MAR 20040007: WEST CENTRAL

Received date: Jun 10, 2004

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GRAYMONT WESTERN CANADA INC.

2003 EXPLORATION AND FIELDWORK AT THE CORKSCREW MOUNTAIN METALLIC AND INDUSTRIAL MINERALS PERMIT WEST-CENTRAL ALBERTA

Metallic and Industrial Minerals Permit
9396020019

Geographic Coordinates

51°58' N to 52°15' N
115°15' W to 115°35' W

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

June 4, 2004

by

J.R. Dahrouge, B.Sc., P.Geol.
R. Wolbaum, B. Sc., Geol. I.T.

Dahrouge Geological Consulting Ltd.
18, 10509 - 81 Avenue
Edmonton, Alberta
T6E 1X7

MINING GEOLOGY
MINERAL EXPLORATION
INDUSTRIAL MINERALS
COAL

dahrouge geological consulting ltd.

consulting geologists

June 08, 2004

Attention: Hazel Henson
Senior Administrator

Coal and Mineral Development Unit
Alberta Department of Energy
7th Floor, North Petroleum Plaza
9945 - 108 Street
Edmonton, AB T5K 2G6

Dear Hazel:

Re: Metallic & Industrial Minerals Permit No(s). 9396020019

In connection with the above noted metallic and industrial minerals (MAIM) permit, we are enclosing herewith one bound copy and one unbound copy of an assessment report entitled "2003 Exploration and Fieldwork at the Corkscrew Mountain Metallic and Industrial Minerals Permit, West-Central Alberta". Dahrouge Geological Consulting Ltd. is filling the aforementioned assessment on behalf of Graymont Western Canada Inc.

The entirety of Permit 9396020019 will be kept in good standing, it will not be amended. Excess expenditures, as discussed in Section 4.3 of the attached report, are to be assigned to permit 9396020019.

Also attached are the following:

a) a letter of authorization for the reproduction or copying of the attached report; and
b) a letter of authorization from Graymont Western Canada Inc. authorizing Dahrouge Geological Consulting Ltd. to act on their behalf.

If you have any question pertaining to the letter of authorization, please contact Mr. Mark Gidluck at Graymont Western Canada Inc., his telephone number is (403) 219-1308. Please advise if you require any additional information.

Yours very truly,
DAHROUGE GEOLOGICAL

[redacted]

Jody Dahrouge, B.Sc., P.Geol.

Encl.

cc. Mr. Mark Gidluck
Graymont Western Canada Inc.
Mr. Peter Darbyshire
Graymont Western Canada Inc.

Suite 18, 10509 - 81 Avenue,
Edmonton Alberta, T6E 1X7

PH: (780)434-9808 FAX:(780)439-9789
email: jody@dahrouge.com

GRAYMONT WESTERN CANADA INC.
190, 3025 - 12th Street N.E.
Calgary, Alberta
T2E 7J2

Bus: 403 250-9100
Fax: 403 291-1303
www.graymont.com

GRAYMONT

April 19, 2004

Alberta Resource Development
Mineral Operations
2nd floor North Tower, Petroleum Plaza
9945 - 108 Street
Edmonton, AB T5K 2G6

To Whom It May Concern:

Re: Authorization

This letter authorizes Mr. Jody Dahrouge of Dahrouge Geological Consulting Ltd. in Edmonton, Alberta to file assessment work and make amendments to Metallic and Industrial Minerals Permits on behalf of Graymont Western Canada Inc.

Yours truly,

[redacted]

Marcus J. Gidluck, P.Geol.
Division Geologist
Graymont Western Canada Inc.

cc. J. Dahrouge

MINING GEOLOGY
MINERAL EXPLORATION
INDUSTRIAL MINERALS
COAL

dahrouge geological consulting ltd.
consulting geologists

2004-06-08

Alberta Resource Development
Mineral Operations
2nd floor North Tower, Petroleum Plaza
9945 - 108 Street
Edmonton, AB T5K 2G6

Re: **Reproductions**

Dahrouge Geological Consulting Ltd. hereby authorizes the Government of Alberta to reproduce or copy the attached Assessment Report, entitled "2003 Exploration and Fieldwork at the Corkscrew Mountain Metallic and Industrial Minerals Permit, West Central Alberta" at the end of the one year confidentiality period.

Yours very truly,
DAHROUGE GEOLOGICAL

[redacted]

Jody Dahrouge, B.Sc., P.Geol.

Suite 18, 10509 - 81 Avenue,
Edmonton Alberta, T6E 1X7

PH: (780)434-9808 FAX:(780)439-9789
email: dahrouge@telusplanet.net

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1. SUMMARY

During late June and July, 2003 Paleozoic carbonate units were examined and sampled at Corkscrew Mountain, Idlewilde Mountain and Oradea Ridge, all within Metallic and Industrial Minerals (MAIM) Permit 9396020019. The 2003 exploration was conducted as a follow-up to previous exploration at and near Corkscrew Mountain during the summers of 1997, 1999 and 2001.

During 2003, carbonate units within Banff and Rundle assemblages were examined and stratigraphic thicknesses recorded. About 37 m of the Banff Assemblage was examined, and more than 426 m of the Rundle Assemblage. In total approximately 463 m of strata was examined from more than 1431 m normal thickness measured at 42 locations. In preparation for a future drill program, approximately 2.4 line-km of access trails were flagged on the west flank of Corkscrew Mountain.

High-quality carbonate units were identified in both the Banff and Rundle assemblages. Limestone units within the Banff Formation are generally less than several meters thick. The Rundle Assemblage includes various thicknesses of coarse-grained grainstone, peloidal wackestone and lime mudstone.

As a previous assessment report (Dahrouge, 2002) includes descriptions of geographic setting, history and previous investigations, most of that information is not repeated here. 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. A magnetic declination of 18° east was used. Where bedding has been obscured by structure, stratigraphic thicknesses were calculated using orientations from adjacent units. Where more than one bedding orientation was measured, the mean orientation is used.

2. INTRODUCTION

During the summer of 2003, Dahrouge Geological Consulting Ltd. on behalf of Graymont Western Canada Inc. conducted exploration for high-quality carbonate lithotypes within west-central Alberta. This assessment report describes the exploration conducted within MAIM Permit 9396020019, which encompasses the northern parts of Clearwater and Marble ranges of the Alberta Foothills. It includes information on the geology and structure of more than 42 stratigraphic sections examined during July, 2003; as well as, a brief interpretation of the results. Peter Darbyshire, Vice President and General Manager for Graymont Western Canada Inc. authorized this work.

3. GEOGRAPHIC SETTING AND ACCESS

Corkscrew Mountain, Oradea Ridge and Marble Mountain form the southern part of Clearwater Range west of Caroline, Alberta. Caroline is located less than 15 km south of Rocky Mountain House. Corkscrew Mountain and parts of Oradea Ridge are within MAIM Permit 9396020019 and Marble Mountain is within MAIM Permit 9398100125, both are held by Graymont Western Canada Inc. About 10 km west of Clearwater Range, Idlewilde Mountain and Limestone Mountain form the northerly trending Limestone Range. The western part of MAIM Permit 9396020019 encompasses Idlewidle Mountain along the northern part of Limestone Range.

Access to Clearwater Range is from Caroline, about 30 km westerly on secondary road 591 to a southerly branch of Forestry Trunk Road 40 (Fig. 3.1). This branch of Forestry Trunk Road is about 4 km east of the Limeco Quarry. It continues southerly and is approximately parallel to Marble Mountain at a distance of about 3 km. From the Limeco Quarry at the south end of Corkscrew Mountain, Forestry Trunk Road 40 continues northwest for about 5 km along the west flank of Corkscrew Mountain. There it turns westerly and continues on to Idlewilde Mountain.

For ease of referencing geographic locations, informal names have been assigned to creeks, mountains and other features without names on published maps.

TABLE 4.1 DESCRIPTION OF MAIM PERMIT9396020019 OF GRAYMONT WESTERN CANADA INC.

Permit	Comm. Date	Expiry Date	Land Description (Tp-RW5)	Size (Ha)
Corkscrew Mountain MAIM Permit 9396020019*				
9396020019 (Current)	Feb. 29, 1996	Feb. 28, 2004	35-9W5 (Sections: 5L5,L6,L12,L13; 6L1,L8; 7SE,L3,L6) 35-10W5 (Sections: 1N; 2NE; 11; 12SW,L2,L7,L11-L13; 14S,NW,L9,L10,L15; 15L1,L8) 35-11W5 (Sections: 2W,L7,L10,L16; 3; 10SE,L3,L6,L9,L10, L11, L16; 11L4,L5,L12,L13; 12L1,L2,L3,L4,L6,L7,L13,L14; 13L4,L5; 14NE,L1,L8; 15L1,L6,L11,L12; 22L13,L14; 23L2,L3,L6,L7,L11, L13,L14; 26L4,L5; 27SW,L2,L7,L8,L11,L12; 28L1,L7,L8)	2400

* Report deadline is May 28, 2004 plus 30 days.

4. PROPERTY, EXPLORATION AND EXPENDITURES

4.1 MAIM PERMIT 9396020019

In 1996, Graymont Western Canada Inc. (nee: Continental Lime Ltd.) acquired MAIM permit 9396020019 to cover Paleozoic limestones at Corkscrew and Idlewilde mountains, west of Caroline, Alberta (Fig's. 3.1 and 3.2). The permit is divided into two parts: the eastern part covers Paleozoic limestones along the central part of Clearwater Range at Corkscrew Mountain and Oradea Ridge, while the western part covers Paleozoic limestones at the north end of Limestone Range at Idlewilde Mountain.

