2019 GEOLOGICAL AND GEOCHEMICAL EXPLORATION ON THE SHADOW LAKE PROPERTY

WHITEHORSE MINING DISTRICT, YUKON

Grant Numbers: WL 1-45 (YF46097-YF46141)

Geographic Coordinates
60°33' N to 60°35' N
134°46' W to 134°49' W

NTS Sheet 105D10

Owner:	J. Dahrouge (Client ID 4002813) 103, 10183 – 112th Street Edmonton, Alberta T5K 1M1
Operator:	Graymont Western Canada Inc. 260, 4311 – 12th Street NE Calgary, Alberta T2E 4P9
Consultant:	Dahrouge Geological Consulting Ltd. 103, 10183 – 112th Street Edmonton, Alberta T5K 1M1
Authors:	K. Krueger, B.Sc., P. Geo. A. Shumilak, B.Sc., G.I.T.

Field Work Completed:	August 3, 2019
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1. INTRODUCTION

The Shadow Lake group of quartz claims were staked by Henry Lole in late June 2014 and transferred to Jody Dahrouge in April 2019. Dahrouge Geological Consulting (Dahrouge) completed a surface sampling program on August 3rd, 2019. Exploration consisted of collecting seven hand samples. A traverse totalling 1.25 km was completed on the Property in order to map geologic units and identify outcrops. The majority of the 2019 work focused on identifying access routes, mapping geological contacts and identifying high-calcium limestone outcrops on the Shadow Lake Property. This report describes the 2019 exploration and provides an interpretation of the results. Appendix 1 is an itemized cost breakdown of the 2019 work completed on the Shadow Lake Property. The operator for the 2019 exploration was Graymont Western Canada Inc.

The Shadow Lake Property is comprised of 45 contiguous quartz claims; the Property has been grouped as per Grouping Certificate HW07732.

Structural measurements were obtained at stations throughout the Property. A magnetic declination of 24° 2' east was used. Attitudes of bedding and other planar features are given as A°/B° NW, where A° is the azimuth of the strike (right-hand rule) and B° is the amount of dip in the direction indicated. Where bedding has been obscured by structure, stratigraphic thicknesses were calculated using orientations from adjacent units. Where more than one bedding orientation was measured, the mean orientation was used.

1.1 GEOGRAPHIC SETTING

1.1.1 Location and Access

The Shadow Lake Property can be accessed by travelling approximately 18 km southeast of Whitehorse, Yukon along the Alaska Highway (Hwy 1), then spurring off south onto the Klondike Highway (Hwy 2) for approximately 2 km (Fig.'s 3.1 and 3.2). A network of well-maintained ATV trails bisect the northern portion of the Property, and can be used to further access the claims. Extensive hiking is also required, as much of the southern half of the Property has no pre-existing ATV trails.

1.1.2 Topography, Vegetation, Wildlife and Climate

Topography in the Shadow Lake Property area is characterized by northwest trending broad U-shaped glacial valleys and ridges of significant relief. Elevations on the Property range from

730 m in the north, nearest the Alaska Highway, up to approximately 1,300 m on the highest peak in the SE corner of the Property (Fig. 4.1).

Tree cover in the Whitehorse area is moderate to dense. The most common trees are evergreen (spruce, pine and fir), with common birch, poplar, willow, cottonwood and aspen. There is no evidence of recent industry clear-cutting and logging in the area. There is, however, a public municipal firewood area overlapping the northern portion of the Property.

The abundance of wetlands and small ponds in the Shadow Lake area make it an ideal habitat for a variety of ungulates, birds and small mammals. The Yukon Government has identified a woodland caribou winter range in the Shadow Lake Property area. To the authors' knowledge, there are no restrictions on the area due to the presence of these animals. During exploration, Dahrouge endeavored to minimize the disturbance to local flora and fauna.

The area is part of the Boreal Cordillera Eco-zone with generally dry and cool conditions. Climate is alpine to sub-arctic with average summer temperatures of 20° to 25°C and winter temperatures of -15° to -25°C, with extremes of 32°C and -55°C. Rainfall averages about 15 cm per year and maximum snowfall occurs from November to February with an average total of 128 cm. Snow often falls as early as September and as late as April.

1.2 PROPERTY

The Shadow Lake claims are being held in trust for Graymont Western Canada Inc. by Jody Dahrouge, based out of Edmonton, AB. The claims were staked from June 22nd to 24th, 2014 by a four-person crew based out of Whitehorse, YT. The Shadow Lake Property consists of 45 quartz claims (WL 1-45) with a combined area of 940.5 ha.

TABLE 1.1 LIST OF SHADOW LAKE CLAIMS

Grant Number	Claim Name	Original Size (ha)	Record Date	Current Good To Date	New Good To Date	Required Spending
YF46097	WL 1	20.9	14-Jul-14	14-Jan-2021	14-Jan-2022	$100.00
YF46098	WL 2	20.9	14-Jul-14	14-Jan-2021	14-Jan-2022	$100.00
YF46099	WL 3	20.9	14-Jul-14	14-Jan-2021	14-Jan-2022	$100.00
YF46100	WL 4	20.9	14-Jul-14	14-Jan-2021	14-Jan-2022	$100.00
YF46101	WL 5	20.9	14-Jul-14	14-Jan-2021	14-Jan-2022	$100.00
YF46102	WL 6	20.9	14-Jul-14	14-Jan-2021	14-Jan-2022	$100.00
YF46103	WL 7	20.9	14-Jul-14	14-Jan-2021	14-Jan-2022	$100.00
YF46104	WL 8	20.9	14-Jul-14	14-Jan-2021	14-Jan-2022	$100.00
YF46105	WL 9	20.9	14-Jul-14	14-Jan-2021	14-Jan-2022	$100.00

