Water Quality Standards, Objectives, and Guidelines (MB Water Stewardship, 2011; and Canadian Water Quality Guidelines for protection of Aquatic Life (CCME, 2011)
Discharge Water Quality and Aquatic Life Water Quality Criteria		X	<ul> <li>MMER Regulation</li> <li>MB Water Quality Standards, Objectives and Guidelines (MB Water Stewardship, 2011)</li> <li>CCME Water Quality Guidelines for the Protection of Aquatic Life (CCME, 2011)</li> <li>All similar to the 2010 EAP/EIS</li> </ul>

INFRASTRUCTURE/COMPONENT	CHANGE	NO CHANGE	COMMENTS	
TWRMF Watershed	Х	(as in the 2010 EIS)	<ul> <li>The proposed TWRMF is located in the Minago River Watershed</li> <li>The 2010 EAP/EIS TWRMF was originally located in the Oakley Creek watershed</li> </ul>	
Proposed TRWMF	Χ		Accommodates the Communities of Interest (COI) concerns raised during the consultation process. COIs would like Victory Nickel Inc. to discharge the effluent to the Minago River Watershed and not to the Oakley Creek Watershed. The 2010 EAP/EIS called for discharges to the Minago River and Oakley Creek. Effluent Discharge to the Minago River will protect to the Limestone Bay as this is considered to be a sensitive fish spawning area.	

The design of the TWRMF is based on the aspects given in Table 1.2-3

Item	Value
Life of TWRMF	10 years
Total Nickel Tailings (Tonnes)	30,567,000
Total Sand Tailings (Tonnes)	3,512,000
Total Combined Tailings to TWRMF (Tonnes)	34,079,000
Total PAG Waste Rock (tonnes)	35,569,000
Tailings Specific Gravity (Nickel)	2.6
Initial Tailings Void Ratio (Nickel)	1.0
Initial Tailings Density (Nickel)	1.3 t/m <sup>3</sup>
Average Final Tailings Density (Nickel)	1.5 t/m <sup>3</sup>
Tailings Pulp Density (solid weight) (Nickel) <sup>1</sup>	45%
Average Initial Tailings Density (Sand)	1.4 t/m <sup>3</sup>
Average Final Tailings Density (Sand)	1.6 t/m <sup>3</sup>
Tailings Pulp Density (solid weight) (Sand)	20%
Ultramafic Waste Specific Gravity	2.59
Ultramafic Waste Swelling	30%
Void Space in PAG Waste Rock	5,369,502 m <sup>3</sup>
Total Volume of Ni Tailings	20,807,560 m <sup>3</sup>
Total Volume of Sand Tailings	2,195,000 m <sup>3</sup>
Total Combined Tailings Volume	23,002,560 m <sup>3</sup>
Total PAG Waste Rock	17,898,340 m <sup>3</sup>
Total Ni-Tailings Ingress into Voids of Ultramafic Waste Rock (at initial tailings density) <sup>2</sup>	3,221,701 m <sup>3</sup>
Required TWRMF	37,679,199 m³
Required TWRMF Storage (with 15% contingency included)	43,331,079 m <sup>3</sup>

Table 1.2-3	Design	<b>Basis for</b>	the	TWRMF
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Prepared by: MJV2 Checked by: JBH1

# Notes:

<sup>1</sup> A 45% tailings solids density is used in the current study. However, higher water-to-solids ratios to enhance transport into and through the rock fill are recommended for consideration in detailed engineering.

<sup>2</sup> It is assumed that 60% of the voids in the PAG ultramafic waste rock will be filled with tailings during codisposal. The actual amount of tailings ingress into waste rock voids is dependent on the grain size of the PAG waste rock and the method of deposition. Sensitivity analysis should be carried out to assess the impact of varying levels of tailings ingress into the voids of the waste rock. During construction, field trails should be carried out to determine the actual amount of tailings migration into waste rock voids that can be achieved. The TWRMF is proposed to occupy a long, narrow water-saturated muskeg/peat wetland with some forested areas approximately four km northwest of the proposed pit. This lowland extends approximately 8 km from the southwest to the northeast and is bound on the east and west by sub-parallel dolomite bedrock ridges, approximately 2.5 km apart. The ridges rise nearly 20 meters above the wetland valley that slopes gently at approximately 0.2% but consistently to the north-northeast. The proposed TWRMF structures would be oriented between the east and west ridges, and along the north and south lowland.

The TWRMF is designed to contain all of the ultramafic waste rock and tailings produced during the life of the mine. As shown in Table 1.2-3, the total volume of tailings produced is 23.002 M-m<sup>3</sup> and the total volume of PAG waste rock is 17.898 M-m<sup>3</sup>. The total volume required to accommodate all the waste material is 37.7 M-m<sup>3</sup>, or 43.3 M-m<sup>3</sup> including a 15% contingency.

The available storage in the proposed facility is approximately 48.3 M-m<sup>3</sup>, assuming the facility is filled to a constant elevation of 264m (2m below dam crest) and 55.0 M-m<sup>3</sup> assuming the facility is filled to a constant elevation of 265m (1m below dam crest). In reality, the tailings will not be deposited to a constant elevation. Assuming a 360 degree deposition from an elevation of 264m toward the center of the facility and a final average deposition slope of 0.2%, a reduction in available storage of approximately 10.5 M-m<sup>3</sup> is expected from the 48.3 M-m<sup>3</sup> struck level volume. Therefore, the effective storage volume is reduced to approximately 37.7 M-m<sup>3</sup>, assuming a 2 m freeboard. The TWRMF covers 595 ha and the polishing pond covers an area of 120 ha.