The original area of MAIM permit 9396020019 totaled 8,816 hectares (Fig. 3.2). Based on exploration conducted in 1997, 1999 and 2001, the permit area was reduced to 2,400 hectares (Dahrouge, 2002). Given the 2003 exploration expenditures of $34,388.44 (Appendix 1; Section 4.3), the entirety of MAIM permit 9396020019 will be maintained (Table 4.1).

4.2 2003 EXPLORATION

During 2003, parts of Oradea Ridge, Corkscrew Mountain and Idlewilde Mountain, all within MAIM Permit 9396020019, were examined for high-quality carbonate rocks by Dahrouge Geological Consulting Ltd. on behalf of Graymont Western Canada Inc. Carbonate outcrops were examined at more than 42 locations (Appendix 2; Fig. 4.1, Table 4.2). A total of 272 discrete intervals representing a total of about 1431 m of strata were examined.

In addition, approximately 2.4 line-km of access trails were flagged for future access to proposed drill hole locations on the northwest flank of Corkscrew Mountain (Fig 4.2).

TABLE 4.2 LOCATIONS EXAMINED IN 2003*

Section Number	Location	Intervals	Strat. Thick. (m)*	Measured Thick. (m)°
	Corkscrew Mountain			
CS2003-1	North of Area A00; Upper Creek Valley	16	15 ¾	169
CS2003-2	North of Area A00; Creek Valley	10	9 ¼	28 ½
CS2003-3	Area A0; Northeast	20	26	~70 ½
Isolated	Area A0	4	1 ½	1 ½
CS2003-4	Area A0; Southeast	7	9 ¾	114 ¾
CS2003-5	Area A1; Northeast	15	32 ¼	107
CS2003-6	Area A1; South Flank	4	4 ¾	44 ¾
CS2003-7	Area A1; South Flank	13	15 ½	37 ½
CS2003-8	Area A1	2	3	3 ½
Isolated	East of Area A1	5	~3 ¾	~3 ¾
CS2003-9	Area A2; Northeast Ridgeline	9	17 ¼	38 ¼
CS2003-10	Secondary Peak; Northeast of Main Peak	8	15	17
Isolated	100m downslope from CS2003-10	1	3	3
CS2003-11	Main Peak; Corkscrew Mountain	10	22 ¼	22 ¼
CS2003-12	Main Ridge; Southeast of Peak	6	8 ½	33 ½
CS2003-13	Southeast of Area A3	2	3	3
CS2003-14A	Area A4	6	13 ¾	18 ¼
CS2003-14B	Area A4 (Repeat lower part CS2003-14A)	2	4 ¼	4 ¼
CS2003-14C	Area A4 (Repeat lower part CS2003-14A)	2	3 ¾	3 ¾
CS2003-15	Area A4; Creek Valley	12	14	40 ½
CS2003-16	Area A4; South End Corkscrew Mountain	4	~2 ¾	~16 ¾
CS2003-17	Area A4; South Flank Creek Valley	7	10 ¼	31
CS2003-18	Southwest of Area A4	9	17 ¼	92 ¼
CS2003-19	South of Area A4	8	10 ¾	23 ¾
Bulk	West Flank Corkscrew Mountain	11	12	12
CS2003-20	West Flank, Oradea Ridge	11	33	135
CS2003-21	West Flank, Oradea Ridge	3	9	9
CS2003-22	Peak, Oradea Ridge	14	27 ¾	33 ½
CS2003-23	South Flank, Oradea Ridge	3	8 ½	18 ½
Isolated	South Flank, Oradea Ridge	1	~2 ½	~ 2 ½
		225	360	1139
	Idlewilde Mountain			
ID2003-1	West Flank; ~640m WNW of Main Peak	2	3 ¾	3 ¾
ID2001-2	Upper SW Flank; ~300m S of Main Peak	11	20 ¾	82 ¾
ID2001-3	Southwest Flank; ~1km SW of Main Peak	5	9 ½	69 ½
ID2001-4	Southwest of Clearwater River	14	31 ½	11¼
ID2001-5	~400m NW of Confluence of Rocky Creek and Clearwater River	15	37 ½	47 ½
		47	103	292

* Stratigraphic thicknesses are examined thicknesses.
° Measured thicknesses are total investigated thicknesses, including covered and unexamined intervals.

4.3 EXPLORATION EXPENDITURES

During 2003, exploration expenditures for MAIM permit 9396020019 totaled $34,388.44 (Appendix 1). In addition, prior excess expenditures of $18,883.52 were previously credited to MAIM Permit 9396020019 for the assessment period 'Years 7 and 8'. Hence, the combined expenditures total $53,271.96 (Table 4.3). Based on a permit area of 2400 hectares and assessment requirements of $15 per hectare for the remaining two assessment periods, minimum expenditures of $36,000 are required to keep the permit in good standing.

TABLE 4.3 **ALLOCATION OF EXPENDITURES***

Permit	Assessment Period	Expected Expiry Date	Permit Area*	Required Expenditures*	Assigned Expenditures*
9396020019	Years 7 & 8	2006-02-29	2400	$ 36,000.00	$ 36,000.00
	Years 9 & 10	2008-02-29	2400	$ 36,000.00	17,271.96
				Total:	$ 53,271.96

* Based upon the permit area of Section 4.1

5. REGIONAL GEOLOGY

Clearwater and Limestone Ranges of the Alberta Foothills, were previously mapped according to NTS map sheets by the following officers of the Geological Survey of Canada:

NTS Map Sheet	Reference
82 O/14 W½ (Limestone Mountain)	Ollerenshaw (1968)
82 O/14 E½ (Marble Mountain)	Ollerenshaw (1965)
83 B/3 W½ (Tay River)	Henderson (1944); (1945a)
83 B/4 E½ (Fall Creek)	Henderson (1945b); (1946)
83 B/5 E½ (Saunders)	Erdman (1950)

At Clearwater and Limestone ranges, carbonate lithologies are known to occur within both Palaeozoic and Mesozoic sequences. Palaeozoic limestones are described in the Upper Devonian Palliser Formation, Upper Devonian to Lower Carboniferous Banff Formation and the Lower Carboniferous Rundle Assemblage. Limited quantities of limestone have been produced from the upper part of the Banff Formation and the lower part of the Rundle Assemblage at the Limeco Quarry at the south end of Corkscrew Mountain. Mesozoic carbonate rocks are known in the Nordegg Member of the Fernie Group.

As previous reports (Pana and Dahrouge, 1998; Dahrouge, 2000 and 2002) include detailed descriptions of the statigraphy and structure of Clearwater and Limestone ranges, that information is not repeated herein. New information bearing on these subjects is, however, included.

6. PERMIT GEOLOGY

6.1 MEASURED SECTIONS

Carbonate lithologies of the Banff and Rundle assemblages were examined and measured along the central part of Clearwater Range at Corkscrew Mountain and Oradea Ridge; and along the northern part of Limestone Range at Idlewilde Mountain. During June and July, 272 discrete intervals were examined at the 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 272 intervals represent a stratigraphic thickness of about 463 m and were collected from an investigated stratigraphic thickness that exceeds 1431 m.

6.2 STRATIGRAPHY

Palaeozoic limestones of the Mississippian Banff Formation and the Rundle Assemblage are exposed on Corkscrew Mountain, Oradea Ridge and Idlewilde Mountain. The Banff Formation consists of thin-bedded argillaceous and calcareous siltstone, and silty limestone. It is more than 200 m thick. According to Dahrouge (2002; p.7)

> "Along the southwest flank of Corkscrew Mountain the lower part of the Rundle Assemblage exceeds 65 m (Dahrouge, 2000). Due to poor exposure, thickness and correlation of the various subunits of the Rundle Assemblage is uncertain. Limited examinations along Marble Mountain Anticline at Oradea Ridge and Marble Mountain, indicated similar stratigraphy to that observed at Corkscew Mountain.
>
> At Oradea Ridge, two intervals with appreciable thicknesses of coarse-grained limestone are separated by approximately 10 m of dolomite and dolomitic limestone."

At Corkscrew Mountain the lower part of the Rundle Assemblage includes thick-bedded to massive, medium- to coarse-grained, crinoidal grainstone and wackestone, with interbeds of lime mudstone and dolomite. The apparent thickness of the lower part of the Rundle Assemblage may increase from the west to the east. At some locations on the west flank of Corkscrew Mountain, limestone units within the lower part of the Rundle Assemblage are less than 10 m thick; to the east thicknesses of more than 15 m were obtained (Appendix 2).

6.3 STRUCTURE

As previously indicated by Dahrouge (2002; p.6)

"At Clearwater Range are a series of northwest trending anticlines and synclines, from southwest to northeast: Corkscrew Mountain Anticline, Corkscrew Mountain Syncline, and Marble Mountain Anticline (Ollerenshaw, 1968). The southwest limb of Corkscrew Mountain Anticline is cut by the southwest dipping Corkscrew Mountain Thrust, and its east limb is cut by an east-dipping backthrust. A detailed account of the pertinent structures is provided by Dahrouge (2000).

Prominent dip-slopes and partial dip-slopes are present along the west flank of Corkscrew Mountain, with dips of between 10° to 40° SW. Along the northwestern part of Corkscrew Mountain, dipslopes at Areas A0 to A4, are underlain by Paleozoic limestones of the Banff Formation and Rundle Assemblage.

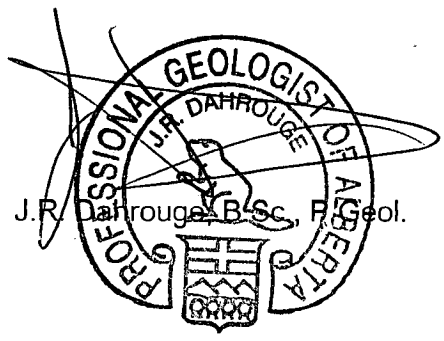
North of Clearwater River, near the northern terminus of the Marble Mountain Anticline, dips vary from 20° to 80°. A dip-slope on the west flank of Oradea Ridge, with dips of 20° to 50° SW, is underlain by the Rundle Assemblage."

