MAR 20100023: LIMESTONE RANGE

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GRAYMONT WESTERN CANADA INC.
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2010 EXPLORATION AND FIELDWORK WITHIN THE LIMESTONE RANGE METALLIC AND INDUSTRIAL MINERALS PERMITS, WEST-CENTRAL ALBERTA

PART B

Metallic and Industrial Minerals Permits
9398100125 & 9310060379

Geographic Coordinates

51°53' N to 52°04' N
115°11' W to 115°34' W

NTS Sheets 82 O/13 and O/14, 83 B/3 and B/4

Owners and Operators: MAIM Permit 9398100125
Graymont Western Canada Inc.
260, 4311 - 12 Street NE
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MAIM Permit 9310060379
877384 Alberta Ltd.
18, 10509 - 81 Ave
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Consultant: Dahrouge Geological Consulting Ltd.
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Date Submitted: December 23, 2010

TABLE OF CONTENTS

		Page
1.	Summary	4
2.	Introduction	4
3.	Geographic Setting and Access	4
	3.1 Location and Access	4
	3.2 Infrastructure	5
	3.3 Topography, Vegetation and Climate	6
	3.4 Field Operations	6
4.	Property, Exploration and Expenditures	6
	4.1 Property Summary	6
	4.2 2010 Exploration Summary	7
	4.3 Exploration Expenditures.	7
5.	Regional Geology	8
	5.1 Stratigraphy	8
	5.1.1 Palliser Formation	9
	5.1.2 Banff Assemblage	9
	5.1.3 Rundle Assemblage	9
	5.1.4 Fernie Group	10
	5.2 Structure	10
6.	Results	10
7.	Conclusions	11
8.	References	13
9.	Statements of Qualifications	15

LIST OF TABLES

Page

Table 5.1 Generalized Paleozoic Stratigraphy of Foothills And Front Ranges, West-Central Alberta 8

LIST OF APPENDICES

Appendix 1: Cost Statement B1

PART C

Appendix 2: 2010 Sample Descriptions and Assay Results C1
Appendix 3: Analytical Laboratory Information and Techniques C7

Fig. 3.1 Property Location C8
Fig. 3.2 Access Map C9

Fig. 4.1 Permit Map C10
Fig. 4.2 Geology & Sample Locations ..... (In Pocket)

1. SUMMARY

During July, 2010, parts of Limestone and Clearwater ranges, west of Rocky Mountain House and within Metallic and Industrial Minerals (MAIM) Permits 9298100125 and 9310060379, were explored for high-quality carbonate rocks. Exploration conducted in 2010 was a follow-up to previous exploration conducted in the area.

Access routes and outcrops were mapped, and a total of 41 rock samples were collected within the Limestone Mountain and Idlewilde Mountain permits, representing approximately 100 m of stratigraphy. Samples were sent to a laboratory for whole-rock analysis.

Throughout this report, attitudes of bedding and other planar features are given as A°/B° SW, where A° is the azimuth of the strike and B° is the amount of dip in the direction indicated (right-hand rule). A magnetic declination of 16°17' east was used. Where bedding was not evident, stratigraphic thicknesses were calculated using orientations from adjacent units. Where more than one bedding orientation was measured, the mean orientation is used.

2. INTRODUCTION

The 2010 exploration within the Limestone Mountain and Idlewilde Mountain permits was conducted by Dahrouge Geological Consulting Ltd. (Dahrouge), on behalf of Graymont Western Canada Inc. (Graymont). This assessment report describes the exploration conducted within MAIM Permits 9398100125 and 9310060379, which encompass parts of Clearwater and Limestone ranges of the Alberta Foothills. Bob Robison, exploration manager for Graymont Western U.S. Inc., authorized this work.

The objectives of the 2010 exploration were to expand on the previously explored areas, and to locate and better define carbonate units throughout the property. This report includes information on the geology and quality of carbonates encountered while mapping and sampling outcrops within the permit area.

3. GEOGRAPHIC SETTING AND ACCESS

3.1 LOCATION AND ACCESS

MAIM Permits 9398100125 and 9310060379 encompass areas within Limestone and Clearwater ranges, surrounding and including Limestone Mountain, Idlewilde Mountain and Marble Mountain, within west-central Alberta (Fig. 3.1).

Access to the central parts of Clearwater Range is from Rocky Mountain House, approximately

30 km southerly on Highway 22, continuing 30 km westerly on secondary road 591 to a southerly branch of Forestry Trunk Road 734 (Fig. 3.2). This branch of Forestry Trunk Road, located about 5 km east of Burnco Quarry, continues southerly, approximately parallel to Marble Mountain at an average distance of about 3 km. ATV access to Marble Mountain is provided by cut lines running perpendicular to Clearwater Range.

From Burnco Quarry, at the south end of Corkscrew Mountain, Forestry Trunk Road 734 continues northwest along the west flank of Corkscrew Mountain and onward to the junction with Secondary Highway 752, north of Idlewilde Mountain. There it turns west and north away from the property and eventually reaches Nordegg.

Approximately 7 km northwest of Burnco Quarry along Forestry Trunk Road 734, Cutoff Creek Forestry Road heads westerly and provides access to the central part of Limestone Range, between Idlewilde and Limestone mountains. A secondary route to the Limestone Mountain area involves following Forestry Trunk Road 734 south and west from the Secondary Highway 591 intersection, past Marble Mountain, for approximately 45 km. At this point the Limestone Mountain Service Road, which is maintained by Shell Canada Ltd., can be followed north for approximately 30 km to reach the southwestern part of the property.

Clearwater Range can also be accessed from Caroline, by travelling about 35 km west on Secondary Highway 591, and then utilizing Forestry Trunk Road 734.

Access to and throughout the property area is by truck, all-terrain vehicles, helicopter, and extensive hiking. Several logging roads and cut lines spurring off the main roads provide valuable ATV access throughout the property area.

Several creeks, mountains, and other features presently without names on published maps have been assigned informal names in this report to facilitate references to geographic locations.

3.2 INFRASTRUCTURE

Accommodations, food, fuel and other necessary services are available in Caroline and Rocky Mountain House. The local economy is primarily based on agriculture, forestry, and energy-based industries.

Rocky Mountain House, with a population of about 6,500, is accessed by traveling about 67 km west of Red Deer along the David Thompson Highway (Highway 11), and then 12 km north along Highway 22.

The village of Caroline is about 49 km from Rocky Mountain House, 37 km south along Highway 22 and 12 km east along Highway 54. Caroline has a population of about 550.