YF46106	WL 10	20.9	14-Jul-14	14-Jan-2021	14-Jan-2022	$100.00
YF46107	WL 11	20.9	14-Jul-14	14-Jan-2021	14-Jan-2022	$100.00
YF46108	WL 12	20.9	14-Jul-14	14-Jan-2021	14-Jan-2022	$100.00
YF46109	WL 13	20.9	14-Jul-14	14-Jan-2021	14-Jan-2022	$100.00
YF46110	WL 14	20.9	14-Jul-14	14-Jan-2021	14-Jan-2022	$100.00
YF46111	WL 15	20.9	14-Jul-14	14-Jan-2021	14-Jan-2022	$100.00
YF46112	WL 16	20.9	14-Jul-14	14-Jan-2021	14-Jan-2022	$100.00
YF46113	WL 17	20.9	14-Jul-14	14-Jan-2021	14-Jan-2022	$100.00
YF46114	WL 18	20.9	14-Jul-14	14-Jan-2021	14-Jan-2022	$100.00
YF46115	WL 19	20.9	14-Jul-14	14-Jan-2021	14-Jan-2022	$100.00
YF46116	WL 20	20.9	14-Jul-14	14-Jan-2021	14-Jan-2022	$100.00
YF46117	WL 21	20.9	14-Jul-14	14-Jan-2021	14-Jan-2022	$100.00
YF46118	WL 22	20.9	14-Jul-14	14-Jan-2021	14-Jan-2022	$100.00
YF46119	WL 23	20.9	14-Jul-14	14-Jan-2021	14-Jan-2022	$100.00
YF46120	WL 24	20.9	14-Jul-14	14-Jan-2021	14-Jan-2022	$100.00
YF46121	WL 25	20.9	14-Jul-14	14-Jan-2021	14-Jan-2022	$100.00
YF46122	WL 26	20.9	14-Jul-14	14-Jan-2021	14-Jan-2022	$100.00
YF46123	WL 27	20.9	14-Jul-14	14-Jan-2021	14-Jan-2022	$100.00
YF46124	WL 28	20.9	14-Jul-14	14-Jan-2021	14-Jan-2022	$100.00
YF46125	WL 29	20.9	14-Jul-14	14-Jan-2021	14-Jan-2022	$100.00
YF46126	WL 30	20.9	14-Jul-14	14-Jan-2021	14-Jan-2022	$100.00
YF46127	WL 31	20.9	14-Jul-14	14-Jan-2021	14-Jan-2022	$100.00
YF46128	WL 32	20.9	14-Jul-14	14-Jan-2021	14-Jan-2022	$100.00
YF46129	WL 33	20.9	14-Jul-14	14-Jan-2021	14-Jan-2022	$100.00
YF46130	WL 34	20.9	14-Jul-14	14-Jan-2021	14-Jan-2022	$100.00
YF46131	WL 35	20.9	14-Jul-14	14-Jan-2021	14-Jan-2022	$100.00
YF46132	WL 36	20.9	14-Jul-14	14-Jan-2021	14-Jan-2022	$100.00
YF46133	WL 37	20.9	14-Jul-14	14-Jan-2021	14-Jan-2022	$100.00
YF46134	WL 38	20.9	14-Jul-14	14-Jan-2021	14-Jan-2022	$100.00
YF46135	WL 39	20.9	14-Jul-14	14-Jan-2021	14-Jan-2022	$100.00
YF46136	WL 40	20.9	14-Jul-14	14-Jan-2021	14-Jan-2022	$100.00
YF46137	WL 41	20.9	14-Jul-14	14-Jan-2021	14-Jan-2022	$100.00
YF46138	WL 42	20.9	14-Jul-14	14-Jan-2021	14-Jan-2022	$100.00
YF46139	WL 43	20.9	14-Jul-14	14-Jan-2021	14-Jan-2022	$100.00
YF46140	WL 44	20.9	14-Jul-14	14-Jan-2021	14-Jan-2022	$100.00
YF46141	WL 45	20.9	14-Jul-14	14-Jan-2021	14-Jan-2022	$100.00
	Total Area:	940.5	**Representation Work Cost:**			$4,500.00
				Certification Cost:		$225.00
				Total:		**$4725.00**

1.3 HISTORY AND PREVIOUS INVESTIGATIONS

The Shadow Lake claims were staked in 2014 by a team from Dahrouge; an exploration

program was then completed in 2014 and 2015 to investigate carbonate quality on the Property. Historic exploration surrounding the Shadow Lake Property has dominantly been focused on copper mineralization of the Whitehorse Copper Belt, a 30 km northwest trending zone of skarn deposits, which is located west of the Property. To the knowledge of the authors, there has been no previous exploration for high-calcium limestone in the Shadow Lake Property area.

The YT Property is located approximately 4 km northwest along Alaska Highway of the Shadow Lake Property and has been historically explored for copper minerals such as bornite and chalcopyrite. The YT claims were first staked in 1967 by Lewes River Mines Ltd., then optioned to Arcturus Ventures Inc. in 2006, who currently holds them. Exploration completed between 1967 and 1970 by Lewes River Mines Ltd. consisted of an induced polarization survey, geochemical sampling and line cutting. In 2006, 2007, and 2008 Arcturus Ventures Inc. completed magnetic surveys in order to confirm the Triassic Aksala Formation limestone - Coast Intrusive contact.

The JIM (85337-8, 85355-8), SUE (75653-6) and ACE (85476) claims held by Lobo del Norte Ltd. are located at the southeast end of the Whitehorse Copper Belt and is approximately 4.5 km west of the Shadow Lake Property. Historic exploration on the JIM claims in 1998 included trenching, outcrop, float and soil sampling.

The Dorian Miner claims were first staked in 2013 by Karl Ziehe, Carl Schulze, Robert Sterling, and Kluane Drilling Ltd. They are located approximately 1 km south of the southeast corner of the Shadow Lake Property. In 2013 and 2014, geological mapping, rock and silt sampling was completed. Two diamond drill holes were also completed in 2014. Nickel, gold, and copper mineralization has been noted in skarn deposits throughout the Dorian Miner claims. Abundant felsic and mafic dykes cut through the Lewes River Group limestones on the claims. Schulze (2014) noted that the Limestone from the upper Lewes River Group was more crystalline and marbelized with depth suggesting metamorphism. Subsequent work completed in 2014 will remain confidential until May 2020.

In June 2018, Carl Schulze staked 36 additional claims (MINOR 1-24, TRITONE 1-12) extending north of the of the Dorian Miner to the south-eastern perimeter of the Property (Fig. 4.1). No assessment work has been filed yet on these claims. The MINOR claims will expire in June 2021 and the TRITONE claims will expire in June 2020.

1.4 PURPOSE OF WORK

The work described herein was undertaken to accurately identify the location and extent of

limestone units throughout the Shadow Lake Property, and consisted of mapping and sampling. The 2019 exploration program is a follow-up to work completed in 2014 and 2015 by Dahrouge (Krueger and Lole, 2014, Kreuger and Lole, 2015).

1.5 SUMMARY OF WORK

In August 2019, Dahrouge completed a one-day geologic mapping and sampling program on the Shadow Lake Property.

A total of seven limestone samples were obtained within the Shadow Lake Property (Fig. 4.2). A 1.25 km traverse was completed on the Property in order to map geologic units and identify outcrops. Samples were collected by chipping outcrops perpendicular to defined or assumed bedding. Bedding was commonly difficult to identify due to the nondescript and cryptocrystalline nature of the limestone. Where bedding was uncertain or had been obscured by structure, stratigraphic thicknesses were calculated using the best estimated orientation from adjacent units. Where more than one bedding orientation was measured, the mean orientation was used.

Geological observations were recorded, including lithologic information, measurements of structural elements, and other pertinent details (App. 4). A solution of 10% HCl was used to assess carbonate quality in the field. Samples were shipped to a lab in Salt Lake City, Utah for preparation and analyses by standard ICP techniques, and LOI. Analytical procedures are described in Appendix 2 and assay sheets are provided in Appendix 3.

Personnel were based in a hotel in Whitehorse, YT, and access to and from the Property was by rented four-wheel-drive vehicle. Access throughout the Property was by ATV's and extensive hiking.

