

MAR 20030004: BASELINE RIDGE

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GRAYMONT WESTERN CANADA INC.

**2001 AND 2002
EXPLORATION AND FIELDWORK
ON THE BASELINE RIDGE PERMIT,
WEST-CENTRAL ALBERTA**

Metallic and Industrial Mineral Permit
9301010011

Geographic Coordinates
52° 09' N to 52° 19'
115° 29' W to 115° 40'

NTS Sheets 83 B/3, B/4, B/5

2003 03 21

by

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1.

SUMMARY

During August, 2002 the northern part of Clearwater Range, west of Rocky Mountain House and within Metallic and Industrial Mineral (MAIM) Permit 9301010011, was explored for high-quality carbonate rocks. Paleozoic and Mesozoic carbonate units were examined and measured at 18 locations along Clearwater Range at Baseline Ridge, Ram River and Tawadina Ridge. In total approximately 418½ m was examined from more than 716½ m normal thickness of strata measured. This 2002 exploration was conducted as a follow-up to reconnaissance exploration conducted at Baseline Ridge during the summer of 2001, which included the examination and measurement of three sections across a total stratigraphic thickness of 82½ m.

The 2001 and 2002 exploration identified an approximately 10½ m thick interval of lime mudstone to medium-coarse-grained grainstone within the upper part of the Banff Formation. Carbonate units of the Rundle Assemblage generally consist of good quality lime mudstone, wackestone and grainstone. Although the good quality carbonates may vary from a few to up to 30 or more metres thick, their continuity was not definitively established. Lime mudstones within the lowermost part of the Fernie Formation were of too low quality for further consideration.

2.

INTRODUCTION

In early 2001, Graymont Western Canada Inc. acquired Metallic and Industrial Minerals (MAIM) Permit 9301010011 to cover Paleozoic limestone outcrops along the north parts of Clearwater Range. Reconnaissance work during the summer of 2001 involved the measurement and description of three sections along the northwest portion of Baseline Ridge. The exploration confirmed the presence of a number of high-quality carbonate horizons that warranted further exploration.

During August, 2002 carbonate exposures were examined and measured at four locations along Tawadina Ridge, at one location on Ram River and 13 locations along Baseline Ridge. This report describes the 2001 and 2002 exploration of MAIM Permit 9301010011 and includes field observations, structural measurements, specific gravity tests and interpretations based on the geological data. Peter Darbyshire, Vice President and General Manager for Graymont Western Canada Inc. authorized this work.

3. GEOGRAPHIC SETTING

MAIM Permit 9301010011 of Graymont Western Canada Inc. encompasses the northern parts of Clearwater Range and includes lands to the northwest of the quarry of Prairie Creek Quarries Ltd. on Baseline Ridge to Ram River and Tawadina Ridge, within west-central Alberta (Fig. 3.1). The part of Baseline Ridge with the quarry of Prairie Creek Quarries Ltd., is within the central parts of Baseline Ridge about 10 km from its south end.

The northern part of Clearwater Range lies within Prairie Creek and Ram-Clearwater Resource Management areas (Alberta Forestry and Wildlife, 1986 and 1988). Sensitive regions, defined as "access controlled" or "ecologically significant", are generally absent from the areas of interest. However, the northern parts of Baseline Ridge along Ram River, Fall Creek and Prairie Creek are within Critical Wildlife Land Use Zone (Fig. 6.1).

3.1 LOCATION AND ACCESS

The areas of Baseline Ridge north of Prairie Creek are about 50 km southwest of Rocky Mountain House (Fig. 3.1) along secondary road 752; approximately 46 km is paved and 5 km is gravel. About 1 km east of Baseline Ridge an unimproved gravel road continues to the north from secondary road 752. About 1½ km along this road is a "T" intersection with the west fork leading to the Prairie Creek Quarry and the east fork to the northeastern flank of Baseline Ridge. At approximately 2½ km along the eastern fork erosion bars make the road passable only to ATVs'. The east fork continues north for an additional 2 km, thence westerly for about 4¼ km on the north side of Dry Creek, thence about 3¾ km to the northwest.

Access to the western flank of Baseline Ridge is via an unimproved road that branches to the northwest from secondary road 752 and continues for 11 km to Fall Creek. Numerous bush trails and cut lines provide ATV access to various portions of the property.

At the northern end of Clearwater Range, Ram River and Tawadina Ridge are accessible from Rocky Mountain House via secondary road 752. About 25 km southwesterly of Rocky Mountain House, an improved gravel road leads northerly from secondary road 752, it continues northwesterly and westerly for approximately 40 km to a private, all-weather logging road of Sunpine Forest Products Ltd. The Sunpine road continues southeasterly for approximately 32 km to secondary road 752; both the north and south ends of the road are barred by gates. A network of logging roads and cutlines that branch from or cross the Sunpine road provides good access to the Ram River and Tawadina Ridge areas.

3.2 TOPOGRAPHY AND VEGETATION

MAIM Permit 9301010011 is within the Eastern-Slope Montane Forest Ecological Region of the Alberta Foothills. At the property are a series of northwest-trending ridges and valleys. Elevations range from approximately 1180 m along Ram River to almost 2000 m atop Baseline Ridge. The property is cut by a number of easterly trending tributaries of Ram River drainage basin, from south to north these include Fall Creek, Ram River and Tawadina Creek.

Forest vegetation consists primarily of aspen, lodgepole pine, white spruce and rarely douglas fir. Some areas of the property have been logged and include various stages of second growth. Areas of lower relief, particularly along Fall Creek, have some fairly extensive meadows with sparse stands of black spruce and thick undergrowth, with local muskegs and swamps. Above treeline and along the rocky slopes, vegetation is sparse and generally made up of alpine foliage and grasses.

4. PROPERTY

4.1 MAIM PERMITS OF GRAYMONT WESTERN CANADA INC.

In early 2001, Graymont Western Canada Inc. acquired MAIM Permit 9301010011, west of Rocky Mountain House, Alberta. MAIM Permit 9301010011 was acquired to cover Paleozoic limestones along the northern part of Clearwater Range at Baseline Ridge and Tawadina Ridge (Fig. 3.1). Based upon the 2001 and 2002 exploration, the permit will be reduced to 2,832 hectares (Table 4.1, Fig. 4.1) from its original size of 5,888 hectares.

TABLE 4.1 AMENDMENTS TO MAIM PERMIT 9301010011 OF GRAYMONT WESTERN CANADA INC.

Permit	Comm. Date	Expiry Date	Land Description (Tp-RW5)	Size (Ha)
9301010011 (Current)	Jan. 15, 2001	Jan. 15, 2003	37-11W5 (Sections: 17; 19-21; 29-31) 37-12W5 (Sections: 25; 35; 36) 38-12W5 (Sections: 1-3; 9-14; 23-26)	5,888
9301010011 (Reduced)	Jan. 15, 2001	Feb. 28, 2005	37-11W5 (Sections: 19L16; 20L1-2,L6-16; 21; 29; 30L1-3,5-16; 31) 37-12W5 (Sections: 25L7-11,L14-16; 35L16; 36L1-3, L6-16) 38-12W5 (Sections: 1L2-6,L11-13; 2L1-2,7-16; 3L9, L15-16; 9L8-9,L16; 10L1-3,L5-15; 11L1-5; 12L4,L6,L11,L14; 13L3,L6,L9-10,L13-16; 23L1,L7- 10,L14-16; 24L2-5; 26L2-7,L11-12)	2,832

4.2 HISTORY AND PREVIOUS INVESTIGATIONS

The areas of the Foothills and Front Ranges of the Rocky Mountains in west-central Alberta examined in 2001 and 2002, were previously mapped according to NTS map sheet by the following officers of the Geological Survey of Canada:

NTS Map Sheet	Reference
83 B/3 W½ (Tay River)	Henderson (1945)
83 B/4 E½ (Fall Creek)	Henderson (1946)
83 B/5 E½ (Saunders)	Erdman (1945, 1950)
83 B/5 W½ (Alexo)	Erdman (1950)

The majority of prior exploration along Clearwater Range occurred near the southern end of Corkscrew Mountain, where a small quarry was developed by Limeco Products Corp. The quarry exposes carbonate beds within the Banff Formation and the overlying Pekisko Formation of the Rundle Assemblage (Holter, 1994).

In 1997, Prairie Creek Quarries Ltd. examined parts of Baseline Ridge north of Prairie Creek (Scheurman, 1998). They collected nine grab samples and completed approximately 30 percussion drill holes at two locations along the northeast flank of Baseline Ridge. Scheurman (1998) collected the samples from along the axial trace and east limb of Baseline Anticline and found (p. 4):

"... two limestone exposures running parallel to one another and separated by a distance of approximately 25-30 meters." Further (p. 11) "Test hole results indicated the presence of two and possibly three nearly vertical beds of good quality limestone varying in width from 6 - 7 meters."

Quarriable reserves of good quality limestone were estimated at between 0.45 to 0.85 million tonnes (Scheurman, 1998). Prairie Creek Quarries Ltd. has subsequently opened a quarry which exposes approximately 120 m of near-vertical strata within the Rundle Assemblage and the overlying Fernie Formation.

Recently, a limestone mine has been proposed for the eastern side of Baseline Ridge, immediately south of Prairie Creek (Barakat Resources Ltd., 2002). The limestone horizon of interest would appear to be the southern extension of the Rundle Assemblage exploited at the Prairie Creek Quarry. It is reported to be up to 40 m thick with an overall grade between 95.4 - 96.4% CaCO₃ (Barakat Resources Ltd., 2002). An initial estimate of 16.2 million tonnes of limestone has been calculated for the prospect area (Barakat Resources Ltd., 2002).

TABLE 4.2: LOCATIONS EXAMINED AND MEASURED IN 2001 AND 2002

Section Number	Location	Measured Intervals	Strat. Thick (m)*	Measured Thick. (m) ^o
<u>Tawadina Creek and Ram River Area</u>				
TC2002-01	West Limb of Baseline Anticline, Tawadina Creek	8	22	22½
TC2002-02	Northwest Part of Tawadina Ridge	1	1	1
TC2002-03	Northwest Part of Tawadina Ridge	4	4	4
TC2002-04	South End of Tawadina Ridge	8	43½	83½
RR2002-01	Ram River	4	10	10
<u>Baseline Ridge Area</u>				
BR2001-01	Northwest Side of Fall Creek	7	18½	35¼
BR2001-02	Northeast Side of Fall Creek	9	17¼	13¾
BR2001-03	East Flank of Baseline Ridge	12	25	33¾
BR2002-01	Fall Creek, Baseline Ridge	6	10½	10½
BR2002-02	NE Flank of Baseline Ridge, South of Fall Creek	15	33	33
BR2002-03	NW Flank of Baseline Ridge, South of Fall Creek	10	28¼	29¼
BR2002-04	NW Flank of Baseline Ridge, South of Fall Creek	4	10¾	10¾
BR2002-05	North Central Part of Baseline Ridge	8	18¾	18¾
BR2002-06	North Central Part of Baseline Ridge	7	15	18
BR2002-07	East Flank of Baseline Ridge	13	33½	177½
BR2002-08	East Flank of Baseline Ridge	8	25	25
BR2002-09	East Flank of Baseline Ridge	6	16¼	26¼
BR2002-10	East Flank of Baseline Ridge	4	4¼	30¾
BR2002-11	East Flank of Baseline Ridge	18	34¼	82¼
BR2002-12	East Flank of Baseline Ridge	4	9¾	9¾
BR2002-13	NE and downslope of Main Peak Atop Baseline Ridge	<u>4</u>	<u>38</u>	<u>41</u>
TOTALS:		160	418½	716½

*Stratigraphic thickness are measured intervals.

^oMeasured thickness is total investigated thickness, including covered intervals.