3.3 TOPOGRAPHY, VEGETATION AND CLIMATE

The Limestone Mountain and Idlewilde Mountain permits are included in the Eastern-Slope Montane Forest Ecological Region, and lie within the Rocky-Clearwater District of the Alberta Forest Reserve. In the subalpine zone, vegetation consists of stunted subalpine fir and Englemann Spruce, and alpine foliage above the treeline. Vegetation in areas of rugged limestone outcroppings is generally sparse, and commonly consists of junipers, other low brush, and grasses. Below treeline, vegetation consists of dense stands of Aspen, Lodgepole Pine, White Spruce, and less frequent stands of Douglas Fir. Areas of lowest relief are covered with dense stands of Black Spruce and thick undergrowth, with local muskegs and swamps.

The property is comprised of a series of northwest-trending ridges and valleys where elevations range from approximately 1,280 m along Clearwater River to about 2,200 m atop Limestone Mountain. The property is cut by a number of creeks and rivers, including Cutoff, Rocky, Limestone, Moose, and Teepee Pole creeks, and Clearwater River.

Climate is sub-alpine with average summer temperatures of 20° to 25°C and winter temperatures of -15° to -20°C, with extremes of 35°C and -40°C. Rainfall averages about 35 cm per year; snowfall averages 35 to 45 cm with the majority falling in December and January.

3.4 FIELD OPERATIONS

Field operations were conducted by a four-person geological crew from Dahrouge Geological Consulting Ltd., based in a hotel in Rocky Mountain House.

Transportation to and from the property was by four-wheel-drive truck. Access throughout the property was by truck and ATV's where possible, and by extensive hiking.

Garmin GPSmap 60Cx instruments were used to mark outcrop locations and record access information. Compasses were set at a magnetic declination of 16°17' east.

4. PROPERTY, EXPLORATION AND EXPENDITURES

4.1 PROPERTY SUMMARY

In 1998, Graymont (nee: Continental Lime Ltd.) acquired MAIM Permit 9398100125 (Limestone Mountain) to cover Paleozoic limestones adjacent to the Corkscrew Mountain Permit (Fig.'s 3.2 and 4.1). The Limestone Mountain Permit covers the central and southern part of Limestone Range, and the southernmost portions of Clearwater Range. The permit has been reduced from an original area of 8,592 hectares to its current size of 2,416 hectares following exploration conducted prior to 2002.

Based on the 2010 exploration, the entirety of the Limestone Mountain Permit will be retained (Section 4.3, Fig. 4.1).

4.2 2010 EXPLORATION SUMMARY

From July 6 to 13, 2010, Dahrouge Geological Consulting Ltd., on behalf of Graymont Western Canada Inc., conducted exploration for carbonate lithotypes within west-central Alberta. The work was undertaken to determine the location and extent of carbonate units in the permit area.

Carbonate outcrops were examined and a total of 41 samples were collected (Fig. 4.2). Geological observations were recorded, including lithologic information, measurements of structural elements, and other pertinent details (Appendix 2). A solution of 6% HCl was used to assess carbonate quality in the field, and rock samples were shipped to Central Lab of Graymont Western U.S. Inc. in Utah for analyses (Appendix 3). In some instances, interval thicknesses were determined by measuring outcrops perpendicular to bedding, where it could be identified. Field maps were completed on 1:20,000 and 1:30,000 scale map sheets and concentrated on areas surrounding and including Limestone Mountain, Marble Mountain and Idlewilde Mountain, along Clearwater and Limestone ranges.

4.3 EXPLORATION EXPENDITURES

Expenditures for 2010 totaled $36,746.89. The entirety of the Limestone Mountain (MAIM Permit 9398100125) and Idlewilde Mountain (MAIM Permit 9310060379) permits will be retained. All of the 2010 expenditures are to be assigned to the Limestone Mountain Permit; the Idlewilde Mountain Permit is included for grouping purposes only.

Expenditures are allocated to MAIM Permits 9398100125 & 9310060379 as follows:

MAIM Permit	Permit Area (ha)	Required Expenditures	Assigned Expenditures	New Expiry Date
9302090596	2,336	$23,643.05[1]	$36,746.89	Oct. 30, 2012
9310060379	4,736	$23,680.00	none	June 8, 2012

[1] Calculated from $35,040 - previous credit of $11,396.95

5. REGIONAL GEOLOGY

5.1 STRATIGRAPHY

At Clearwater and Limestone ranges, carbonate lithologies are known to occur within both Paleozoic and Mesozoic sequences (Table 5.1, Fig. 4.2). Paleozoic limestones are described in the Upper Devonian Palliser Formation, Upper Devonian to Lower Carboniferous Banff Formation and the Lower Carboniferous Rundle Assemblage. The Paleozoic limestones encountered within the Limestone Mountain and Idlewilde Mountain permits were from the Turner Valley, Shunda and Pekisko formations of the Rundle Assemblage, the Banff Formation of the Banff Assemblage, and the Palliser Formation. Mesozoic rocks of the Fernie Group have been noted within the permit group area.

TABLE 5.1 GENERALIZED PALEOZOIC STRATIGRAPHY OF FOOTHILLS AND FRONT RANGES, WEST-CENTRAL ALBERTA*

System or Subsystem	Stratigraphic Unit		
	Assemblage / Group	Formation	
		S	*N*
Lower Carboniferous	Rundle Assemblage	Mount Head	
		[1] Livingstone	Turner Valley
			Shunda
			Pekisko
	Banff Assemblage	Banff	
		Exshaw	
Upper Devonian		[1] Palliser	
		Alexo	
	Fairholme Group°	Southesk	Mount Hawk
		Cairn	
Cambrian		Pika	
		Eldon	
		Stephen	
		Cathedral	

*Compiled from MacKenzie (1969), Richards et al. (1994), Switzer et al. (1994), and Holter (1994).
° Fairholme Group of MacKenzie (1969) is partly equivalent to the Woodbend Group (Switzer et al., 1994).
[1] Current limestone production (*from* Holter, 1994)

5.1.1 Palliser Formation

In west-central Alberta, the Upper Devonian Palliser Formation consists mainly of outer shelf and basinal carbonates of the Sassenach Basin (Halbertsma, 1994). The Palliser Formation is divisible into the Morro and overlying Costigan members, which are separated by an unconformity. The Morro Member comprises a lithologic suite dominated by carbonates with significant lateral facies variations. The Costigan Member consists of open-marine fossiliferous limestones and shales, with local evaporitic sedimentation. Within Foothills and Front Ranges of Alberta, limestones of the Palliser Formation vary from less than 180 m to more than 270 m in thickness (Holter, 1976).

The Palliser Formation is overlain by shales of the Exshaw Formation, and siliciclastics and carbonates of the Banff Assemblage.

