

CONSORTIUM

Ref. No : 115726.001-601



1032, 3^e avenue, Val d'Or, QC, J9P 1T6

REPORT

SOCIÉTÉ DE DÉVELOPPEMENT DE LA BAIE-JAMES

JAMES BAY ROAD REHABILITATION — 2018-2021 ROAD WORK

Operation of quarry at km 85.5, operation of a mobile asphalt concrete plant on the quarry site at km 85.5 and operation of a quarry at km 168 of the James Bay Road

Application for exemption from the environmental assessment process under section 154 of the Environment Quality Act

FEBRUARY 2018

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Société de développement de la Baie-James

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Application for exemption from the environmental assessment process under section 154 of the Environment Quality Act

Prepared by:



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Approved by:



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February 8, 2018

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1 PROJECT PROPONENT

Name:	Société de développement de la Baie-James (SDBJ)	
Civic address:	110 Matagami Boulevard, P.O. Box 970	
	Matagami, Quebec J0Y 2A0	
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Fax:	819 739-4329	
Email:	rthibault@sdbj.gouv.qc.ca	
Project Manager:	Raymond Thibault	
Mandatory: Quebec Enterprise Number (NEQ) from the Registraire des entreprises du Québec	Not applicable	

2 CONSULTANT COMMISSIONED BY THE PROJECT PROPONENT

Name:	Consortium Norda Stelo/Stantec	
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Project Manager:	Anne-Marie Leclerc, M.Sc., geomorphologist	
Mandatory: Quebec Enterprise Number (NEQ) from the Registraire des entreprises du Québec	3373097636	

3 TITLE OF THE PROJET

Operation of a quarry at km 85.5, operation of a mobile asphalt concrete plant on the quarry site at km 85.5 and operation of a quarry at km 168 of the James Bay Road

4 OBJECTIVES AND JUSTIFICATION OF THE PROJECT

4.1 Objective

The objective of this application is to obtain a exemption notice under section 154 of the *Environment Quality Act* (EQA) for the following activities:

- Operation of a quarry, whose area to be stripped is less than 3 ha, located at km 85.5 of the James Bay Road;
- Operation of a mobile asphalt concrete plant on the quarry site at km 85.5 of the James Bay Road;
- Operation of a quarry, whose area to be stripped is less than 3 ha, located at km 168 of the James Bay Road;

The following sections provide information on an exemption application for the development and operation of these three project elements. All the information required in the "*Preliminary information on a project in a northern region*" form (September 2016 version) is included in this report.

4.2 Applicable regulatory framework

No person may undertake or carry out a project referred to in Schedule A of the *Environment Quality Act*, i.e. a project that is automatically subject to the environmental impact assessment procedure or a project that is not automatically exempt from this procedure (Schedule B of the Act), in a northern region¹ unless an attestation of exemption of the project has been issued by the MDDELCC, in accordance with section 154 of the Act. However, the development of a mobile asphalt concrete plant and the operation of a quarry of less than 3 hectares are both activities in the "grey zone."

It should be mentioned that a mobile asphalt concrete plant located on the quarry site at km 85.5 has already been the subject of an exemption application in 2016, in anticipation of road works of which the deadline was originally set for fall 2017. The attestation from the MDDELCC was obtained on June 28, 2016 (Ref. No.: 3214-05-081). However, in the summer of 2017, the contractor selected by the SDBJ did not need to mobilize such a plant on this site and preferred to operate from other facilities. This year, it is certain that a mobile asphalt concrete plant will be used, as the rock resource is still available and the planned work, including paving, is located near the quarry.

¹ Territory subject to the JBNQA; south of the 55th parallel.

The SDBJ holds valid certificates of authorization (CofA) issued under section 22 of the EQA for quarrying operations at km 85.5 and km 168. For information purposes, a CofA change for the quarry at km 85.5 was obtained on June 21, 2017, authorizing an area of 22,500 m² (2.25 ha) to be stripped (see ref.: 7610-10-01-84003-00).