The proposed TWRMF life of the mine is given in Appendix 2.13-1

# 1.2.1 Construction Schedule

The Pre-load / Starter Dam are scheduled to be constructed during the first year of mine development (Year -2) when dolomitic limestone will be available from overburden removal. The Ultimate Dam is scheduled to be constructed during the second year of mine development (Year - 1) with the dolomite waste rock and clay overburden from the open pit. Direct disposal of the dolomite waste rock and clay overburden at the site of the TWRMF perimeter dam will minimize double handing of material.

The delivery of ultramatic PAG rock is schedule for the middle of Year -1, frac sand tailings at the end of Year -1 and nickel tailings at the end of Year 1. TWRMF site preparation and mine development will start approximately one year prior to the disposal of PAG ultramatic waste rock and 2 years prior to the deposition of nickel tailings.

The proposed TWRMF layout is given in Figure 1.2-3. The site topography and drainage is shown in Figure 1.2-1b. The projected construction schedule is shown in Figure 1.2-2



Figure 1.2-2 Projected Construction Schedule



Figure 1.2-1b Site Topography and Drainage



Figure 1.2-3 Proposed TWRMF Layout

# 1.2.1 Mining Activities

The ore will be mined using the conventional open pit mining method. The mine will provide mill feed of sulphide ore at a rate of 10,000 t/d for a total of 30,954,000 Mt of ore grading 0.43% over a period of approximately 10 years. Further drilling is proposed to reclassify some of the inferred into the measured and indicated categories.

In addition, the open pit will provide sand feed to a Frac Sand Plant at a rate of about 4,100 t/d of sand for a total of 14.8 Mt of frac sand over a period of about 10 years. Although the sand will be mined over a period of 3 years at the start of the mining period and stockpiled, the throughput of the Frac Sand Plant will be set to roughly match the same operational period as the Nickel Ore Processing Plant.

The overall waste-to-ore ratio (tonne per tonne, t/t) to mine both the nickel sulphide ore and frac sand is outlined in Table 1.2-4 below.

Case	SR (t/t) (No Overburden)	SR (t/t) (With Overburden)
Frac Sand Only	7.48	8.23
Nickel Ore Only	11.27	11.71
Nickel Ore and Frac Sand	6.72	7.00

Table 1.2-4	Open Pit Design Stripping R	atios
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Source: Wardrop, 2009b

The overall mining sequence was developed in three phases: one initial pit phase and two pushback phases. Each phase corresponds to a designed open pit that is mined in sequence in accordance with the ore grade and stripping ratio. The mine development for the ore and the waste will progress using 12 m high benches.

After removal of trees and significant roots, mine development will commence with the removal of the muskeg and clay overlying the dolomitic limestone, sandstone and nickel host rock. For this initial stage of the mining operation, the work will be done as part of capital expenditures using contractors to remove the overburden. The overburden will be removed mechanically using excavators and haul trucks instead of dredging as previously proposed in the 2010 EIS.

The general arrangement of the mine is illustrated in Figure 1.2-4, Figure 1.2-5 and the mine complex is illustrated in Figure 1.2-2 and detailed in this Section. The general layout for the ultimate mine is provided in Figure 1.2-6.

The rock quantities are summarized as follows:

- 1. A total of 9.285 Mt of overburden comprising peat and clay will be placed in a containment cell located southeast of pit, over a one year period. This cell was considered the ideal location for this low-strength material, because it is above an area with thick, low-strength clays.
- 2. A total of 111.0 Mt of dolomite/limestone from the pit will be used for construction at various locations. The remainder will be placed in the dolomite dump. The limestone will be used in the construction of the TWRMF; the remaining roads and the crusher and ore stockpile pad (18.7 Mt).
- 3. The granite is considered non-acid generating and will be placed in the Country Rock Waste Rock Dump.
- 4. The ultramatic waste rock (35.7 Mt), which is potentially acid-generating and seleniumbearing, will be co-disposed with the tailings in the TWRMF.

The mine water will be managed as follows:

- 1. The progressive development of the open pit will result in increased water infiltration from precipitation and groundwater inflows. As the pit deepens and the footprint increases, dewatering systems such as drainage ditches, sumps, pipelines and pumps will be installed to collect and pump inflows to the Polishing Pond.
- 2. To minimize groundwater infiltration and surface run-off, a ring road with berm and drainage ditches will be implemented to divert water away from the pit. Although dewatering wells will be installed at the pit perimeter, a worst-case allowance of 20% (8000 m<sup>3</sup>/day) of groundwater seepage has been assumed.
- 3. In the pit, dewatering sumps will be used to contain groundwater and storm water run-off will be pumped directly to the Polishing Pond. The in-pit pumping requirements will vary annually, increasing with the catchment area as successive pushbacks create the ultimate pit.
- 4. Storm water from the TWRMF, in-pit dewatering and dewatering wells will be pumped to the Polishing Pond. This water containment provision will ensure that quality standards are met prior to discharge.



Figure 1.2-4 Overall Site Plan for the Industrial Complex



Source: adapted from Wardrop, 2009b





Source: adapted from Wardrop, 2009b

# Figure 1.2-6 General Layout of the Ultimate Mine

# 1.2.2 Ore and Frac Sand Processing

The Nickel Ore Processing Plant will process nickel ore at a nominal rate of 10,000 t/d beginning with the haulage of ore to the primary gyratory crusher and hydraulic rock breaker capable of crushing the ore to an optimal size for grinding.

