# MAR 20200005: Idlewilde Mountain

A report on Limestone exploration on the Idlewilde Mountain property near Rocky Mountain House.

Received date: March 17, 2020
Public release date: September 20, 2021

**GRAYMONT WESTERN CANADA INC.**

# 2019 EXPLORATION AND FIELDWORK WITHIN THE IDLEWILDE MOUNTAIN METALLIC AND INDUSTRIAL MINERALS PERMIT, WEST-CENTRAL ALBERTA

## PART B

Metallic and Industrial Minerals Permit
9310060379

Geographic Coordinates

51°56 N to 52°03' N
115°25' W to 115°34' W

NTS Sheets
82O/13, 82O/14, 83B/03, 83B/04


| | |
|---|---|
| Owner & Operator: | Graymont Western Canada Inc.<br>Lime Divisional Office<br>260, 4311 – 12th Street N.E.<br>Calgary, Alberta T2E 4P9 |
| Consultant: | Dahrouge Geological Consulting Ltd.<br>103, 10183 – 112th Street<br>Edmonton, Alberta T5K 1M1 |
| Authors: | K. Krueger, B.Sc., P.Geo.<br>A. Shumilak, B.Sc., G.I.T. |
| Date Submitted: | March 17, 2020 |

# TABLE OF CONTENTS

## LIST OF TABLES



## LIST OF APPENDICES



## PART C

# 1. SUMMARY

During August 2019, parts of Limestone Range, west of Rocky Mountain House and within Metallic and Industrial Minerals (MIM) Permit 9310060379, were explored for high-quality carbonate rocks. The 2019 exploration was a follow-up to previous exploration completed in the area.

Access routes and outcrops were mapped, and a total of 283 rock samples were collected within the Idlewilde Mountain Property (the Property), representing approximately 477.25 m of stratigraphy. Samples were sent to a laboratory for whole-rock analysis.

Throughout this report, attitudes of bedding and other planar features are given as A°/B° SW, where A° is the azimuth of the strike and B° is the amount of dip in the direction indicated (right-hand rule). A magnetic declination of 15°54' east was used. Where bedding was not evident, stratigraphic thicknesses were calculated using orientations from adjacent units. Where more than one bedding orientation was measured, the mean orientation was used.

# 2. INTRODUCTION

The 2019 exploration within the Property was completed by Dahrouge Geological Consulting Ltd. (Dahrouge), on behalf of Graymont Western Canada Inc. (Graymont). This assessment report describes the exploration completed within MIM Permit 9310060379, which encompasses parts of Limestone Range of the Alberta Foothills. Bob Robison, exploration manager for Graymont Western U.S. Inc., authorized this work.

The objectives of the 2019 exploration were to expand on the previously explored areas, and to locate and better define carbonate units throughout the property. This report includes information on the geology and quality of carbonates encountered while mapping and sampling outcrops within the permit area.

# 3. GEOGRAPHIC SETTING AND ACCESS

## 3.1 LOCATION AND ACCESS

MIM Permit 9310060379 encompasses areas within Limestone Range, surrounding and including Idlewilde Mountain, Limestone Mountain, Corkscrew Mountain and Simon Ridge within west-central Alberta (Fig. 3.1).

Approximately 7 km northwest of Burnco Quarry along Forestry Trunk Road 734 or 75 km southwest from Rocky Mountain House via Secondary Highway 752, Cutoff Creek Forestry Road

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

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

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

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

### 3.2 INFRASTRUCTURE

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

Rocky Mountain House, with a population of about 7,000, is accessed by traveling about 67 km west of Red Deer along the David Thompson Highway (Highway 11), and then 12 km north along Highway 22.

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

### 3.3 TOPOGRAPHY, VEGETATION AND CLIMATE

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

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

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

### 3.4 FIELD OPERATIONS

Field operations were completed by a four-person geological crew from Dahrouge based in a hotel in Rocky Mountain House.

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

Garmin GPSmap 64S instruments were used to mark outcrop locations and record access information. Compasses were set at a magnetic declination of 15°54' east.

## 4. PROPERTY, EXPLORATION AND EXPENDITURES

### 4.1 PROPERTY SUMMARY

MIM Permit 9310060379 (Idlewilde Mountain) was acquired in 2010 to cover limestone exposures within Limestone Range and is currently 4,736 ha in size (Fig. 4.1).

Based on the 2019 exploration, Graymont wishes for the entirety of the Idlewilde Mountain Permit to be retained (Section 4.3, Fig. 4.1).

### 4.2 2019 EXPLORATION SUMMARY

From August 15 to 27, 2019, Dahrouge, on behalf of Graymont, completed exploration for carbonate lithotypes within west-central Alberta. The work was undertaken to determine the location and extent of carbonate units in the permit area.

Carbonate outcrops were examined and a total of 283 samples were collected (Fig. 4.2). Geological observations were recorded, including lithologic information, measurements of structural elements, and other pertinent details (App. 2). A solution of 10% HCl was used to assess carbonate quality in the field, and rock samples were shipped to Central Lab of Graymont Western U.S. Inc. in Sandy, Utah for analyses (App. 3). In some instances, interval thicknesses

were determined by measuring outcrops perpendicular to bedding, where it could be identified. Field maps were completed on 1:20,000 and 1:30,000 scale map sheets and concentrated on areas surrounding and including Limestone Mountain and Idlewilde Mountain, along Limestone Range.

### 4.3 EXPLORATION EXPENDITURES

Expenditures for 2019 totaled $74,676.86 Graymont wishes for the entirety of the Idlewilde Mountain (MIM Permit 9310060379) Permit to be retained. Excess expenditures are to be assigned to future exploration periods.

Expenditures are allocated to MIM Permit 9310060379 as follows:

| MIM Permit | Permit Area (ha) | Required Expenditures[1] | Assigned Expenditures | New Expiry Date |
|---|---|---|---|---|
| 9310060379 | 4,736 | $70,365.93 | $74,676.86 | June 8, 2022 |

[1] Calculated from $71,040 - previous credit of $674.07

## 5. REGIONAL GEOLOGY

### 5.1 STRATIGRAPHY

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

#### 5.1.1 Palliser Formation

In west-central Alberta, the Upper Devonian Palliser Formation consists mainly of outer shelf and basinal carbonates of the Sassenach Basin (Halbertsma, 1994). The Palliser Formation is divisible into the Morro and overlying Costigan members, which are separated by an unconformity. The Morro Member comprises a lithologic suite dominated by carbonates with significant lateral facies variations. The Costigan Member consists of open-marine fossiliferous

limestones and shales, with local evaporitic sedimentation. Within Foothills and Front Ranges of Alberta, limestones of the Palliser Formation vary from less than 180 m to more than 270 m in thickness (Holter, 1976).

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

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

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

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

### 5.1.2 Banff Assemblage

In west-central Alberta, the Exshaw, Banff and Yohin formations comprise the Banff

Assemblage (Richards et al. 1994). Only exposures of the Banff Formation appear within the Property. The Banff Formation is a heterogeneous association of carbonates and fine-grained siliciclastics deposited on poorly differentiated carbonate platforms. Westward, the uppermost Banff Formation grades laterally into the Rundle Assemblage.

### 5.1.3 Rundle Assemblage

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

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

The upper Rundle Assemblage includes the transgressive Mount Head Formation.

### 5.1.4 Fernie Group

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

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

## 5.2 STRUCTURE

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

their leading edges.

## 6. RESULTS

Thirteen days were spent checking property access and outlining carbonate outcrops in detail. The 2019 exploration concentrated on defining stratigraphic unit locations and contacts within previously under-explored areas of the Property.

Carbonate lithologies of the Rundle Assemblage, Banff Formation and Palliser Formation were examined and sampled within Limestone Range, near Cutoff Creek, along unnamed ATV trails and along the flanks of Limestone Mountain (Fig. 4.2). A total of 283 discrete intervals were examined and sampled, representing approximately 477.25 m of stratigraphy (App. 2). Where bedding could not be identified, stratigraphic measurements were taken based on the previously determined regional trends or deduced from surrounding measurements where possible.

A total of 23 samples taken in 2019 were from the Palliser Formation. Samples were dominantly dolomitic packstones and wackestones confirmed by their high $MgCO_3$ values. The best section (2019-12) was dolomitized and averaged 54.92% $CaCO_3$, 44.53% $MgCO_3$ and 0.78% $SiO_2$ over approximately 4 m. The best isolated sample (132829) yielded results of 95.11% $CaCO_3$, 2.78% $MgCO_3$ and 2.02% $SiO_2$ averaged over roughly 2.25 m. Two float samples also produced high $CaCO_3$ content which is uncharacteristic of the Palliser Formation. Sample 132828 returned 97.18% $CaCO_3$, 1.30% $MgCO_3$ and 1.01% $SiO_2$ and sample 132845 averaged 96.72% $CaCO_3$, 1.38% $MgCO_3$ and 1.68% $SiO_2$. All other samples had $MgCO_3$ content ranging from 43.64% to 45.14%. In total, approximately 37.25 m of Palliser carbonates were sampled on the Property (Fig. 4.2, App. 2). The Palliser Formation has high-quality dolomite potential, and so was examined and collected during the 2019 exploration program.

In 2019, 38 samples were taken within the Banff Formation. Most samples were described as light- to medium-grey to tan, variably dolomitized mudstones, packstones and grainstones. The variable quality of the Banff Formation samples collected taken in 2019 ranged from 44.37% to 99.13% $CaCO_3$, 0.90% to 33.85% $MgCO_3$, and 0.23% to 26.07% $SiO_2$. Section 2019-21 was the best section returning a weighted average of 84.60% $CaCO_3$, 14.29% $MgCO_3$ and 1.08% $SiO_2$ over approximately 35.5 m. One notably high CaCO3 interval was sampled (sample 132977) that produced results of 98.97% $CaCO_3$, 1.57% $MgCO_3$ and 0.31% $SiO_2$ averaged over approximately 1.25 m. In total, approximately 72 m of Banff carbonates were sampled on the Property (Fig. 4.2, App. 2). The Banff Formation has limited high-quality calcium limestone and high-quality dolomite

potential, which was confirmed by collecting and analyzing several outcrops during the 2019 exploration program.

173 samples were collected within the Pekisko Formation in 2019. Analytical results were variable, presumably because different members within the formation were sampled. The best high-calcium interval included samples 132918-132920 (section 2019-17), which averaged 98.37% $CaCO_3$, 0.93% $MgCO_3$ and 0.28% $SiO_2$ over approximately 7.5 m (Fig. 4.2, Appendix 2). Another notable high-quality interval included samples 127302-127306 (section 2019-02), which averaged 98.06% $CaCO_3$, 1.58% $MgCO_3$ and 0.20% $SiO_2$ over approximately 9.25 m. Several other sample sections and isolated intervals returned values exceeding 95% $CaCO_3$ over several meters; however, $MgCO_3$, and minor $SiO_2$ impurities were common in many intervals. The Pekisko generally consists of resistant, thick-bedded to massive, light- to dark-grey, micritic- to coarse-grained mudstones to grainstones. In total, approximately 294 m of Pekisko limestones were sampled on the Property (Fig. 4.2, App. 2). Overall, the Pekisko Formation has the greatest high-calcium limestone potential in the area.

34 samples were collected within the Shunda Formation in 2019. The highest-calcium interval included samples 132823-132825 (section 2019-05), which averaged 96.58% $CaCO_3$, 1.89% $MgCO_3$ and 1.13% $SiO_2$ over approximately 4.25 m, and was collected on the western flank of Limestone Mountain. The Shunda Formation samples collected from the Idlewilde Property ranged in quality from 71.95% to 97.91% $CaCO_3$, 1.40% to 28.18% $MgCO_3$, and 0.20% to 9% $SiO_2$. The Shunda Formation generally consists of somewhat recessive, argillaceous mudstones. In total, approximately 58.25 m of Shunda carbonates were sampled on the Property (Fig. 4.2, App. 2).

15 samples were collected within the Turner Valley Formation in 2019. Though the Turner Valley Formation has dolomite potential, one notable high-calcium interval was collected. Section 2019-06 was sampled from the western flank of Limestone Mountain and averaged 95.77% $CaCO_3$, 3.59% $MgCO_3$ and 0.43% $SiO_2$ over approximately 3.25 m. The best dolomitic section (2019-31) included samples 141920-131912 and was collected from the eastern flank of Limestone Mountain. This section averaged 51.55% $CaCO_3$, 41.25% $MgCO_3$ and 5.97% $SiO_2$ over approximately 5 m. The Turner Valley Formation consists of vuggy, light-grey to tan, micritic to medium-grained, dolomitic mudstone to wackestone. In total, approximately 15.75 m of Turner Valley dolomites were sampled on the Property (Fig. 4.2, App. 2). Previous exploration projects as well as the 2019 project have revealed the Turner Valley Formation to have high-quality dolomite potential.

## 7. CONCLUSIONS

Carbonate units of the Palliser, Banff, Pekisko, Shunda and Turner Valley formations were examined and measured along Limestone Range and near Cutoff Creek, within MIM Permit 9310060379. A total of 283 discrete intervals were sampled and described in detail. Of note were several high-calcium limestone intervals collected from the Pekisko Formation, and several high-quality dolomite intervals from the Palliser and Turner Valley formations. Based on the samples collected during the 2019 exploration and overall property assessment, Graymont wishes for the entirety of the Idlewilde Mountain Permit to be retained.

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

Future exploration will expand on previously completed work in the area, confirming or redefining past geological interpretations and determining the potential for high-calcium limestone and/or high-quality dolomite within the permit area. Drill-testing of the Pekisko, Palliser and/or Turner Valley formations would also be beneficial.

## 8. REFERENCES

Dahrouge, J.R. (2000) Exploration for High-Calcium Limestone at Clearwater and Limestone Ranges of West-Central Alberta; Assessment Report on MAIM Permits 9396020019 and 9398100125 for Continental Lime Ltd., Dahrouge Geological Consulting Ltd., 20 p., 10 fig., 5 app.

Dahrouge, J.R. (2002) 2001 Exploration for High-Calcium Limestone at Clearwater and Limestone Ranges of West-Central Alberta; Assessment Report on MAIM Permits 9396020019 and 9398100125 for Graymont Western Canada Inc., Dahrouge Geological Consulting Ltd., 10 p., 8 fig., 4 app.

Dahrouge, J.R. (2005) 2004 Exploration and Fieldwork at the Limestone Mountain Metallic and Industrial Minerals Permit, West-Central Alberta; Assessment Report on MAIM Permit 9398100125 for Graymont Western Canada Inc., Dahrouge Geological Consulting Ltd., 9 p., 4 fig., 4 app.

Dahrouge, J.R. 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., 53 p., 67 fig., 24 app.

Dahrouge, J. and Tanton, J. (2006) 2005 Exploration and Diamond Drill Program at the Corkscrew Mountain Property, West-Central Alberta; Assessment Report on MAIM Permits 9396020019 and 9305090646 for Graymont Western Canada Inc., Dahrouge Geological Consulting Ltd., 10 p., 4 fig., 3 app.

Dahrouge, J. and Tanton, J. (2006) 2006 Exploration and Fieldwork at the Limestone Mountain and Corkscrew Mountain Metallic and Industrial Minerals Permits, West-Central Alberta; Assessment Report on MAIM Permits 9398100125 and 9396020019 for Graymont Western Canada Inc., Dahrouge Geological Consulting Ltd., 9 p., 4 fig., 1 app.

Dahrouge, J.R. and Wolbaum, R. (2003) 2003 Exploration and Fieldwork at the Corkscrew Mountain Metallic and Industrial Minerals Permit, West-Central Alberta; Assessment Report on MAIM Permit 9396020019 for Graymont Western Canada Inc., Dahrouge Geological Consulting Ltd., 8 p., 4 fig., 3 app.

Douglas, R.J.W. (1956). Nordegg, Alberta; Geological Survey of Canada Paper 55-34.

Douglas, R.J.W. (1958). Chungo Creek map-area, Alberta; Geological Survey of Canada Paper 58-3.

Erdman, O.A. (1950). Alexo and Saunders map-areas, Alberta; Geological Survey of Canada Memoir 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); Canadian Society of Petroleum Geologists and Alberta Resource Council, p. 221-250.

Holter, M.E. (1976). Limestone resources of Alberta; Alberta Resource Council Economic Geology Report 4.

Holter, M.E. (1994). A Review of Alberta Limestone Production, Marketing, Distribution and Future Development Possibilities. Alberta Geological Survey, EUB, Open File Report 1994-15., 95 p., 57 figs.

Klarenbach, J. and Kluczny, P. (2009) 2009 Exploration and Fieldwork within the Clearwater Group Metallic and Industrial Minerals Permits, West-Central Alberta; Assessment Report on MAIM Permits 9396020019, 9398100125, 9305090646, and 9306031167 for Graymont Western Canada Inc., Dahrouge Geological Consulting Ltd., 17 p., 7 fig., 3 app.

Kluczny, P. (2011) 2011 Exploration and Fieldwork within the Limestone Range Metallic and Industrial Minerals Permits, West-Central Alberta; Assessment Report on MAIM Permits 9398100125, 9305090646 and 9310060379 for Graymont Western Canada Inc., Dahrouge Geological Consulting Ltd., 16 p., 4 fig., 3 app.

Kluczny, P. and Tanton, J. (2008) 2007 Exploration and Fieldwork within the Clearwater Group Metallic and Industrial Minerals Permits, West-Central Alberta; Assessment Report on MAIM Permits 9305090646, 9306031167, 9396020019, and 9398100125 for Graymont Western Canada Inc., Dahrouge Geological Consulting Ltd., 14 p., 3 fig., 3 app.

Kluczny, P. and Klarenbach, J. (2011) 2010 Exploration and Fieldwork within the Limestone Range Metallic and Industrial Minerals Permits, West-Central Alberta; Assessment Report on MAIM Permits 9398100135 and 9310060379 for Graymont Western Canada Inc., Dahrouge Geological Consulting Ltd., 15 p., 4 fig., 3 app.

Kluczny, P. and Krueger, K. (2013) 2012 Exploration and Fieldwork within the Clearwater Group Metallic and Industrial Minerals Permits, West-Central Alberta; Assessment Report on MAIM Permits 9398100125, 9305090646 and 9310060379 for Graymont Western Canada Inc., Dahrouge Geological Consulting Ltd., 15 p., 4 fig., 3 app.

Kluczny, P. and Krueger, K. (2014) 2013 Exploration and Fieldwork within the Idlewilde Mountain Metallic and Industrial Minerals Permit, West-Central Alberta; Assessment Report on MAIM Permit 9310060379 for Graymont Western Canada Inc., Dahrouge Geological Consulting Ltd., 16 p., 4 fig., 3 app.

Krueger, K. (2016) 2015 Exploration and Fieldwork within the Idlewilde Mountain Metallic and Industrial Minerals Permit, West-Central Alberta; Assessment Report on MAIM Permit 9310060379 for Graymont Western Canada Inc., Dahrouge Geological Consulting Ltd., 12 p., 4 fig., 3 app.

Krueger, K. (2018) 2017 Exploration and Fieldwork within the Idlewilde Mountain Metallic and Industrial Minerals Permit, West-Central Alberta; Assessment Report on MAIM Permit 9310060379 for Graymont Western Canada Inc., Dahrouge Geological Consulting Ltd., 13 p., 4 fig., 3 app.

MacKenzie, W.S. (1966). Upper Devonian Stratigraphy in the Vicinity of Mountain Park, Alberta, in Eighth Annual Field Trip Guidebook, Edmonton Geological Society, p.19-29.

Mackenzie, W.S. (1969). Stratigraphy of the Devonian Southesk Cairn carbonate complex and associated strata, eastern Jasper National Park, Alberta. Geological Survey Bulletin 184.

MacQueen, R.W., and Bamber, E.W. (1968). Stratigraphy and facies relationships of the Upper Mississippian Mount Head Formation, Rocky Mountains and Foothills, southwestern Alberta; Bulletin of Canadian Petroleum Geology, v. 16, p. 225-287.

Mossop, G.D. and Shetsen, I. (1994). Geological Atlas of the Western Canada Sedimentary Basin, G.D. Mossop and I. Shetsen (comps.); Canadian Society of Petroleum Geologists and Alberta Resource Council.

Ollerenshaw, N.C. (1968) Preliminary Account of the Geology of Limestone Mountain map-area, Southern Foothills, Alberta; GSC Paper 68-24.

Poulton, T.P., Christopher, J.E., Hayes, B.J.R, Losert, J., Tittemore, J. and Gilchrist, R.D. (1994) Jurassic and lowermost Cretaceous strata of the Western Canada Sedimentary Basin; Chapter 18 Geological Atlas of the Western Canada Sedimentary Basin.

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), Canadian Society of Petroleum Geologists and Alberta Resource Council, p. 221-250.

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), Canadian Society of Petroleum Geologists and Alberta Resource Council, p. 165-202.

Stott, D.F. and Aitken, J.D. (1993). Sedimentary Cover of the Craton in Canada, D.F. Stott and J.D. Aitken (ed.); Geological Survey of Canada, Geology of Canada, no. 5, pp. 202 - 271.

## 9. STATEMENT OF QUALIFICATIONS

I, Kelly Krueger, residing at [redacted] do hereby certify that:

- I am a geologist of Dahrouge Geological Consulting Ltd., 103-10183 112th Street, Edmonton, Alberta, T5K 1M1.
- I am a 2012 graduate of the University of Alberta, Edmonton, Alberta with a B.Sc. in Geology.
- I have practiced my profession as a geologist continuously since 2012.
- I am a registered Professional Geoscientist with the Association of Professional Engineers and Geoscientists of Alberta, member 96506.
- I hereby consent to the copying or reproduction of this Assessment Report following the one-year confidentiality period.
- I am the author of the report entitled "2019 Exploration and Fieldwork within the Idlewilde Mountain Metallic and Industrial Minerals Permit, West-Central Alberta" and accept responsibility for the veracity of technical data and results.

Dated this 17th day of March, 2020.

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

APEGA 96506

I, Andrew Shumilak, residing at [redacted], do hereby certify that:

- I am a geologist of Dahrouge Geological Consulting Ltd., 103-10183 112th Street, Edmonton, Alberta, T5K 1M1.
- I am a 2016 graduate of the University of Alberta, Edmonton, Alberta with a B.Sc. in Geology.
- I am a registered Geologist in Training with the Association of Professional Engineers and Geoscientists of Alberta, member 214310.
- I hereby consent to the copying or reproduction of this Assessment Report following the one-year confidentiality period.
- I am the author of the report entitled "2019 Exploration and Fieldwork within the Idlewilde Mountain Metallic and Industrial Minerals Permit, West-Central Alberta" and accept responsibility for the veracity of technical data and results.

Dated this 17th day of March, 2020.