7. CONCLUSIONS

Carbonate intervals of the Banff Formation and the Rundle Assemblage were examined at several locations at Corkscrew Mountain, Oradea Ridge and Idlewilde Mountain. The Banff Formation is greater than 200 m thick and is comprised of thin-bedded argillaceous and calcareous siltstone, and silty limestone. The limestone units with the Banff Formation are generally less than ten meters thick.

At Corkscrew Mountain, the thickness of limestone units within the Rundle Assemblage is variable. The lower part of the Rundle Assemblage includes thick-bedded to massive, medium- to coarse-grained, crinoidal grainstone and wackestone, with interbeds of lime mudstone and dolomite.

R. Wolbaum, B.Sc., Geol.I.T.



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

Edmonton, Alberta

June 4, 2004

8. REFERENCES

Dahrouge, J.D. (2000) Exploration for High-Calcium Limestone at Clearwater and Limestone Ranges of West-Central Alberta; ass. rept. On MAIM Permits 9396020019 and 9398100125 for Continental Lime Ltd., Dahrouge Geological Consulting Ltd., 20 p., 5 App., 10 Fig., 5 Tables.

Dahrouge, J.D. (2002) 2001 Exploration for High-Calcium Limestone at Clearwater and Limestone Ranges of West-Central Alberta; ass. rept. on MAIM Permits 9396020019 and 9398100125 for Graymont Western Canada Inc., Dahrouge Geological Consulting Ltd., 10 p., 4 App., 8 Fig., 4 Tables.

Erdman, O.A. (1950) Alexo and Saunders map-areas, Alberta; Geol. Surv. Can. Mem. 254.

Henderson, J.F. (1944) Tay River map-area, Alberta; Geol. Surv. Can. Paper 44-26.

_____ (1945a) Tay River; Geol. Surv. Can. Map 840A.

_____ (1945b) Fall Creek map-area, Alberta; Geol. Surv. Can. Paper 45-19.

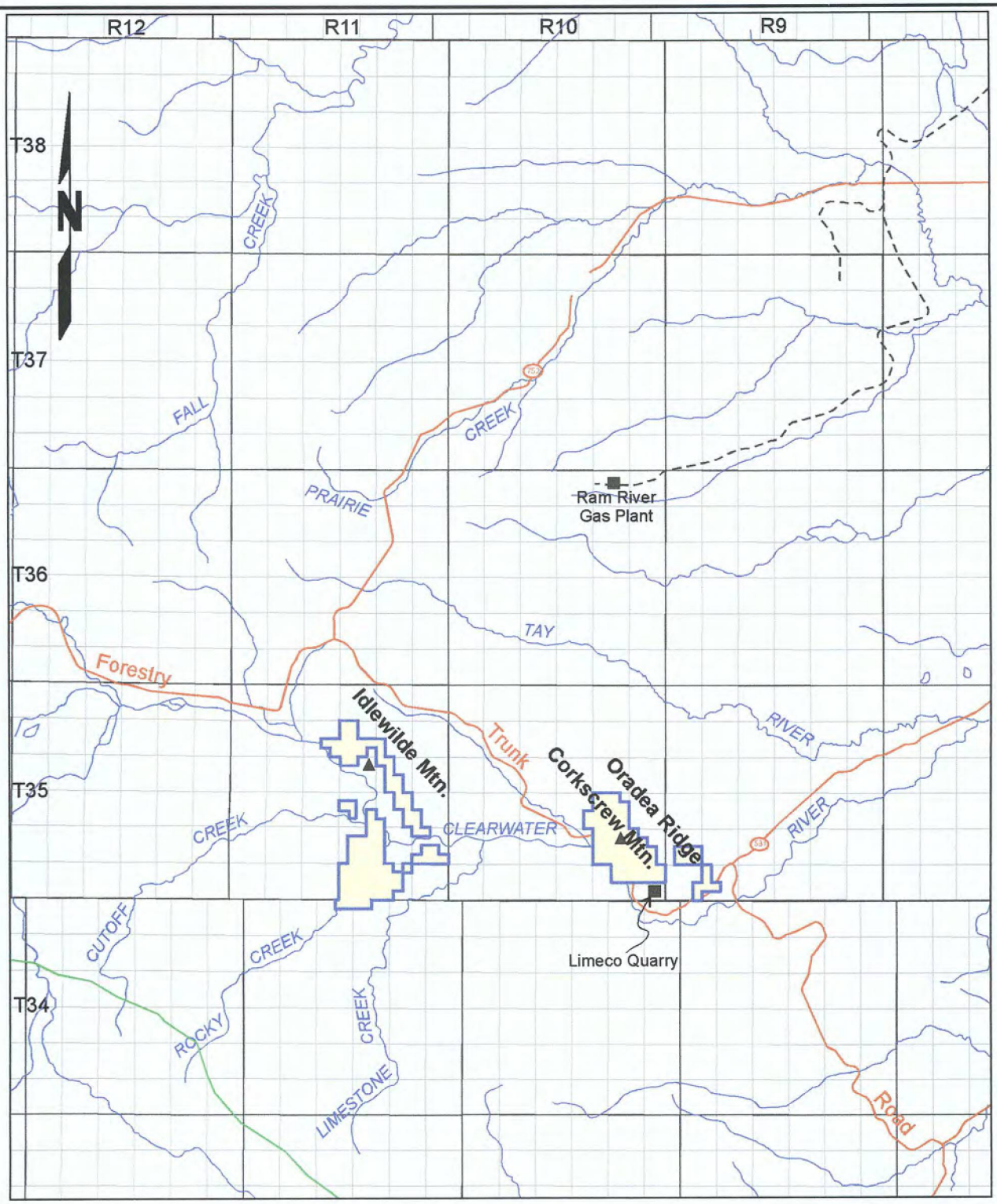
_____ (1946) Fall Creek; Geol. Surv. Can. Map 883A.

Holter, M.E. (1990) An evaluation of Alberta limestones for use as paper filler materials; Alta. Geol. Surv., Alta. Res. Coun. Open File Rept. 1990-11., 63 p., 30 figs., 3 appendices.

Ollerenshaw, N. C. (1965) Burnt Timber Creek: Geol. Surv. Can., Map 11-1965 (with marginal notes).

_____ (1968) Preliminary account of the geology of Limestone Mountain map-area, southern Foothills, Alberta; Geol. Surv. Can. Paper 68-24.

Pana, D., and Dahrouge, J., (1998) 1997 Exploration Near Corkscrew and Idlewilde Mountains, West-Central Alberta; ass. rept. On MAIM Permit 9396020019 for Continental Lime Ltd., Halferdahl and Associates (a division of Dahrouge Geological Consulting Ltd.), Alta. Geol. Surv. Index No. 19980013, Edmonton, 17 p., 8 App., 6 Fig., 4 Tables.



LEGEND & SYMBOLS

- Metallic and Industrial Minerals Permit #9396020019
- Highway or Secondary Road
- Railway
- Park or Protected Area

SCALE
(approx. 1: 256 000)
0 5 10
kilometers

GRAYMONT WESTERN CANADA INC.

DAHROUGE GEOLOGICAL CONSULTING LTD.
EDMONTON, ALBERTA

CORKSCREW MOUNTAIN, ALBERTA

Fig. 3.1 Location Map

RW 2004.05

Corkscrew Mountain Permit

Current area of MAIM Permit 9396020019
(2,400 ha.)

Scale 0 1 2 5 10 Kilometers

GRAYMONT WESTERN CANADA INC.

