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GEOLOGICAL SURVEY BRANCH
ASSESSMENT REPORTS

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ECOWASTE INDUSTRIES LTD.

**1995 SAMPLING, MAPPING, AND FLAGGING ACCESS TRAILS
ON THE CMM CLAIMS**

CROWSNEST PASS, BRITISH COLUMBIA

CLAIMS CMM 1 TO 13, 16 TO 24

Geographic Coordinates

49° 40' N
115° 42' W

NTS Sheet 82 G/10E

Owner of Claims CMM 1 to 13, 16 to 24: Ecowaste Industries Ltd.

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Date Submitted: 1995 12 15

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GEOLOGICAL SURVEY BRANCH
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INTRODUCTION

In order to explore for additional reserves of limestone for the lime plant of Summit Lime Works Ltd. (Summit Lime), just on the Alberta side of Crowsnest Pass, Ecowaste Industries Ltd., an associated company, arranged for the staking of seven claims (CMM 1 to 7) totalling 32 units in September and October 1994. These claims adjoin land held by Summit Lime in Alberta. Fifteen additional adjoining claims (CMM 8-13, 16-24) totalling 65 units were staked in June 1995, and six more (CMM 14, 15, 25FR, 26-28) of one unit each in September 1995. The natural gas pipeline of Alberta Natural Gas (ANG) crosses the southern part of claim CMM 4. In 1995, the work on the CMM claims was divided in two by the pipeline corridor. This report describes the work on the CMM claims north of the pipeline corridor; another report covers that south of the corridor. The 1995 work was confined to claims CMM 1 to 7, the southern part of CMM 8, and CMM 19 to 21. This report on the 1995 work north of the pipeline corridor includes information on 634 limestone samples chipped from outcrops and on flagged trails to provide ground access part of the way to potential drillsites.

1.1 GEOGRAPHIC SETTING

1.1.1 Location

The CMM claims are in southeastern British Columbia. They extend northerly for about 12 km from Crowsnest Pass and within about 4 km west of the British Columbia - Alberta border (Fig. 1.1, 1.2). The parts of the CMM claims explored in 1995 and described in this report extend north from the pipeline corridor for about 4½ km to a prominent westerly trending ridge (Rudolf Ridge), and are within 3 km west of the British Columbia - Alberta border. A convenient reference point is the entrance to Crowsnest Provincial Park, which is on Highway 3 about 2 km west of the British Columbia - Alberta border (Fig. 1.2), and which adjoins southwest of the CMM claims. The Forestry Road corner in Coleman is 17 km east of Crowsnest Provincial Park and Sparwood is about 19 km westerly, both along Highway 3. Blairmore is 5 km east of Coleman. Infrastructure common to towns of 5000 to 7000 is available at these places. All three are or were centres of coal mining. The Elk Valley Regional Airport serves Sparwood. In addition the southern line of the Canadian Pacific Railway (CPR), the gas pipeline of ANG, and two electric power transmission lines, the northerly with aluminum towers, pass through or within 1 or 2 km of Crowsnest Provincial Park. By air Crowsnest Provincial Park is 140 km southwest of Calgary, Alberta, and by paved highway 231 km.

1.1.2 Access

From Crowsnest Provincial Park, claims CMM 6 and the southern part of CMM 4 may be reached by driving easterly on a rough gravel road along the ANG pipeline and a detour on its north side which eliminates a steep climb and descent. Trails along the power transmission lines and access

to them have gradients commonly reaching 13° or 14° and locally 16° to 18°, and even 22° (Fig. 1.5). Parts may be accessible by 4x4 trucks or quads, but the steeper sections will probably require tracked vehicles. Claims CMM 19 to 24, the adjacent parts of CMM 4 and 5, the northern part of CMM 5, and the southern part of CMM 8 are accessible by walking up a cattle or game trail that follows Norman Creek, which flows southerly through Crowsnest Provincial Park. With little cutting, most of this trail could be made passible for a quad, but the Forest Practices Code forbids trails within 50 m of a creek. Further, B.C. Parks has denied vehicle access through Crowsnest Provincial Park except for the existing rough road along the pipeline. Access trails to drillsites could be constructed along the cattle or game trails which ascend some of the westerly flowing tributaries to Norman Creek, but such trails are likely to be too close to these creeks, and so are forbidden by the Forest Practices Code.

CMM claims 9 and 16, the northern part of CMM 8, and the southern part of CMM 10 may be accessible from the 4-wheel-drive trail through Deadman Pass which joins the 4-wheel-drive logging trail within 1 km east of Alexander Creek. Both of these trails should be checked for washouts before attempted use. The rest of the CMM claims, particularly the higher parts are accessible by helicopter, which is based in Fernie, B.C., or by climbing.

1.1.3 Geographic Names

For convenience previously unnamed geographic features have been given informal names in this report. These names are those previously applied to these features by Schindler (1995), with a few added.

1.1.4 Topography and Vegetation

The CMM claims are on the western slope of High Rock Range which forms part of the boundary between British Columbia and Alberta. In this part of High Rock Range, Allison Peak reaches an elevation of 2644 m, but the highest elevation within the property is 2469 m on the ridge within claim CMM 11. The highest elevation on the part of the property explored in 1995 is 2347 m at the northeast end of Rudolf Ridge in claim CMM 8. The lowest elevations on the property are about 1400 m, where Norman Creek crosses the southern boundary of claim CMM 19, and along the pipeline road at the western boundary of claim CMM 4. Within the part of the property explored in 1995, the mountain slopes are steep and rugged. They are broken by valleys of creeks tributary to Norman Creek which flows southerly from Rudolf Ridge to Crowsnest Provincial Park. In spite of very heavy rains in early June 1995, no water flowed in Norman Creek above an elevation of about 1550 m in mid June, and creeks tributary to Norman Creek ceased flowing above about 1650 m by late July.

The vegetation consists of poplar, pine, and spruce, some of which reach diameters of ½ m on lower slopes, but become smaller as treeline is reached at about 1950 m. Undergrowth is mostly thin except at lower elevations on some northerly facing slopes.

1.2 PROPERTY

The property now consists of 28 contiguous CMM mineral claims totalling 103 units covering approximately 2474 ha within the Fort Steele Mining Division, NTS Map Sheet 82 G/10E (Fig. 1.2 and 1.3; Table 1.1). These claims are registered in the name of Ecowaste Industries Ltd. At the time of the work, claims CMM 14, 15, 25FR, 26, 27, and 28 had not been staked.

TABLE 1.1 LIST OF CMM MINERAL CLAIMS

Claim Name	Tenure Number	Units / Claim	Record Date	Expected Expiry Date
CMM 1	331238	1	1994 09 18	2005 09 18
CMM 2	331239	1	1994 09 18	2005 09 18
CMM 3	331956	1	1994 10 11	2005 10 11
CMM 4	331242	12	1994 09 20	2005 09 20
CMM 5	331243	15	1994 09 21	2005 09 21
CMM 6	331240	1	1994 09 23	2005 09 23
CMM 7	331241	1	1994 09 23	2005 09 23
CMM 8	337304	15	1995 06 21	2006 06 21
CMM 9	337305	4	1995 06 21	2006 06 21
CMM 10	337306	16	1995 06 22	2006 06 22
CMM 11	337307	6	1995 06 22	2006 06 22
CMM 12	337308	6	1995 06 22	2006 06 22
CMM 13	337309	9	1995 06 22	2006 06 22
CMM 14	340459	1	1995 09 23	1996 09 23
CMM 15	340460	1	1995 09 23	1996 09 23
CMM 16	337314	1	1995 06 21	2006 06 21
CMM 17	337315	1	1995 06 22	2006 06 22
CMM 18	337316	1	1995 06 19	2006 06 19
CMM 19	337317	1	1995 06 17	1997 06 17
CMM 20	337318	1	1995 06 17	1997 06 17
CMM 21	337319	1	1995 06 17	1997 06 17
CMM 22	337320	1	1995 06 17	1997 06 17
CMM 23	337321	1	1995 06 17	1997 06 17
CMM 24	337322	1	1995 06 17	1997 06 17
CMM 25FR	340464	1	1995 09 23	1996 09 23
CMM 26	340461	1	1995 09 24	1996 09 24
CMM 27	340462	1	1995 09 24	1996 09 24
CMM 28	340463	1	1995 09 24	1996 09 24
		103		

1.3 HISTORY AND PREVIOUS INVESTIGATIONS

Lime has been produced at the present site of Summit Lime along a siding of the CPR at Hazell, Alberta for many decades, probably from the early part of this century, but the writer has been unable to locate a reference for the date production commenced. In 1993, about 165 000 tonnes of limestone were quarried (Holter, 1994, p. 4-1). Several quarries have operated in strata of the Livingstone and Mount Head Formations (Holter, 1994, p. 6-1).