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

APEGA 214310

## APPENDIX 1: ITEMIZED COST STATEMENT FOR THE 2019 EXPLORATION IDLEWILDE PROPERTY

**a) Personnel**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| [redacted], geologist | | | | | | | | | |
| 12.14 | days | | | field | Geological mapping and rock sampling | | | | |
| 8.50 | days | | | office | Field preparations | | | | |
| 20.63 | days | @ | $ | 800.00 | | | $ | 16,505.98 | |
| [redacted], geologist | | | | | | | | | |
| 15.78 | days | | | field | Geological mapping and rock sampling | | | | |
| 6.68 | days | | | office | Field preparations | | | | |
| 22.45 | days | @ | $ | 590.00 | | | $ | 13,247.26 | |
| [redacted], geologist | | | | | | | | | |
| 3.64 | days | | | field | Geological mapping and rock sampling | | | | |
| 3.64 | days | @ | $ | 590.00 | | | $ | 2,148.21 | |
| [redacted], student | | | | | | | | | |
| 10.32 | days | | | field | Geological mapping and rock sampling | | | | |
| 10.32 | days | @ | $ | 450.00 | | | $ | 4,642.31 | |
| [redacted], student | | | | | | | | | |
| 12.14 | days | | | field | Geological mapping and rock sampling | | | | |
| 12.14 | days | @ | $ | 450.00 | | | $ | 5,461.54 | |
| [redacted] | | | | | | | | | |
| 1.21 | hours | | | office | Logistics, shipping | | | | |
| 1.21 | hours | @ | $ | 42.00 | ` | | $ | 50.97 | |
| | | | | | | | | | $ 42,056.27 |

**b) Food and Accommodation**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 48.41 | man-days | @ | $ | 165.71 | accommodations (48 nights @ $191.94/night/room) | $ | 9,291.66 |
| 54 | man-days | @ | $ | 70.00 | meals | $ | 3,780.00 |
| | | | | | | | $ 13,071.66 |

**c) Transportation**

| | | |
|---|---|---|
| 4x4 Truck Rental | $ | 2,256.22 |
| ATV Rentals (2) | $ | 3,985.10 |
| ATV Rentals (Dahrouge) | $ | 2,427.35 |
| Trailer | $ | 770.99 |
| Fuel | $ | 728.21 |
| Mileage | $ | 121.37 |
| | | $ 10,289.24 |

**d) Instrument Rental**

| | | |
|---|---|---|
| Radio (4) | $ | 47.33 |
| Satellite Phone (1) | $ | 205.11 |
| GPS (3) | $ | 189.33 |
| | | $ 441.78 |

**e) Drilling** n/a

**f) Analyses**

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

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 283 | samples | @ | $ 4.50 | preparation fee | $ 1,273.50 | | |
| 283 | samples | @ | $ 25.00 | sample analysis | $ 7,075.00 | | |
| | | | | | | $ | 8,348.50 |

**G) Other**

| | | | |
|---|---|---|---|
| Misc. Supplies | $ | 285.82 | |
| Prints/plots | $ | 12.90 | |
| Courier | $ | 170.70 | |
| | | | $ 469.41 |

**Total** $ 74,676.86

K. Krueger, B.Sc., P.Geo.

Edmonton, Alberta
March 17, 2020

# APPENDIX 2: 2019 SAMPLE DESCRIPTIONS AND ASSAY RESULTS FROM THE IDLEWILDE PROPERTY

Notes: Stratigraphic thicknesses are based on measured attitudes of bedding listed below, with appropriate interpolations. Attitudes are strike and dip (right-hand rule). Sections are listed in numerical order of samples, which does not necessarily represent stratigraphic order. Most samples consist of chips at 30 cm intervals. UTM coordinates are NAD83, Zone 11N. Section locations are shown in Figure 4.2. Stratigraphy Abbreviations: Mpk - Mississippian Pekisko Formation; Msh - Mississippian Shunda Formation. Sample size: 10-12 chips or pieces that are approximately 2"x1.5"x1.5" per chip.

| Sample | Strat Unit | Strat Tkns (m) | Description | $CaCO_3$ (%) | $MgCO_3$ (%) | $SiO_2$ (%) | $Al_2O_3$ (%) | $Fe_2O_3$ (%) | SrO (ppm) | MnO (ppm) | $P_2O_5$ (ppm) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Isolated Samples** | | | | | | | | | | | |
| 132767<br>UTM 604470E, 5762277N | Mpk | 3.5 | **Calcareous Mudstone,** tan to dark grey weathered, tan to medium brown-grey fresh, micritic to medium-grained, moderately-bedded to thickly-bedded, hard, banded, alteration: silica; oxide, fracture-related, weak intensity, weak fetid odour, very weak HCl reaction | 62.70 | 9.64 | 22.95 | 1.775 | 1.075 | 241 | 594 | 138 |
| 132768<br>UTM 604374E, 5762337N | Mpk | 2 | **Calcareous Mudstone,** tan to very-dark grey weathered, dark grey fresh, micritic to very fine-grained, thickly-bedded to massively-bedded, resistant, alteration: silica, weak HCl reaction | 72.61 | 17.84 | 6.67 | 1.191 | 0.627 | 249 | 132 | 139 |
| 132769<br>UTM 604349E, 5762321N | Msh | 3.75 | **Calcareous Mudstone,** very-light grey to very-dark grey weathered, medium grey fresh, micritic to coarse-grained, moderately-bedded to thickly-bedded, resistant, alteration: silica; oxide, fracture-related, weak intensity, weak HCl reaction, structure(s): bedding (undulatory), local-scale, 159/30 SW | 79.49 | 8.26 | 9.00 | 1.236 | 0.411 | 251 | 114 | 229 |
| 132770<br>UTM 604315E, 5762307N | Msh | grab | **Calcareous Dolomitic Grainstone,** light brown-grey to dark grey weathered, medium grey to medium brown-grey fresh, micritic to very coarse-grained, fossils: solitary rugose coral, rare, resistant, weak HCl reaction | 73.86 | 24.60 | 1.15 | 0.158 | 0.065 | 180 | 45 | 50 |
| 132771<br>UTM 604316E, 5762306N | Msh | 2.5 | **Lime Grainstone,** very-light grey to dark grey weathered, medium grey fresh, micritic to medium-grained, moderately-bedded to thickly-bedded, resistant, vuggy (open), moderate HCl reaction | 97.70 | 1.86 | 0.27 | 0.068 | 0.017 | 251 | 24 | 50 |
| 132772<br>UTM 604303E, 5762303N | Msh | grab | **Strongly Dolomitic Lime Grainstone,** very-light grey to dark grey weathered, medium grey fresh, micritic to medium-grained, fossils: fragment (indeterminate), common; brachiopod, common, moderately-bedded to thickly-bedded, resistant, vuggy (open), moderate HCl reaction | 79.64 | 18.47 | 1.39 | 0.191 | 0.064 | 220 | 27 | 168 |
| 132773<br>UTM 604302E, 5762300N | Msh | grab | **Dolomitic Lime Mudstone,** light grey to very-dark grey weathered, dark grey fresh, micritic to fine-grained, fossils: fragment (indeterminate), rare, slightly resistant, vuggy (calcite-filled), weak HCl reaction | 88.88 | 8.49 | 1.84 | 0.214 | 0.121 | 742 | 88 | 122 |
| 132774<br>UTM 604286E, 5762283N | Msh | grab | **Strongly Dolomitic Lime Packstone,** rust to dark grey weathered, light grey to medium grey fresh, micritic to medium-grained, fossils: ooid, very rare, resistant, vuggy (open), brecciated, moderate HCl reaction | 76.07 | 20.44 | 2.18 | 0.282 | 0.144 | 6526 | 69 | 50 |
| 132775<br>UTM 604257E, 5762286N | Msh | grab | **Calcareous Dolomitic Grainstone to Calcareous Dolomitic Packstone,** light brown-grey to dark grey weathered, light grey to tan fresh, micritic to coarse-grained, fossils: fragment (indeterminate), rare; brachiopod, rare, resistant, nodular, moderate HCl reaction | 72.73 | 25.29 | 1.46 | 0.185 | 0.139 | 319 | 75 | 50 |
| 132789<br>UTM 603689E, 5760106N | Mbf | grab | **Calcareous Dolomitic Packstone,** light grey to dark grey weathered, medium grey fresh, micritic to fine-grained, thinly-bedded to moderately-bedded, weak HCl reaction | 67.97 | 28.18 | 2.86 | 0.357 | 0.327 | 264 | 129 | 101 |

| Sample | Strat Unit | Strat Tkns (m) | Description | $CaCO_3$ (%) | $MgCO_3$ (%) | $SiO_2$ (%) | $Al_2O_3$ (%) | $Fe_2O_3$ (%) | SrO (ppm) | MnO (ppm) | $P_2O_5$ (ppm) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 132790<br>UTM 603691E, 5760105N | Mbf | grab | **Dolomitic Lime Grainstone,** light grey to medium grey weathered, medium grey fresh, micritic to very coarse-grained, fossils: solitary rugose coral, rare; ooid, rare, resistant, weak fetid odour, weak HCl reaction, structure(s): calcite veinlet, local-scale, weak | 92.24 | 6.76 | 0.56 | 0.133 | 0.048 | 246 | 26 | 50 |
| 132791<br>UTM 603697E, 5760100N | Mpk | 1 | **Strongly Dolomitic Lime Grainstone,** light tan-grey to dark grey weathered, medium grey to medium brown-grey fresh, micritic to coarse-grained, fossils: ooid, rare; fragment (indeterminate), rare, massive, resistant, vuggy (calcite-filled), weak HCl reaction | 75.89 | 22.91 | 0.88 | 0.146 | 0.054 | 202 | 38 | 50 |
| 132792<br>UTM 603698E, 5760094N | Mbf | 1.25 | **Dolomitic Wackestone,** light grey to dark grey weathered, medium grey fresh, micritic to medium-grained, fossils: ooid, rare, slightly resistant, very weak HCl reaction | 60.77 | 37.24 | 1.44 | 0.279 | 0.059 | 175 | 45 | 227 |
| 132797<br>UTM 603704E, 5760082N | Mbf | 2.5 | **Calcareous Dolomitic Grainstone to Calcareous Dolomitic Packstone,** light tan-grey to dark grey weathered, medium grey fresh, micritic to medium-grained, massive, slightly resistant, weak HCl reaction | 68.52 | 30.27 | 0.89 | 0.140 | 0.074 | 130 | 36 | 171 |
| 132798<br>UTM 603690E, 5760086N | Mbf | 2.5 | **Strongly Dolomitic Lime Grainstone to Strongly Dolomitic Lime Packstone,** light grey to dark grey weathered, medium grey fresh, micritic to medium-grained, fossils: fragment (indeterminate), rare; brachiopod, rare, massive, resistant, weak HCl reaction | 90.06 | 9.12 | 0.33 | 0.070 | 0.037 | 237 | 28 | 50 |
| 132799<br>UTM 603690E, 5760083N | Mbf | 2.5 | **Dolomitic Lime Grainstone,** very-light grey to very-dark grey weathered, medium grey fresh, micritic to coarse-grained, fossils: solitary rugose coral, rare, massive, resistant, vuggy (open), weak fetid odour, weak HCl reaction | 92.79 | 6.28 | 0.64 | 0.079 | 0.044 | 259 | 26 | 50 |
| 132800<br>UTM 603688E, 5760091N | Mbf | 0.75 | **Strongly Dolomitic Lime Grainstone to Strongly Dolomitic Lime Packstone,** light grey to medium grey weathered, medium grey to dark grey fresh, micritic to very coarse-grained, fossils: ooid, rare, massive, slightly resistant, alteration: oxide, localized, weak intensity, weak HCl reaction | 79.23 | 19.71 | 0.70 | 0.110 | 0.065 | 199 | 38 | 136 |
| 132801<br>UTM 607817E, 5754567N | Msh | 1 | **Lime Wackestone to Lime Packstone,** light grey weathered, medium grey fresh, micritic to medium-grained, fossils: fragment (indeterminate), rare; brachiopod, rare, thickly-bedded to massively-bedded, resistant, vuggy (calcite-filled), alteration: oxide, fracture-related, weak intensity, moderate HCl reaction | 97.27 | 1.63 | 0.78 | 0.127 | 0.047 | 291 | 20 | 50 |
| 132802<br>UTM 607802E, 5754571N | Msh | 0.25 | **Slightly Dolomitic Lime Packstone to Slightly Dolomitic Lime Wackestone,** light grey to medium grey weathered, medium grey fresh, micritic to medium-grained, thickly-bedded to massively-bedded, resistant, vuggy (calcite-filled), nodular, alteration: oxide, fracture-related, weak intensity, moderate HCl reaction, structure(s): calcite veinlet, local-scale, weak; bedding (undulatory), local-scale, 119/24 SW | 96.11 | 2.49 | 1.02 | 0.158 | 0.059 | 296 | 22 | 50 |
| 132818<br>UTM 607792E, 5754526N | Mpk | 2.25 | **Calcareous Dolomitic Wackestone to Calcareous Dolomitic Packstone,** light grey to medium grey weathered, medium grey fresh, micritic to fine-grained, thickly-bedded to massively-bedded, resistant, nodular, alteration: oxide, fracture-related, weak intensity, weak HCl reaction | 69.05 | 28.43 | 2.27 | 0.089 | 0.058 | 191 | 54 | 496 |
| 132828<br>UTM 604679E, 5762956N | Dpa | grab | **Lime Mudstone to Lime Wackestone,** light grey to dark grey weathered, dark grey fresh, micritic to fine-grained, nodular, moderate HCl reaction | 97.18 | 1.30 | 1.01 | 0.246 | 0.114 | 345 | 81 | 50 |
| 132829<br>UTM 604649E, 5763030N | Dpa | 2.25 | **Slightly Dolomitic Lime Wackestone to Slightly Dolomitic Lime Grainstone,** light grey to medium grey weathered, tan to light grey fresh, micritic to fine-grained, hard, banded, alteration: oxide, fracture-related, weak intensity; oxide, contact-related, weak intensity, strong HCl reaction, structure(s): calcite veinlet, local-scale, weak | 95.11 | 2.78 | 2.02 | 0.258 | 0.091 | 222 | 44 | 50 |

| Sample | Strat Unit | Strat Tkns (m) | Description | $CaCO_3$ (%) | $MgCO_3$ (%) | $SiO_2$ (%) | $Al_2O_3$ (%) | $Fe_2O_3$ (%) | SrO (ppm) | MnO (ppm) | $P_2O_5$ (ppm) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 132830 UTM 604505E, 5763062N | Mbf | 5 | **Lime Mudstone to Lime Wackestone,** light grey to tan weathered, medium grey to dark grey fresh, micritic to fine-grained, fossils: solitary rugose coral, common, thickly-bedded to massively-bedded, resistant, alteration: oxide, fracture-related, weak intensity, moderate HCl reaction, structure(s): bedding (undulatory), local-scale, 171/48 W | 96.66 | 1.28 | 1.59 | 0.259 | 0.122 | 354 | 113 | 50 |
| 132831 UTM 604442E, 5763041N | Mbf | 3.25 | **Calcareous Mudstone,** light grey to tan weathered, dark grey fresh, micritic to very fine-grained, fossils: crinoid ossicle, rare, thinly-bedded to moderately-bedded, slightly resistant, fissile, alteration: silica; oxide, fracture-related, weak intensity; oxide, contact-related, weak intensity, strong HCl reaction, structure(s): bedding (undulatory), local-scale, 169/50 SW | 74.18 | 2.89 | 19.94 | 1.566 | 0.741 | 2039 | 172 | 805 |
| 132832 UTM 604373E, 5763028N | Mbf | 1.25 | **Calcareous Mudstone,** light grey weathered, dark grey fresh, micritic to very fine-grained, thinly-bedded to moderately-bedded, recessive, homogeneous, alteration: silica; oxide, fracture-related, weak intensity; oxide, contact-related, weak intensity, strong HCl reaction, structure(s): bedding (undulatory), local-scale, 152/41 SW | 81.19 | 1.69 | 14.58 | 0.940 | 0.378 | 2418 | 104 | 325 |
| 132833 UTM 604329E, 5763042N | Mbf | grab | **Calcareous Dolomitic Grainstone,** light grey to medium grey weathered, medium grey to medium brown-grey fresh, micritic to coarse-grained, fossils: colonial coral, very rare; brachiopod, rare, nodular, weak HCl reaction | 74.41 | 25.29 | 0.64 | 0.088 | 0.060 | 327 | 60 | 50 |
| 132834 UTM 604234E, 5763158N | Mbf | grab | **Lime Mudstone to Lime Wackestone,** light grey to rust weathered, dark grey fresh, micritic to medium-grained, nodular, vuggy (calcite-filled), alteration: oxide, localized, moderate intensity, moderate HCl reaction | 98.56 | 1.26 | 0.23 | 0.062 | 0.026 | 328 | 16 | 50 |
| 132835 UTM 604208E, 5763196N | Mbf | grab | **Lime Packstone,** light grey to dark grey weathered, medium grey fresh, micritic to medium-grained, fossils: fragment (indeterminate), rare, nodular, alteration: oxide, localized, moderate intensity; oxide, fracture-related, moderate intensity, strong fetid odour, moderate HCl reaction | 96.54 | 1.23 | 1.71 | 0.278 | 0.191 | 344 | 139 | 50 |
| 132843 UTM 604099E, 5763068N | Mbf | 2.25 | **Calcareous Mudstone,** light grey to medium grey weathered, dark grey fresh, micritic to medium-grained, fossils: fragment (indeterminate), rare, thinly-bedded to moderately-bedded, resistant, nodular, alteration: silica; oxide, fracture-related, weak intensity, weak fetid odour, weak HCl reaction | 71.78 | 5.19 | 20.94 | 0.982 | 0.652 | 279 | 653 | 50 |
| 132844 UTM 604407E, 5762992N | Mbf | grab | **Lime Grainstone to Lime Packstone,** medium grey weathered, light grey to medium grey fresh, micritic to coarse-grained, fossils: ooid, common; fragment (indeterminate), common; crinoid ossicle, common, alteration: oxide, fracture-related, weak intensity, weak HCl reaction | 99.13 | 0.90 | 0.32 | 0.061 | 0.015 | 248 | 28 | 50 |
| 132845 UTM 604757E, 5762701N | Dpa | grab | **Lime Packstone to Lime Grainstone,** medium grey to medium brown-grey weathered, medium grey to dark grey fresh, micritic to fine-grained, nodular, weak HCl reaction | 96.72 | 1.38 | 1.68 | 0.364 | 0.168 | 392 | 62 | 50 |
| 132846 UTM 605013E, 5762636N | Dpa | 2.25 | **Dolomitic Packstone,** light grey to medium grey weathered, medium grey to dark grey fresh, micritic to medium-grained, massive, resistant, weak fetid odour, very weak HCl reaction, structure(s): joint, local-scale, strong | 55.33 | 43.85 | 1.04 | 0.230 | 0.127 | 106 | 52 | 50 |
| 132847 UTM 605011E, 5762646N | Dpa | 1.25 | **Dolomitic Packstone,** light tan-grey to medium grey weathered, medium grey fresh, micritic to medium-grained, massive, resistant, weak fetid odour, weak (powder) HCl reaction | 54.58 | 45.14 | 0.64 | 0.172 | 0.087 | 107 | 48 | 50 |
| 132859 UTM 599705E, 5762437N | Mpk | 1 | **Lime Wackestone,** medium grey weathered and fresh, micritic to medium-grained, fossils: crinoid ossicle, rare, massive, resistant, homogeneous, strong HCl reaction | 98.95 | 1.15 | 0.16 | 0.048 | 0.006 | 335 | 24 | 50 |
| 132860 UTM 599702E, 5762433N | Mpk | grab | **Slightly Dolomitic Lime Mudstone to Slightly Dolomitic Lime Wackestone,** light grey to medium grey weathered, light grey fresh, micritic to fine-grained, fossils: crinoid ossicle, rare, strong HCl reaction | 97.70 | 2.34 | 0.16 | 0.066 | 0.010 | 293 | 33 | 50 |

| Sample | Strat Unit | Strat Tkns (m) | Description | $CaCO_3$ (%) | $MgCO_3$ (%) | $SiO_2$ (%) | $Al_2O_3$ (%) | $Fe_2O_3$ (%) | SrO (ppm) | MnO (ppm) | $P_2O_5$ (ppm) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 132863<br>UTM 599713E, 5762433N | Mpk | grab | **Lime Grainstone,** medium grey weathered, light grey fresh, micritic to very coarse-grained, fossils: fragment (indeterminate); crinoid ossicle, resistant, strong HCl reaction | 99.43 | 0.82 | 0.42 | 0.058 | 0.011 | 272 | 25 | 50 |
| 132864<br>UTM 599720E, 5762427N | Mpk | grab | **Lime Grainstone,** medium grey weathered, light grey fresh, micritic to very coarse-grained, fossils: fragment (indeterminate); crinoid ossicle, resistant, strong HCl reaction | 99.48 | 0.92 | 0.22 | 0.049 | 0.004 | 319 | 24 | 50 |
| 132865<br>UTM 599732E, 5762435N | Mpk | grab | **Lime Grainstone,** medium grey weathered, light grey fresh, micritic to very coarse-grained, fossils: fragment (indeterminate); crinoid ossicle, resistant, strong HCl reaction | 99.48 | 0.90 | 0.20 | 0.064 | 0.005 | 285 | 23 | 148 |
| 132866<br>UTM 599736E, 5762430N | Mpk | grab | **Lime Grainstone,** medium grey weathered, light grey fresh, micritic to very coarse-grained, fossils: fragment (indeterminate); crinoid ossicle, resistant, strong HCl reaction | 99.18 | 0.86 | 0.13 | 0.042 | 0.004 | 258 | 21 | 316 |
| 132867<br>UTM 599742E, 5762434N | Mpk | grab | **Lime Grainstone,** medium grey weathered, light grey fresh, micritic to very coarse-grained, fossils: fragment (indeterminate); crinoid ossicle, resistant, strong HCl reaction | 99.25 | 0.92 | 0.17 | 0.049 | 0.007 | 267 | 23 | 50 |
| 132868<br>UTM 599746E, 5762437N | Mpk | grab | **Calcareous Dolomitic Grainstone,** medium grey weathered, light grey fresh, micritic to very coarse-grained, fossils: fragment (indeterminate); crinoid ossicle, resistant, alteration: silica, strong HCl reaction | 60.56 | 27.26 | 9.08 | 1.130 | 0.419 | 175 | 312 | 165 |
| 132869<br>UTM 599702E, 5762456N | Mpk | 3 | **Dolomitic Lime Packstone to Dolomitic Lime Grainstone,** very-light grey weathered and fresh, micritic to coarse-grained, massive, resistant, homogeneous, moderate HCl reaction | 93.29 | 6.34 | 0.79 | 0.105 | 0.038 | 263 | 49 | 125 |
| 132870<br>UTM 599702E, 5762451N | Mpk | 3 | **Lime Packstone to Lime Grainstone,** very-light grey weathered and fresh, micritic to coarse-grained, massive, resistant, homogeneous, moderate HCl reaction | 98.75 | 1.13 | 0.22 | 0.055 | 0.005 | 334 | 24 | 136 |
| 132871<br>UTM 599734E, 5762461N | Mpk | grab | **Calcareous Dolomitic Mudstone to Calcareous Dolomitic Wackestone,** medium grey to tan weathered, medium grey to dark grey fresh, micritic to fine-grained, alteration: silica, strong HCl reaction | 59.56 | 30.90 | 7.36 | 0.955 | 0.552 | 252 | 242 | 192 |
| 132872<br>UTM 599748E, 5762455N | Mpk | grab | **Calcareous Dolomitic Mudstone to Calcareous Dolomitic Wackestone,** light grey to tan weathered, medium grey to dark grey fresh, micritic to fine-grained, alteration: silica, weak HCl reaction, structure(s): calcite veinlet, local-scale, moderate | 63.43 | 27.24 | 7.68 | 0.902 | 0.376 | 250 | 214 | 174 |
| 132873<br>UTM 599752E, 5762457N | Mpk | grab | **Strongly Dolomitic Lime Mudstone,** tan weathered, light grey to medium grey fresh, micritic to fine-grained, hard, moderate HCl reaction | 74.59 | 19.64 | 4.62 | 0.822 | 0.473 | 234 | 143 | 50 |
| 132874<br>UTM 599756E, 5762467N | Mpk | grab | **Calcareous Dolomitic Mudstone,** tan weathered, light grey to medium grey fresh, micritic to fine-grained, hard, alteration: silica, weak HCl reaction | 66.48 | 26.09 | 5.22 | 1.279 | 0.565 | 191 | 172 | 50 |
| 132875<br>UTM 599745E, 5762447N | Mpk | grab | **Calcareous Dolomitic Mudstone to Calcareous Dolomitic Wackestone,** medium grey to tan weathered, medium grey fresh, micritic to fine-grained, alteration: silica, weak HCl reaction | 55.35 | 28.53 | 12.11 | 1.828 | 0.884 | 141 | 299 | 167 |
| 132878<br>UTM 605043E, 5762671N | Dpa | 1.75 | **Dolomitic Packstone,** light grey to dark grey weathered, medium grey to medium brown-grey fresh, micritic to medium-grained, massive, resistant, vuggy (open), alteration: oxide, fracture-related, weak intensity, no HCL reaction, structure(s): calcite veinlet, local-scale, weak | 54.94 | 44.31 | 0.88 | 0.225 | 0.112 | 105 | 52 | 50 |

