MAR 20160010: PEACE RIVER

A report on Sandstone exploration on the Peace River property near Grimshaw.

Received date: July 26, 2016

Public release date: October 02, 2017

Phoenix Metals Corp.

2016 EXPLORATION ON THE PEACE RIVER PROPERTY METALLIC AND INDUSTRIAL MINERALS PERMITS, NORTH-CENTRAL ALBERTA

PART B

Metallic and Industrial Minerals Permits:

9314010263

9314010264

9314010265

Geographic Coordinates:

56°14' N to 56°30' N

117°02' W to 117°20' W

NTS Sheets

084C/6 and 084C/11

Operator: Phoenix Metals Corp.
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Date Submitted: July 26th, 2016

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1 SUMMARY

This Assessment Report summarizes exploration work conducted in June 2016 by Dahrouge Geological Consulting Ltd. on the Peace River Property ("the Property"), which consists of Metallic and Industrial Mineral permits 9314010263, 9314010264 and 9314010265.

The 2016 program consisted of mapping and sampling of outcrop with silica-rich sandstone potentially favorable for hydraulic fracturing. A total of 58 outcrop stations were mapped, and 25 samples were collected. No samples were sent for analysis.

2 INTRODUCTION

Dahrouge Geological Consulting Ltd. ("Dahrouge") conducted exploration on the Peace River Property on behalf of Phoenix Metal Corp. ("Phoenix Metals"). Exploration was carried out on permits: 9314010263, 9314010264 and 9314010265. These permits straddle Peace River, just north of the town of Peace River (Figure 3-1).

The objectives of the 2016 exploration program were to locate and sample sandstone favorable for use in hydraulic fracturing, identify drill targets, and evaluate the extent and economic potential of the favorable sandstone.

3 GEOGRAPHIC SETTING & ACCESS

3.1 LOCATION, ACCESS AND INFRASTRUCTURE

The centre of the Property is located at about 56°20'N, 117°11'W, approximately 12 km northwest of Peace River, AB, Canada (Figure 3-1). The Property extends from the town of Peace River to approximately 30 km north of the town, along Peace River.

General access to the Property is via Alberta secondary highway 743 on the west side of the Peace River and gravel roads on the east side of the Peace River. Further access to the steep bluffs and cliffs is limited to only a few quad and horse trails accessed from the above mentioned general access. The property is also accessible by boat via Peace River; however, accessing the target unit, usually located high in the cliffs, is difficult from the river.

The town of Peace River, with a population of 6,700 (2011 Census), is located at the southern boundary of the Property and provides a wide variety of amenities including accommodation, fuel, supplies, and other necessary services. A rail line runs along the west side of the Peace River between the Daishowa-Marubeni pulp mill and the town of Peace River.

3.2 TOPOGRAPHY, VEGETATION AND CLIMATE

The Peace River Property ranges in elevation from 320 to 560 m above sea level and is located along the banks of the Peace River. Flat to gently undulating glacial till or lacustrine plains dominate and are cut by the Peace River Canyon, exposing the Lower Cretaceous (middle Albian) sandstones of the Peace River Formation. Higher elevations are characterized by gray luvisols, while lower elevations (wetlands), are characterized by gleysols and organic soils.

The Property exists in the Dry Mixedwood Subregion of the Alberta Boreal Forest. The region is characterized by Aspen forests with mixed undergrowth of rose, low-bush cranberry, beaked hazelnut and Canada buffaloberry in the higher elevations; Jack pine stands on dry, well to rapidly drained glaciofluvial and aeolian parent materials; and treed, shrubby or sedge-dominated fens, occupying up to 15 percent of the region.

The Peace River area is characterized by the warmest summers and highest growing degree-day accumulations of any of the boreal regions. Winter temperatures average -15°C, and may drop as low as -50°C. Summer temperatures average 15° C and may reach up to 37°C. About 70 percent of the annual precipitation falls between April to August, with peak precipitation in June and July that is often associated with intense convective storm events. Average rainfall is about 30 cm, and average snowfall is about 119 cm.

Figure 3-1 Location of the Peace River Property

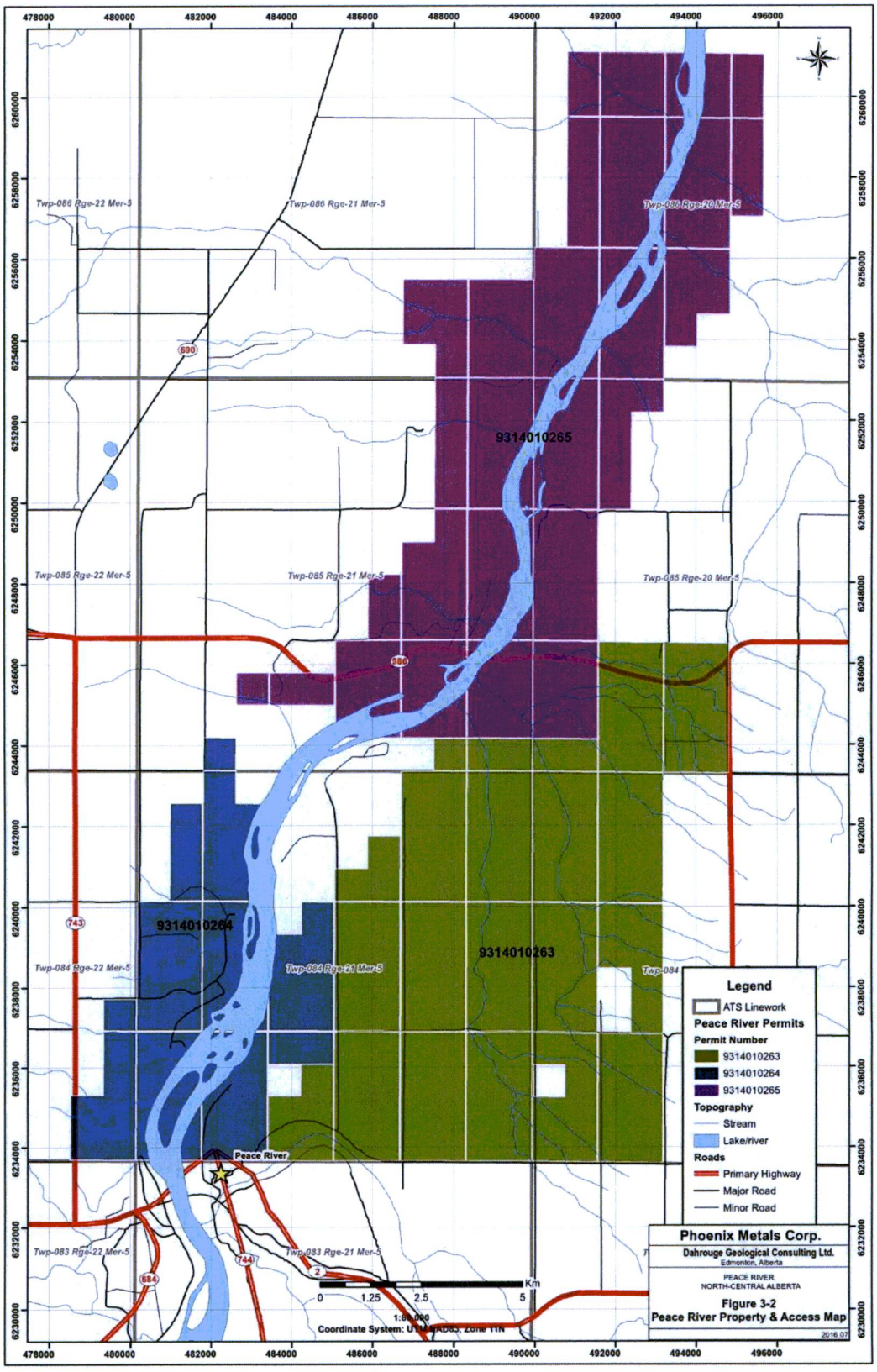

Figure 3-2 Peace River Property & Access Map

4 PROPERTY & EXPENDITURES

4.1 PROPERTY

The Peace River Property consists of four MAIM permits; however, this report only covers the three permits expiring as of June 30, 2016 (extended deadline): permits 9314010263, 9314010264 and 9314010265. These MAIM permits were acquired by 877384 Alberta Ltd. in January 2014 (Figure 3-2). 877384 Alberta Ltd. holds 100% ownership in these permits, which are currently operated by Phoenix Metals.