Gouge (1945) described and presented chemical analyses of limestone at and near Summit Lime Works at the time of his examination believed to be in the 1930s.

Price (1962) described the geology of the Fernie map-area east half, which includes Summit Lime Works and the CMM claims.

Between 1966 and 1990, the geology and other features of the area at and surrounding Summit Lime Works have been investigated by several geologists and engineers including Crabb (1966), Van Raalte (1969), Pelletier (1973), Brasher (1974), Pool (1974), Sherman (1990), and Seymour and Schindler (1990). None of these reports has been consulted by the writer.

Holter (1976) described the limestone resources of Alberta including those of Summit Lime Works Ltd.

Macdonald and Hamilton (1981) described limestone prospects near the Crowsnest Pass including some that are now within the CMM claims.

Hamilton (1987, p. 12-17) investigated carbonate rocks of the Devonian Fairholme Group in Phillips Pass for use as filler material.

Holter (1994) briefly mentioned Summit Lime Works and Crowsnest Pass in his review of Alberta limestone.

Knox and Schindler (1995) described a drilling program at and near Summit Lime's #8 quarry in Alberta.

Schindler (1995) spent a few days in late 1994 examining and sampling limestone from the British Columbia - Alberta border near Crowsnest Pass north to and beyond Deadman Pass, an area now included in the CMM claims.

1.4 PURPOSE OF SURVEY

The chief purpose of the work was to obtain additional information on limestone in all or parts of claims CMM 4 to 8 to learn if it is of suitable quality for making lime. A secondary purpose was to select access trails to potential drillsites.

1.5 SUMMARY OF WORK DONE

Prior to beginning the field work on the CMM claims in late June 1995, Ecowaste Industries Ltd. contracted to have the property covered by controlled aerial photographs resulting in 8 at a scale of 1:20 000 and 53 at a scale of 1:10 000. The flight lines for these photographs are shown in Fig. 1.4. These photographs were expected to be used for detailed contour maps of the property to aid in field work. Due to clouds and other features of the weather, the property was not flown until early August 1995, after completion of the sampling, so the planned contour maps were not prepared. However, the aerial photographs were used extensively in locating pertinent features and interpreting the geology.

Starting near the detour on the pipeline access road, 3830 m of a potential access trail part of the way to future drillsites were flagged (Fig. 1.5, 1.6, and 1.7). This route was selected so that it could serve as a future haul road for quarried stone. In addition, 263 m of a possible access trail connecting the pipeline access road to a powerline access trail just east of Crowsnest Provincial Park were flagged (Fig. 1.6). Gradients of the access trail along the powerline with aluminum towers were measured (Fig. 1.5) to assess its suitability for access to drillsites.

Potential drillsites were checked for archeological and timber concerns and none found. With approval of the B.C. Government obtained only for helicopter-supported drilling north of the pipeline corridor, the planned drilling was deferred.

The 634 samples of limestone chipped from outcrops at 125 stations were analyzed by Inductively Coupled Plasma (ICP) techniques in the Central Laboratory of Continental Lime Inc. in Salt Lake City, Utah. Eight samples were tested for decrepitation.

1.6 FIELD OPERATIONS

Field operations were conducted by a five-person crew based in a motel in Coleman, Alberta as the section of Highway 3 between Crowsnest Provincial Park and Sparwood had been extensively damaged by run-off from heavy rains in early June 1995. Transportation between Coleman and Crowsnest Provincial Park was by rented vehicles. A Bell 206B helicopter based in Fernie, B.C. was frequently used to set field parties on the mountainside in the morning; at the end of the day they walked down to Crowsnest Provincial Park. Sample stations were located by means of GPS instruments, altimeters, aerial photographs, and triangulation. A helicopter was used for the archeological and timber checks around potential drillsites.

2.

REGIONAL GEOLOGY

Most of the following description of the regional geology is summarized from Price (1962); references to him are omitted except for direct quotations. Only Devonian, Mississippian, Pennsylvanian, Permian, and Triassic formations are included in Table 2.1, although other formations are present in High Rock Range north of Crowsnest Pass. At and near Crowsnest Pass, they form a northerly trending band in the Lewis Thrust sheet, which thrusts them on top of Upper Cretaceous strata, that outcrop to the east in Alberta. Although they outcrop in Alberta within the Lewis Thrust sheet, none of the Devonian Formations nor the Exshaw Formation in Table 2.1 outcrop in High Rock Range in British Columbia for at least 30 km north of Crowsnest Pass, so are not considered further here.

According to Price (p. 19-20) the Banff Formation is 320 m thick at Tomado Pass about 38 km north of Crowsnest Pass in High Rock Range. It consists mostly of thin-bedded black and brownish-black shale and calcareous shale, black cherty limestone, cherty siltstone and banded black chert in its lower part. Its middle part consists of thin-bedded dark-grey and black, dense, cherty argillaceous limestone. Its upper part consists mainly of medium-dark-grey, fine- to medium-crystalline limestone with disseminated skeletal fragments and bands, lenses, and patches of grey calcareous chert. The limestone in its upper part weathers darker-grey than limestone in the lower part of the overlying Livingstone Formation.

The Livingstone Formation is about 350 m thick at Tomado Pass. "It consists mainly of light-grey skeletal calcarenites and calcarenitic fine-crystalline limestone. Cherty limestone beds are common in the lower part ... and interbeds of light-grey fine-crystalline dolomite, commonly silty" (Price, p. 20) are present in the upper part. Beds of porous sucrosic "dolomite appear to be the dolomitized equivalents of calcarenites" (Price, p. 20).

The Mount Head Formation is about 300 m thick at Tomado Pass. To the northeast of Crowsnest Pass near Gap and Mount Head in Alberta, the Mount Head Formation is divided into six members from bottom to top: Wileman, Baril, Salter, Loomis, Marston, and Carnarvon (Douglas, 1953) with lithologies indicated in Table 2.1; to the west, facies changes in the Marston and lower two-thirds of the Carnarvon Member led Macqueen and Bamber (1968) to introduce the Opal Member for this interval. In High Rock Range, the Wileman and Baril Members do not fit the sequence described by Douglas (1953) and Macqueen and Bamber (1968).

The Etherington Formation is about 185 m thick at Crowsnest Pass. The lowest part "consists mainly of medium grey, fine-crystalline to cryptocrystalline limestone with variable amounts of skeletal calcarenite, mainly as disseminated echinoderm fragments in the dense limestone matrix. Nodules and bands of medium grey chert are abundant and silicified brachiopods are common. Thin

TABLE 2.1

TABLE OF PERTINENT FORMATIONS
(modified after Price, 1962)

Stratigraphic Unit	Description	Thickness (m)
Triassic		
Spray River Group	silty shale, siltstone, shale, dolomitic siltstone	0 - 460
Permian - Pennsylvanian		
Rocky Mountain Group	quartzitic, dolomitic, and calcareous sandstone, dolomite, chert, shale, siltstone	0 - 460
Mississippian		
Rundle Group		
Etherington Formation	limestone, cherty limestone, dolomite, cherty dolomite, anhydrite, greenish shale	60-260
Mount Head Formation		120-300
Carnarvon Member	skeletal limestone, cherty and dolomitic beds	
Opal Member	skeletal and other limestone, micritic limestone, calcareous shale	
Loomis Member	oolitic coarse-grained echinoderm-bryozoan limestones	
Salter Member	micritic silty or sandy dolomite, locally cherty	
Baril Member	oolitic and micritic, and skeletal limestone, microdolomite	
Wileman Member	finer crystalline silty dolomite	
Livingstone Formation	skeletal calcarenite, cherty limestone, dolomite	250-430
Banff Formation	cherty and argillaceous limestone	180-320
Exshaw Formation	black shale	2-12
Devonian		
Palliser Formation	fine crystalline limestone, dolomitic limestone	200-220
Alexo Formation	limestone, dolomite, silty limestone and dolomite, siltstone, sandstone	6-150
Fairholme Group	limestone, argillaceous limestone, shale, dolomite	290-460

interbeds of green and greenish grey shale are characteristic. ... The middle part ... consists mainly of medium and light grey skeletal calcarenites. ... The calcarenites are generally thickly bedded or massive and commonly contain lenses and nodules of medium grey chert. ... The upper part ... is characterized by silty and sandy fine-crystalline dolomite" (Price, p. 22-23).

