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BIRCH MOUNTAIN RESOURCES LTD.

ASSESSMENT REPORT:
September 26, 2006

Athabasca Metallic and Industrial Minerals Permit 9396080028,
Northeastern Alberta

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20060019

Birch Mountain
RESOURCES LTD

PARTS B and C

ASSESSMENT REPORT:
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Athabasca Metallic and Industrial Minerals Permit 9396080028,
Northeastern Alberta

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Birch Mountain
RESOURCES LTD

SUMMARY

This assessment report documents the mineral exploration activities conducted on Birch Mountain Resources Ltd's Metallic and Industrial Mineral permit no. 9396080028 on the Athabasca property in northeastern Alberta, for the period August 14, 2004, to August 31, 2006. A total of $85,090.38 is claimed for assessment on this permit. All of the work described here was directed at industrial mineral exploration on this permit.

Exploration activities described in this report include:

- Reconnaissance Mapping and Sampling Program September 2004
- Field Mapping and Sampling Program June 2006
- Remote Sensing Program August 2006

The assessment expenditures are organized and reported by exploration activity in Part A of this report.

1.0 INTRODUCTION

In Fall, 2004, Birch Mountain began to investigate the possibility of establishing an aggregate quarry in the northern area of its Athabasca permits, south of the Marguerite River. A reconnaissance mapping and sampling investigation was conducted. In Winter 2006, additional work identified an area within Metallic and Industrial Minerals permit number 93960800028 as having high potential for an aggregate quarry due to previous identification of outcrops of Precambrian granites (Dufresne et al., 1994). It was decided to investigate this region further in a more detailed field mapping and sampling program in Summer 2006. Both helicopter-supported field mapping and sampling work as well as remote sensing studies were conducted.

1.1 Previous Work

Previous exploration by Birch Mountain Resources Ltd. within the Athabasca permit area is documented in previous assessment reports prepared and submitted by Birch Mountain. Birch Mountain has not conducted aggregate exploration on Metallic and Industrial Minerals permit number 9396080028 prior to the activities documented in this report.

Exploration activities conducted by other companies have concentrated on uranium and both base and precious metals (Dufresne et al., 1994). Additional geological information can be found in Dufresne et al. (1994) and Olson et al. (1994).

2.0 LOCATION AND ACCESS

Birch Mountain Athabasca permit number 9396080028 is located northeast of Fort McMurray and Fort McKay, in northeastern Alberta (NTS 74D, E & L; Appendix A). Much of this area is underlain by the McMurray Formation oil sand deposits. Near the Athabasca River between Fort McMurray and Fort McKay, road access is good; once away from the river and further north, the number and condition of the roads decreases. A winter road exists from Fort McKay to Fort Chipewyan. Permit number 9396080028 is only accessible by use of a helicopter and all field personnel and equipment must be flown in. During exploration activities on this permit, accommodation, food, supplies and fuel were available from both Fort McMurray or the new Denman Camp, 60 km north of Fort McMurray.

The regional physiography in the immediate vicinity of the Athabasca permits is generally low lying (from 300 to 350m above sea level), with open and spruce-forested swampy ground. In the northern section of the mineral permits, in the region of permit number 9396080028, the swampy areas are separated by well defined pine-forested sand flats. Spruce-forested swampy ground in this area gives way to the south and southwest to ground that is well drained and densely forested, with a mix of deciduous and coniferous trees on the northern side of a roughly circular elevated area called Muskeg Mountain (with elevations of up to 580 m above sea level). The best outcrop exposures occur in the river valleys; in elevated areas swamps are almost ubiquitous and outcrop is absent. Therefore, much of the information on the geology and structure of the area is from drill core examination.

Infrastructure in the area is centered on the major community of Fort McMurray, which is serviced by regular passenger air service. Several major highways including Highway 63 to Fort McMurray provide road access to the area.

3.0 REGIONAL GEOLOGY

A geological map for Birch Mountain's Athabasca permit area is included in Appendix A. A generalized stratigraphic column for the Athabasca permit area is shown in Table 3.1. The Athabasca permit area is underlain by Precambrian Basement and Phanerozoic rocks of the Western Canada Sedimentary Basin. The Precambrian basement is exposed in the extreme northeast of the permit area and is overlain by a southwest thickening wedge of gently westward dipping Phanerozoic sedimentary rocks. The information summarized here is from Dufresne et al. (1994), Cotterill and Hamilton (1995) and Birch Mountain Resources Ltd. lithological core logs of drill holes in the study area.

3.1 Precambrian Basement

Precambrian basement underlies all of the Athabasca permit area and outcrops at surface in the northeastern part of the province. Crystalline basement comprises both an Archean craton to the east (Rae Sub-province) and an Early Proterozoic mobile belt in the west (Taltson Magmatic Zone); the subdivision of these is based primarily on government aeromagnetic data. The Taltson Magmatic Zone has been dated to between 1.932 to 1.975 Ga (Ross et al., 1989; McNicholl et al., 1993; Villeneuve et al., 1993).

Period	Deposition Interval	Group	Formation	Member	Lithology
Quaternary	Present to 1.6 Ma				unconsolidated sediments
Upper Cretaceous	74.5 Ma	Smoky			silty shales
		La Biche	La Biche		shales
	97.5 Ma		Shaftesbury		shales
Lower Cretaceous	103 Ma	Mannville	Grand Rapids		lithic sands
			Clearwater		shales, glauconitic sandstones
	119 Ma		McMurray		quartzose sandstones
Upper Devonian	372 Ma	Beaverhill Lake	Waterways	Mildred	lime mudstones & shales
				Moberly	mudstone & limestone
				Christina	shale
				Calumet	limestone
				Firebag	lime mudstone
			Slave Point		limestone
	374 Ma		Fort Vermilion		limestone, shale, dolostone
Middle Devonian	374 Ma	Upper Elk Point	Watt Mountain		shales
			Prairie		salt/anhydrite
			Methy		dolostone
	401 Ma	Lower Elk Point	La Loche/ McLean River		sandstone & shales
Precambrian	>570 Ma				Granite and granitic and mafic gneiss

Table 3.1. Generalized stratigraphic column for the Athabasca permit area (modified after Carrigy, 1959; 1973; Norris, 1963; 1973; Hamilton 1971; Dufresne et al., 1994). The depositional interval indicates the ages represented by preserved sediments.

Precambrian rocks outcrop at several locations within Metallic and Industrial Minerals permit number 9396080028 in the Marguerite River area and further to the northeast; these rocks include Archean granite, gneiss and mafic igneous rocks (Appendix B) and Paleoproterozoic metasediments. At least three Archean lithological subdivisions can be made (Dufresne et al., 1994): (1) granitoid rocks; (2) mafic meta-igneous rocks; and (3) strongly mylonitic rocks. Paleoproterozoic age metasediments are found only in drill core obtained from the northeastern part of the study area; similar rocks are exposed in northwestern Saskatchewan (Tremblay, 1961). These have been metamorphosed to granulite grade with superimposed retrograde amphibolite to greenschist facies metamorphism (Abercrombie, 1996). These granites are exposed in several outcrop locations.

Middle Proterozoic metasediments of the Athabasca Basin are exposed to the northeast of the map area. The Athabasca Basin is 400 km long, east to west, and 200 km wide, north to south, and occupies an area of 80,000 km^2 in Saskatchewan and Alberta (Wilson, 1985). It comprises flat-lying Athabasca Group sediments up to 1255 m thick that unconformably overlie crystalline basement (Wilson, 1985). The Athabasca Group consists of poorly to well sorted, clay-rich sandstones, siltstones and mudstones intercalated with conglomerates; conglomerates are more common at the base of the section (Hoeve et al., 1980). These units were deposited in predominantly fluvial environments, with minor nearshore marine facies rocks (Wilson, 1985).