| Sample | Strat Unit | Strat Tkns (m) | Description | $CaCO_3$ (%) | $MgCO_3$ (%) | $SiO_2$ (%) | $Al_2O_3$ (%) | $Fe_2O_3$ (%) | SrO (ppm) | MnO (ppm) | $P_2O_5$ (ppm) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 132879<br>UTM 605096E, 5762553N | Dpa | 2.25 | **Dolomitic Packstone,** light grey to dark grey weathered, light grey to medium grey fresh, micritic to medium-grained, massive, slightly resistant, alteration: oxide, fracture-related, weak intensity, weak fetid odour, no HCl reaction | 53.95 | 44.79 | 0.85 | 0.202 | 0.087 | 117 | 42 | 50 |
| 132882<br>UTM 604277E, 5763052N | Mbf | grab | **Lime Grainstone,** light grey to medium grey weathered, medium grey fresh, micritic to coarse-grained, fossils: crinoid ossicle, rare, vuggy (open), alteration: oxide, localized, weak intensity; oxide, fracture-related, weak intensity, moderate HCl reaction | 98.56 | 1.28 | 0.40 | 0.071 | 0.015 | 282 | 21 | 107 |
| 132883<br>UTM 604274E, 5763043N | Mbf | grab | **Lime Packstone,** light grey to medium grey weathered, medium grey fresh, micritic to medium-grained, hard, vuggy (open), strong HCl reaction | 93.06 | 1.90 | 3.07 | 0.578 | 0.633 | 1187 | 138 | 50 |
| 132884<br>UTM 604250E, 5763040N | Mbf | grab | **Calcareous Dolomitic Packstone,** light grey to medium grey weathered, medium grey fresh, micritic to fine-grained, hard, alteration: silica; oxide, fracture-related, weak intensity, very weak HCl reaction | 44.37 | 28.93 | 20.33 | 2.309 | 1.587 | 123 | 1387 | 774 |
| 132892<br>UTM 604131E, 5763014N | Mpk | 1.75 | **Dolomitic Packstone to Dolomitic Wackestone,** light grey to dark grey weathered, medium grey fresh, micritic to medium-grained, fossils: fragment (indeterminate), rare; crinoid ossicle, rare, massive, resistant, alteration: oxide, fracture-related, weak intensity, moderate HCl reaction | 58.95 | 34.64 | 4.33 | 0.752 | 0.596 | 182 | 189 | 50 |
| 132895<br>UTM 604085E, 5763017N | Mpk | 1.75 | **Calcareous Dolomitic Mudstone,** light grey to dark grey weathered, medium grey fresh, micritic to very fine-grained, moderately-bedded to thickly-bedded, resistant, alteration: silica; oxide, fracture-related, weak intensity, no HCL reaction, structure(s): bedding (undulatory), local-scale, 145/45 SW | 55.45 | 23.91 | 15.52 | 1.660 | 1.364 | 169 | 1052 | 340 |
| 132896<br>UTM 604136E, 5762928N | Mpk | grab | **Dolomitic Lime Grainstone,** light grey to medium grey weathered, medium grey fresh, micritic to coarse-grained, fossils: fragment (indeterminate), rare; crinoid ossicle, rare; brachiopod, rare, resistant, moderate HCl reaction | 91.97 | 6.99 | 0.24 | 0.061 | 0.054 | 205 | 38 | 121 |
| 132897<br>UTM 605123E, 5762408N | Dpa | grab | **Dolomitic Packstone,** light grey to medium grey weathered, medium grey to medium brown-grey fresh, micritic to fine-grained, strong fetid odour, no HCl reaction | 55.36 | 44.14 | 0.71 | 0.173 | 0.082 | 109 | 46 | 50 |
| 132898<br>UTM 605130E, 5762413N | Dpa | 2 | **Dolomitic Packstone to Dolomitic Wackestone,** light tan-grey to dark grey weathered, medium grey to medium brown-grey fresh, micritic to fine-grained, massive, slightly resistant, vuggy (open), alteration: oxide, localized, weak intensity; oxide, fracture-related, weak intensity, weak fetid odour, no HCl reaction | 54.03 | 44.56 | 0.70 | 0.193 | 0.088 | 112 | 40 | 50 |
| 132899<br>UTM 605136E, 5762428N | Dpa | 0.75 | **Dolomitic Packstone to Dolomitic Wackestone,** light grey to dark grey weathered, light grey to light brown-grey fresh, micritic to medium-grained, massive, resistant, vuggy (open), alteration: oxide, localized, weak intensity; oxide, fracture-related, weak intensity, no HCl reaction | 54.81 | 44.31 | 0.83 | 0.181 | 0.078 | 120 | 38 | 50 |
| 132900<br>UTM 605147E, 5762442N | Dpa | 3.5 | **Dolomitic Packstone to Dolomitic Wackestone,** light grey to very-dark grey weathered, medium grey fresh, micritic to fine-grained, massive, slightly resistant, weak fetid odour, no HCl reaction | 54.44 | 44.89 | 0.80 | 0.219 | 0.095 | 115 | 41 | 50 |
| 132901<br>UTM 599774E, 5762469N | Mpk | 1 | **Calcareous Mudstone,** light grey weathered, tan to very-light grey fresh, micritic to coarse-grained, fossils: fragment (indeterminate), rare; crinoid stem, abundant; crinoid ossicle, abundant, massive, resistant, alteration: silica, strong HCl reaction | 85.62 | 8.14 | 5.59 | 0.559 | 0.248 | 267 | 168 | 174 |
| 132902<br>UTM 599780E, 5762468N | Mpk | 1 | **Calcareous Dolomitic Packstone,** light grey to tan weathered, medium grey fresh, micritic to medium-grained, fossils: crinoid ossicle, rare, massive, resistant, alteration: silica, moderate HCl reaction, structure(s): fracture, local-scale, moderate | 59.08 | 33.11 | 5.69 | 1.324 | 0.560 | 165 | 177 | 134 |

| Sample | Strat Unit | Strat Tkns (m) | Description | $CaCO_3$ (%) | $MgCO_3$ (%) | $SiO_2$ (%) | $Al_2O_3$ (%) | $Fe_2O_3$ (%) | SrO (ppm) | MnO (ppm) | $P_2O_5$ (ppm) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 132903<br>UTM 599782E, 5762472N | Mpk | grab | **Calcareous Dolomitic Packstone,** light grey to tan weathered, medium grey fresh, micritic to medium-grained, fossils: crinoid ossicle, rare, massive, resistant, moderate HCl reaction, structure(s): fracture, local-scale, moderate | 70.07 | 25.04 | 3.48 | 0.549 | 0.401 | 255 | 159 | 50 |
| 132904<br>UTM 599788E, 5762487N | Mpk | grab | **Calcareous Dolomitic Packstone,** light grey to tan weathered, medium grey fresh, micritic to medium-grained, fossils: crinoid ossicle, rare, massive, resistant, moderate HCl reaction, structure(s): fracture, local-scale, moderate | 70.39 | 23.70 | 4.05 | 1.010 | 0.460 | 242 | 164 | 111 |
| 132905<br>UTM 599800E, 5762472N | Mpk | 0.5 | **Calcareous Dolomitic Mudstone,** tan to medium grey weathered, medium grey fresh, micritic, massive, resistant, hard, homogeneous, alteration: silica, moderate HCl reaction | 46.28 | 29.94 | 19.66 | 2.184 | 1.090 | 133 | 791 | 443 |
| 132906<br>UTM 599806E, 5762487N | Mpk | grab | **Strongly Dolomitic Lime Packstone,** light grey weathered, very-light grey fresh, micritic to coarse-grained, resistant, crumbly, strong HCl reaction | 85.53 | 10.69 | 2.49 | 0.456 | 0.222 | 326 | 91 | 50 |
| 132907<br>UTM 599828E, 5762490N | Mpk | grab | **Calcareous Dolomitic Wackestone to Calcareous Dolomitic Packstone,** light grey weathered, very-light grey fresh, micritic to coarse-grained, resistant, crumbly, alteration: silica, moderate HCl reaction | 62.29 | 29.06 | 6.98 | 1.145 | 0.435 | 211 | 173 | 152 |
| 132908<br>UTM 599834E, 5762479N | Mpk | grab | **Lime Wackestone to Lime Packstone,** light grey to medium grey weathered, medium grey to dark grey fresh, micritic to medium-grained, fossils: crinoid ossicle, abundant, resistant, fossiliferous, strong HCl reaction | 95.43 | 1.95 | 1.74 | 0.212 | 0.098 | 361 | 52 | 50 |
| 132909<br>UTM 599856E, 5762482N | Mpk | grab | **Dolomitic Mudstone,** tan to light grey weathered, tan to medium grey fresh, micritic, fossils: crinoid ossicle, abundant, resistant, hard, blocky, alteration: silica, weak HCl reaction, structure(s): calcite veinlet, local-scale, weak | 53.63 | 35.48 | 7.42 | 1.716 | 0.712 | 177 | 236 | 262 |
| 132912<br>UTM 599712E, 5762392N | Mpk | grab | **Lime Mudstone to Lime Packstone,** medium grey weathered and fresh, micritic to medium-grained, resistant, weak fetid odour, strong HCl reaction | 98.07 | 0.84 | 0.20 | 0.046 | 0.006 | 290 | 24 | 241 |
| 132913<br>UTM 599711E, 5762378N | Mpk | grab | **Lime Mudstone to Lime Packstone,** medium grey weathered and fresh, micritic to medium-grained, resistant, weak fetid odour, strong HCl reaction | 99.36 | 0.92 | 0.14 | 0.072 | 0.029 | 340 | 25 | 50 |
| 132914<br>UTM 599726E, 5762383N | Mpk | grab | **Lime Mudstone to Lime Packstone,** medium grey weathered and fresh, micritic to medium-grained, resistant, weak fetid odour, moderate HCl reaction | 98.36 | 0.88 | 0.13 | 0.044 | 0.003 | 289 | 22 | 112 |
| 132915<br>UTM 599730E, 5762380N | Mpk | grab | **Strongly Dolomitic Lime Mudstone to Strongly Dolomitic Lime Packstone,** medium grey weathered and fresh, micritic to medium-grained, resistant, weak fetid odour, strong HCl reaction | 84.72 | 9.12 | 4.48 | 0.709 | 0.104 | 243 | 101 | 222 |
| 132916<br>UTM 599736E, 5762383N | Mpk | grab | **Lime Packstone to Lime Grainstone,** medium grey weathered and fresh, micritic to coarse-grained, fossils: crinoid ossicle, abundant, resistant, strong HCl reaction, structure(s): calcite veinlet, outcrop-scale, weak | 97.38 | 0.94 | 1.04 | 0.051 | 0.008 | 290 | 25 | 50 |
| 132917<br>UTM 599738E, 5762365N | Mpk | grab | **Lime Packstone to Lime Grainstone,** medium grey weathered and fresh, micritic to coarse-grained, fossils: crinoid ossicle, abundant, resistant, strong HCl reaction, structure(s): calcite veinlet, outcrop-scale, weak | 97.93 | 0.94 | 0.43 | 0.041 | 0.001 | 305 | 21 | 50 |
| 132921<br>UTM 603613E, 5759800N | Mbf | 2 | **Strongly Dolomitic Lime Mudstone,** tan to light grey weathered, tan fresh, micritic, massive, resistant, hard, homogeneous, weak HCl reaction | 76.41 | 21.73 | 2.10 | 0.164 | 0.071 | 208 | 36 | 50 |
| 132922<br>UTM 603592E, 5759789N | Mpk | grab | **Dolomitic Lime Packstone to Dolomitic Lime Grainstone,** medium grey weathered and fresh, micritic to very coarse-grained, resistant, homogeneous, strong HCl reaction | 88.62 | 7.76 | 2.78 | 0.232 | 0.091 | 632 | 31 | 200 |
| 132923<br>UTM 603585E, 5759800N | Mpk | grab | **Strongly Dolomitic Lime Packstone to Strongly Dolomitic Lime Grainstone,** medium grey weathered and fresh, micritic to very coarse-grained, resistant, homogeneous, strong HCl reaction | 87.85 | 11.00 | 0.58 | 0.075 | 0.029 | 288 | 31 | 50 |

| Sample | Strat Unit | Strat Tkns (m) | Description | $CaCO_3$ (%) | $MgCO_3$ (%) | $SiO_2$ (%) | $Al_2O_3$ (%) | $Fe_2O_3$ (%) | SrO (ppm) | MnO (ppm) | $P_2O_5$ (ppm) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 132924<br>UTM 603587E, 5759789N | Mpk | 3 | **Slightly Dolomitic Lime Mudstone to Limestone Breccia,** medium grey weathered, dark grey to black fresh, micritic, resistant, brecciated, strong HCl reaction | 94.63 | 3.68 | 0.85 | 0.136 | 0.070 | 434 | 30 | 50 |
| 132925<br>UTM 603573E, 5759789N | Mpk | grab | **Calcareous Dolomitic Mudstone,** light grey to medium grey weathered, light grey to tan fresh, micritic, resistant, homogeneous, moderate HCl reaction | 75.37 | 23.14 | 1.05 | 0.178 | 0.073 | 255 | 36 | 104 |
| 132926<br>UTM 605158E, 5762446N | Dpa | 1.25 | **Dolomitic Packstone to Dolomitic Wackestone,** light grey to dark grey weathered, dark grey to medium brown-grey fresh, micritic to fine-grained, massive, slightly resistant, nodular, vuggy (open), alteration: oxide, localized, weak intensity; oxide, fracture-related, weak intensity, no HCL reaction, structure(s): calcite veinlet, local-scale, very weak | 54.67 | 43.64 | 0.88 | 0.191 | 0.085 | 110 | 45 | 50 |
| 132927<br>UTM 605164E, 5762433N | Dpa | 1.75 | **Dolomitic Packstone to Dolomitic Wackestone,** light grey to dark grey weathered, medium grey fresh, micritic to fine-grained, massive, resistant, vuggy (open), alteration: oxide, fracture-related, weak intensity, no HCl reaction | 54.86 | 44.37 | 0.84 | 0.208 | 0.097 | 109 | 42 | 50 |
| 132928<br>UTM 605180E, 5762416N | Dpa | 1.5 | **Dolomitic Packstone to Dolomitic Wackestone,** light grey to dark grey weathered, medium grey fresh, micritic to fine-grained, massive, resistant, vuggy (open), alteration: oxide, fracture-related, weak intensity, no HCl reaction | 54.24 | 44.06 | 0.73 | 0.159 | 0.072 | 111 | 42 | 50 |
| 132929<br>UTM 605193E, 5762417N | Dpa | 2 | **Dolomitic Packstone to Dolomitic Wackestone,** light grey to dark grey weathered, medium grey fresh, micritic to fine-grained, massive, resistant, vuggy (open), alteration: oxide, fracture-related, weak intensity, no HCl reaction | 54.47 | 44.60 | 0.95 | 0.165 | 0.109 | 107 | 51 | 50 |
| 132930<br>UTM 605197E, 5762417N | Dpa | 2 | **Dolomitic Packstone to Dolomitic Wackestone,** light grey to dark grey weathered, medium grey fresh, micritic to fine-grained, massive, resistant, vuggy (open), alteration: oxide, fracture-related, weak intensity, no HCl reaction | 54.72 | 44.35 | 0.80 | 0.226 | 0.100 | 113 | 44 | 50 |
| 132931<br>UTM 599852E, 5762513N | Mpk | grab | **Strongly Dolomitic Lime Wackestone to Strongly Dolomitic Lime Mudstone,** light grey to medium grey weathered, medium grey fresh, micritic to fine-grained, alteration: oxide, fracture-related, weak intensity, moderate HCl reaction | 73.30 | 22.03 | 3.20 | 0.570 | 0.405 | 264 | 148 | 136 |
| 132932<br>UTM 599853E, 5762512N | Mpk | grab | **Lime Grainstone,** light grey to medium grey weathered, very-light grey to medium grey fresh, micritic to very coarse-grained, fossils: fragment (indeterminate), rare, alteration: oxide, fracture-related, weak intensity, strong HCl reaction | 98.50 | 1.00 | 0.39 | 0.068 | 0.023 | 248 | 22 | 128 |
| 132933<br>UTM 599864E, 5762521N | Mpk | grab | **Lime Grainstone,** light grey to medium grey weathered and fresh, micritic to very coarse-grained, nodular, alteration: oxide, fracture-related, weak intensity, weak fetid odour, strong HCl reaction | 98.15 | 0.98 | 0.35 | 0.079 | 0.036 | 278 | 25 | 106 |
| 132934<br>UTM 599877E, 5762518N | Mpk | grab | **Lime Grainstone,** light grey to medium grey weathered, medium grey fresh, micritic to coarse-grained, fossils: solitary rugose coral, very rare, vuggy (open), alteration: oxide, fracture-related, weak intensity, strong HCl reaction | 99.06 | 1.03 | 0.44 | 0.074 | 0.041 | 255 | 37 | 50 |
| 132935<br>UTM 599879E, 5762513N | Mpk | grab | **Lime Grainstone,** light grey to medium grey weathered, medium grey fresh, micritic to very coarse-grained, fossils: crinoid ossicle, rare, alteration: oxide, localized, weak intensity; oxide, fracture-related, weak intensity, strong HCl reaction | 98.57 | 0.69 | 0.28 | 0.044 | 0.005 | 227 | 18 | 272 |
| 132936<br>UTM 599893E, 5762511N | Mpk | grab | **Lime Grainstone,** light grey to medium grey weathered and fresh, micritic to coarse-grained, fossils: crinoid ossicle, rare, nodular, alteration: oxide, fracture-related, weak intensity, strong HCl reaction | 98.54 | 0.94 | 0.35 | 0.079 | 0.038 | 271 | 32 | 50 |
| 132937<br>UTM 599893E, 5762471N | Mpk | grab | **Calcareous Mudstone,** light grey to dark grey weathered, medium grey fresh, micritic to coarse-grained, fossils: fragment (indeterminate), rare; crinoid ossicle, rare, heterogeneous, vuggy (open), alteration: silica; oxide, fracture-related, weak intensity, very weak HCl reaction | 65.36 | 22.63 | 8.84 | 1.499 | 0.686 | 215 | 180 | 308 |