The Property lies within the Lower Peace Land Use Framework. Here, Peace River forms the boundary between the County of Northern Lights to the west, and County of Northern Sunrise to the east. The Property falls within Forest Management units P01, P03 and P21.

Based on the results of the 2016 exploration program (Section 6), it was concluded that the current area of the MAIM permits can be reduced. Table 4-1 summarizes the area to be kept and the area to be released. Figure 4-1 shows the area to be kept and the area to be released.

Table 4-1 Summary of Land to Release & Keep

MAIM Permit	Township	Land to Retain	Area to Retain (ha)	Land to Release	Area to Release (ha)
9314010263	05-20-085	-	0	**4-5; 6:** L1-8**; 8-9**	1152
	05-21-085	**1:** L4-5**; 2:** L1-2. L7-8	96	**1:** L1-3, L6-8	96
	05-20-084	-	0	**5-6; 7:** L1-2, L7-16; **8; 17:** L1-2, L7-10, L15-16; **18-20; 29-32**	2880
	05-21-084	**22:** L5-16; **26:** L5-7, L10-15**; 27:** L1-10, L15-16**; 35:** L2-7, L9-16**; 36:** L12-13	784	**1-4; 9:** L1-2, L7-8**; 10-15; 22**: L1-4; **23-25; 26**: L1-4, L8-9, L16; **35**: L1, L8; **36**: L1-11, L14-16	3824
		TOTAL:	**880**		**7952**
9314010264	05-21-085	**5:** L3-4	32	**5:** L5-6	32
	05-21-084	**7**: L6-11, L14-16**; 8:** L5-16**; 9:** L10-15**; 16:** L2-7, L10-16**; 17; 18:** L1-3, L6-11, L14-16**; 19:** L1-3, L8-9, L16**; 20; 21:** L1-10, L15-16**; 29; 30:** L1, L8-9, L16**; 31:** L1**; 32:** L1-8, L11-14	2160	**5-6; 7**: L1-5, L12-13; **8**: L1-4; **9**: L9, L16; **16:** L1, L8-9; **18:** L4-5; L12-13; **19**: L4-7, L10-15**; 30**: L2, L7, L10, L15; **31**: L2, L7-8	1104
	05-22-084	-	0	**1; 12:** L1-2, L7-10, L15-16**; 13**: L1-2, L7-8.	448
		TOTAL:	**2160**		**1552**
9314010265	05-20-086	-	0	**4:** L11-14; **5-9; 15:** L11-14; **16-17; 18:** L1-2, L7-10, L15-16; **19:** L1-2, L7-10, L15-16; **20-21; 22:** L3-6, L11-14; **27:** L3-6, L11-14; **28-29**; **30:** L1-2, L7-10, L15-16	3584
	05-21-086	-	0	**1; 2:** L1-2, L7-16; **11:** L1-8; **12:** L1-8	704
	05-20-085	**7:** L3-6, L11-14**; 18:** L2-7	224	**6:** L9-16**; 7:** L1-2, L7-10, L15-16**; 18:** L1, L8-16**; 19; 29:** L3-6**,** L11-14**; 30-31; 32:** L3-6, L9-16	1504
	05-21-085	**1:** L9-16**; 2:** L9-16**; 3:** L9-16; **9:** L1-3, L6-8**; 10-12; 13:** L1-8**; 14:** L1-8	1504	**8:** L1-2, L7-8; **9:** L4-5; **13:** L9-16; **14:** L9-16; **15:** L1-2, L7-10, L15-16; **23:** L1-10, L15-16; **24-25; 26:** L1-2, L7-10, L15-16; **35:** L1-2, L7-10, L15-16; **36**	1696
		TOTAL:	**1728**		**7488**

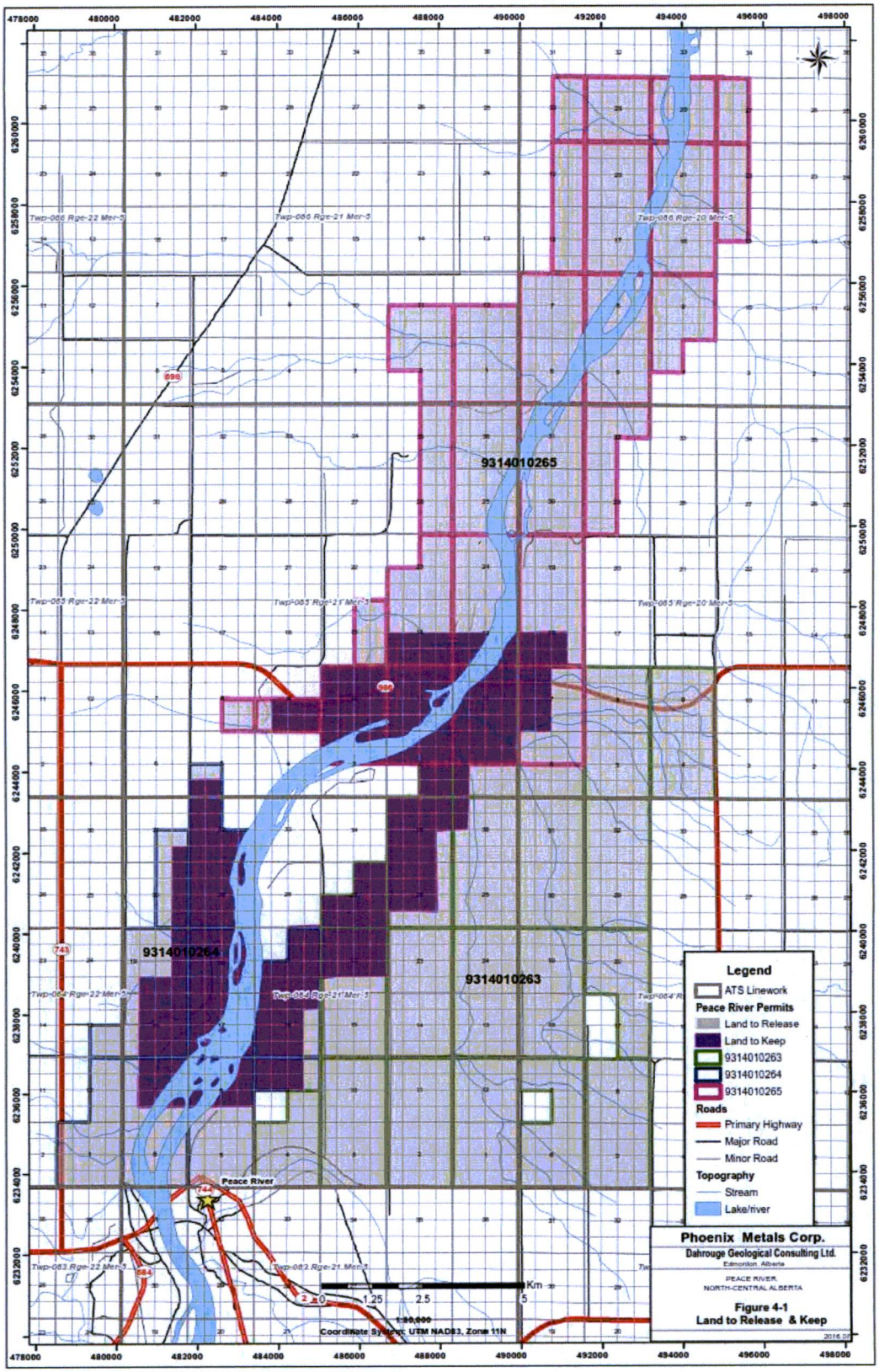

Figure 4-1 Land to Release & Keep

4.2 EXPENDITURES

Expenditures for 2016 totaled $27,510.40 (including 10% administration cost) (Appendix 1). The Peace River permits reached their original renewal date on January 7, 2016 (extended to June 30, 2016) and hence these expenditures will extend the new expiry to January 7, 2018. **Table 4-2;** summarizes the reduction area of each permit along with the expenditures allocated to these reduced areas.