3.2 Phanerozoic Rocks

In general, Phanerozoic sedimentary rocks are poorly exposed within the Athabasca permit area; most outcrops occur along river valleys. As a result, most of the information on the sedimentary succession is from drill hole logs. The sedimentary rocks range in age from Middle Devonian to Cretaceous and are capped by a succession of glacially-derived Quaternary sediments of variably thickness; locally the thickness of Quaternary sediments exceeds 200 metres to a zero edge against the Precambrian basement in the northeast. The Devonian rocks form an unconformity-bounded wedge of predominantly carbonate, evaporite and clastic sediments that include the Elk Point and Beaverhill Lake groups. In the area of permit number 9396080028, Phanerozoic rocks are probably restricted to Quaternary sediments.

3.2.1 Devonian Rocks

Within the Athabasca permit area, Devonian age rocks range from 350 m thick in the south but thin to a zero edge against the Precambrian basement in the northeast, within permit number 9396080028. The Devonian rocks form an unconformity-bounded wedge of predominantly carbonate, evaporitic and clastic sediments that include the Elk Point and Beaverhill Lake groups.

3.2.1.1 Elk Point Group

The oldest Devonian unit in the permit area is the Lower to Middle Devonian Elk Point Group which has been subdivided into Lower and Upper subgroups. The Lower Elk Point Group is represented in the study area by the La Loche/McLean River Formation; this unit consists of a fining upwards sequence of red sandstone, red and green sandy shales and green shale with anhydrite/gypsum. Sediment thickness and facies were controlled by the Peace River Arch suggesting that it was active and elevated at Lower Elk Point time (Abercrombie and Feng, 1997).

The Upper Elk Point Group conformably overlies the McLean River Formation and contains the Methy (or equivalents Winnipegosis and Keg River) Formation, the Prairie Formation and the Watt Mountain Formation, the youngest Middle Devonian unit. The Methy Formation comprises reef to non-reefal, massive to bedded dolostone, dolomitic limestone and minor anhydrite and gypsum (Cotterill and Hamilton, 1995). The Prairie Formation comprises salt and gypsum/anhydrite with thin beds of shale and dolostone and occur only to the west of the salt dissolution front (Cotterill and Hamilton, 1995). The dolomitic shales of the Watt Mountain Formation disconformably overlie the salt sequence and may be more properly included in the overlying Beaverhill Lake sequence.

3.2.1.2 Beaverhill Lake Group

Upper Devonian Beaverhill Lake Group rocks disconformably overlie the Upper Elk Point Group. These rocks include the Fort Vermilion, Slave Point and Waterways formations.

The Fort Vermilion Formation comprises interbedded (50-100 cm) and finely laminated anhydrite, green to brown shale, gray and cream coloured limestone and light brown dolostone. A 1.4 metre dark green silty shale is found at the base of the formation; a 10-20 cm thick brown to gray shale, often desiccated, marks the top of the Fort Vermilion Formation.

The Slave Point Formation is characterized by light brown laminated to nodular limestone with thin, dark brown, bituminous, carbonaceous shale beds. The base of the formation is marked by a fine-grained calcareous quartz sandstone, 70 to 90 cm thick, that grades upwards into the limestone. Locally, coarse gravels consisting of angular clasts of Proterozoic orthogneisses are observed within the Slave Point succession in the northeastern part of the permit area.

The Waterways Formation has been subdivided into 5 members. The lowermost Firebag Member consists of a basal green limey shale unit that is overlain by repeated sequences of shales grading upwards into interbedded limestone and shale then grading into nodular limestone; it is up to 50 m thick. The Calumet Member comprises fossiliferous, light green to brown nodular limestone with shaly intervals, with a maximum thickness of 32 m. The Christina Member is up to 26 m thick and consists of a lower unit of green-gray calcareous shale with rare fossils and limestone lamina and an upper unit of interbedded limestone and shale with abundant intraformational conglomerates and hardground surfaces. The Moberly Member is composed primarily of brown nodular limestone overlain by a porous, bitumen-stained, bioclastic limestone; the maximum thickness attained is 60 m. The Mildred Member is the youngest Waterways Formation unit and contains variably argillaceous nodular lime mudstones and calcareous shales; it is up to 45 m thick (Cotterill and Hamilton, 1995).

The top of the Devonian is marked by an erosional unconformity; it is postulated that several periods of subaerial erosion and karsting have affected the limestone at the unconformity (Dufresne et al., 1994).

3.2.2 Cretaceous Rocks

Cretaceous rocks in the Athabasca permit area are predominantly siliciclastic sediments. They have a variable thickness due to post-depositional erosion but can be up to 500 m thick. Cretaceous rocks include the Mannville, La Biche and Smoky Groups.

3.2.2.1 Mannville Group

The Lower Cretaceous sediments of the Mannville Group overlie the post-Devonian unconformity. In the Athabasca permit area, the Mannville Group comprises the McMurray, Clearwater and Grand Rapids formations.

The McMurray Formation, which hosts the oil sands deposits in this region, comprises interbedded sandstone, siltstone and shale deposited in fluvial to deltaic to shallow marine environments (Dufresne et al., 1994); it is up to 50 m thick. The McMurray Formation is conformably overlain by Clearwater Formation shale and glauconitic sandstone, up to 100 m thick (Dufresne et al., 1994). The Grand Rapids Formation comprises lithic sandstone, laminated siltstone and silty shale with thin coal beds deposited in nearshore to marine environments with a maximum thickness of 100 m (Dufresne et al., 1994).

3.2.2.2 Upper Cretaceous Units

The Mannville Group is conformably overlain by sediments of the Upper Cretaceous La Biche Group, including the Shaftesbury and La Biche formations. The Shaftesbury Formation, 250-300 m thick, contains fossiliferous marine shales with local thin interbeds of siltstones and sandstones. Numerous bentonitic horizons within the shale may be interpreted to indicate regional late Lower to early Upper Cretaceous volcanic activity (Dufresne et al., 1994).

The Upper Cretaceous La Biche Formation directly overlies the Shaftesbury Formation in most of the Athabasca permit area, but in the extreme northwest, it overlies the Smoky Group. The La Biche Formation consists of marine shale and silty shale; the Smoky Group comprises silty shale also deposited in a marine environment (Dufresne et al., 1994).

3.2.3 Quaternary Sediments

Quaternary sediments in the Athabasca permit area consist of tills, outwash deposits, lacustrine and eolian sediments. Regional mapping has divided the Quaternary sediments into 11 units (Dufresne et al., 1994). In general, accumulations are thickest on elevated areas and thinnest on lowlands and along rivers.

Sandy till units, composed largely of eroded Athabasca Formation, are found on high ground east and west of the Athabasca River, including the Birch Mountains and Muskeg Mountain. Flutings on these sandy tills indicate ice flow from the north-northeast and north-northwest. Glacial striations on bedrock near the Marguerite River, within permit number 9396080028, also indicate ice flow from the north-northwest.