| Sample | Strat Unit | Strat Tkns (m) | Description | $CaCO_3$ (%) | $MgCO_3$ (%) | $SiO_2$ (%) | $Al_2O_3$ (%) | $Fe_2O_3$ (%) | SrO (ppm) | MnO (ppm) | $P_2O_5$ (ppm) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 132938 UTM 599882E, 5762467N | Mpk | grab | **Strongly Dolomitic Lime Packstone to Strongly Dolomitic Lime Wackestone,** light grey to medium grey weathered, medium grey fresh, micritic to coarse-grained, alteration: oxide, fracture-related, weak intensity, moderate HCl reaction | 84.30 | 11.78 | 2.50 | 0.541 | 0.350 | 336 | 107 | 50 |
| 132939 UTM 599890E, 5762466N | Mpk | grab | **Lime Packstone to Lime Grainstone,** light grey to medium grey weathered, medium grey fresh, micritic to coarse-grained, alteration: oxide, fracture-related, weak intensity, strong HCl reaction | 98.36 | 0.88 | 0.21 | 0.049 | 0.007 | 255 | 22 | 316 |
| 132940 UTM 599901E, 5762476N | Mpk | grab | **Lime Grainstone to Lime Packstone,** light grey to medium grey weathered, medium grey fresh, micritic to coarse-grained, fossils: fragment (indeterminate), rare; crinoid ossicle, rare; brachiopod, rare, alteration: oxide, fracture-related, weak intensity, strong HCl reaction | 98.43 | 0.96 | 0.50 | 0.066 | 0.019 | 266 | 30 | 162 |
| 132941 UTM 599910E, 5762433N | Mpk | 1.25 | **Calcareous Dolomitic Packstone,** light grey to dark grey weathered, light grey fresh, micritic to medium-grained, massive, resistant, alteration: silica; oxide, fracture-related, weak intensity, very weak HCl reaction, structure(s): calcite veinlet, local-scale, weak | 49.81 | 31.13 | 14.18 | 1.199 | 2.811 | 170 | 3317 | 183 |
| 132945 UTM 599962E, 5762332N | Mpk | 1.25 | **Lime Grainstone,** light grey to dark grey weathered, medium grey fresh, micritic to coarse-grained, massive, slightly resistant, alteration: oxide, fracture-related, weak intensity, strong HCl reaction, structure(s): calcite veinlet, local-scale, very weak | 96.38 | 1.00 | 2.97 | 0.138 | 0.048 | 311 | 32 | 104 |
| 132946 UTM 599955E, 5762299N | Mpk | grab | **Lime Grainstone,** yellow-brown to medium grey weathered, medium grey fresh, micritic to coarse-grained, fossils: solitary rugose coral, rare; fragment (indeterminate), rare; crinoid ossicle, rare, moderately-bedded to massively-bedded, slightly resistant, alteration: oxide, fracture-related, weak intensity, strong HCl reaction | 98.79 | 1.00 | 0.45 | 0.051 | 0.005 | 274 | 19 | 50 |
| 132947 UTM 599926E, 5762231N | Mpk | grab | **Lime Grainstone,** light grey weathered, medium grey fresh, micritic to medium-grained, fossils: crinoid ossicle, rare, nodular, alteration: oxide, fracture-related, weak intensity, strong HCl reaction | 99.57 | 0.88 | 0.10 | 0.037 | 0.002 | 302 | 20 | 50 |
| 132948 UTM 599933E, 5762197N | Mpk | 1 | **Lime Grainstone,** light grey weathered, medium grey fresh, micritic to medium-grained, fossils: crinoid ossicle, rare, massive, slightly resistant, alteration: oxide, fracture-related, weak intensity, strong HCl reaction | 99.88 | 0.86 | 0.11 | 0.041 | 0.002 | 313 | 21 | 50 |
| 132949 UTM 599937E, 5762205N | Mpk | 1 | **Lime Grainstone,** light grey weathered, light grey to medium grey fresh, micritic to very coarse-grained, fossils: fragment (indeterminate), rare; crinoid ossicle, common, massive, slightly resistant, alteration: oxide, fracture-related, weak intensity, weak fetid odour, strong HCl reaction | 98.74 | 0.90 | 0.17 | 0.040 | 0.006 | 269 | 22 | 50 |
| 132950 UTM 599894E, 5762258N | Mpk | 1.25 | **Lime Grainstone to Lime Packstone,** light grey weathered, medium grey fresh, micritic to medium-grained, massive, slightly resistant, nodular, alteration: oxide, fracture-related, weak intensity, strong HCl reaction | 99.20 | 0.92 | 0.61 | 0.055 | 0.007 | 289 | 30 | 50 |
| 132955 UTM 603577E, 5759743N | Mpk | grab | **Strongly Dolomitic Lime Wackestone to Strongly Dolomitic Lime Grainstone,** light grey weathered and fresh, micritic to very coarse-grained, fossils: crinoid ossicle, abundant, crumbly, fossiliferous, strong HCl reaction | 82.03 | 17.68 | 0.57 | 0.095 | 0.039 | 217 | 35 | 50 |
| 132956 UTM 603576E, 5759734N | Mpk | grab | **Strongly Dolomitic Lime Wackestone to Strongly Dolomitic Lime Grainstone,** light grey weathered and fresh, micritic to very coarse-grained, fossils: crinoid ossicle, abundant, crumbly, fossiliferous, strong HCl reaction | 82.90 | 16.59 | 0.90 | 0.131 | 0.042 | 263 | 29 | 130 |
| 132957 UTM 603593E, 5759730N | Mbf | grab | **Calcareous Dolomitic Grainstone to Calcareous Dolomitic Mudstone,** very-light grey weathered, light grey fresh, micritic to very coarse-grained, fossils: crinoid stem; crinoid ossicle, resistant, strong HCl reaction | 68.93 | 30.19 | 1.23 | 0.210 | 0.088 | 172 | 66 | 181 |

| Sample | Strat Unit | Strat Tkns (m) | Description | $CaCO_3$ (%) | $MgCO_3$ (%) | $SiO_2$ (%) | $Al_2O_3$ (%) | $Fe_2O_3$ (%) | SrO (ppm) | MnO (ppm) | $P_2O_5$ (ppm) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 132958<br>UTM 603597E, 5759726N | Mbf | grab | **Strongly Dolomitic Lime Grainstone,** very-light grey weathered, light grey fresh, micritic to very coarse-grained, fossils: crinoid stem; crinoid ossicle, resistant, strong HCl reaction | 85.90 | 13.05 | 0.90 | 0.107 | 0.024 | 250 | 26 | 50 |
| 132959<br>UTM 605121E, 5756031N | Msh | 1.5 | **Calcareous Mudstone,** medium grey weathered, dark grey fresh, micritic to very fine-grained, massive, resistant, homogeneous, alteration: silica, moderate HCl reaction, structure(s): calcite veinlet, local-scale, very weak | 78.57 | 15.52 | 6.34 | 0.242 | 0.162 | 222 | 54 | 50 |
| 132960<br>UTM 605117E, 5756022N | Msh | 3 | **Dolomitic Lime Mudstone,** medium grey weathered, dark grey fresh, micritic to very fine-grained, massive, resistant, homogeneous, moderate HCl reaction, structure(s): calcite veinlet, local-scale, very weak | 93.08 | 5.38 | 0.96 | 0.152 | 0.050 | 334 | 22 | 50 |
| 132961<br>UTM 605129E, 5756011N | Msh | 3 | **Slightly Dolomitic Lime Mudstone to Limestone Breccia,** dark grey weathered, dark grey to black fresh, micritic, moderately-bedded, resistant, brecciated, strong HCl reaction | 95.59 | 4.02 | 0.44 | 0.085 | 0.020 | 399 | 19 | 50 |
| 132962<br>UTM 605137E, 5756017N | Msh | 3 | **Dolomitic Lime Mudstone,** dark grey weathered, dark grey to black fresh, micritic, moderately-bedded, resistant, brecciated, strong HCl reaction | 94.13 | 4.94 | 0.56 | 0.069 | 0.023 | 347 | 20 | 50 |
| 132963<br>UTM 605145E, 5756018N | Msh | 3 | **Calcareous Dolomitic Mudstone,** dark grey weathered, dark grey to black fresh, micritic, moderately-bedded, resistant, brecciated, strong HCl reaction | 71.95 | 28.18 | 0.24 | 0.070 | 0.068 | 198 | 61 | 50 |
| 132964<br>UTM 605160E, 5756014N | Msh | grab | **Calcareous Dolomitic Wackestone,** medium grey weathered and fresh, micritic to very fine-grained, fossils: crinoid ossicle, resistant, crumbly, strong HCl reaction | 76.96 | 23.37 | 0.14 | 0.055 | 0.049 | 217 | 50 | 50 |
| 132969<br>UTM 605190E, 5756047N | Msh | 3 | **Dolomitic Lime Mudstone,** medium grey weathered and fresh, micritic, moderately-bedded, resistant, blocky, brecciated, strong HCl reaction | 92.40 | 6.53 | 1.06 | 0.138 | 0.038 | 370 | 26 | 50 |
| 132970<br>UTM 605191E, 5756061N | Msh | 2 | **Slightly Dolomitic Lime Mudstone,** medium grey weathered and fresh, micritic, moderately-bedded, resistant, blocky, brecciated, moderate HCl reaction | 95.08 | 3.95 | 1.05 | 0.129 | 0.033 | 407 | 20 | 50 |
| 132971<br>UTM 605199E, 5756071N | Msh | 3 | **Slightly Dolomitic Lime Mudstone to Limestone Breccia,** medium grey weathered and fresh, micritic, moderately-bedded, resistant, blocky, brecciated, strong HCl reaction | 97.54 | 2.45 | 0.65 | 0.097 | 0.020 | 410 | 16 | 50 |
| 132972<br>UTM 605198E, 5756074N | Msh | 1 | **Slightly Dolomitic Lime Mudstone,** medium grey weathered and fresh, micritic, moderately-bedded, resistant, blocky, brecciated, moderate HCl reaction | 95.67 | 4.10 | 0.95 | 0.135 | 0.036 | 369 | 21 | 50 |
| 132973<br>UTM 605212E, 5756064N | Msh | grab | **Strongly Dolomitic Lime Mudstone,** medium grey weathered and fresh, micritic, moderately-bedded, resistant, blocky, brecciated, strong HCl reaction | 86.42 | 13.87 | 0.43 | 0.080 | 0.040 | 317 | 36 | 50 |
| 132974<br>UTM 605221E, 5756074N | Msh | 1 | **Calcareous Dolomitic Mudstone to Calcareous Dolomitic Packstone,** light grey weathered and fresh, micritic to coarse-grained, fossils: crinoid ossicle, abundant, massive, resistant, fossiliferous, strong HCl reaction, structure(s): calcite veinlet, local-scale, weak | 75.21 | 25.04 | 0.43 | 0.097 | 0.075 | 245 | 56 | 50 |
| 132975<br>UTM 605234E, 5756066N | Msh | 1.5 | **Strongly Dolomitic Lime Mudstone to Strongly Dolomitic Lime Packstone,** light grey weathered and fresh, micritic to coarse-grained, fossils: crinoid ossicle, abundant, massive, resistant, fossiliferous, strong HCl reaction, structure(s): calcite veinlet, local-scale, weak | 78.05 | 21.46 | 0.83 | 0.145 | 0.087 | 226 | 56 | 50 |
| 132976<br>UTM 604937E, 5756427N | Mbf | grab | **Strongly Dolomitic Lime Packstone to Strongly Dolomitic Lime Wackestone,** light grey to rust weathered, medium grey fresh, micritic to fine-grained, fossils: crinoid ossicle, rare, alteration: oxide, fracture-related, weak intensity, moderate HCl reaction | 77.32 | 21.86 | 1.15 | 0.181 | 0.079 | 234 | 41 | 50 |

| Sample | Strat Unit | Strat Tkns (m) | Description | $CaCO_3$ (%) | $MgCO_3$ (%) | $SiO_2$ (%) | $Al_2O_3$ (%) | $Fe_2O_3$ (%) | SrO (ppm) | MnO (ppm) | $P_2O_5$ (ppm) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 132977<br>UTM 604913E, 5756466N | Mbf | 1.25 | **Lime Grainstone to Lime Wackestone,** light grey to dark grey weathered, medium grey fresh, micritic to coarse-grained, fossils: fragment (indeterminate), rare; crinoid ossicle, rare, massive, resistant, alteration: oxide, fracture-related, weak intensity, moderate HCl reaction | 98.97 | 1.57 | 0.31 | 0.063 | 0.013 | 261 | 17 | 50 |
| 132988<br>UTM 604902E, 5756581N | Mbf | grab | **Dolomitic Lime Grainstone,** light grey to medium grey weathered, medium grey fresh, micritic to medium-grained, fossils: crinoid ossicle, rare; brachiopod, rare, alteration: oxide, fracture-related, weak to moderate intensity, strong HCl reaction | 93.84 | 5.79 | 0.98 | 0.119 | 0.031 | 392 | 15 | 50 |
| 132989<br>UTM 607478E, 5754571N | Mpk | 0.5 | **Lime Mudstone to Lime Wackestone,** light grey to medium grey weathered, medium grey fresh, micritic to fine-grained, massive, resistant, vuggy (calcite-filled), strong HCl reaction | 97.56 | 1.17 | 1.26 | 0.134 | 0.032 | 310 | 24 | 50 |
| 132990<br>UTM 607466E, 5754591N | Mpk | 0.5 | **Lime Mudstone to Lime Wackestone,** light grey weathered, medium grey to dark grey fresh, micritic to fine-grained, massive, resistant, vuggy (calcite-filled), alteration: oxide, fracture-related, strong HCl reaction | 98.40 | 1.11 | 0.75 | 0.087 | 0.018 | 345 | 18 | 50 |
| 132991<br>UTM 607450E, 5754617N | Mpk | 0.25 | **Lime Mudstone to Lime Wackestone,** light grey weathered, medium grey fresh, micritic to fine-grained, massive, slightly resistant, vuggy (calcite-filled), alteration: oxide, fracture-related, weak intensity, strong HCl reaction, structure(s): bedding (definite), local-scale, 154/19 SW | 98.93 | 0.98 | 0.70 | 0.088 | 0.019 | 322 | 15 | 50 |
| 132992<br>UTM 607445E, 5754634N | Mpk | grab | **Lime Mudstone to Lime Wackestone,** light grey weathered, medium grey fresh, micritic to fine-grained, massive, vuggy (calcite-filled), nodular, alteration: oxide, fracture-related, weak intensity, strong HCl reaction | 98.15 | 1.11 | 1.15 | 0.118 | 0.047 | 313 | 20 | 50 |
| 132993<br>UTM 607452E, 5754675N | Mpk | 0.25 | **Lime Mudstone to Lime Packstone,** light grey weathered, medium grey to dark grey fresh, micritic to fine-grained, massive, resistant, vuggy (calcite-filled), alteration: oxide, fracture-related, weak intensity, strong HCl reaction, structure(s): calcite veinlet, local-scale, very weak | 98.82 | 1.03 | 0.71 | 0.116 | 0.028 | 321 | 14 | 50 |
| 132994<br>UTM 607447E, 5754686N | Mpk | 1 | **Lime Grainstone to Lime Packstone,** light grey weathered, light grey to medium grey fresh, micritic to coarse-grained, massive, resistant, alteration: oxide, fracture-related, weak intensity, weak fetid odour, strong HCl reaction | 97.47 | 1.65 | 0.90 | 0.125 | 0.037 | 346 | 16 | 50 |
| 132998<br>UTM 607437E, 5754697N | Mpk | 2.25 | **Strongly Dolomitic Lime Grainstone to Strongly Dolomitic Lime Packstone,** light grey weathered, medium grey fresh, micritic to medium-grained, massive, resistant, nodular, alteration: oxide, fracture-related, weak intensity, weak HCl reaction | 80.44 | 19.91 | 0.39 | 0.084 | 0.041 | 213 | 33 | 50 |
| 132999<br>UTM 607402E, 5754717N | Mpk | 3 | **Slightly Dolomitic Lime Grainstone to Slightly Dolomitic Lime Packstone,** light grey to medium grey weathered, medium grey to medium brown-grey fresh, micritic to medium-grained, fossils: fragment (indeterminate), rare; crinoid ossicle, rare, massive, resistant, nodular, alteration: oxide, fracture-related, weak intensity, moderate HCl reaction, structure(s): bedding (undulatory), local-scale, 136/24 SW | 96.81 | 2.89 | 0.35 | 0.060 | 0.014 | 327 | 15 | 50 |
| 133000<br>UTM 607433E, 5754747N | Mpk | 1.75 | **Strongly Dolomitic Lime Grainstone to Strongly Dolomitic Lime Packstone,** light grey to medium grey weathered, medium grey fresh, micritic to medium-grained, fossils: solitary rugose coral, rare; crinoid ossicle, rare, massive, resistant, hard, alteration: oxide, fracture-related, weak intensity, weak HCl reaction | 76.19 | 22.51 | 0.67 | 0.137 | 0.066 | 168 | 37 | 50 |
| 141861<br>UTM 607542E, 5754737N | Mpk | 1 | **Slightly Dolomitic Lime Mudstone to Slightly Dolomitic Lime Wackestone,** light grey weathered, dark grey fresh, micritic to fine-grained, fossils: fragment (indeterminate), rare, thickly-bedded to massively-bedded, resistant, vuggy (calcite-filled), nodular, alteration: oxide, fracture-related, weak intensity, moderate HCl reaction, structure(s): calcite veinlet, local-scale, weak; bedding (undulatory), local-scale, 112/10 SW | 95.29 | 2.87 | 1.02 | 0.116 | 0.034 | 282 | 19 | 50 |

| Sample | Strat Unit | Strat Tkns (m) | Description | $CaCO_3$ (%) | $MgCO_3$ (%) | $SiO_2$ (%) | $Al_2O_3$ (%) | $Fe_2O_3$ (%) | SrO (ppm) | MnO (ppm) | $P_2O_5$ (ppm) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 141865<br>UTM 608252E, 5759821N | Mpk | 5.75 | **Lime Grainstone,** light grey to medium grey weathered, medium grey fresh, micritic to coarse-grained, fossils: crinoid ossicle, rare, massive, resistant, nodular, alteration: oxide, fracture-related, weak intensity, moderate HCl reaction | 97.84 | 0.98 | 0.58 | 0.067 | 0.014 | 348 | 22 | 105 |
| 141908<br>UTM 605188E, 5756123N | Mpk | 1.5 | **Strongly Dolomitic Lime Mudstone to Strongly Dolomitic Lime Packstone,** light grey weathered, light grey to medium grey fresh, micritic to medium-grained, fossils: crinoid ossicle, massive, resistant, moderate HCl reaction | 75.59 | 22.45 | 1.53 | 0.163 | 0.062 | 200 | 39 | 205 |
| 141909<br>UTM 608396E, 5753973N | Mtv | 1 | **Dolomitic Mudstone,** tan to light grey weathered, light grey fresh, micritic, massive, resistant, blocky, homogeneous, moderate HCl reaction, structure(s): calcite veinlet, local-scale, weak | 51.81 | 42.32 | 4.61 | 0.758 | 0.440 | 136 | 411 | 352 |
| 141913<br>UTM 608416E, 5754042N | Mtv | grab | **Dolomitic Mudstone,** tan to light grey weathered, tan fresh, micritic, massive, resistant, weak fetid odour, weak HCl reaction | 53.79 | 42.97 | 3.28 | 0.162 | 0.483 | 92 | 682 | 127 |
| 141915<br>UTM 608419E, 5754049N | Mtv | grab | **Dolomitic Mudstone,** tan to light grey weathered, tan fresh, micritic, massive, resistant, weak fetid odour, weak HCl reaction | 55.70 | 43.72 | 0.83 | 0.206 | 0.151 | 86 | 105 | 245 |
| 141916<br>UTM 608453E, 5754014N | Mtv | 2.5 | **Dolomitic Mudstone,** tan to light grey weathered, tan fresh, micritic, massive, resistant, hard, blocky, weak fetid odour, weak HCl reaction | 54.12 | 42.38 | 3.35 | 0.283 | 0.342 | 89 | 529 | 133 |
| 141917<br>UTM 608446E, 5754022N | Mtv | 1.25 | **Dolomitic Mudstone,** tan to light grey weathered, tan fresh, micritic, massive, resistant, hard, blocky, alteration: silica, weak fetid odour, weak HCl reaction | 52.31 | 41.80 | 6.01 | 0.175 | 0.435 | 79 | 589 | 145 |
| 141918<br>UTM 608434E, 5754031N | Mtv | 1.25 | **Dolomitic Mudstone,** tan to light grey weathered, tan fresh, micritic, massive, resistant, hard, blocky, weak fetid odour, weak HCl reaction | 56.04 | 43.51 | 0.56 | 0.114 | 0.131 | 131 | 98 | 137 |
| 141919<br>UTM 608396E, 5754062N | Mtv | 1 | **Dolomitic Mudstone,** tan weathered and fresh, micritic, massive, resistant, hard, sucrosic, alteration: silica, weak HCl reaction | 50.87 | 41.57 | 6.06 | 0.587 | 0.728 | 80 | 846 | 275 |
| 141920<br>UTM 608388E, 5754068N | Mtv | 0.5 | **Dolomitic Mudstone,** tan weathered and fresh, micritic, massive, resistant, hard, sucrosic, weak HCl reaction | 59.17 | 40.77 | 0.74 | 0.094 | 0.049 | 93 | 159 | 50 |
| 141921<br>UTM 608362E, 5754106N | Mtv | grab | **Dolomitic Mudstone,** tan weathered and fresh, micritic, massive, resistant, hard, sucrosic, alteration: silica, weak HCl reaction | 46.44 | 38.62 | 13.04 | 0.414 | 1.781 | 105 | 3028 | 172 |
| 141922<br>UTM 608346E, 5754135N | Mtv | grab | **Calcareous Mudstone,** light grey weathered, medium grey to very-dark grey fresh, micritic, resistant, hard, alteration: silica, weak fetid odour, moderate HCl reaction | 25.92 | 6.19 | 31.99 | 0.500 | 2.125 | 134 | 2728 | 6904 |
| **Section 2019-01 (UTM 603684E, 5760087N)** | | | | | | | | | | | |
| 132793 | Mbf | 2.5 | **Calcareous Dolomitic Packstone to Calcareous Dolomitic Wackestone,** medium grey to dark grey weathered, medium grey to tan-grey fresh, micritic to fine-grained, massive, resistant, vuggy (calcite-filled), vuggy (open), weak HCl reaction | 65.61 | 33.30 | 0.75 | 0.142 | 0.053 | 159 | 45 | 50 |
| 132794 | Mbf | 1.25 | **Calcareous Dolomitic Packstone to Calcareous Dolomitic Wackestone,** medium grey to dark grey weathered, medium grey to tan-grey fresh, micritic to fine-grained, massive, resistant, vuggy (calcite-filled), vuggy (open), weak HCl reaction | 64.63 | 33.85 | 1.09 | 0.200 | 0.058 | 156 | 43 | 141 |
| 132795 | Mbf | 1.75 | **Strongly Dolomitic Lime Packstone to Strongly Dolomitic Lime Grainstone,** light tan-grey weathered, medium grey to dark grey fresh, micritic to medium-grained, massive, resistant, vuggy (calcite-filled), vuggy (open), weak fetid odour, moderate HCl reaction | 78.75 | 19.71 | 0.85 | 0.125 | 0.043 | 209 | 30 | 50 |
| 132796 | Mbf | 2.5 | **Strongly Dolomitic Lime Packstone to Strongly Dolomitic Lime Grainstone,** light tan-grey weathered, medium grey to dark grey fresh, micritic to medium-grained, massive, resistant, vuggy (calcite-filled), vuggy (open), weak fetid odour, weak HCl reaction | 76.62 | 21.92 | 1.15 | 0.140 | 0.056 | 194 | 30 | 204 |