DAHROUGE GEOLOGICAL CONSULTING LTD.
Edmonton, Alberta

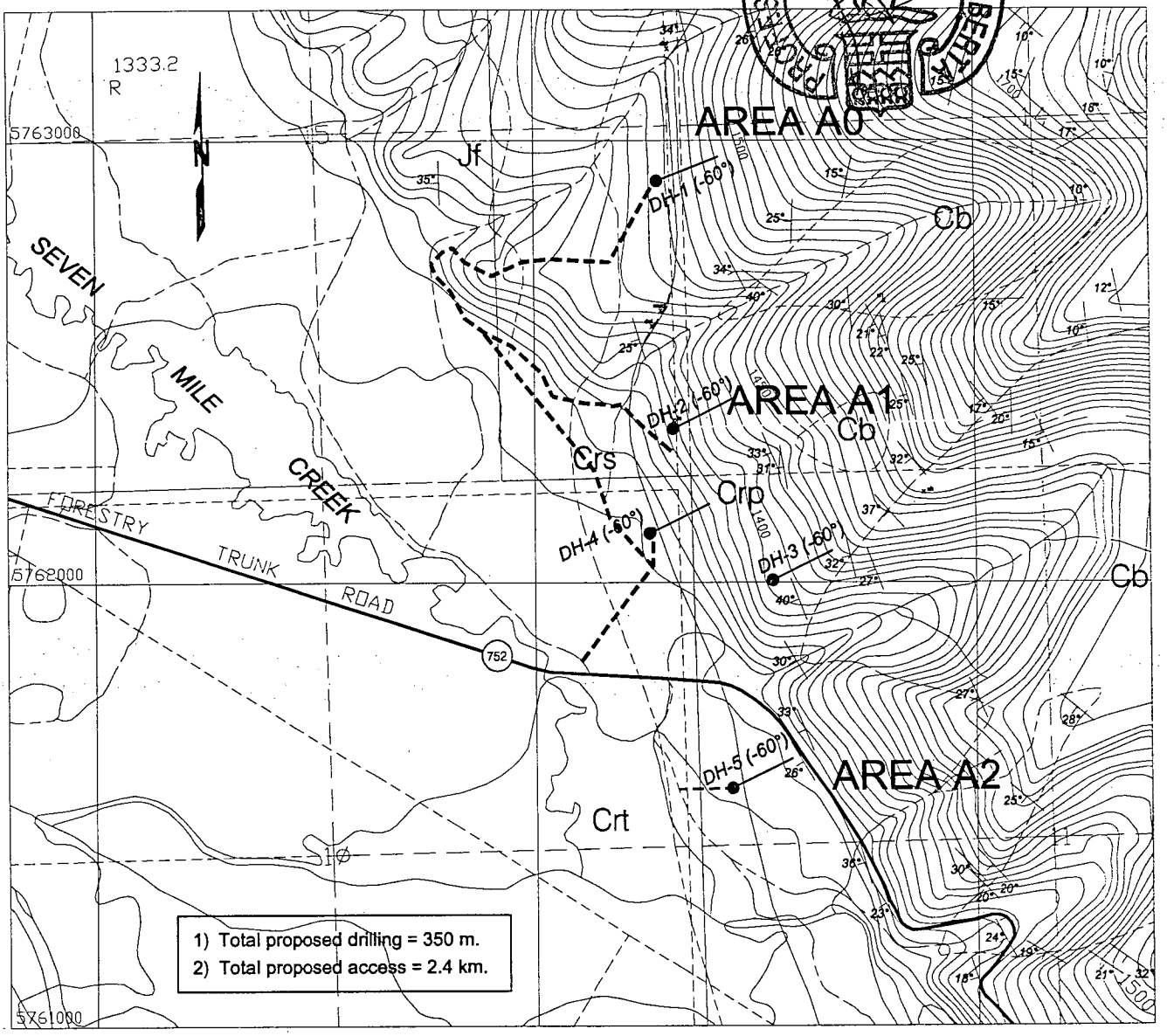
WEST-CENTRAL ALBERTA

Fig. 3.2
Metallic and Industrial Minerals
Permit 9396020019

JD 2002.06

F2

F3



LEGEND AND SYMBOLS

JURASSIC AND LOWER CRETACEOUS
FERNIE GROUP
Jf — Undivided: shale; sandstone, and carbonates

CARBONIFEROUS
RUNDLE GROUP
Crt — Turner Valley Formation: dolomite, argillaceous dolomite, limestone
Crs — Shunda Formation: thin-bedded, silty dolomite, cherty and dolomitic limestone, shale, anhydrite
Crp — Pekisko Formation: fine to coarse calcarenite, fine-grained dolomite

Cb — Banff Formation: argillaceous, cherty limestone; fissile and calcareous shale

Geological boundary (approximate)
Bedding (inclined, vertical, overturned, horizontal)
Fault (approximate)
Synclinal axis (arrow indicates plunge)
Anticlinal axis (arrow indicates plunge)
Elevation contour (interval: 10 m)
Secondary highway with number
Gravel road, dry weather
Trail or cut line
MAIM Permit boundary
Proposed drill hole
Proposed drill access

GRAYMONT WESTERN CANADA INC.

DAHROUGE GEOLOGICAL CONSULTING LTD.
Edmonton, Alberta

CLEARWATER RANGE, WEST-CENTRAL ALBERTA

Fig. 4.2
Proposed Drill Holes and Access at Corkscrew Mountain

0 1 km
Scale: 1:10,000

WM 2004.05

APPENDIX 1: ITEMIZED COST STATEMENT FOR METALLIC AND INDUSTRIAL MINERALS PERMIT 9396020019 OF GRAYMONT WESTERN CANADA INC.

a) Personnel

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

11.0	days	field work and travel between June 28 and July 8, 2003	
2.2	days	preparations for field, organizing, supervising and preparing report	
[redacted]			[redacted]

S. Fraser, M.Sc., P.Geol.

11.0	days	field work and travel between June 28 and July 8, 2003	
5.0	days	review section description, plot field data to maps	
[redacted]			[redacted]

B. Gonek, B. Sc.

9.0	days	field work and travel between June 28 and June 30, and July 3 and 8, 2003	
4.7	days	plotting unit contacts and sample locations	
[redacted]			[redacted]

J. Lundin, Assistant

11.0	days	field work and travel between June 28 and July 8, 2003	
[redacted]			[redacted]

W. McGuire, Draftsperson

10.1	days	compiling field data; drafting; preparing figures and maps	
[redacted]			[redacted]

R. Wolbaum, B. Sc.

2.0	days	edits to assessment reports	
[redacted]			[redacted]

R. Vega, Assistant

32.5	hours	data entry	
[redacted]			[redacted]

$ 24,543.13

b) Food and Accommodation

42 man-days @	$ 46.49	accommodations (motel)	$ 1,952.58
42 man-days @	$ 39.16	groceries and restaurants	$ 1,644.72

$ 3,597.30

APPENDIX 1: CONTINUED

c) Transportation

Vehicles:	Quad and Trailer Rental (12 days @ $147.1250)	$ 1,765.50	
	Quad Rental (12 days @ $135.3550)	$ 1,624.26	
	4x4 sports utility truck 2439 km @ 0.4950	$ 1,207.31	
	4x4 truck 1274 km @ 0.3850	$ 490.49	
	Fuel	$ 30.80	
	Vehicle Repairs	$ 326.72	
			$ 5,445.08

d) Instrument Rental n/a

e) Drilling n/a

f) Analyses n/a

g) Report	Reproduction and assembly	$ 178.10	
			$ 178.10
h) Other			
	Base map(s) and map reproductions	$ 514.25	
	Courier and Shipping	$ 11.83	
	Digital Topographic Data	$ 235.40	
	Long distance telephone	$ 0.32	
			$ 761.80
Total			$ 34,525.40

I, Jody R. Dahrouge, hereby certify that the costs outlined above were expended for the assessment of metallic and industrial minerals permits 9396020019.

[redacted]

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

Commissioner for Oaths

JACK LAMOUREUX
COMMISSIONER FOR OATHS
COMMISSION EXPIRES
MAY 21, 2005

APPENDIX 2: DESCRIPTIONS OF THE 2003 STRATIGRAPHIC SECTIONS WITHIN MAIM PERMIT 9396020019 NEAR CORKSCREW MOUNTAIN

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. Examined intervals are listed in order from stratigraphic top to bottom.

Abbreviations: Banff - Banff Assemblage; RA - Rundle Assemblage (U - Upper, M- Middle, L- Lower)

Interval Number	Formation Member	Strat. Thick. (m)	Description
			WEST FLANK OF CORKSCREW MOUNTAIN
CS2003-1: Upper Part of Creek Valley North of Area A00			
13276	RA-U	2	Argillaceous Dolomite interbedded with Calcareous Shale, black fresh, rusty-brown weathered, thin laminal beds to 10cm, fetid odour, abundant hydrocarbon staining
	RA-U	~7	covered
13214	RA-U	grab	Limestone, black, carbonaceous, very well bedded
	RA-U	~43	covered
13277	RA-U	¾	Dolomite, light-grey fresh, tan-grey weathered, stained vugs, fossiliferous, no reaction to HCl
	RA-U	~22	covered
18635	RA-U	1	Dolomite to Dolomitic Limestone, similar to 18634, light-grey to white fresh, massive, vuggy
-	RA-U	~3	covered
18634	RA-U	¾	Dolomite to Dolomitic Limestone, grey fresh and weathered, vuggy, sucrosic, massive
	RA-U	~25	covered
18628	RA-U	grab	Dolomite, rusty-brown, massive, rugose corals
-	RA-U	~2	covered
18629	RA-U	1¼	Dolomite, light-grey fresh, blue-grey weathered, sucrosic, porous, massive, poor reaction to HCl
-	RA	~24½	covered
18630	RA	1¼	Micritic Limestone, black fresh, grey weathered, massive, good reaction to HCl
-	RA	~25	covered
18631	RA-L	1	Micritic Limestone, black fresh, grey weathered, buff-pink to grey weathering, beds 5 - 10 cm, attitude of beds 050°/9°N
18632	RA-L	1	Micritic Limestone, dark-grey to black fresh, tan to rusty material filling vugs, moderate reaction to HCl
18633	RA-L	1¼	Micritic Limestone, dark-grey to brownish-grey weathered, massive, excellent reaction to HCl
-	RA-L	~1¼	covered
18636	RA-L	1½	Packstone to Wackestone, grey to dark-grey-brown fresh, brownish-grey weathered, laminated beds ½m, abundant bivalves and crinoids in middle, good reaction to HCl, attitude of beds 044°/8°NW
-	RA-L	<½	covered
18637	RA-L	1	Micritic Limestone, dark-grey fresh, grey-brown weathered, abundant sparry calcite, vugs filled with brown silty material, massive, good reaction to HCl
18638	RA-L	1¾	Lime Mudstone, dark-grey fresh, grey weathered, massive, good reaction to HCl
18639	RA-L	1¼	as per 18638