The Rocky Mountain Group is about 300 m thick at Tornado Pass. The "lower and by far the greater part ... consists of a monotonous succession of light-coloured quartzitic, dolomitic or calcareous, fine-grained, quartz sandstone. ... The sandstone succession is overlain by approximately 50 feet of grey fine-crystalline dolomite, silty dolomite, and cherty dolomite with interbeds of yellow and brown shale, grey chert, cherty quartz-pebble conglomerate, and conglomeratic sandstone. The dolomites are most abundant" (Price, p. 24).

The Spray River Group is approximately 200 m thick at Tornado Pass with lithologies indicated in Table 2.1. It has been divided into two members, but they are not pertinent to this report and not mentioned.

The pertinent part of the High Rock Range is at or near the east limit of the Lewis Thrust sheet. The Lewis Thrust is a major feature of the southern Canadian Rocky Mountains. It has been traced for more than 300 km along the strike of the Rocky Mountains. The maximum stratigraphic separation across it may reach 9000 m, and the maximum thickness of strata within the thrust sheet is about 6000 m. Within the Lewis Thrust sheet, the strata constituting High Rock Range form a west-dipping homoclinal succession. Some are repeated not far to the west by the Alexander and other faults. "North of Crowsnest Pass the Lewis thrust sheet has been folded, essentially concordantly, with the underlying Mesozoic strata ... " (Price, p. 49).

3. PROPERTY GEOLOGY

3.1 STRATIGRAPHY

Only strata of the Livingstone, Mount Head, and Etherington Formations were mapped and sampled (Fig. 3.1) in 1995.

3.1.1 Livingstone Formation

North of the pipeline corridor, the Livingstone Formation outcrops in the southeast part of claim CMM 4, and underlies all or most of claims CMM 6, 7, 14, 15, and 27. It also occupies the area east of these claims to the British Columbia - Alberta border and beyond into Alberta where it is underlain by the Banff and Palliser Formations. Not far north or northwest of Phillips Peak the contact between the Livingstone and Mount Head Formations trends northerly in Alberta just east of the British Columbia - Alberta border. About 145 m of mostly grainstone but including some wackstone -

packstone in the upper part of the Livingstone Formation were sampled or described or both (Appendix 5). Chert is present in lime or dolomitic mudstones or both. Some covered intervals are probably mudstones, as the grainstone layers are more likely to be exposed than the mudstones.

3.1.2 Mount Head Formation

North of the pipeline corridor on the claims explored in 1995, the Mount Head Formation is at the surface under most of claims CMM 4, 5, and 25FR, the eastern part of CMM 8, and small parts of CMM 7, 14, and 15. The trace of its contact with the overlying Etherington Formation is sinuous (Fig. 3.1) because of the topography. In the western parts of claims CMM 4 and 5, its upper part has been repeated by a fault. A maximum thickness of 278 m of the Mount Head Formation was sampled or described or both in 1995. The samples have not been assigned to the members of the Mount Head Formation. The lithologies include grainstone, packstone, wackestone, and mudstone, some of which is dolomitic or chert-bearing or both (Appendix 5).

3.1.3 Etherington Formation

North of the pipeline corridor on the claims explored in 1995, the Etherington Formation is at the surface of the western parts of claims CMM 4, 5, and 8. Its upper contact was not observed, but at one place along Norman Creek near the Initial Post of claim CMM 21, it is bracketed by sandstone talus of the Rocky Mountain Formation. About 38 m in the lower part of the Etherington Formation were sampled or described or both (Appendix 5) and with a short interval higher up, separated from the other samples by a large covered interval. Lithologies sampled and described include packstone, wackestone, grainstone, limestone conglomerate, and shale.

3.2 STRUCTURE

As indicated in Section 2, the strata of the western slope of High Rock Range form a westerly dipping homocline. The dips recorded in Fig. 3.1 and Appendix 5 have the following statistics:

n	112
range	16° to 53° W
mean	36.8° W
standard deviation	7.9°
median	38° W
mode	40° W.

The largest variations in dips of up to 23° within 60 or 70 m are generally close to faults.

Of the faults within the property, the one crossing Vaughan Ridge at an elevation of about 1980 m (Fig. 3.1) repeats strata of the Mount Head and Livingstone Formations as observed from the Initial Post of claim CMM 15. Its trace in Fig. 3.1 is based on an attitude of 0°/52° W. Other faults

shown in Fig. 3.1 and 3.2 within the property are based on stratigraphic considerations.

An apparently small fault along Kirsten Creek strikes 30° and dips 33° SE.

4. QUALITY OF LIMESTONE

4.1 SAMPLING, SAMPLE PREPARATION, AND ANALYTICAL PROCEDURES

Some 634 samples were collected by chipping outcrops perpendicular to the bedding at 125 sample stations (Table 4.1; Appendices 4 and 5). Samples consisted of chips at intervals of 33 cm, each generally representative of 2 m of strata, but a few represented greater thicknesses. Obviously dolomitic or cherty stratigraphic intervals were measured but not sampled.

The 634 samples were crushed to $\frac{1}{4}$ inch in a laboratory jaw crusher at Summit Lime Works and split to between 100 and 200 grams by means of a Jones splitter. Rejects are stored at Summit Lime; split fractions were sent to the Central Analytical Laboratory of Continental Lime Inc. in Salt Lake City, Utah for pulverizing and analysis for 12 constituents by standard ICP techniques. Analytical procedures are described in Appendix 3. Analytical reports as received by modem from the Central Analytical Laboratory are in Appendix 1, and re-arranged into numerical order in Appendix 2. In Appendix 1 analyses for 70 samples are reported twice; all these duplicated reports are identical, except for four samples 10072, 11159, 11164, and 11176. Preferred values in Appendix 2 for samples 10072, 11159, 11176 are the average of the two sets of analyses. The preferred values for sample 11164 are for the one with 93.37 per cent CaCO_3 , because the replicate analysis with 92.37 per cent CaCO_3 may be a typographical error. The total for the replicate analysis is 98.09 per cent compared to 99.73 per cent for the analysis with 93.37 per cent CaCO_3 . For sample 11164 the two determinations for each constituent are very close to each other except for SiO_2 : 4.13 vs 3.49 per cent.

4.2 SECTIONS WITH HIGH-QUALITY LIMESTONE

Sampled sections of limestone (Appendix 5) six or more metres thick and expected to average at least 54.00 per cent CaO , less than 1.00 per cent MgO , and less than 1.00 per cent SiO_2 are compiled in Table 4.2. A few sections in Table 4.2 exceed these limits for MgO and SiO_2 .