| Sample | Strat Unit | Strat Tkns (m) | Description | $CaCO_3$ (%) | $MgCO_3$ (%) | $SiO_2$ (%) | $Al_2O_3$ (%) | $Fe_2O_3$ (%) | SrO (ppm) | MnO (ppm) | $P_2O_5$ (ppm) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Section 2019-02 (UTM 607727E, 5754471N)** | | | | | | | | | | | |
| 132803 | Mpk | 1.5 | **Lime Grainstone,** light grey to tan weathered, medium grey fresh, micritic to very coarse-grained, fossils: ooid, rare; oncolite, rare; crinoid ossicle, rare, thickly-bedded to massively-bedded, resistant, nodular, alteration: oxide, fracture-related, weak intensity, strong HCl reaction | 98.70 | 0.90 | 0.23 | 0.085 | 0.036 | 247 | 29 | 50 |
| 132804 | Mpk | 1.5 | **Lime Grainstone,** light grey to tan weathered, medium grey fresh, micritic to very coarse-grained, fossils: ooid, rare; oncolite, rare; crinoid ossicle, rare, thickly-bedded to massively-bedded, resistant, nodular, alteration: oxide, fracture-related, weak intensity, strong HCl reaction | 98.88 | 0.84 | 0.14 | 0.061 | 0.016 | 261 | 22 | 50 |
| 132805 | Mpk | 0.75 | **Lime Grainstone to Lime Packstone,** light grey to tan weathered, medium grey fresh, micritic to very coarse-grained, fossils: ooid, rare; oncolite, rare; crinoid ossicle, rare, thickly-bedded to massively-bedded, resistant, nodular, alteration: oxide, fracture-related, weak intensity, strong HCl reaction | 98.57 | 1.05 | 0.21 | 0.073 | 0.022 | 260 | 26 | 50 |
| 132806 | Mpk | 1 | **Lime Grainstone to Lime Packstone,** light grey weathered, medium grey fresh, micritic to very coarse-grained, fossils: ooid, rare; fragment (indeterminate), rare; crinoid ossicle, rare, thickly-bedded to massively-bedded, resistant, alteration: oxide, fracture-related, weak intensity, strong HCl reaction | 98.84 | 0.86 | 0.16 | 0.065 | 0.015 | 261 | 23 | 50 |
| 132807 | Mpk | 1.75 | **Lime Grainstone,** light grey weathered, medium grey fresh, micritic to very coarse-grained, fossils: ooid, rare; fragment (indeterminate), rare; crinoid ossicle, rare, thickly-bedded to massively-bedded, resistant, alteration: oxide, fracture-related, weak intensity, weak fetid odour, moderate HCl reaction, structure(s): calcite veinlet, local-scale, very weak | 98.75 | 0.94 | 0.18 | 0.060 | 0.008 | 265 | 20 | 50 |
| 132808 | Mpk | 1 | **Lime Grainstone to Lime Packstone,** light grey weathered, medium grey fresh, micritic to coarse-grained, fossils: solitary rugose coral, very rare; fragment (indeterminate), rare; crinoid ossicle, rare, massive, resistant, alteration: oxide, fracture-related, weak intensity, weak fetid odour, strong HCl reaction | 98.75 | 0.98 | 0.19 | 0.052 | 0.004 | 255 | 18 | 50 |
| 132809 | Mpk | 1.75 | **Slightly Dolomitic Lime Grainstone,** light grey weathered, medium grey fresh, micritic to coarse-grained, fossils: ooid, common; fragment (indeterminate), common; crinoid ossicle, common, moderately-bedded to massively-bedded, resistant, alteration: oxide, fracture-related, weak intensity, strong HCl reaction | 95.08 | 4.41 | 0.27 | 0.065 | 0.020 | 247 | 22 | 50 |
| **Section 2019-03 (UTM 607763E, 5754506N)** | | | | | | | | | | | |
| 132810 | Mpk | 1.75 | **Slightly Dolomitic Lime Grainstone,** light grey weathered, medium grey fresh, micritic to coarse-grained, fossils: ooid, rare; fragment (indeterminate), rare; crinoid ossicle, rare, moderately-bedded to thickly-bedded, resistant, nodular, alteration: oxide, fracture-related, weak intensity, weak fetid odour, moderate HCl reaction | 96.45 | 2.84 | 0.46 | 0.088 | 0.041 | 342 | 20 | 156 |
| 132811 | Mpk | 0.75 | **Lime Grainstone to Lime Packstone,** light grey weathered, medium grey fresh, micritic to coarse-grained, fossils: ooid, rare; fragment (indeterminate), rare; crinoid ossicle, rare, moderately-bedded to thickly-bedded, resistant, nodular, alteration: oxide, fracture-related, weak intensity, weak fetid odour, strong HCl reaction, structure(s): calcite veinlet, local-scale, very weak | 98.11 | 1.44 | 0.26 | 0.052 | 0.020 | 368 | 19 | 50 |
| 132812 | Mpk | 1.25 | **Lime Grainstone,** light grey weathered, medium grey to dark grey fresh, micritic to medium-grained, fossils: fragment (indeterminate), rare; crinoid ossicle, rare, moderately-bedded to thickly-bedded, slightly resistant, nodular, alteration: oxide, fracture-related, weak intensity, moderate HCl reaction | 98.54 | 1.17 | 0.13 | 0.050 | 0.023 | 366 | 18 | 50 |

| Sample | Strat Unit | Strat Tkns (m) | Description | $CaCO_3$ (%) | $MgCO_3$ (%) | $SiO_2$ (%) | $Al_2O_3$ (%) | $Fe_2O_3$ (%) | SrO (ppm) | MnO (ppm) | $P_2O_5$ (ppm) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 132813 | Mpk | 1.5 | **Lime Grainstone to Lime Packstone,** light grey weathered, medium grey fresh, micritic to medium-grained, fossils: fragment (indeterminate), rare; crinoid ossicle, rare, moderately-bedded to thickly-bedded, resistant, nodular, alteration: oxide, fracture-related, weak intensity, moderate HCl reaction, structure(s): bedding (approximate), local-scale, 252/10 NW; bedding (approximate), local-scale, 104/11 SW | 98.25 | 1.44 | 0.17 | 0.053 | 0.024 | 365 | 17 | 50 |
| 132814 | Mpk | 1.25 | **Lime Grainstone to Lime Packstone,** light grey weathered, medium grey to dark grey fresh, micritic to medium-grained, fossils: fragment (indeterminate), rare; crinoid ossicle, rare, massive, slightly resistant, alteration: oxide, fracture-related, weak intensity, strong HCl reaction | 98.32 | 1.38 | 0.14 | 0.048 | 0.022 | 387 | 14 | 50 |
| 132815 | Mpk | 1.75 | **Lime Grainstone to Lime Packstone,** light grey weathered, medium grey to dark grey fresh, micritic to medium-grained, fossils: fragment (indeterminate), rare; crinoid ossicle, rare, massive, slightly resistant, alteration: oxide, fracture-related, weak intensity, strong HCl reaction | 98.31 | 1.34 | 0.23 | 0.050 | 0.020 | 361 | 14 | 50 |
| 132816 | Mpk | 2 | **Lime Grainstone to Lime Packstone,** light grey weathered, medium grey to dark grey fresh, micritic to medium-grained, fossils: fragment (indeterminate), rare; crinoid ossicle, rare, massive, resistant, moderate HCl reaction | 98.56 | 1.21 | 0.10 | 0.045 | 0.015 | 329 | 14 | 50 |
| 132817 | Mpk | 1.25 | **Dolomitic Lime Grainstone to Dolomitic Lime Packstone,** light grey weathered, medium grey to dark grey fresh, micritic to coarse-grained, fossils: fragment (indeterminate), rare; crinoid ossicle, rare, thickly-bedded to massively-bedded, slightly resistant, alteration: oxide, fracture-related, weak intensity, strong HCl reaction, structure(s): bedding (undulatory), local-scale, 137/10 SW | 92.43 | 6.95 | 0.30 | 0.060 | 0.020 | 294 | 21 | 50 |
| **Section 2019-04 (UTM 607787E, 5754541N)** | | | | | | | | | | | |
| 132819 | Msh | 1.5 | **Strongly Dolomitic Lime Packstone to Strongly Dolomitic Lime Wackestone,** light grey weathered, light grey to medium grey fresh, micritic to medium-grained, fossils: crinoid ossicle, rare, massive, resistant, moderate HCl reaction | 79.78 | 19.56 | 0.35 | 0.059 | 0.036 | 214 | 34 | 50 |
| 132820 | Msh | 1.75 | **Strongly Dolomitic Lime Wackestone to Strongly Dolomitic Lime Mudstone,** light grey weathered, medium grey fresh, micritic to fine-grained, fossils: fragment (indeterminate), rare; crinoid ossicle, rare, massive, resistant, nodular, alteration: oxide, fracture-related, weak intensity, strong HCl reaction | 89.20 | 9.16 | 1.03 | 0.193 | 0.067 | 254 | 28 | 50 |
| 132821 | Msh | 1 | **Strongly Dolomitic Lime Wackestone to Strongly Dolomitic Lime Mudstone,** light grey weathered, medium grey fresh, micritic to fine-grained, fossils: fragment (indeterminate), rare; crinoid ossicle, rare, massive, resistant, nodular, alteration: oxide, fracture-related, weak intensity, strong HCl reaction | 84.85 | 13.93 | 0.73 | 0.125 | 0.052 | 242 | 30 | 50 |
| 132822 | Msh | 2.25 | **Dolomitic Lime Packstone to Dolomitic Lime Wackestone,** light grey weathered, medium grey fresh, micritic to medium-grained, fossils: crinoid ossicle, rare, massive, resistant, nodular, alteration: oxide, fracture-related, weak intensity, strong HCl reaction, structure(s): calcite veinlet, local-scale, weak | 91.08 | 7.36 | 1.04 | 0.181 | 0.079 | 321 | 29 | 50 |
| **Section 2019-05 (UTM 607812E, 5754556N)** | | | | | | | | | | | |
| 132823 | Msh | 1.75 | **Lime Wackestone to Lime Mudstone,** light grey weathered, medium grey to dark grey fresh, micritic to medium-grained, fossils: fragment (indeterminate), rare; crinoid ossicle, rare, thickly-bedded to massively-bedded, resistant, nodular, alteration: oxide, fracture-related, weak intensity, strong HCl reaction, structure(s): bedding (undulatory), local-scale, 92/11 S | 95.65 | 1.42 | 2.28 | 0.280 | 0.090 | 296 | 32 | 50 |

| Sample | Strat Unit | Strat Tkns (m) | Description | $CaCO_3$ (%) | $MgCO_3$ (%) | $SiO_2$ (%) | $Al_2O_3$ (%) | $Fe_2O_3$ (%) | SrO (ppm) | MnO (ppm) | $P_2O_5$ (ppm) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 132824 | Msh | 1.5 | **Slightly Dolomitic Lime Mudstone to Slightly Dolomitic Lime Wackestone,** light grey weathered, medium grey to dark grey fresh, micritic to medium-grained, fossils: fragment (indeterminate), rare; crinoid ossicle, rare, thickly-bedded to massively-bedded, resistant, nodular, vuggy (calcite-filled), alteration: oxide, fracture-related, weak intensity, moderate HCl reaction, structure(s): bedding (undulatory), local-scale, 92/11 S | 96.79 | 2.68 | 0.29 | 0.066 | 0.049 | 295 | 20 | 50 |
| 132825 | Msh | 1 | **Lime Wackestone to Lime Packstone,** light grey weathered, medium grey to dark grey fresh, micritic, fossils: fragment (indeterminate), rare; crinoid ossicle, rare, thickly-bedded, resistant, nodular, vuggy (calcite-filled), strong HCl reaction | 97.91 | 1.51 | 0.39 | 0.078 | 0.028 | 314 | 18 | 50 |
| **Section 2019-06 (UTM 607890E, 5754498N)** | | | | | | | | | | | |
| 132826 | Mtv | 1.5 | **Slightly Dolomitic Lime Packstone to Slightly Dolomitic Lime Wackestone,** light grey to tan weathered, light grey to rust fresh, micritic to medium-grained, fossils: crinoid ossicle, rare, massive, resistant, alteration: oxide, pervasive, moderate intensity; oxide, fracture-related, weak intensity; oxide, fracture-related, moderate intensity, moderate HCl reaction | 95.13 | 4.16 | 0.46 | 0.083 | 0.038 | 364 | 59 | 50 |
| 132827 | Mtv | 1.75 | **Slightly Dolomitic Lime Grainstone to Slightly Dolomitic Lime Wackestone,** light grey to tan weathered, medium grey fresh, micritic to medium-grained, fossils: crinoid ossicle, rare, massive, resistant, strong HCl reaction | 96.31 | 3.10 | 0.40 | 0.073 | 0.067 | 266 | 62 | 50 |
| **Section 2019-07 (UTM 604104E, 5763078N)** | | | | | | | | | | | |
| 132836 | Mbf | 2.25 | **Lime Packstone to Lime Wackestone,** light tan-grey to dark grey weathered, medium grey fresh, micritic to medium-grained, fossils: crinoid ossicle, rare, thinly-bedded to massively-bedded, resistant, fissile, alteration: oxide, fracture-related, weak intensity, moderate HCl reaction, structure(s): bedding (undulatory), local-scale, 160/29 SW | 91.36 | 1.49 | 4.99 | 0.857 | 0.888 | 711 | 204 | 142 |
| 132837 | Mbf | 2 | **Calcareous Mudstone,** light tan-grey to dark grey weathered, medium grey fresh, micritic to medium-grained, fossils: crinoid ossicle, rare, thickly-bedded to massively-bedded, resistant, fissile, nodular, alteration: silica; oxide, fracture-related, weak intensity, moderate HCl reaction | 86.19 | 1.67 | 7.99 | 1.605 | 0.979 | 599 | 256 | 233 |
| 132838 | Mbf | 1.25 | **Calcareous Mudstone,** light tan-grey to dark grey weathered, medium grey fresh, micritic to medium-grained, fossils: crinoid ossicle, rare, thickly-bedded to massively-bedded, resistant, fissile, nodular, alteration: silica; oxide, fracture-related, weak intensity, moderate HCl reaction | 78.66 | 4.52 | 11.74 | 1.754 | 1.183 | 613 | 379 | 259 |
| **Section 2019-08 (UTM 604095E, 5763079N)** | | | | | | | | | | | |
| 132839 | Mbf | 2.5 | **Calcareous Mudstone,** light grey to medium grey weathered, medium grey fresh, micritic to medium-grained, fossils: fragment (indeterminate), rare; crinoid ossicle, rare, thinly-bedded to moderately-bedded, resistant, nodular, alteration: silica; oxide, fracture-related, weak intensity, weak fetid odour, moderate HCl reaction, structure(s): bedding (undulatory), local-scale, 142/25 SW | 85.10 | 2.84 | 8.91 | 1.373 | 0.850 | 405 | 274 | 50 |
| 132840 | Mbf | 3.5 | **Calcareous Mudstone,** light grey to medium grey weathered, medium grey to dark grey fresh, micritic to coarse-grained, fossils: fragment (indeterminate), rare; crinoid ossicle, rare, thinly-bedded to thickly-bedded, resistant, alteration: silica; oxide, fracture-related, weak intensity, moderate HCl reaction, structure(s): bedding (undulatory), local-scale, 136/25 SW | 62.97 | 7.01 | 22.74 | 2.559 | 1.723 | 408 | 760 | 410 |

| Sample | Strat Unit | Strat Tkns (m) | Description | $CaCO_3$ (%) | $MgCO_3$ (%) | $SiO_2$ (%) | $Al_2O_3$ (%) | $Fe_2O_3$ (%) | SrO (ppm) | MnO (ppm) | $P_2O_5$ (ppm) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 132841 | Mbf | 3.25 | **Calcareous Mudstone,** light tan-grey to medium grey weathered, medium grey to dark grey fresh, micritic to fine-grained, fossils: fragment (indeterminate), rare; crinoid ossicle, rare, thinly-bedded to thickly-bedded, resistant, alteration: silica; oxide, fracture-related, weak intensity, moderate HCl reaction | 56.95 | 10.23 | 26.07 | 2.050 | 1.614 | 407 | 816 | 410 |
| 132842 | Mbf | 3 | **Calcareous Mudstone,** light grey to medium grey weathered, dark grey fresh, micritic to fine-grained, fossils: fragment (indeterminate), rare, thinly-bedded to thickly-bedded, resistant, alteration: silica; oxide, fracture-related, weak intensity, moderate HCl reaction | 58.06 | 13.18 | 22.42 | 2.312 | 1.457 | 377 | 796 | 281 |
| **Section 2019-09 (UTM 604994E, 5762651N)** | | | | | | | | | | | |
| 132848 | Dpa | 2 | **Dolomitic Packstone,** light tan-grey to medium grey weathered, medium grey fresh, micritic to medium-grained, massive, resistant, vuggy (open), weak fetid odour, no HCl reaction | 53.60 | 44.98 | 0.72 | 0.197 | 0.098 | 105 | 50 | 50 |
| 132849 | Dpa | 1.5 | **Dolomitic Packstone,** light tan-grey to medium grey weathered, medium grey fresh, micritic to medium-grained, massive, resistant, vuggy (open), weak fetid odour, no HCl reaction | 54.37 | 44.81 | 0.64 | 0.171 | 0.081 | 105 | 43 | 50 |
| 132850 | Dpa | 2 | **Dolomitic Packstone,** light tan-grey to medium grey weathered, medium grey fresh, micritic to medium-grained, massive, resistant, vuggy (open), weak fetid odour, no HCl reaction | 54.38 | 44.85 | 0.78 | 0.202 | 0.110 | 110 | 48 | 50 |
| **Section 2019-10 (UTM 603466E, 5762537N)** | | | | | | | | | | | |
| 132851 | Mpk | 6.5 | **Lime Packstone to Lime Grainstone,** medium grey weathered and fresh, micritic to medium-grained, fossils: solitary rugose coral, abundant; fragment (indeterminate), abundant; crinoid ossicle, abundant, moderately-bedded, resistant, homogeneous, strong HCl reaction, structure(s): bedding (undulatory), outcrop-scale, 215/5 NW | 95.27 | 1.65 | 1.89 | 0.506 | 0.228 | 363 | 60 | 50 |
| 132852 | Mpk | 5.5 | **Slightly Dolomitic Lime Packstone to Slightly Dolomitic Lime Grainstone,** medium grey weathered and fresh, micritic to medium-grained, fossils: solitary rugose coral, abundant; fragment (indeterminate), abundant; crinoid ossicle, abundant, moderately-bedded, resistant, homogeneous, strong HCl reaction | 95.99 | 3.91 | 0.28 | 0.081 | 0.033 | 231 | 30 | 50 |
| 132853 | Mpk | 3 | **Lime Packstone to Lime Grainstone,** medium grey weathered and fresh, micritic to medium-grained, fossils: solitary rugose coral, abundant; fragment (indeterminate), abundant; crinoid ossicle, abundant, moderately-bedded, resistant, homogeneous, strong HCl reaction | 98.79 | 0.92 | 0.13 | 0.049 | 0.006 | 231 | 19 | 50 |
| 132854 | Mpk | 3.25 | **Lime Packstone to Lime Grainstone,** medium grey weathered and fresh, micritic to medium-grained, fossils: solitary rugose coral, abundant; fragment (indeterminate), abundant; crinoid ossicle, abundant, moderately-bedded, resistant, homogeneous, strong HCl reaction | 97.18 | 1.72 | 0.99 | 0.057 | 0.013 | 246 | 20 | 50 |
| 132855 | Mpk | 4.25 | **Slightly Dolomitic Lime Wackestone to Slightly Dolomitic Lime Packstone,** medium grey weathered and fresh, micritic to medium-grained, fossils: solitary rugose coral, abundant; fragment (indeterminate), abundant; crinoid ossicle, abundant, moderately-bedded, resistant, homogeneous, strong HCl reaction | 96.97 | 2.91 | 0.31 | 0.073 | 0.022 | 262 | 21 | 50 |
| 132856 | Mpk | 3.75 | **Dolomitic Lime Packstone to Dolomitic Lime Grainstone,** medium grey weathered and fresh, micritic to medium-grained, fossils: solitary rugose coral, abundant; fragment (indeterminate), abundant; crinoid ossicle, abundant, moderately-bedded, resistant, homogeneous, strong HCl reaction | 90.54 | 8.93 | 0.52 | 0.098 | 0.034 | 238 | 24 | 107 |

| Sample | Strat Unit | Strat Tkns (m) | Description | $CaCO_3$ (%) | $MgCO_3$ (%) | $SiO_2$ (%) | $Al_2O_3$ (%) | $Fe_2O_3$ (%) | SrO (ppm) | MnO (ppm) | $P_2O_5$ (ppm) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 132857 | Mpk | 6 | **Dolomitic Lime Packstone to Dolomitic Lime Grainstone,** medium grey weathered and fresh, micritic to medium-grained, fossils: solitary rugose coral, abundant; fragment (indeterminate), abundant; crinoid ossicle, abundant, moderately-bedded, resistant, homogeneous, strong HCl reaction | 90.90 | 8.79 | 0.64 | 0.144 | 0.078 | 249 | 25 | 119 |
| 132858 | Mpk | 2.25 | **Strongly Dolomitic Lime Grainstone,** medium grey weathered and fresh, micritic to medium-grained, fossils: solitary rugose coral, abundant; fragment (indeterminate), abundant; crinoid ossicle, abundant, moderately-bedded, resistant, strong HCl reaction | 88.33 | 10.56 | 1.04 | 0.115 | 0.046 | 263 | 22 | 144 |
| **Section 2019-11 (UTM 599701E, 5762426N)** | | | | | | | | | | | |
| 132861 | Mpk | 3 | **Lime Packstone to Lime Grainstone,** medium grey weathered and fresh, medium-grained to very coarse-grained, fossils: crinoid ossicle, abundant, massive, resistant, strong HCl reaction | 99.00 | 0.92 | 0.15 | 0.045 | 0.005 | 294 | 20 | 50 |
| 132862 | Mpk | 3 | **Lime Grainstone,** medium grey weathered and fresh, medium-grained to very coarse-grained, fossils: crinoid ossicle, abundant, massive, resistant, alteration: silica, strong HCl reaction | 92.22 | 0.84 | 6.80 | 0.055 | 0.048 | 292 | 72 | 50 |
| **Section 2019-12 (UTM 605032E, 5762647N)** | | | | | | | | | | | |
| 132876 | Dpa | 1.75 | **Dolomitic Packstone,** light grey to dark grey weathered, medium grey to medium brown-grey fresh, micritic to medium-grained, massive, resistant, vuggy (open), alteration: oxide, fracture-related, weak intensity, no HCL reaction, structure(s): calcite veinlet, local-scale, weak | 55.20 | 44.33 | 0.84 | 0.203 | 0.099 | 108 | 45 | 50 |
| 132877 | Dpa | 2.25 | **Dolomitic Packstone,** light grey to dark grey weathered, medium grey to medium brown-grey fresh, micritic to medium-grained, massive, resistant, vuggy (open), alteration: oxide, fracture-related, weak intensity, weak fetid odour, no HCL reaction, structure(s): calcite veinlet, local-scale, weak | 54.70 | 44.68 | 0.74 | 0.179 | 0.094 | 108 | 49 | 50 |
| **Section 2019-13 (UTM 605129E, 5762469N)** | | | | | | | | | | | |
| 132880 | Dpa | 2 | **Dolomitic Packstone,** light grey to dark grey weathered, medium grey to medium brown-grey fresh, micritic to medium-grained, massive, resistant, vuggy (open), alteration: oxide, fracture-related, weak intensity, weak fetid odour, very weak HCl reaction | 54.26 | 45.02 | 0.65 | 0.174 | 0.082 | 107 | 41 | 50 |
| 132881 | Dpa | 1.25 | **Dolomitic Packstone,** light grey to dark grey weathered, medium grey to medium brown-grey fresh, micritic to medium-grained, massive, resistant, vuggy (open), alteration: oxide, fracture-related, weak intensity, weak fetid odour, very weak HCl reaction | 54.49 | 44.81 | 0.64 | 0.181 | 0.095 | 108 | 39 | 50 |
| **Section 2019-14 (UTM 604164E, 5763019N)** | | | | | | | | | | | |
| 132885 | Mpk | 3 | **Calcareous Mudstone,** light tan-grey to dark grey weathered, dark brown-grey fresh, micritic to fine-grained, fossils: brachiopod, very rare, moderately-bedded to massively-bedded, resistant, alteration: silica; oxide, fracture-related, weak intensity, weak HCl reaction, structure(s): bedding (undulatory), local-scale, 140/32 SW | 64.79 | 8.83 | 22.04 | 1.445 | 1.166 | 304 | 923 | 113 |
| 132886 | Mpk | 2.75 | **Calcareous Mudstone,** light grey to dark grey weathered, dark grey to dark brown-grey fresh, micritic to fine-grained, thinly-bedded to thickly-bedded, resistant, alteration: silica; oxide, localized, weak intensity; oxide, fracture-related, weak intensity, moderate HCl reaction | 55.54 | 13.68 | 25.08 | 2.077 | 1.285 | 215 | 1018 | 215 |
| 132887 | Mpk | 2.5 | **Calcareous Mudstone,** very-light grey to dark grey weathered, medium grey to medium brown-grey fresh, micritic to coarse-grained, fossils: crinoid ossicle, rare, moderately-bedded to massively-bedded, resistant, nodular, alteration: silica; oxide, fracture-related, weak intensity, weak fetid odour, weak HCl reaction | 83.85 | 5.08 | 10.09 | 0.629 | 0.446 | 346 | 381 | 259 |