The grinding circuit, consisting of one semi-autogenous grinding (SAG) mill and one ball mill, will grind the ore prior to flotation. An intermediate crushing stage consisting of one pebble cone crusher will crush oversized product from the grinding circuit for recirculation to the SAG mill. A single vibrating screen will be utilized to classify the SAG mill discharge and the oversize that will be crushed. A hydrocyclone cluster will classify the ball mill discharge and the underflow of the

vibrating screen. Underflow from the hydrocyclone cluster, the oversize ball mill product, will be recycled to the ball mill feed while the overflow, the undersize product, will flow by gravity to the conditioning tank at the start of the flotation circuit.

The flotation circuit will consist of conventional rougher, scavenger and cleaner cells to produce a high-grade nickel concentrate and final tailings. One bank of rougher cells, one bank of scavenger cells, and five banks of cleaner cells will be utilized throughout the flotation circuit. The final flotation concentrate will be thickened in an indoor conventional concentrate thickener and stored in a stock tank. Concentrate from the stock tank will be dried for shipment in a horizontal plate filter press. The filter press will dewater the concentrate to an 8.6% moisture content. A bagging machine will bag the final concentrate in 2 t bags for shipping.

A high rate tailings thickener will clarify the final tailings from the flotation circuit and distribute the tailings underflow to the tailings management area. Flocculants will be used in each thickener to assist in settling and generating a precipitate from solution. Reagents including potassium amyl xanthate (PAX) and sodium hexametaphosphate (SHMP or Calgon) will be added to the ore in the grinding stage to enhance the flotation performance downstream. Methyl isobutyl carbinol (MIBC) and depramin C (CMC) will also be added to the cleaner flotation to aid in concentrate quality.

Flotation optimization will be provided by on-stream samplers, particle size analyzers and an online X-ray analyzer. The samplers and analyzers will be used to monitor performance of the flotation process to optimize concentrate grade and nickel recoveries. An assay and metallurgical laboratory will be incorporated into the mill building to perform laboratory tests.

The frac sand is not expected to require drilling and blasting to be removed, but will require additional backhoe cleanup due to the expected undulating contact at the top of the basement rocks. The backhoe will windrow the sand so that a front-end loader can easily load the material while minimizing the loss of sand due to the loaders large bucket size. The sand is then hauled to a stockpile location, separate from the waste dumps, prior to processing. The sand is released each time a mining stage passes through the bedrock contact as given in Table 1.2-5. The proposed nickel ore processing flow sheet if given in Figure 1.3-2

Initial studies determined the deposit was capable of producing three saleable products including two types of fracturing sand and a flux sand product. Based on marketing study results for annual sales, Outotec designed a Frac Sand Plant capable to operate at a feed rate of 1.5Mt/y, producing different grades of frac sand at a rate of 1,142,805 tonnes of marketable sand annually (Outotec, 2008).

Phase	Sand (tonnes)
Starter Pit	5,288,864
Phase 1	2,091,628
Phase 2	7,466,065
Total	14,846,557

#### Table 1.2-5Final Pit Sand Resource by Phase

Source: Wardrop, 2009b

The design takes into account the seasonality of the frac sand market, the inclement winter weather of Manitoba, and the requirement to operate the full plant year-round. The wet and dry plants will operate in series, with a wet plant feed rate of 265 t/h.

A 16-month schedule for the Frac Sand Plant construction is estimated as the best-case scenario. This would include detailed design, procurement, construction and commissioning with consideration for starting construction in the spring.

The site infrastructure will consist of several facilities including a maintenance building, fuelling facilities, emergency services building, cold storage, fresh and process water pump house, modular complex building, guardhouse and scale house, treatment plants, dewatering facilities, and tailings management facilities.

The maintenance building with truck shop will be used for vehicle repair, tire replacements, welding and general maintenance. This truck shop will comprise a wash bay, lube storage, hydraulic shop, electrical shop, instrumentation shop, storage warehouse and lunchroom. The fuelling faculties will provide diesel fuel storage for mining trucks and diesel generators.

The modular complex building will consist of mine staff dormitories, staff kitchen and cafeteria, mine dry, recreational facilities and office complex (Figure 1.2-7). The water and waste water treatment facilities include a sewage treatment plant and potable water treatment plant. Dewatering facilities include groundwater pumps located around the perimeter of the pit as well as portable dewatering pumping stations within the open pit.

Tailings and ultramafic waste rock will be disposed of in the proposed TWRMF. This area will be equipped with a floating barge system to properly discharge decant water to the Polishing Pond and flood retention area. The Polishing Pond pump house will discharge to the Minago watershed north of the Minago mine site year round. No effluent will be discharged to the Oakley Creek.