Table 4-2 Summary of Peace River Property Permits & Expenditures

MAIM Permit	Record Date	Original Size (ha)	Reduced Size (ha)	Amount Due per ha	Assigned Expenditures	Total Expenditures	Excess Expenditures	Term Expiry
9314010263	2014-01-07	8832	894	$5.00	$4,468.75	$5,510.40	$1,041.65	2028-01-07
9314010264	2014-01-07	3712	2194	$5.00	$10,968.75	$12,000.00	$1,031.25	2028-01-07
9314010265	2014-01-07	9216	1755	$5.00	$8,775.00	$10,000.00	$1,225.00	2028-01-07
				TOTAL:	**$24,212.50**	**$27,510.40**	**$3297.90**	

5 GEOLOGICAL SETTING

5.1 REGIONAL GEOLOGY

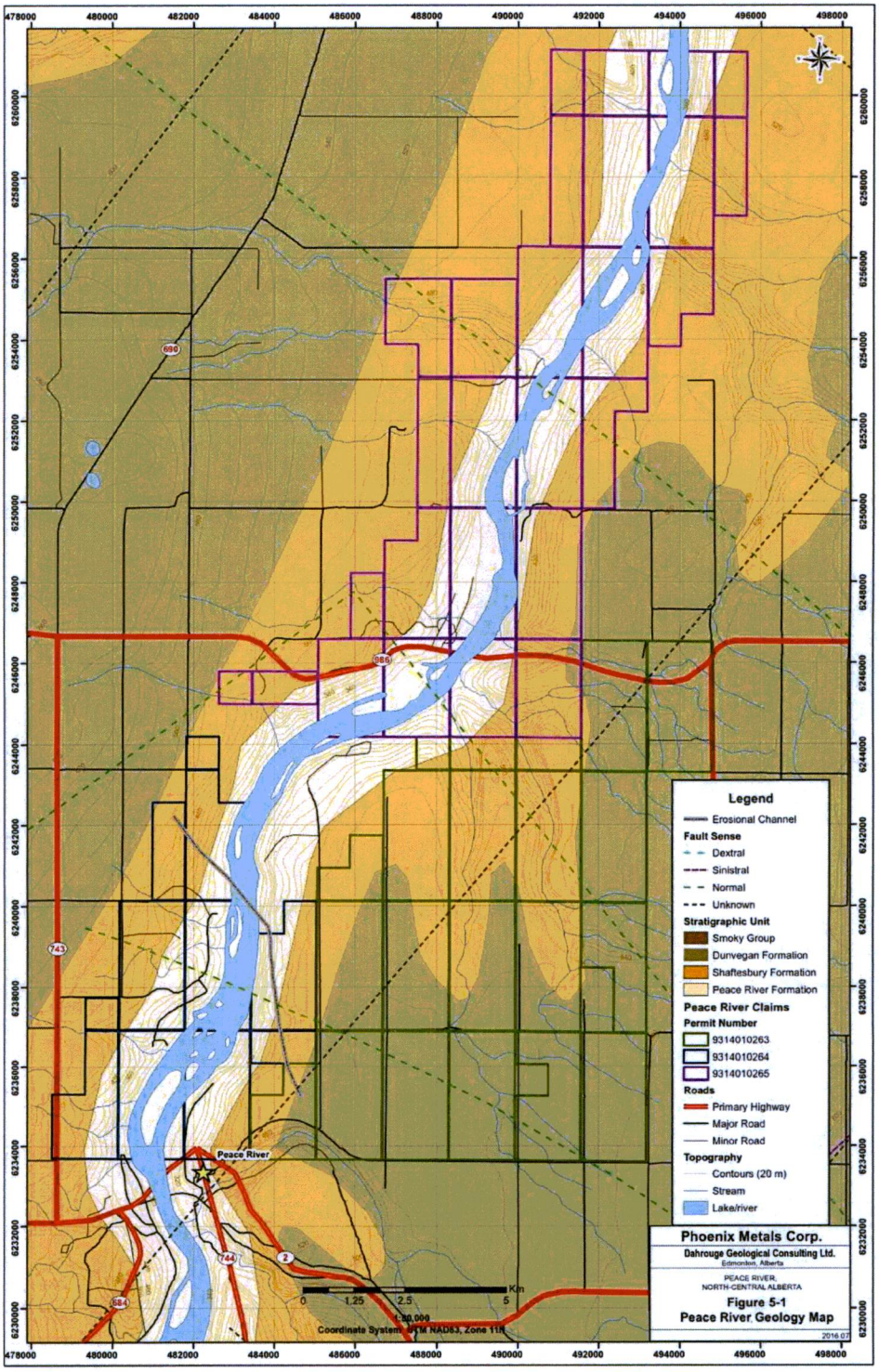

Figure 5-1 Peace River Geology Map

5.2 STRATIGRAPHY

In the Peace River area, essentially flat-lying sandstones of the lower Cretaceous Peace River Formation are overlain by shales of the mid-Cretaceous Shaftsbury Formation of the Colorado Group (Figure 5-1; Figure 5-2). The Peace River Formation is 20 m thick on average, and consists of three members: a basal marine shale (Harmon Member), a middle, marine sand (Cadotte Member), and an upper continental sand (Paddy Member). Figure 5-3 shows the Paddy overlying the Cadotte in the cliffs along the Peace River.

The Harmon Member consists of dark-grey non-calcareous marine shale of middle Albian age, and ranges up to 10 m thick. The Cadotte Member, also of middle Albian age, is a well-sorted, uniform, deltaic sandstone with a maximum thickness of up to 20 m. It has a lobate pattern typical of some deltas and it extends east to the middle of Lesser Slave Lake and north to Township 101. Its southern extensions are unknown.

The overlying Paddy member is the continental phase of Peace River sedimentation and has a maximum thickness of over 10 m in the area. It too has the "bird's-foot" pattern of a delta formed on a shallow shelf. This member extends to the western tip of Lesser Slave Lake, north to Township 91 and south to Township 66.

The Paddy and Cadotte members are well exposed on the Property along the canyon of the Peace River. Both had a complex western source which probably consisted of igneous, metamorphic and clastic rocks lying, for the most part, west of the present day Rocky Mountain Trench. The Harmon member has only been observed in one location on the Property.

In northwest Alberta and northeast British Columbia, the basal contact of the Colorado Group sediments is represented by a major erosion surface between the Paddy and Cadotte members of the Peace River Formation. This unconformity has beveled the underlying Cadotte and Harmon members toward the east and south. Westward, in the Rocky Mountain Foothills of northeastern British Columbia, the unconformity approximately corresponds to the position of the lowermost paleosols within the Boulder Creek Formation (Leckie et al., 1990).

Shales of the Shaftsbury Formation outcrop only at the top of the sandstone cliffs along the river.

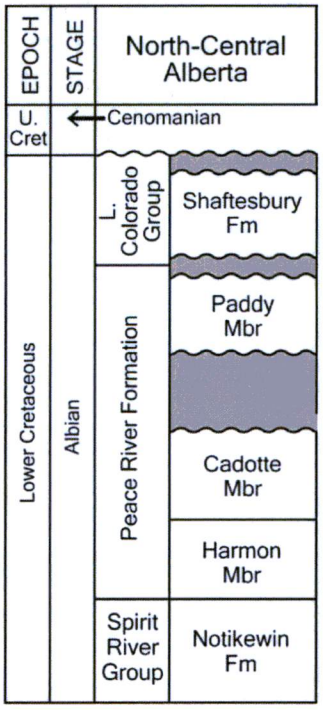

Figure 5-2 Generalized Cretaceous Stratigraphy of the Peace River River Area (adapted from Dafoe, Gingras, and Pemberton, (2010) Bulletin of Canadian Petroleum Geology, June 2010, v. 58, p. 173-201).

5.2.1 Cadotte

The Albian Cadotte Member in northwestern Alberta is a clastic shoreline to offshore progradational sequence. A prominent erosional scour surface subdivides the Cadotte into lower and upper units which can be easily recognized in the subsurface on gamma-ray logs.

The lower unit is finer grained and consists of a coarsening-upward offshore to middle shore-face shale, siltstone and sandstone sequence. The offshore facies consists of interbedded shale and wave-rippled to graded-bedded siltstone and very fine grained sandstone, representing deposition below storm-weather wave base. The overlying lower shoreface facies consists of interbedded graded-bedded and hummocky cross-stratified sandstone and shale with a moderate amount of bioturbation. This bioturbation occurs in the upper portion of sandy layers, giving rise to laminated-to-burrowed structure. Deposition took place below the average storm-weather wave base.

The middle shore face facies gradationally overlies the lower shoreface facies and consists of very fine to fine grained, horizontal to low-angle cross-stratified sandstone, interpreted as amalgamated hummocky cross-stratification. Bioturbation in this facies is restricted to a thin argillaceous sandstone zone near its top, containing such burrows as Skolithos, Palaeophycus and Terebellina. This facies was deposited below fair weather wave base where severe storms reworked bottom sediments.