The total operating area authorized by the CofA within the quarry at km 168 is 39,500 m² (3.95 ha), while the area to be stripped is 21,700 m² (2.17 ha) (see ref.: 7610-10-01-84826-00). The certificate is worded as follows: *"Operate a quarry whose operating area has a total surface area of 39,500 square metres, an area to be stripped of 21,700 square meters, an average thickness of 14 metres and a maximum thickness of 16 metres."*

In addition, exclusive leases to mine surface mineral substances (BEX) were obtained from the Ministère de l'Énergie et des Ressources naturelles. BEX No. 1554 of the quarry at km 85.5 expires June 25, 2020. For the quarry at km 168, BEX No. 1708 is valid until July 13, 2022.

Finally, the operation of the mobile asphalt concrete plant planned inside the quarry site at km 85.5 is subject to obtaining a CofA or, where applicable, upon filing a certificate of compliance with the MDDELCC. The SDBJ entrusts the contractor with the responsibility of complying with the regulations in force in this respect. These steps will likely be undertaken by the contractor in early spring 2018.

4.3 Justification of the project

4.3.1 Overall road rehabilitation project

The James Bay Road connecting Matagami to Radisson was built in the early 1970s as part of the development of major hydroelectric projects in the area. The road now requires major repairs. From 2015 until 2021, the SDBJ will launch various projects aimed at improving the safety and comfort of road users, thus benefiting several Cree communities for whom the James Bay Road remains the only road link connecting villages to each other and to southern Quebec.

To do this, the work will involve the rehabilitation of roadways, reshaping of shoulders, installation of guardrails at required locations, maintenance of structures (bridges) and complete replacement of hundreds of culverts. The work was scheduled in two phases: 2014 to 2017 and 2018 to 2021. In September 2018, Consortium Norda Stelo/Stantec received a mandate from the SDBJ to prepare the plans and specifications for the 2018 to 2021 programming and to carry out other related mandates. Related mandates include the preparation and submission of environmental applications to various regulatory authorities (MDDELCC, MFFP, DFO, MERN).

In 2018, more specifically, the SDBJ plans to carry out the following maintenance works (see Map 1.1 of Schedule 1):

- Complete replacement of 61 deficient culverts, including several drainage culverts and others crossing fish habitats;
- Correction of deficient work at the extremities of culverts, installed in 2017 (environmental protection measures);
- Road work from km 69 to km 74 and km 89 to km 143;
- Equipment replacement work on 8 bridges (Pontax III, Pontax I, Pontax II, Jolicoeur, Eastmain, Opinaca, Vieux Comptoir and Castor);
- Supply and installation of guardrails from km 120 to km 200;
- Clearing and deforestation (small areas mainly for culvert extremities and quarries).

4.3.2 Project subject of this application

As of spring 2018, the SDBJ wishes to mine two local quarries, one at km 85.5 and another at km 168. As part of the same project, a mobile asphalt concrete plant will also be installed within the quarry site at km 85.5². These quarries will provide the required materials for the following purposes:

- Paving and sub-layers;
- Adjustment of the shoulders;
- Spot lengthening of shoulder slopes where safety in the event of an accidental road departures must be improved, but where the installation of guardrails is not possible;
- Crushed stone and stabilization stone for the replacement of culverts and the correction of some existing structures.

5 LOCATION OF THE PROJECT

The project is located entirely in the vast territory of the Eeyou Istchee James Bay municipality (administrative region No. 10), in a territory subject to the JBNQA. Map 1.1 of Schedule 1 illustrates the general location of quarries and the mobile asphalt concrete plant.

The quarry at km 85.5 is approximately located at kilometre marker 85.5 on the east side of the James Bay Road, at the following approximate central coordinates:

LAT/LONG (degrees, min, sec.)	UTM zone 18
50°13'10"N; -77°05'37" N	350,646 m E; 5,565,137 m N

The cutting edge is located approximately 680 m from the road (see map in Schedule 2). The quarry is connected to the road by an existing access road of approximately 450 m in length. The mobile asphalt concrete plant will be located in an already levelled and deforested area.

² Note that a mobile asphalt concrete plant will also be installed near the quarry site at km 168. An exception application has recently been submitted by others (a contractor) to the MDDELCC and is currently being analyzed. Our request only concerns the operation of the quarry located at km 168.