Outwash sands and gravels as well as lacustrine and eolian sediments are found mainly along river valleys and adjacent lowlands. Two distinct units have been identified: (1) an upper outwash/eolian sand unit exposed at surface; and (2) a lower lacustrine mud unit encountered in drill core. The upper unit averages 25 m thick and consists of medium to coarse grained sand, previously mapped as a glacial outwash deposit (Dufresne et al., 1994). Dune forms exposed north of McClelland Lake indicate eolian reworking and transport of this unit. The lower unit averages 23 m thick and consists of pink to dark brown mud with scattered white and red quartzite dropstones and occasional centimetre scale varves. Boulder till lenses, one to 10 m thick, are found within both the pink and brown muds. The pink mud is likely derived from red sandstones of the Athabasca Sedimentary Basin while the brown lacustrine mud may be derived from Clearwater Formation shales.

Other Quaternary units in the area include meltwater sand and gravel along the Athabasca River and alluvial fan and slump sediment along the eastern slope of the Birch Mountains.

4.0. 2004-2006 EXPLORATION PROGRAM

Work reported here includes a reconnaissance mapping and sampling program conducted in September 2004, a field mapping and sampling program conducted in June 2006 and associated remote sensing work completed in August, 2006. All work conducted on Metallic and Industrial Minerals permit no 9396080028 from August 14, 2004 to August 14, 2006 is included.

4.1 Reconnaissance Mapping and Sampling Program

Previous studies had documented the occurrence of granitoids at surface (Dufresne et al., 1994) in the region of Metallic and Industrial Minerals permit 9396080028. In Fall, 2004, a one day reconnaissance field trip was conducted on September 27, 2004, to document the extent of granite outcrops and to determine if the area did have potential for an aggregate quarry.

The field crew comprised one senior geologist, one senior vice president and one engineering consultant. Access to the region was provided by Canadian Helicopters using an AS350B2. The flight to the region was approximately 1.5 hours. Reconnaissance mapping was conducted from the air and where landing sites were available, the crew was able to proceed on foot to outcrops for identification of lithology and sampling where appropriate.

Field investigations indicated that granites did occur at surface but that the extent of the granite was smaller than had been previously documented. One 200 kg sample of granitic gneiss was collected from an outcrop (Appendix B.1). The sample was sealed in 5 five gallon plastic pails and transported to Birch Mountain's core logging and sample storage facility in Calgary. Aggregate testing work was conducted on the sample; this cost is not included in this report.

As a result of the reconnaissance work, it was recommended that a more detailed mapping program be conducted to more accurately define the extent of the granites and to collect more samples for aggregate testing.

4.2 Shieldstone Mapping and Sampling Program

The Shieldstone Project area is located about 74.5 km northeast of Fort McKay and 140 km northeast of Fort McMurray on Birch Mountain's Metallic and Industrial Minerals permit number 9396080028 (Appendix C.1). Additional information on the region investigated in September 2004 was obtained from existing publicly available satellite imagery provided by the Government of Canada (Government of Canada, 2006). These data were examined in Winter 2006, and an area within permit number 9396080028 was identified as having highest potential for an aggregate quarry. This area, referred to as Shieldstone, is bordered on the north by Reid Creek, on the west and south by a tributary stream to Reid Creek and on the east by an additional tributary steam to Reid Creek.

Field work was completed on the Shieldstone Project from June 26th – June 28th, 2006. The field work was based out of the new Denman Camp, 60 km north of Fort McMurray. Access to the Shieldstone Project area was provided by Phoenix Helicopters using an AS-350B helicopter. The flight to the project area was approximately 1.5 hours and once in the area, access to outcrops was either on foot or by short helicopter flights. The four man field crew consisted of one geologist, one geological assistant, one environmental consultant and one environmental assistant.

The Shieldstone Project area comprises moderate to heavily treed muskeg with occasional small, 10 to 60 m diameter swamps. All trees in the region are poplar or limber pines. Several areas of higher elevation were identified prior to the field work; these are referred to as the west central body, the east central body and the northeast body. Field investigations concentrated on these three areas.

Within each of the three higher potential areas, initial helicopter reconnaissance was used to determine the extent of the zone of higher elevation. Where possible, landing sites were located and more detailed mapping was completed from the ground. As time permitted, the lithology of the outcrops was described and samples were collected. Field work indicated that the east central and the northeast body were granite outcrops but the west body comprised glacial material both at surface and within shallow pits. A preliminary geological map of Shieldstone is included in Appendix B.2. The Precambrian granitic rocks within Shieldstone include schists and mylonitic gneisses. Occasional north-south trending felsic dykes cut the gneissic outcrops. Steeply angled joint sets are observed within the outcrops.

Samples were collected from outcrops using large sledgehammers and an electrical jackhammer. Fragments that had obviously spalled off of the outcrops were occasionally included in the sample. Sample locations are shown in Appendix B.3 and sample descriptions are included in Appendix B.4. A total of seven 200 kg samples were collected from five separate sites. Six of the samples collected were from granitic outcrops and the remaining sample comprised glacial material. The samples were sealed in five gallon plastic pails and transported to Birch Mountain's core logging and sample storage facility in Calgary. No analytical work has yet been conducted on these samples.

4.3. Remote Sensing Studies

In order to augment information obtained from its field mapping program, Birch Mountain contracted Maltais Geomatics to obtain air photo coverage over the Shieldstone Project area. The air photos were taken in July and August, 2006, at both 1:30,000 and 1:10,000 scale. Details of the photo collection are listed below:

Lines flown and images recorded by: The Orthophoto Shop sub-contracted through Maltais Geomatics
Lines Recorded using: Forward motion, Wild RC – 30 Camera
Digital Ortho-Rectification of all photos completed by: Maltais Geomatics (28 photos)
Scanning and stitching of photos completed by: Maltais Geomatics (3 file sets)
Photo Printing Using: AGFA X 100 printing (28 color photos)
Total lines flown: 4; lines 1-3 flown July 23rd, 2006, line 4 flown August 14th
Line 1: Flown east, 1:10000 scale, 8 photos, #1-8
Line 2: Flown east, 1:10000 scale, 8 photos, #9-16
Line 3: Flown west, 1:10000 scale, 8 photos, #17-24
Line 4: Flown north, 1:30000 scale, 4 photos, #35-38

Both series of air photos were taken in colour and provided to Birch Mountain as two series of overlapping 23 cm x 23 cm photographs. Birch Mountain also contracted Maltais Geomatics to digitize and ortho-rectifiy the photos and to provide larger digital images for use in GIS mapping. A map showing the coverage of these digital images is included in Appendix C.1 and a CD containing the 1:30,000 digital image is included in Appendix C.2. These images are being used by Birch Mountain to refine its geological interpretation of the Shieldstone area.

5.0 CONCLUSIONS

Birch Mountain has conducted mineral exploration on its Athabasca permit area since 1994. Target commodities have included industrial minerals and precious metals. The 2004-2006 exploration activities on Metallic and Industrial Minerals permit number 9698080028 has been directed primarily towards industrial minerals exploration, specifically granitic aggregate material.

The field mapping and sampling programs in 2004 and 2006 as well as data acquired through remote sensing in Summer 2006 have allowed advancement of Birch Mountain's industrial minerals exploration program on permit number 9396080028. Granite outcrops have been documented at or near surface within the Shieldstone Project area supporting the contention that this area has high potential for an aggregate quarry. Additional work is planned for Fall and Winter 2006 to advance the possibility of establishing an aggregate quarry in this region.