5.1.2 Banff Assemblage

In west-central Alberta, the Exshaw, Banff and Yohin formations comprise the Banff Assemblage (Richards et al. 1994). Only exposures of the Banff Formation appear within the Clearwater Group permits. The Banff Formation is a heterogeneous association of carbonates and fine-grained siliciclastics deposited on poorly differentiated carbonate platforms. Westward, the uppermost Banff Formation grades laterally into the Rundle Assemblage.

5.1.3 Rundle Assemblage

The Lower Carboniferous Rundle Assemblage extends from MacKenzie Mountains in the Arctic, south through the Peace River Embayment to southeastern British Columbia. In west-central Alberta, it comprises shallow-marine platform and ramp carbonates, which prograded westward over deeper water shales and carbonates of the Banff Assemblage. The lower Rundle Assemblage is subdivided into the transgressive carbonate Pekisko Formation, and two regressive successions of restricted-marine carbonates and subordinate anhydrite assigned to the Shunda and Turner Valley formations (Richards et al. 1994). The Turner Valley Formation extends from east-central British Columbia to southwest Alberta. According to Richards et al. (1994), the Turner Valley Formation thickens to the southwest and for most of its length is 50 m to 120 m thick. The type section near Turner Valley is 152 m thick and divisible into four beds.

Earlier work by Douglas (1958), and MacQueen and Bamber (1968) indicate that the eastern peritidal sequences of the uppermost Pekisko, Shunda and lower Turner Valley grade south and southwestward into the more open-marine sequence of the Livingstone Formation (Table 5.1).

The upper Rundle Assemblage includes the transgressive Mount Head Formation.

5.1.4 Fernie Group

The Fernie Group includes all but the uppermost Jurassic strata of western Alberta and eastern British Columbia. Although treated as a Group, the Fernie is divided into a number of members and informal units with uncertain mutual relations and continuity. The Fernie Group thickens gently and irregularly west and southwest.

Outcrops of the Fernie Group, noted within the Clearwater Group permits, consist of large thicknesses of shale and calcareous sandstones with minor conglomerate.

5.2 STRUCTURE

In Front Ranges and Foothills of west-central Alberta, Paleozoic and Mesozoic strata are repeated along several major thrust faults. Displacements along these faults are interpreted to be tens of kilometres. Within individual thrust sheets, regional-scale folds exhibit a spatial relation to their leading edges.

6. RESULTS

Eight days were spent checking property access and outlining carbonate outcrops in detail. The 2010 exploration concentrated on defining stratigraphic unit locations and contacts within previously under-explored areas of the property.

Carbonate lithologies of the Rundle Assemblage, Banff Formation and Palliser Formation were examined and sampled within Clearwater and Limestone ranges, near Limestone Mountain, Marble Mountain and southwest of Idlewilde Mountain (Fig. 4.2). A total of 41 intervals were examined and sampled, representing more than 100 m of stratigraphy (Appendix 2). Where bedding could not be identified, stratigraphic measurements were taken based on the previously determined regional trend or deduced from surrounding measurements where possible.

A single outcrop of the Palliser Formation was examined in 2010, to test the potential for high-calcium limestone or high-quality dolomite (Fig. 4.2). Sample 74841, located along Limestone Creek, likely tested the middle or lower part of the formation and averaged 54.45% $CaCO_3$, 43.60%

$MgCO_3$ and 0.94% SiO_2. It was described as a medium-brownish-grey dolomitic wackestone to packstone. Further work is required to evaluate the high-calcium limestone or high-quality dolomite potential of the Palliser Formation in the area.

A single isolated interval of Banff Formation was examined in 2010. Sample 74832, located along Teepee Pole Creek, averaged 56.69% $CaCO_3$, 28.14% $MgCO_3$ and 10.63% SiO_2 over 2.5 metres (Fig. 4.2). It was described as a tan-grey dolomitic mudstone. The Banff Formation is not considered a unit of interest due to it's low $CaCO_3$ values and high SiO_2 content.

The majority of the outcrops visited in 2010 were within the Pekisko Formation. Analytical results were variable, presumably due to the fact that different members within the formation were sampled. The best sample section was 2010-03, which averaged 98.51% $CaCO_3$, 0.85% $MgCO_3$ and 0.16% SiO_2 over approximately 7.25 m, and was collected on a hillside near the western edge of the permit area, above Cutoff Creek (Fig. 4.2). Several other sample sections and isolated intervals returned values in excess of 95% $CaCO_3$ over several metres, however $MgCO_3$ impurities were common in many intervals. The high-quality Pekisko intervals generally consist of resistant and massive, light- to medium-brownish-grey, fine- to coarse-grained crinoidal lime packstone to grainstone. Lower quality intervals generally consist of less resistant, medium- to dark-brownish-grey, micritic to fine-grained lime mudstone to packstone. Overall, the Pekisko Formation has the greatest high-calcium limestone potential.

Several outcrops of Turner Valley Formation were examined in 2010 to test for high-quality dolomite potential. All of the outcrops were strongly dolomitic, ranging from 42.82 to 44.31% $MgCO_3$ and all containing less than 5% SiO_2 over 2-3 metres. It generally consists of vuggy, medium-brown to medium-grey, moderately to strongly dolomitic mudstone with minor wackestone to packstone. The Turner Valley Formation has the greatest potential for high-quality dolomite in the permit area, although more work is required to constrain it's extent and overall quality.

7. CONCLUSIONS

Carbonate units of the Palliser, Banff, Pekisko, and Turner Valley formations were examined and measured along Clearwater and Limestone ranges, near Limestone Mountain, Marble Mountain and southwest of Idlewilde Mountain, within MAIM Permits 9398100125 and 9310060379. A total of 41 discrete intervals were sampled and described in detail. Based on the samples collected during the 2010 exploration and overall property assessment, the entirety of the Limestone Mountain permit will be retained.

Access roads and trails were noted, which provide access to most parts of the property.

Future exploration will expand on previously conducted work in the area, confirming or redefining past geological interpretations and determining the potential for high-calcium limestone and/or high-quality dolomite within the permit area.

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9. STATEMENT OF QUALIFICATIONS

I, Patrick Kluczny, 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 2006 graduate of the University of Alberta, Edmonton, Alberta with a B.Sc. in Geology.
- I have practiced my profession as a geologist continuously since 2006.
- I am a registered Professional Geologist with the Association of Professional Engineers, Geologists and Geophysicists of Alberta, member M81985.
- 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 "2010 Exploration and Fieldwork within the Limestone Mountain and Idlewilde Mountain Metallic and Industrial Minerals Permits, West-Central Alberta" and accept responsibility for the veracity of technical data and results.