The upper unit, which for the most part, erosionally overlies the lower unit, comprises three facies. At the base of the unit, an upper shoreface facies consists of cross- and horizontally stratified, medium to coarse grained sandstone, pebbly sandstone and conglomerate. Macaronkhnus segregatis occurs at the top of this facies and into the base of the overlying facies. The overlying facies represents current-swept longshore troughs and rip channels of a barred high-energy shoreline. Gradationally overlying this facies, and at times difficult to separate from it, is a foreshore consisting of horizontally to low-angle cross-stratified, medium grained sandstone deposited by the action of swash and backwash on high-energy beaches. A rooted and highly homogenized fine to medium grained sandstone representing the uppermost backshore facies gradationally overlies the foreshore facies. This sequence represents the seaward progradation of a high-energy barred coastline (Rahmani and Smith, 1988).

5.2.2 Paddy

The Paddy member overlies the Cadotte member on an erosional surface. Outcrop exposures of the Peace River Formation in northwestern Alberta contain evidence of significant relative sea-level fluctuations that occurred during the middle to late Albian, including Paddy Member channels that incised into the Cadotte Member shoreline deposits. The upper Cadotte Member contact is irregular and siderite-cemented; it has been scoured into and infilled by sandstone of the Paddy Member.

The lower sandstone of the Paddy Member is cross-bedded, with abundant comminuted, carbonaceous debris. Channels cut into the Cadotte Member are up to 5 m deep and are locally overlain by in situ coal and roots. The channels are infilled with alternating couplets of moderately to intensely bioturbated sand and mud which have inclined heterolithic stratification; mud plugs are also present. Internally these sands are rippled with parallel cross-laminations. This lower part of the Paddy Member is interpreted as estuarine fill that resulted from a relative sea-level rise. The channel fill is overlain by intensely bioturbated, locally rooted, finely interbedded sandstone, siltstone and shale, with minor reworked bentonites, which are interpreted as tidal flat deposits.

These tidal flat sediments are overlain by 2 to 3 m of scoured, parallel-laminated sandstone, and capped by 1.5 m of planar-tabular cross-bedded sandstone interpreted to be shoreface and transgressive, estuary-mouth deposits, respectively. Evidence for tides throughout the Paddy Member includes inclined heterolithic stratification, mud couplets, reactivation surfaces, reversing paleoflows and compound cross-beds. The incised channels and related fill are correlative with a sequence of paleosols 300 km southwest in the Boulder Creek Formation. A brackish influence is indicated by the presence of a few species of peridinioid dinoflagellates, occurring in abundance at certain levels, as well as the trace fossil assemblage. The Paddy Member is overlain by marine mudstone of the Shaftesbury Formation. A 20 to 30 cm thick, wave-rippled layer of fish teeth, fish bones and pebbles, near the base of the Shaftesbury Formation, can be traced along the Peace River for at least 75 km. This layer of fish remains is interpreted as a transgressive lag (Leckie and Singh, 1991).

Figure 5-3 Photo (looking west) of the Paddy overlying the Cadotte along the Peace River.

5.3 STRUCTURAL GEOLOGY

The dominant structural feature in this part of the Alberta Basin is the Peace River Arch, which is a large, fault-controlled cratonic uplift. It is an east-northeasterly trending structure that has a total preserved length of approximately 750 km. At its western end, near the Alberta/British Columbia boundary, the arch stands approximately 1,000 m above the regional elevation of the basement. The amplitude of the arch decreases eastward to between 400 and 500 m at the fifth meridian (175 km east of the Property) and to only several tens of metres at its eastern end, near the fourth meridian. It is an asymmetrical structure with a steeply dipping northern flank and a more gently dipping southern slope. The axis passes about 5km north of the town of Peace River.

Facies distributions within the Lower Cretaceous Peace River Formation also appear to have been controlled by subsidence of the underlying Dawson Creek Graben Complex, a series of linked grabens that formed the central core of a renewed Peace River Embayment, a zone of subsidence which developed during the Carboniferous Period. Within the Cadotte Member, an abrupt transition from shoreline sandstone to offshore shale overlies the southern margin of the complex. An incised fluvial-estuarine system within the overlying Paddy Member parallels this shoreline, and the southern edge of the Dawson Creek Graben Complex (Leckie et al.,1990). In the Peace River region there are many minor structural offsets within units throughout the Cretaceous, possibly caused by the reactivation of underlying Peace River Arch / Dawson Creek Graben Complex structures.

Dips for the top of the Colorado Group are estimated at 40-60 m per 10 km to the south and southwest. Local variations due to scours, cross-bedding and other sedimentological features are generally of greater amplitude (O'Connell, 1994).

6 2016 Exploration

6.1 Exploration

Dahrouge, on behalf of Phoenix, conducted exploration for silica sands (with the potential as a proppant) within the Peace River district of Alberta, between June 19-24, 2016. The work was undertaken to determine the location, quality, extent and economic potential of sandstone units within the Property.

A jet boat based out of Peace River was used to access lower elevations along the river, and trucks were used to access areas above the cliffs. Garmin GPSmap 64S instruments were used to mark outcrop locations and record access information. Compasses were set at a magnetic declination of 16.8° east. Sandstone outcrops were examined along both sides of the river. A total of 58 stations were mapped, and 25 channel samples from 16 locations were collected (Figure 6-1, Figure 6-2 and Figure 6-3). Geological observations were recorded, including lithologic information, and other pertinent details (Appendix 2 and Appendix 3). Photos were also taken at the sample stations.