TABLE 4.1 LIST OF SAMPLED SECTIONS AND STATIONS

Section	Stations	Total Stratigraphic Section (m)	Stratigraphic Thickness Sampled (m)	Number of Samples
Northern Slope of Rudolf Ridge	JS-09, JS-46, JS-47	251	45	22
Top of Rudolf Ridge	JS-05, JS-06, JS-07, JS-08, RV-05, RV-06	320	86	42
Southern Slope of Rudolf Ridge	RV-12, RV-11, RV-10, RV-09, RV-08, RV-13, JS-10, JS-16	207	~106	46
Near Knox Creek (discontinuous)	JS-11, JS-48	5+	5	2
Northeast of Knox Creek	JS-45, JS-44, JS-43	85	37	18
Knox Ridge	RV-43, RV-42, RV-41, RV-40, RV-39, RV-38, RV-37, RV-32, RV-31, JS-39, JS-38, JS-37, JS-36	314½	96½	39
Upper Knox Ridge	RV-27, RV-28, RV-29, RV-30	57⅓	27⅓	14
David Creek	RV-50, RV-49, RV-48, RV-47, RV-46	39	33	10
Boundary Ridge above David Creek	RV-45, RV-44	19½	14½	5
Lower David Ridge and Miriam Creek	JS-25, JS-26, JS-27	158½	41½	20
Upper David Ridge	RV-36, RV-35, RV-34, RV-33, RV-22	94	37	17
Mary Creek	JS-31, JS-28, JS-30, JS-29, JS-32, JS-33, JS-34, JS-35	115	82	39
Upper Mark Creek	RV-26, RV-25, RV-24, RV-23, JS-40, JS-41, JS-42	126	68	31
Near Waterfall Creek	JS-24, JS-23, JS-04, JS-03, JS-02, JS-01	238	157	79
North Side of Caroline Creek	RV-01, RV-02, RV-03	34	12	6
Caroline Creek	RV-67, RV-66, RV-65, RV-64, RV-63, RV-62, RV-04, RV-61, RV-60, RV-59, RV-58, RV-57, RV-56	204	108	44
Northern Slope of Vaughan Ridge	JS-52, RV-21, RV-20, RV-19, RV-18, RV-17, RV-16, RV-15, RV-14	374½	144½	69
Vaughan Ridge	JS-59, JS-56, JS-55, JS-54, RV-55, JS-53, JS-22, JS-21, JS-20, JS-19, RV-54, RV-53, RV-52, RV-51	509	134	51
Upper Kirsten Creek	JS-49, JS-50, JS-51	124+	86	41
Kirsten Creek	JS-58, JS-57, JS-17, JS-18, JS-15, JS-14, JS-13	636	60	30
Pipeline Road	JS-12	18	18	9
		3929⅓+	1398⅓	634

TABLE 4.2

SAMPLED SECTIONS WITH HIGH-QUALITY LIMESTONE
(compiled from Appendix 5)

Section	Station	Samples	Strat. Thick. (m)	Weighted Average (%)			Comment
				CaO	MgO	SiO ₂	
Mount Head Formation							
Northern Slope of Rudolf Ridge	JS-47	10004-10	22	54.88	0.50	0.47	includes two covered intervals of 4 m each
	JS-47	10011-19	26	55.00	0.54	0.31	includes two covered intervals of 4 m and 2
Top of Rudolf Ridge	JS-07	10264-61	8	54.69	0.53	0.63	-
	JS-08	10266-65	8	54.47	0.45	0.69	includes one covered interval of 2 m
	RV-06	10336-26	28	54.44	0.59	0.99	includes 2 m not sampled
		10300-298					
Southern Slope of Rudolf Ridge	RV-12	10359-57	7	54.65	0.64	0.85	-
	RV-11	10356	7	54.09	0.55	0.79	-
	JS-10	{ 10272-75 10301-03 }	14	54.70	0.56	0.80	-
	JS-10	{ 10307-08 10389 }	7	54.44	0.90	0.60	-
	JS-16	10395-97	6	54.54	0.83	0.74	-
Northeast of Knox Creek	JS-45	11200-198	7	54.65	0.63	0.38	-
	JS-43	11190-87	8	54.43	1.03	0.49	-
Knox Ridge	RV-37	11154	16	54.22	0.66	0.80	-
	RV-32	11088-86					
	JS-39	11136-32	10	54.26	0.88	0.81	-
	JS-38	11130-27	8	54.15	0.96	0.72	-
	JS-36	11125-20	12	55.09	0.53	0.51	-
Upper Knox Ridge	RV-30	11084-77	16	54.17	0.82	0.95	-
Lower David Ridge & Miriam Cree	JS-27	10470-68	6	54.87	0.46	0.87	-
Upper David Ridge	RV-36	{ 11153-51 11100-098 }	12	54.12	0.72	0.81	-
	RV-33	11090-89	6	54.79	0.45	1.00	-

TABLE 4.2

CONTINUED

Section	Station	Samples	Strat. Thick. (m)	Weighted Average (%)			Comment
				CaO	MgO	SiO ₂	
Mary Creek	JS-31	10488-85	13	55.12	0.43	0.56	-
	JS-28	10474-73	24	54.43	0.77	0.59	includes one covered interval of 2 m
	JS-30	10484-75					
	JS-29	10492-89	8	54.62	0.55	0.73	-
	JS-32		23	54.78	0.77	0.28	includes one covered interval of 4 m
	JS-34	10498-500					
JS-35	11101-06						
Upper Mary Creek	JS-40	11147-42	12	55.19	0.47	0.36	-
	JS-40	11140-37	9	54.94	0.59	0.19	-
	JS-42	11180-82	6	54.62	0.87	0.55	-
Waterfall Creek	JS-23	10447-29	38	54.45	0.52	1.04	includes one covered interval of 2 m and one inaccessible interval of 2 m plus 2 m of dolomitic stone in middle, omitted from averages
	JS-04	10255-43	30	54.99	0.58	0.39	
	JS-03	10224-12	24	54.05	0.96	0.98	
	JS-02						
Caroline Creek	RV-67	10169-67	7	54.96	0.60	0.34	-
Northern Slope of Vaughan Ridge	JS-52	10074-67	16	54.29	0.85	0.95	-
	JS-52	10066-63	8	54.63	0.45	1.01	-
	RV-20	11055-52	9	54.91	0.65	0.32	-
	RV-19	11051-44	34	54.46	1.01	0.47	includes one dolomitic interval of 2 m
	RV-18	11043-34					
	RV-17	11024-22	6	54.87	0.44	0.83	-
Vaughan Ridge	JS-22	10428-26	6	55.02	0.42	0.26	-
	JS-21	10425-23	7	54.48	0.61	1.15	-
	JS-20	10419-13	21	54.93	0.73	0.29	includes one covered interval of 6 m
Kirsten Creek	JS-58	10083-82	6	54.82	0.60	0.81	-
	JS-14	10384-74	25	54.48	0.79	0.56	includes one covered interval of 3 m

TABLE 4.2

CONTINUED

Section	Station	Samples	Strat. Thick. (m)	Weighted Average (%)			Comment
				CaO	MgO	SiO ₂	
<u>Livingstone Formation</u>							
Waterfall Creek	JS-01	10211-04	16	54.97	0.56	0.27	-
Caroline Creek	RV-62	10153-51	8	55.12	0.70	0.22	-
	RV-04	10288-86	6	54.63	0.90	0.24	-
	RV-61	10145	15	54.67	0.97	0.15	includes one covered interval of 2 m
	RV-60	10150-48					
	RV-60	10146, -44	6	55.15	0.49	0.09	-
Northern Slope of Vaughan Ridge	RV-16	11020-10	27	54.97	0.36	0.30	includes one covered interval of 3 m
	RV-14	11009-01	19	54.53	0.87	0.37	-
Vaughan Ridge	RV-51	10117-09	19	55.24	0.40	0.31	-
Upper Kirsten Creek	JS-49	10025-36	27	55.21	0.54	0.23	includes one covered interval of 2 m
	JS-49	10037-50	30	54.54	0.50	1.06	-
	JS-50	10051-59	19	54.76	0.67	0.40	-
	JS-51	10060-62	6	54.31	0.85	0.61	-
Kirsten Creek	JS-18	10411-08	8	55.20	0.52	0.34	-
	JS-15	10387-85	6	54.46	1.16	0.13	-
Pipeline Road	JS-12	10312-10	6	54.95	0.60	0.27	-

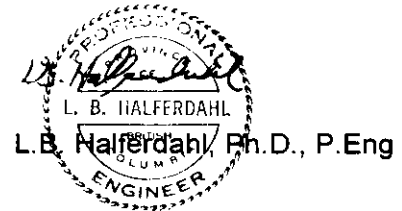
4.3 DECREPITATION TESTS

Eight samples labelled or numbered JS-16, JS-30, JS-47, RV-37, 10118 (from station RV-52), 10133 (from station RV-56), 10144 (from Station RV-60), 10165 (from station RV-65) were submitted to a laboratory at Continental Lime Inc. in Salt Lake City for decrepitation tests. Those labelled JS-16, JS-30, JS-47, and RV-37 were selected from one or more of the intervals sampled for chemical analyses at these stations (Fig. 3.1, Appendices 4 and 5). The other four samples are as numbered in Appendices 1, 2, and 5. The samples consisted of one or more blocks up to about 300 cc in size. In the laboratory individual blocks were reduced in size, if necessary, to about 80 cc, burned in a muffle furnace for 2h 20min at 1000°C, and subjected to crushing by hand after cooling.