Dated this 23rd day of December, 2010.

PROFESSIONAL GEOLOGIST PATRICK KLUCZNY ALBERTA

Patrick Kluczny, B.Sc., P.Geol.

APEGGA M81985

APPENDIX 1: COST STATEMENT FOR THE 2010 EXPLORATION WITHIN THE LIMESTONE MOUNTAIN AND IDLEWILDE MOUNTAIN PERMITS

a) **Personnel**		$ 20,359.50
b) **Food and Accommodation**		$ 4,538.03
c) **Transportation**		$ 5,594.37
d) **Instrument Rental**		$ 402.60
e) **Drilling**	n/a	$ -
f) **Analyses**		$ 1,209.50
h) **Other** (Software Rental, Data, Field maps, Courier & Shipping)		$ 1,302.27
Total		$ 33,406.27
Administration (10%)		$ 3,340.63
Total + Administration		**$ 36,746.89**

APPENDIX 2: 2010 SAMPLE DESCRIPTIONS AND ASSAY RESULTS FROM THE LIMESTONE MOUNTAIN AREA

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 order from stratigraphic top to bottom.
Most samples consist of chips at 30 cm intervals. UTM coordinates are NAD83, Zone 11N. Section locations are shown in Figures 4.2.
Stratigraphy Abbreviations: TV - Turner Valley Formation, Sh - Shunda Formation, Pek - Pekisko Formation, B - Banff Formation, Pal - Palliser Formation

Sample	Strat. Unit	Strat. Thick. (m)	Description	$CaCO_3$ (%)	$MgCO_3$ (%)	SiO_2 (%)	Al_2O_3 (%)	Fe_2O_3 (%)	SrO (ppm)	MnO (ppm)	P_2O_5 (ppm)
Isolated Sample: (623158 E, 5752681 N)											
74801	Pek	grab	**Dolomitic Lime Packstone**, medium-grey weathered, light-brown-grey fresh, fine- to medium-grained, abundant crinoids and some shell fragments, relatively hard, strong fetid odour, very good reaction with HCl	84.22	14.54	0.72	0.118	0.083	199	42	<100
Isolated Sample: (623145 E, 5752726 N)											
74802	Pek	1½	**Lime Packstone**, same as 74802, less dolomitic	98.36	1.00	0.31	0.033	0.068	263	28	<100
Isolated Sample: (623060 E, 5752823 N)											
74803	Pek	2	**Lime Packstone**, medium-grey weathered, light- to medium-brown-grey fresh, fine- to medium-grained, abundant crinoids and some shell fragments, minor crinoidal grainstone, massive, resistant and hard, fetid odour, very good reaction with HCl	98.11	1.00	0.52	0.051	0.071	348	27	179
Isolated Sample: (623081 E, 5752630 N)											
74804	Pek	1	**Lime Packstone to Grainstone**, light- to medium-grey weathered, medium- to brown-grey fresh, fine- to coarse-grained (bioclasts), coarse-grained crinoid ossicles and shell fragments, thick-bedded (> ½ m), relatively hard and resistant, weak fetid odour, very good reaction with HCl, bedding 178°/11° W (wavy)	94.38	4.14	0.86	0.092	0.099	343	39	<100
Section 2010-01: (622937 E, 5752822 N)											
74807	Pek	2	**Slightly Dolomitic Lime Wackestone to Packstone**, light-tan-grey weathered, light- to medium-brown-grey fresh, very-fine- to fine-grained, minor medium-grained bioclasts, crinoid ossicles and shell fragments, moderately-bedded (½ m), moderate to strong calcite veinlets with moderate to strong brecciation, fetid odour, very good reaction with HCl	90.19	9.14	0.42	0.063	0.103	338	27	<100
74806	Pek	3	**Lime Grainstone**, light-grey weathered, light- to medium-brown-grey fresh, fine- to medium-grained, minor coarse-grained bioclasts, abundant crinoid ossicles, some shell fragments, moderately-bedded (½ m), resistant, powders when struck, fetid odour, very good reaction with HCl, bedding 180°/38° W	98.36	1.05	0.43	0.059	0.075	323	25	114

74805	Pek	3	**Lime Grainstone**, light-grey to light-brown-grey weathered, light-tan-grey fresh, fine- to medium-grained, abundant crinoid ossicles/stems and shell fragments, moderately-bedded (10 cm to 1 m), resistant, powders when struck, fetid odour, very good reaction with HCl	98.29	1.09	0.29	0.037	0.063	302	26	110
Isolated Sample: (624276 E, 5750744 N)												
74808	B	3½	**Calcareous Dolomitic Wackestone**, mottled tan to light-grey weathered, light-tan to grey fresh, very-fine- to fine-grained, appears well-bedded to fissile, relatively resistant, powders when struck, fetid odour, weak reaction with HCl	62.08	34.41	2.40	0.238	0.164	135	46	185
Isolated Sample: (624363 E, 5750744 N)												
74809	TV	3	**Dolomitic Packstone**, tan to light-grey weathered (mottled), white-grey to tan-grey fresh, very-fine- to medium-grained, abundant bioclasts: crinoid ossicles, shell fragments and various others; well-bedded to fissile, weak reaction with HCl	55.13	43.91	0.33	0.034	0.082	83	61	<100
Isolated Sample: (624346 E, 5750734 N)												
74810	Pek	1½	**Slightly Dolomitic Lime Packstone to Grainstone**, mottled tan and medium-grey weathered, light- to medium-grey (minor brown) fresh, fine- to medium-grained, crinoid ossicles and shell fragments, moderately-bedded (½ m), hard, strong fetid odour, very good reaction with HCl	91.19	6.67	1.32	0.055	0.071	232	59	<100
Isolated Sample: (605074 E, 5756120 N)												
74811	Pek	3	**Lime Packstone**, mottled light- and medium-grey weathered, medium- to dark-grey and minor med-brown fresh, fine- to medium-grained, shell fragments, crinoid ossicles, ooids(?); thick-bedded (>1m), resistant and hard, moderately fractured, fetid odour, good reaction with HCl, bedding 164°/22° W (approximate)	97.79	1.57	0.26	0.026	0.076	315	24	115
Isolated Sample: (605096 E, 5756168 N)												
74812	Pek	2½	**Lime Packstone to Grainstone**, mottled tan and light-grey weathered, light- to medium-brown-grey fresh, fine- to medium-grained, crinoid ossicles/stems and shell fragments, massive(?), hard, powders when struck, moderately-fractured, very good reaction with HCl	96.00	2.85	0.37	0.046	0.080	261	27	<100
Isolated Sample: (605100 E, 5756194 N)												
74813	Pek	3½	**Lime Packstone**, mottled tan and light-grey weathered, light-brown-grey fresh, medium- to coarse-grained (bioclasts), crinoid ossicles and shell fragments, moderate to thick-bedded, moderately to highly fractured, slight fetid odour, good reaction with HCl, bedding 138°/27° SW (approximate)	98.54	1.03	0.24	0.031	0.075	265	26	<100