2. REGIONAL GEOLOGY

2.1 STRATIGRAPHY

The Shadow Lake Property is located within the Whitehorse Trough, part of the Stikine Terrane. The Whitehorse Trough is a 500 km long, northwest-trending intermontane basin located in south-central Yukon, which originated as a fore-arc basin, but progressively developed into a piggy-back basin near the end of the Pliensbachian during orogenic events (Colpron, 2014). The basin straddles the Yukon-British Columbia border, with its northernmost margin in the Carmacks area, approximately 200 km north of the Shadow Lake Property. The area of the Trough covers approximately 2.44 million hectares. The basin contains up to 3 km thick Jurassic Laberge Group

sedimentary rocks, underlain by Triassic Lewes River Group sediments. Overlying the sedimentary sequences are Cretaceous and Neogene volcanics (Fig. 4.3).

2.1.1 Laberge Group

The Jurassic Laberge Group has been informally subdivided into the Richthofen, Nordenskiold and Tanglefoot formations (Table 2.1). The Richthofen Formation is characterized by thin- to medium-bedded turbidite beds, massive sandstone intervals, and fossiliferous conglomerates. It ranges from 500-10,000 m in thickness, and is restricted to the southern half of the basin, so is not present in the Whitehorse area. The Nordenskiold Formation consists of dark grey, massive dacites with quartz, plagioclase, biotite and hornblende phenocrysts in a cryptocrystalline groundmass. The Tanglefoot Formation consists of coal-bearing, fluvial to marginal marine interbedded sandstones and mudstones, conglomerates, and rare bioclastic limestones. The limestones locally contain abundant ammonites, pelecypods, and carbonaceous material. It is at least 600 m thick and is restricted to the northern half of the Whitehorse Trough, and has not been seen in outcrop near the Shadow Lake Property to date. The Richthofen, Nordenskiold and Tanglefoot formations unconformably overlie the Triassic Lewes River Group and are unconformably overlain by the Jurassic-Cretaceous Tantalus Formation (Colpron, 2011).

2.1.2 Lewes River Group

The Lewes River Group was determined to range in age from Carnian to Norian, based on dating of spiriferids, pelecypods, ammonites and cerioid corals. It generally consists of limestone, argillite, greywacke and sandstone. Lees (1934) recognized the presence of three units: a lower limestone sequence, middle sequence of greywacke and argillite with interbedded limestone intervals, and an upper limestone unit. The Lewes River Group is informally subdivided into the Povoas and Aksala formations (Table 2.1). The Povoas Formation is a volcanic unit that consists of basalts and andesites, with minor carbonate rocks. It is overlain by the Carnian-Norian Aksala Formation, which has been subdivided into two main members: Casca and Hancock. Sequences of sandstones, conglomerates and mudstones comprise the Casca Member, which overlies the reefal carbonates of the Hancock Member (Colpron, 2011). Large areas of the sedimentary sequence were subsequently intruded by granitic rocks during the Cretaceous.

2.2 STRUCTURE

The structural geology of the area is dominated by two major sub-parallel, north-northwest

trending faults that divide and define the boundaries between the Cache Creek Terrane (to the east) and the Whitehorse Trough and between the Whitehorse Trough and the Yukon-Tanana Terrane (to the west). The Nahlin Fault more or less marks the western extent of the Cache Creek Terrane and eastern extent of the Whitehorse Trough. It is a steeply dipping to vertical fault, or series of faults and has seen intermittent activity from the Late Triassic to Tertiary time. The Llewellyn fault marks the boundary between the regionally metamorphosed Yukon-Tanana Terrane and the Whitehorse Trough. It is also steeply dipping and appears to have been active from Late Triassic to Tertiary time (Shaw, 1989).

TABLE 2.1 STRATIGRAPHY OF THE SHADOW LAKE PROPERTY AREA*

Period	Stage/Age	Stratigraphic Unit			Lithological Description	Approx. Thickness (m)
		Group	Formation/ Member			
Jurassic	Bathenian		Tantalus Fm.		Quartzite, chert and pebble conglomerate, minor sandstone, shale and minor coal	200-300
	Bajocian	Laberge Gp.	Tanglefoot Fm.		Interbedded sandstones and mudstones, conglomerates, rare limestones	Up to 600 m
	Aalenian					
	Toarcian		Nordenskiold Fm.		Volcanics including dacites	unknown
	Pliensbachian					
	Sinemurian		Richtofen Fm.		Massive sandstones, conglomerates	500-900 m
	Hettangian					
Triassic	Norian	Lewes River Gp.	Aksala Fm.	Casca Mbr.	Sandstones, conglomerates and mudstones, limestone	unknown
				Hancock Mbr.	Massive to thick-bedded limestone	Up to 600
	Carnian		Povoas Fm.		Volcanics including basalts and andesites, minor carbonates	

*Adapted from Clapham et al., 2002.

3. PROPERTY GEOLOGY

3.1 STRATIGRAPHY AND LITHOLOGY

As only initial prospecting work has been performed on the Shadow Lake Property, a detailed description of the Property geology is not yet possible. In the Whitehorse area, carbonate lithologies are known to occur within Triassic sequences. The Triassic limestones encountered within the Shadow Lake Property are from the Hancock and Casca members of the Carnian-Norian Aksala Formation (Fig. 4.2). The massive, resistant limestone exposures in the Whitehorse area are likely part of the Hancock Member. The following is a brief summary of the units underlying the Shadow Lake Property.

3.1.1 Laberge Group

Exposures of the Laberge Group have not been confirmed on the Shadow Lake Property during previous exploration programs completed by Dahrouge. However, mapping completed by the Yukon Geological Survey suggests the unit outcrops in the eastern-most claims of the Property. Typical lithology for the formation consists of massive sandstones and conglomerates.

3.1.2 Aksala Formation – Casca Member

Exposures of the Casca Member were mapped and sampled during previous exploration programs within the Shadow Lake Property. The member outcrops consist of light-grey weathered, medium-grey to dark-grey fresh, micritic to fine-grained lime mudstones and argillaceous lime mudstones. Outcrops are typically massive and somewhat resistant with minor calcite veining. Significant silica contamination ranging from 2.95 to 38.19% has previously been observed in the Casca Member of the Aksala Formation.

3.1.3 Aksala Formation – Hancock Member

The cliff-forming Hancock Member of the Aksala Formation has been mapped within the western and northern claims of the Shadow Lake Property. The member outcrops consist of very light-grey to medium-grey weathered, light-grey to medium-grey fresh, cryptocrystalline to micritic lime mudstones. Both massive and resistant, the Hancock Member limestones have minor carbonaceous stringers and oxide alteration along fractures. The Hancock Member is the high-calcium limestone unit targeted by Dahrouge in exploration projects.