The lime pebbles and fines after decrepitation tests are shown in Fig. 4.1 to 4.8. All samples disintegrated significantly during decrepitation testing, with sample RV-37 less so. Although decrepitation during calcination has many causes, perhaps the lesser disintegration in sample RV-37 is due to its finer grain size.

Edmonton, Alberta

1995 12 15



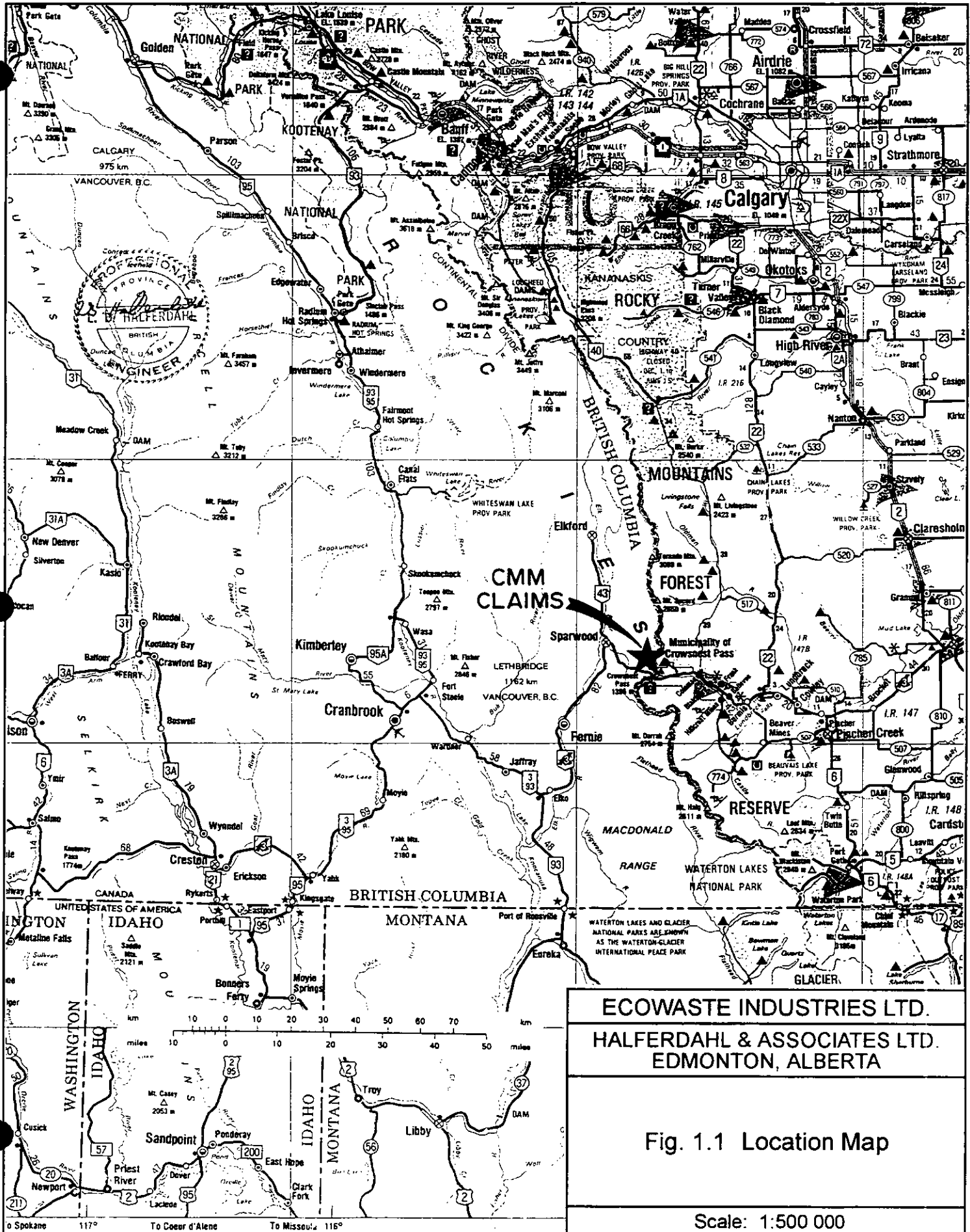
5. REFERENCES

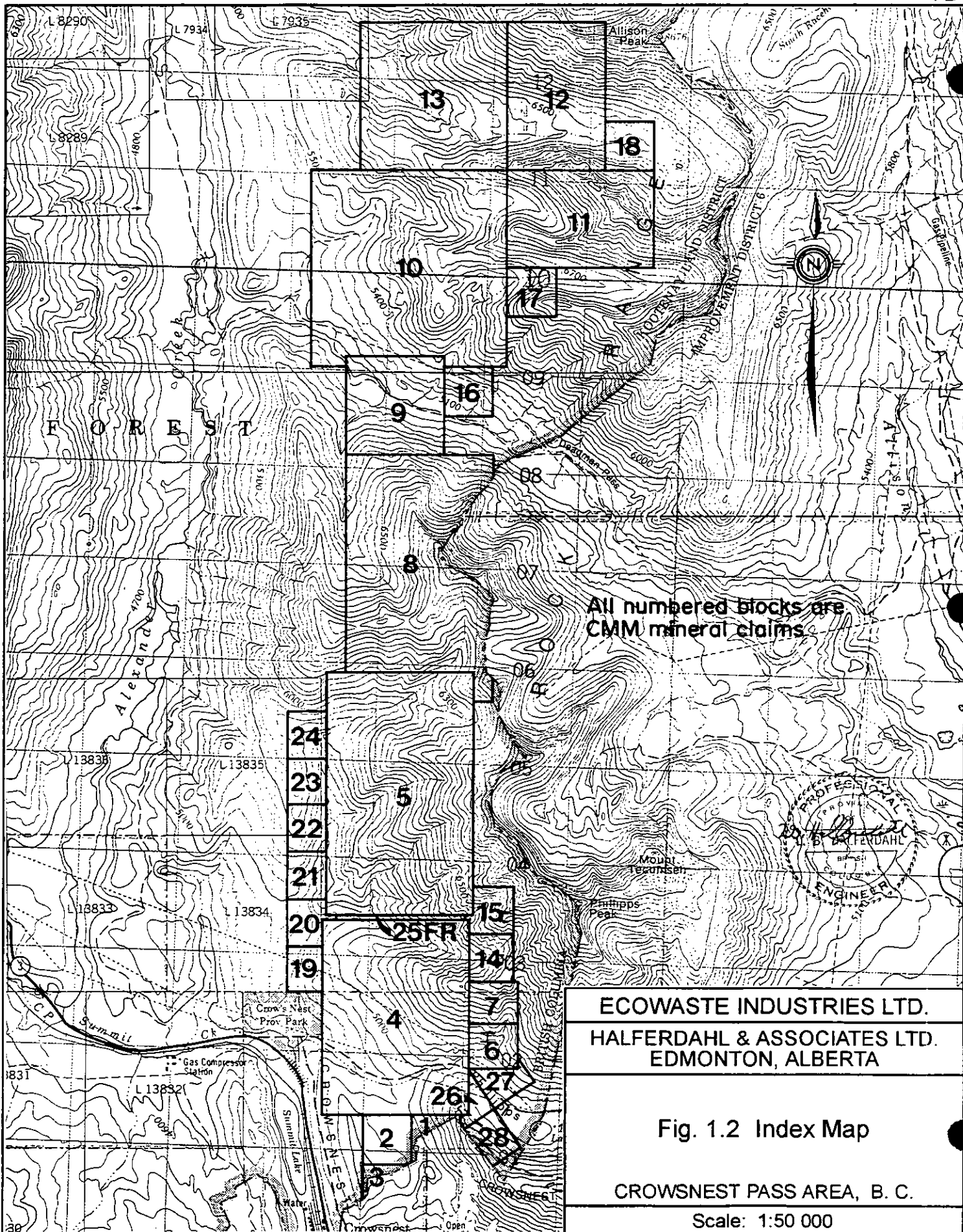
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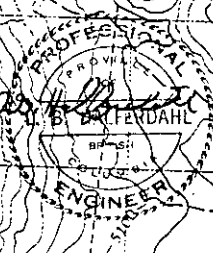