4.3 2001 AND 2002 EXPLORATION

During July, 2001 Dahrouge Geological Consulting Ltd., on behalf of Graymont Western Canada Inc., completed reconnaissance scale mapping of Paleozoic carbonate rocks along the northern part of Baseline Ridge. At three separate locations, 28 intervals of carbonate rocks were measured and described in detail. An approximate total length of 60¾ m was examined from more than 82½ m normal thickness of strata measured. A number of potentially favourable carbonate horizons were identified within the Paleozoic units examined.

In August 2002, a more extensive exploration program was conducted along the northern part of Clearwater Range. A total of 132 intervals of carbonate rocks at 18 separate sections were measured and described in detail. An approximate total length of 357¾ m was examined from more than 634 m normal thickness of strata measured. Overall, the 2001 and 2002 exploration included the examination and measurement of 160 discrete intervals from the 21 locations listed in Table 4.2, representing approximately 418½ m of strata, from more than 716½ m normal thickness measured. Sample descriptions and section measurements are in Appendices 2A and 2B.

4.4 EXPLORATION EXPENDITURES

During 2001 and 2002, exploration expenditures for MAIM permit 9301010011 totalled \$ 39,675.94 (Appendix 1). Expenditures for MAIM permit 9301010011 are assigned as follows:

TABLE 4.3 ALLOCATION OF EXPENDITURES

Permit	Assessment Period	Expected Expiry Date	Permit Area*	Required Expenditures*	Assigned Expenditures*
9301010011	Years 1 & 2	Jan. 15, 2003	2,832	\$14,160.00	\$14,160.00
					<u>\$25,515.94</u>
				Total Expenditures:	\$ 39,675.94

* Based upon the reduced permit area of Section 4.1

5. REGIONAL GEOLOGY

5.1 STRATIGRAPHY

At Clearwater Range, carbonate lithologies are known to occur within both Paleozoic and Mesozoic sequences. Paleozoic limestones are described in the Upper Devonian Palliser Formation, Upper Devonian to Lower Carboniferous Banff Formation and the Lower Carboniferous Rundle Assemblage. Mesozoic carbonate rocks are known in the Nordegg Member of the Fernie Group.

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

System or Subsystem	Stratigraphic Unit		
	Assemblage Group	Formation	
		S	N
Jurassic	Fernie Group		
		Etherington	
	Rundle Assemblage	Mount Head	
		Livingstone ¹	Turner Valley
			Shunda
Lower Carboniferous			Pekisko
	Banff Assemblage	Banff	
		Exshaw	
	Wabamun Group	Palliser ¹	
	Winterburn Group	Sassenach (Alexo) ²	
			Arcs
Upper Devonian		Southesk	Grotto
			Mount Hawk
	Fairholme Group ^o		Peechee
		Cairn	Perdix
			Flume, Maligne
			Pika
			Eldon
			Stephen
			Cathedral
Cambrian			

*Compiled from MacKenzie (1969), Mountjoy et al. (1992); Richards et al. (1994); Switzer et al. (1994); and Holter (1994).

^o Fairholme Group of MacKenzie (1969) and Mountjoy et al. (1992) is partly equivalent to the Woodbend Group of Switzer et al., 1994.

¹ Current limestone production (Holter, 1994)

² Sassenach and Alexo formations are partly equivalent (McLaren and Mountjoy, 1962)

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 about 180 to 270 m in thickness (Holter, 1976).

At Clearwater Range, the Palliser Formation is exposed within the core of Prairie Creek Anticline at Fall Creek and Prairie Creek, and as limited inliers along Clearwater River within the core of Marble and Corkscrew anticlines. At Fall Creek the Palliser Formation consists (Henderson, 1944)

"mainly of thick-bedded, massive, dark blue-grey limestone."

Further north, at Gap on North Saskatchewan River, Erdman (1950) indicates the upper Devonian sequences, from top to bottom, to consist primarily of 22½ m of massive limestone, 30½ m of shaly limestone, and 127¾ m of massive, saccharoidal dolomite.

5.1.2 Banff Formation

At Clearwater Range, the Banff Formation comprises a heterogeneous association of carbonates and fine-grained siliciclastics deposited on poorly differentiated carbonate platforms. The mostly dolomitic Banff succession of the Alberta Foothills becomes increasingly limy westward. For the Baseline Ridge area, Henderson (1945) estimates the Banff Formation to range from about 182¾ m to 213¾ m thick, and

"is composed of buff weathering, platy, dark blue-grey limestone, shaly limestone, black calcareous shale, and occasional thick beds of light weathering blue-grey limestone."

At the Ram River No. 1 well at Tawadina Creek, the Banff Formation is 190¾ m thick (Erdman, 1950). It is generally composed of thin-bedded limestones and shaly limestones with some cherty bands.

5.1.3 Rundle Assemblage

The Rundle Assemblage is subdivided into the transgressive carbonate Rundle Assemblage, and two regressive successions of restricted-marine carbonates and subordinate anhydrite assigned to the Shunda and Turner Valley Formations (Richards et al., 1994). The uppermost part of the Rundle Assemblage is assigned to the Mount Head Formation. Ollerenshaw (1968) described all four formations of the Rundle Assemblage for the southern part of Clearwater Range, but could only separate two map units: the lower one included the Pekisko and Shunda formations and the upper one included the Turner Valley and Mount Head formations. Along the southern parts of Clearwater Range, the lower part of the Rundle Assemblage is described by Ollerenshaw (1968, p. 13), as:

"... limestone which is commonly crinoidal, light grey-weathering and typically cliff-forming. Calcarenites, pelletal limestones, oolites, pisolites and chert layers occur locally."

Locally, three cliff forming limestone units are commonly overlain by recessive units of dolomite. The entire interval is commonly overlain by a recessive unit that includes collapse breccias attributed to the dissolution of evaporitic material. Further north, at Baseline Ridge, Henderson (1944) indicates the Rundle Assemblage is divisible into three lithologic units, as follows:

Upper	106¾ m	<u>Limestone to Dolomite</u> : white-weathered, massive bedded
Middle	45¾ m	<u>Shaly Limestone</u> : buff- to grey-weathered, thin bedded
Lower	61 m	<u>Limestone</u> : white-weathered, light grey, thick bedded, crystalline, crinoidal

Along the southern part of Clearwater Range, within Fallentimber Thrust Sheet, Ollerenshaw (1968) indicates the lower Rundle Assemblage is overlain by more than 30 m of light-grey crinoidal limestone and dolomitic limestone attributed to the lower part of the upper Rundle Assemblage. While the uppermost part of the Rundle Assemblage consists of 37 to 70 m of dolomite, dolomitic limestone, minor chert, sandstone, and limestone. The uppermost Rundle Assemblage is eroded and unconformably overlain by the Jurassic Fernie Group.

At Tawadina Creek, Erdman (1945, p.6) divided the Rundle Assemblage into three distinct lithologic units, as follows:

Upper	<u>Calcareous Dolomite</u> : white-weathered, massive, thin-bedded chert
Middle	<u>Limestone</u> : buff-weathered, porous, brecciated
Lower	<u>Limestone</u> : light-grey weathered, massive, fossiliferous, fragmental, disseminated black hydrocarbons

5.1.4 Nordegg Member of the 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.

Near the base of the Fernie Group, the Nordegg Member consists of a thin radioactive shale-limestone unit, overlain by a massive, light-grey chert and limestone unit (Poulton et al., 1994). The Nordegg Member thins to the west and also to the east, in part due to deposition and in part due to subsequent erosion. Within the area of Tawadina Creek, the Fernie Group has an estimated thickness of 109¾ to 134¾ m (Erdman, 1950). Within Clearwater River Basin the Fernie Group is subdivided into the Nordegg Member at the base and a collection of units informally designated

the "upper members" above (Ollerenshaw, 1968).

5.2 STRUCTURE

The northern parts of Clearwater Range and Baseline Ridge are on the leading edge of the Seven Mile Creek Thrust plate (Henderson, 1945). Seven Mile Creek Thrust is the northwest continuation of the Fallentimber Thrust Sheet (Ollerenshaw, 1968). It is a complex of faulted and folded Paleozoic and Jurassic Strata, with its eastern boundary demarcated by the northwest-trending Baseline Thrust (Dahrouge and Halferdahl, 1995). The main structural elements of the northern part of Clearwater Range, north of Prairie Creek, from west to east are the northwest trending Prairie Creek Anticline, Baseline Syncline and Baseline Anticline.

Prairie Creek Anticline is a nearly symmetrical fold structure with average dip-slopes of 45° to 55° on both limbs (Henderson, 1946). Bedding planes are nearly horizontal near the core of the anticline atop Baseline Ridge and a northwest plunge has been noted in the Fall Creek area (Henderson, 1946). To the east, Baseline Anticline is an asymmetrical structure with most dips near vertical within the eastern limb, and 25° to 40° within the western limb (Erdman, 1950). The portion of Baseline Anticline along Ram River has a series of smaller folds with overturned beds near the margin of Baseline Thrust (Erdman, 1950).

6. PROPERTY GEOLOGY

6.1 SAMPLES AND MEASURED SECTIONS

Carbonate lithologies of the Banff Formation, Rundle Assemblage, and the Nordegg Member of the Fernie Group were examined and measured along the northern part of Clearwater Range (Fig. 6.1) at Baseline Ridge, Ram River (Fig. 6.2) and Tawadina Ridge (Fig. 6.3). During July 2001 and August 2002, 160 discrete intervals were examined at locations listed in Table 4.2, by chipping outcrops perpendicular to bedding. Where bedding could not be identified, chips were taken in directions appropriate to topography with stratigraphic thickness deduced from other measurements where possible (Appendix 2). A solution of 5% HCl was used to assess the quality of the limestone from the measured sections in the field. The 160 intervals represent a stratigraphic thickness of about 418½ m and were collected from an investigated stratigraphic thickness that exceeds 716½ m.

An approximately 10 kg bulk sample was collected and tested to determine an approximate average specific gravity (density) for a typical grainstone (Sample 11999; Appendix 2B). Sample weights and volumes of displaced water were recorded (Table 6.1). Tests included five individual samples and five multiple samples. The overall density average for the 10 tests was 2.69 g/cm³, although it should be noted that the individual samples had a lower average density (2.62 g/cm³) when compared to the multiple samples (2.76 g/cm³). The overall average density of 2.69 g/cm³ is within the range of 2.6 - 2.8 g/cm³ for limestone.

TABLE 6.1: SPECIFIC GRAVITY OF SELECT LIMESTONE SAMPLES

Sample #	Weight (g)	Water (ml)	Specific Gravity (g/cm ³)
11	486.3	182	2.67
12	543	214	2.54
13	489.5	188	2.60
14	393.5	143	2.75
15	505.6	201	2.52
1-3-4-6-9	601	219	2.74
2-5-7-8-10	653.3	237	2.76
5-7-13	708.8	260	2.73
1-3-8-9-14	795.4	280	2.84
4-10-11	702.3	257	<u>2.73</u>
AVERAGE			2.69

6.2 STRATIGRAPHY

Within MAIM permit 9301010011 carbonates of the Mississippian Banff Formation are exposed in a number of windows through the Rundle Assemblage (Fig. 6.1). Where examined, the uppermost parts of the Banff Formation consist of thin-bedded, argillaceous limestones with interbeds of grainstone, wackestone and lime mudstone. Near the upper contact with the Rundle Assemblage, an approximately 10½ m thick interval of lime mudstone to medium- to coarse-grained grainstone was identified within the upper part of the Banff Formation (Section BR2002-01; Appendix 2B). The upper 9 m were composed of coarse-grained grainstone with thin interbeds of wackestone. The lower 1½ m were composed of fine-grained lime mudstone, which may be of lower quality based on a slower reaction to the acidic solution.