3.2 STRUCTURE

Given the early stage of exploration on the Property, the structure is currently largely unknown. Several structural measurements were taken in the 2015 exploration program, specifically within the western portion of the Property (App. 4). Outcrops were observed to strike north, with dips ranging from 30 to 40° eastward.

4. RESULTS OF 2019 EXPLORATION

The 2019 exploration program was conducted in order to further assess the quality of the Aksala Formation limestones and provide more constraint on geologic contacts with other units in the area.

The groundwork involved mapping and sampling at several locations along the northwest portion of the Shadow Lake Property. A total of four samples were examined and analyzed from the Hancock Member. Three samples were taken from the Casca Member at one location (Fig. 4.2).

During the programs, geological observations were recorded, including lithologic information, measurements of structural elements, and other pertinent details (App. 4). A solution of 10% HCl was used to assess carbonate quality in the field. In some instances, interval thicknesses were determined by measuring outcrops perpendicular to bedding, where it could be identified. In many cases the interval thickness can only be considered approximate (at best) due to the lack of reliable bedding surfaces.

Samples were shipped to Graymont's Central Lab in Sandy, Utah for preparation and analyses by standard ICP techniques, and LOI (App.'s 2 and 3).

The highest-quality Hancock Member sample (132675) averaged 97.45% $CaCO_3$, 1.40% $MgCO_3$ and 1.48% SiO_2 and was not in situ. Another notable Hancock grab sample (132676) taken from a piece of float averaged 94.61% $CaCO_3$, 3.01% $MgCO_3$ and 0.82% SiO_2 (Fig. 4.2).

The remaining 3 samples from the 2019 exploration program were low quality mudstones, averaging from 12.10 to 23.01% $CaCO_3$, that were likely not sourced from Hancock Member; these were presumed to be the Casca Member of the Aksala Formation.

5. DISCUSSION AND CONCLUSIONS

Within the Shadow Lake Property, limestones of the Norian-Carnian Hancock member of the Aksala Formation were mapped and tested by sampling float. A total of seven samples were

collected in the northwest portion of the Property. Samples collected from the Hancock Member were fairly consistent in quality, generally averaging in excess of 97% $CaCO_3$. The best sample of Hancock Member limestone (132675) averaged 97.45% $CaCO_3$. Limited time and challenging access routes prevented a conclusive determination of the quality of the Aksala Formation members.

The next phase of exploration on the Shadow Lake Property should consist of additional mapping and sampling, focusing on the southern and eastern portions of the Property. Confirming the contact with the Laberge Group in the east portion of the Property would also be beneficial. Identifying and mapping contacts between the Hancock and Casca members of the Aksala Formation throughout the Property should also be a priority. Southwest claims WL 1-6 should be allowed to lapse if higher quality limestones are not discovered in the future.

6. STATEMENT OF QUALIFICATIONS

I, Kelly Krueger, residing at 10550 Ellerslie Rd. SW, Edmonton, Alberta, do hereby certify that:

- I am a geologist of Dahrouge Geological Consulting Ltd., Suite 103, 10183 - 112 St., Edmonton, Alberta, T5K 1M1.
- I am a 2012 graduate of the University of Alberta, Edmonton, Alberta with a B.Sc. in Geology.
- I have practiced my profession as a geologist continuously since 2012.
- I am a registered Geologist in Training with the Association of Professional Engineers and Geoscientists of Alberta, member M96506.
- I managed the 2019 work described in this report.
- I am co-author of the report entitled "2019 Geological and Geochemical Exploration on the Shadow Lake Property" and accept responsibility for the veracity of technical data and results.
- I hereby consent to the copying or reproduction of this Assessment Report following the confidentiality period.

Dated this 31st day of March, 2020.

PROFESSIONAL GEOSCIENTIST ALBERTA
KELLY KRUEGER

Kelly Krueger, B.Sc., P. Geo.

APEGA M96506

I, Andrew Shumilak, residing at 7446 Ellesmere Way, Sherwood Park, Alberta, do hereby certify that:

- I am a geologist of Dahrouge Geological Consulting Ltd., Suite 103, 10183 - 112 St., Edmonton, Alberta, T5K 1M1.
- I am a 2016 graduate of the University of Alberta, Edmonton, Alberta with a B.Sc. in Geology.
- I am a registered Geologist in Training with the Association of Professional Engineers and Geoscientists of Alberta, member 214310.
- I co-managed the 2019 work described in this report.
- I am co-author of the report entitled "2019 Geological and Geochemical Exploration on the Shadow Lake Property" and accept responsibility for the veracity of technical data and results.
- I hereby consent to the copying or reproduction of this Assessment Report following the confidentiality period.

Dated this 31st day of March, 2020.

Andrew Shumilak, B.Sc., G.I.T.

APEGA 214310

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APPENDIX 1: ITEMIZED COST STATEMENT FOR THE 2019 EXPLORATION

a) Personnel

K. Krueger, geologist

11.00	hrs			project management, field work and travel			
3.52	hrs			project planning & preparations, reporting			
14.52	hrs	@	$ 80.00		$	1,161.40	

A. Shumilak, geologist

14.56	hrs			field work and travel			
6.33	hrs			project preparations, data entry			
20.89	hrs	@	$ 59.00		$	1,232.33	

P. Mickelsen, student

13.24	hrs			field work and travel			
0.41	hrs			project preparations, data entry			
13.65	hrs	@	$ 45.00		$	614.20	

T. Anderson, student

14.56	hrs			field work and travel			
14.56	hrs	@	$ 45.00		$	655.15	

J. Kerr, receptionist

0.54	hrs			logistics, prepare shipments			
0.54	hrs	@	$ 39.38		$	21.17	
							$ 3,684.25

b) Food and Accommodation

4.47	man-days	@	$ 156.45	accommodations (hotel rooms)	$	698.85	
5.45	man-days	@	$ 70.00	meals	$	381.34	
							$ 1,080.19

c) Transportation

Vehicles:	Truck rental	Driving Force (Whitehorse)	$	237.73	
	Fuel		$	38.38	
					$ 276.12

d) Analyses

Central Lab of Graymont Western U.S. Inc.
(7 rock samples)

7	samples	@	$ 4.50	Preparation fee	$	31.50	
7	samples	@	$ 25.00	Sample analysis	$	175.00	
							$ 206.50

e) Other

Shipping	$	60.61	
Disposable Supplies	$	23.22	
			$ 83.83

Total $ 5,330.89

Kelly Krueger, B.Sc., P. Geo.

Edmonton, Alberta
March 31, 2020

APPENDIX 2: ANALYTICAL LABORATORY INFORMATION AND TECHNIQUES

Name and Address of the Lab:

Graymont Western US Inc., Western Region Office
585 W Southridge Way
Sandy, Utah, 84070

Statement of Qualifications:

Jared Leikam, Graymont Central Lab Supervisor, obtained a B.S. in Chemistry from the University of Utah in the class of 2003. Jared started working for Graymont in February of 2004 and has been working with the ICP Spectrometer for 14 years.