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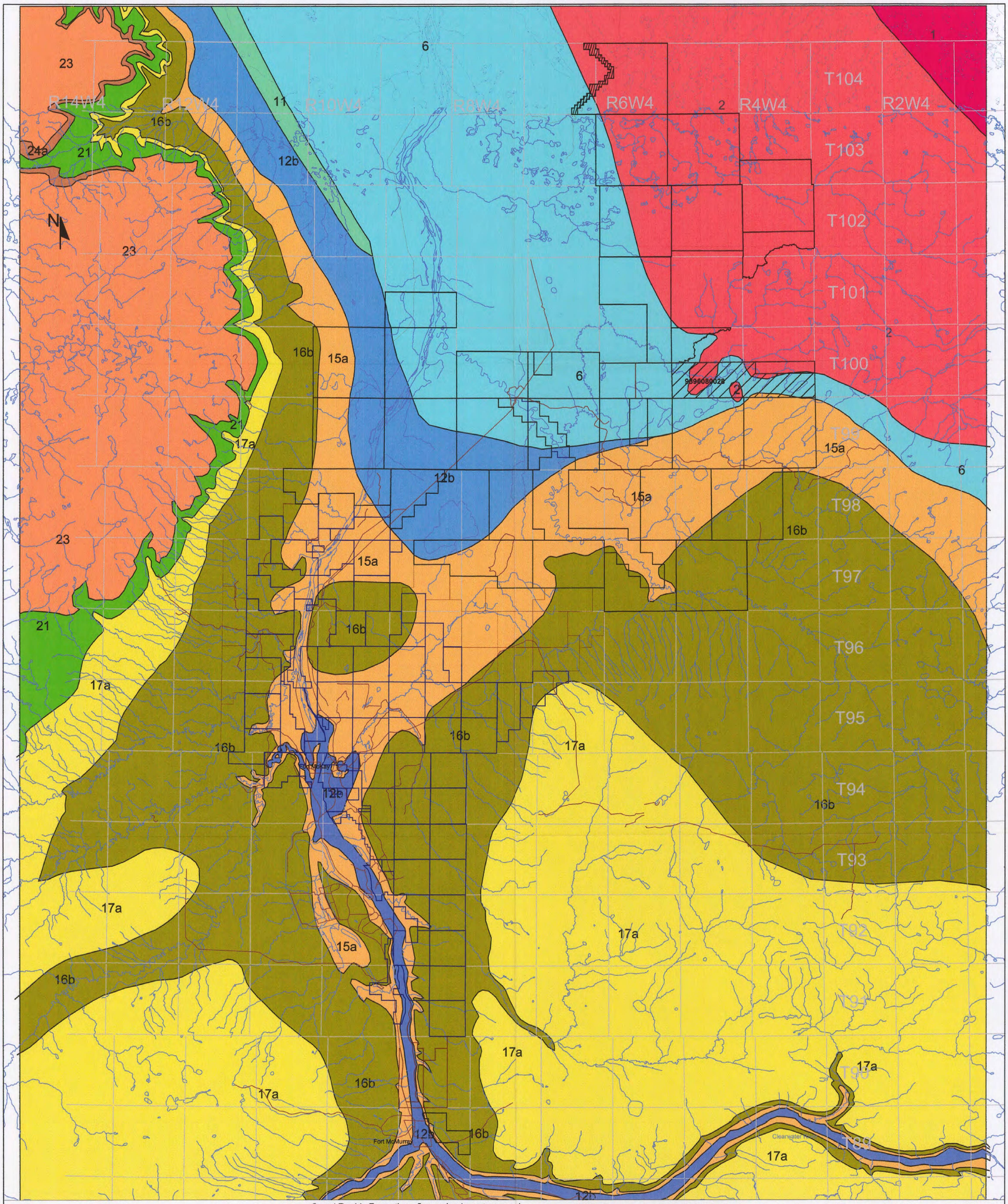
Appendix A. Regional Geological Map

Scale: 1:350,000

(pocket)



LEGEND

- Birch Mountain Metallic & Industrial Minerals permits
- Birch Mountain Metallic & Industrial Mineral leases
- Permit-to-lease conversions

24a	Smoky Group: dark grey and silty shale, ironstone partings and concretions; marine
23	LaBiche Formation: dark grey shale and silty shale, ironstone partings and concretions; thin fish scale-bearing silty beds in lower part; marine
21	Shaftesbury Formation: dark grey fish scale-bearing shale, silty in upper part; numerous nodules & thin beds of concretionary ironstone; bentonite partings; interbedded locally in lower part with thin silty and sandy intervals; marine
17a	Grand Rapids Formation: fine grained quartzose and feldspathic sandstone, laminated siltstone and silty shale; thin coaly beds, deltaic to marine
16b	Clearwater Formation: dark fossiliferous silty shale, laminated siltstone, fine grained cherty sandstone; glauconitic sandstone (Wabiskaw Member) near base; marine
15a	McMurray Formation: cross-bedded quartzose sandstone and siltstone; oil-impregnated; grey silty shale interbeds in upper part; deltaic
12b	Waterways Formation: grey and greenish-grey shale and argillaceous limestone units alternating with grey and greyish-brown fine grained and clastic limestone units; marine
11	Caribou Member, Slave Point Formation: grey and brown fine to medium grainedlimestone and dolomitic limestone; minor shale, gypsum; marine
6	Middle Devonian (undivided) includes La Loche/McLean River Formation: sandstone and shales; Methy Formation: brown and buff massive porous dolomite, brown to grey thin-bedded dolomite, dolomitic limestone, minor anhydrite and gypsum; Prairie Formation: gypsum, anhydrite, grey-green silty and dolomitic shale, minor dolomite; and Watt Mountain Formation: shales; marine to evaporitic
2	Undivided Granitic Plutonic Rocks: including biotite granite, porphyroblastic and porphyritic granites; some granite gneiss and metasedimentary rocks
1	Porphyroblastic Granites: foliated to massive, white, grey and pink biotite granite and gneissic granite, quartz diorite, with feldspar porphyroblasts; variable amounts of sedimentary rocks and granite gneiss