The lowermost part of the Lower Rundle Assemblage is generally composed of thick-bedded to massive, crinoidal, coarse-grained, grainstone to wackestone. This unit includes a number of

sections with good quality limestone that react well to the acidic solution. Several intervals contain significant concentrations of bitumen stain. On the northeast side of Fall Creek (Section PC2001-02; Appendix 2B) the Lower Rundle Assemblage fines upwards to a lime mudstone with some thin lenses of sandstone and significant bitumen stain. The upper portion of the Lower Rundle Assemblage consists of thin-bedded lime mudstone. This unit is poorly exposed and tends to be brecciated, friable and highly fractured.

Carbonate lithologies within the Upper Rundle Assemblage include variably dolomitized intervals of wackestone, lime mudstone and lesser amounts of grainstone. Microcrystalline units, rare chert nodules, and fossil debris were observed. The Upper Rundle Assemblage includes some intervals of good quality, coarse-grained grainstone to wackestone that react well to the acidic solution (Sample 18517, Appendix 2B).

Where examined the lowermost parts of the Fernie Group consist of thin-bedded, calcareous shales and siltstones.

6.3 STRUCTURE

North of Prairie Creek, along Clearwater Range, the relevant structural elements include the northwesterly trending Prairie Creek Anticline with its axis along Baseline Ridge, the northerly trending Baseline Anticline with its axis along the east flank of Baseline Ridge and Tawadina Ridge, and Baseline Thrust which marks the eastern boundary of Clearwater Range.

Structural measurements collected from carbonate units at and near Prairie Creek Anticline indicate a moderate dip for the northeast limb and a shallow to moderate dip for the southwest. A number of sub-horizontal bedding measurements were collected near the top of Baseline Ridge near the core of Prairie Creek Anticline. A statistical analysis of the bedding orientation data measured along Prairie Creek Anticline was completed by plotting poles to measured planes in the southern hemisphere of a Schmidt (equal angle) stereographic projection (Fig 6.6). Measurements for both the northeast and southwest limbs group within well-defined clusters with some collected from near the core of the anticline showing slight variability. The northeast limb has a mean bedding orientation of $149^{\circ}/41^{\circ}$ NE (n=20) and the southwest limb has a mean bedding orientation of $150^{\circ}/33^{\circ}$ SW (n=9). Given the two mean bedding attitudes, Prairie Creek Anticline has an axial plane of $150^{\circ}/90^{\circ}$ and a fold axis of $329^{\circ}/1^{\circ}$. In general, Baseline Anticline, in the vicinity of Fall Creek, is a nearly symmetrical upright fold that plunges very slightly to the northeast and has undergone no

major tilting. The structural information collected from the 2001 and 2002 exploration work in the Baseline Ridge Area concurs with the prior observations of Henderson (1946).

Along Prairie Creek Anticline prominent dipslopes of carbonate lithologies within the Rundle Assemblage are present along the eastern flank of Baseline Ridge (Fig. 6.5). Where Fall Creek cuts across Baseline Ridge, dipslopes are present on both flanks of Baseline Ridge. These dipslopes may continue northerly towards Ram River, however these areas were not examined during 2002.

As only a few sections were measured along the Baseline - Tawadina Creek Anticline there is insufficient structural measurements to conduct a meaningful statistic analysis. However, most bedding measurements were consistent with Erdman (1945) regarding the asymmetrical nature of Baseline Anticline.

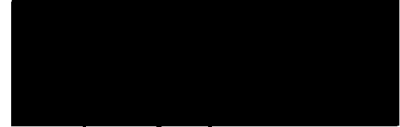
7. CONCLUSIONS

Within MAIM Permit 9301010011, exposures of the Banff Formation, Rundle Assemblage and Fernie Group were examined along the northern part of Clearwater Range, west of Rocky Mountain House, Alberta. A total of 160 discrete intervals were measured and described in detail, representing approximately 418½ m of stratigraphy out of a total investigated thickness of more than 716½ m. A bulk sample of grainstone was collected from the Rundle Assemblage. Its overall density of 2.69 g/cm³ was determined, from within a range of 2.52 to 2.84g/cm³.

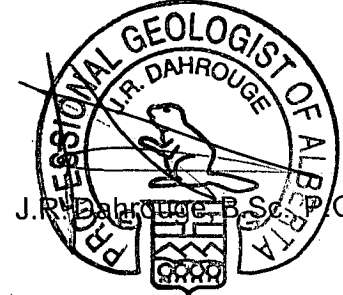
Limestone intervals within the upper part of the Banff Formation were examined at Baseline Ridge on Fall Creek. An approximately 10½ m thick interval of good quality lime mudstone to medium- to coarse-grained grainstone was identified. Further examination of good quality carbonates within the upper part of the Banff Formation are warranted.

Along the northern part of Clearwater Range the Rundle Assemblage contains several intervals of good quality limestone. The most significant are typically composed of grainstone to wackestone. Interbeds of lime mudstone generally appear to be of lower quality. Within the Rundle Assemblage individual beds of limestone vary from a few meters up to 30 or more meters. Due to the scale of the examination, the continuity of individual carbonate beds was not well established. Aberrations in thickness and quality may be due, in part, to local structural complications.

Where examined the lowermost parts of the Fernie Group consist of thin-bedded, calcareous shales and siltstones. The lowermost part of the Fernie Group is of too low-quality for further consideration.



M.D. Smith, M.Sc., Geol.I.T.



J.P. Dahrouge, B.Sc., Geol.

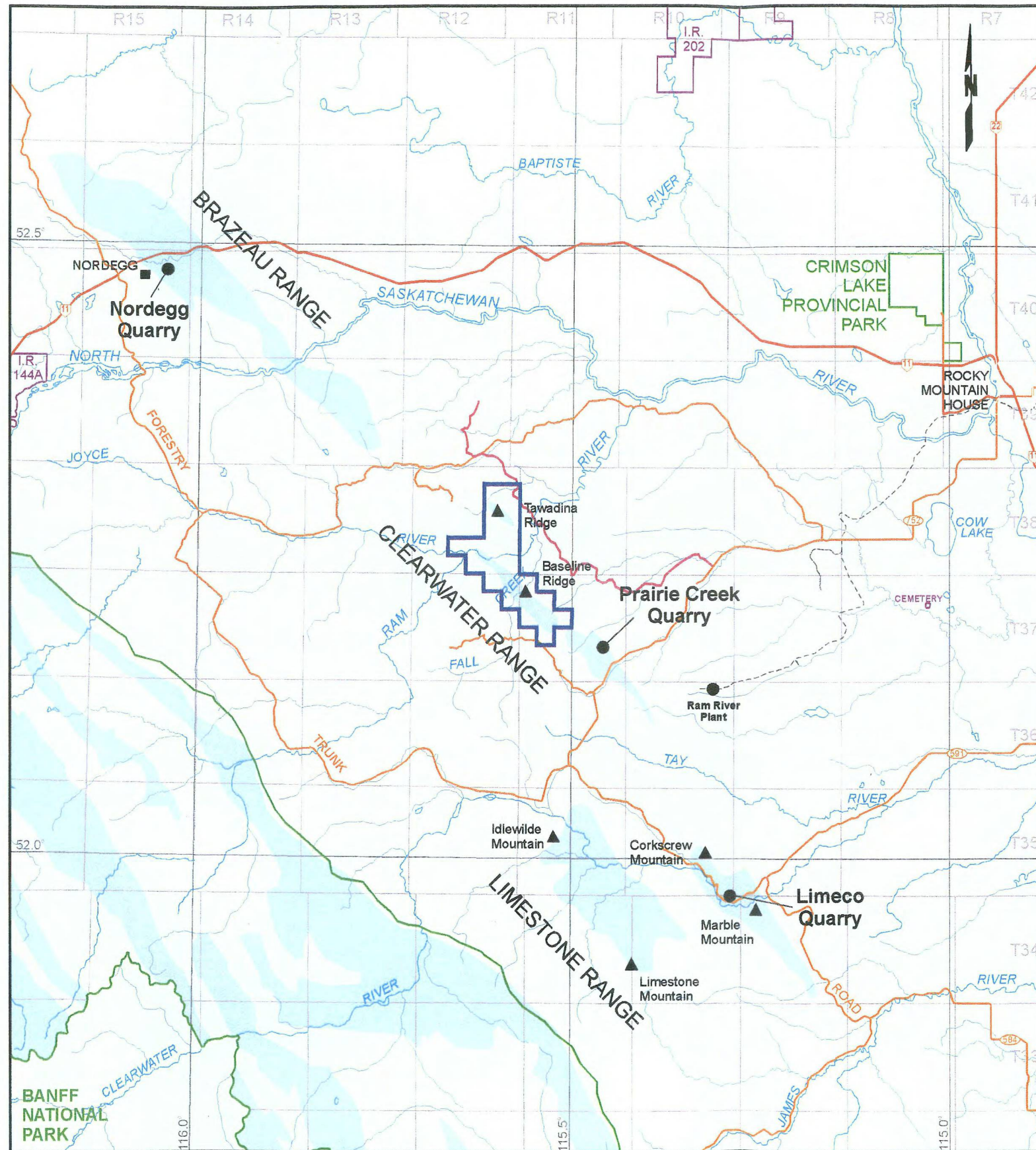
Edmonton, Alberta
2003 01 31

8.

REFERENCES

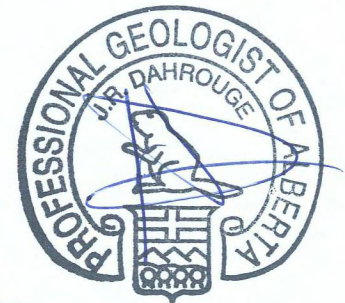
- Alberta Forestry, Lands and Wildlife (1986). Rocky-North Saskatchewan Sub-Regional Integrated Resource Plan, T/1 - No. 8.
- Alberta Forestry, Lands and Wildlife (1988) Nordegg-Red Deer River Sub-Regional Integrated Resource Plan, T/1 - No. 10.
- Barakat Resources Ltd. (Nov 2002). Corporate website: www.mems.ca/Barakat.
- Dahrouge, J.D. and Halferdahl, L.B. (1995). 1994 and early 1995 Exploration for High-Calcium Limestone in West-Central Alberta. Unpublished report for Continental Lime Ltd., Halferdahl and Associates Ltd., Edmonton, 53 p., 67 fig., 24 app.
- Erdman, O.A. (1945). Saunders Map-Area, Alberta; Geol. Surv. Can. Paper 45-24.
- Erdman, O.A. (1950). Alexo and Saunders map-areas, Alberta; Geol. Surv. Can. Mem. 254.
- Halbertsma, H.L. (1994). Devonian Wabamun Group of the Western Canada Sedimentary Basin, in Geological Atlas of the Western Canada Sedimentary Basin. Mossop, G.D. and Shetsen, I. (compilers); Can. Soc. Petr. Geol. and Alberta Res. Coun., p. 221-250.
- Henderson, J.F. (1944). Tay River map-area, Alberta; Geol. Surv. Can. Paper 44-26.
- Henderson, J.F. (1945). Tay River; Geol. Surv. Can. Map 840A.
- Henderson, J.F. (1946). Fall Creek; Geol. Surv. Can. Map 883A.
- Holter, M.E. (1976) Limestone resources of Alberta; Alta. Res. Coun. Econ. Geol. Rept. 4.
- Holter, M.E. (1994). A Review of Alberta Limestone Production, Marketing, Distribution and Future Development Possibilities. Alta. Geol. Surv., EUB, Open File Rept. 1994-15., 95 p., 57 figs.
- Mackenzie, W.S. (1969). Stratigraphy of the Devonian Southesk Cairn carbonate complex and associated strata, eastern Jasper National Park, Alberta. Geol. Surv. Bull. 184.
- McLaren, D.J. and Mountjoy, E.W. (1962). Alexo equivalents in the Jasper region, Alberta. Geol. Surv. Can., Paper 62-63.
- Mountjoy, E.W., Price, R.A. and Lebel, D. (1992). Geology and structure cross-section, Mountain Park, Alberta. Geol. Surv. Can., Map 1830A, scale 1:50000.