Sample Preparation, Procedures, Reagents, Equipment, etc.:

For the ICP sample preparation, 0.5 grams of the sample is mixed with 3 g of lithium carbonate. The sample and the lithium carbonate are then fused together in a muffle furnace at 850°C. Following the fusion process, the samples are dissolved in 1:1 HCl; a total of 40 mL 1:1 HCl is used in the dissolving process. The samples are then diluted to 200 mL and spiked with 10 ppm Co. Cobalt is used as an internal standard. At this point the samples are ready for analysis on the Perkin Elmer, Optima 7300V.

Mesh Size Fraction, Split and Weight of Sample:

Upon receiving the samples, the prep room technician crushes the stone down to a -3/8-inch sizing. The technician then riffles and splits the stone down to a manageable size (roughly 200 g). The stone is then dried in an oven at 105ºC. Once the samples have been dried, they get pulverized in a Bico Disc Mill, so that 90% of the powder is passing a 75um screen. A split of this pulverized material is bagged up, given a barcode label and then set to the analytical lab for testing.

Quality Control Procedures:

The ICP spectrometer is calibrated with two certified reference materials prior to analyzing a batch of samples. A batch typically contains 96 samples. Every 12th sample in a batch is a certified limestone reference sample. In addition to the 8 reference samples imbedded in the batch, there are 2 limestone reference samples analyzed at the beginning and at the end of each batch. Every element being analyzed in a sample is backed up by data that we collect from the certified reference materials being analyzed within each batch of samples. We also use an internal standard (10 ppm Co) to further ensure the quality and accuracy of the analysis.

APPENDIX 3: ASSAY RESULTS – CENTRAL ANALYTICAL LABORATORY OF GRAYMONT WESTERN U.S. INC

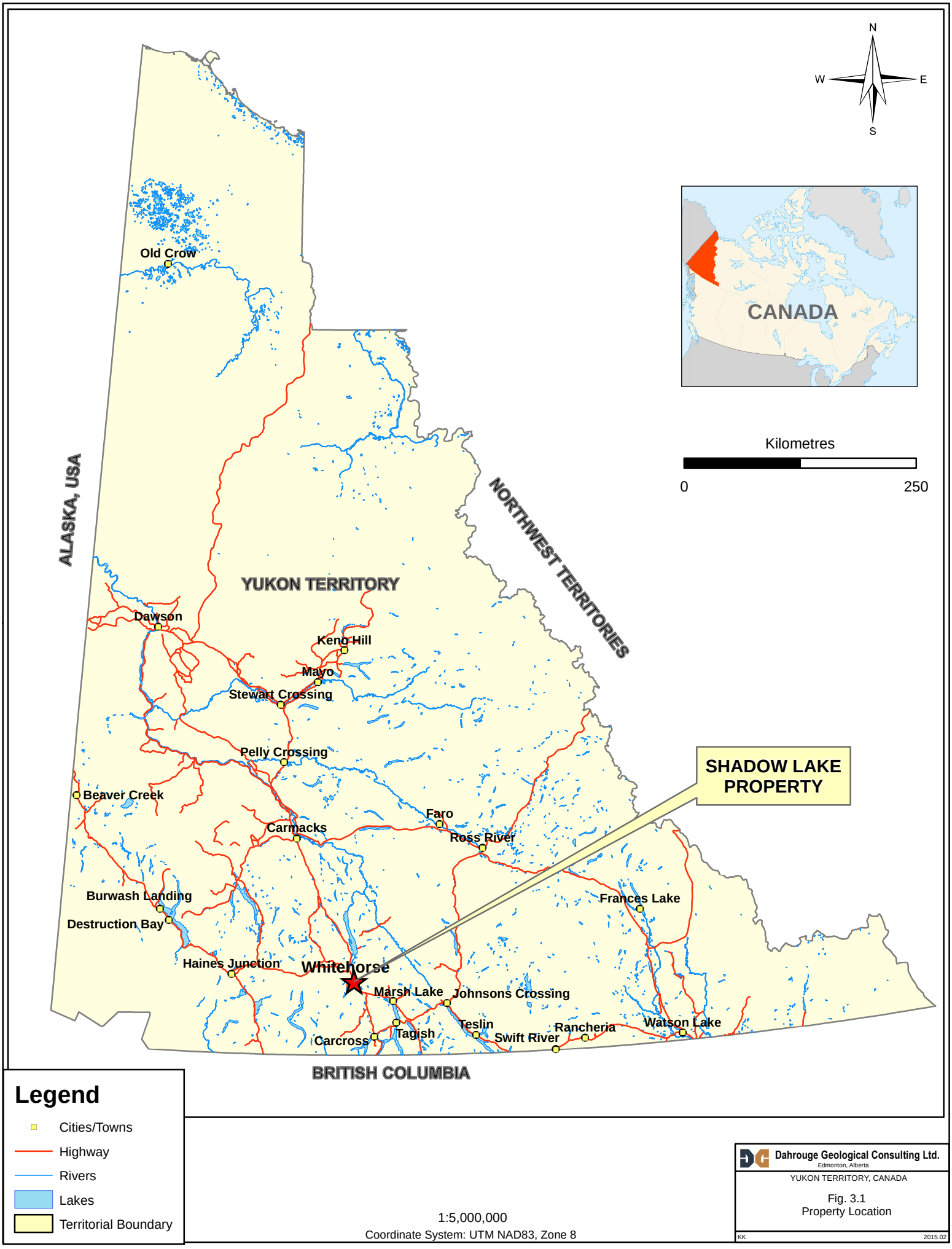
See Data Folder

for Assay Results

APPENDIX 4: 2019 SAMPLE DESCRIPTIONS AND ASSAY RESULTS FROM THE SHADOW LAKE PROPERTY

Notes: Stratigraphic thicknesses are based on measured attitudes of bedding listed below, with appropriate interpolations. Attitudes are strike and dip (right-hand rule). Sections are listed in numerical order of samples, which does not necessarily represent stratigraphic order. Most samples consist of chips at 30 cm intervals. UTM coordinates are NAD83, Zone 8N. Sample locations are shown in Figure 4.2. Stratigraphy Abbreviations: Th - Triassic Aksala Fm. (Hancock Member), Tc - Triassic Aksala Fm. (Casca Member), JLb - Jurassic Laberge Group