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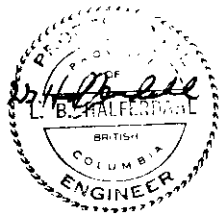
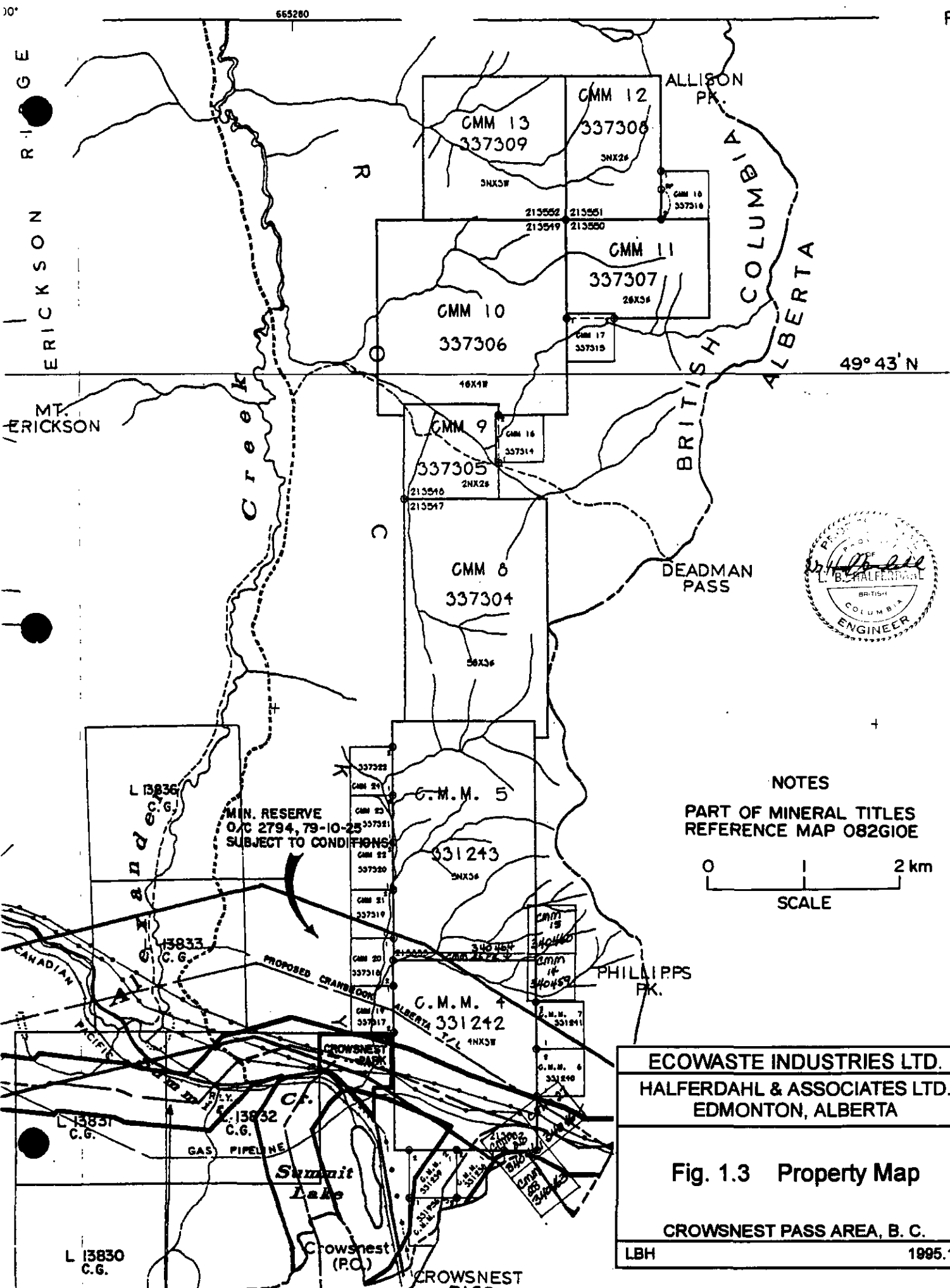
All numbered blocks are CMM mineral claims



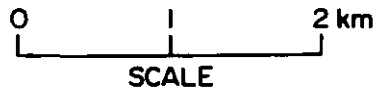
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EDMONTON, ALBERTA

Fig. 1.2 Index Map

CROWSNEST PASS AREA, B. C.
Scale: 1:50 000



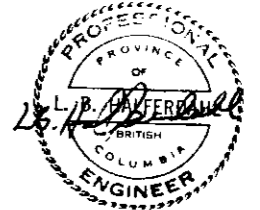
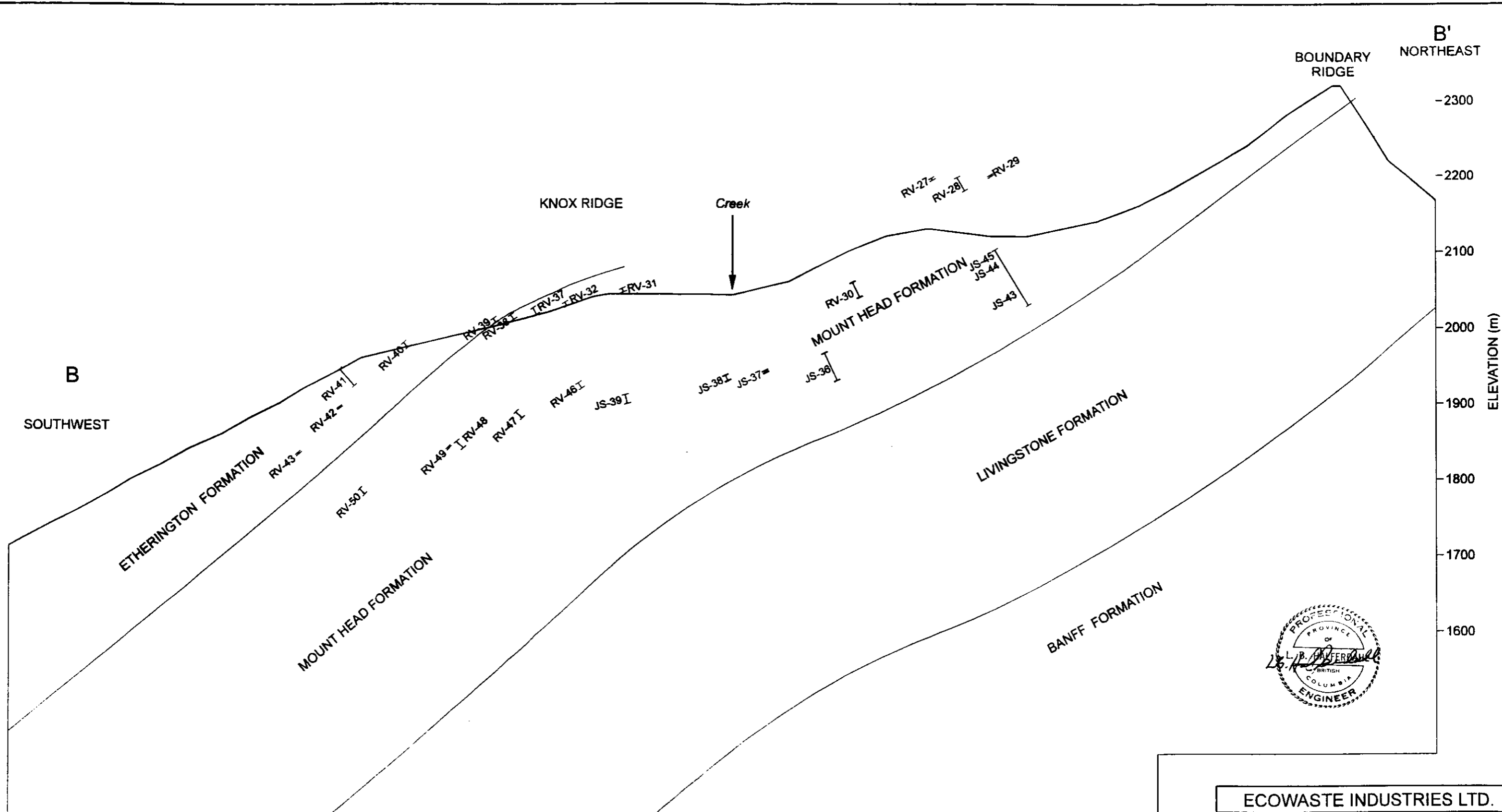
NOTES
 PART OF MINERAL TITLES
 REFERENCE MAP 082G10E