- Ollerenshaw, N.C. (1968). Preliminary account of the geology of Limestone Mountain map-area, southern Foothills, Alberta; Geol. Surv. Can. Paper 68-24.
- Poulton, T.P., Christopher, J.E., Hayes, B.J.R., Losert, J., Tittlemore, J., and Gilchrist, R.D. (1994) Jurassic and Lowermost Cretaceous strata of the Western Canada Sedimentary Basin *in* Geological Atlas of the Western Canada Sedimentary Basin. G.D. Mossop and I. Shetsen (compilers), Can. Soc. Petr. Geol. And Alberta Res. Coun., p. 221-250.
- Richards, B.C., Barclay, J.E., Bryan, D., Hartling, A., Henderson, C.M. and Hinds, R.C. (1994). Carboniferous strata of the Western Canada Sedimentary Basin *in* Geological Atlas of the Western Canada Sedimentary Basin. G.D. Mossop and I. Shetsen (compilers), Can. Soc. Petr. Geol. And Alberta Res. Coun., p. 221-250.
- Scheurman, D.H. (1998). Limestone Study S.W. of Rocky Mountain House as a potential source of raw material. Ass. Rept. On MAIM permit 939611054 for Prairie Creek Quarries Ltd., Alta. Geol. Surv. Index No. 19990003, 17 p., 3 App., 12 fig., 3 tables.
- Switzer, S.B., Holland, W.G., Christie, S.D., Graf, G.C., Hedinger, A.S., McAuley, R.J., Wierezbicki, R.A and Packard, J.J. (1994). Devonian Woodbend-Winterburn Strata of the Western Canadian Sedimentary Basin *in* Geological Atlas of the Western Canada Sedimentary Basin. G.D. Mossop and I. Shetsen (compilers), Can. Soc. Petr. Geol. And Alberta Res. Coun., p. 165-202.



LEGEND & SYMBOLS

- Paleozoic Limestone-bearing units (locations approximate)
- Property of Graymont Western Canada Inc. (MAIM Permit 9301010011)
- Highway
- Secondary Road
- Private Road
- Railway
- Industrial Use or Quarry
- Park or Protected Area
- Reserve or Restricted Zone
- Mountain Peak



SCALE
(approx. 1:450 000)



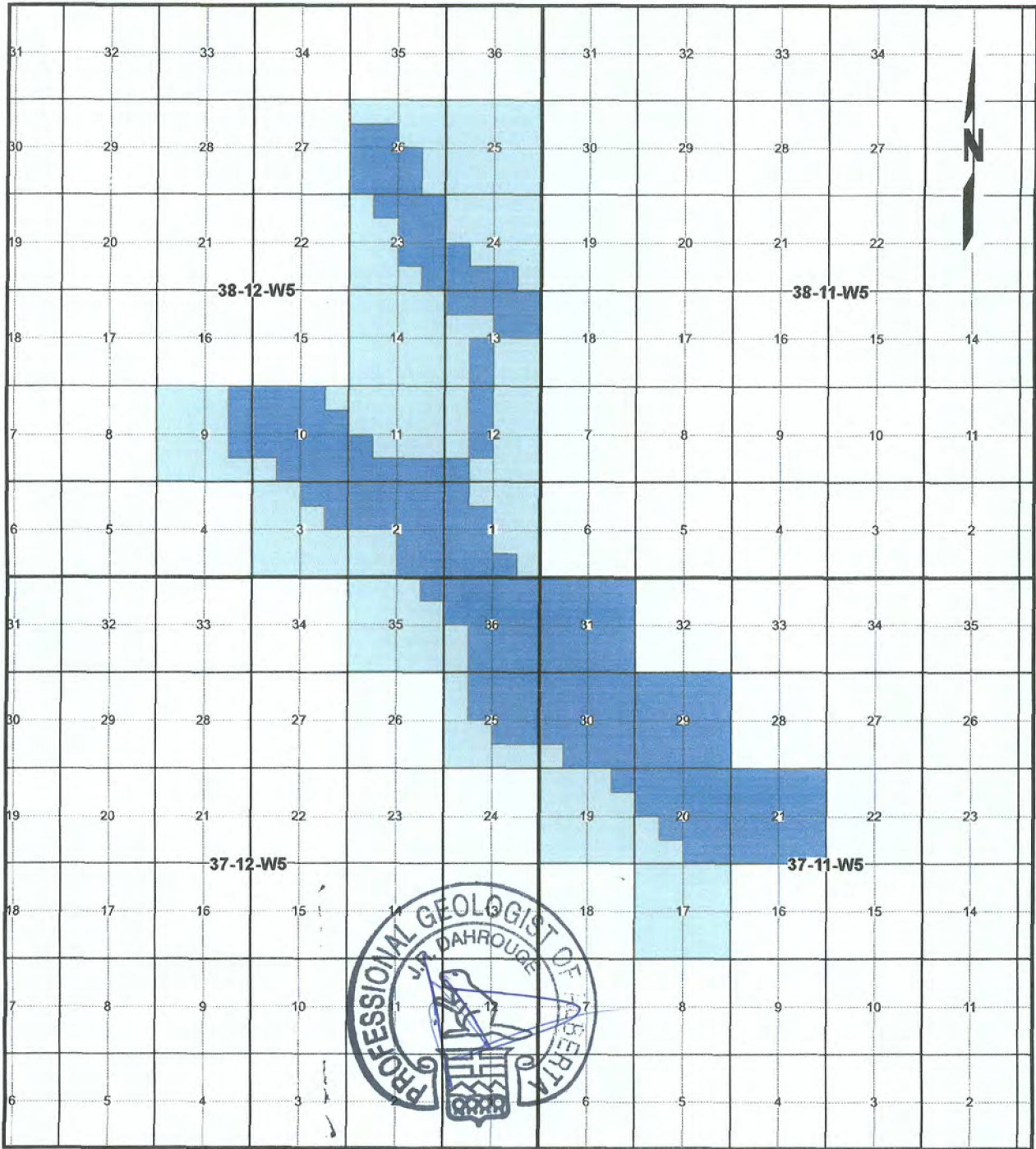
kilometers

GRAYMONT WESTERN CANADA INC.

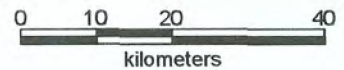
DAHROUGE GEOLOGICAL CONSULTING LTD.
EDMONTON, ALBERTA

BRAZEAU, CLEARWATER & LIMESTONE RANGES



Fig 3.1: Location Map



SCALE



MAIM Permit 9301010011

-  Original permit area: 5,888 ha
Graymont Western Canada Inc.
-  Reduced permit area: 2,832 ha
Graymont Western Canada Inc.

GRAYMONT WESTERN CANADA INC.

DAHROUGE GEOLOGICAL CONSULTING LTD.
EDMONTON, ALBERTA

CLEARWATER RANGE, ALBERTA

Fig. 4.1: Location of MAIM Permit 9301010011.



Fig. 6.2: View to the west of cliffs of the Rundle Assemblage exposed along the Ram River (facing 060°).

13



Fig. 6.3: View to the north of core of Baseline Anticline exposed along Tawadina Creek (facing 300°).
Located slightly west of the plate is section TC2002-01, samples 15711-15718.

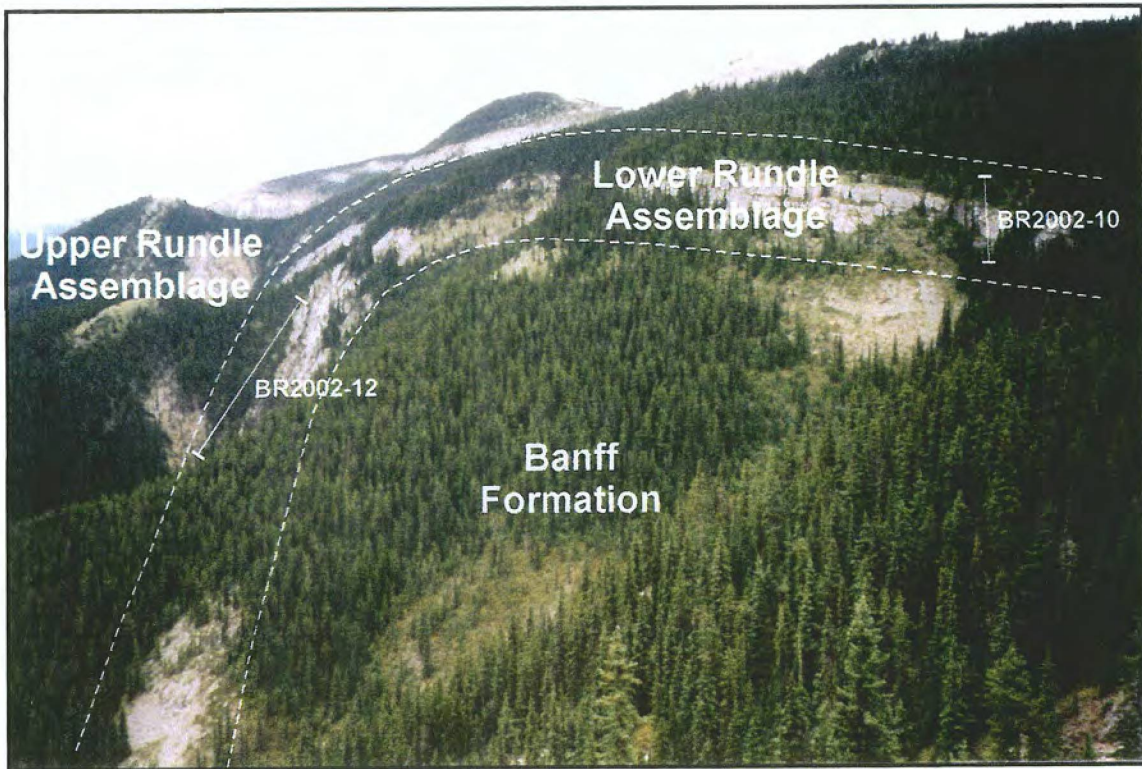


Fig. 6.4: View to the south of east flank of Prairie Creek Anticline atop Baseline Ridge (facing 160°).