The quarry at km 168 is approximately located at kilometre marker 167.2 on the west side of the James Bay Road, at the following approximate central coordinates:

LAT/LONG (degrees, min, sec.)	UTM zone 18
50°41'43"N; -77°40'14" N	311,391 m E; 5,619,365 m N

The cutting edge is located approximately 430 m from the road (see map in Schedule 3). The quarry is connected to the road by an existing access road of approximately 300 m in length.

6 DESCRIPTION OF THE PROJECT AND ITS VARIANTS

As in the case of the rehabilitation work of previous years, construction stone will be provided by local quarries located near the James Bay Road. Paving will be produced by operating mobile asphalt concrete plants located on or near the quarry site. The extracted materials will be used for the production of crushed stone used in the manufacture of asphalt concrete and aggregates for road works, as well as the production of filter stones or armour stone for slope stabilization works, including culverts.

The criteria selected for choosing these sites are:

- Rock availability and their existing disposition (e.g., presence of access road);
- Their proximity to road works;
- Awarding of contracts to contractors;
- Validity of environmental authorizations.

According to the criteria listed above, the two quarries at km 85.5 and km 168 are all designated. There is no alternative project, since the operation of these two quarries appears more profitable compared to other quarries that are further away in terms of the projected road works. It should be noted that the volumes and areas presented specifically for 2018 in Table 6.1 are based on preliminary estimates. The quantities that will be mined between 2019 and 2021 are not known to date, but they will be significantly lower than the quantities planned for 2018, since most of the mining will be carried out in 2018. That said, the volumes and maximum areas will remain consistent with the environmental authorizations obtained, since the contractor is contractually bound.

Table 6.1 summarizes the areas already mined and stripped as well as the maximum expansions corresponding to the area to be stripped. In addition, for information purposes, the areas planned for deforestation and mining in 2018 are presented based on preliminary estimates. It should be noted that the maximum expansions, which are the subject of this application, are greater than the areas corresponding to the anticipated needs for 2018.

Table 6.1 Quarrying and deforestation areas at km 85.5 and km 168

	Quarries	
	km 85.5	km 168
Current state		
Previously quarried area ¹ (m ²)	17,205	12,925
Bare surface (m ²)	17,995	20,070
Present exemption application		
Maximum expansion – area to be stripped (m ²)	22,500 ²	21,700 ³
Area to clear (m ²)	18,965	9118
Estimated needs for 2018 ⁴		
Projected quarry area for 2018 (%)	50%	70%
Projected quarry area for 2018 (m ²)	11,250	16,275
Projected deforestation area for 2018 (m ²)	9,480	5,473

1. Quarries were already partially mined a few years ago, but none are currently active.

2. This area to be stripped corresponds to that authorized in the CA (2.25 ha).

3. This area to be stripped corresponds to that authorized in the CA (2.17 ha).

4. For information only, according to estimates made by the developer according to preliminary estimates. Depending on the mandated contractor, the quantities may differ, while remaining within the maximum expansions requested.

6.1 Quarry at km 85.5

This exemption application is for quarrying an area of 22,500 m² (2.25 hectares) (Table 6.1 and map of Schedule 2). It is estimated that a prior deforestation of approximately 18,965 m² would be required to mine it. However, the real projected needs are of the order of 50% of this area, i.e. 11,250 m² of quarrying, which would result in about 9,480 m² of deforestation in 2018. The areas to be quarried in subsequent years are not known but are considered to be much lower than those of 2018.

This quarry has been used in the past, but vegetation partially covering the site indicates that it has not been used in recent years. The access road remains usable. According to a recent potential borrow pit characterization report (WSP 2017³), two types of rock characterize the site: pink granite and gneiss. A large potential for eastward quarrying has been identified, with rock outcrop visible up to about 75 m east of the current working face. Then, the bare soil gives way to shrubby vegetation and ends in a forest environment. No wetland appears to limit expansion, but a small intermittent stream flows 300 m west of the working face (Schedule 2).

According to current estimates, the crushed rock of this quarry is expected to meet the material requirements for rehabilitation work located approximately south of km 143 of the James Bay Road.