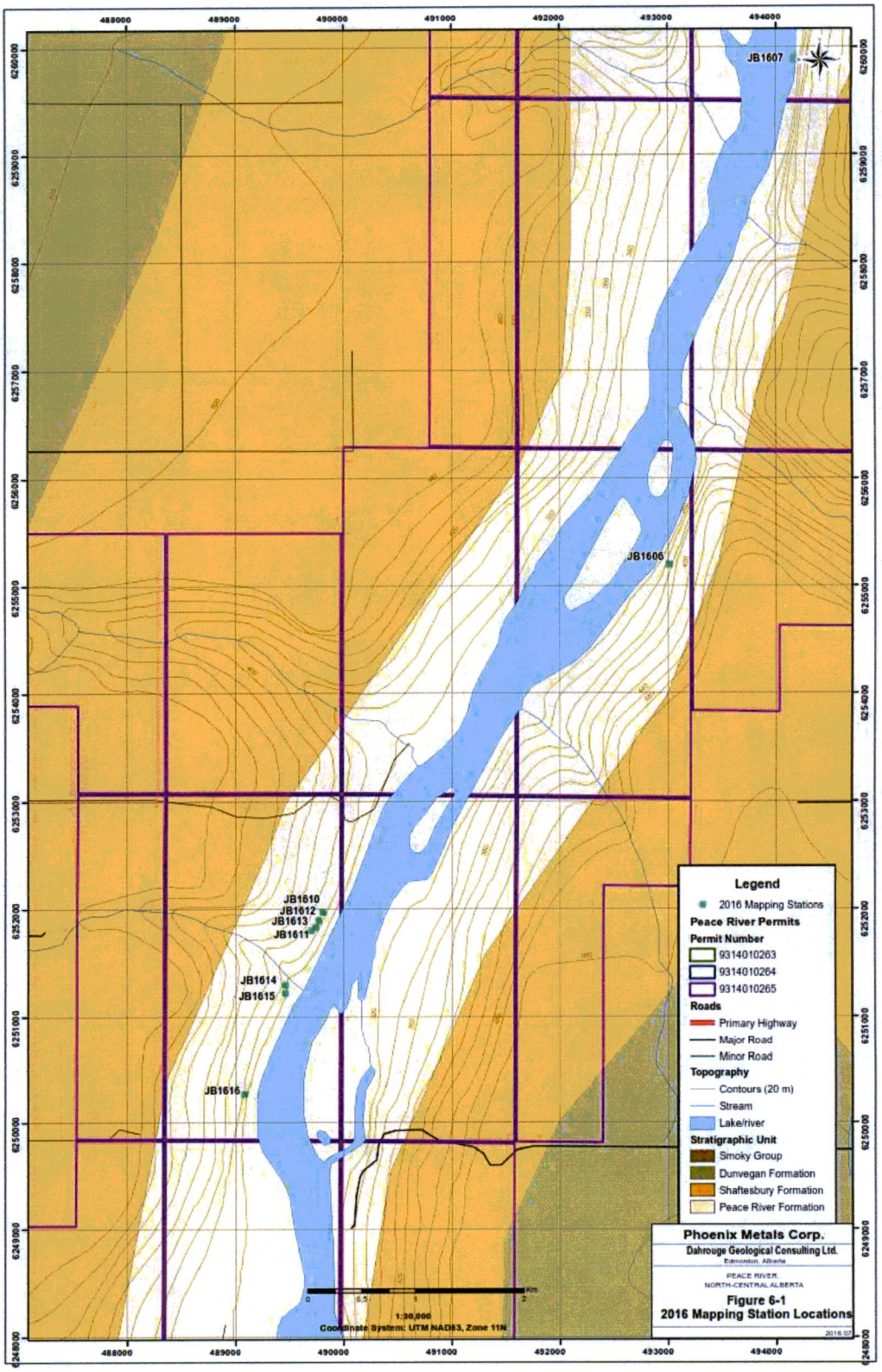

Figure 6-1 **2016 Mapping Station Locations (northern permit area)**

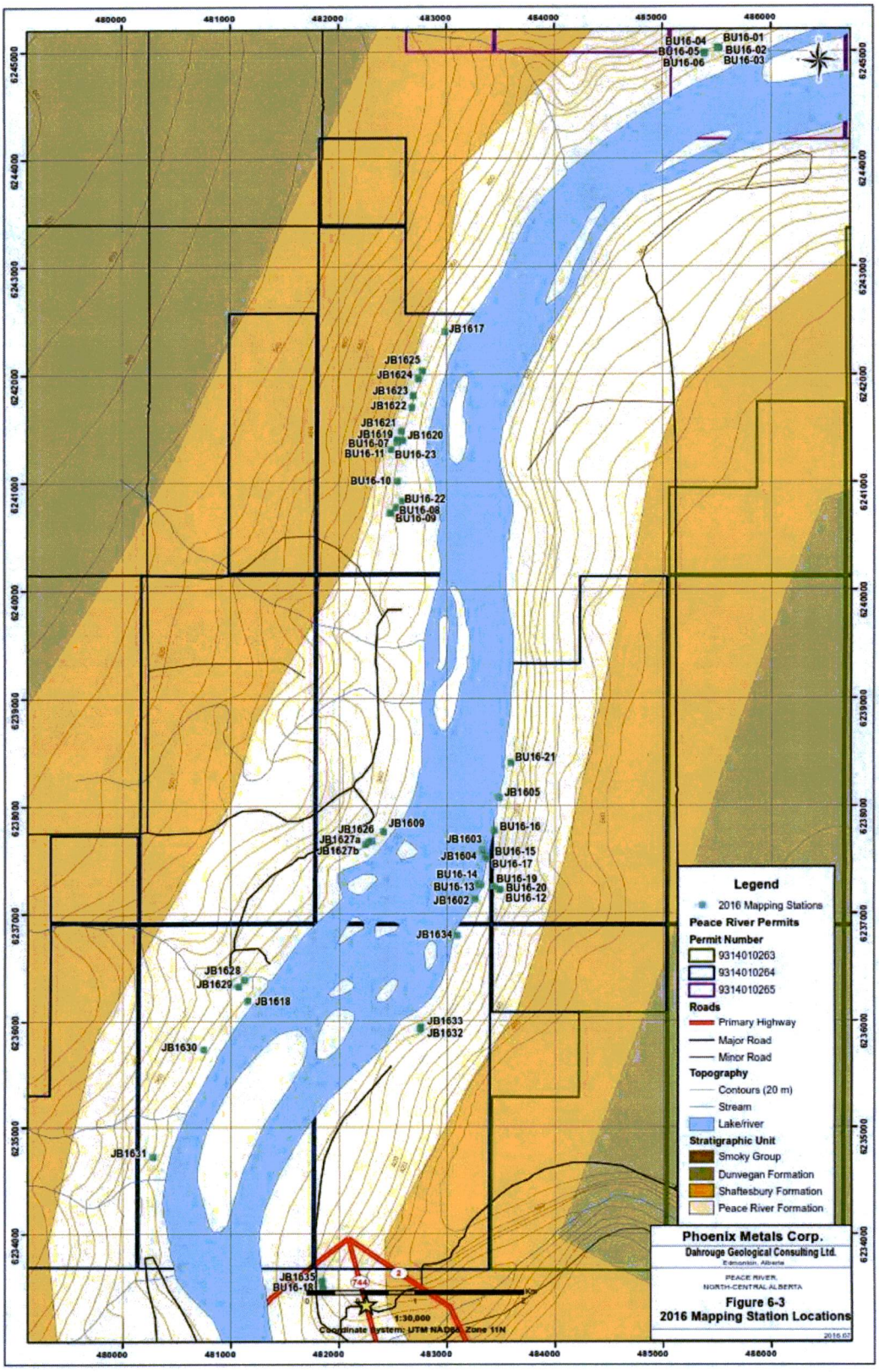

Figure 6-2 **2016 Mapping Station Locations (southern permit area)**

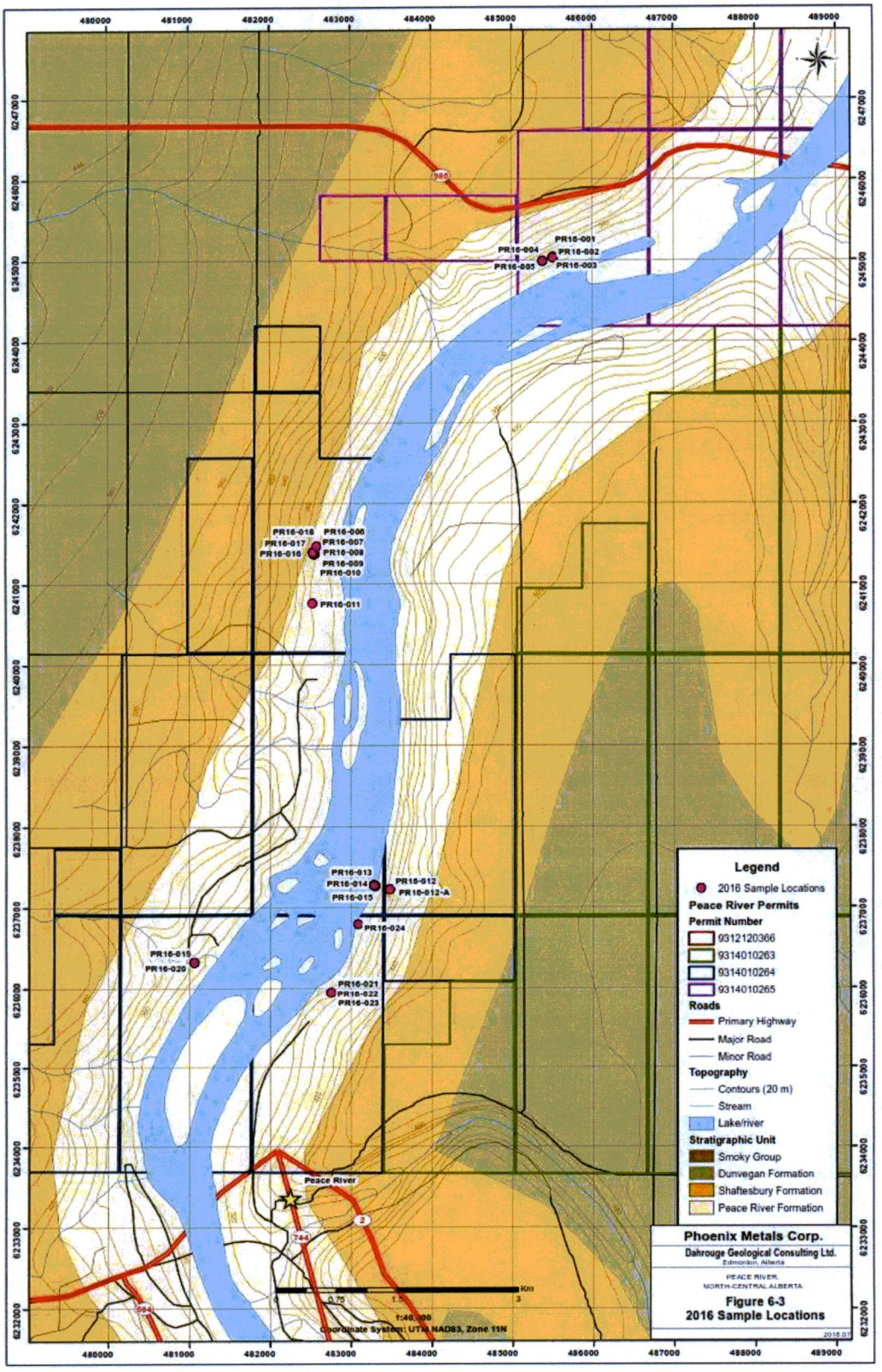

Figure 6-3 2016 Sample Locations

6.2 RESULTS

Mapping and sampling during the 2016 program primarily focused on the Paddy Member. Some samples of the underlying Cadotte Member were also collected. Channel samples were collected from top to bottom, and varied from 0.37 to 2.00 m in length depending on the accessible exposed amount of the Paddy. None of the samples collected during the 2016 exploration program were sent for analysis.