| Sample | Strat Unit | Strat Tkns (m) | Description | $CaCO_3$ (%) | $MgCO_3$ (%) | $SiO_2$ (%) | $Al_2O_3$ (%) | $Fe_2O_3$ (%) | SrO (ppm) | MnO (ppm) | $P_2O_5$ (ppm) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 132888 | Mpk | 3.75 | **Slightly Dolomitic Lime Grainstone,** light grey to dark grey weathered, light grey to medium grey fresh, micritic to very coarse-grained, fossils: crinoid ossicle, rare, thinly-bedded to massively-bedded, slightly resistant, fissile, alteration: oxide, fracture-related, weak intensity, strong fetid odour, moderate HCl reaction, structure(s): calcite veinlet, local-scale, weak; bedding (undulatory), local-scale, 142/40 SW | 91.81 | 2.95 | 4.00 | 0.355 | 0.174 | 524 | 133 | 244 |
| 132889 | Mpk | 3.25 | **Calcareous Dolomitic Mudstone to Calcareous Dolomitic Wackestone,** light tan-grey to dark grey weathered, medium grey to dark grey fresh, micritic to fine-grained, thinly-bedded to massively-bedded, resistant, alteration: silica; oxide, fracture-related, weak intensity, weak HCl reaction | 54.56 | 28.28 | 12.59 | 2.172 | 1.080 | 189 | 212 | 307 |
| 132890 | Mpk | 2.5 | **Calcareous Dolomitic Mudstone to Calcareous Dolomitic Wackestone,** light grey to dark grey weathered, medium grey to dark grey fresh, micritic to fine-grained, thinly-bedded to thickly-bedded, resistant, alteration: silica; oxide, fracture-related, weak intensity, very weak HCl reaction | 53.78 | 32.22 | 10.19 | 2.058 | 0.883 | 170 | 250 | 450 |
| 132891 | Mpk | 1.5 | **Strongly Dolomitic Lime Mudstone to Strongly Dolomitic Lime Wackestone,** light grey to dark grey weathered, medium grey to dark grey fresh, micritic to fine-grained, thinly-bedded to thickly-bedded, resistant, vuggy (calcite-filled), alteration: oxide, fracture-related, weak intensity, very weak HCl reaction | 81.82 | 13.16 | 3.36 | 0.519 | 0.349 | 302 | 104 | 50 |
| **Section 2019-15 (UTM 604093E, 5763030N)** | | | | | | | | | | | |
| 132893 | Mpk | 1.75 | **Dolomitic Mudstone to Dolomitic Wackestone,** light grey to medium grey weathered, medium grey fresh, micritic to fine-grained, massive, resistant, nodular, alteration: silica; oxide, fracture-related, weak intensity, very weak HCl reaction | 56.97 | 34.08 | 5.97 | 1.149 | 0.641 | 203 | 204 | 150 |
| 132894 | Mpk | 1.5 | **Strongly Dolomitic Lime Wackestone to Strongly Dolomitic Lime Mudstone,** light grey to dark grey weathered, medium grey fresh, micritic to fine-grained, massive, resistant, nodular, vuggy (open), alteration: oxide, localized, weak intensity; oxide, fracture-related, weak intensity, weak HCl reaction, structure(s): calcite veinlet, local-scale, weak | 77.62 | 18.81 | 2.96 | 0.435 | 0.361 | 266 | 130 | 50 |
| **Section 2019-16 (UTM 599855E, 5762486N)** | | | | | | | | | | | |
| 132910 | Mpk | 3 | **Lime Mudstone to Lime Packstone,** medium grey weathered, medium grey to dark grey fresh, micritic to coarse-grained, fossils: crinoid ossicle, abundant, massive, resistant, homogeneous, strong HCl reaction | 97.45 | 1.23 | 0.23 | 0.067 | 0.012 | 299 | 23 | 50 |
| 132911 | Mpk | 3 | **Slightly Dolomitic Lime Mudstone to Lime Packstone,** medium grey weathered, medium grey to dark grey fresh, micritic to coarse-grained, fossils: crinoid ossicle, abundant, massive, resistant, homogeneous, strong HCl reaction | 96.04 | 3.03 | 0.41 | 0.116 | 0.021 | 301 | 28 | 50 |
| **Section 2019-17 (UTM 599751E, 5762371N)** | | | | | | | | | | | |
| 132918 | Mpk | 2 | **Lime Packstone to Lime Grainstone,** medium grey weathered and fresh, micritic to very coarse-grained, fossils: crinoid stem; crinoid ossicle, massive, resistant, strong HCl reaction | 98.38 | 0.90 | 0.30 | 0.040 | 0.003 | 309 | 21 | 50 |
| 132919 | Mpk | 2.5 | **Lime Packstone to Lime Grainstone,** medium grey weathered and fresh, micritic to very coarse-grained, fossils: crinoid stem; crinoid ossicle, massive, resistant, strong HCl reaction | 98.63 | 0.94 | 0.35 | 0.046 | 0.003 | 312 | 21 | 50 |
| 132920 | Mpk | 3 | **Lime Packstone to Lime Grainstone,** medium grey weathered and fresh, coarse-grained, fossils: fragment (indeterminate); crinoid ossicle, massive, resistant, homogeneous, strong HCl reaction | 98.15 | 0.94 | 0.21 | 0.042 | 0.001 | 312 | 21 | 50 |

| Sample | Strat Unit | Strat Tkns (m) | Description | $CaCO_3$ (%) | $MgCO_3$ (%) | $SiO_2$ (%) | $Al_2O_3$ (%) | $Fe_2O_3$ (%) | SrO (ppm) | MnO (ppm) | $P_2O_5$ (ppm) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Section 2019-18 (UTM 599925E, 5762434N)** | | | | | | | | | | | |
| 132942 | Mpk | 3 | **Calcareous Dolomitic Packstone to Calcareous Dolomitic Grainstone,** light grey to dark grey weathered, medium grey fresh, micritic to medium-grained, massive, slightly resistant, vuggy (open), nodular, alteration: silica; oxide, localized, weak intensity; oxide, fracture-related, weak intensity, no HCL reaction, structure(s): calcite veinlet, local-scale, weak | 56.01 | 33.99 | 8.20 | 0.806 | 0.964 | 201 | 925 | 50 |
| 132943 | Mpk | 2 | **Strongly Dolomitic Lime Grainstone,** light grey to medium grey weathered, medium grey fresh, micritic to coarse-grained, fossils: fragment (indeterminate), rare; crinoid ossicle, rare; brachiopod, rare, thickly-bedded to massively-bedded, slightly resistant, vuggy (open), alteration: oxide, localized, weak intensity; oxide, fracture-related, weak intensity, strong HCl reaction | 83.37 | 10.86 | 4.47 | 0.744 | 0.206 | 239 | 97 | 191 |
| 132944 | Mpk | 4.5 | **Slightly Dolomitic Lime Grainstone,** light grey to medium grey weathered, medium grey fresh, micritic to very coarse-grained, fossils: solitary rugose coral, rare; crinoid ossicle, rare; brachiopod, rare, thickly-bedded to massively-bedded, resistant, vuggy (open), alteration: oxide, localized, weak intensity; oxide, fracture-related, weak intensity, strong HCl reaction, structure(s): bedding (undulatory), local-scale, 329/23 NE | 92.79 | 4.29 | 1.86 | 0.226 | 0.062 | 255 | 48 | 50 |
| **Section 2019-19 (UTM 603569E, 5759767N)** | | | | | | | | | | | |
| 132951 | Mpk | 3 | **Calcareous Mudstone,** very-light grey weathered, light grey fresh, micritic, moderately-bedded to massively-bedded, alteration: silica, weak HCl reaction, structure(s): fracture, local-scale, moderate; calcite veinlet, local-scale, weak | 62.61 | 19.48 | 14.06 | 1.551 | 1.897 | 210 | 1902 | 344 |
| 132952 | Mpk | 3 | **Calcareous Dolomitic Mudstone to Calcareous Dolomitic Wackestone,** light grey weathered and fresh, micritic to medium-grained, fossils: crinoid ossicle, rare, resistant, alteration: silica, weak HCl reaction | 59.40 | 23.05 | 13.58 | 1.688 | 1.268 | 222 | 1027 | 178 |
| 132953 | Mpk | 3 | **Calcareous Dolomitic Mudstone to Calcareous Dolomitic Wackestone,** light grey weathered and fresh, micritic to medium-grained, fossils: crinoid ossicle, rare, resistant, alteration: silica, weak HCl reaction | 64.31 | 25.88 | 7.48 | 0.830 | 0.928 | 236 | 966 | 174 |
| 132954 | Mpk | 3 | **Dolomitic Lime Wackestone to Dolomitic Lime Grainstone,** light grey weathered and fresh, micritic to coarse-grained, moderately-bedded, resistant, strong HCl reaction | 91.67 | 6.36 | 1.60 | 0.300 | 0.102 | 295 | 60 | 50 |
| **Section 2019-20 (UTM 605160E, 5756044N)** | | | | | | | | | | | |
| 132965 | Msh | 3 | **Dolomitic Lime Mudstone,** medium grey weathered and fresh, micritic to very fine-grained, fossils: crinoid ossicle, resistant, crumbly, strong HCl reaction | 92.61 | 5.90 | 0.79 | 0.117 | 0.036 | 326 | 23 | 50 |
| 132966 | Msh | 3 | **Strongly Dolomitic Lime Mudstone,** medium grey weathered and fresh, micritic to very fine-grained, fossils: crinoid ossicle, resistant, crumbly, strong HCl reaction | 86.58 | 12.11 | 1.20 | 0.145 | 0.059 | 278 | 34 | 50 |
| 132967 | Msh | 3 | **Strongly Dolomitic Lime Mudstone,** medium grey weathered and fresh, micritic, moderately-bedded, resistant, blocky, brecciated, strong HCl reaction | 83.05 | 14.43 | 2.01 | 0.278 | 0.111 | 267 | 40 | 50 |
| 132968 | Msh | 3 | **Strongly Dolomitic Lime Mudstone,** medium grey weathered and fresh, micritic, moderately-bedded, resistant, blocky, brecciated, strong HCl reaction | 82.08 | 15.92 | 2.10 | 0.340 | 0.119 | 254 | 44 | 50 |

| Sample | Strat Unit | Strat Tkns (m) | Description | $CaCO_3$ (%) | $MgCO_3$ (%) | $SiO_2$ (%) | $Al_2O_3$ (%) | $Fe_2O_3$ (%) | SrO (ppm) | MnO (ppm) | $P_2O_5$ (ppm) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Section 2019-21 (UTM 604905E, 5756467N)** | | | | | | | | | | | |
| 132978 | Mbf | 3 | **Strongly Dolomitic Lime Grainstone to Strongly Dolomitic Lime Packstone,** light grey to dark grey weathered, medium grey fresh, micritic to coarse-grained, massive, slightly resistant, weak HCl reaction | 87.99 | 11.28 | 1.20 | 0.154 | 0.051 | 270 | 28 | 106 |
| 132979 | Mbf | 3 | **Lime Grainstone,** light grey to dark grey weathered, light grey to medium grey fresh, micritic to medium-grained, fossils: solitary rugose coral, rare; fragment (indeterminate), rare, massive, resistant, alteration: oxide, fracture-related, weak intensity, strong HCl reaction | 98.11 | 1.61 | 0.51 | 0.082 | 0.018 | 320 | 13 | 50 |
| 132980 | Mbf | 3.25 | **Dolomitic Lime Grainstone,** light grey to medium grey weathered, medium grey fresh, micritic to very coarse-grained, fossils: fragment (indeterminate), rare; crinoid ossicle, rare, massive, slightly resistant, alteration: oxide, fracture-related, weak intensity, moderate HCl reaction | 91.86 | 7.57 | 0.47 | 0.106 | 0.049 | 256 | 19 | 50 |
| 132981 | Mbf | 3.75 | **Dolomitic Lime Wackestone to Dolomitic Lime Packstone,** light grey to dark grey weathered, medium grey to dark grey fresh, micritic to fine-grained, fossils: brachiopod, rare, massive, resistant, vuggy (open), alteration: oxide, fracture-related, weak intensity, moderate HCl reaction, structure(s): calcite veinlet, local-scale, weak | 90.58 | 8.41 | 0.64 | 0.098 | 0.040 | 282 | 23 | 50 |
| 132982 | Mbf | 3.75 | **Strongly Dolomitic Lime Grainstone,** light grey to dark grey weathered, medium grey to dark grey fresh, micritic to coarse-grained, fossils: fragment (indeterminate), rare; crinoid ossicle, rare, massive, resistant, alteration: oxide, fracture-related, weak to moderate intensity, strong HCl reaction | 89.72 | 9.48 | 0.77 | 0.109 | 0.039 | 260 | 21 | 50 |
| 132983 | Mbf | 3.5 | **Strongly Dolomitic Lime Packstone to Strongly Dolomitic Lime Wackestone,** light grey to dark grey weathered, dark grey fresh, micritic to fine-grained, fossils: solitary rugose coral, rare, massive, resistant, alteration: oxide, fracture-related, weak to moderate intensity, strong HCl reaction, structure(s): calcite veinlet, local-scale, very weak; bedding (undulatory), local-scale, 151/25 SW | 79.28 | 20.02 | 0.51 | 0.116 | 0.092 | 226 | 29 | 50 |
| 132984 | Mbf | 3.5 | **Strongly Dolomitic Lime Packstone,** light grey to dark grey weathered, dark grey fresh, micritic, fossils: solitary rugose coral, common; fragment (indeterminate), rare; brachiopod, rare, massive, resistant, alteration: oxide, fracture-related, weak intensity, strong HCl reaction | 91.01 | 9.08 | 0.35 | 0.063 | 0.045 | 277 | 21 | 50 |
| 132985 | Mbf | 3.75 | **Calcareous Dolomitic Packstone,** light grey to dark grey weathered, medium grey to dark grey fresh, micritic to medium-grained, massive, resistant, nodular, vuggy (open), alteration: oxide, fracture-related, weak intensity, moderate HCl reaction, structure(s): bedding (undulatory), local-scale, 158/36 SW | 71.68 | 24.96 | 2.92 | 0.460 | 0.144 | 279 | 48 | 50 |
| 132986 | Mbf | 3 | **Strongly Dolomitic Lime Packstone to Strongly Dolomitic Lime Wackestone,** light grey to dark grey weathered, medium grey to dark grey fresh, micritic to fine-grained, massive, resistant, vuggy (open), nodular, alteration: oxide, fracture-related, weak intensity, strong HCl reaction | 84.58 | 11.82 | 2.81 | 0.532 | 0.169 | 299 | 37 | 123 |
| 132987 | Mbf | 5 | **Calcareous Dolomitic Grainstone to Calcareous Dolomitic Packstone,** light grey to dark grey weathered, medium grey to dark grey fresh, micritic to coarse-grained, fossils: crinoid ossicle, rare, massive, resistant, vuggy (open), nodular, alteration: oxide, fracture-related, weak to moderate intensity, moderate HCl reaction | 70.32 | 29.24 | 0.80 | 0.141 | 0.087 | 259 | 62 | 50 |

| Sample | Strat Unit | Strat Tkns (m) | Description | $CaCO_3$ (%) | $MgCO_3$ (%) | $SiO_2$ (%) | $Al_2O_3$ (%) | $Fe_2O_3$ (%) | SrO (ppm) | MnO (ppm) | $P_2O_5$ (ppm) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Section 2019-22 (UTM 607436E, 5754682N)** | | | | | | | | | | | |
| 132995 | Mpk | 1.75 | **Slightly Dolomitic Lime Wackestone to Slightly Dolomitic Lime Packstone,** light grey weathered, medium grey fresh, micritic to medium-grained, massive, resistant, nodular, alteration: oxide, fracture-related, weak intensity, strong HCl reaction, structure(s): calcite veinlet, local-scale, weak | 96.29 | 2.68 | 1.00 | 0.120 | 0.032 | 350 | 16 | 50 |
| 132996 | Mpk | 1.5 | **Slightly Dolomitic Lime Wackestone to Slightly Dolomitic Lime Packstone,** light grey weathered, medium grey fresh, micritic to medium-grained, massive, resistant, nodular, alteration: oxide, fracture-related, weak intensity, moderate HCl reaction, structure(s): calcite veinlet, local-scale, weak | 95.99 | 3.49 | 0.93 | 0.115 | 0.032 | 320 | 16 | 50 |
| 132997 | Mpk | 1.25 | **Slightly Dolomitic Lime Wackestone to Slightly Dolomitic Lime Packstone,** light grey weathered, medium grey fresh, micritic to medium-grained, massive, resistant, nodular, alteration: oxide, fracture-related, weak intensity, strong HCl reaction, structure(s): calcite veinlet, local-scale, weak | 96.61 | 2.99 | 0.60 | 0.109 | 0.035 | 354 | 17 | 50 |
| **Section 2019-23 (UTM 607474E, 5754782N)** | | | | | | | | | | | |
| 141851 | Mpk | 1.5 | **Dolomitic Lime Grainstone,** light grey weathered, medium grey fresh, micritic to coarse-grained, fossils: fragment (indeterminate), rare; crinoid ossicle, rare, massive, resistant, nodular, alteration: oxide, fracture-related, weak intensity, strong HCl reaction | 92.68 | 6.63 | 0.37 | 0.081 | 0.020 | 235 | 24 | 50 |
| 141852 | Mpk | 1 | **Dolomitic Lime Grainstone,** light grey weathered, light grey to medium grey fresh, micritic to very coarse-grained, fossils: ooid, rare; fragment (indeterminate), rare; crinoid ossicle, rare, massive, resistant, alteration: oxide, fracture-related, weak intensity, strong HCl reaction | 90.83 | 8.22 | 0.42 | 0.099 | 0.053 | 265 | 25 | 50 |
| 141853 | Mpk | 1.75 | **Slightly Dolomitic Lime Packstone to Slightly Dolomitic Lime Grainstone,** light grey weathered, medium grey fresh, micritic to coarse-grained, fossils: ooid, rare; crinoid ossicle, rare, massive, resistant, alteration: oxide, fracture-related, weak intensity, strong HCl reaction | 96.66 | 3.08 | 0.35 | 0.077 | 0.015 | 268 | 20 | 50 |
| **Section 2019-24 (UTM 607494E, 5754772N)** | | | | | | | | | | | |
| 141854 | Mpk | 3.25 | **Slightly Dolomitic Lime Grainstone,** light grey weathered, medium grey fresh, micritic to coarse-grained, fossils: fragment (indeterminate), rare; crinoid ossicle, rare, massive, resistant, hard, vuggy (open), alteration: oxide, fracture-related, weak intensity, strong HCl reaction | 95.63 | 3.70 | 0.36 | 0.077 | 0.028 | 304 | 19 | 50 |
| 141855 | Mpk | 3.25 | **Lime Grainstone,** light grey weathered, medium grey to dark grey fresh, micritic to medium-grained, fossils: crinoid ossicle, rare, massive, resistant, alteration: oxide, fracture-related, weak intensity, strong HCl reaction | 96.86 | 2.20 | 0.33 | 0.078 | 0.027 | 370 | 16 | 50 |
| 141856 | Mpk | 2.5 | **Slightly Dolomitic Lime Grainstone,** light grey weathered, medium grey to dark grey fresh, micritic to medium-grained, fossils: ooid, rare; crinoid ossicle, rare, moderately-bedded to massively-bedded, resistant, alteration: oxide, fracture-related, weak intensity, strong HCl reaction, structure(s): calcite veinlet, local-scale, very weak | 92.68 | 2.76 | 3.39 | 0.086 | 0.038 | 377 | 27 | 50 |
| 141857 | Mpk | 3 | **Lime Grainstone,** light grey weathered, medium grey to dark grey fresh, micritic to medium-grained, fossils: crinoid ossicle, rare, moderately-bedded to massively-bedded, resistant, alteration: oxide, fracture-related, weak intensity, moderate HCl reaction, structure(s): calcite veinlet, local-scale, very weak; bedding (undulatory), local-scale, 122/21 SW | 96.70 | 2.01 | 0.87 | 0.117 | 0.033 | 342 | 18 | 50 |