Sample	Strat Unit	Strat Tkns (m)	Description	$CaCO_3$ (%)	$MgCO_3$ (%)	SiO_2 (%)	Al_2O_3 (%)	Fe_2O_3 (%)	SrO (ppm)	MnO (ppm)	P_2O_5 (ppm)
Isolated Samples											
132670 UTM 509685E, 6716962N	Tc	grab	**Mudstone**, very-light grey to light grey weathered, very-light grey fresh, alteration: silica; oxide, weak intensity, moderate HCl reaction, structure(s): calcite veinlet, outcrop-scale, weak	12.10	4.06	29.36	7.625	4.726	736	1363	1712
132671 UTM 509736E, 6716978N	Tc	grab	**Mudstone**, light grey to medium grey weathered, medium grey fresh, alteration: silica; oxide, weak intensity, weak HCl reaction	15.22	6.71	32.12	8.589	5.760	581	1457	2160
132672 UTM 509736E, 6716948N	Tc	grab	**Mudstone**, medium grey weathered and fresh, moderately-bedded to massively-bedded, hard, homogeneous, alteration: silica, weak HCl reaction	14.72	4.37	32.29	7.283	4.232	479	1494	1575
132673 UTM 510175E, 6716893N	Tc	grab	**Mudstone**, light grey to medium grey weathered, medium grey fresh, alteration: silica; oxide, weak intensity, weak HCl reaction	23.01	4.64	25.77	6.229	5.282	804	2864	2189
132674 UTM 510175E, 6716853N	Tc	grab	**Mudstone**, medium grey weathered, light grey to medium grey fresh, micritic to coarse-grained, fossils: fragment (indeterminate), rare; crinoid ossicle, rare, alteration: silica; oxide, localized, weak intensity, very weak HCl reaction	13.40	3.35	39.48	10.964	4.674	403	1631	1612
132675 UTM 510426E, 6716862N	Th	grab	**Lime Wackestone to Lime Packstone**, medium grey weathered, light grey to medium grey fresh, micritic to coarse-grained, fossils: fragment (indeterminate), rare; crinoid ossicle, rare, crumbly, very strong HCl reaction, structure(s): calcite veinlet, outcrop-scale, weak	97.45	1.40	1.48	0.315	0.085	272	51	448
132676 UTM 510541E, 6716831N	Th	grab	**Slightly Dolomitic Lime Grainstone**, light grey to medium grey weathered, medium grey fresh, coarse-grained, fossils: fragment (indeterminate), rare; crinoid ossicle, rare, alteration: oxide, moderate intensity, very strong HCl reaction, structure(s): calcite veinlet, outcrop-scale, weak	94.61	3.01	0.82	0.094	0.045	389	106	232



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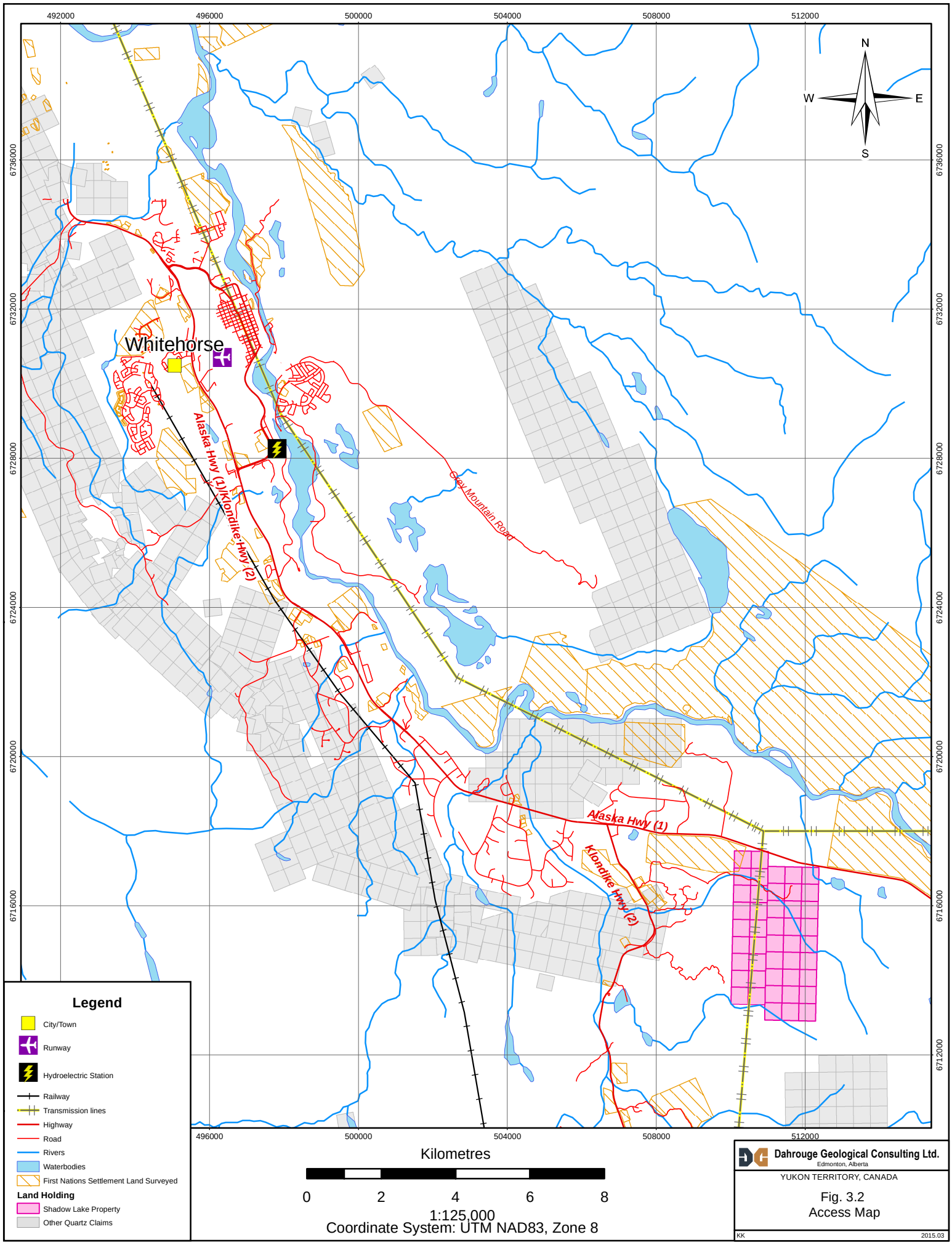
Coordinate System: UTM NAD83, Zone 8