Section 2010-02: (605138 E, 5756096 N)

74817	Pek	2¾	**Slightly Dolomitic Lime Mudstone to Wackestone**, mottled light- to medium-grey weathered, medium-brown-grey to dark-grey fresh, micritic to very-fine-grained, rare crinoid ossicles and zones with colonial coral(?), moderately-bedded (10 cm to ½ m), less resistant but hard, weak to moderate calcite veinlets, very strong fetid odour, good reaction with HCl, bedding 156°/21° SW	82.64	12.15	4.20	0.096	0.126	271	38	<100
74816	Pek	3½	**Slightly Dolomitic Lime Wackestone**, mottled light- to medium-grey weathered, light- to medium-brown-grey fresh, micritic to fine-grained, rare medium-grained crinoid ossicles, moderate to thick-bedded (20 cm to 1 m), hard and resistant, minor to locally abundant calcite veinlets, very good reaction with HCl	87.99	10.04	1.09	0.111	0.114	348	34	180
74815	Pek	3	**Calcareous Dolomitic Wackestone to Packstone**, mottled light- and medium-grey weathered, light- to medium-brown-grey fresh, micritic to fine-grained, crinoid ossicles, shell fragments, ooids(?); thick-bedded (>1 m), hard and resistant, rubbly, weak fetid odour, very good reaction with HCl, bedding 130°/23° SW	70.61	26.97	1.43	0.190	0.119	190	41	130
74814	Pek	4½	**Slightly Dolomitic Lime Wackestone**, mottled tan and medium-grey weathered, medium-brown-grey fresh, micritic to medium-grained (bioclasts), crinoid ossicles, shell fragments, possibly colonial coral, stromatolites and ooids; moderately-bedded (15 cm to >1 m), moderately-fractured, weak fetid odour, good reaction with HCl, bedding 144°/24° SW	89.01	9.02	1.17	0.175	0.115	300	38	<100

Section 2010-03: (599827 E, 5762318 N)

74820	Pek	1½	**Lime Packstone to Grainstone**, same as 74818, beddings (wavy): 160°/40° W and 170°/39° W	98.32	0.82	0.22	0.013	0.054	362	31	114
74819	Pek	2	**Lime Packstone to Grainstone**, same as 74818	98.68	0.82	0.16	0.017	0.064	282	33	101
74818	Pek	3¾	**Lime Packstone to Grainstone**, light- to medium-grey weathered, medium-brown-grey fresh, fine- to medium-grained, crinoid ossicles and stems, shell fragments, ooids(?); thick-bedded (60 cm to >1 m), resistant cliff-former, moderately-fractured and rubbly, very weak fetid odour, very good reaction with HCl, beddings (wavy): 178°/44° W and 175°/55° W	98.49	0.88	0.13	0.014	0.047	283	28	416

Section 2010-04: (603402 E, 5762713)

74823	Pek	2½	**Slightly Dolomitic Lime Mudstone to Wackestone**, same as 74821, less wackestone, locally strongly brecciated	93.74	5.27	0.50	0.054	0.085	1365	37	<100
74822	Pek	3½	**Slightly Dolomitic Lime Mudstone to Wackestone**, same as 74821, less wackestone, fewer well-bedded intervals	93.04	5.36	1.01	0.095	0.064	993	25	183

74821	Pek	3	**Dolomitic Lime Mudstone to Wackestone**, mottled tan to medium-grey weathered, medium-brown-grey to dark-grey fresh, micritic, minor fine- to medium-grained bioclasts, shell fragments, crinoid ossicles; mostly moderately-bedded (30-60 cm), several well-bedded (argillaceous) intervals about ¼ m thick, relatively resistant, breaks easily, moderately-fractured and rubbly, locally brecciated by very small calcite veinlets, moderate to very good reaction with HCl, bedding 252°/05° NW (sub-horizontal)	82.26	14.92	2.27	0.187	0.085	420	35	326
Isolated Sample: (603562 E, 5762716 N)												
74824	Pek	½	**Calcareous Dolomitic Mudstone**, medium-brown to grey weathered, medium-grey and minor brown fresh, micritic to very-fine-grained, burrows(?) filled with brown material, moderately-bedded, weak to moderate calcite veinlets, weak fetid odour, good reaction with HCl	69.84	27.20	1.69	0.306	0.146	891	69	<100
Isolated Sample: (605016 E, 5756193 N)												
74825	Pek	2¾	**Dolomitic Lime Mudstone to Grainstone**, tan to medium-grey weathered, medium brown-grey fresh, micritic to very-fine-grained, minor fine- to medium-grained bioclasts, crinoid ossicles, shell fragments, localized colonial coral(?); moderate to well-bedded (locally laminated), benches of outcrop, resistant, minor calcite veinlets, good reaction with HCl, bedding 144°/35° SW	85.83	13.31	0.36	0.052	0.079	270	33	<100
Isolated Sample: (623061 E, 5752400 N)												
74826	Pek	2½	**Strongly Dolomitic Lime Mudstone to Wackestone**, light-grey weathered, medium-grey to medium-brown-grey fresh, micritic to fine-grained, rare crinoid ossicles and shell fragments(?), thinly to moderately-bedded (~ 6 cm), weathered along fractures, fetid odour	80.07	18.74	0.44	0.070	0.068	172	36	<100
Isolated Sample: (623028 E, 5752457 N)												
74827	Pek	1½	**Lime Mudstone to Wackestone**, light-grey weathered, medium-brown-grey fresh, micritic to very-fine-grained, very rare shell fragments, moderately-bedded (30 cm), minor calcite veinlets, small rare carbon-filled(?) vugs, good reaction with HCl	93.02	4.56	1.42	0.152	0.102	2034	33	<100
Isolated Sample: (623362 E, 5751816 N)												
74828	Pek	3½	**Slightly Dolomitic Lime Mudstone to Wackestone**, light-grey weathered, medium-brown-grey fresh, very-fine-grained, very rare crinoid ossicles and shell fragments, thick-bedded (1 to 1½ m), minor secondary green mineral, good to very good reaction with HCl, bedding 143°/30° SW	86.67	12.22	0.71	0.031	0.056	220	48	<100