The Paddy Member sandstone samples were generally medium- to coarse-grained, cream to light brown coloured, friable, moderate to well-sorted and rounded, and locally contained thin coal bands and carbonaceous material. The thickest visible section through the Paddy member was 15 m at station BU16-07.

The Cadotte Member sandstone samples were generally medium-grained, light grey, moderately sorted and red-brown oxidized. Near the contact with the Paddy, the Cadotte was siderite cemented.

Based on a review of regional historic data (including drill hole information and maps) and data collected during the 2016 exploration program, it has been concluded that areas of the Property should be released due to thick overburden and low economic potential of the sandstone (See Section 4).

7 DISCUSSIONS & CONCLUSIONS

Sandstone units of the Cadotte and Paddy members of the Peace River Formation were examined and sampled along Peace River north of the town of Peace River, within MAIM Permits 9314010263, 9314010264 and 9314010265. A total of 16 discrete intervals were sampled and described in detail. Based on the samples collected and units mapped during the 2016 exploration program, along with an overall property assessment, the size of the permits will be reduced where the overburden thickness is deemed too great and the sandstone has low economic potential (Figure 4-1).

Currently, access to the Property is limited. Jet boat and hiking/climbing are required to reach the sandstones on much of the Property. The steepness of cliffs frequently prevents systematic sampling, particularly of the upper part of the Paddy Member below the Shaftesbury

Future exploration should expand on previously conducted work in the area, confirming or redefining past geological interpretations and determining the potential for quality hydraulic fracturing sand within the permit area. This exploration should involve rappelling down the cliffs to better define the Paddy Member on the west side of the Peace River. Further sampling, including analysis should also be carried out.

8 REFERENCES

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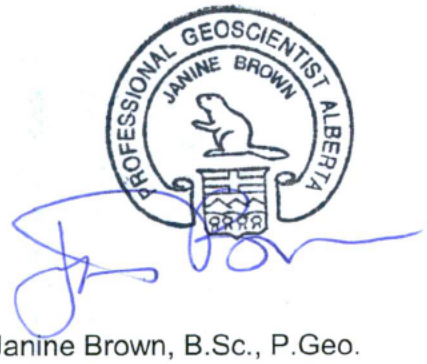
9 STATEMENT OF QUALIFICATIONS

- I, Janine Brown, residing at [redacted] do hereby certify that:
- I am a geologist of Dahrouge Geological Consulting Ltd., Suite 18, 10509 - 81 Ave., Edmonton, Alberta, T6E 1X7.
- I am a 2009 graduate of the University of Alberta, Edmonton, Alberta with a B.Sc. in Geology.
- I have practiced my profession as a geologist continuously since 2009.
- I am a registered Professional Geologist with the Association of Professional Engineers and Geoscientists of Alberta, member M89368.
- I hereby consent to the copying or reproduction of this Assessment Report following the one-year confidentiality period.
- I am the author of the report entitled "2016 Exploration on the Peace River Property Metallic and Industrial Minerals Permits, North-Central Alberta" and accept responsibility for the veracity of technical data and results.

Dated this 26rd day of July, 2016.



Janine Brown, B.Sc., P.Geo.

APEGA

M89368

APPENDIX 1 – ITEMIZED COST STATEMENT

Itemized Cost Statement for the 2016 Exploration on the Peace River Property

a) Personnel	$	13,907.15
b) Food & Accommodation	$	3,668.96
c) Transportation	$	2,957.93
d) Equipment Rental	$	124.00
e) Drilling		n/a
f) Analyses		n/a
h) Other (software rental, supplies, expenses)	$	4,351.41
	$	25,009.45
Administration (10%)	$	2,500.95
Total + Administration	**$**	**27,510.40**