Dahrouge Geological Consulting Ltd.
Edmonton, Alberta

YUKON TERRITORY, CANADA

Fig. 3.1
Property Location

KK 2015.02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504000
508000
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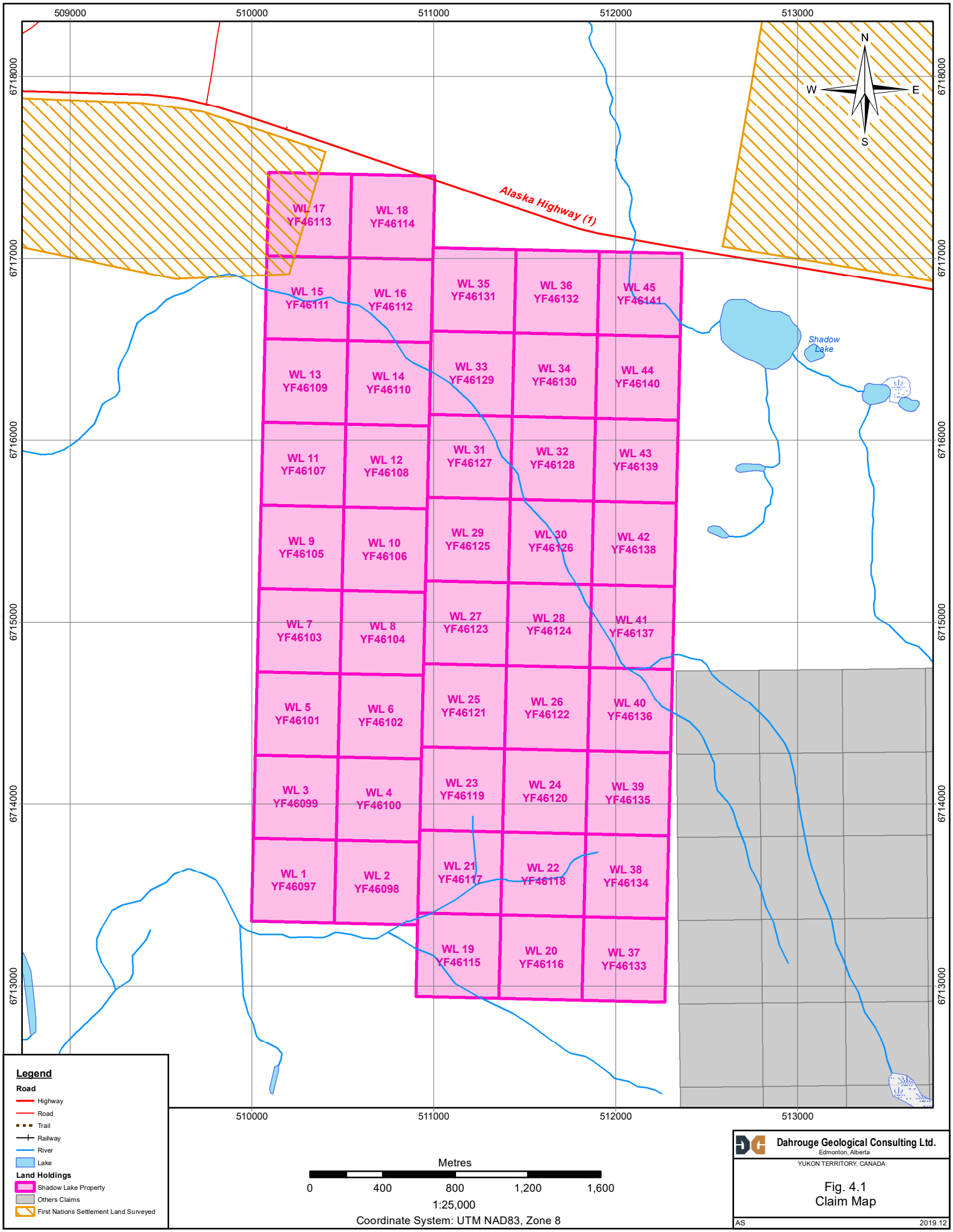
6736000
6732000
6728000
6724000
6720000
6716000
6712000
N
S
E
W
Whitehorse
Alaska Hwy (1)/Klondike Hwy (2)
Grey Mountain Road
Alaska Hwy (1)
Klondike Hwy (2)
Legend
City/Town
Runway
Hydroelectric Station
Railway
Transmission lines
Highway
Road
Rivers
Waterbodies
First Nations Settlement Land Surveyed
Land Holding
Shadow Lake Property
Other Quartz Claims
Kilometres
0
2
4
6
8
1:125,000
Coordinate System: UTM NAD83, Zone 8
Dahrouge Geological Consulting Ltd.
Edmonton, Alberta
YUKON TERRITORY, CANADA
Fig. 3.2
Access Map
KK
2015.03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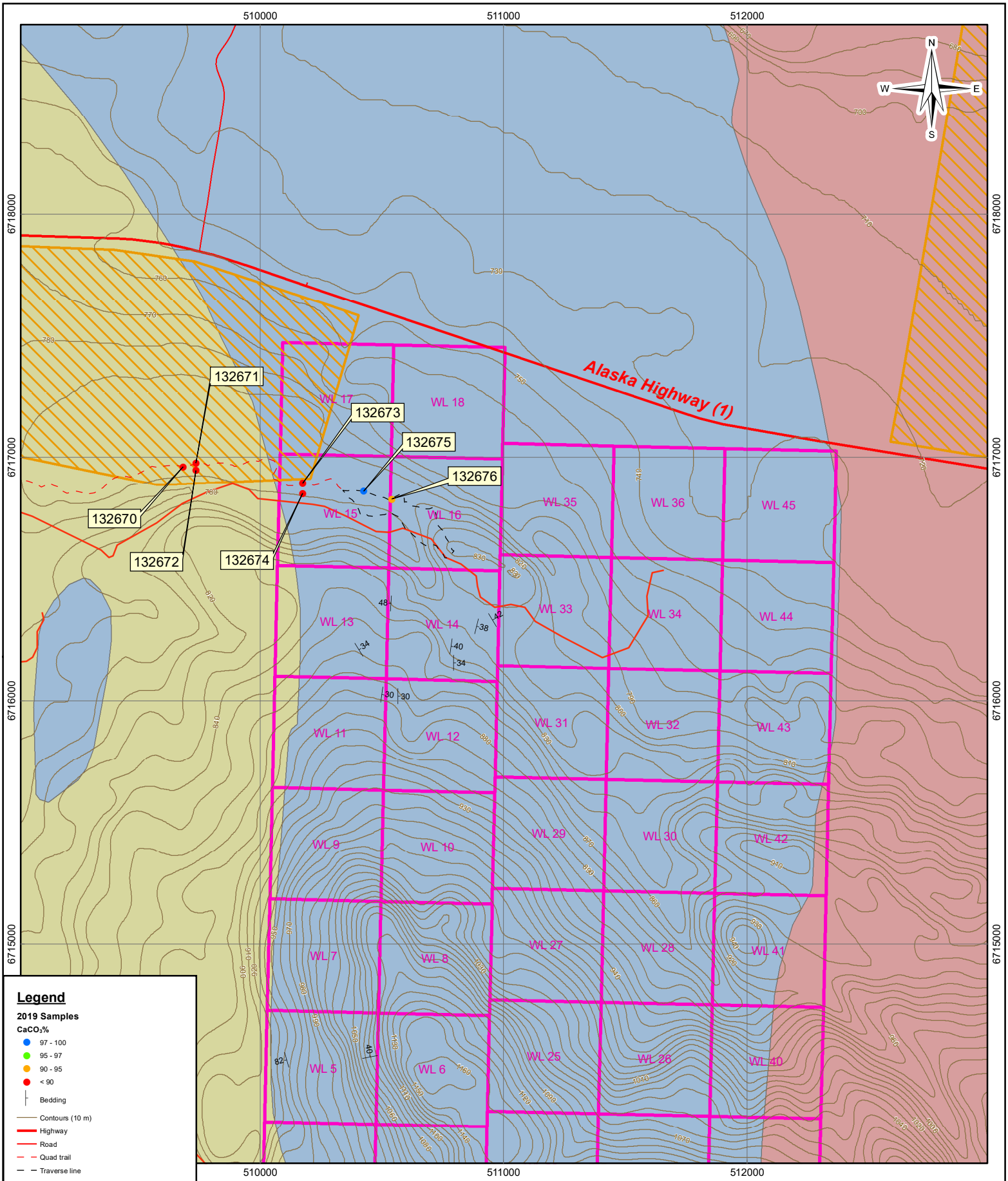
N
S
E
W
Alaska Highway (1)
Shadow Lake
WL 17 YF46113
WL 18 YF46114
WL 15 YF46111
WL 16 YF46112
WL 35 YF46131
WL 36 YF46132
WL 45 YF46141
WL 13 YF46109
WL 14 YF46110
WL 33 YF46129
WL 34 YF46130
WL 44 YF46140
WL 11 YF46107
WL 12 YF46108
WL 31 YF46127
WL 32 YF46128
WL 43 YF46139
WL 9 YF46105
WL 10 YF46106
WL 29 YF46125
WL 30 YF46126
WL 42 YF46138
WL 7 YF46103
WL 8 YF46104
WL 27 YF46123
WL 28 YF46124
WL 41 YF46137
WL 5 YF46101
WL 6 YF46102
WL 25 YF46121
WL 26 YF46122
WL 40 YF46136
WL 3 YF46099
WL 4 YF46100
WL 23 YF46119
WL 24 YF46120
WL 39 YF46135
WL 1 YF46097
WL 2 YF46098
WL 21 YF46117
WL 22 YF46118
WL 38 YF46134
WL 19 YF46115
WL 20 YF46116
WL 37 YF46133
Legend
Road
Highway
Road
Trail
Railway
River
Lake
Land Holdings
Shadow Lake Property
Others Claims
First Nations Settlement Land Surveyed
Metres
0
400
800
1,200
1,600
1:25,000
Coordinate System: UTM NAD83, Zone 8
Dahrouge Geological Consulting Ltd.
Edmonton, Alberta
YUKON TERRITORY, CANADA
Fig. 4.1
Claim Map
AS
2019.12