APPENDIX 2: CONTINUED

Interval Number	Formation Member	Strat. Thick. (m)	Description
CS2003-2: Creek Valley North of Area A00			
13179	RA	<1¼	Limestone, in part fragmental
-	RA	~2	covered
13201	RA	1½	Wackestone, dark-grey fresh, microcrystallline, sparry calcite vug filling
-	RA	~13¾	covered
13178	RA-L	~¾	Crinoidal Grainstone, coarse-grained, excellent reaction to HCl
-	RA-L	~3	covered
18647	RA-L	¼	Lime Mudstone, micritic, solution breccia with clasts to 1 cm, 5 to 15% secondary carbonate, good reaction to HCl
18646	RA-L	½	Mudstone, dark-grey fresh, grey weathered, vuggy, beds to 20 cm, good reaction to HCl
-	RA-L	½	covered
18641	RA-L	(¾)	Lime Mudstone, dark-grey fresh, grey weathered, micritic, some sparry calcite, massive, good reaction to HCl, attitude of beds 164°/26°W
18645	RA-L	(¾)	Lime Mudstone, grey fresh, light-grey weathered, micritic, secondary calcite veinlets, beds 10 to 15 cm, good reaction to HCl, attitude of beds 160°/30° W
18644	RA-L	(½)	Lime Mudstone - Grainstone, dark-grey fresh, tan weathered, fine- to coarse-grained, interbedded, grains <1½ mm, beds to 10 or 15 cm, good reaction to HCl, attitude of beds 160°/36°W
18642	RA-L	1½	Lime Mudstone, dark-grey fresh, grey weathered, micritic, sparry calcite, massive, lower ⅓ of section solution breccia with clasts from 1 to 5mm, good reaction to HCl
18643	RA-L	1½	Packstone, light-grey fresh, grey weathered, grains to 3mm, rare crinoid debris and pellets, vugs filled with brownish material, massive, attitude of beds 179°/22°W
CS2003-3: Northeastern Part of Area A0			
13207	RA	1	Mudstone, brown-grey fresh, vugs filled with sparry calcite, brecciated
-	RA	½	covered
13206	RA	1	as per 13207, vugs with tan-brown silty fill
-	RA	~5	covered
13208	RA	~¼	Dolomitic Limestone, spar filled vugs, small weathered beds 10 to 30 cm (position within section approx)
13278	RA	1½	Mudstone, dark-grey fresh, microcrystalline, vugs filled with brown material, calcite stringers along beds, massive, excellent reaction to HCl
13279	RA	¾	Mudstone, dark-grey fresh, light-grey weathered, vugs up to ½ cm filled with sparry calcite, rusty-stain on bedding planes, massive
-	RA	~1	covered
13280	RA	1½	Mudstone, similar to 13279, with some brecciated interbeds, generally good reaction to HCl
-	RA	~½	covered
13177	RA	~¼	Mudstone, dark-grey-brown fresh, microcrystalline, spar filled vugs
13281	RA	1	Mudstone with interbedded Dolomitic Breccia, dark-grey fresh, tan clasts, light-grey weathered, clasts up to ¾ cm, orange material filling vugs, beds ¼ to ½ m
-	RA	10	covered
13152	RA	1	Packstone, attitude of beds 132°/10° W
-	RA	1½	covered
13282	RA	1¼	Wackestone, grey fresh, brownish-grey weathered, coarse-grained, some sparry calcite blebs up to 1½ cm, massive

APPENDIX 2: CONTINUED

Interval Number	Formation Member	Strat. Thick. (m)	Description
CS2003-3: Continued			
13283	RA	1¾	Crinoidal Grainstone, dark-grey fresh and weathered, coarse-grained, grains to 4 mm, massive, excellent reaction to HCl
-	RA	~8½	covered
13291	RA	2	Crinoidal Grainstone, as per 13289
13290	RA	2	Crinoidal Grainstone, as per 13289
13289	RA	2	Crinoidal Grainstone, light-grey fresh, grey weathered, crumbly weathering, coarse-grained with grains to 3mm, massive, excellent reaction to HCl
13285	RA	(1½)	as per 13284
13284	RA	1½	Grainstone, coarse-grained, light-grey both fresh and weathered, beds 10 cm to ½ m, excellent reaction to HCl
-	RA	~2	covered
13288	RA	1½	Packstone, as per 13287, beds up to ½ m
13287	RA	2	Packstone, dark-grey both fresh and weathered, coarse-grained, massive, some crinoid debris, good reaction to HCl
-	Banff	~7½	covered
13286	Banff	1¼	Siliceous Lime Shale interbedded with Lime Shale, light-grey fresh, grey weathered, sparse rust-stained vugs, fine laminations, good reaction to HCl
-	Banff	~8¼	covered
13209	Banff	1	Dolomite, microcrystalline, grey-brown fresh, spar filled vugs
Isolated Samples in Area A0			
13151	RA	*	Limestone (UTM 615322E, 5763194N)
13153	RA	grab	Lime Mudstone, weakly dolomitic (UTM 614820E, 5763167N)
13154	RA	¾	Limestone, vuggy, brown silty sections, profuse calcite veining, attitude of beds 176°/18° W (UTM 614777E, 5763081N)
13176	RA	~¾	Dolomite, coarse-grained, vuggy, druse, fetid (UTM 615322E, 5763267N)
CS2003-4: Southeast Part of Area A0			
13200	RA	*	Wackestone, grey fresh, dark-grey to grey-brown weathered, iron staining on fresh surfaces, vugs, silty sections
-	RA	~64	covered
13198	RA	grab	Wackestone, coarse-grained, vuggy, massive bedding
-	RA	~2	covered
13180	RA	2	Mudstone, microcrystalline, sparry calcite, fetid odour
-	RA	~6	covered
13181	RA	¾	Packstone, sparry calcite filled vugs
-	RA	~9	covered
13202	RA	1	Wackestone, massive, excellent reaction to HCl
-	RA-L	~24	covered
13196	RA-L	3	Crinoidal grainstone
13197	RA-L	3	Grainstone

APPENDIX 2: CONTINUED

Interval Number	Formation Member	Strat. Thick. (m)	Description
CS2003-5: Northeast Part of Area A1			
13195	RA	*	Mudstone, dark-grey fresh, light-grey weathered, fine-grained, buff-brown silt filling vugs, excellent reaction to HCl
-	RA	~13	covered
13192	RA	2	Wackestone, fine-grained
-	RA	2	covered
13191	RA	~¾	Grainstone
-	RA	2	covered
13190	RA	2	Grainstone, fine-grained
13189	RA	1½	Grainstone
13188	RA	4	Grainstone
-	RA	~13¾	covered
13187	RA	~4¼	Grainstone
13186	RA	~2¾	Crinoidal Grainstone
13185	RA	3	Grainstone, coarse-grained
13184	RA	4½	Crinoidal Grainstone
13183	RA	~2¼	Crinoidal Grainstone
13182	RA	~1½	Grainstone, coarse-grained, vuggy, moderate reaction to HCl
-	Banff	~28	covered
13194	Banff	1¾	Mudstone, vuggy and brown-stained locally, beds 6 to 10 cm
13193	Banff	*	Mudstone, microcrystalline, conchoidal fracturing, weakly silicic, thick-bedded, poor reaction to HCl
-	Banff	~16	covered
13203	Banff	2	Mudstone, black fresh, microcrystalline, thin silty parting along beds
CS2003-6: South Flank of Area A0			
13210	RA-L	*	Mudstone, grey fresh, microcrystalline, attitude of beds 190°/28°W
-	RA-L	~25	covered
13211	RA-L	2¼	Packstone, large brachiopods, massive bedding
13212	RA-L	2½	as per 13211
-	RA-Banff	~15	covered
13213	Banff	*	Mudstone, grey-black fresh, microcrystalline, limonite staining
CS2003-7: South Flank of Area A1			
13103	RA	2¾	Grainstone, light-grey fresh and weathered, coarse-grained, grains 2-3mm, massive, attitude of beds 141°/32°SW
13102	RA	2½	as per 13102, increased grains to 4mm, increase in crinoidal debris and allochems
13105	RA	½	as per 13104
13104	RA	¾	similar to 13102 and 13103, tan material along fracture planes
13107	RA	(1)	as per 13106
13106	RA	(1¾)	Wackestone, light-grey fresh, grey weathered, grains 2 - 3mm, sparry calcite, crinoids with bivalves up to 1cm (rare), excellent reaction to HCl
13110	RA	½	as per 13107 and 13108, beds to ¼ m
13109	RA	1½	as per 13107
13108	RA	2	Grainstone, light-grey fresh and weathered, coarse-grained, grains 1 - 3mm, massive
-	RA-Banff	~12½	covered
13101	Banff	¼	Argillaceous Mudstone, dark-grey to brown fresh, grey weathered, buff on fracture surfaces, microcrystalline, concoidal fracturing, beds to 10cm, moderate reaction to HCl, attitude of beds 139°/ 37°W

APPENDIX 2: CONTINUED

Interval Number	Formation Member	Strat. Thick. (m)	Description
CS2003-7: Continued			
-	Banff	~2	covered
18649	Banff	1¼	Mudstone, dark-grey fresh, grey weathered, vugs filled with brownish material, beds 3 - 10cm, good reaction to HCl, attitude of beds 168°/32°W
18650	Banff	(¼)	as per 18649
-	Banff	~7½	covered
18648	Banff	½	Mudstone, dark-grey fresh, grey weathered, platy sections, sparry calcite on bedding and cleavage planes, beds to 10cm, good HCl reaction, attitude of beds 160°/27°W
CS2003-8: Area A1			
13112	RA	1¼	as per 13112, beds 15 - 20cm, excellent reaction to HCl, rubbly
-	RA	½	covered
13111	RA	1¾	Crinoidal Grainstone, light-grey fresh and weathered, grains 1 - 3mm, brown staining on fracture surfaces, beds to 10cm
Isolated Samples East of Area A1, Along Ridgeline and East of Ridgeline			
13215	RA	*	Wackestone, dark-grey fresh, grey weathered, excellent reaction to HCl
13204	RA	~1½	Dolomite, interbedded chert, chert bands up to 10 cm, good bedding, attitude of beds 160°/18° E
13205	RA	~2	As per 13204
13199	Fernie	*	Shale, black, fissile, interbedded with black chert, attitude of beds 150°/36°E
13175	RA	*	Dolomitic Limestone, Grey weathered, vuggy, buff staining on fracture planes, good reaction to HCl
CS2003-9: Ridgeline Northeast Upslope from Area A2			
13225	RA	*	Dolomitic Limestone
-	RA	~21	covered
18703	RA-L	3	as per 18702
18702	RA-L	3	as per 18701
18701	RA-L	3	Crinoidal Grainstone
13229	RA-L	¼	Grainstone, sugary, vugs with brown staining
-	RA-L	??	covered
13230	RA-L	½	Mudstone, buff fresh, grey weathered, large vugs, excellent reaction to HCl
-	RA-L	??	covered
13226	RA-L	2¼	Grainstone
13227	RA-L	2½	Grainstone
13228	RA-L	2¾	Grainstone
CS2003-10: Secondary Peak 450 m Northeast from Main Peak			
13216	RA	2	Packstone, medium-grey fresh, medium- to fine-grained, massive
13217	RA	2½	Wackestone
13218	RA	2½	Wackestone
13219	RA	1½	Wackestone
13220	RA	2¼	Packstone, rare crinoid ossicle
-	RA	~2	covered
13221	RA	2	Wackestone
13222	RA	1¼	Wackestone
13223	RA	1	Packstone, crinoids, vugs lined with silt