# 1.2.3 Electrical Power Supply

Electrical power is required for the Nickel Ore Processing Plant, the Frac Sand Plant, the open pit mine, de-watering and general services. A main substation 230 kV/13.8 kV will be installed to transform the primary power at 230 kV to the secondary power at 13.8 kV. The secondary power distribution network will consist of 13.8 kV primary feeders and overhead transmission lines (Aluminium Conductor Steel Reinforced (ACSR)). The secondary feeders would consist of 6.6 kV,



Source: adapted from Wardrop's drawing 0951330400-G0003 (Wardrop, 2009b)

Figure 1.2-7 Plant and Camp Facilities

4.16 kV and 0.6 kV Teck cable. All operational loads will be calculated on a 24 hr basis for the various load centres. The Nickel Ore Processing Plant consists mainly of the grinding, flotation, concentrate thickener, process water plant and reagent areas, which accounts for 29 Megavolt amperes (MVA) (58 %) of the load requirement. The open pit mine/remote locations consist mainly of the shovels, drills, dewatering pumps, administration buildings, Frac Sand Plant and transfer pond pumps, which accounts for 21 MVA (42%) of the load. Total operational load for the Victory Nickel Minago mine will be approximately 50 MVA.

# **1.2.4 Transportation Corridors**

The Minago property enjoys the advantage of being located directly adjacent to Manitoba Provincial Highway 6, a major north-south highway transportation route. Also, the property may be served by the OmniTRAX rail company with a railhead at Ponton 60 km away. Therefore both inbound and outbound goods from the Minago site can be transported by conventional land transportation methods such as truck and rail. Victory Nickel will neither own nor operate the Ponton Loadout Facility. The site will be operated by the OmniTRAX rail company.

# 1.2.5 Socio-Economic Assessment

Nickel conducted a Socio-economic Assessment of the neighbouring communities. A series of meetings and interviews were held with a wide range of key stakeholders to identify their views and opinions with respect to the Minago Project. The stakeholders included Norway House Cree Nation (NHCN) and Norway House Community (NHC); Grand Rapids Cree Nation (GRCN) and Grand Rapids Community (GRC); Cross Lake Band of Indians (CLBI) and Cross Lake Community (CLC); Moose Lake Cree Nation (MLCN) and Moose Lake Community (MLC); Snow Lake; Manitoba Métis Federation (MMF); Trapline Owners (TLO); Norway House Resource Management Board (NHRMB) and Government Agencies. Consultations, community engagements, and small group and open house meetings were held in the individual communities. Also, Victory Nickel has signed a Memorandum of Understanding (MoU) with Cross Lake, Moose Lake and Grand Rapids First Nations' Bands. The communities to the Minago Property include Grand Rapids (GR), Moose Lake (ML), Cross Lake (CL), Snow Lake (SL) and Norway House (NH). Each community has its own governing infrastructure usually collectively known as the First Nations in the Northern Region of Manitoba.

The objectives of the Socio-economic Assessment (SEA) for the Minago Project were to:

- introduce the major components of the Minago Project to a wide range of key stakeholders;
- inform communities and stakeholders of potential impacts and their relative magnitude on the communities' social and economic well-being;
- provide an opportunity for the integration of diverse community values into the decision making process for the mine development;
- understand the concerns of the communities and stakeholders to develop potential mitigative measures that are practical and cost effective; and
- provide information for addressing the potential impacts of the Minago Project on the socioeconomic resources of the communities.

The Socio-economic Assessment examined how the proposed mining project would change the lives of current and future residents of the surrounding communities socially and economically. The indicators used to measure the potential social-economic impacts include aspects such as

demographic composition, social well-being, business and services evaluation, occupational skills availability and capacity gap analysis, public services, and community social structure.

Overall, the issues raised by the Communities of Interest (COI) were positive. However, it should be noted that there is considerable resentment to development in the area due to adverse past experience with some companies. Many stakeholders, who participated in the community engagement and consultation meetings, appreciated the company's community engagement and consultation process. The COI were interested in potential employment and business opportunities that the Project might bring to the communities. Concerns included the potential environmental degradation and social problems that the Project might bring to the communities. This Study has addressed these concerns by incorporating robust environmental protection measures to minimize exposure.

Various meetings were held with government agencies, the public, First Nations and Métis. Consultation and community engagements on various aspects of the Minago Project occurred during the past three years (2007-2009).

Baseline studies included surface water quality monitoring, vegetation surveys, fisheries assessment, benthic community enumeration, wildlife surveys, sediment characterization, soil assessment, socio-economic assessment, geochemical characterization, hydrological and hydro-geological assessments. The goal of this study is to determine the potential impacts of the Minago Project on those environs by comparing baseline indicators and operational data. The details of the baseline studies are given in the 2010 EIS document (Victory Nickel Inc., 2010).

# 1.3 Regional Context

Figure 1.3-1 presents a regional Context Map for the Minago Project that details locations of Indian Reserves, First Nation Selections, Resource Management Areas, mining claims, Manitoba Parks, as well as road distances from the proposed Minago mine development. The Minago Property is located 485 km north-northwest of Winnipeg, Manitoba, Canada and 225 km south of Thompson, Manitoba on NTS map sheet 63J/3. Road distances from the Minago Project are as follows: 68 km north to Ponton, 103 km south to Grand Rapids, 117 km to Wabowden, 157 km to Snow Lake, 228 km to Cross Lake, and 261 km to Norway House.

The Minago Project area falls within the Treaty 5 traditional territory and specifically the Norway House Resource Management Area. Neighbouring communities to the Minago Property include Grand Rapids (GR), Moose Lake (ML), Cross Lake (CL), Snow Lake (SL) and Norway House (NH). All of these communities, with the exception of Snow Lake, are members of Treaty 5. Cross Lake and Norway House were also two of five First Nations that signed the Northern Flood Agreement (NFA) with Canada, the Province of Manitoba and Manitoba Hydro, which provided compensation to First Nations for flooding arising from hydro-electric projects on the Nelson and Churchill Rivers and by the Lake Winnipeg Regulation Project.