6.2 Mobile asphalt concrete plant at km 85.5

The location for this mobile asphalt plant is the quarry at km 85.5. At this time, it is not possible to provide details of the plant that will be put in place, as this application is intended to reserve a site for use by a contractor who has not yet been selected. In addition to crushed rock from the quarry, it is possible for recycled levelling materials to be used as inputs in the manufacture of new asphalt concrete.

In addition to the mobile asphalt mix plant, standard equipment will be used for crushing, production, loading and transportation of the material. The approximate location of the asphalt plant is shown in the map of Schedule 2.

The plant will be transported from the south by truck. Used oil and empty asphalt containers will be taken care of by the contractor and transported off site to a company authorized to handle this type of waste. The fuel supply to the plant and related equipment will be provided by a local supplier.

Once the paving is complete, the plant will be dismantled, empty asphalt containers will be compressed, put in containers to be shipped south for recycling. The site will be levelled as needed using clean aggregates.

6.3 Quarry at km 168

This exemption application also concerns the mining of the quarry at km 168, the area to be stripped is 21,700 m² (2.17 ha) and has a total operating area of 39,500 m² (3.95 ha) (Table 6.1 and map of Schedule 3). It is estimated that prior deforestation of approximately 9,110 m² would be required to mine it. This lower proportion of deforestation required for the quarry at km 85.5 is due to the fact that approximately 40-50% of the deforestation required for 2018 has already been completed in 2017, or

³ WSP, 2017. *Characterization of the quality of the materials from borrow pits and quarries along the James Bay Road*. Final report presented to: Société de développement de la Baie-James. March 2017. 51 pages and appendices.

approximately 5,470 m². However, the actual anticipated needs are of the order of 70% of the maximum area to be stripped, i.e. 16,275 m², requiring approximately 5,470 m² of deforestation for the works of 2018. The areas to be quarried in subsequent years are not known but are considered to be much lower than those of 2018.

This quarry has been mined in the past, but has not been used for a few years. According to the characterization report of WSP (2017), the site has great potential for quarrying with a working face visually assessed at a height of 20 m over a length of approximately 350 m. Visual observation of the rock in place suggests that the north rock is more brittle (sheets) than that found in the east. The continuous outcrop observed in the east and the lack of wetlands and high water table (water accumulation) suggest a potential eastward extension.

According to current estimates, the crushed rock of this quarry is expected to meet the material requirements for the 2018 rehabilitation work located approximately between km 143 and km 200 of the James Bay Road.

7 COMPONENTS OF THE ENVIRONMENT AND MAIN CONSTRAINTS TO THE REALIZATION OF THE PROJECT

7.1 Natural environment

The two quarries at km 85.5 and km 168 are already developed on existing sites and already benefit from access roads. According to data from ecoforest maps, drainage is considered good with rocky outcrops. An intermittent stream is located approximately 300 m from the site at km 85.5, while an intermittent linear stream is located approximately 350 m from km 168. Thus, no wetland, lake, river or permanent watercourse is identified within 100 m of the sites covered by this application.

Both quarries are in the boreal forest, in the bioclimatic domain of the spruce-moss forest. The forest environment at the periphery of the sites is composed of even-aged forest stands dominated by black spruce and an age class of 50 years (km 168) or 70 years (km 85.5). When the forest cover is more open, on the edge of deforestation cleared by quarry development, there is also a regeneration of trembling aspen among the spruce trees.

There are no protected areas near the two sites, only one biological refuge is listed more than two kilometres from the km 85.5 site.

7.2 Human environment

The James Bay Road is the main road link between the Aboriginal communities of Nord-du-Québec and the village of Radisson with the south of the province. According to the James Bay and Northern Quebec Agreement, the two sites at km 85.5 and km 168 are in Category III land, a free public land without exclusive use by Aboriginal communities. The development and mining of quarries will not affect the fishing or hunting rights of neighbouring communities. A priori, the two sites are not in trapping territory nor inside a lease of a temporary shelter or Aboriginal resort. In addition, there are no Cree camps near the quarries or any other infrastructure other than the road itself. Except for the movement of people (residents and vacationers), the road is also used by the forest and mining industry. The realization of the overall project meets few constraints, except at the administrative level, because of the work schedule (deadlines, authorizations, contractor phasing, implementation, etc.). The quality of materials has been validated by the consultant WSP (2017). In addition, the amount of material available is greater than required. Few constraints are anticipated for the works and activities covered by this exemption application.