Isolated Sample: (623363 E, 5751750 N)

74829	TV	4	**Dolomitic Mudstone**, light-grey-white weathered, mottled brown-grey fresh, micritic, heavily weathered, heavily-fractured, very fine laminations, no reaction with HCl	53.88	43.79	1.56	0.150	0.163	114	153	213	

Isolated Sample: (623823 E, 5750436 N)

74830	Pek	2½	**Lime Mudstone to Wackestone**, light-grey-brown weathered, medium-brown-grey fresh, fine-grained, some coarse-grained crystals (possibly crinoid ossicles and shell fragments), thin to medium-bedded (6 to 45 cm), good to very good reaction with HCl, bedding 124°/17° SW	98.24	1.00	0.19	0.029	0.081	212	29	<100	

Isolated Sample: (623896 E, 5750444 N)

74831	Pek	2½	**Lime Mudstone to Wackestone**, light-grey-brown weathered, medium-grey-brown fresh, micritic to fine-grained, very rare crinoid ossicles and shell fragments, very weathered and overgrown, very good reaction with HCl	98.32	1.00	0.19	0.042	0.085	302	33	<100	

Isolated Sample: (623903 E, 5750440 N)

74832	B	2½	**Calcareous Dolomitic Mudstone**, medium-tan-grey weathered and fresh, finely-laminated and thinly-bedded (2 cm), minor calcite veinlets, moderate reaction with HCl	56.69	28.14	10.63	2.109	0.656	154	134	589	

Section 2010-05: (604470 E, 5758538 N)

74835	Pek	3	**Strongly Dolomitic Lime Mudstone to Wackestone**, same as 74833, very rare colonial coral, strongly weathered, moderately-bedded (30 cm), bedding 198°/28° W	75.98	22.80	0.46	0.052	0.095	264	101	<100	
74834	Pek	2½	**Strongly Dolomitic Lime Mudstone to Wackestone**, same as 74833, rare calcite nodules, very weathered, moderate to thick-bedded (45 cm), bedding 200°/21° W	79.66	19.48	0.58	0.053	0.079	248	105	<100	
74833	Pek	1½	**Dolomitic Lime Mudstone to Wackestone**, light- to medium-brown-grey weathered, light-brown-grey fresh, micritic, rare crinoid ossicles and shell fragments, moderately-bedded (30 cm), very rare calcite veinlets, good reaction with HCl, bedding 192°/22° W	82.21	15.82	1.14	0.061	0.088	286	107	<100	

Isolated Sample: (604499 E, 5758369 N)

74836	TV	2½	**Dolomitic Mudstone**, mottled medium-brown-grey weathered and fresh, micritic to very-fine-grained, rare shell fragments, very rare shell casts and calcite nodules, thick-bedded (1 m), rubbly, weathered, no reaction with HCl, bedding 160°/44° SW	53.87	44.31	0.75	0.150	0.129	108	171	<100	

Isolated Sample: (604437 E, 5758169 N)

74837	TV	4	**Dolomitic Mudstone**, mottled brown-grey weathered, mottled dark-brown-grey fresh, micritic, moderate to thick-bedded (6 to 60 cm), moderate carbon-filled(?) vugs, no reaction with HCl, bedding 182°/26° W	51.78	42.82	4.22	0.295	0.211	107	637	116	

Section 2010-06: (603743 E, 5762091 N)

74840	Pek	2½	**Lime Wackestone**, same as 74838, medium- to dark-grey fresh, more crinoid ossicles and shell fragments, very rare solitary rugose coral, very rare shell imprint	94.79	3.51	0.69	0.032	0.049	329	24	134
74839	Pek	3	**Slightly Dolomitic Lime Mudstone to Wackestone**, same as 74838, less weathered, moderately-bedded (6 to 30 cm), bedding 210°/05° NW (wavy and irregular)	89.04	9.64	0.63	0.086	0.106	248	36	100
74838	Pek	3½	**Slightly Dolomitic Lime Mudstone to Wackestone**, light- to medium-grey-brown weathered, medium-grey-brown fresh, micritic to very-fine-grained, rare crinoid ossicles and shell fragments, fetid odour, very good reaction with HCl	91.38	7.59	0.50	0.065	0.070	257	33	113

Isolated Sample: (605090 E, 5757943 N)

74841	Pal	1¾	**Dolomitic Wackestone to Packstone**, light- to medium-brown-grey weathered, medium-brown-grey fresh, very-fine- to medium-grained, rare coarse-grained bioclasts, shell fragments, very rare gastropod, crinoid ossicles; thick-bedded (>1 m), resistant, locally vuggy (usually calcite-filled), no reaction with HCl	54.45	43.60	0.94	0.211	0.147	105	67	<100

APPENDIX 3: ANALYTICAL LABORATORY INFORMATION AND TECHNIQUES

Name and Address of the Lab:

Graymont Western US Inc., Central Laboratory.
670 East 3900 South, Suite 200
Salt Lake City, Utah, 84107

Statement of Qualifications:

Jared Leikam 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 two and a half years, under the direct supervision of Carl Paystrup (Lab Supervisor).

Vonda Stuart obtained a B.S. in Chemistry from Weber State University in 2004. Vonda started with Graymont in August of 2007 and started working in the ICP Lab the following September.

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℃. Following the fusion process, th e 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 riffles and then splits the stone down to a manageable size (roughly 200 g). The stone is then dried in an oven at 120°C. Once the samples have been dried they get pulverized to a -200 mesh size. A split of this pulverized material is then sent for testing in the main part of the lab.

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 12^{th} 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 the batch to ensure the accuracy of our Na and P numbers. Every element being analyzed in a sample is backed up by data from the certified reference materials. We also use an internal standard (10 ppm Co) to further ensure the quality and accuracy of the analysis.