Treaty 5 is a treaty that was first established in September, 1875, between Queen Victoria and Saulteaux and Swampy Cree non-treaty tribes and peoples around Lake Winnipeg in the District of Keewatin. The Treaty was completed in two rounds. The first was from September 1875 to September 1876. The Crown intended in 1875 to include only "the Indians [east and west] of Lake Winnipeg for the surrender of the Territory uncovered by previous treaties" including "the proposed migration of the Norway House band" (Kenneth and Morrison, 1986). The Pimicikamak



Figure 1.3-1 Minago Project: Regional Context Map

territory (Cross Lake) was north of the lake, but was also included. Additional peoples and groups signed on between 1908 and 1910.

The Manitoba Northern Flood Agreement (NFA) and an accompanying Economic Development Agreement (EDA) were ratified after referenda in five First Nations communities in March 1978. Parties to the agreement included Canada, the Province of Manitoba, Manitoba Hydro and the Northern Flood Committee Inc. (NFC), an Aboriginal corporation acting on behalf of the five affected First Nations (Cross Lake First Nation, Nelson House - now Nisichawayasihk Cree Nation, Split Lake - now Tataskweyak Cree Nation, York Factory First Nation and Norway House Cree Nation). The NFA proved difficult to implement (INAC, 2009a and 2009b). In 1982, all parties filed a large number of claims before the Arbitrator in the face of an initial limitation period for such claims. In 1986, the Northern Flood Committee Inc. proposed that a comprehensive implementation agreement be developed and four party global negotiations followed. In 1990, those all-party negotiations produced a Proposed Basis of Settlement (PBS). Over the next few years, Tataskweyak Cree Nation, York Factory Cree Nation, Nisichawayasihk Cree Nation, and Norway House Cree Nation signed Comprehensive Implementation Agreements (CIAs), which in the case of Norway House is known as a Master Implementation Agreement (MIA). These agreements were signed with Canada, Manitoba and Manitoba Hydro and clarified the obligations of each party as well as provided substantial economic development funds to communities, along with significantly more land than the original NFA. In 1997, Cross Lake First Nation opted not to continue with negotiations toward a Comprehensive Implementation Agreement and requested that Canada, Manitoba and Manitoba Hydro to implement the NFA directly, in accordance with its "spirit and intent". This new process was launched in May 1998. Various proposals have been put forth by Canada, Manitoba, and Manitoba Hydro to the Cross Lake First Nations. Discussions are still continuing. Canada continues to fulfil its ongoing obligations specified in the NFA (INAC, 2009a and 2009b).

Various mineral/mining claims have been staked in the Minago Project area and areas surrounding Snow Lake, Wekusko, Ponton, Dunlop, and Wabowden. Currently, there is an operating mine (Bucko Lake Nickel Mine) near Wabowden, which is operated by Crowflight Minerals Inc. HudBay Minerals Inc. has the Chisel North mine and concentrator in Snow Lake, Manitoba, which is currently under care and maintenance until economic conditions warrant re-evaluation.

The Minago Project is located within the Nelson River sub-basin, which drains northeast into the southern end of the Hudson Bay. The Minago River and Hargrave River catchments, surrounding the Minago Project Site to the north, occur within the Nelson River sub-basin. The William River and Oakley Creek catchments at or surrounding the Minago Project Site to the south, occur within the Lake Winnipeg sub-basin, which flows northward into the Nelson River sub-basin. The topography in these watersheds varies between elevation 210 and 300 m.a.s.l. The Minago Project history is detailed in the 2010 EIS document (Victory Nickel Inc.,2010).



Source: Wardrop, 2009b

# Figure 1.3-2 Proposed Flowsheet for the Ore Processing

# 1.3.1 Project Proposal

VNI is applying for an amendment to its EAL No.2981 to include the proposed TWRMF. Following the discovery of additional mineralization in and around the area where the current TWRMF is located, VNI decided to relocate the TWRMF.

The TWRMF is proposed to occupy a long, narrow water-saturated muskeg/peat wetland with some forested areas approximately four km northwest of the proposed pit. This lowland extends approximately 8 km from the southwest to the northeast and is bound on the east and west by sub-parallel dolomite bedrock ridges, approximately 2.5 km apart. The ridges rise nearly 20 meters above the wetland valley that slopes gently at approximately 0.2% but consistently to the north-northeast. The proposed TWRMF structures would be oriented between the east and west ridges, and along the north and south lowland (Figure 1.2-1b).

A nickel mine is proposed for the Minago deposit on the Minago Nickel Property (Property). The Property is located near the northeast corner of the Western Canada Sedimentary Basin.

Ultramafic rocks host the nickel mineralization on the Property. The deposit is overlain by approximately 7.5 m of Ordovician sandstone, 53 m of Ordovician dolomitic limestone, 1.5 to 10.7 m of compacted glacial lacustrine clays that have very low permeability, and 1.0 to 2.1 m of muskeg and peat (Wardrop, 2009b). The sandstone at the contact of the basement rocks has potential for frac sand for use in the oil well developing industry. Beneath the sandstone lies granite and ultramafic rocks.

The dominant geological feature of economic interest underlying the Property is a series of boudinaged ultramafic bodies folded in a large Z shaped pattern. The ultramafic bodies, intrude mafic metavolcanics and metasediments interpreted to be lower Pipe Formation stratigraphy, contain intraparental magmatic nickel sulphide mineralization.