APPENDIX 2: CONTINUED

Interval Number	Formation Member	Strat. Thick. (m)	Description
Isolated Sample 100 m East Downslope from CS2003-10			
13224	RA-U	3	Mudstone, grey-brown fresh, vuggy with pyrobitumen fill, brecciated, excellent reaction to HCl
CS2003-11: Main Peak of Corkscrew Mtn			
13131	RA-L	1¼	Crinoidal Grainstone, grey-brown fresh, light-grey weathered, beds ¼m, sparse vugs filled with tan material, tan material along fracture planes, excellent reaction to HCl
13130	RA-L	2¼	as per 13129
13129	RA-L	2¾	Wackestone to Grainstone, as per 13128, coarse-grained, grains ½ - 2mm, beds ¼ - ½m, excellent reaction to HCl
13128	RA-L	2¾	Crinoidal Grainstone, light-brown-grey fresh, light-grey weathered, excellent HCl reaction
13127	RA-L	2½	as per 13128
13126	RA-L	1¾	as per 13125, interbedded with finer grained, grains ½ - 1mm
13125	RA-L	2¾	Crinoidal Grainstone, light-grey both fresh and weathered, coarse-grained, grains 2 - 4mm, massive, excellent reaction to HCl
13124	RA-L	1¾	as per 13123, beds ½ - 1m, crumbly and sucrosic
13123	RA-L	2¼	Wackestone - Packstone, light-grey both fresh and weathered, medium- to coarse-grained, grains <1 - 3mm, excellent reaction to HCl, attitude of beds 142°/ 51°W
13122	Banff	2¼	Mudstone, dark-grey fresh, grey weathered, massive to shaley, vugs filled with buff material, good HCl reaction, attitude of beds 138°/40°W
CS2003-12: Along Main Ridge Southeast from Peak			
13118	RA	¾	Peloidal Grainstone - Packstone, as per base of 13117, beds 15 - 25cm, grains <3mm, excellent reaction to HCl
13117	RA	1	Packstone, as per 13116, beds 10 - 25cm, peloids in lower part
13116	RA	1¼	Packstone, light-grey-brown fresh, light-grey weathered, grains 1 - 3mm, massive, excellent reaction to HCl
-	RA	~3	covered
13119	RA	2¼	Mudstone, light- to dark-grey fresh, grey weathered, microcrystalline to fine-grained, massive, fractured, attitude of beds 168°/70°E
13120	RA	2	Mudstone to Wackestone, grains to 1½mm, good reaction to HCl, grades upward into Mudstone
-	RA	~22	covered
13121	RA	1¼	Grainstone, light-grey both fresh and weathered, coarse-grained, grains 1 - 3mm, massive, good reaction to HCl
CS2003-13: Upper Part of Creek Valley Southeast of Area A3			
13133	RA	1½	Crinoidal Grainstone, as per 13132
13132	RA	1½	Crinoidal Grainstone, grains 1 - 4mm, massive, excellent reaction to HCl, attitude of beds 143°/27°W
CS2003-14A: Area A4			
13115	RA-L	¼	Mudstone, dark-grey fresh, light- to medium-grey weathered, microcrystalline to fine-grained, rubbly outcrop, poor reaction to HCl, cleavage 122°/66°E
-	RA-L	~4½	covered
13146	RA-L	¾	Crinoidal Wackestone, light-grey fresh, grey-brown weathered, fine- to medium-grained, grains <2mm, sparry calcite, beds < ¼m thick, excellent reaction to HCl

APPENDIX 2: CONTINUED

Interval Number	Formation Member	Strat. Thick. (m)	Description
CS2003-14A: Continued			
13147	RA-L	2	Peloidal Grainstone, grey fresh, grey-brown weathered, coarse-grained, grains <2mm, sparry calcite, massive
13148	RA-L	3	Crinoidal Grainstone, light-grey to grey-brown fresh and weathered, coarse-grained, grains 2 - 4mm, sparry calcite blebs to ½cm, rare peloids to 2mm, massive
13149	RA-L	3¼	as per 13150
13150	RA-L	3½	Crinoidal Grainstone, light-grey-brown fresh, light-grey weathered, coarse-grained, grains <4mm, massive, crumbly
CS2003-14B: Area A4 (Repeat of Lower Part of 14A)			
13142	RA-L	(1¾)	Crinoidal Grainstone, light-grey fresh and weathered, coarse-grained, grains <4mm, sparry calcite blebs to ½cm, massive, excellent reaction to HCl
13143	RA-L	(2½)	as per 13142, weathered crumbly and sucrosic
CS2003-14C: Area A4 (Repeat of Lower Part of 14A)			
13144	RA-L	(2½)	Crinoidal Grainstone, light-grey fresh and weathered, coarse-grained, massive, excellent reaction to HCl
13145	RA-L	(1¼)	Crinoidal Grainstone, coarse-grained, sparry calcite blebs millimeter scale, fetid odor, beds ¼ - ½m
CS2003-15: Area A4 Creek Valley (350 m long traverse)			
13114	RA	2¾	Mudstone, as per 13113, increased number of calcite filled vugs to 1cm, beds 10 - 25 cm
13113	RA	1	Mudstone, dark-grey fresh, grey weathered, micritic, vugs filled with coarse sparry calcite, massive
-	RA	~17	covered
13322	RA	1¼	as per 13321, beds ½m, attitude of beds 110°/28°SW
13321	RA	1¾	Grainstone to Wackestone, light-grey-brown fresh and weathered, coarse-grained, grains to 3 - 4mm, crinoids, sparry calcite replacement of fossils
-	RA	~2½	covered
13134	RA	1½	Grainstone, grains 1 - 3mm, massive, excellent reaction to HCl
-	RA	~5½	covered
13135	RA	¾	Crinoidal Grainstone, light-grey-brown fresh, brown-grey weathered, some black peloids to 1mm, grains 1 - 2mm, fetid odor, beds to ½m
13136	RA	1½	Crinoidal Grainstone, as per 13134, beds ½ to 1½ m
13137	RA	~¼	Grainstone, light-grey fresh, grey-brown weathered, grains to 3mm, beds up to 15 cm, excellent reaction to HCl
13139	RA	¼	Dolomitic Limestone, tan-grey fresh, light-grey to tan-grey weathered, fine-grained, sparry calcite blebs to 2mm, porous, colonial corals, massive
13138	RA	~¼	as per 13137, attitude of beds 119°/28°SW
-	RA	~1½	covered
13141	RA	1¼	as per 13140, beds ¼m, attitude of beds 123°/28°SE
13140	RA	1½	Crinoidal Grainstone, light-grey fresh and weathered, coarse-grained, massive, rubbly, excellent reaction to HCl
CS2003-16: Area A4 - Along Ridgeline near South End of Corkscrew Mountain			
13160	RA	<1	Wackestone, sparry calcite
13163	RA	*	Grainstone, coarse-grained
13162	RA	*	Dolomitic Limestone
-	RA	~14	covered
13161	RA	2	Wackestone, grey-black fresh, grey weathered, spar filled vugs

APPENDIX 2: CONTINUED

Interval Number	Formation Member	Strat. Thick. (m)	Description
CS2003-17: Creek Valley on South Flank of Area A4			
13165	RA-U	1	Wackestone, thin laminated beds
-	RA-U	~1½	covered
13157	RA-U	2	Wackestone, sparry calcite
13158	RA-U	2	Wackestone, sparry calcite
13159	RA-U	1¼	Dolomitic Limestone, fine-grained, dull-brown weathered, attitude of beds 140°/28°W
-	RA-U	~2	covered
13156	RA-U	¾	Limestone, dull-brown weathered, blue-green to grey fresh
-	RA-U	2¼	covered
13155	RA	2½	Mudstone, light-grey weathered, fine-grained, sparry calcite
-	RA	~15	covered
13164	RA	¾	Wackestone, attitude of beds 124°/20°SW
CS2003-18: Above and Below Forestry Trunk Road Southwest of Area A4			
13323	RA-U	¼	Dolomite, light-grey fresh, rusty-brown weathered, microcrystalline, porous, secondary dolomite blebs, beds ½ m to massive
-	RA-U	~40	covered
13324	RA-U	1½	Dolomite, tan-brown fresh, grey weathered, porous, coarse-grained, secondary white dolomite, grains to ½ cm, fetid odor, abundant bitumen stain
-	RA-U	~35	covered
13325	RA	5	Mudstone, light-brown-grey fresh, buff-grey weathered, sparry calcite blebs to ½cm, massive, excellent reaction to HCl, attitude of beds 139°/4°W
13326	RA	1½	Dolomitic Mudstone grading up to Argillaceous Mudstone, light-grey to light-grey-brown fresh, buff weathered, microcrystalline, conchoidal fractures, beds <¼m
13327	RA	2¾	Mudstone interbedded with Dolomite, grey-brown fresh, dark-grey to tan weathered, microcrystalline, beds ¼ - ½m, excellent reaction to HCl
13328	RA	3	Mudstone, grey-brown fresh, light-grey weathered, microcrystalline, beds to 1m, good reaction to HCl
13329	RA	¾	Mudstone, light-grey fresh, light-brown weathered, weakly laminated, good reaction to HCl
13330	RA	¾	Mudstone, grey-brown fresh, grey weathered, sparry calcite blebs to 3cm, buff stained surfaces, fetid odor, bitumen staining, massive, buff Dolomite layer 10cm thick at base
13331	RA	1¾	Mudstone, grey-brown fresh, grey-buff weathered, microcrystalline, beds <15cm, shaly, fine lamination on weathered surfaces
CS2003-19: Below Forestry Trunk Road South of Area A4			
13171	RA	*	Limestone, light-brown fresh, good reaction to HCL
	RA	~4	covered
13170	RA	3	Packstone - Grainstone, light-brown fresh, coarse-grained, grains >2mm, attitude of beds 140°/7°SW
13169	RA	1½	
13168	RA	2	Packstone, light-brown fresh
13167	RA	1¼	Grainstone
	RA	~2	covered
13174	RA	grab	Crinoidal Grainstone, coarse-grained
-	RA	<2	covered