| Sample | Strat Unit | Strat Tkns (m) | Description | $CaCO_3$ (%) | $MgCO_3$ (%) | $SiO_2$ (%) | $Al_2O_3$ (%) | $Fe_2O_3$ (%) | SrO (ppm) | MnO (ppm) | $P_2O_5$ (ppm) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Section 2019-25 (UTM 607531E, 5754749N)** | | | | | | | | | | | |
| 141858 | Mpk | 0.75 | **Dolomitic Lime Grainstone to Dolomitic Lime Packstone,** light grey weathered, light grey to medium grey fresh, micritic to medium-grained, fossils: crinoid ossicle, rare, massive, resistant, vuggy (calcite-filled), nodular, alteration: oxide, fracture-related, weak intensity, moderate HCl reaction | 89.90 | 8.89 | 0.61 | 0.096 | 0.028 | 287 | 22 | 50 |
| 141859 | Mpk | 1.75 | **Slightly Dolomitic Lime Wackestone to Slightly Dolomitic Lime Mudstone,** light grey weathered, medium grey to dark grey fresh, micritic to fine-grained, massive, resistant, vuggy (calcite-filled), alteration: oxide, fracture-related, weak intensity, strong HCl reaction, structure(s): calcite veinlet, local-scale, weak | 94.24 | 3.89 | 1.06 | 0.163 | 0.049 | 339 | 19 | 50 |
| 141860 | Mpk | 3.75 | **Lime Wackestone to Lime Mudstone,** light grey weathered, medium grey to dark grey fresh, micritic to fine-grained, thickly-bedded to massively-bedded, resistant, vuggy (calcite-filled), nodular, alteration: oxide, fracture-related, weak intensity, moderate HCl reaction, structure(s): calcite veinlet, local-scale, weak; bedding (undulatory), local-scale, 104/7 SW; bedding (undulatory), local-scale, 103/5 SW | 97.24 | 1.51 | 0.82 | 0.133 | 0.037 | 337 | 16 | 50 |
| **Section 2019-26 (UTM 608239E, 5759805N)** | | | | | | | | | | | |
| 141862 | Mpk | 4 | **Lime Grainstone,** light grey weathered, medium grey fresh, micritic to coarse-grained, fossils: fragment (indeterminate), rare; brachiopod, rare, thickly-bedded to massively-bedded, resistant, alteration: oxide, fracture-related, weak intensity, moderate HCl reaction, structure(s): calcite veinlet, local-scale, weak | 98.45 | 0.84 | 0.19 | 0.045 | 0.004 | 314 | 19 | 50 |
| 141863 | Mpk | 4.5 | **Lime Packstone to Lime Grainstone,** very-light grey to light grey weathered, medium grey fresh, micritic to medium-grained, fossils: colonial coral, rare, thickly-bedded to massively-bedded, resistant, cherty, nodular, alteration: oxide, fracture-related, weak intensity, strong HCl reaction, structure(s): calcite veinlet, local-scale, weak; bedding (undulatory), local-scale, 152/72 SW | 94.67 | 0.98 | 4.66 | 0.065 | 0.012 | 483 | 31 | 50 |
| 141864 | Mpk | 2.25 | **Lime Packstone,** very-light grey to light grey weathered, medium grey fresh, micritic to medium-grained, fossils: colonial coral, rare, thickly-bedded to massively-bedded, resistant, cherty, nodular, alteration: silica; oxide, fracture-related, weak intensity, strong HCl reaction, structure(s): calcite veinlet, local-scale, weak | 91.01 | 0.88 | 8.15 | 0.070 | 0.037 | 441 | 61 | 50 |
| **Section 2019-27 (UTM 608142E, 5755424N)** | | | | | | | | | | | |
| 141866 | Mpk | 2.75 | **Slightly Dolomitic Lime Grainstone,** light grey weathered, medium grey fresh, micritic to fine-grained, massive, resistant, alteration: oxide, fracture-related, weak intensity, weak HCl reaction, structure(s): calcite veinlet, local-scale, very weak | 95.36 | 3.41 | 0.15 | 0.044 | 0.036 | 299 | 23 | 50 |
| 141867 | Mpk | 2.5 | **Dolomitic Lime Grainstone,** light grey weathered, medium grey fresh, micritic to coarse-grained, fossils: solitary rugose coral, rare; crinoid ossicle, rare, massive, resistant, alteration: oxide, fracture-related, weak intensity, moderate HCl reaction, structure(s): calcite veinlet, local-scale, very weak | 92.20 | 7.66 | 0.26 | 0.069 | 0.027 | 243 | 32 | 50 |
| 141868 | Mpk | 2 | **Lime Grainstone,** light grey weathered, medium grey fresh, micritic to coarse-grained, fossils: solitary rugose coral, rare; crinoid ossicle, rare, massive, resistant, nodular, vuggy (open), alteration: oxide, fracture-related, weak intensity, strong HCl reaction, structure(s): calcite veinlet, local-scale, very weak | 98.52 | 1.09 | 0.16 | 0.050 | 0.004 | 270 | 20 | 50 |
| 141869 | Mpk | 2.5 | **Lime Grainstone to Lime Packstone,** light grey weathered, medium grey fresh, micritic to medium-grained, fossils: fragment (indeterminate), rare, massive, resistant, nodular, vuggy (open), alteration: oxide, localized, weak intensity; oxide, fracture-related, weak intensity, strong HCl reaction | 97.38 | 1.53 | 0.30 | 0.063 | 0.008 | 292 | 19 | 50 |

| Sample | Strat Unit | Strat Tkns (m) | Description | $CaCO_3$ (%) | $MgCO_3$ (%) | $SiO_2$ (%) | $Al_2O_3$ (%) | $Fe_2O_3$ (%) | SrO (ppm) | MnO (ppm) | $P_2O_5$ (ppm) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 141870 | Mpk | 1.75 | **Dolomitic Lime Grainstone,** light grey weathered, medium grey fresh, micritic to coarse-grained, fossils: solitary rugose coral, very rare, massive, resistant, nodular, vuggy (open), alteration: oxide, localized, weak intensity; oxide, fracture-related, weak intensity, weak fetid odour, strong HCl reaction | 92.36 | 6.65 | 0.30 | 0.068 | 0.015 | 273 | 24 | 50 |
| 141871 | Mpk | 2 | **Calcareous Dolomitic Grainstone to Calcareous Dolomitic Packstone,** light grey weathered, medium grey fresh, micritic to medium-grained, massive, resistant, hard, vuggy (open), nodular, alteration: oxide, localized, weak intensity; oxide, fracture-related, weak intensity, moderate HCl reaction | 68.50 | 30.81 | 0.68 | 0.159 | 0.085 | 193 | 44 | 110 |
| 141872 | Mpk | 1.5 | **Strongly Dolomitic Lime Grainstone to Strongly Dolomitic Lime Packstone,** light grey weathered, light grey to medium grey fresh, micritic to medium-grained, massive, resistant, vuggy (open), alteration: oxide, fracture-related, weak intensity, strong fetid odour, strong HCl reaction | 81.17 | 17.24 | 0.53 | 0.101 | 0.057 | 252 | 31 | 50 |
| 141873 | Mpk | 2.75 | **Strongly Dolomitic Lime Grainstone,** light grey weathered, medium grey fresh, micritic to medium-grained, fossils: brachiopod, rare, massive, resistant, hard, vuggy (open), alteration: oxide, localized, weak intensity; oxide, fracture-related, weak intensity, moderate HCl reaction, structure(s): joint, local-scale, strong; calcite veinlet, local-scale, very weak | 88.85 | 9.89 | 0.65 | 0.110 | 0.063 | 303 | 24 | 198 |
| 141874 | Mpk | 2.75 | **Slightly Dolomitic Lime Grainstone,** light grey weathered, medium grey fresh, micritic to coarse-grained, fossils: ooid, rare; fragment (indeterminate), rare, massive, resistant, vuggy (open), alteration: oxide, fracture-related, weak intensity, strong HCl reaction, structure(s): joint, local-scale, strong; calcite veinlet, local-scale, very weak; bedding (undulatory), local-scale, 145/11 SW | 92.67 | 2.30 | 4.50 | 0.056 | 0.098 | 352 | 102 | 50 |
| 141875 | Mpk | 2.5 | **Lime Grainstone,** light grey weathered, medium grey fresh, micritic to medium-grained, massive, resistant, alteration: oxide, fracture-related, weak intensity, weak fetid odour, strong HCl reaction, structure(s): joint, local-scale, strong; calcite veinlet, local-scale, weak | 97.52 | 1.46 | 0.37 | 0.053 | 0.031 | 422 | 16 | 50 |
| 141886 | Mpk | 2 | **Lime Grainstone,** light grey weathered, medium grey fresh, micritic to medium-grained, fossils: crinoid ossicle, very rare, massive, resistant, alteration: oxide, fracture-related, weak intensity, strong HCl reaction, structure(s): joint, local-scale, strong; calcite veinlet, local-scale, very weak | 99.00 | 1.38 | 0.15 | 0.041 | 0.032 | 366 | 13 | 50 |
| 141887 | Mpk | 2 | **Lime Grainstone,** light grey weathered, medium grey fresh, micritic to medium-grained, massive, resistant, vuggy (open), alteration: oxide, fracture-related, weak intensity, strong HCl reaction, structure(s): calcite veinlet, local-scale, weak | 98.15 | 1.38 | 0.16 | 0.050 | 0.016 | 337 | 13 | 50 |
| 141888 | Mpk | 3 | **Dolomitic Lime Mudstone to Dolomitic Lime Wackestone,** light grey weathered, medium grey fresh, micritic to fine-grained, massive, resistant, vuggy (calcite-filled), alteration: oxide, fracture-related, weak intensity, strong HCl reaction | 94.61 | 5.02 | 0.77 | 0.125 | 0.038 | 300 | 20 | 50 |
| 141889 | Mpk | 3 | **Lime Wackestone to Lime Mudstone,** light grey weathered, medium grey fresh, micritic to fine-grained, massive, resistant, vuggy (calcite-filled), alteration: oxide, fracture-related, weak intensity, strong HCl reaction, structure(s): calcite veinlet, local-scale, weak | 98.63 | 1.03 | 0.48 | 0.074 | 0.023 | 266 | 20 | 50 |
| 141890 | Mpk | 1.5 | **Lime Mudstone to Lime Wackestone,** light grey weathered, dark grey fresh, micritic to fine-grained, massive, resistant, vuggy (calcite-filled), alteration: oxide, fracture-related, weak intensity, strong HCl reaction, structure(s): calcite veinlet, local-scale, weak; bedding (undulatory), local-scale, 105/17 SW | 97.88 | 1.05 | 0.36 | 0.065 | 0.011 | 284 | 15 | 50 |

| Sample | Strat Unit | Strat Tkns (m) | Description | $CaCO_3$ (%) | $MgCO_3$ (%) | $SiO_2$ (%) | $Al_2O_3$ (%) | $Fe_2O_3$ (%) | SrO (ppm) | MnO (ppm) | $P_2O_5$ (ppm) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 141891 | Msh | 0.75 | **Slightly Dolomitic Lime Mudstone to Slightly Dolomitic Lime Wackestone,** light grey weathered, dark grey fresh, micritic to fine-grained, massive, resistant, vuggy (calcite-filled), alteration: oxide, fracture-related, weak intensity, strong HCl reaction, structure(s): calcite veinlet, local-scale, weak; bedding (undulatory), local-scale, 105/17 SW | 94.88 | 4.23 | 0.54 | 0.088 | 0.038 | 264 | 21 | 50 |
| **Section 2019-28 (UTM 604847E, 5756594N)** | | | | | | | | | | | |
| 141876 | Mpk | 2.25 | **Strongly Dolomitic Lime Grainstone,** light grey to medium grey weathered, medium grey fresh, micritic to coarse-grained, fossils: crinoid ossicle, rare, massive, resistant, nodular, alteration: oxide, fracture-related, weak intensity, weak HCl reaction, structure(s): bedding (undulatory), local-scale, 144/18 SW | 87.69 | 10.77 | 0.60 | 0.099 | 0.053 | 282 | 19 | 50 |
| 141877 | Mpk | 2.75 | **Strongly Dolomitic Lime Grainstone to Strongly Dolomitic Lime Packstone,** light grey to dark grey weathered, medium grey to dark grey fresh, micritic to medium-grained, fossils: ooid, rare; fragment (indeterminate), very rare, massive, resistant, alteration: oxide, fracture-related, weak intensity, moderate HCl reaction, structure(s): calcite veinlet, local-scale, very weak | 87.15 | 12.15 | 1.06 | 0.105 | 0.042 | 271 | 21 | 113 |
| 141878 | Mpk | 2.25 | **Lime Grainstone,** light grey to dark grey weathered, medium grey to dark grey fresh, micritic to coarse-grained, fossils: solitary rugose coral, rare; fragment (indeterminate), common; crinoid ossicle, common, massive, resistant, sucrosic, nodular, alteration: oxide, fracture-related, weak intensity, moderate HCl reaction | 97.68 | 1.44 | 0.55 | 0.043 | 0.012 | 306 | 16 | 50 |
| 141879 | Mpk | 2.5 | **Lime Grainstone,** light grey to medium grey weathered, dark grey fresh, micritic to very coarse-grained, fossils: ooid, rare; fragment (indeterminate), common; crinoid ossicle, common, massive, resistant, sucrosic, alteration: oxide, fracture-related, weak intensity, moderate HCl reaction, structure(s): calcite veinlet, local-scale, very weak | 97.65 | 1.19 | 0.59 | 0.045 | 0.014 | 322 | 16 | 50 |
| 141880 | Mpk | 2.5 | **Strongly Dolomitic Lime Grainstone,** light grey to dark grey weathered, medium grey to dark grey fresh, micritic to medium-grained, moderately-bedded to massively-bedded, resistant, sucrosic, alteration: oxide, fracture-related, weak to moderate intensity, moderate HCl reaction, structure(s): calcite veinlet, local-scale, very weak | 86.92 | 12.38 | 1.14 | 0.075 | 0.024 | 221 | 27 | 223 |
| 141881 | Mpk | 2.25 | **Strongly Dolomitic Lime Wackestone to Strongly Dolomitic Lime Mudstone,** light grey to dark grey weathered, medium grey to dark grey fresh, micritic to fine-grained, massive, resistant, nodular, vuggy (calcite-filled), alteration: oxide, fracture-related, weak intensity, weak HCl reaction, structure(s): calcite veinlet, local-scale, very weak | 82.56 | 15.81 | 0.72 | 0.114 | 0.056 | 247 | 23 | 120 |
| 141882 | Mpk | 2.75 | **Strongly Dolomitic Lime Wackestone to Strongly Dolomitic Lime Mudstone,** light grey to dark grey weathered, medium grey to dark grey fresh, micritic to fine-grained, massive, resistant, nodular, alteration: oxide, fracture-related, weak intensity, weak HCl reaction, structure(s): calcite veinlet, local-scale, very weak | 85.06 | 13.76 | 0.76 | 0.136 | 0.045 | 278 | 25 | 50 |
| 141883 | Mpk | 3.5 | **Calcareous Dolomitic Wackestone,** light grey to dark grey weathered, medium grey to dark grey fresh, micritic to fine-grained, massive, resistant, hard, alteration: oxide, fracture-related, weak intensity, moderate HCl reaction | 70.05 | 25.83 | 2.90 | 0.485 | 0.160 | 216 | 54 | 50 |
| 141884 | Mpk | 2.5 | **Strongly Dolomitic Lime Packstone to Strongly Dolomitic Lime Wackestone,** light grey to dark grey weathered, medium grey to dark grey fresh, micritic to medium-grained, massive, resistant, vuggy (calcite-filled), alteration: oxide, fracture-related, weak intensity, weak fetid odour, weak HCl reaction | 80.46 | 17.51 | 0.95 | 0.166 | 0.081 | 257 | 40 | 50 |
| 141885 | Mpk | 1.75 | **Strongly Dolomitic Lime Packstone to Strongly Dolomitic Lime Wackestone,** light grey to dark grey weathered and fresh, micritic to medium-grained, massive, resistant, alteration: oxide, fracture-related, weak intensity, weak HCl reaction | 81.46 | 17.95 | 0.57 | 0.096 | 0.067 | 260 | 42 | 50 |

| Sample | Strat Unit | Strat Tkns (m) | Description | $CaCO_3$ (%) | $MgCO_3$ (%) | $SiO_2$ (%) | $Al_2O_3$ (%) | $Fe_2O_3$ (%) | SrO (ppm) | MnO (ppm) | $P_2O_5$ (ppm) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Section 2019-29 (UTM 605219E, 5756069N)** | | | | | | | | | | | |
| 141901 | Mpk | 3 | **Lime Grainstone,** medium grey weathered, very-light grey fresh, fine-grained to very coarse-grained, fossils: fragment (indeterminate); crinoid ossicle, massive, resistant, crumbly, fossiliferous, strong HCl reaction | 97.34 | 1.40 | 0.20 | 0.067 | 0.017 | 261 | 15 | 50 |
| 141902 | Mpk | 3 | **Lime Grainstone,** medium grey weathered, very-light grey fresh, fine-grained to very coarse-grained, fossils: fragment (indeterminate); crinoid ossicle, massive, resistant, crumbly, fossiliferous, strong HCl reaction | 98.59 | 1.03 | 0.11 | 0.045 | 0.011 | 266 | 17 | 50 |
| 141903 | Mpk | 3 | **Slightly Dolomitic Lime Grainstone,** medium grey weathered, very-light grey fresh, fine-grained to very coarse-grained, fossils: fragment (indeterminate); crinoid ossicle, massive, resistant, crumbly, fossiliferous, strong HCl reaction | 95.86 | 3.03 | 0.32 | 0.075 | 0.033 | 247 | 21 | 50 |
| 141904 | Mpk | 3 | **Slightly Dolomitic Lime Grainstone,** medium grey weathered, very-light grey fresh, fine-grained to very coarse-grained, fossils: fragment (indeterminate); crinoid ossicle, massive, resistant, crumbly, fossiliferous, very strong HCl reaction | 96.33 | 2.70 | 0.33 | 0.059 | 0.017 | 265 | 18 | 50 |
| **Section 2019-30 (UTM 605169E, 5756139N)** | | | | | | | | | | | |
| 141905 | Mpk | 2 | **Calcareous Dolomitic Packstone to Calcareous Dolomitic Grainstone,** medium grey weathered, very-light grey fresh, fine-grained to very coarse-grained, fossils: fragment (indeterminate); crinoid ossicle, massive, resistant, crumbly, fossiliferous, strong HCl reaction | 71.62 | 27.95 | 1.01 | 0.145 | 0.062 | 138 | 37 | 50 |
| 141906 | Mpk | 2.5 | **Strongly Dolomitic Lime Mudstone to Strongly Dolomitic Lime Packstone,** light grey weathered, light grey to medium grey fresh, micritic to medium-grained, fossils: crinoid ossicle, massive, resistant, strong HCl reaction | 76.53 | 20.67 | 3.33 | 0.186 | 0.101 | 329 | 69 | 197 |
| 141907 | Mpk | 1.75 | **Calcareous Mudstone,** light grey weathered, light grey to medium grey fresh, micritic to medium-grained, fossils: crinoid ossicle, massive, resistant, alteration: silica, strong HCl reaction | 86.46 | 7.05 | 6.72 | 0.124 | 0.097 | 447 | 95 | 158 |
| **Section 2019-31 (UTM 608408E, 5753974N)** | | | | | | | | | | | |
| 141910 | Mtv | 1 | **Dolomitic Mudstone,** tan to light grey weathered, light grey fresh, micritic, massive, resistant, blocky, homogeneous, weak HCl reaction, structure(s): calcite veinlet, local-scale, weak | 53.03 | 42.21 | 3.43 | 0.507 | 0.248 | 82 | 393 | 50 |
| 141911 | Mtv | 1 | **Dolomitic Mudstone,** tan to light grey weathered, light grey fresh, micritic, massive, resistant, blocky, homogeneous, weak HCl reaction, structure(s): calcite veinlet, local-scale, weak | 53.87 | 43.01 | 2.38 | 0.332 | 0.190 | 90 | 772 | 50 |
| 141912 | Mtv | 3 | **Dolomitic Mudstone,** tan to light grey weathered, light grey fresh, micritic, massive, resistant, blocky, homogeneous, alteration: silica, weak HCl reaction, structure(s): calcite veinlet, local-scale, weak | 50.28 | 40.35 | 8.01 | 0.269 | 0.794 | 91 | 1606 | 1710 |

# APPENDIX 3: ANALYTICAL LABORATORY INFORMATION AND TECHNIQUES

Name and Address of the Lab:

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

Statement of Qualifications:

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

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

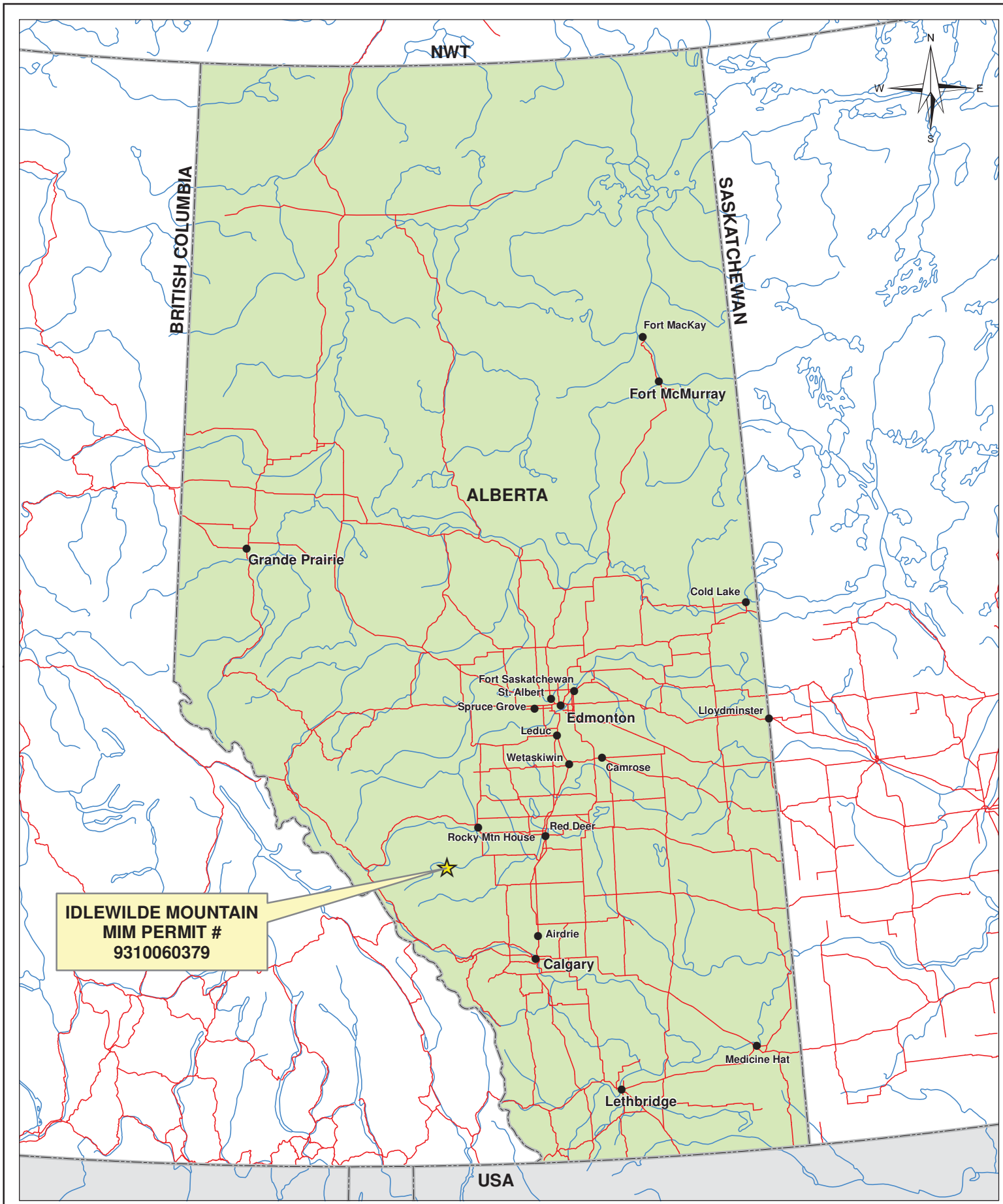
For the ICP sample preparation, 0.5 grams of the sample is mixed with 3 g of lithium carbonate. The sample and the lithium carbonate are then fused together in a muffle furnace at 850°C. Following the fusion process, the samples are dissolved in 1:1 HCl; a total of 40 mL 1:1 HCl is used in the dissolving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

Mesh Size Fraction, Split and Weight of Sample:

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

Quality Control Procedures:

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




**Legend**

- Towns/Cities
- Major roads
- Rivers

Kilometres

0 250

1:5,500,000

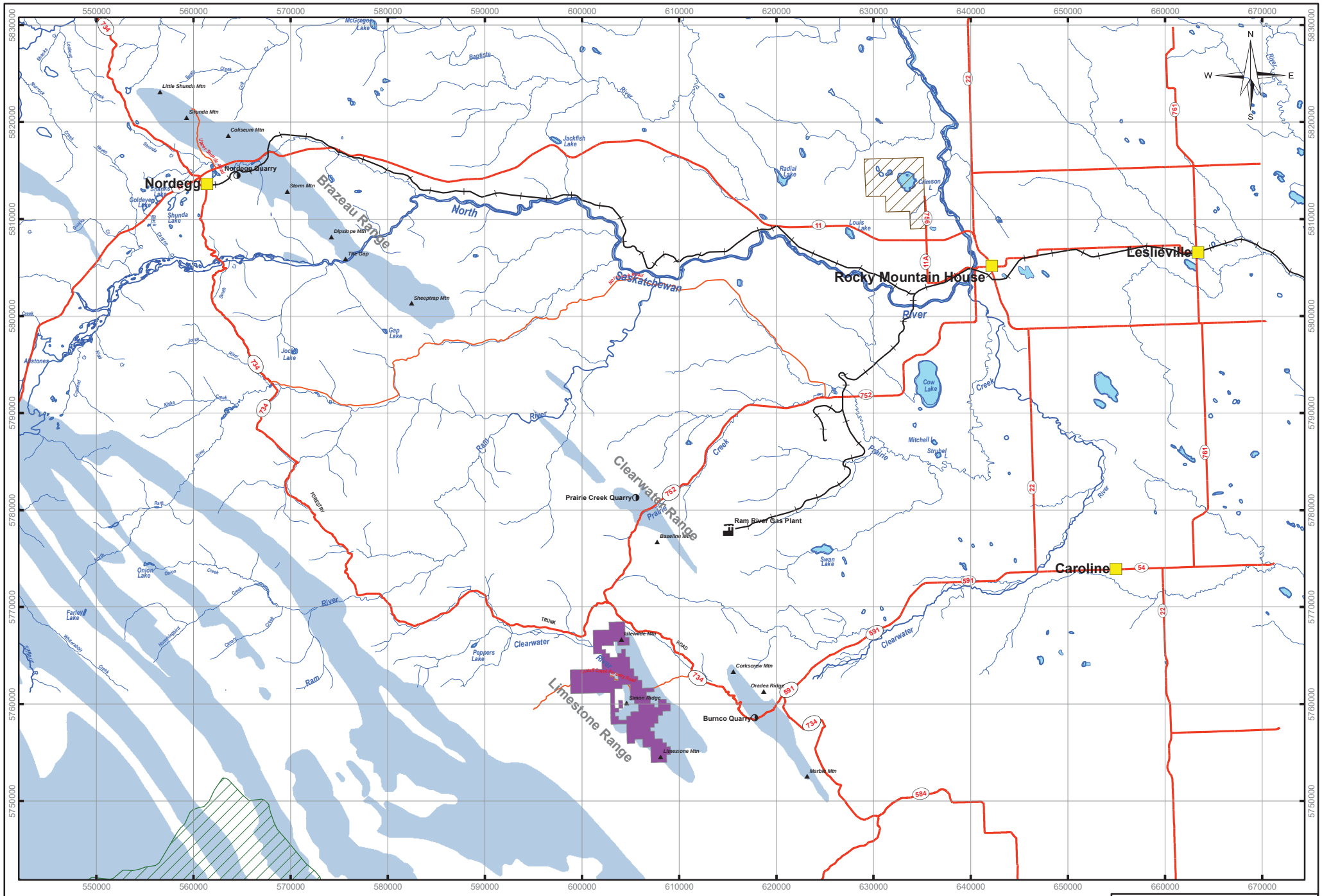
Coordinate System: UTM NAD83, Zone 11N

**GRAYMONT WESTERN CANADA INC.**

Dahrouge Geological Consulting Ltd.
Edmonton, Alberta

Fig. 3.1
Location Map

AS 2020.02




## Legend

- Railway
- Secondary Road
- Highway
- Approximate Paleozoic Limestone
- Idlewilde Mountain (9310060379)
- Provincial Park
- National Park

Kilometres

0 10 20 30

1:500,000

Coordinate System: UTM NAD83, Zone 11N

**GRAYMONT WESTERN CANADA INC.**

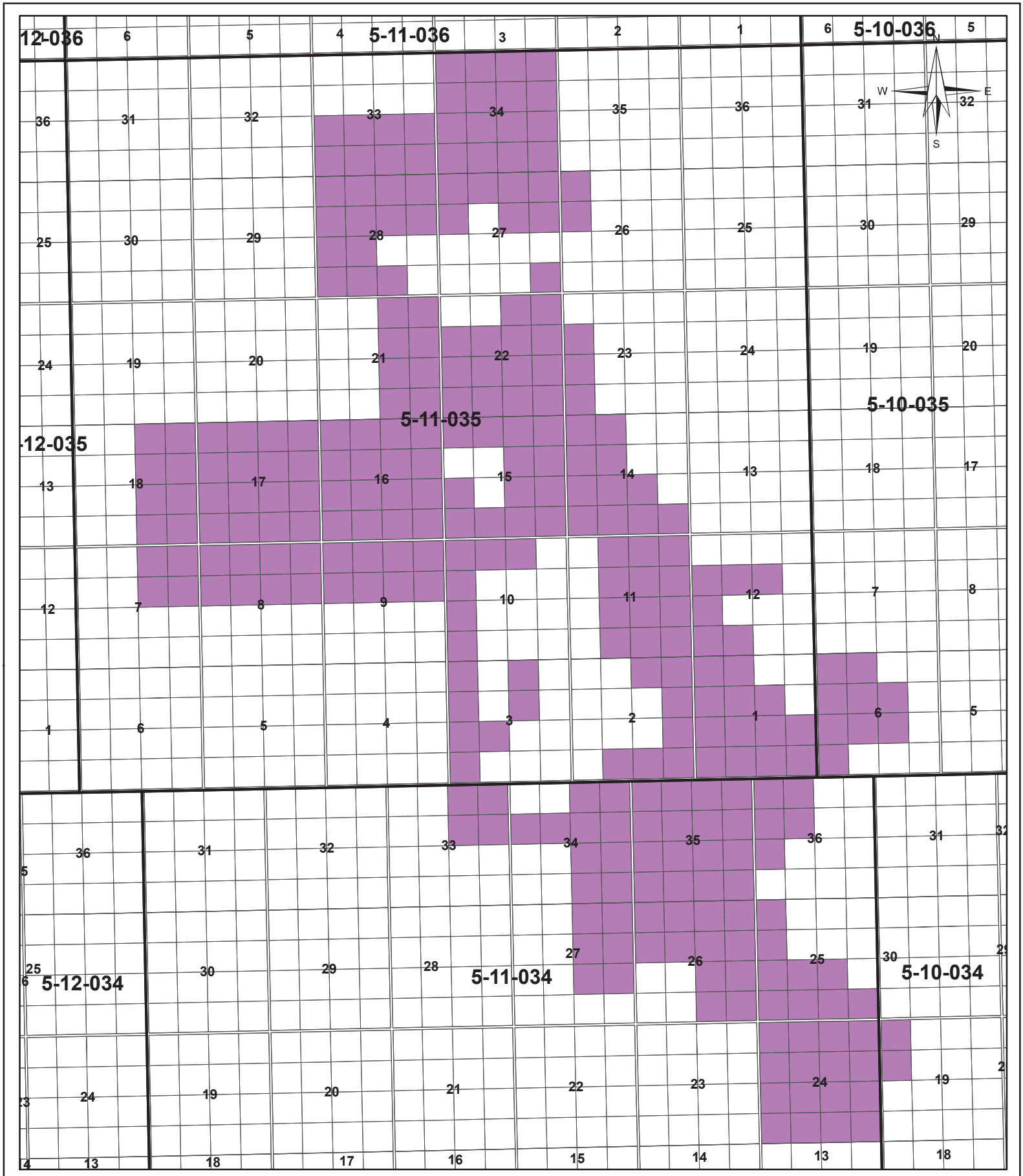
Dahrouge Geological Consulting Ltd.
Edmonton, Alberta

WEST-CENTRAL ALBERTA

Fig. 3.2
Access Map

PK 2018.03

C27




## Legend

### MIM Permits

- Permit # 9310060379 (4,736 ha)
- Others

Kilometres

0 2 4

1:65,000

Coordinate System: UTM NAD83, Zone 11N

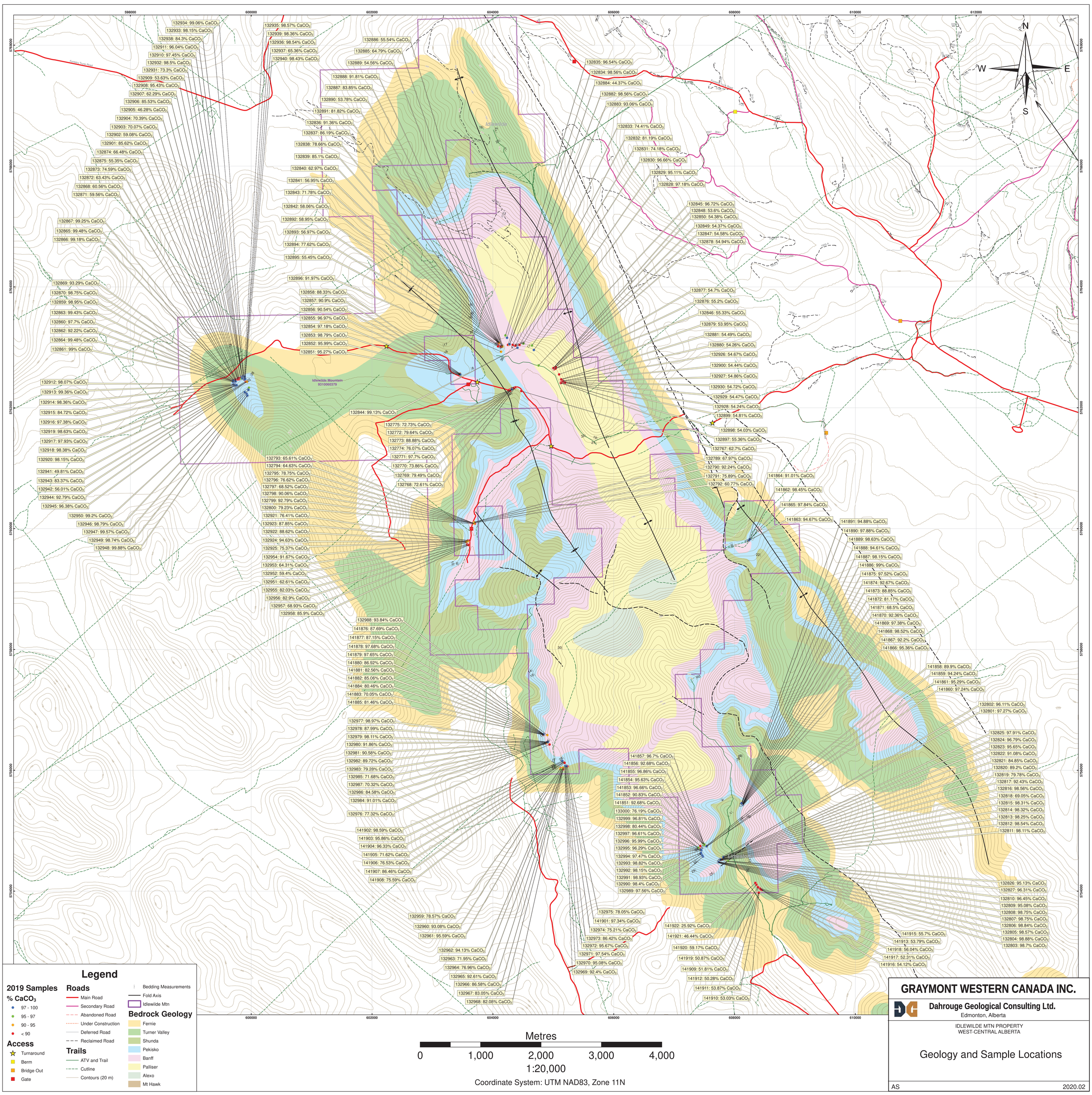
**GRAYMONT WESTERN CANADA INC.**

Dahrouge Geological Consulting Ltd.
Edmonton, Alberta

WEST-CENTRAL ALBERTA

Fig. 4.1
Permit Map

AS 2020.02


598000
600000
602000
604000
606000
608000
610000
612000
5766000
5764000
5762000
5760000
5758000
5756000
5754000
N
S
E
W
Forestry Trunk Road
Idlewilde Mountain
9310060379
132934: 99.06% CaCO3
132933: 98.15% CaCO3
132938: 84.3% CaCO3
132911: 96.04% CaCO3
132910: 97.45% CaCO3
132932: 98.5% CaCO3
132931: 73.3% CaCO3
132909: 53.63% CaCO3
132908: 95.43% CaCO3
132907: 62.29% CaCO3
132906: 85.53% CaCO3
132905: 46.28% CaCO3
132904: 70.39% CaCO3
132903: 70.07% CaCO3
132902: 59.08% CaCO3
132901: 85.62% CaCO3
132874: 66.48% CaCO3
132875: 55.35% CaCO3
132873: 74.59% CaCO3
132872: 63.43% CaCO3
132868: 60.56% CaCO3
132871: 59.56% CaCO3
132867: 99.25% CaCO3
132865: 99.48% CaCO3
132866: 99.18% CaCO3
132869: 93.29% CaCO3
132870: 98.75% CaCO3
132859: 98.95% CaCO3
132863: 99.43% CaCO3
132860: 97.7% CaCO3
132862: 92.22% CaCO3
132864: 99.48% CaCO3
132861: 99% CaCO3
132912: 98.07% CaCO3
132913: 99.36% CaCO3
132914: 98.36% CaCO3
132915: 84.72% CaCO3
132916: 97.38% CaCO3
132919: 98.63% CaCO3
132917: 97.93% CaCO3
132918: 98.38% CaCO3
132920: 98.15% CaCO3
132941: 49.81% CaCO3
132943: 83.37% CaCO3
132942: 56.01% CaCO3
132944: 92.79% CaCO3
132945: 96.38% CaCO3
132950: 99.2% CaCO3
132946: 98.79% CaCO3
132947: 99.57% CaCO3
132949: 98.74% CaCO3
132948: 99.88% CaCO3
132935: 98.57% CaCO3
132939: 98.36% CaCO3
132936: 98.54% CaCO3
132937: 65.36% CaCO3
132940: 98.43% CaCO3
132886: 55.54% CaCO3
132885: 64.79% CaCO3
132889: 54.56% CaCO3
132888: 91.81% CaCO3
132887: 83.85% CaCO3
132890: 53.78% CaCO3
132891: 81.82% CaCO3
132836: 91.36% CaCO3
132837: 86.19% CaCO3
132838: 78.66% CaCO3
132839: 85.1% CaCO3
132840: 62.97% CaCO3
132841: 56.95% CaCO3
132843: 71.78% CaCO3
132842: 58.06% CaCO3
132892: 58.95% CaCO3
132893: 56.97% CaCO3
132894: 77.62% CaCO3
132895: 55.45% CaCO3
132896: 91.97% CaCO3
132858: 88.33% CaCO3
132857: 90.9% CaCO3
132856: 90.54% CaCO3
132855: 96.97% CaCO3
132854: 97.18% CaCO3
132853: 98.79% CaCO3
132852: 95.99% CaCO3
132851: 95.27% CaCO3
132844: 99.13% CaCO3
132775: 72.73% CaCO3
132772: 79.64% CaCO3
132773: 88.88% CaCO3
132774: 76.07% CaCO3
132771: 97.7% CaCO3
132770: 73.86% CaCO3
132769: 79.49% CaCO3
132768: 72.61% CaCO3
132793: 65.61% CaCO3
132794: 64.63% CaCO3
132795: 78.75% CaCO3
132796: 76.62% CaCO3
132797: 68.52% CaCO3
132798: 90.06% CaCO3
132799: 92.79% CaCO3
132800: 79.23% CaCO3
132921: 76.41% CaCO3
132923: 87.85% CaCO3
132922: 88.62% CaCO3
132924: 94.63% CaCO3
132925: 75.37% CaCO3
132954: 91.67% CaCO3
132953: 64.31% CaCO3
132952: 59.4% CaCO3
132951: 62.61% CaCO3
132955: 82.03% CaCO3
132956: 82.9% CaCO3
132957: 68.93% CaCO3
132958: 85.9% CaCO3
132988: 93.84% CaCO3
141876: 87.69% CaCO3
141877: 87.15% CaCO3
141878: 97.68% CaCO3
141879: 97.65% CaCO3
141880: 86.92% CaCO3
141881: 82.56% CaCO3
141882: 85.06% CaCO3
141884: 80.46% CaCO3
141883: 70.05% CaCO3
141885: 81.46% CaCO3
132977: 98.97% CaCO3
132978: 87.99% CaCO3
132979: 98.11% CaCO3
132980: 91.86% CaCO3
132981: 90.58% CaCO3
132982: 89.72% CaCO3
132983: 79.28% CaCO3
132985: 71.68% CaCO3
132987: 70.32% CaCO3
132986: 84.58% CaCO3
132984: 91.01% CaCO3
132976: 77.32% CaCO3
141902: 98.59% CaCO3
141903: 95.86% CaCO3
141904: 96.33% CaCO3
141905: 71.62% CaCO3
141906: 76.53% CaCO3
141907: 86.46% CaCO3
141908: 75.59% CaCO3
132959: 78.57% CaCO3
132960: 93.08% CaCO3
132961: 95.59% CaCO3
132962: 94.13% CaCO3
132963: 71.95% CaCO3
132964: 76.96% CaCO3
132965: 92.61% CaCO3
132966: 86.58% CaCO3
132967: 83.05% CaCO3
132968: 82.08% CaCO3
132835: 96.54% CaCO3
132834: 98.56% CaCO3
132884: 44.37% CaCO3
132882: 98.56% CaCO3
132883: 93.06% CaCO3
132833: 74.41% CaCO3
132832: 81.19% CaCO3
132831: 74.18% CaCO3
132830: 96.66% CaCO3
132829: 95.11% CaCO3
132828: 97.18% CaCO3
132845: 96.72% CaCO3
132848: 53.6% CaCO3
132850: 54.38% CaCO3
132849: 54.37% CaCO3
132847: 54.58% CaCO3
132878: 54.94% CaCO3
132877: 54.7% CaCO3
132876: 55.2% CaCO3
132846: 55.33% CaCO3
132879: 53.95% CaCO3
132881: 54.49% CaCO3
132880: 54.26% CaCO3
132926: 54.67% CaCO3
132900: 54.44% CaCO3
132927: 54.86% CaCO3
132930: 54.72% CaCO3
132929: 54.47% CaCO3
132928: 54.24% CaCO3
132899: 54.81% CaCO3
132898: 54.03% CaCO3
132897: 55.36% CaCO3
132767: 62.7% CaCO3
132789: 67.97% CaCO3
132790: 92.24% CaCO3
132791: 75.89% CaCO3
132792: 60.77% CaCO3
141864: 91.01% CaCO3
141862: 98.45% CaCO3
141865: 97.84% CaCO3
141863: 94.67% CaCO3
141891: 94.88% CaCO3
141890: 97.88% CaCO3
141889: 98.63% CaCO3
141888: 94.61% CaCO3
141887: 98.15% CaCO3
141886: 99% CaCO3
141875: 97.52% CaCO3
141874: 92.67% CaCO3
141873: 88.85% CaCO3
141872: 81.17% CaCO3
141871: 68.5% CaCO3
141870: 92.36% CaCO3
141869: 97.38% CaCO3
141868: 98.52% CaCO3
141867: 92.2% CaCO3
141866: 95.36% CaCO3
141858: 89.9% CaCO3
141859: 94.24% CaCO3
141861: 95.29% CaCO3
141860: 97.24% CaCO3
132802: 96.11% CaCO3
132801: 97.27% CaCO3
132825: 97.91% CaCO3
132824: 96.79% CaCO3
132823: 95.65% CaCO3
132822: 91.08% CaCO3
132821: 84.85% CaCO3
132820: 89.2% CaCO3
132819: 79.78% CaCO3
132817: 92.43% CaCO3
132816: 98.56% CaCO3
132818: 69.05% CaCO3
132815: 98.31% CaCO3
132814: 98.32% CaCO3
132813: 98.25% CaCO3
132812: 98.54% CaCO3
132811: 98.11% CaCO3
141857: 96.7% CaCO3
141856: 92.68% CaCO3
141855: 96.86% CaCO3
141854: 95.63% CaCO3
141853: 96.66% CaCO3
141852: 90.83% CaCO3
141851: 92.68% CaCO3
133000: 76.19% CaCO3
132999: 96.81% CaCO3
132998: 80.44% CaCO3
132997: 96.61% CaCO3
132996: 95.99% CaCO3
132995: 96.29% CaCO3
132994: 97.47% CaCO3
132993: 98.82% CaCO3
132992: 98.15% CaCO3
132991: 98.93% CaCO3
132990: 98.4% CaCO3
132989: 97.56% CaCO3
132975: 78.05% CaCO3
141901: 97.34% CaCO3
132974: 75.21% CaCO3
132973: 86.42% CaCO3
132972: 95.67% CaCO3
132971: 97.54% CaCO3
132970: 95.08% CaCO3
132969: 92.4% CaCO3
141922: 25.92% CaCO3
141921: 46.44% CaCO3
141920: 59.17% CaCO3
141919: 50.87% CaCO3
141909: 51.81% CaCO3
141912: 50.28% CaCO3
141911: 53.87% CaCO3
141910: 53.03% CaCO3
141915: 55.7% CaCO3
141913: 53.79% CaCO3
141918: 56.04% CaCO3
141917: 52.31% CaCO3
141916: 54.12% CaCO3
132826: 95.13% CaCO3
132827: 96.31% CaCO3
132810: 96.45% CaCO3
132809: 95.08% CaCO3
132808: 98.75% CaCO3
132807: 98.75% CaCO3
132806: 98.84% CaCO3
132805: 98.57% CaCO3
132804: 98.88% CaCO3
132803: 98.7% CaCO3
Legend
2019 Samples
% CaCO3
97 - 100
95 - 97
90 - 95
< 90
Access
Turnaround
Berm
Bridge Out
Gate
Roads
Main Road
Secondary Road
Abandoned Road
Under Construction
Deferred Road
Reclaimed Road
Trails
ATV and Trail
Cutline
Contours (20 m)
Bedding Measurements
Fold Axis
Idlewilde Mtn
Bedrock Geology
Fernie
Turner Valley
Shunda
Pekisko
Banff
Palliser
Alexo
Mt Hawk
Metres
0
1,000
2,000
3,000
4,000
1:20,000
Coordinate System: UTM NAD83, Zone 11N
GRAYMONT WESTERN CANADA INC.
Dahrouge Geological Consulting Ltd.
Edmonton, Alberta
IDLEWILDE MTN PROPERTY
WEST-CENTRAL ALBERTA
Geology and Sample Locations
AS
2020.02