km
0 5 10 15

Scale: 1:350,000
UTM NAD 83

Birch Mountain
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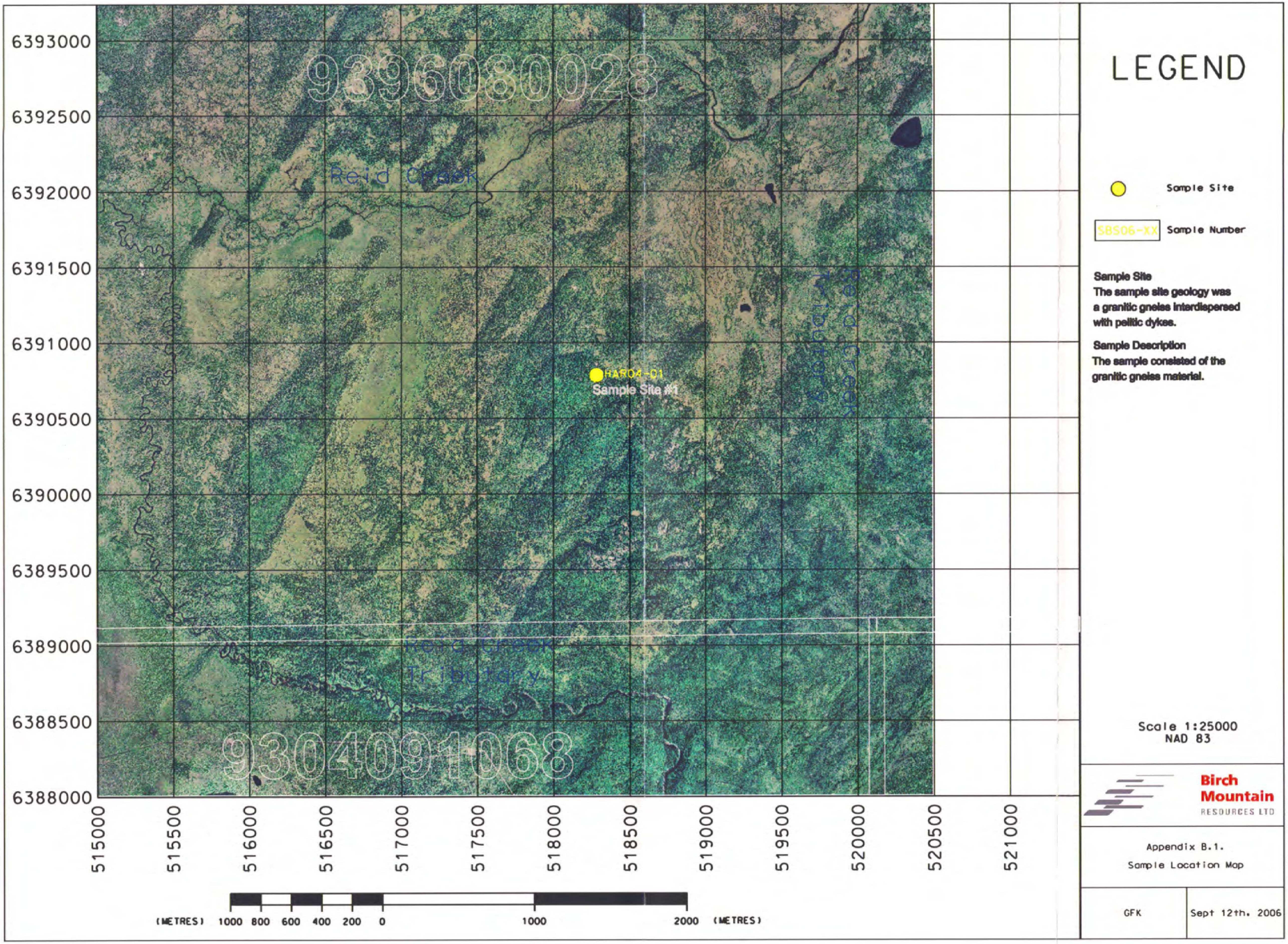
Appendix A. Regional Geology, Athabasca Property, Northeastern Alberta

Sept 7, 2005	KAM

20060019

Appendix B. Reconnaissance Mapping and Sampling Program

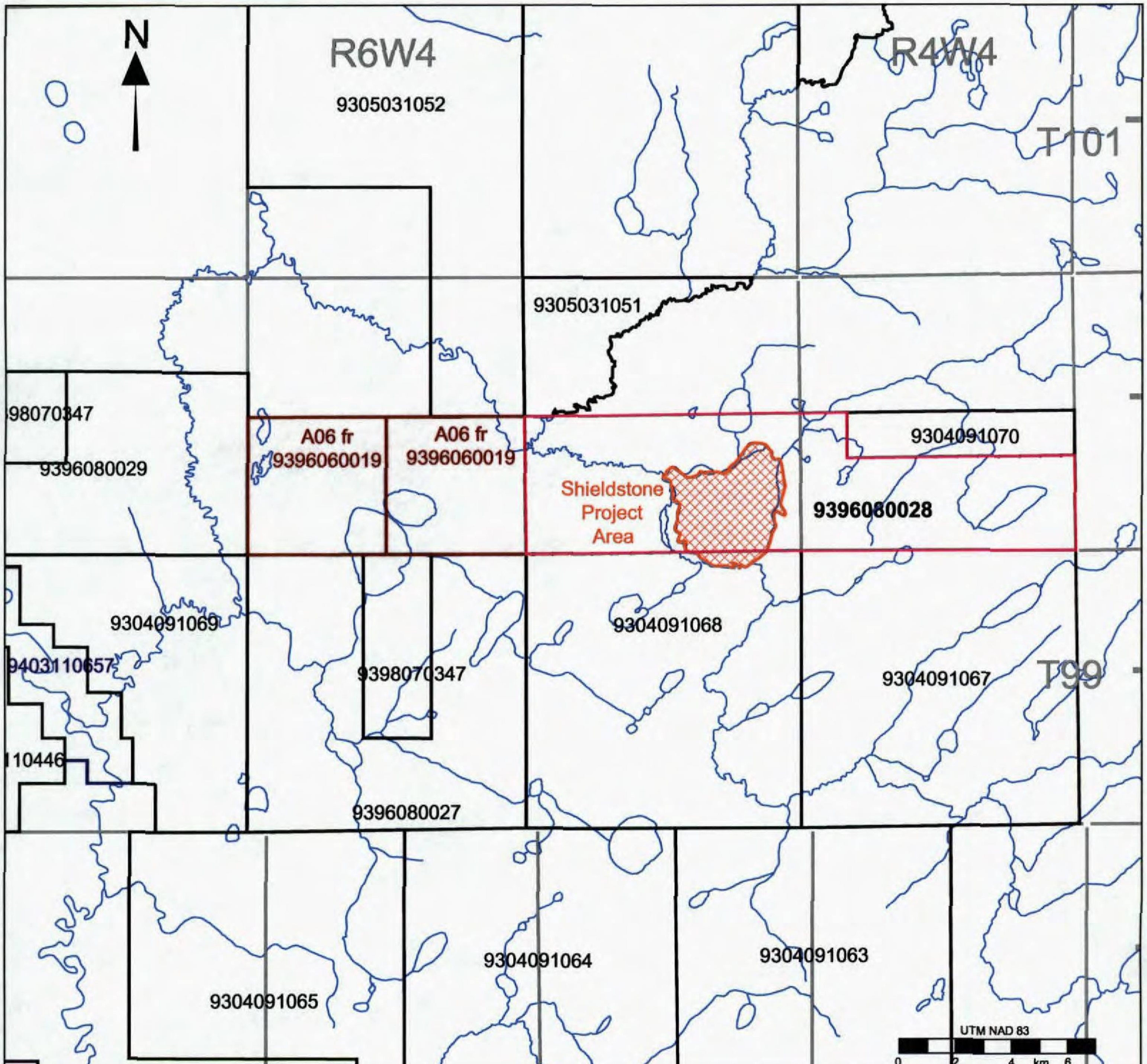
B.1. Sample Location Map



9396080028
Reid Creek
Reid Creek Tributary
HAR04-01
Sample Site #1
Reid Creek Tributary
9304091068
6393000
6392500
6392000
6391500
6391000
6390500
6390000
6389500
6389000
6388500
6388000
515000
515500
516000
516500
517000
517500
518000
518500
519000
519500
520000
520500
521000
(METRES) 1000 800 600 400 200 0 1000 2000 (METRES)
LEGEND
Sample Site
SBS06-XX Sample Number
Sample Site
The sample site geology was a granitic gneiss interdispersed with pelitic dykes.
Sample Description
The sample consisted of the granitic gneiss material.
Scale 1:25000
NAD 83
Birch Mountain
RESOURCES LTD
Appendix B.1.
Sample Location Map
GFK
Sept 12th, 2006

Appendix C. Shieldstone Mapping and Sampling Program

C.1. Shieldstone Location Map



LEGEND

- Shieldstone Project Area Summer 2006
- Birch Mountain Resources Metallic and Industrial Mineral permit 9396080028
- Birch Mountain Resources Metallic and Industrial Mineral leases
- Birch Mountain Resources Metallic and Industrial Mineral permits
- Birch Mountain Resources Permit-to-lease conversions (in progress)