It is proposed to mine and process the Minago ore body and frac sand on site utilizing crushing, grinding using a sag mill, flotation, thickening, concentrate filtering and drying process steps.

The Minago deposit has potential as a large tonnage, low-grade nickel sulphide deposit suitable for open pit mining methods with the possibility for underground mining using bulk tonnage mining methods. Parts of the deposit below a depth of 400 m will require additional drilling to upgrade the resource class from inferred to indicated. The tailings and ultramafic waste rock deposition rates are given in Tables 1.2-1 and 1.2-3.

The TWRMF will occupy 595 ha and the PP will occupy 120 ha.

The deposit is overlay by 80 m of overburden, limestone, and sand, with a high open pit strip ratio. However, the 7.5 to 10 m sand layer just above the ultramafic ore bearing rock contains marketable hydraulic fracturing sand (frac sand), which will offset the cost of the stripping. The installation of a Frac Sand Plant in addition to the Nickel Ore Processing Plant will generate further revenue for the Project. The analysis assumes that critical revenue streams will be developed from both the nickel and frac sand resources.

The mine life is estimated to be 10 years of full production for nickel and frac sand.

The Nickel Ore Processing Plant will process 3,600,000 t/a of ore through crushing, grinding, flotation, and gravity operations. This feed rate will produce approximately 49,500 t/a of 22.3% nickel concentrate on an average year before transportation and moisture losses and approximately 46,400 t/a after losses. The Frac Sand Plant will be capable of producing 1,350,000 t/a of various sand products including 20/40 and 40/70 frac sand.

# **1.3.2 Environmental Commitment**

From exploration to mining, Victory Nickel will continue to work diligently to preserve and protect our natural environment by implementing sound environmental management systems and processes at all stages of our business activities, and by pursuing continuous improvement in our environmental performance.

Victory Nickel's commitment starts at the top with the CEO/Vice Chair, the President and COO and the Vice President of Environment and Sustainable Development, and extends through to the managers and supervisors at each of our projects, and all management, technical and operational personnel.

Victory Nickel's environmental code of practice outlines our goals and commitments. Victory Nickel commits to:

- Assessing the potential environmental impacts of any new undertaking with an objective of minimizing them;
- Designing and operating our facilities to ensure that effective controls are in place to minimize risks to health, safety and the environment;
- Implementing an Emergency Response Plan to minimize the impacts of unforeseen events;
- Providing training and resources to develop environmentally responsible employees;
- Ensuring that environmental factors are included in the purchase of equipment and materials;
- Ensuring that contractors operate according to our environmental policies and procedures;
- Complying with all applicable environmental laws and regulations;
- Communicating with employees, the public, government agencies and other stakeholders on activities involving health, safety and the environment;
- Regularly verifying environmental performance and implementing any required corrective action;

- Minimizing the generation of hazardous and non-hazardous waste and ensuring proper disposal of all wastes;
- Implementing measures to conserve natural resources such as energy and water; and
- Rehabilitating sites in accordance with regulatory criteria and within the established timeframe.

In addition, VNI is committed to the Six Tenants for Sustainability of Mining including:

- Planning for the sustainable mining of necessary resources is a global necessity.
- Sustainability of the economic and social benefits stimulated by the active mining period is an objective of sustainability and succession planning for a mine site.
- Determination of the potential impacts and the optimization of mine development, operation and reclamation, to minimize these impacts, is a requirement of responsible stewardship.
- Planning and provision for post mining sustainable land use management and custodial succession are necessary.
- Involvement of all stakeholders in the planning, execution and succession processes are necessary.
- Achieving a consensus decision on the mine plan requires both a platform for the exchange of technical and social information and viewpoints (to achieve universal and comprehensive understanding) and accounting (decision making) procedure that allows for all evaluation bases.

# **1.3.3 First Nations and Other Communities of Interest Commitment**

Victory Nickel's commitment to the First Nations and Communities of Interest (COI) are consistent with the following general principles:

- mutual respect, essential to lasting beneficial and interactive relationships between Victory Nickel's operations and the First Nations including other COI and requires continuing and effective two-way communications and realistic expectations on all sides;
- active partnership to shape the way that Victory Nickel works with local communities, as well as with regional and national governments and other affected parties, by seeking mutual commitment and reciprocity based on trust and openness so as to reach agreed objectives and shared involvement;
- long-term commitment to the Nations is sought so that social and economic well-being is safeguarded and, where possible, enhanced throughout the Minago Project's life and beyond.

# 1.4 Project Regulatory and Planning Context

The entire Minago project constitutes a Class 2 development under the Classes of Development Regulation (Manitoba Regulation 164/88) as a nickel mine development. The development is subject to the *Manitoba Environment Act* review process. The project will therefore undergo the environmental assessment and licensing process in order to amend the *Environment Act* Licence (EAL) No.2981 prior to construction and operation. An Environment Act License was issued to VNI in August 2011 following the Minister's acceptance of an Environment Act Proposal (EAP) and an EIS (Victory Nickel Inc.,2010).