APPENDIX 2 – 2016 MAPPING STATION DESCRIPTIONS

2016 Mapping Station Descriptions

DATE COLLECTED	STATION ID	EASTING (UTM NAD83)	NORTHING (UTM NAD83)	ELEVATION	MEMBER	ROCKTYPE	ROCK DESCRIPTION	OUTCROP DESCRIPTION	SAMPLE ID	STRUCTURE	AZIMUTH (DD)	DIP	COMMENTS
2016-06-20	JB1602	483254	6237133	328	Paddy-Cadotte	sandstone	Paddy: medium-dark orange weathering; carbonaceous layers. Cadotte: fine-grained; salt & pepper; light grey; silty.	7 m high x >30 m along east side of Peace River; light-medium orange weathering; 3 m of Paddy overlying 3 m of Cadotte; 30 cm gravel at contact.	n/a	Bedding	120	20	photo looking east.
2016-06-20	JB1603	483324	6237589	313	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	photo looking at cliffs on west side of river.
2016-06-20	JB1604	483352	6237536	325	Paddy	sandstone	fine-grained; light grey; burrows; laminae; local siderite lenses.	15 m high x 40 m along east side of Peace River; light brown weathering; local orange-red weathering.	n/a	Bedding	180	23	photos looking east.
2016-06-20	JB1605	483483	6238077	324	Cadotte	sandstone	fine- to medium-grained; light grey; salt & pepper; few burrows; siderite lenses (10 cm thick); x-bedding; massive; local laminations	>15 m high x 30 m long; light brown weathering; orange-red weathering of burrows; precipitated white powdery salt; bedding ~10° to NE (can not get good surface for measurement).	n/a	n/a	n/a	n/a	photos looking east.
2016-06-20	JB1606	493005	6255195	334	Cadotte	sandstone	fine-grained; light grey; few burrows (less than previous stations); salt & pepper; x-bedding; massive.	10 m long x 3 m high; light brown weathering.	n/a	Bedding	110	10	photos looking east.
2016-06-20	JB1607	494157	6259891	340	Cadotte	sandstone	fine-grained; light grey; salt & pepper; burrows; siderite lenses (20 cm thick); massive	extends >50 m x 8 m high; light brown weathering.	n/a	Bedding	125	0	photos looking east.
2016-06-20	JB1608	494209	6265669	303	Cadotte	sandstone	n/a	outcrop visible from boat; looks like Cadotte with till/shaft on top.	n/a	n/a	n/a	n/a	photos looking east.
2016-06-20	JB1609	482410	6237764	323	Cadotte	sandstone	fine-grained; light grey to brown sandstone; massive	20 m high; outcrop extends >30 m along Peace River; medium-orange brown weathering.	n/a	Bedding	130	6	photo.
2016-06-21	JB1610	489797	6251970	340	Cadotte	sandstone	medium-grained; well-sorted; less silty than previous day stations; massive; strongly altered seems to be quite orange-brown deep into outcrop.	7 m high x >30 m along river; light-medium rown weathering; orange-red altered bands (10-20 cm).	n/a	n/a	n/a	n/a	photo.
2016-06-21	JB1611	489695	6251806	368	Cadotte	sandstone	n/a	continuation of JB1610	n/a	n/a	n/a	n/a	n/a
2016-06-21	JB1612	489764	6251899	338	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	photo of cliff looking SW.
2016-06-21	JB1613	489734	6251840	341	Cadotte	sandstone	medium-grained; salt & pepper.	difficult to tell dip direction because so horizontal; strongly weathered medium brown; 15 m high cliff.	n/a	Bedding	335	8	photo of cliff looking SW.
2016-06-21	JB1614	489455	6251298	346	Cadotte	sandstone	fine-grained; siderite lenses (orange-brown colour); well-sorted; burrows.	large cliff ~8 m high; medium orange-brown weathering.	n/a	n/a	n/a	n/a	photo of cliff looking SW.
2016-06-21	JB1615	489452	6251221	313	Cadotte-Harmon	sandstone-mudstone	sandstone: fine-grained; grey-brown; light brown weathering; x-bedding; cm-scale beds; poorly sorted; lithics. mudstone: dark grey; orange-brown weathering.	outcrop along stream bed; mudstone overlain by sandstone.	n/a	Bedding	210	12	photos.
2016-06-21	JB1616	489081	6250268	308	n/a	n/a	n/a	continuation of JB1615 & JB1614	n/a	n/a	n/a	n/a	photo.
2016-06-21	JB1617	482980	6242398	323	Cadotte	sandstone	silty	cliff along tracks; orange-red weathering of bands; orange weathering overall.	n/a	Bedding	305	12	photo.
2016-06-21	JB1618	481153	6236190	324	Cadotte	sandstone	light grey; well-sorted; salt & pepper; x-bedding.	cliff along river; extends >500m; light brown weathering	n/a	Bedding	295	2	photo.
2016-06-22	JB1619	482536	6241396	351	Paddy	sandstone	medium- to coarse-grained; light brown; x-bedding; laminae; well-sorted but some poorly-sorted; minor dark fragments; friable; rounded to subrounded; few burrows.	old stream bed with outcrop on both sides; 5 m wide; 5 m x 8 m wide exposed; covered by dirt; medium brown-grey weathering.	128451; 128452	n/a	n/a	n/a	photo.
2016-06-22	JB1620	482593	6241395	348	Paddy-Cadotte	sandstone	n/a	good spot for sample with appropriate rappelling gear.	n/a	n/a	n/a	n/a	n/a
2016-06-22	JB1621	482579	6241473	352	Paddy	sandstone	fine-grained; light brown; few carbonaceous laminae; moderately-sorted; horizontal strata; subrounded; friable; trace dark frags.	outcrop in old stream bed; 3 m wide gully; 10 m x 2 m high; grey-brown weathering; runs E-W; overlain by till/dirt; too weathered for bedding measurement.	128453	n/a	n/a	n/a	photo.
2016-06-22	JB1622	482677	6241696	345	n/a	sandstone	n/a	photo looking south (upstream along river); orange irregular looking layer is contact between Paddy and Cadotte -likely siderite nodules	n/a	n/a	n/a	n/a	photo looking south.
2016-06-22	JB1623	482691	6241800	347	Paddy-Cadotte	sandstone	light brown; 1% dark frags- more than previous sample locations; well-sorted; subrounded; approximately 2 m thick (difficult to confirm on slope).	Paddy outcropping along top of cliff along tracks; lots of Shaftsbury above; strong red alteration.	n/a	n/a	n/a	n/a	photo.
2016-06-22	JB1624	482738	6241960	348	Paddy-Shaftsbury	sandstone-mudstone	dark grey mudstone overlying light brown, well-sorted; few dark grains; minor milky white agate.	contact between units; small gully (1-5 m wide) running 135-315; Paddy outcrops 10 m to SE; very wet; brown weathered.	n/a	Bedding	345	18	photo.
2016-06-22	JB1625	482775	6242038	361	Paddy-Shaftsbury	sandstone-mudstone	fine- to medium-grained; moderately-poorly sorted; light brown; carbonaceous laminae; burrows; chert in lower zone.	outcropping Paddy; some slumped; not ideal for sampling without rappelling; slope covered in Shaftsbury debris; red and orange weathering.	n/a	n/a	n/a	n/a	n/a
2016-06-23	JB1626	482305	6237677	343	Cadotte	sandstone	medium-grained; light grey-brown; salt & pepper;	start of outcrop exposed along till-covered slope; dominant light brown-grey weathering; local red-orange weathering associated with siderite..	n/a	n/a	n/a	n/a	n/a
2016-06-23	JB1627a	482239	6237647	341	Paddy-Cadotte	sandstone-mudstone	Cadotte: fine- to medium-grained; light grey; salt & pepper; well-sorted. Paddy: seem slightly salt & pepper; poorly-sorted; grey-brown; x-bedding.	end of exposed knobs along slope; light brown-grey weathering; 10 m high,	n/a	n/a	n/a	n/a	n/a
2016-06-23	JB1627b	482274	6237664	338	Paddy-Cadotte	sandstone-mudstone	Cadotte: salt & pepper; iron staining (orange); fine- to medium-grained; light grey; moderately sorted; burrows. Paddy: medium-grained; brown-grey; carbonaceous layers; burrows; poorly-sorted.	4 m x 5 m long on steep slope; 60 m overburden.	n/a	n/a	n/a	n/a	photo.

2016 Mapping Station Descriptions

DATE COLLECTED	STATION ID	EASTING (UTM NAD83)	NORTHING (UTM NAD83)	ELEVATION	MEMBER	ROCKTYPE	ROCK DESCRIPTION	OUTCROP DESCRIPTION	SAMPLE ID	STRUCTURE	AZIMUTH (DD)	DIP	COMMENTS
2016-06-23	JB1628	481064	6236321	332	Cadotte	sandstone	grey-brown; siderite; poorly-sorted; burrows; x-bedding.	light brown weathering; local red weathering; exposure along drainage; 4 m wide; 3-6 m high cliff (varies downstream); drainage runs 210-30; many sections slumped.	PR16-019 & PR16-020	n/a	n/a	n/a	photo.
2016-06-23	JB1629	481121	6236387	340	n/a	n/a	n/a	continuation of Paddy along stream; 8 m high.	n/a	Bedding	190	6	n/a
2016-06-23	JB1630	480746	6235734	372	n/a	n/a	n/a	~1 m Paddy; x-bedding; ~50 m overburden.	n/a	n/a	n/a	n/a	photo looking downstream (north) at contact of Paddy with Cadotte
2016-06-23	JB1631	480275	6234721	358	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	photo looking North along Peace River; overburden/Shaftsbury on Cadotte.
2016-06-24	JB1632	482755	6235940	327	Cadotte-Gravel Bed-Paddy	sandstone-gravel	Cadotte: fine-grained; light grey; salt & pepper; x-bedded; siderite. Gravel: cobbles to boulders; pinches out to south at JB1633. Paddy: crumbly; mud matrix with granules; carbonaceous material (wood debris); grey-brown.	outcrop of Cadotte-Paddy contact; grey-brown weathering; runs along east side of river.	PR16-021; PR16-022 & PR16-023	Bedding	120	8	photo.
2016-06-24	JB1633	482747	6235919	334	Cadotte-Gravel Bed-Paddy	sandstone-gravel	extent of JB1632 to south.	n/a	n/a	n/a	n/a	n/a	n/a
2016-06-24	JB1634	483091	6236793	325	Cadotte-Paddy	sandstone	Cadotte: salt & pepper; light grey; burrows; silty. Paddy: fine- to medium-grained; well-sorted; orange-brown weathering; 37 cm thick; grey-brown; overlain by till.	60 m long x 4 m high; running 45-225°; sample taken on north side of outcrop (dip 90° ; azimuth 130°)	PR16-024	n/a	n/a	n/a	photo.
2016-06-24	JB1635	481836	6233564	325	Cadotte	sandstone	fine- to medium-grained; light grey; salt & pepper; silty; x-bedding; massive; burrows; well-sorted.	grey-brown weathering; 5 m x 8 m long; just off 98st in Peace River.	n/a	n/a	n/a	n/a	n/a
2016-06-22	BU16-01	485522	6245033	366	Cadotte	sandstone	medium- to coarse-grained; tan brown "Dirty"; highly friable; contains re-worked clasts up to 5 cm; poorly consolidated	na	PR16-001	n/a	n/a	n/a	n/a
2016-06-22	BU16-02	485508	6245034	350	Cadotte-Paddy Contact	sandstone	medium grain; brownish grey; clean moderately sorted; 5 cm layered bands; poorly consolidated.	minor tributary exposing 4 m outcrop bank.	PR16-002	n/a	n/a	n/a	n/a
2016-06-22	BU16-03	485507	6245029	349	Paddy	sandstone	medium- to coarse-grained; tan brown "Dirty"; highly friable; contains re-worked clasts up to 5 cm; poorly consolidated.	na	PR16-003	n/a	n/a	n/a	n/a
2016-06-22	BU16-04	485384	6244980	343	Paddy	sandstone	medium- to coarse-grained; poorly consolidated	minor tributary exposing 4 m outcrop bank.	PR16-004	n/a	n/a	n/a	n/a
2016-06-22	BU16-05	485382	6244987	342	Paddy	sandstone	medium- to coarse-grained, cream-white; thin coal bands up to 2 cm thick; poorly consolidated	minor tributary exposing 4 m outcrop bank.	PR16-005	n/a	n/a	n/a	n/a
2016-06-22	BU16-06	485390	6244980	341	Cadotte-Paddy Contact	Sandstone		minor tributary exposing 4 m outcrop bank.	n/a	n/a	n/a	n/a	n/a
2016-06-23	BU16-07	482545	6241376	362	Paddy	sandstone	medium-grain; cream-white to brown with dark purple staining; well sorted; minor coal bands < 4 cm; fine bedding.	Shaftsbury-Paddy-Cadotte Section exposed along 20 m cut bank, showing ~20 m of geological section (15 m Paddy).	PR16-006; PR16-007; PR16-008; PR16-009; PR16-010	n/a	n/a	n/a	n/a
2016-06-23	BU16-08	482527	6240766	346	Cadotte	sandstone	medium grain; light grey to red-brown oxidized, moderately sorted.	n/a	PR16-011	n/a	n/a	n/a	CADOTTE Last exposure before slump
2016-06-23	BU16-09	482472	6240712	356	Shaftsbury	mudstone	poorly consolidated mudstone.	n/a	n/a	n/a	n/a	n/a	Shaftsbury cover gave way > 25 m shaft cover
2016-06-23	BU16-10	482544	6241011	346	Cadotte	Sandstone	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2016-06-23	BU16-11	482538	6241376	364	Shaftsbury-Paddy Contact	mudstone-sandstone	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2016-06-24	BU16-12	483485	6237222	352	Paddy-Shaftsbury	gravel-siltstone	fine- to medium-grained, tan brown; well sorted; thin coal bands up to 2 cm thick; poorly consolidated; overlying poorly sorted silt to 14 cm pebble-boulder gravel.	minor tributary exposing 4 m outcrop bank; upper contact of Paddy; below erosional gravel bed at base of Shaftsbury.	PR16-012; PR16-012-A	n/a	n/a	n/a	n/a
2016-06-24	BU16-13	483309	6237262	344	Paddy	sandstone	medium grain; brownish grey; clean moderate to well sorted; oxidized at base but clean; poorly consolidated.	minor tributary exposing 4 m outcrop bank.	PR16-013	n/a	n/a	n/a	n/a
2016-06-24	BU16-14	483287	6237273	329	Cadotte-Paddy	sandstone	medium-grained; light grey; moderate-sorting; trace dark fragments; round to subrounded grains; poorly consolidated.	minor tributary exposing 4 m outcrop bank.	PR16-014; PR16-015	n/a	n/a	n/a	n/a
2016-06-24	BU16-15	483369	6237514	335	Cadotte top	Sandstone	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2016-06-24	BU16-16	483439	6237769	330	Cadotte top	Sandstone	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2016-06-24	BU16-17	483358	6237525	332	Cadotte	Sandstone	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2016-06-24	BU16-18	481847	6233500	338	Shaftsbury	mudstone	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2016-06-24	BU16-19	483421	6237253	350	Shaftsbury	mudstone	n/a	n/a	n/a	n/a	n/a	n/a	Near Base
2016-06-24	BU16-20	483487	6237222	351	Shaftsbury	mudstone	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2016-06-24	BU16-21	483589	6238402	341	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	South Side Erosion
2016-06-24	BU16-22	482587	6240834	331	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Potential Drillsite (to west)
2016-06-24	BU16-23	482480	6241304	384	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Potential Drillsite