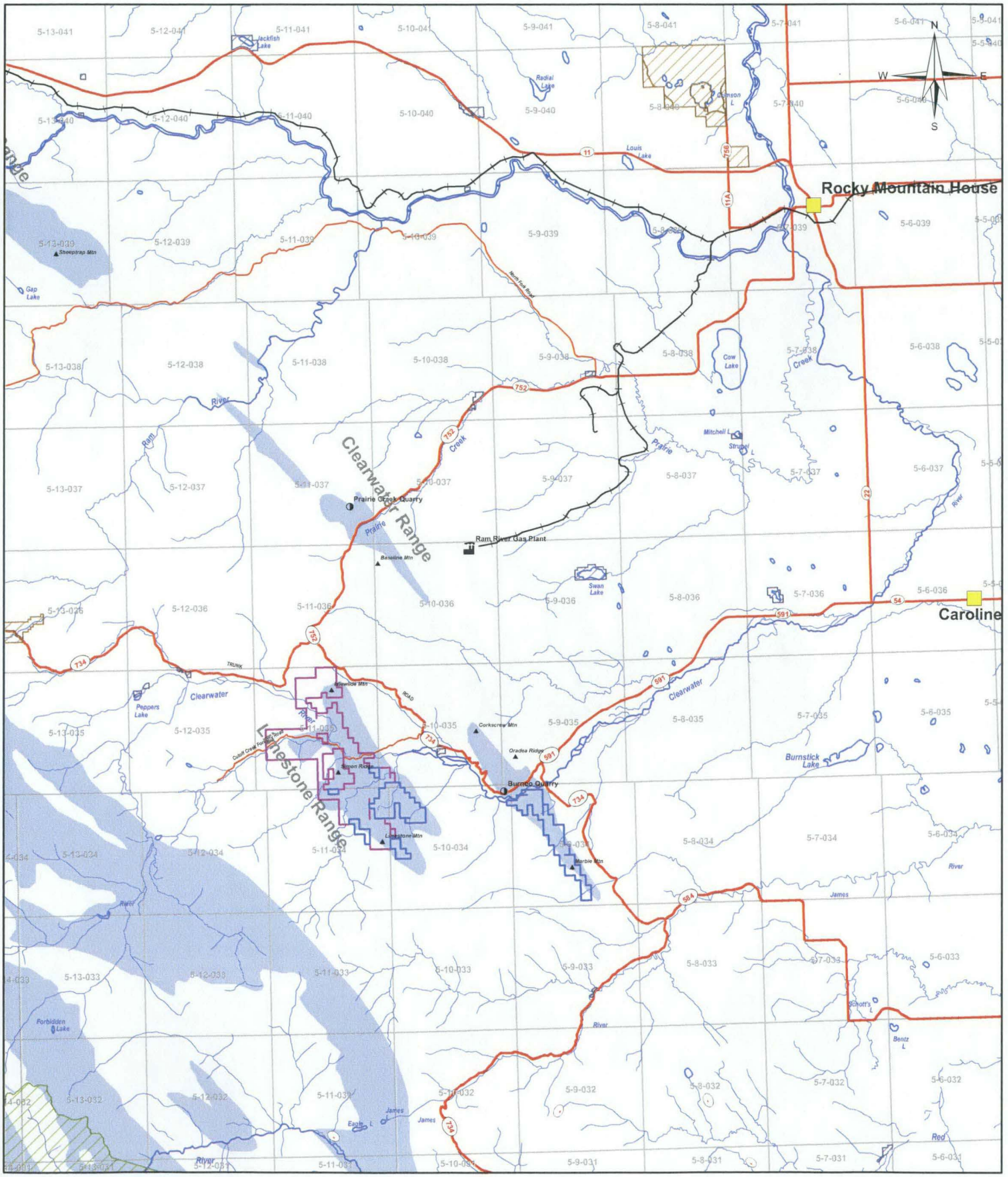
GRAYMONT WESTERN CANADA INC.

Dahrouge Geological Consulting Ltd.
Edmonton, Alberta

CLEARWATER-LIMESTONE RANGES,
WEST-CENTRAL ALBERTA

Fig. 3.1
Property Location

PK 2010.10



Legend

- Highway
- Secondary Road
- Provincial Recreation Area
- Provincial Park
- National Park
- Approximate Paleozoic Limestone

Graymont Land Holdings

- Limestone Mtn
- Idlewilde Mtn

Kilometres

0 5 10 15 20

1:400,000

Coordinate System: UTM NAD83, Zone 11N

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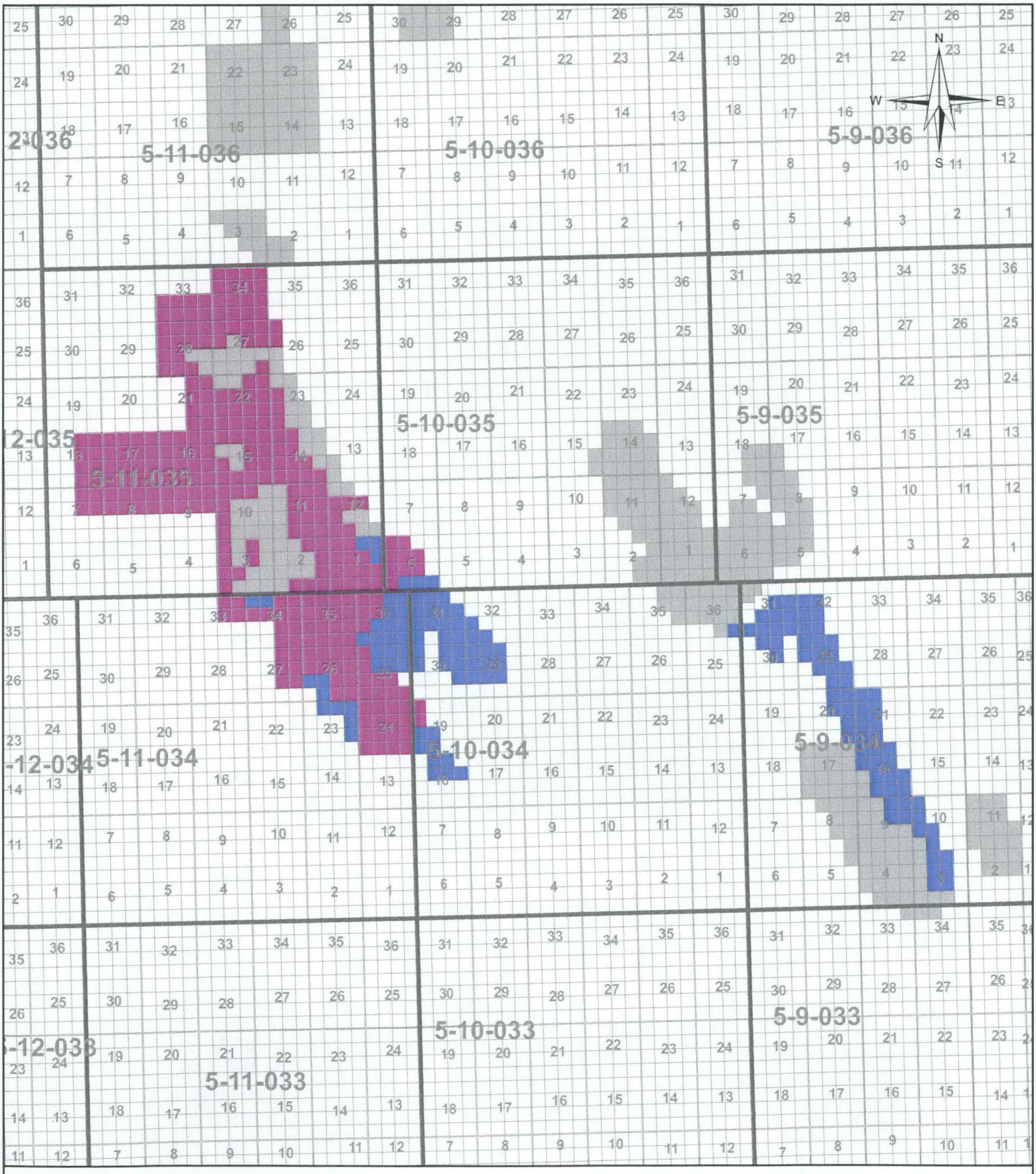
Dahrouge Geological Consulting Ltd.
Edmonton, Alberta