8 PRIMARY IMPACTS ANTICIPATED

Given that the two quarries already exist and that the mobile asphalt concrete plant will be set up in an already deforested sector, no significant impact is anticipated on the natural and human environments. Forest stands that will be cut are abundant in the area and no wetland or water will be impacted. No Aboriginal rights or privileges are undermined by the operation of both quarries. Since no camp is nearby, no noise disturbance is anticipated. The visual impact of the quarry will be almost zero since it is not visible from the road.

Preliminary plans and specifications include a special estimate "185 - Environmental Protection" and the contractor is required to comply with it for all work, including quarrying, which must comply with the authorizations obtained (CofA and BEX) and the technical and general specifications of the Ministère des Transports, de la Mobilité durable et de l'Électrification des transports (MTMDET).

In addition to the mitigation measures contained in the CA application, specification 185 contains the following:

- Establishment of a contractor protection plan;
- Sediment and runoff control;
- Measures to be taken to avoid petroleum product spills and the measures to be taken in case of an accidental spill;
- Management of excavated materials and hazardous materials.

9 PUBLIC INFORMATION AND CONSULTATION PROCESSES

The SDBJ and the Eeyou Istchee James Bay Regional Government are multi-level partners across the region. The road rehabilitation program was established following consultations with local populations and other stakeholders in the area.

10 PROJECT SCHEDULE

The quarry operations and the operation of the mobile asphalt concrete plant are planned mainly for 2018, but depending on the needs for 2019, 2020 and 2021, there may be an opportunity to operate these quarries and a mobile asphalt concrete plant until the fall of 2021. For this reason, this application covers the period 2018-2021.

11 SUBSEQUENT PHASES AND RELATED PROJECTS

Similar road repairs will be carried out along the James Bay Road and along Chisasibi Road until 2021. The supply of materials will be made from quarries and borrow pits already characterized and located on both sides of the road. Some of these sites may require additional analysis or additional permissions to be usable.

12 SIGNATURE OF APPLICANT

I, Anne-Marie Leclerc, M.Sc., geomorphologist, Environmental Execution Manager, Consortium Norda Stelo/Stantec, certify that all the information mentioned in this preliminary information form is accurate to the best of my knowledge