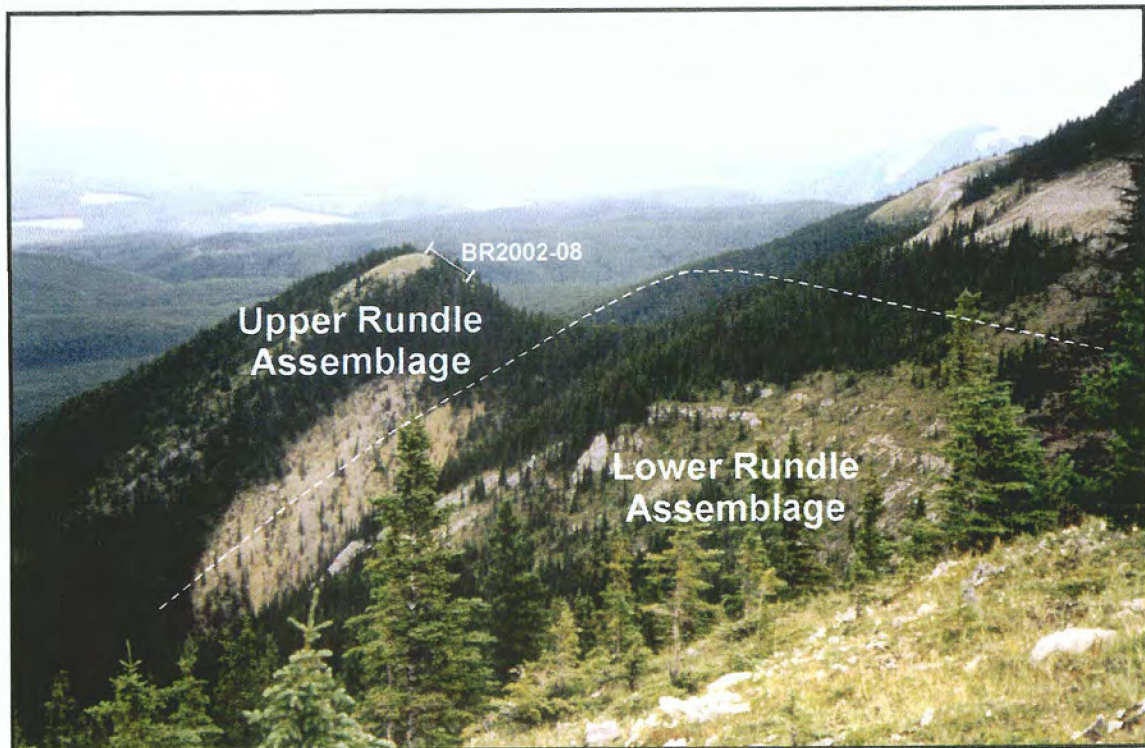
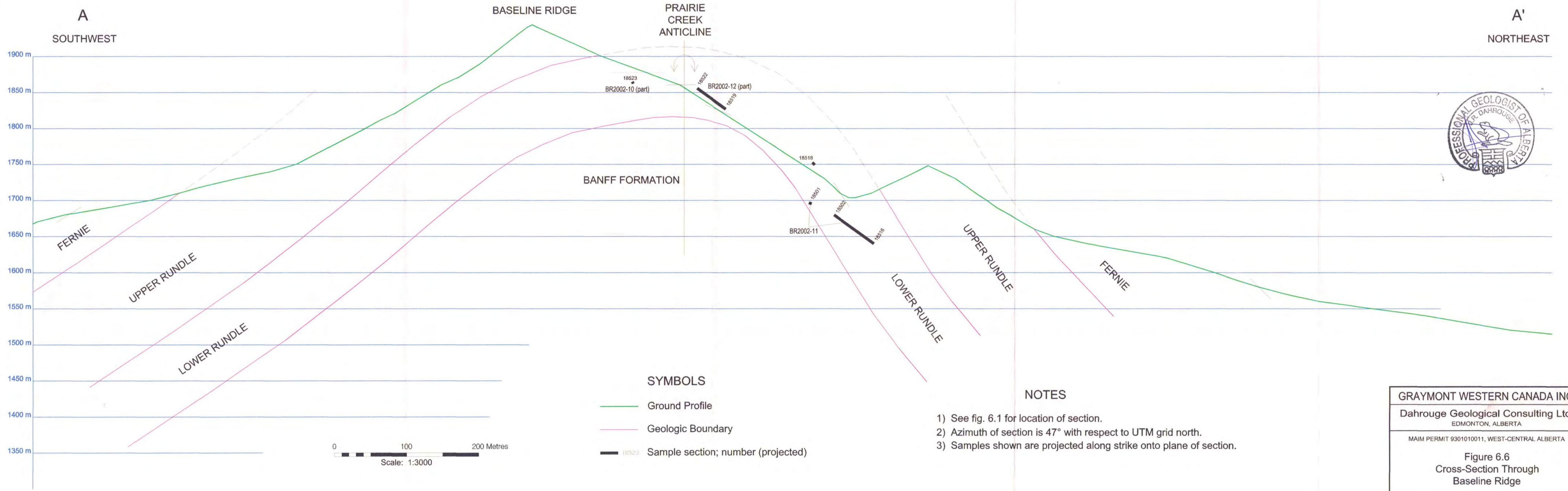
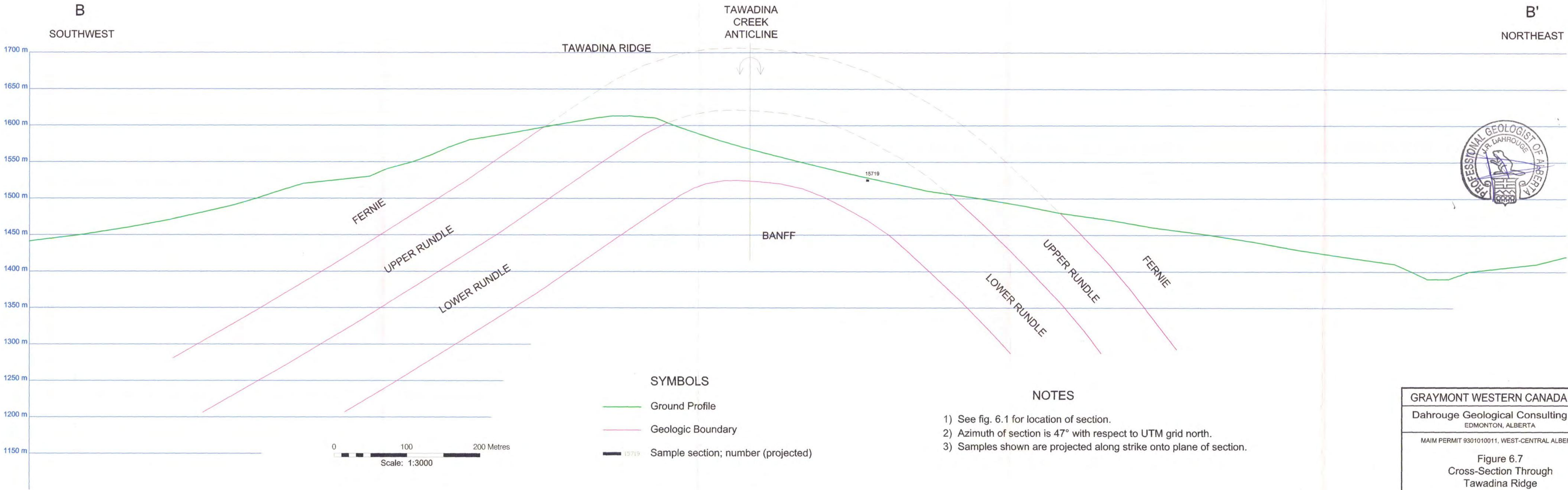


Fig. 6.5: View to the southeast of Rundle Assemblage dip slope atop Baseline Ridge (facing 110°).

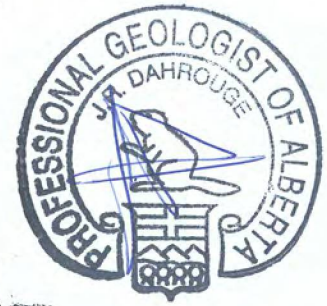


GRAYMONT WESTERN CANADA INC.
Dahrouge Geological Consulting Ltd. EDMONTON, ALBERTA
M.A.M. PERMIT 9301010011, WEST-CENTRAL ALBERTA
Figure 6.6 Cross-Section Through Baseline Ridge
WM 2003.01

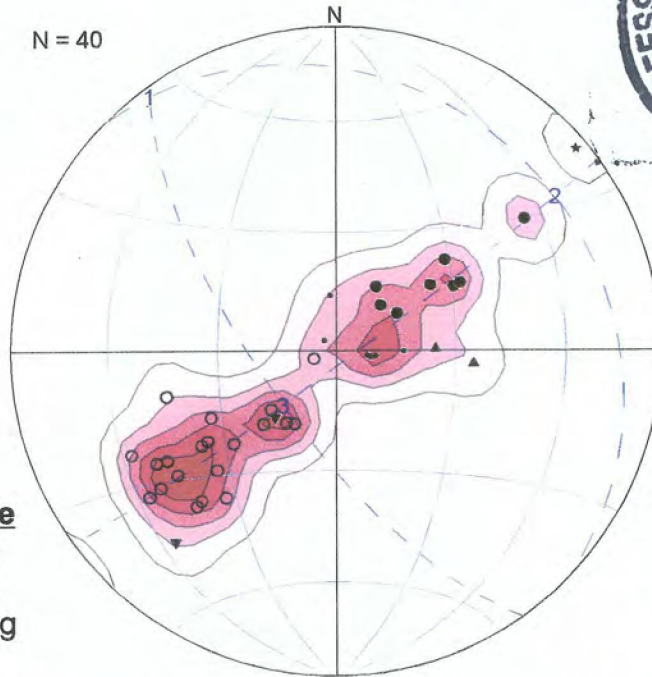


GRAYMONT WESTERN CANADA INC.	
Dahrouge Geological Consulting Ltd. EDMONTON, ALBERTA	
M.A.M. PERMIT 9301010011, WEST-CENTRAL ALBERTA	
Figure 6.7 Cross-Section Through Tawadina Ridge	
WM	2003.01

ALL DATA



N = 40



Prairie Creek Anticline

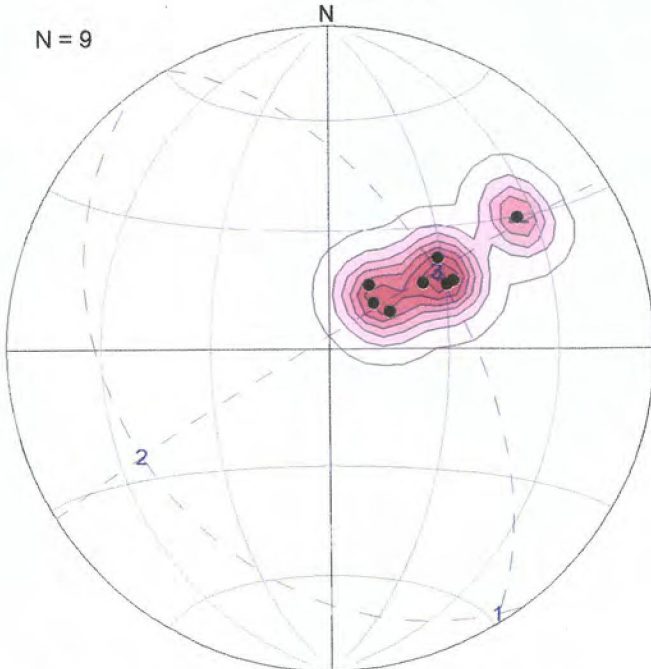
- SW Limb Bedding
- NE Limb Bedding
- Near Core Bedding

Baseline Anticline

- ▲ SW Limb Bedding
- ▲ NE Limb Bedding
- ★ Overturned Bedding

**Prairie Creek Anticline
SW Limb**

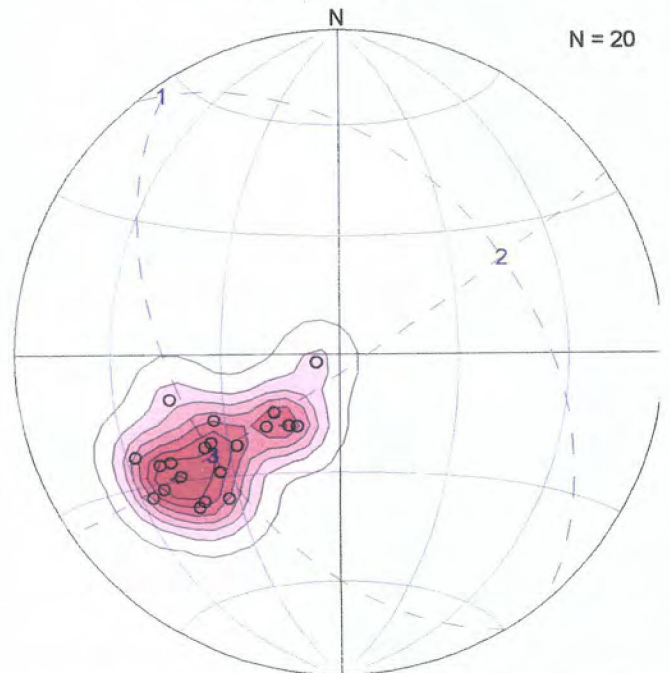
N = 9



Mean Bedding Orientation: 150°/33° SW

**Prairie Creek Anticline
NE Limb**

N = 20



Mean Bedding Orientation: 149°/41° NE

Axial Plane Orientation: 150°/90°

Fold Axis Lineation: 329°/1°

Figure 6.8: Stereographic Projection of Poles to Planar Structural Elements Measured in Limestone Units in the Baseline Ridge Area. Equal Area Schmidt Net.