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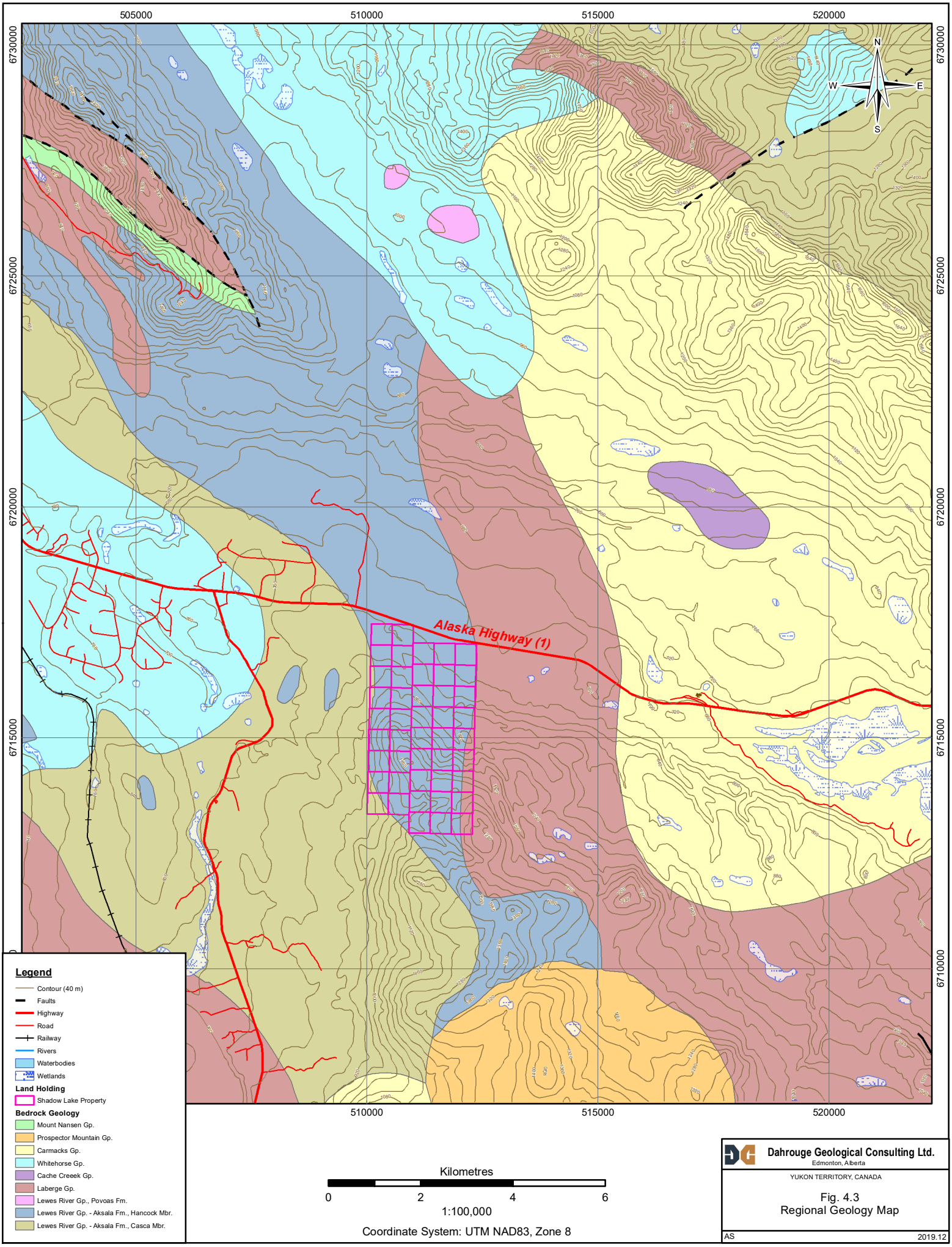
Edmonton, Alberta

YUKON TERRITORY, CANADA

Fig. 4.2
Geology & Sample Locations

AS 2019.12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N
S
E
W
Alaska Highway (1)
Legend
Contour (40 m)
Faults
Highway
Road
Railway
Rivers
Waterbodies
Wetlands
Land Holding
Shadow Lake Property
Bedrock Geology
Mount Nansen Gp.
Prospector Mountain Gp.
Carmacks Gp.
Whitehorse Gp.
Cache Creeek Gp.
Laberge Gp.
Lewes River Gp., Povoas Fm.
Lewes River Gp. - Aksala Fm., Hancock Mbr.
Lewes River Gp. - Aksala Fm., Casca Mbr.
Kilometres
0
2
4
6
1:100,000
Coordinate System: UTM NAD83, Zone 8
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Fig. 4.3
Regional Geology Map
AS
2019.12