APPENDIX 2: CONTINUED

Interval Number	Formation Member	Strat. Thick. (m)	Description
CS2003-19: Continued			
13173	Banff	1½	Dolomitic Limestone, pale-brown to grey fresh, whiteish-grey weathered, fine-grained
-	Banff	~5	covered
13172	Banff	1½	Dolomitic Mudstone, reddish-brown fresh, sucrosic
Isolated Sample Below Road South of Area A4 (UTM 616250E, 5759981N)			
13166	RA	*	Limestone, light-brown fresh and weathered, vuggy; possibly float
EAST FLANK OF CORKSCREW MOUNTAIN ORADEA RIDGE; MARBLE MOUNTAIN ANTICLINE			
CS2003-20: West Flank of Oradea Ridge, 2.4 km North from Road			
13242	RA	3	Wackestone, grey-brown fresh
13241	RA	3	Packstone, grey fresh, crinoids, rugose and colonial coral
-	RA	~8	covered
13239	RA	3	Packstone, fine-grained, sugary, attitude of beds 160°/30°SW
13240	RA	2½	as per 13239
13236	RA	3	Grainstone, grey fresh, rugose and colonial coral
13237	RA	3	as per 13236
13238	RA	3½	as per 13236
-	Banff	~94	covered
13232	Banff	3	Packstone, grey fresh, silt filled vugs, disseminated chert grains
13233	Banff	3	Packstone, dark-grey to black fresh, disseminated pyrobitumen
13234	Banff	3	Mudstone, microcrystalline, sparry calcite, massive
13235	Banff	3	Mudstone, dark-grey fresh, microcrystalline
CS2003-21: West Flank of Oradea Ridge, 1.9 km North from Road			
13243	RA	3	Crinoidal Grainstone, pellets
13244	RA	3	Grainstone
13245	RA	3	Grainstone
CS2003-22: Peak of Oradea Ridge, 1.3 km North from Road			
13305	RA-L	2	Mudstone, dark-grey fresh, tan-grey weathered, microcrystalline, brown staining on fracture planes, moderate reaction to HCl
-	RA-L	4¼	covered
13304	RA-L	1½	Dolomite, tan-brown fresh and weathered, microcrystalline, sparry calcite blebs to 2mm, beds <¼m
13303	RA-L	2½	Peloidal Wackestone interbedded Crinoidal Wackestone, light-brown-grey fresh, light-grey weathered, coarse-grained, grains to 2mm, peloids and crinoid debris, beds 10 - 25cm thick, excellent reaction to HCl
13302	RA-L	½	Wackestone to Grainstone, light-grey fresh and weathered, medium-grained, grains <2mm, crinoid debris, beds ¼m thick, attitude of beds 142°/64°W
-	RA-L	1½	covered
13301	RA-L	¼	Dolomitic Wackestone, light-tan fresh, tan-brown weathered, fine-grained, beds ¼m thick, good reaction to HCl
13300	RA-L	2	Wackestone - Mudstone - Crinoidal Grainstone, light-bluish-grey fresh, grey weathered, microcrystalline to coarse-grained, sparse bitumen staining, fetid odor, beds 15 - 20 cm thick

APPENDIX 2: CONTINUED

Interval Number	Formation Member	Strat. Thick. (m)	Description
CS2003-22: Continued			
13299	RA-L	2	as per 13298
13298	RA-L	2¾	Crinoidal Grainstone interbedded Wackestone, grey fresh and weathered, coarse-grained, grains ¼cm, fetid odor
13297	RA-L	3	as per 13296; beds 164°/65°E
13296	RA-L	3	Wackestone to Grainstone, light-grey fresh and weathered, sparry calcite blebs to ½cm diameter, massive, excellent reaction to HCl
13295	RA-L	2½	as per 13294
13294	RA-L	2½	Crinoidal Grainstone, light-grey fresh and weathered, coarse-grained, grains 3 - 5mm, massive, fetid odour, excellent reaction to HCl, attitude of beds 158°/58°E
13293	RA-L	2	Crinoidal Grainstone to Wackestone, grey to brown-grey fresh, light-grey weathered, massive, good reaction to HCl
13292	RA-L	1¼	Crinoidal Grainstone, light-grey fresh and weathered, coarse-grained, grains <5mm, beds ½m, slightly recessive, excellent reaction to HCl; attitude of beds 163°/67°E
-	Banff	-	covered, contact not visible
CS2003-23: South Flank of Oradea Ridge, 460 m North from Road (West Limb of Marble Anticline)			
	RA	~10	as 13308 (not sampled)
13308	RA	2½	Wackestone, light-grey both fresh and weathered, massive, attitude of beds 144°/61°W
13307	RA	3	as per 13306
13306	RA	3	Grainstone, light-grey both fresh and weathered, coarse-grained, beds ¼ - ½m, attitude of beds 152°/44°W
Isolated Sample on South Flank of Oradea Ridge, 650 m North from Road (Core of Marble Anticline)			
13231	Banff	~2½	Mudstone, dark-grey to black fresh, silty sections, varying bed thickness, abundant spar, local crenulations
IDLEWILDE MOUNTAIN			
ID2003-1: Along Road on West Flank ~640 m WNW from Main Peak			
13344	RA-U	1	as per 13343
13343	RA-U	2 ¾	Dolomite, light-grey fresh, buff weathered, porous, massive, attitude of beds 135°/18°W
ID2003-2: Upper SW Flank ~300 m S from Main Peak			
13332	RA-U	1½	Dolomite, light-grey-brown fresh, light- to medium-grey weathered, vugs to 5cm filled with dolomite and fossil replacement by dolomite, attitude of beds 066°/5°N
-	RA-U	¼	covered
13333	RA-U	1¼	Dolomite, light-grey fresh, grey weathered, vuggy, massive bedding
-	RA-U	1	covered
13334	RA-U	¾	Dolomite, mottled grey-brown to light-brown fresh, light- to medium-grey weathered, spar filled vugs, rusty stain
-	RA-U	2½	covered
13335	RA-U	1¾	Dolomitic Mudstone, light-grey-brown fresh, grey weathered, some rusty staining, massive
-	RA-U	6½	covered

APPENDIX 2: CONTINUED

Interval Number	Formation Member	Strat. Thick. (m)	Description
ID2003-2: Continued			
13336	RA-U	3½	Dolomite, light-brown-grey fresh, light-grey weathered, vuggy with some secondary dolomite filling, lenses of black chert to 10cm, massive
13337	RA-U	1½	Dolomite, tan to light-brown fresh, light-grey-tan weathered, sucrosic, porous, massive
13338	RA-U	3	as per 13337, some vugs
13339	RA-U	2¼	Limy Dolomite, tan to light-brown fresh, grey weathered, fetid odour, porous, beds ~1m
13340	RA-U	1 ½	Limy Dolomite, tan fresh, light-grey weathered, sucrosic, spar stringers, beds 1 - 1½m, moderate reaction to HCl
-	RA-U	14¾	covered
13341	RA	1½	Mudstone, black fresh, grey weathered, microcrystalline, strong jointing with spar fill, massive, good reaction to HCl, attitude of beds 128°/26°SW
-	RA	~37	covered
13342	RA	2¼	Dolomitic Lime Mudstone, brown-grey fresh and weathered, interbedded, microcrystalline, spar filled vugs, beds <¼m, upper half laminated, attitude of beds 045°/14°N
ID2003-3: SW Flank ~1030 m SW from Main Peak			
13246	RA	2½	Dolomitic Mudstone, fine-grained, light-grey-brown fresh, minor white chert
13247	RA	2½	similar to 13246, large spar filled vugs,rugose coral and brachiopods
13248	RA	2½	as per 13247
13249	RA	2	as per 13247
-	RA-Banff	~60	covered
13250	Banff	*	not described
ID2003-4: SW of Clearwater River Between Rocky Creek and Cutoff Creek			
13262	RA	~½	Mudstone, dark-grey fresh, sparry calcite
-	RA	~6	covered
13261	RA	2½	Mudstone, microcrystalline, black fresh, well bedded
-	RA	~14	covered
13260	RA	~½	as per 13253
13259	RA	3	Crinoidal Grainstone, grey fresh
13258	RA	2½	Crinoidal Grainstone, grey fresh
13264	RA	~1½	as per 13253
13263	RA	3	as per 13253
13257	RA	3	as per 13253
13256	RA	3	as per 13255
13255	RA	3	Packstone, grey fresh, massive beds
13254	RA	3	Crinoidal Packstone, grey fresh, thin centimeter scale bedding, attitude of beds 158°/20°SW
13253	Banff	3	Packstone interbedded Grainstone, grey fresh, interbeds 10cm thick, rugose coral, crinoids, and brachiopods
13252	Banff	3	Dolomitic Mudstone interbedded with Wackestone, grey fresh, microcrystalline, silty
-	Banff	~37	covered
13251	Banff	*	Dolomite, grey-black fresh, brown weathered, good bedding