CLEARWATER-LIMESTONE RANGES,
WEST-CENTRAL ALBERTA

Fig 3.2
Access Map

PK 2010.12



Legend

Graymont Land Holdings

- Permit # 9310060379 (4,736 Ha)
- Permit # 9398100125 (2,336 Ha)

Kilometres

0 2 4 6 8

1:150,000

Coordinate System: UTM NAD83, Zone 11N

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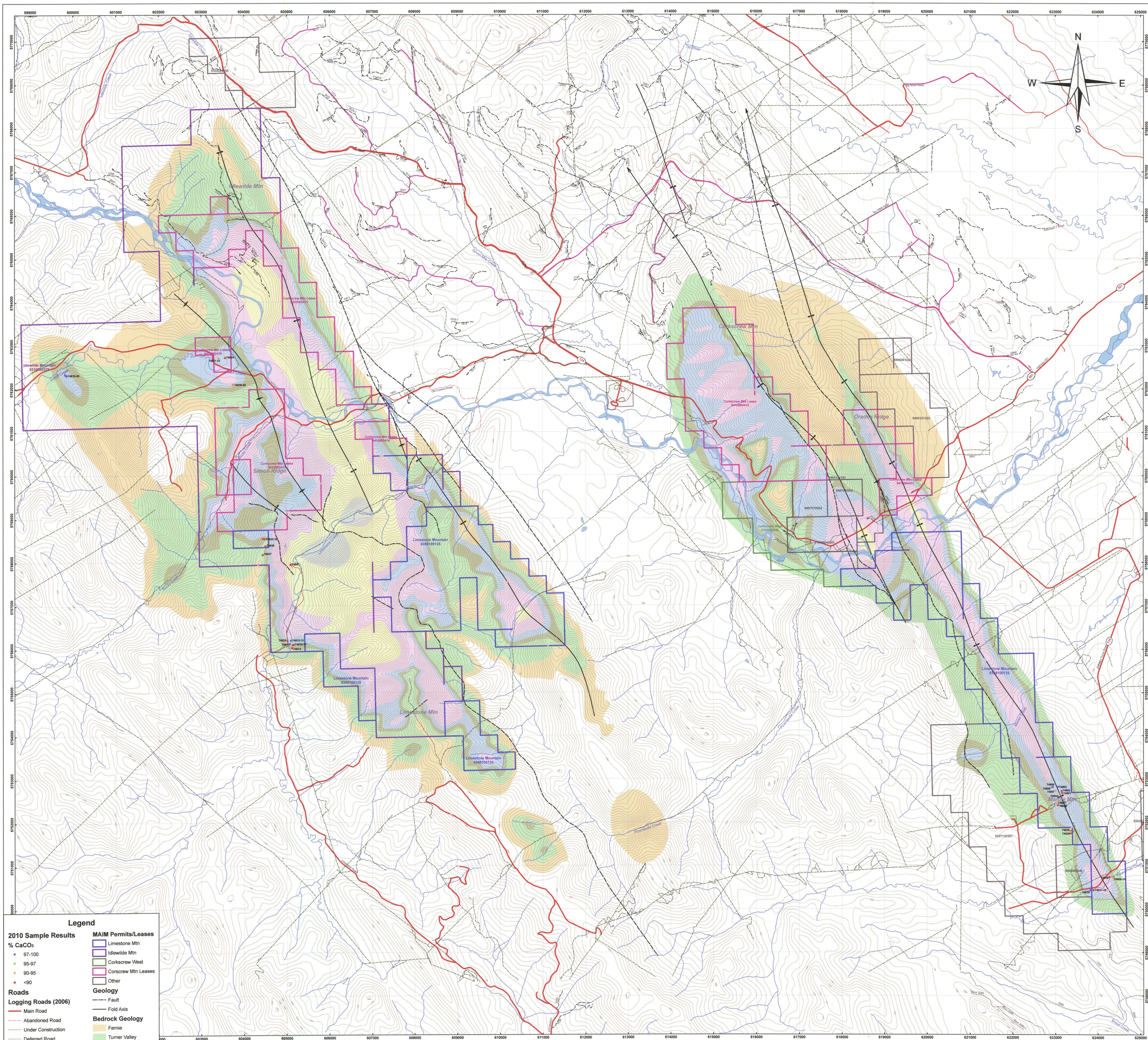
CLEARWATER-LIMESTONE RANGES
WEST-CENTRAL ALBERTA

Fig. 4.1
Permit Map

WM 2010.10



Legend

2010 Sample Results

% $CaCO_3$

- 97-100
- 95-97
- 90-95
- <90

Roads

Logging Roads (2006)

- Main Road
- Abandoned Road
- Under Construction
- Deferred Road
- Future Road
- Maintained Road
- Other Disposition
- Reclaimed Raod
- Stabilized Road

CANVEC Roads

- Highway
- Secondary Road
- Minor road/trail
- Cutline
- Topographic Contour (20 m)
- Creek/stream
- River/lake
- Park

MAIM Permits/Leases

- Limestone Mtn
- Idlewilde Mtn
- Corkscrew West
- Corscrew Mtn Leases
- Other

Geology

- Fault
- Fold Axis

Bedrock Geology

- Fernie
- Turner Valley
- Shunda
- Pekisko
- Banff
- Palliser
- Alexo
- Mt Hawk

Metres

0 1,000 2,000 3,000 4,000

1:30,000

Coordinate System: UTM NAD83, Zone 11N

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Edmonton, Alberta

LIMESTONE MTN AND IDLEWILDE MTN PROPERTIES
WEST-CENTRAL ALBERTA

Fig. 4.2
Geology and Sample Locations

PK 2010.12