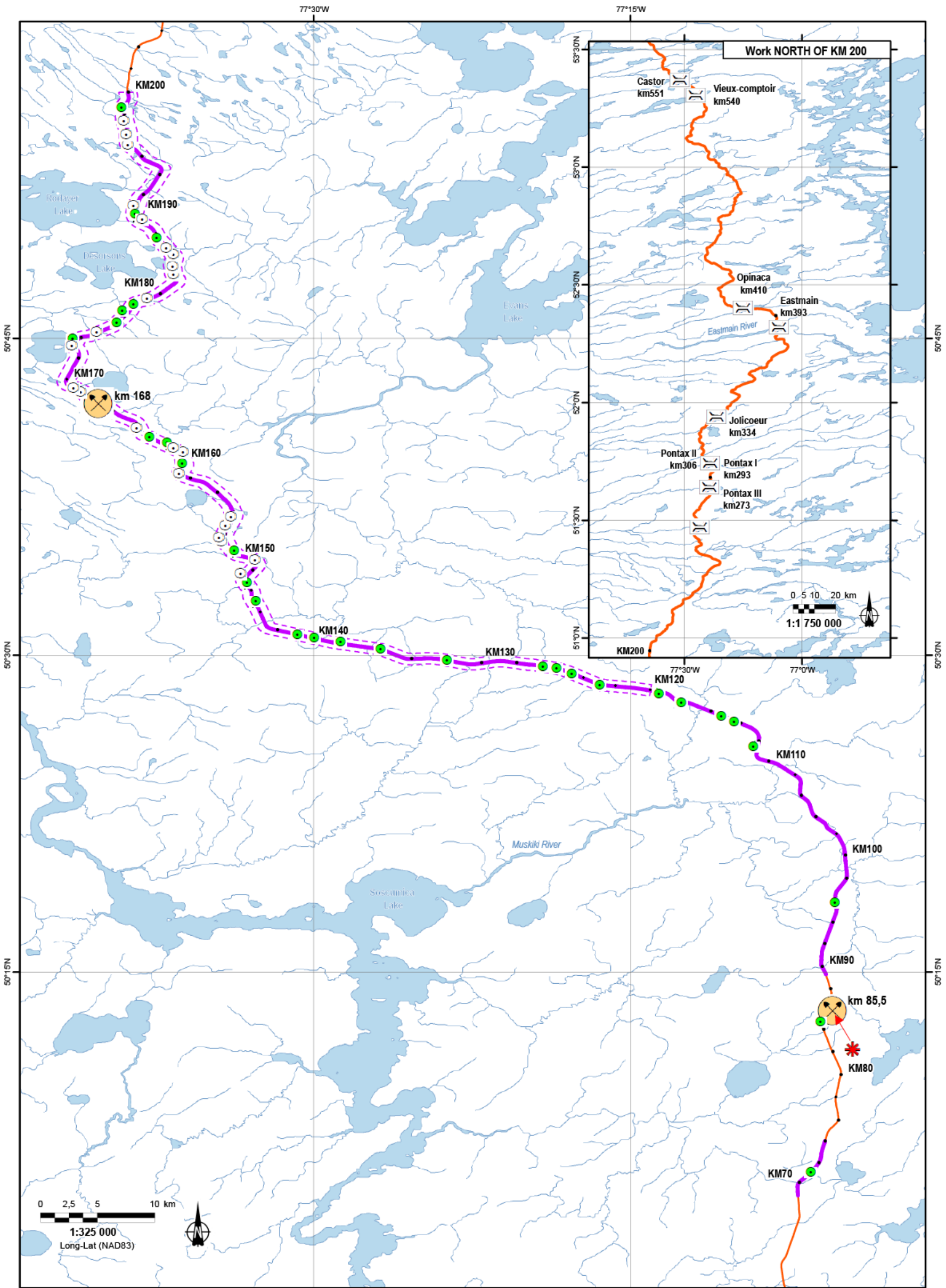
Anne-Marie Leclerc, M.Sc., géomorphologist

February 8, 2018

Date

Appendix 1

Map 1.1 Location of road work for 2018 and quarries at km 85.5 and km 168



- James Bay Road
- Road rehabilitation
- Installation of guardrails
- Quarry
- Mobile asphalt concrete plant (km 85.5)

- Culverts**
- Development 2017, WSP
 - Development 2018, Norda-Stelo/Stantec
- Bridges**
- Equipment replacement, Norda-Stelo/Stantec

Société de développement de la Baie-James
JAMES BAY ROAD REHABILITATION
(Work scheduled in 2018)