APPENDIX 2: CONTINUED

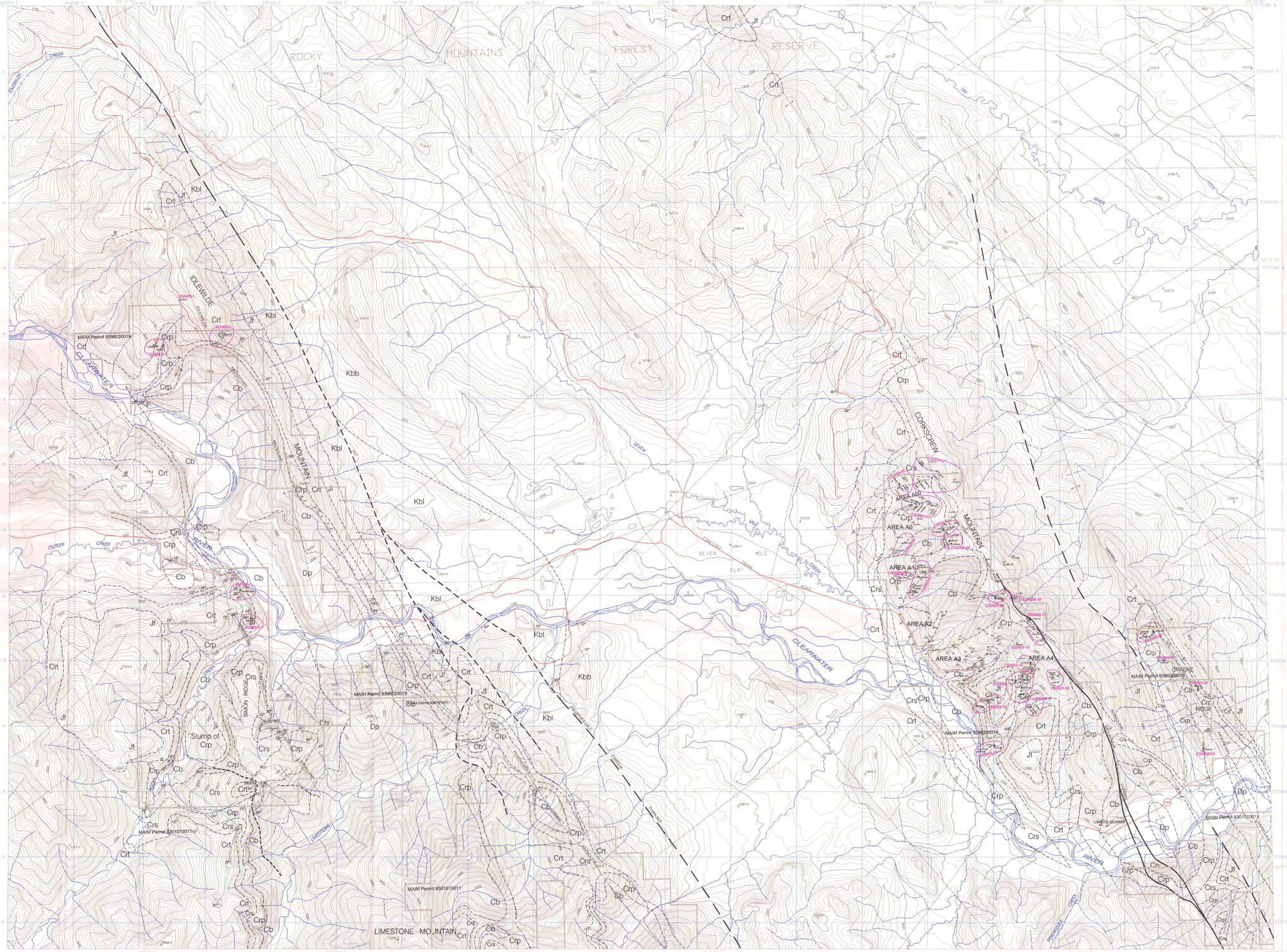
Interval Number	Formation Member	Strat. Thick. (m)	Description
ID2003-5: Cliffs 400 m NW of Confluence of Rocky Creek and Clearwater River			
13360	RA	3¼	as per 13359
13359	RA	3¼	Peloidal Grainstone, light-brown-grey fresh, grey weathered, coarse-grained, grains <2mm, black peloids, beds to ¾m, good reaction to HCl
13358	RA	2¼	similar to 13357, recessive, beds <¼m thick
13357	RA	2¼	Mudstone, light-grey fresh, grey-tan weathered, massive beds <¼m, strongly jointed, good reaction to HCl
13356	RA	2½	as per 13355, abundant jointing, possible tectonization
13355	RA	3	Mudstone, brown-grey weathered, beds <¼m, recessive
13354	RA	2	as per 13353
13353	RA	2¾	Wackestone to Crinoidal Grainstone, light-grey-brown fresh, grey weathered, massive bedding, crumbly weathering, good reaction to HCl
13352	RA	3	Wackestone, light-grey fresh, grey weathered, coarse-grained, grains to 3mm, massive bedding, excellent reaction to HCl
13351	RA	2	Grainstone, blue-grey fresh, grey weathered, massive bedding, good reaction to HCl, attitude of beds 168°/32°W
-	RA	10	covered
13350	RA	3	Dolomitic Shale to Lime Mudstone, brown-buff weathered, thin-bedded, poor reaction to HCl, rubble outcrop
13349	RA	1	as per 13348
13348	RA	3	Wackestone, light-brown-grey fresh, grey to tan weathered, coarse-grained, grains to 2mm, strongly jointed, recrystallization, tectonized
13347	RA	2¼	similar to 13346, strongly jointed and possible tectonization and recrystalization,
13346	RA	2	Wackestone, light-brown-grey fresh, grey weathered, coarse-grained, grains to 4mm, crinoid debris, massive bedding, excellent reaction to HCl

APPENDIX 3: STATEMENT OF QUALIFICATIONS

The field work described in this report was supervised by Jody Dahrouge.

J.R. Dahrouge is a geological consultant with Dahrouge Geological Consulting Ltd. based in Edmonton, Alberta. He 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 mineral 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.

R. Wolbaum is a geological consultant with Dahrouge Geological Consulting Ltd. based in Edmonton, Alberta. She obtained a degree in geology from the University of Alberta, Edmonton in 2003 and has been employed in the mineral exploration industry since. She is registered as a Geol. I.T. with the Association of Professional Engineers, Geologists, and Geophysicists of Alberta.



LEGEND AND SYMBOLS

LOWER CRETACEOUS
BLAIRMORE GROUP

- Kbb — Beaver Mines Formation: fine- to coarse-grained, greenish-grey sandstone, siltstone and rubbly mudstone; minor grey and black shale; local conglomerate and pebbly sandstone
- Kbl — Lower Blairmore Group: siltstone and sandstone; grey and black shale; minor coal seams and limestone; includes conglomerate, pebbly sandstone and sandstone of the Cadomin Formation at the base

JURASSIC AND LOWER CRETACEOUS

- Jk — Kootenay Formation: grey to black shale and sandstone

FERNIE GROUP

- Jf — Undivided: grey to black shale; sandstone, and carbonates

CARBONIFEROUS
RUNDLE GROUP

- Crmh — Mount Head Formation: finely crystalline dolomite, finely to coarsely crystalline limestone, shale
- Crt — Turner Valley Formation: dense and porous dolomite, argillaceous dolomite, limestone
- Crp — Pekisko and Shunda formations: finely to coarsely crystalline calcarenite, fine-grained dolomite, thin-bedded, silty dolomitic, cherty and dolomitic limestone, shale, anhydrite
- Cb — Banff Formation: argillaceous and cherty limestone, fissile and calcareous shale

DEVONIAN

- Dp — Palliser Formation: massive mottled limestone and dolomite, porous and vuggy dolomite, argillaceous limestone

Geological boundary
Bedding (inclined, vertical, overturned, horizontal) 30 75
Fault (approximate)
Synclinal axis (arrow indicates plunge)
Anticlinal axis (arrow indicates plunge)
Sample section with sample numbers CS2003-10
Isolated sample with sample number
Location of cross-section B B'
Elevation contour (interval: 10 m) 1450
Secondary highway with number 750
Logging road
Trail or cut line
MAIM Permit boundary

NOTES

1) Map compiled from 1 : 20 000 scale digital base maps 82O/13NE, 14NW, 83B/3SW, and 4SE supplied by Spatial Data Warehouse Ltd., Calgary, Alberta.
2) Geology modified after Henderson (1943, 1944), and Ollerenshaw (1964, 1965).
3) UTM grid is based on North American Datum, 1983 (NAD83); UTM grid zone: 11U.
4) To accompany Graymont Western Canada Inc. assessment report dated 2004 06 04.

2004007

REVISIONS	
BY	DATE
WM	2000.04
WM	2002.05
WM	2004.04

GRAYMONT WESTERN CANADA INC.

DAHROUGE GEOLOGICAL CONSULTING LTD.
Edmonton, Alberta

CLEARWATER RIVER AREA, WEST-CENTRAL ALBERTA

Fig. 4.1
Geology and Sample Locations

0 1 2 km
Scale

W.M. 1998.06