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 EDMONTON, ALBERTA

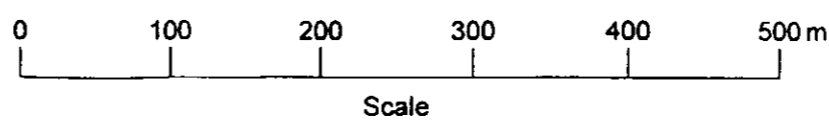
Fig. 1.3 Property Map

CROWSNEST PASS AREA, B. C.

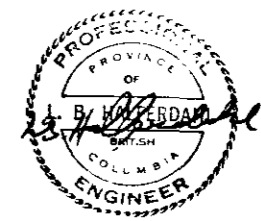
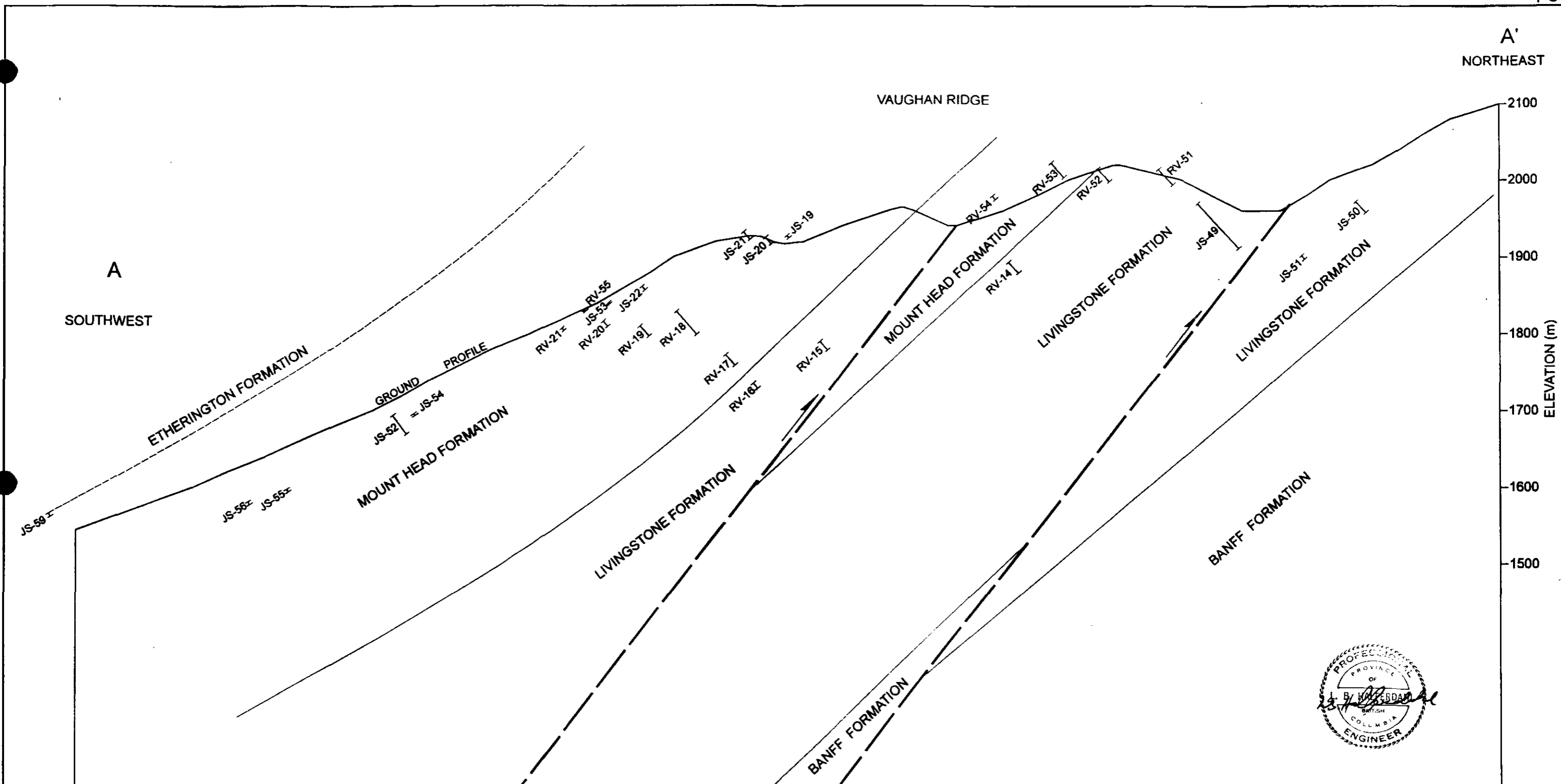


SYMBOLS

- Formation boundary
- J-52 [] Projected sample section with number

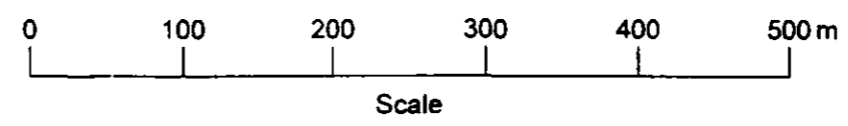


ECOWASTE INDUSTRIES LTD.	
HALFERDAHL & ASSOCIATES LTD. EDMONTON, ALBERTA	
Fig. 3.3 Cross-Section along Knox Ridge	
CROWSNEST PASS AREA, B. C.	
WM	1995.12