Exemption notice under
section 154 of the EQA – MDELCC

Road repairs scheduled for 2018
and location of quarries at km 85.5 and km 168

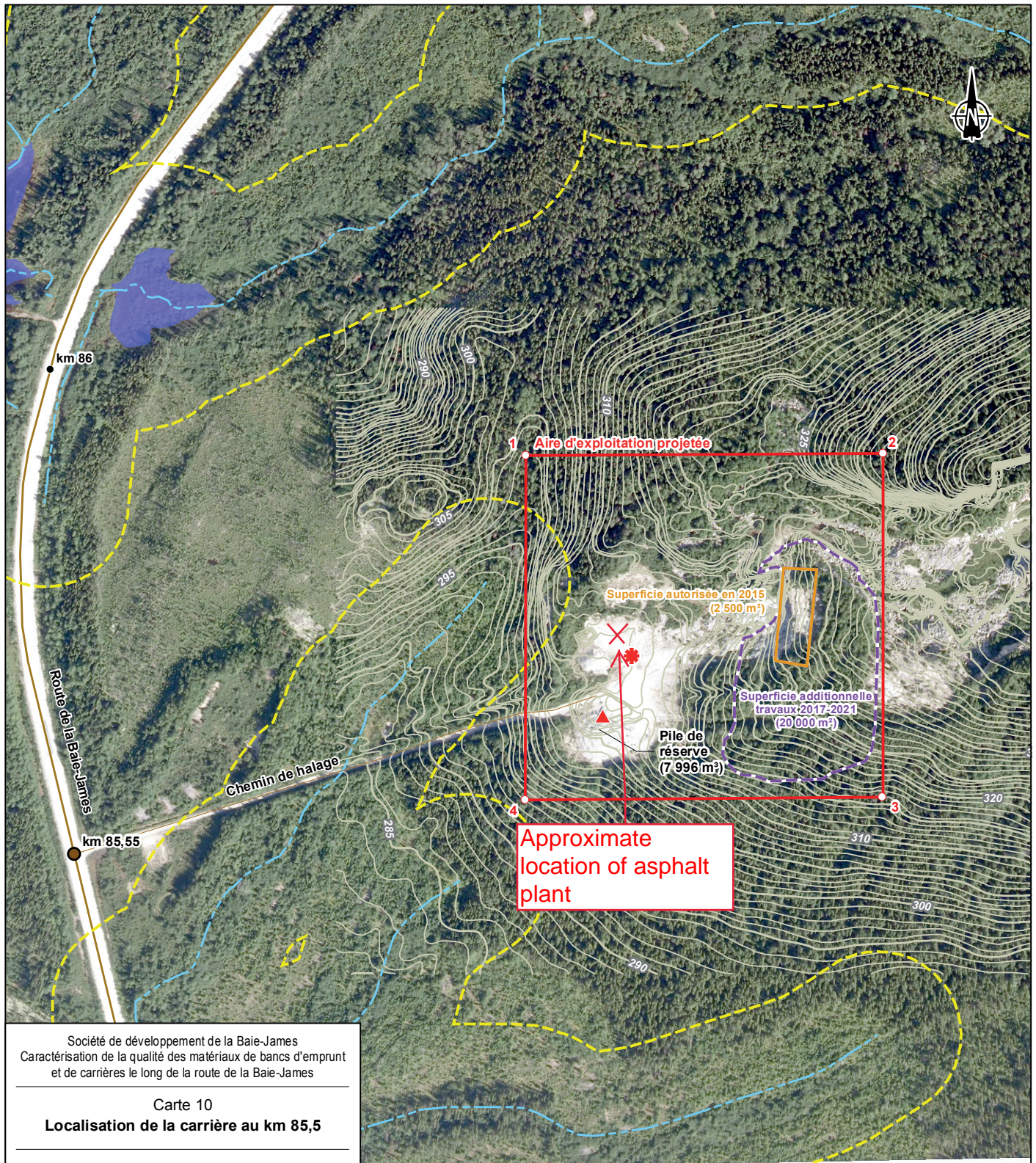
115726_C1-1_Loc_travaux_2018_180202.mxd
Map base: BNDT_032k
February, 2018

Map 1.1

Prepared by: AML Drawn by: YR Verified by: VB

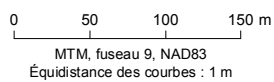
Appendix 2

Location of the quarry at km 85.5 (WSP, 2017)



Société de développement de la Baie-James
Caractérisation de la qualité des matériaux de bancs d'emprunt
et de carrières le long de la route de la Baie-James

Carte 10 Localisation de la carrière au km 85,5



Source :
Orthophoto, MRNF Québec, 2010, © Gouvernement du Québec
BDTQ, 1/20 000, MERN Québec
Milieux humides, WSP, 2015
Courbes de niveau, WSP, 2015
Fichier : 141_23211_GB_c10_carkm85_wspq_170330.mxd