# 1.4.1 Manitoba Environmental Assessment Act

The intent of the *Environment Act* is to develop and maintain an environmental protection and management system in Manitoba, which will ensure that the environment is protected and maintained in such a manner as to sustain a high quality of life, including social and economic development, recreation and leisure for this and future generations. As such, the *Environment Act* is complementary to, and support for, existing and future provincial planning and policy mechanisms; provides for the environmental assessment of projects, which are likely to have significant effects on the environment; provides for the recognition and utilization of existing effective review processes that adequately address environmental issues; provides for public consultation in environmental decision making while recognizing the responsibility of elected government including municipal governments as decision makers; and prohibits the unauthorized release of pollutants having a significant adverse effect on the environment. The Minago Project was subjected to the regulations and related conditions under the *Manitoba Environment Act*. This Environmental Impact Statement for the alternative TWRMF is submitted to the Environmental Assessment and Licensing Branch of the Manitoba Conservation.

# **1.4.2 Manitoba Permits and Approvals**

Prior to commencing exploration field work, a work permit describing each work activity must be obtained from the Manitoba Conservation office in Wabowden, Manitoba and a letter of advice has to be obtained from the Federal Department of Fisheries and Oceans. The Norway House Resource Management Area Board has to be consulted about the Minago Project. A borehole permit is required for diamond drilling.

VNI holds a Mineral Lease, which gives the Company the right to mine. With the Mineral Lease no Surface Rights Permit is required.

The Minago Project was subjected to environmental reviews under both the provincial and federal processes. However, environmental permitting of the Minago project was handled by a onewindow process in which all environmental reviews (whether federal or provincial) was coordinated through Manitoba Conservation, the provincial department responsible for environmental assessment and approvals. VNI anticipates a similar approach to the permitting of the proposed TWRMF.

# Provincial

The project requires an Environment Act License before any construction/mine development/mine production can take place. In Manitoba, the Environment Act License has to cover all emissions from the project (water, mill, Frac Sand Plant, air, tailings, etc). Since the project is a Class 2 Development, a full Environmental Impact Statement (EIS) was required to support the license application. An EAL was issued in 2011.

In addition, some of the other specific provincial and federal requirements are outlined in the 2010 EIS:

- Water rights license for water withdrawal from groundwater sources (Manitoba Regulation 126/87);
- Drinking water permit under the Health Act,
- Septic holding tank permit for installation and operation of the mine site wastewater holding tank (Manitoba Regulation 83/2003);
- Sanitation system approval will be required under the Environment Act (E125);
- Petroleum storage tanks permits are required both for the construction/installation and operation of petroleum storage tanks with a capacity of 5000 L or more (Manitoba Regulation 188/2001);
- A construction camp license will be required under the Manitoba Public Health Act,
- VNI has to register as a Hazardous Waste Generator (Generator Registration and Carrier Licensing Regulation, Manitoba Regulation 175/87);
- A Closure Plan complete with financial assurance has to be submitted to and approved by the Ministry of Energy and Mines before commencement of any construction;
- A permit will be required for any construction above or below ground level within 38.1 m (125') or to place any installation within 15.2 m (50') from the edge of Provincial Highway 6 Right of Way;
- An authorization by the Director of Manitoba Conservation will be required for the construction of the Tailings and Waste Rock Management Facility (TWRMF).
- A functional Decommissioning Plan for the mine will be required under the *Mines Act* and the *Environment Act*, and
- Any new or modified access connections to Provincial Highway 6 will require a permit from the Ministry of Transportation under the *Highways and Transportation Act*.
- EAL 2981 Conditions (Appendix 1-4)

The above permits are administrative in nature and any impact assessment/mitigation matters that may be associated with the above are addressed in the full project and the one for the alternative TWRMF EIS.

#### 1.4.3 Sustainable Development

Victory Nickel Inc. (VNI) recognizes that economic development and environmental stewardship must be compatible with the *Sustainable Development Act* and is committed to the principles of and guidelines for sustainable development as defined in Schedule A and B of the Act.

The seven principles discussed in the Act, along with the six guidelines for sustainable development are outlined below.

#### Principles:

- Integration of Environment and Economic Decisions
- Stewardship
- Shared Responsibility
- Prevention
- Conservation and Enhancement
- Rehabilitation and Reclamation
- Global Responsibility.

#### Guidelines:

- Efficient Use of Resources
- Public Participation
- Access to Information
- Integrated Decision Making and Planning
- Waste Minimization and Substitution
- Research and Innovation.

Through careful financial and engineering planning, VNI will anticipate, prevent, and/or mitigate potential significant economic, environmental, human health and social effects associated with mining operations including the alternative TWRMF. Sound environmental practices will be used to maintain and operate the mining operations. Environmental stewardship is being integrated into most aspects of facility planning, operation and maintenance. VNI will comply with conditions stipulated in the EAL 2981.

VNI will consider the concerns of surrounding communities regarding potential environmental issues associated with the operation of the facility. VNI will continue to work with community leaders and regulatory agencies to address community concerns and to protect the environment. VNI initiated consultation with Norway House Cree First Nations (NHCFN), Grand Rapids Cree First Nations (GRCFN), Moose Lake Cree First Nations (MLCFN), Cross Lake Band of Indians (CLBN); the communities of Grand Rapids, Cross Lake, Moose Lake, Norway House; and the Manitoba Métis Federation (MMF).

All VNI employees will be held accountable and responsible for assisting with sustaining the economy, the environment, human health and social well-being as it pertains to their workplace and the surrounding community. Education and training will be provided to all employees as part of their jobs to assist in decisions, which may affect sustainable development.

VNI will work with its' suppliers with the goal of using only environmentally sound and economically viable products. Wastes, which will be generated, will be handled, treated and disposed of with the utmost care to prevent any adverse impact on the environment as per 2010 EIS, Section 9.4.