APPENDIX 3 – 2016 SAMPLE DESCRIPTIONS

2016 Sample Descriptions

SAMPLE ID	Easting (UTM NAD83)	Northing (UTM NAD83)	Elevation (m)	SAMPLE LENGTH (m)	SAMPLE AZIMUTH	SAMPLE SLOPE	MEMBER	ROCKTYPE	SAMPLE DESCRIPTION	COMMENTS
PR16-001	485522	6245033	366	1.40	-	-90	Paddy	sandstone	medium- to coarse-grained; tan brown "Dirty"; highly friable; contains re-worked clasts up to 5 cm; poorly consolidated.	erosional channel; poor sample interval.
PR16-002	485508	6245034	350	1.20	80	-70	Cadotte	sandstone	medium-grained; brownish grey; clean moderatly sorted; 5 cm layerd bands; poorly consolidated.	Cadotte-Paddy; contact; collected ~2m down section to PD16-001.
PR16-003	485507	6245029	349	1.00	-	-90	Paddy	sandstone	medium- to coarse-grained; tan brown "Dirty"; highly friable; contains re-worked clasts up to 5 cm; poorly consolidated.	extension from PD16-001 erosional channel; poor sample interval.
PR16-004	485384	6244980	343	1.35	340	-78	Paddy	sandstone	medium- to coarse-grained; poorly consolidated	
PR16-005	485382	6244987	342	0.90	340	-78	Paddy	sandstone	medium- to coarse-grained, cream-white; thin coal bands up to 2 cm thick; poorly consolidated.	
PR16-006	482545	6241376	362	2.00	340	-85	Paddy	sandstone	medium- to coarse-grained; cream-white; clean; round; well sorted; poorly consolidated; minor coal bands less than 5 cm.	approximately 5-10 m below Shaftsbury contact.
PR16-007	482545	6241376	362	2.10	340	-85	Paddy	sandstone	medium-grain; brown with dark purple staining; well sorted; minor coal bands < 4 cm; fine bedding.	
PR16-008	482545	6241376	362	2.40	340	-90	Paddy	sandstone	medium-grain; brown with dark purple; well-sorted.	
PR16-009	482555	6241376	348	0.90	340	-80	Cadotte	sandstone	medium-grained; light grey, moderately sorted.	
PR16-010	482555	6241376	348	1.40	80	-65	Cadotte	sandstone	medium-grained; light grey, moderately sorted.	
PR16-011	482527	6240766	346	2.50	80	-80	Cadotte	sandstone	medium-grained; light grey to red-brown oxidized, moderately sorted	
PR16-012	483485	6237222	352	1.10	-	-90	Paddy	sandstone	fine- to medium-grained, tan brown; well sorted; thin coal bands up to 2 cm thick; poorly consolidated.	sample collected directly under PR16-12-A gravel section in Shaftsbury
PR16-012-A	483485	6237222	352	1.40	-	-90	Shaftsbury	gravel & siltstone	poorly sorted silt to 14 cm pebble-boulder gravel.	Shaftsbury-Paddy contact
PR16-013	483309	6237262	344	2.50	-	-90	Paddy	sandstone	medium-grained; brownish grey; clean moderate to well sorted; oxidized at base but clean; poorly consolidated.	Paddy interval location undefined, but below sample PR16-012 in section

2016 Sample Descriptions

SAMPLE ID	Easting (UTM NAD83)	Northing (UTM NAD83)	Elevation (m)	SAMPLE LENGTH (m)	SAMPLE AZIMUTH	SAMPLE SLOPE	MEMBER	ROCKTYPE	SAMPLE DESCRIPTION	COMMENTS
PR16-014	483287	6237273	329	1.00	280	-80	Cadotte	sandstone	medium-grained; light grey; moderate-sorting; trace dark fragments; round to subrounded grains; poorly consolidated.	
PR16-015	483287	6237273	329	2.00	80	-65	Cadotte	sandstone	fine-grained; cemented; reddish brown; very hard siderite cementation over 2 m interval.	location relative to Paddy-Cadotte unknown but close.
PR16-016	482536	6241396	351	2.00	235	-65	Paddy	sandstone	medium-grained; light brown; well-sorted; trace dark fragments; round to subrounded grains.	
PR16-017	482536	6241396	351	2.00	300	-75	Paddy	sandstone	medium- to coarse-grained; light brown; well-sorted; trace dark fragments; round to subrounded grains.	
PR16-018	482579	6241473	352	1.40	180	-90	Paddy	sandstone	fine-grained; light brown; few carbonaceous laminae; moderately-sorted; subrounded; trace dark fragments.	
PR16-019	481064	6236321	332	1.00	280	-80	Cadotte	sandstone	fine-grained; grey-brown; siderite; poorly-sorted.	
PR16-020	481064	6236321	332	1.25	280	-80	Cadotte	sandstone	fine-grained; grey-brown; siderite; poorly-sorted.	
PR16-021	482755	6235940	327	0.80	260	-65	Paddy	gravel	grey-brown; crumbly; mud matrix with granules; carbonaceous material.	
PR16-022	482755	6235940	327	1.10	260	-65	Paddy	gravel	cobbles to boulders.	
PR16-023	482755	6235940	327	1.10	260	-65	Paddy	gravel	cobbles to boulders.	
PR16-024	483091	6236793	325	0.37	310	-90	Paddy	Sandstone	fine- to medium-grained; grey-brown; well-sorted.	