Birch Mountain RESOURCES LTD

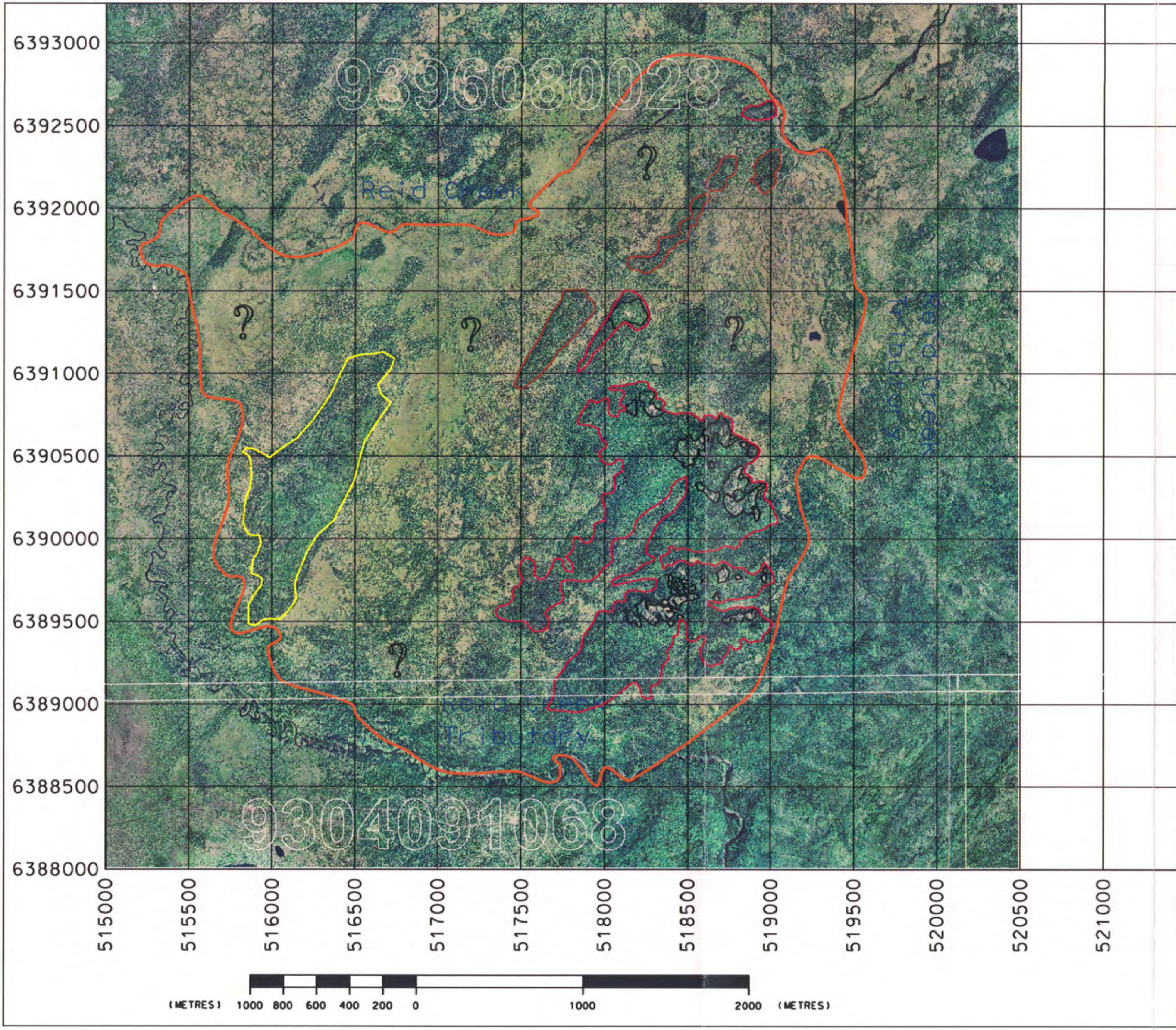
Appendix C.1. Shieldstone Project Area Location Map with Permit 9396080028

September 12, 2006	KAM

2006 0019

Appendix C. Shieldstone Mapping and Sampling Program

C.2. Shieldstone Preliminary Geology Map



LEGEND

Shieldstone Project

Sample Subcrop

Sample Outcrop

Quaternary Outcrop

Unknown Outcrop

? Unknown Subcrop

Scale 1:25000
NAD 83

Birch Mountain
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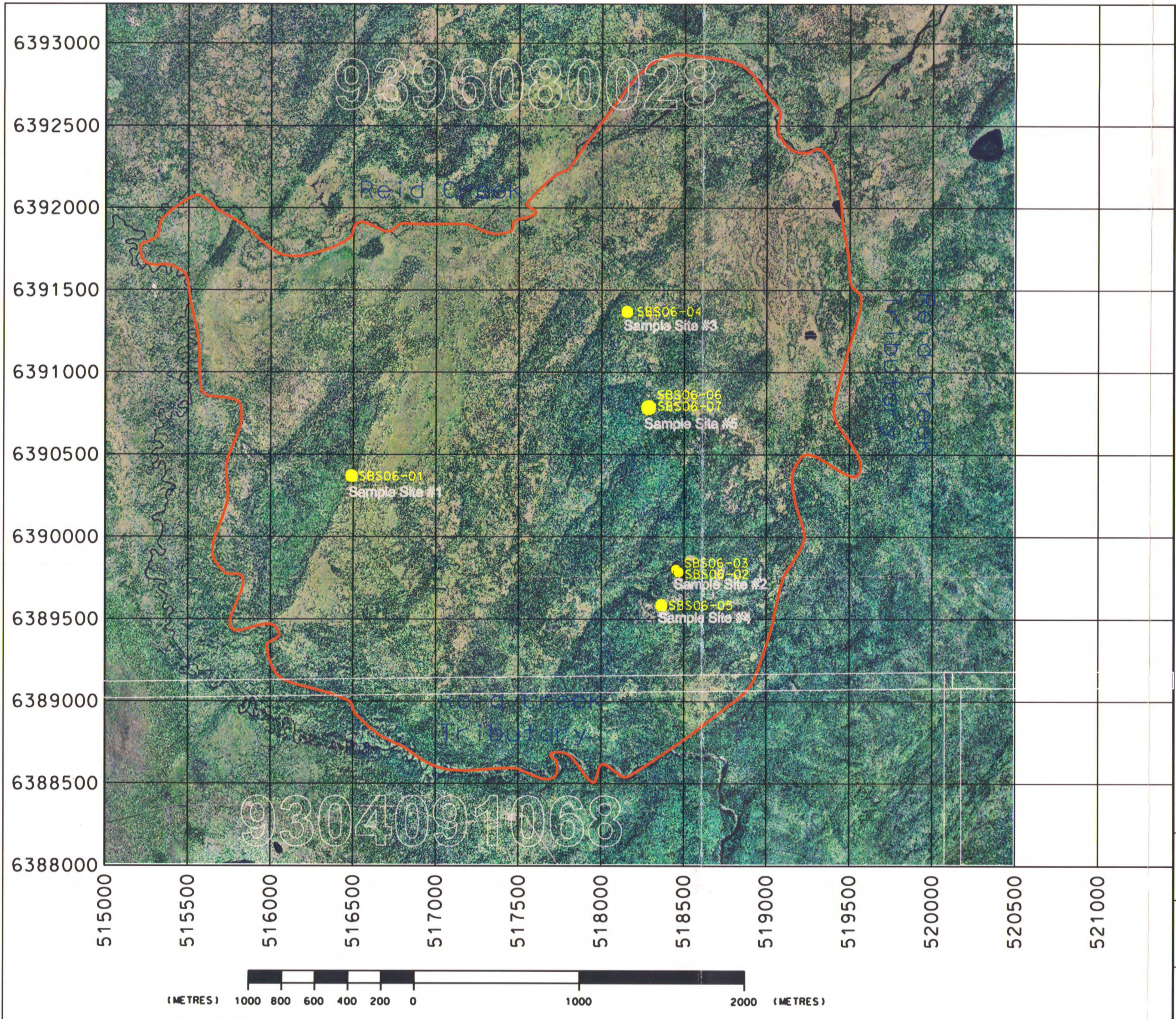
Appendix C.2.
Shieldstone
Preliminary Geology
Map