VNI will encourage the minimization of general waste and hazardous waste generation and will make wise and efficient use of renewable resources and non-renewable resources as per commitments made under Section 9.4 of the 2010 EIS.

# 1.4.4 Federal Acts and Regulations

Environmental permitting of mining projects in Manitoba is handled by a one-window process in which all environmental reviews (whether federal or provincial) are coordinated through Manitoba Conservation, the provincial department responsible for environmental assessments and approvals.

# 1.4.5 Land Use Plans and Tenures

The property is comprised of one contiguous group of claims and one mineral lease, augmented by an isolated claim and a second adjacent mineral lease (Figure 1.4-1). The contiguous block consists of one mineral lease and 40 unpatented mineral claims with a combined surface area of 7,298.23 hectares (ha).

Mineral Lease 2 and Mineral Lease 3, which were issued on April 1, 1992, for a period of 21 years, may be renewed after that time at the discretion of the Minister of Manitoba Industry, Economic Development, and Mines.

Mineral claims KON 1 through KON 4 are in good standing until May 17, 2021 plus 60 days.

Mineral claims BARNEY 1 to BARNEY 6 inclusive are in good standing until September 24, 2022 plus 60 days.

Mineral claims VIC 1 through VIC 12 are in good standing until April 17, 2021 plus 60 days.

Mineral claims VIC 13 through VIC 23 are in good standing.



Figure 1.4-1 Minago Mineral Dispositions

As a result of an option agreement entered into with Xstrata Nickel on claims BRY 18, BRY 20, BRY 21, BRY 22, TOM F, and DAD and subsequently fully exercised at year- end 2008, a NSR is payable to Xstrata on any exploited mineralization found on the claims.

Victory Nickel has obtained a quarry lease (QL-1853) with an area of 69.88 ha on a portion of the mineral lease ML-002. In addition, four quarry leases, surrounding and contiguous with QL-1853 have been applied for. These pending quarry leases over a total area of an additional 244 ha. Victory Nickel has also been issued the 10-year quarry lease QL-2067 that commenced in November 2009.

Quarry lease QL-1853 has a term of 10 years and may be renewable for further terms of 10 years subject to the discretion of the Minister (Figure 1.4-2).

The holder of a mineral claim (Victory Nickel Inc.) has the exclusive right to explore for and develop the Crown minerals, other than the quarry minerals, found in place on, in, or under the lands covered by the claim (*The Mines and Minerals Act*, 73[1]).

The lessee of a mineral lease has the exclusive right to the Crown minerals, other than quarry minerals, that are the property of the Crown and are found in place or under the land covered by the mineral lease. The lessee also has access rights to open and work a shaft or mine, and to erect buildings or structures upon the subject land (*The Mines and Minerals Act*, 108[a], [b], [i], [ii]).

With respect to the pending quarry lease, the lessee of a quarry lease has the exclusive right to the Crown quarry minerals specified in the lease (in this case limestone) that are found on or under the land covered by the lease and that are the property of the Crown (*The Mines and Minerals Act*,140[1] [a]).

Other Land Users within the Mineral Dispositions or Near the Area:

• For Norway House District: Registered Trap Line (RTL) # 150-07 covering all mineral dispositions.



Figure 1.4-2 Minago Property Quarry Lease Status

- For Forestry Branch, Forest Management Licence: (FORM REPAP W 0012 and FORM REPAP 2 0012 covering all mineral dispositions.
- For Manitoba Hydro, Transmission Line and Easement Agreement: Right of Way 319.735 m wide, plan number 5830 N.L.T.O for portions of BARNEY 1, BARNEY 2, BARNEY 6, and MIN 5.
- For Manitoba Department of Highways: Right of way 91.44 m wide that is split 65.532 m west of the centre line and 25.908 m east of the centre line, plan number 6149 N.L.T.O for portions of BARNEY 1, BARNEY 2, BARNEY 3, BARNEY 6, MIN 4, and MIN 5.
- For Manitoba Department of Highways: Quarry Withdrawal, plan number 6148 N.L.T.0.for southeast corner of ML-003.

There is no mining-related infrastructure on the property apart from the access road for exploration activities. The Minago Project Nickel Deposit, referred to as the Nose Deposit, is located on mineral lease ML-002.

There are no environmental liabilities attached to the property.

# 1.5 Report Organization

This report is structured as a series of volumes: Volume I – the TWRMF Environmental Impact Statement – consisting of Chapters 1 to 13; Volumes II – Appendices supplemental to Chapters 1 to 13. To the large volume of supportive material and certified laboratory reports, the appendices have been organized in the following manner. The nomenclature of the appendices follows the numbering of the secondary headings in the text. For example, the appendix related to Section 2.1 – Quarry Lease – is called Appendix 2.1, and appendices to Section 7.5 – Surface Water Quality – are called Appendix 7.5 in Volume II.

As an overview of the entire TWRMF EIS, an Executive Summary gives an outline of Chapter 1 to 10. The intent of the Executive Summary is that it can be read without reference to the body of the TWRMF EIS. Additional information is depicted in the 2010 EIS document.

# 1.6 Report Distribution

This application to amend EAL 2981 has been submitted to the Environmental Assessment and Licensing Branch of the Manitoba Conservation. A total of four (4) hard copies and a minimum of one (1) electronic copy (CD) are required as per Information Bulletin – Environmental Act Proposal, Report Guidelines. Victory Nickel has submitted 4 electronic copies (in Portable Document Format (PDF)) of the report instead of one copy as per Information Bulletin.