**APPENDIX 1: ITEMIZED COST STATEMENT FOR METALLIC AND INDUSTRIAL
MINERALS PERMIT 9301010011 OF GRAYMONT WESTERN CANADA INC.**

a) Personnel

J. Dahrouge, B.Sc., P.Geol. (Geologist)

12.0 days field work and travel between August 13 to 24, 2002

6.1 days preparations for field, organizing, supervising and
preparing report

18.1 days

\$

W. McGuire, (Draftsman, Field Assistant)

12.0 days field work and travel between August 13 to 24, 2002

4.5 days compiling field data, drafting, preparing figures and maps

16.5 days

\$

M. Smith, M.Sc. (Geologist)

12.0 days field work and travel between August 13 to 24, 2002

20.5 days compiling field data, determine specific gravities,
prepare figures, assist with report writing

32.5 days

\$

C. Hermus, B.Sc. (Field Assistant)

12.0 days field work and travel between August 13 to 24, 2002

12.0 days

\$

\$ 28,952.87

b) Food and Accommodation

48 man-days @ \$57.675063 accommodations (motel)

\$ 2,768.40

48 man-days @ \$36.521833 groceries and meals

\$ 1,753.05

\$ 4,521.45

c) Transportation

Vehicles: Quad and Trailer Rental (12 days @ \$135.355000)

\$ 1,624.26

Quad Rental (12 days @ \$137.500000)

\$ 1,650.00

Quad Rental (2 days @ \$147.125000)

\$ 294.25

Car rental 479 km @ \$0.385010

\$ 184.42

4x4 Sports Utility Truck 2213 km @ \$0.482567

\$ 1,067.92

Fuel

\$ 188.99

Quad Repairs and Other

\$ 288.44

\$ 5,298.28

d) Instrument Rental n/a

e) Drilling n/a

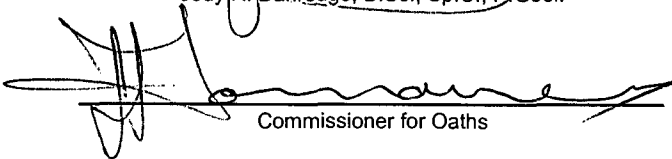
f) Analyses n/a

APPENDIX 1: CONTINUED

g) Report	Reproduction and assembly	\$ 132.32	
			\$ 132.32
h) Other			
	Base map(s) and map reproductions	\$ 255.41	
	Courier, postage and shipping	\$ 462.58	
	Field supplies	\$ 38.79	
	Long distance telephone	\$ 14.25	
			\$ 771.03
Total			<u>\$ 39,675.95</u>

I, Jody R. Dahrouge, hereby certify that the costs outlined above were expended for the assessment of metallic and industrial minerals permits 93010100115


Jody R. Dahrouge, B.Sc., Sp.C., P.Geol.


Commissioner for Oaths

JACK LAMOUREUX
COMMISSIONER FOR OATHS
COMMISSION EXPIRES
MAY 21, 2005

APPENDIX 2A:

DESCRIPTIONS OF THE 2001 SAMPLES FROM BASELINE RIDGE

Note: Stratigraphic thicknesses are based on measured attitudes of bedding, as listed below, with appropriate interpolations. Attitudes are strike and dip. UTM coordinates are NAD83. Samples are listed in order from stratigraphic top to bottom. Most samples consist of chips at 30 cm intervals. * denotes isolated samples. Abbreviations: Banff - Banff Formation; RA - Rundle Assemblage, (l) lower, (u) upper; and Fernie Group - F, NM - Nordegg Member.

Measured Intervals	Formation Member	Strat. Thick. (m)	Description
BASELINE RIDGE (MAIM Permit 9301010011)			
BR2001-01: Northwest Side of Fall Creek (UTM 596882E, 5785955N)			
10509	RA	2	<u>Calcarenite</u> , medium-grey, fine- to medium-grained, beds 15 to 30 cm, attitude of beds 140°/36°W, small vugs in weathered surfaces, top of unit is at top of a west-facing dip slope
10508	RA	3	<u>Calcarenite</u> , medium-grey, medium-grained, beds 15 to 30 cm
10507	RA	3	<u>Calcarenite</u> , light-grey, medium-grained, beds 30 cm to ½ m
10506	RA	3	<u>Calcarenite</u> , light-grey, medium-grained, beds ½ to 1 m
10505	RA	3	<u>Calcarenite</u> , light-grey, coarse-grained, massive, crinoidal
10504	RA	2¼	<u>Lime Mudstone to Calcarenite</u> , bottom ¾ m medium-grey, fine-grained, above is very light grey, coarse-calcarenite, crinoidal, beds ½ m to massive
-	Banff	16¾	<u>Limestone</u> , mostly covered, dark-grey, thin-bedded
10503	Banff	2¼	<u>Lime-Mudstone</u> , medium-grey, beds 30 cm to 1 m, base of unit covered
BR2001-02: Northeast Side of Fall Creek (UTM 597744E, 5786958N)			
-	-	3½	<u>Lime Mudstone</u> , as per 10934
10934	RA(u,?)	1	<u>Lime Mudstone</u> , as per 10934 with 1 to 3 per cent bitumen stain, few sand lenses to 5 cm
10933	RA(u,?)	¾	<u>Lime Mudstone</u> , light-grey weathered, light-brownish-grey fresh, few grains to 2 mm, beds 5 to 15 cm
10932	RA(l)	1½	<u>Dolomitic Calcarenite (Grainstone)</u> , as per 10931
10931	RA(l)	2½	<u>Dolomitic Calcarenite (Grainstone)</u> , light-grey weathered and fresh, beds 5 to 50 cm, crinoidal, attitude of beds 135°/43°NE
10930	RA(l)	1¾	<u>Wackestone</u> , as per 10927, partly covered
10929	RA(l)	1½	<u>Wackestone</u> , as per 10927, with some brownish material along fractures and between grains
10928	RA(l)	2	<u>Wackestone</u> , as per 10927
10927	RA(l)	1½	<u>Wackestone</u> , light-grey weathered and fresh, grains to 2 mm, massive, beds oriented 145°/40°NE
10926	RA(l)	1¼	<u>Wackestone</u> , light-grey weathered, brownish-grey fresh, massive; grab sample.
-	-	-	covered

APPENDIX 2A:

CONTINUED

Measured Intervals	Formation Member	Strat. Thick. (m)	Description
BR2001-03: East Flank of Baseline Ridge (UTM 600451E, 5783360N)			
-	RA(I)	5	similar to 10550, inaccessible and not sampled
10550	RA(I)	2¼	<u>Wackestone</u> , brownish-grey to medium-grey weathered, dark-grey fresh, grains to 2 mm
10549	RA(I)	2	<u>Calcarenite (Grainstone)</u> , light-brownish-grey weathered, light-grey fresh, massive, patches crumbly to deeply weathered, reacts well with HCl
10548	RA(I)	1¼	<u>Calcarenite (Grainstone)</u> , light-grey weathered and fresh, grains to 2 mm, massive, slightly crumbly near top
10547	RA(I)	2	<u>Calcarenite (Grainstone)</u> , as 10546
10546	RA(I)	2¼	<u>Wackestone to Calcarenite (Grainstone)</u> , light-grey weathered and fresh, grains to 3 mm, massive
10545	RA(I)	2	<u>Wackestone</u> , as per 10543
10544	RA(I)	2	<u>Wackestone</u> , as per 10543
10543	RA(I)	2	<u>Wackestone</u> , light-grey weathered, light-brownish-grey fresh, grains to 1 mm, massive, low angle cross-beds within bottom 1 m indicate flat-lying, attitude of beds 000°/00°
-	RA(I)	3½	covered
10542	RA(I)	2¼	<u>Calcarenite to Wackestone</u> , as per 10540
10541	RA(I)	2	<u>Calcarenite to Wackestone</u> , as per 10540
10540	RA(I)	2¼	<u>Calcarenite to Wackestone</u> , very light grey to light-brownish-grey, grains to 3 mm, beds 1 m to massive, reacts well with HCl
10539	Banff	2¾	<u>Lime Mudstone</u> , brownish-grey weathered, very dark grey to black fresh, micritic, beds 5 to 50 cm, attitude of beds 084°/14°S

APPENDIX 2B:

**DESCRIPTIONS OF THE 2002 SAMPLES
FROM BASELINE RIDGE, RAM RIVER AND TAWADINA CREEK**

Note: Stratigraphic thicknesses are based on measured attitudes of bedding, as listed below, with appropriate interpolations. Attitudes are strike and dip. UTM coordinates are NAD83. Samples are listed in order from stratigraphic top to bottom. Most samples consist of chips at 30 cm intervals. * denotes isolated samples.
Abbreviations: Banff - Banff Formation; RA - Rundle Assemblage, (l) lower, (u) upper; and Fernie Group - F, NM - Nordegg Member.

Measured Intervals	Formation Member	Strat. Thick. (m)	Description
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2002 TAWADINA CREEK (MAIM Permit 9301010011)

TC2002-01: West Limb of Baseline Anticline, Tawadina Creek (UTM 594425E, 5794837N)

15711	RA	3	<u>Grainstone</u> , medium-grey to brown-grey, coarse-grained, crinoids, beds 3 to 5 m, attitude of beds 178°/25° W
15712	RA	1	<u>Grainstone</u> , medium- to dark-grey, beds 15 to 30 cm
-	RA	½	Covered
15713	RA	3	<u>Grainstone</u> , medium-grey, very coarse grained, black carbonate stringers, crinoids, beds 15 to 50 cm
15714	RA	3	<u>Grainstone</u> , medium-grey, coarse-grained, crinoids, beds 50 cm to massive
15715	RA	3	<u>Grainstone</u> , medium-grey, coarse-grained, massive, crinoids
15716	RA	3	<u>Grainstone</u> , medium-grey, coarse-grained, massive, crinoids
15717	RA	3	<u>Grainstone</u> , medium-grey, coarse-grained, massive, crinoids
15718	RA	3	<u>Grainstone</u> , light-grey to medium-grey, massive, lower 30 cm is dark-grey, micritic

TC2002-02: Northwest Part of Tawadina Ridge (UTM 594458E, 5794882N)

10981	RA	1	<u>Wackestone</u> , brown-grey, grains to 3 mm, fetid odor, some bitumen filled fractures and vugs, beds 5 to 25 cm, very good reaction to HCL, attitude of beds 005°/35° W
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TC2002-03: Northwest Part of Tawadina Ridge

10982*	RA(u,?)	¼	<u>Wackestone</u> , grey, vuggy with brown material on fractures, recessive, moderate reaction to HCL (UTM 594679E, 5794732N)
10983*	RA(u,?)	½	<u>Dolomitic Limestone</u> , brown-grey, micritic, massive (UTM 594752E, 5794801N)
10984*	RA(u,?)	¼	<u>Wackestone</u> , grey, massive, fetid odor (UTM 594602E, 5794804N)
15719*	RA(u,?)	3	<u>Limestone</u> , medium-grey to dark-greyish-brown, fine- to medium-grained, attitude of beds 132°/23° NE (UTM 594108E, 5794121N)

APPENDIX 2B:

CONTINUED

Measured Intervals	Formation Member	Strat. Thick. (m)	Description
TC2002-04: South End of Tawadina Ridge (UTM 596964 - 7126E, 5792014 - 224N)			
10986	RA(u) - F	7	<u>Mudstone</u> , limy, black, fetid odor, top of unit in contact with Fernie Shales(?)
10985	RA(u)	8	<u>Mudstone</u> , limy and argillaceous, black, fetid odor, chert nodules, secondary calcite, beds to 5 cm thick, attitude of beds 140°/86° SW (overturned)
15725	RA(u)	1½	<u>Limy Mudstone</u> , (as above) beds 1 to 10 cm
15724	RA(u)	2½	<u>Limy Mudstone</u> , medium- to dark-grey, beds up to 50 cm
15723	RA(u)	6	<u>Limy Mudstone</u> , beds 2 to 30 cm
-	RA(u) - RA(l,?)	~40	Covered
15722	RA(l,?)	5	<u>Dolomitic Mudstone</u> , light-tan-grey, cryptocrystalline, bitumen stain, upper contact faulted
15721	RA(l,?)	7½	<u>Dolomitic Mudstone</u> , tan- to light-grey, microcrystalline, chert nodules to 4 cm, layers of bentonite to 2 cm, beds from 1 to 2 cm up to 20 cm, attitude of beds 130°/66° NE
15720	RA(l,?)	6	<u>Dolomitic Mudstone</u> , tan-light grey, microcrystalline, 2 cm interbeds of chert, beds few cm to 20 cm
2002 RAM RIVER (MAIM Permit 9301010011)			
RR2002-01: Ram River (UTM 595275E, 5789389N)			
15729	RA(l)	4	<u>Dolomitic Limestone</u> , medium-brownish-grey, fine-grained, fetid odor, very fractured, beds about ¼ m thick
15728	RA(l)	2½	<u>Dolomitic Mudstone</u> , limy, tan-brown, fine-grained, some thin stringers of bitumen stain, beds 30 to 50 cm
15727	RA(l)	2	<u>Dolomitic Mudstone</u> , tan, microcrystalline, recessive, some secondary calcite filled vugs, very poor reaction with HCL, beds to 10 cm, attitude of beds 138°/35° E
15726	RA(l)	1½	<u>Grainstone</u> , medium-grey, coarse-grained, massive
-	RA(l)	22+	Inaccessible cliffs along Ram River
2002 BASELINE RIDGE (MAIM Permit 9301010011)			
BR2002-01: Fall Creek, Baseline Ridge (UTM 597852E 5786742N)			
18548	Banff	> 1	<u>Grainstone</u> , dark-grey, grains to 3 mm, thin interbeds of wackestone, bitumen stain, fetid odor, beds to ¾ m
18547	Banff	1½	<u>Grainstone</u> , with some thin interbeds of <u>Wackestone</u> , dark-grey, some bitumen stain, fetid odor, beds ¼ to ¾ m
18546	Banff	2¼	<u>Grainstone</u> , with some thin interbeds of <u>Wackestone</u> , dark-grey, abundant bitumen stain, fetid odor, beds up to ¼ m
18545	Banff	2¼	<u>Grainstone</u> , dark-grey, thin interbeds of wackestone, bitumen staining, fetid odor, beds to 100 cm
18544	Banff	2	<u>Grainstone</u> , brown-grey to tan, crumbly, some bitumen stain, crinoids, very good reaction to HCL, beds to ¾ m, attitude of beds 145°/42° E
18543	Banff	1½	<u>Mudstone</u> , dark-grey, grains to 4 mm, fissile, good reaction to HCL, some secondary calcite, beds 10 cm, attitude of beds 152°/36° E

APPENDIX 2B:

CONTINUED

Measured Intervals	Formation Member	Strat. Thick. (m)	Description
BR2002-02: Northeast Flank of Baseline Ridge, South of Fall Creek (UTM 597985E 5786758N)			
11998	RA	3	<u>Wackestone</u> , brown-grey, grains to 3 mm, bitumen stain, beds few cm to 25 cm, attitude of beds 165°/45° E
11997	RA	3	<u>Wackestone</u> , brown-grey, rare crinoids, bitumen stain, some secondary calcite, good reaction to HCL, beds few cm to ½ m, attitude of beds 142°/52° E
11996	RA	2¼	<u>Wackestone</u> , medium-grey, abundant crinoids to 2 mm
11995	RA	2½	<u>Mudstone</u> , limy, dark-grey, some grains 2 mm, bitumen stain near top, beds 10 cm to 1 m
11994	RA	2¼	<u>Wackestone</u> , brown-grey, grains to 2 mm, beds 10 to 40 cm
11993	RA	2	<u>Mudstone - Wackestone</u> , brown-grey, fetid odor, beds to ¼ m
11992	RA	1½	<u>Wackestone</u> , with rare interbed of <u>Lime Mudstone</u> , brown-grey, grains to 3 mm, some bitumen stain, some secondary calcite, beds 5 cm to ½ m
11991	RA	3¼	<u>Wackestone</u> , similar to 11990
11990	RA	2	<u>Mudstone - Wackestone</u> , coarsening up, grains to 2 mm, good reaction to HCL, beds ½ m to massive
11989	RA	2	<u>Wackestone</u> , brown-grey, few corals near top of sample, beds 10 cm to ½ m
11988	RA	2	<u>Wackestone</u> , brown-grey, good reaction to HCL
11987	RA	1¾	<u>Wackestone</u> , brown-grey
11986	RA	1½	<u>Wackestone</u> , brown-grey, massive, grains to 2 mm, attitude of beds 127°/47° E
11985	RA	2	<u>Grainstone</u> , brown-grey, massive
11984	RA	2	<u>Grainstone</u> , brown-grey, massive
BR2002-03: Northwest Flank of Baseline Ridge, South of Fall Creek (UTM 597567E, 5785715N)			
15735*	RA	3½	<u>Grainstone</u> , medium-grey, very coarse grained, some crinoids, very fractured, partial repeat of sample 15734(?), beds up to 30 cm, attitude of beds 151°/34° SW, (UTM 597533E, 5785657N)
15734*	RA	2	<u>Grainstone</u> , light- to medium-grey, coarse-grained, some crinoids, attitude of beds 145°/29° SW (UTM 597508E, 5785670N)
-	RA	>1	Covered
15743	RA	1¾	<u>Grainstone</u> , light- to medium-grey, beds 15 to 30 cm
15742	RA	3	<u>Grainstone</u> , medium- to light-grey, very coarse grained, crinoids
15741	RA	3	<u>Grainstone</u> , medium- to light-grey, very coarse grained, crinoids
15740	RA	3	<u>Grainstone</u> , medium- to light-grey, very coarse grained, crinoids, attitude of beds 180°/17° W
15739	RA	3	<u>Grainstone</u> , light-grey, coarse-grained, very crumbly
15738	RA	3	<u>Grainstone</u> , medium- to light-grey, very coarse grained, crinoids
15737	RA	3	<u>Grainstone</u> , medium- to light-grey, very coarse grained, crinoids
15736	RA	3	<u>Grainstone</u> , medium- to light-grey, very coarse grained, crinoids

APPENDIX 2B:

CONTINUED

Measured Intervals	Formation Member	Strat. Thick. (m)	Description
BR2002-04: Northwest Flank of Baseline Ridge, South of Fall Creek (UTM 597439E, 5785429N)			
15829	RA	2¾	<u>Grainstone - Wackestone</u> , light-grey, crumbly, beds 1 to 10 cm
15828	RA	3	<u>Grainstone</u> , medium-brown, coarse-grained, good reaction to HCL, beds 10 to 30 cm
15827	RA	3	<u>Wackestone</u> , medium-grey, coarse-grained, some bitumen specks, beds 5 to 15 cm, attitude of beds 151°/36° SW
15826	RA	2	<u>Wackestone</u> , medium-grey, coarse-grained, beds 2 to 20 cm (UTM 597418E 5785379N)
BR2002-05: North Central Part of Baseline Ridge (UTM 598103E 5785799N)			
18533	RA	3½	<u>Wackestone</u> , with some interbeds of <u>Lime Mudstone</u> , brown-grey, some bitumen stain, fetid odor, beds up to ½ m
18532	RA	1¾	<u>Grainstone</u> , brown-grey, grains 1 to 2 mm, massive, fetid odor
18531	RA	2	<u>Wackestone</u> , light-brown to light-grey, grains to 2 mm, massive, very good reaction with HCL, thin interbed of <u>Lime Mudstone</u> at base
18530	RA	2	<u>Grainstone</u> , brown-grey, grains 1 to 2 mm, massive
18529	RA	2	<u>Grainstone</u> , brown-grey, coarse-grained, grains to 4 mm, some bitumen stain near base
18528	RA	2	<u>Mudstone - Wackestone</u> , medium-grey, rare grains to 1 mm, massive
18527	RA	2	<u>Grainstone - Wackestone</u> , brown-grey, grains to 4 mm, fines upward, very good reaction to HCL, some crinoids, attitude of beds 160°/06° E
15750*	RA	3	<u>Grainstone</u> , light grey, very coarse grained, massive (UTM 599320E 5785180N)
-	Banff	-	not sampled
BR2002-06: North Central Part of Baseline Ridge (UTM 598203E, 5785501N)			
-	RA(u)	½+	<u>Dolostone</u> , light-grey, vuggy
-	RA(u,?)	2½	<u>Wackestone</u> , brownish-grey, good reaction to HCL, beds less than ¼ m
-	RA(u,?)	3	Covered
-	RA(u,?)	1	<u>Micritic Limestone - Wackestone</u> , good reaction to HCL, rare chert nodules to 10 cm
18540	RA(u,?)	1¼	<u>Wackestone</u> , light-brownish-grey, few grains to 1 mm, good reaction to HCL
18539	RA(u,?)	2	<u>Wackestone</u> , light-brownish-grey, few grains to 1 mm, good reaction to HCL
18538	RA(u,?)	2	<u>Wackestone</u> , light-brownish-grey, few grains to 1 mm, moderate reaction to HCL, slightly dolomitic
18537	RA(u,?)	2	<u>Wackestone</u> , light-brownish-grey, few grains to 1 mm, rare fossils, good reaction to HCL, beds ½ to ¾ m
18536	RA(u,?)	1¼	<u>Dolomitic Mudstone</u> , dark-grey, microcrystalline, very poor reaction to HCL, beds 10 to 20 cm
18535	RA(u,?)	2	<u>Mudstone</u> , dark-grey, microcrystalline, rust stain along fractures, poor reaction to HCL, beds up to ¼ m, attitude of beds 134°/16° W
18534	RA(u,?)	½	<u>Wackestone - Mudstone</u> , medium-grey, fining upwards, vuggy, very good reaction to HCL, some bitumen stain, beds to ½ m

APPENDIX 2B:

CONTINUED

Measured Intervals	Formation Member	Strat. Thick. (m)	Description
BR2002-07: East Flank of Baseline Ridge (UTM 599170E, 5785045N)			
10987*	F	1½	<u>Siltstone - Shale</u> , fissile, calcareous, fetid odor, beds ½ to 5 cm, attitude of beds 148°/18° W and 122°/19° W (UTM 599308E, 5784433N)
-	RA(u) - F	~90	Covered
10988*	RA(u)	2	<u>Dolomitic Grainstone</u> , coarse-grained, light grey, beds 30 to 50 cm, attitude of beds 190°/09° W, (UTM 599129E, 5784871N)
-	RA(l, u)	~52	Covered
10989*	RA(l)	3	<u>Wackestone</u> , coarse-grained, light grey, very fractured, beds subhorizontal (UTM 599221E, 5784950N)
-	RA(l)	2	Covered
10999	RA(l)	3	<u>Wackestone</u> , medium-grey, some discernable beds at 138°/22° NE
10998	RA(l)	2	<u>Wackestone-Grainstone</u> , light- to medium-grey
10997	RA(l)	1¾	<u>Grainstone</u> , light- to medium-grey, very coarse grained, massive, crinoids
10996	RA(l)	2¼	<u>Grainstone</u> , (as above)
10995	RA(l)	3	<u>Grainstone</u> , (as above)
10994	RA(l)	3	<u>Grainstone</u> , (as above)
10993	RA(l)	3	<u>Grainstone</u> , variable light- and dark-grey, coarse-grained, crinoids, dark sections are very crumbly
10992	RA(l)	3	<u>Grainstone</u> , very coarse grained, light- to medium-grey
10991	RA(l)	3	<u>Grainstone</u> , dark-grey, very coarse grained
10990	RA(l)	3	<u>Grainstone</u> , coarse-grained, massive, crinoids
BR2002-08: East Flank of Baseline Ridge (UTM 599561E, 5784789N)			
11983	RA(u)	4¼	<u>Dolomitic Mudstone</u> , buff-brown, microcrystalline, fetid odor, beds to 10 cm
11982	RA(u)	2	<u>Dolomitic Limestone</u> , similar to 11981
11981	RA(u)	6	<u>Dolomitic Limestone</u> , tan-grey, microcrystalline with some grains to a few mm, fetid odor, minor corals, secondary calcite filled vugs, beds 10 to 20 cm
11980	RA(u)	1¾	<u>Dolomitic Mudstone</u> , grey, microcrystalline, beds to 15 cm
11979	RA(u)	3¼	<u>Wackestone</u> , tan-grey, grains to 3 mm, abundant bivalves and corals, resistant, beds to 20 cm, attitude of beds 132°/54° E
11978	RA(u)	2	<u>Dolomitic Mudstone</u> , limy, dark-brown-grey, microcrystalline, recessive, beds to 10 cm
11977	RA(u)	3½	<u>Dolomitic Limestone</u> , interbedded vuggy limestone and dolostone, tan, beds to 20 cm
11976	RA	2¼	<u>Mudstone</u> , microcrystalline, black, fetid odor, poor reaction to HCL, beds generally less than 15 cm with a few to ½ m, attitude of beds 153°/60° E
BR2002-09: East Flank of Baseline Ridge (UTM 599650E, 5784603N)			
15744	RA	1¾	<u>Grainstone</u> , medium-grey, coarse-grained, crinoids, beds 15 to 30 cm, attitude of beds 148°/55° NE (UTM 599973E 5784404N)
-	RA	~10	covered
15749	RA	2½	<u>Grainstone</u> , light-grey, coarse-grained, massive, crumbly, crinoids, attitude of beds 15 cm to ½ m
15748	RA	3	<u>Grainstone</u> , light-grey, coarse-grained, massive, crumbly, crinoids, beds ¼ to ½ m, attitude of beds 135°/26° NE
15747	RA	3	<u>Grainstone</u> , light-grey, coarse-grained, massive, crumbly, crinoids
15746	RA	3	<u>Grainstone</u> , light-grey, coarse-grained, massive, crumbly, crinoids
15745	RA	3	<u>Grainstone</u> , medium- to light-grey, coarse-grained, massive, crinoids

APPENDIX 2B:

CONTINUED

Measured Intervals	Formation Member	Strat. Thick. (m)	Description
BR2002-10: East Flank of Baseline Ridge (UTM 599673E, 5784238N)			
18523*	RA	1	<u>Dolomitic Mudstone</u> , microcrystalline, vuggy, flat-lying (UTM 600007E, 5783966N)
18524*	RA	1½	<u>Grainstone</u> , brown-grey, crumbly, attitude of beds 008/08° W (UTM 599943E, 5784107N)
-	RA	~25	Covered
18526	RA	1¼	<u>Wackestone - Grainstone</u> , brown-grey, grains to 4 mm, vuggy, crumbly
-	RA	1½	Covered
18525	RA	½	<u>Wackestone - Grainstone</u> , brown-grey, grains to 4 mm, crinoids and brachiopods, beds to 50 cm, attitude of beds 007°/10° W
BR2002-11: East Flank of Baseline Ridge (UTM 600249E, 5784127N)			
18517*	RA(u)	2¼	<u>Grainstone - Wackestone</u> , light-brown-grey, massive, good reaction to HCL, rare fossils (UTM 600254E, 5784330N)
-	RA	~45	Covered
18516	RA	1½	<u>Mudstone</u> , dark-grey, microcrystalline, poor reaction to HCL, vuggy, recessive, beds up to 15 cm
18515	RA	3½	<u>Mudstone - Wackestone</u> , limy, brown-grey, coarsens up, moderate reaction to HCL, beds up to ½ m
18514	RA	2¼	<u>Grainstone</u> , brown-grey, grains 1 to 2 mm, very good reaction to HCL, beds ¼ to ½ m, attitude of beds 157°/52° E
18513	RA	2¾	<u>Mudstone</u> , dark-grey, microcrystalline, limy, slow reaction to HCL, rare grain to 2 mm, beds up to ½ m
18512	RA	2¼	<u>Grainstone</u> , grey-brown, grains to 3 mm, upper 1 m crumbly, crinoids and ooids, beds up to ½ m
18511	RA	2	<u>Grainstone</u> , light-brown-grey, grains to 5 mm, crinoids and ooids, beds to ¼ m
18510	RA	2	<u>Grainstone</u> , brown-grey, grains to 5 mm, crumbly in lower 1 m, crinoids and ooids, beds to ½ m
18509	RA	¾	<u>Dolomitic Mudstone</u> , tan, microcrystalline with some grains to 2 mm, recessive, beds 10 to ¼ m
18508	RA	1¾	<u>Dolomitic Wackestone</u> , brown-grey, grains to 5 mm, abundant fossils, beds to ¼ m, attitude of beds 142°/62° E
18507	RA	1½	<u>Dolomitic Mudstone</u> , brown-grey, microcrystalline, platy, secondary calcite fossil replacement
18506	RA	2	<u>Wackestone</u> , brown-grey, coarsens up, grains from less than 1 to 2 mm, fractured, beds 10 to 20 cm
18505	RA	2	<u>Wackestone - Mudstone</u> , light-grey, very fine grained, rare fossils, massive, fetid odor
18504	RA	2	<u>Wackestone - Mudstone</u> , light-grey, very fine grained, rare fossils, massive, rare bitumen stain, good reaction to HCL, fetid odor
18503	RA	2	<u>Grainstone</u> , brown to light-grey, grains to 3 mm, massive
18502	RA	2¼	<u>Grainstone to Wackestone</u> , brown-grey, grains to 2 mm, crumbly, crinoids and ooids, massive
-	RA	~3	Covered
18501	RA	1	<u>Grainstone</u> , light-grey, grains to 4 mm, massive, ooids and crinoids, attitude of beds 142°/58° E (UTM 600179E, 5784111N)

APPENDIX 2B:

CONTINUED

Measured Intervals	Formation Member	Strat. Thick. (m)	Description
18518*	RA	½	<u>Grainstone</u> , brown-grey, grains to 4 mm, crumbly, crinoids, attitude of beds 134°/52° E (UTM 600352E, 5783910N)
BR2002-12: East Flank of Baseline Ridge			
18522	RA	3	<u>Grainstone - Wackestone</u> , light-grey, grains to 4 mm, partially crumbly, massive, attitude of beds 120°/21° E (UTM 600271E, 5783826N)
18521	RA	2	<u>Wackestone</u> , brown-grey, massive, grains to 2 mm
18520	RA	2	<u>Wackestone - Grainstone</u> , brown-grey, grains to 4 mm, some crinoids, crumbly, attitude of beds 125°/22° E
18519	RA	2¾	<u>Grainstone</u> , light-grey, massive, crinoids
BR2002-13: Northeast and Downslope of Main Peak Atop Baseline Ridge (UTM 600735E, 5783159N)			
15730	RA(u)	~8	<u>Dolomitic Mudstone</u> , tan-brown, micritic, scree and rubble grab sample
-	RA(u)	~3	covered
15731	RA(u)	8	<u>Grainstone</u> , variable lithology, some collapse breccia, fine-bedded to ¼ m
15732	RA(u)	12	<u>Grainstone - Wackestone - Mudstone - Dolostone</u>
15733	RA(u)	10	<u>Limy Dolostone</u> , variable composition, tan-grey, medium-grained, attitude of beds 040°/04° SE

APPENDIX 3: STATEMENT OF QUALIFICATIONS

Mark D. Smith obtained a B.Sc. (Honors) and a M.Sc. in geology from the University of Alberta, Edmonton in 1998 and 2002, respectively. He is registered as a Geol.I.T. with the Association of Professional Engineers, Geologists and Geophysicists of Alberta. He has 4 years of experience in mineral exploration.

The work described in the report was under the supervision J.R. Dahrouge who obtained degrees in geology and computing science from the University of Alberta, Edmonton in 1988 and 1994, respectively. He has more than 10 years of experience in mining exploration. He is a member of the Canadian Institute of Mining and Metallurgy and is registered as P. Geol. with the Association of Professional Engineers, Geologists, and Geophysicists of Alberta.

Neither M.D. Smith or J.R. Dahrouge hold any direct or indirect interest in metallic and industrial minerals permit 9301010011, which is the subject of this report.

LEGEND AND SYMBOLS

JURASSIC AND CRETACEOUS

4 Undivided

CARBONIFEROUS

Rundle Assemblage

3 Turner Valley Formation: dense and porous dolomite, argillaceous dolomite, limestone

Shunda Formation: silty dolomite, cherty and dolomitic limestone, shale, anhydrite

Pekisko Formation: finely to coarsely crystalline calcarenite, fine-grained dolomite

2 Banff Formation: argillaceous and cherty limestone, fissile and calcareous shale

DEVONIAN

1 Palliser Formation: massive mottled limestone and dolomite, porous and vuggy dolomite, argillaceous limestone

Geological boundary (defined, approximate) - - - - -

Fault (defined, approximate) - - - - -

Bedding (inclined, overturned) - - - - -

Observed outcrop *

Synclinal axis (arrow indicates plunge) - - - - -

Anticlinal axis (arrow indicates plunge) - - - - -

Sample section with numbers - - - - -

Isolated sample with number - - - - -

Location of cross-section - - - - -

Road, gravel, all weather - - - - -

Road, loose surface, dry weather - - - - -

Rough road or trail - - - - -

Boundary of land use zone; number - - - - -

MAIM Lease or Permit area - - - - -

Tp 38

Tp 38

Tp 37

Tp 37

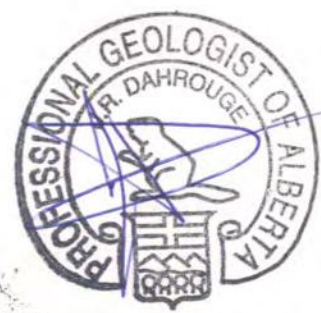
R 12 W5

R 11 W5

GRAYMONT WESTERN CANADA INC.
MAIM Permit 9301010011

NOTES

- 1) Geology modified after Henderson (1943,1944), Dahrouge and Halferdahl (1995), and Dahrouge (2003).
- 2) To accompany Graymont Western Canada Inc. Assessment Report entitled "2001 and 2002 Exploration and Fieldwork Along the Northern Part of Clearwater Range West-Central Alberta" dated 2003 01 31.



REVISIONS		GRAYMONT WESTERN CANADA INC.
BY	DATE	DAHROUGE GEOLOGICAL CONSULTING LTD.
WM	2002.06	Edmonton, Alberta
WM	2003.01	
MAIM PERMIT 9301010011		
Fig. 6.1 Geology and Sample Locations Along the Northern Part of Clearwater Range		
0 1 2 km		
Scale: 1:25 000		
2001.05		