GFK	Sept 12th, 2006

Appendix C. Shieldstone Mapping and Sampling Program

C.3. Sample Location Map



LEGEND

Shieldstone Project

Sample Site

SBS06-XX Sample Number

Scale 1:25000
NAD 83

Birch Mountain
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Appendix C.3.
Sample Location Map

GFK	Sept 12th, 2006

Appendix C. Shieldstone Mapping and Sampling Program

C.4. Sample Descriptions

WEST CENTRAL BODY

SBS06-01

SBS06-01 is a 200kg sample, collected on June 27th, 2006, from location 516489 6390371 (NAD83). The sample was collected from a single large boulder (originally thought to be outcrop) using an electric jackhammer and sledgehammers. The sample is granite gneiss; the felsic minerals have weathered to a pink-brown color from the oxidation of iron bearing minerals. Mafic minerals remain visibly unaltered. Mineralogy consists of plagioclase (30%), quartz (40%), K-feldspar (10%) and the remaining made up of 20% mafic minerals with trace amounts of titanite and apatite.

EAST CENTRAL BODY

SBS06-02

SBS06-02 is a 200kg sample, collected on June 27th, 2006, from location 518467 6389787 (NAD83). The sample was collected from a felsic dyke using an electric jackhammer and sledgehammers. The mineralogy consists of 60% quartz, 30% plagioclase and 10% K-feldspar.

SBS06-03

SBS06-03 is a 200kg sample, collected on June 27th, 2006, from location 518451 6389803 (NAD83). The sample was collected from outcrop using an electric jackhammer and sledgehammers. The sample is of coarse and fine-grained granite gneiss. The coarse grained gneiss contains quartz (40%) and plagioclase (25%) with some K-feldspar (5%). The fine crystalline gneiss is K-feldspar-rich (55%) with plagioclase (10%) and quartz (5%). Both contain similar amounts of mafic minerals (30%) with trace amounts of titanite and apatite.

SBS06-05

SBS06-05 is a 200kg sample, collected on June 28th, 2006, from location 518363 6389586 (NAD83). The sample was collected from outcrop using an electric jackhammer and sledgehammers. The sample is a very homogeneous quartz plagioclase feldspar schist. The mineralogy consists of quartz (40%), plagioclase (30%) and K-feldspar (10%) The mafic minerals comprise (20%) with trace amounts of titanite and apatite. There are some 2-5cm wide white quartz wide veins running through the outcrop; Garnets were locally observed but none were included in the sample.

SBS06-06

SBS06-06 is a 200kg sample, collected on June 29th, 2006, from location 518283 6390788 (NAD83). The sample was collected from outcrop using an electric jackhammer and sledgehammers. The sample is an extremely competent quartz, K-feldspar, plagioclase mylonitic gneiss. The mineralogy consists of quartz (50%), K-Feldspar (20%), plagioclase (15%). Mafic minerals make up the remaining 15% of the mineralogy.

SBS06-07

SBS06-07 is a 200kg sample, collected on June 29th, 2006, from location 518283 6390788 (NAD83). The sample is from the same location as SBS06-06 and has the same mineralogy, but is a collection of random weathered and unweathered outcrop fragments from the outcrop surface. This sample was collected as a control test sample to compare unweathered samples.

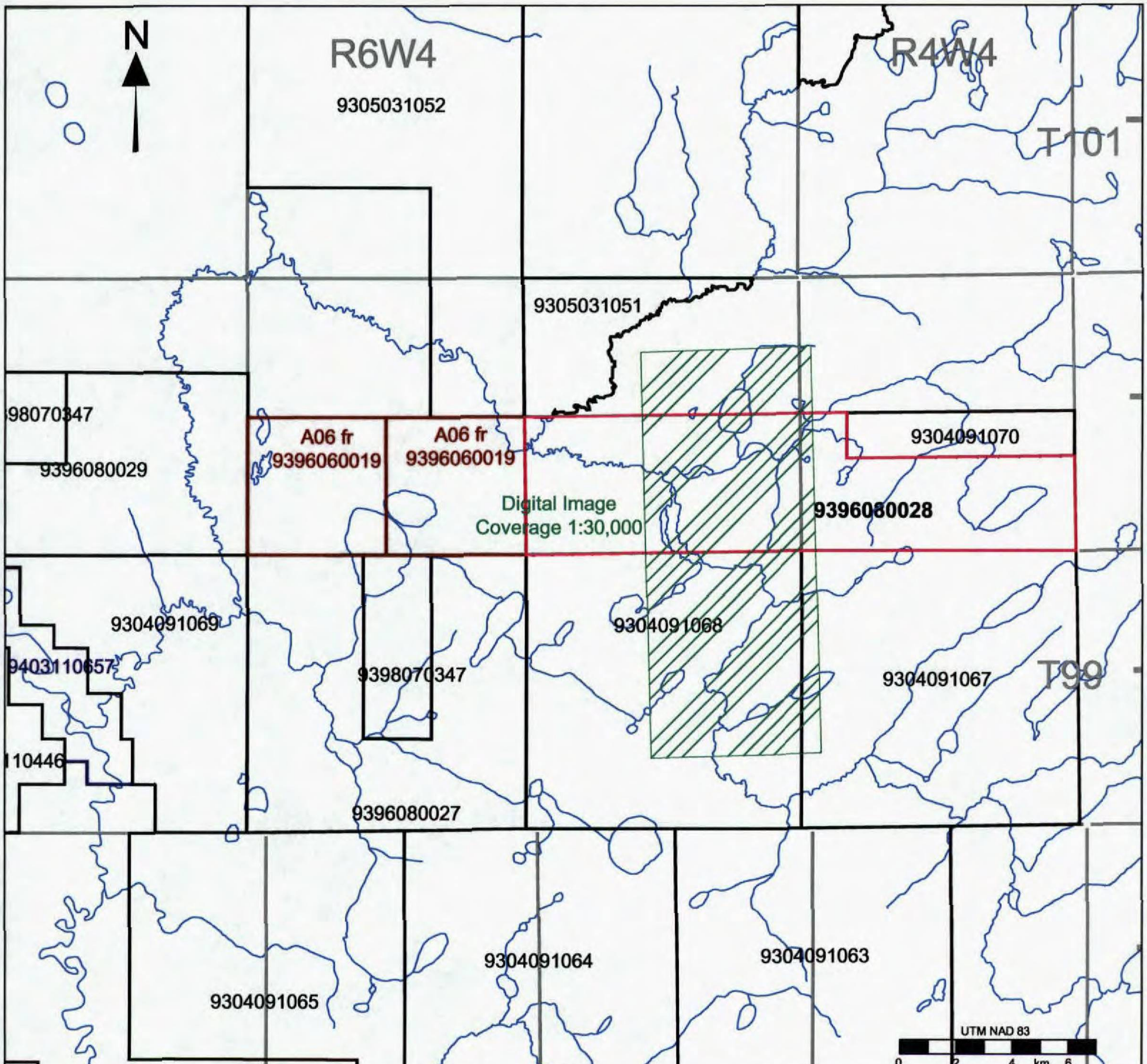
NORTHEAST BODY

SBS06-04

SBS06-04 is a 200kg sample, collected on June 28th, 2006, from location 518152 6391369 (NAD83). The sample was collected from outcrop using an electric jackhammer and sledgehammers. The sample contains coarse and fine-grained granite gneiss. The coarse grained gneiss contains quartz (35%) and plagioclase (25%), K-feldspar (15%). Minerals titanite and apatite are present in trace amounts. The fine crystalline granites are very K-feldspar rich (50%) with plagioclase (10%). Mafic minerals make up the remaining mineralogy. There were rare occurrences of sulphides, pyrite and sphalerite? in the outcrop which were not included in the sampling.