Mars 2017

Projet : 141-23211-07



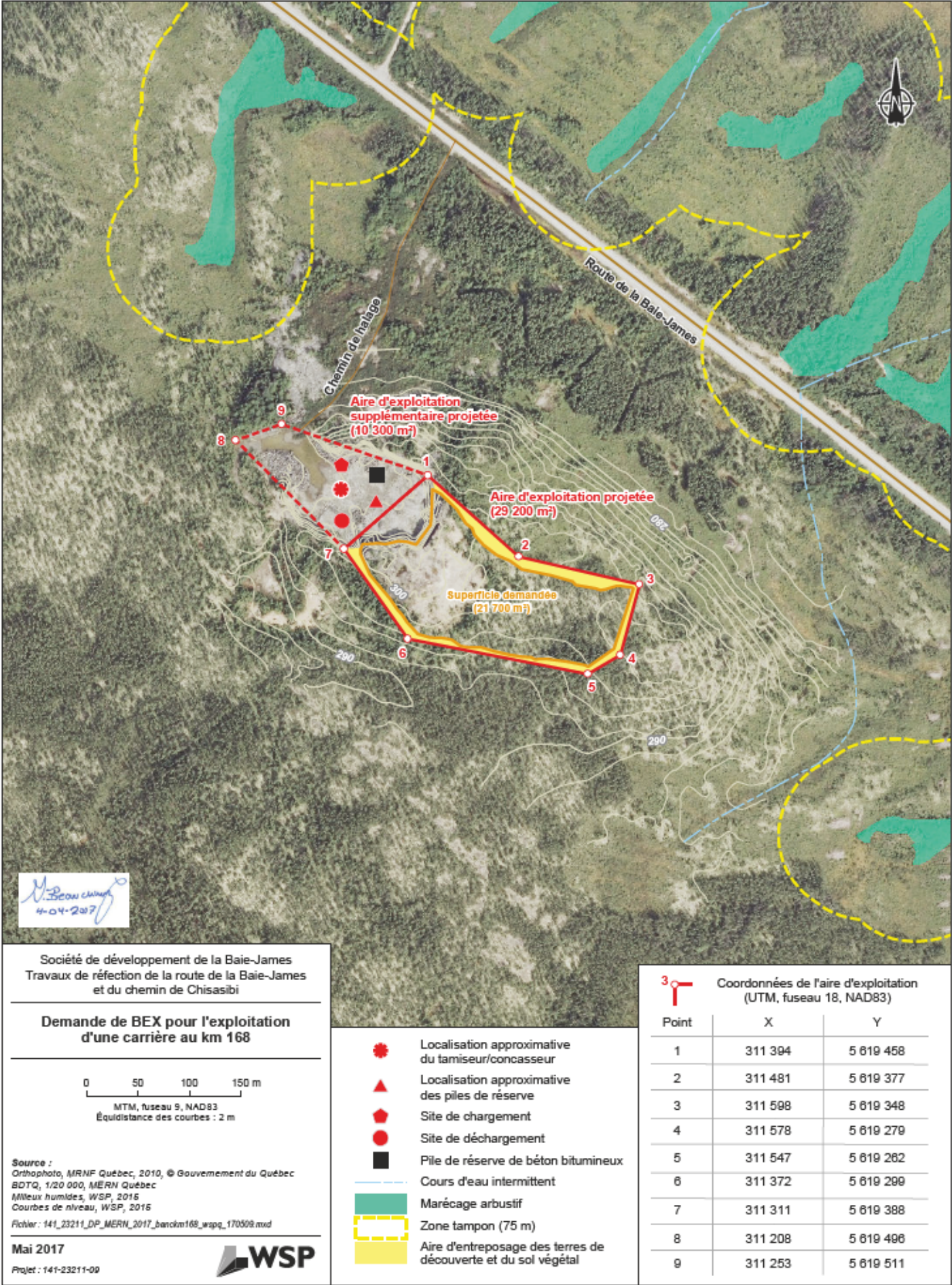
- Localisation approximative du tamiseur/concasseur
- Localisation approximative des piles de réserve
- Cours d'eau intermittent
- Étang de castor
- Zone tampon (75 m)

Coordonnées de l'aire d'exploitation (UTM, fuseau 18, NAD83)

Point	X	Y
1	350 405	5 565 245
2	350 727	5 565 240
3	350 720	5 564 930
4	350 398	5 564 934

Appendix 3

Location of the quarry at km 168 (WSP, 2017)





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