Appendix D. Shieldstone Remote Sensing Program

D.1. 1:30,000 Digital Image Coverage



LEGEND

- Birch Mountain Resources Metallic and Industrial Mineral permit 9396080028
- Birch Mountain Resources Metallic and Industrial Mineral leases
- Birch Mountain Resources Metallic and Industrial Mineral permits
- Birch Mountain Resources Permit-to-lease conversions (in progress)

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Appendix D.1.
Shieldstone Project Area Digital Image Coverage

September 12, 2006	KAM

2006 0019

Appendix D. Shieldstone Remote Sensing Program

D.2. 1:30,000 Digital Images

(on CD in pocket)


W.O. 10050 Maltais Geomatics
L4N (35-38)

Birch Mountain
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Appendix E

Statements of Qualifications

Birch Mountain
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STATEMENT OF QUALIFICATIONS

Kyla M. Arden-Maki, B.Sc., M.Sc.

I, Kyla M. Arden-Maki, certify and declare that I am a graduate of the University of Manitoba, Winnipeg, Manitoba, with a B.Sc. in Geology (1993) and an M.Sc. in Geochemistry (1995).

My experience from 1991 to 2004 includes:

- conducting field geological and geochemical surveys
- planning and supervising field mineral exploration programs involving geological, geochemical and drilling programs
- planning and conducting scientific research, including publishing and presentation of results in peer-reviewed journals
- preparing government assessment reports

Since May, 1997, I have been employed as Project Geologist, Birch Mountain Resources Ltd.

I reside at:

[redacted]

I HEREBY CERTIFY:

1. That the work described was conducted with my participation and supervision;
2. That I participated in the production of this report.

Dated at Calgary, Alberta, this 25th day of September, 2006.

[redacted]

Kyla Arden-Maki, M.Sc.

STATEMENT OF QUALIFICATIONS

Gerald F. Kozdial, B.Sc.

I, Gerald F. Kozdial, certify and declare that I am a graduate of the University of Calgary, Calgary Alberta, with a B.Sc. in Geology (2002).

My experience from 1995-2006 includes:

- Project lead for multiple drilling and sampling programs
- Experience in digital mapping
- Involved in geochemical field programs
- Experience in planning and conducting geochemical research projects
- Experience in field mapping projects
- Certified knowledge of mining software (Minex Quarry)

From May 1, 1997, to April 30, 2002, I was employed as a part time Geologist with Birch Mountain Resources Ltd. Since May 1, 2002, I have been employed as a full time Geologist with Birch Mountain Resources Ltd.

I reside at [redacted]

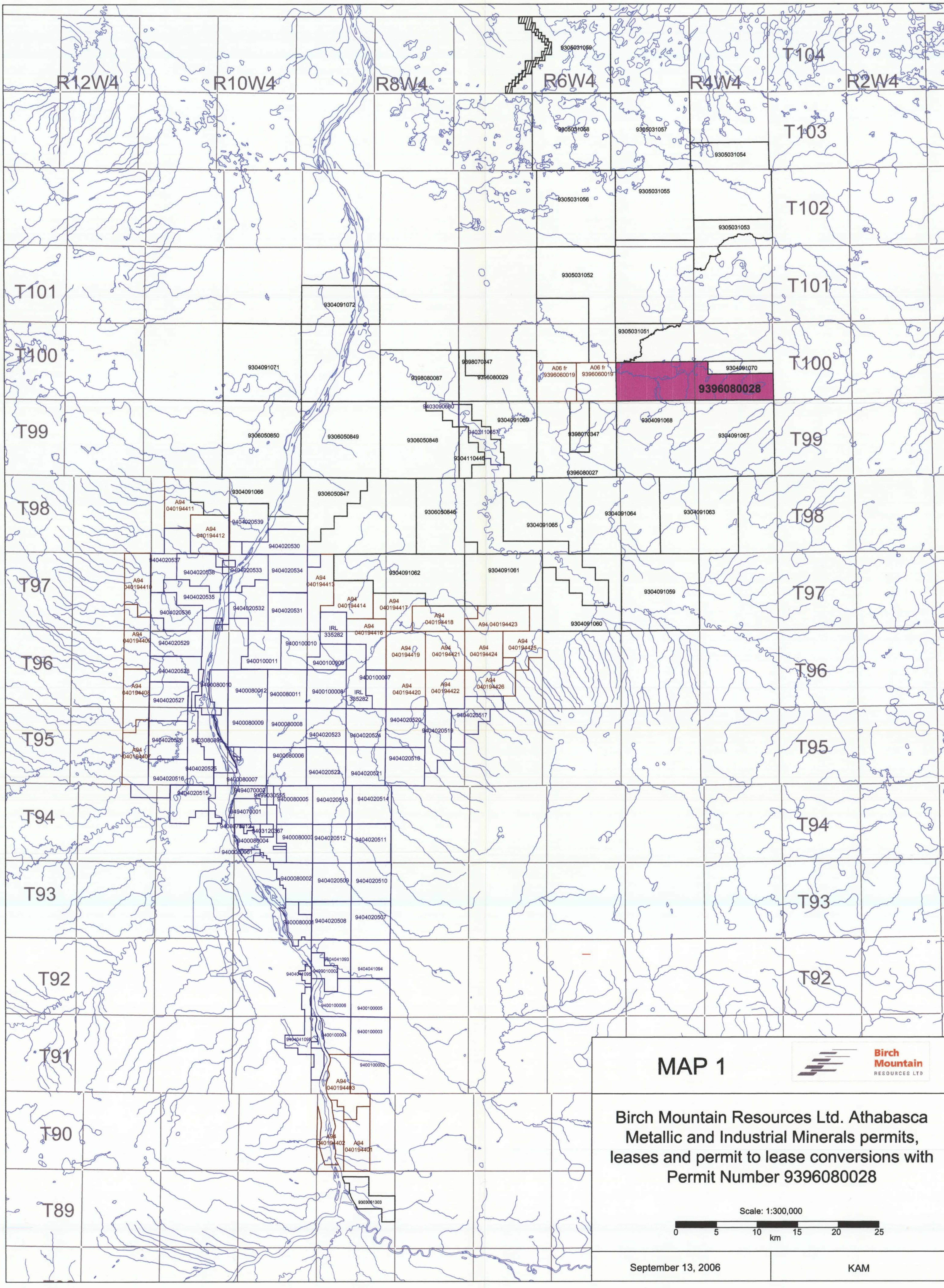
I hereby certify:

1. That I have visited the properties discussed in this report;
2. That I have participated in the production of this report.

Dated at Calgary, Alberta, this 25th day of September, 2006.

[redacted]

Gerald Kozdial, B.Sc.



MAP 1

Birch Mountain Resources Ltd. Athabasca Metallic and Industrial Minerals permits, leases and permit to lease conversions with Permit Number 9396080028

September 13, 2006

KAM