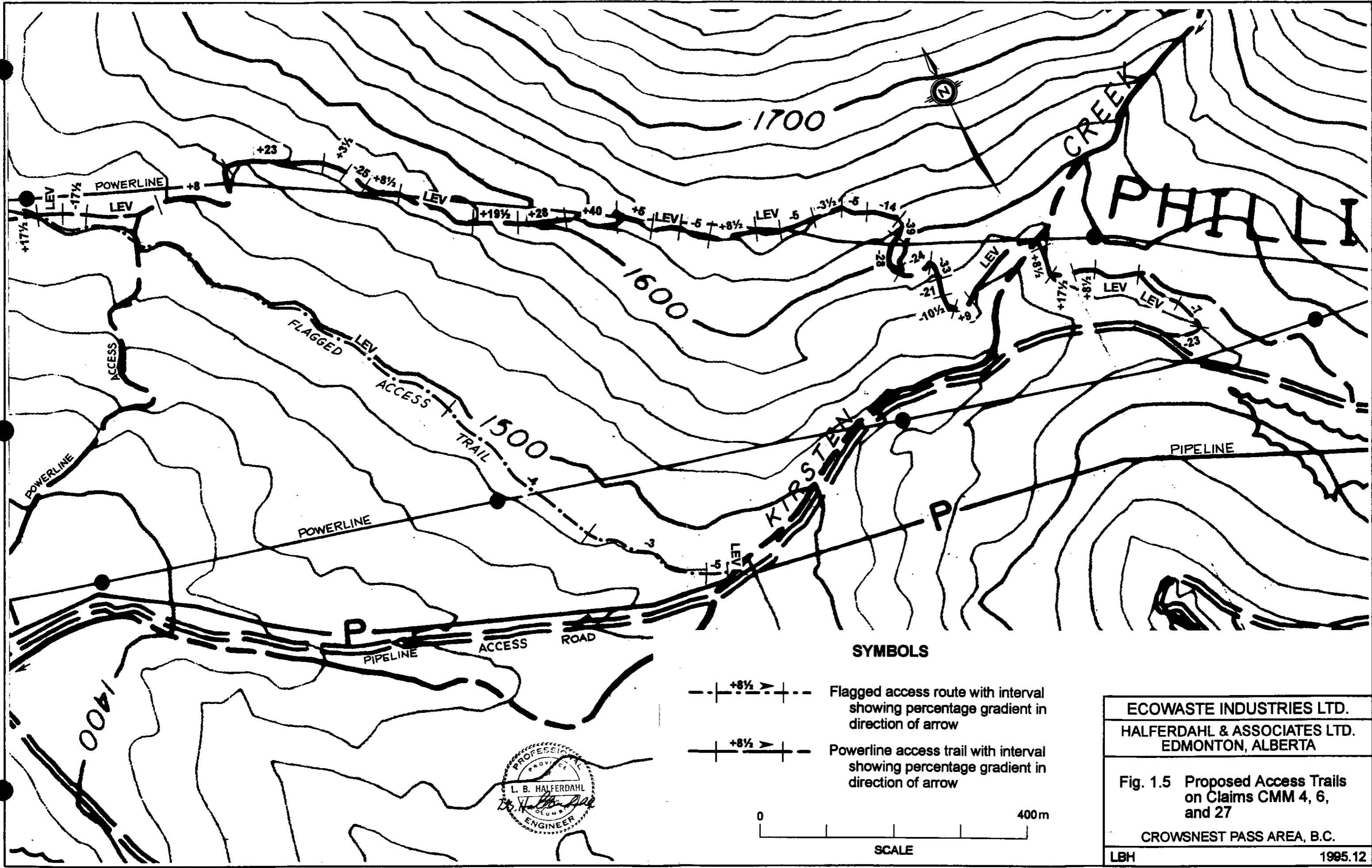
SYMBOLS

- Formation boundary
- - - - - Thrust fault
- J-52 | Projected sample section with number

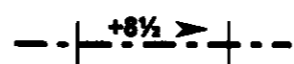
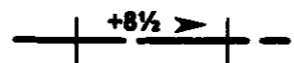


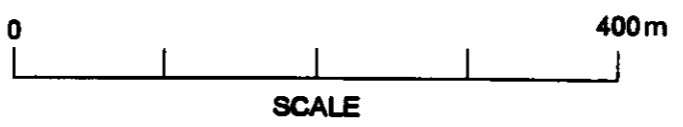
See Fig. 3.1 for location of cross-section.

ECOWASTE INDUSTRIES LTD.	
HALFERDAHL & ASSOCIATES LTD. EDMONTON, ALBERTA	
Fig. 3.2 Cross-Section along Vaughan Ridge	
CROWNEST PASS AREA, B. C.	
WM	1995.12

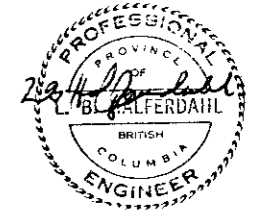
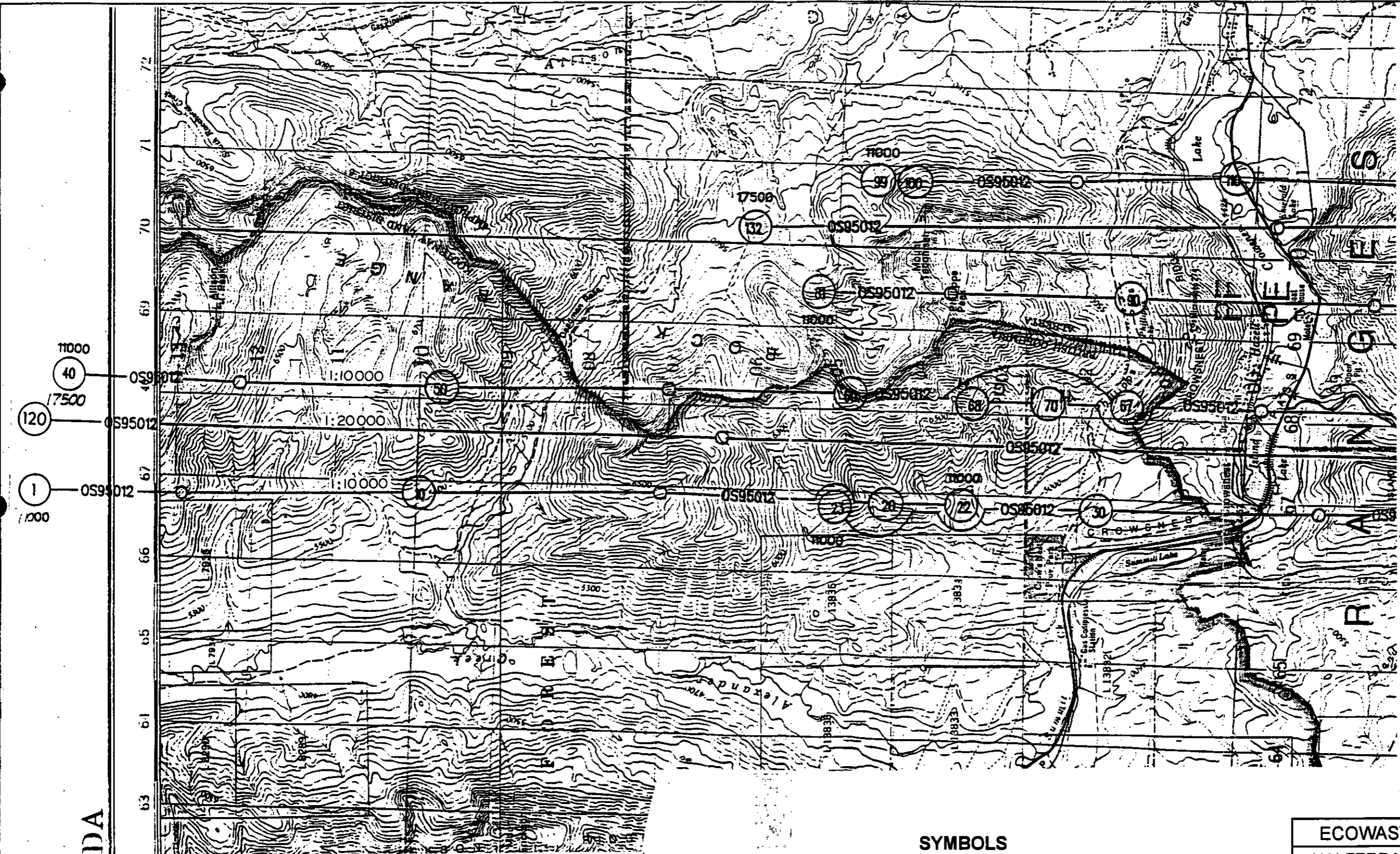


SYMBOLS

- 
 Flagged access route with interval showing percentage gradient in direction of arrow
- 
 Powerline access trail with interval showing percentage gradient in direction of arrow

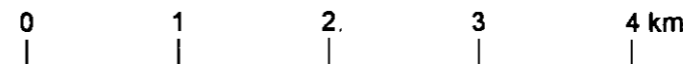


<p>ECOWASTE INDUSTRIES LTD. HALFERDAHL & ASSOCIATES LTD. EDMONTON, ALBERTA</p>
<p>Fig. 1.5 Proposed Access Trails on Claims CMM 4, 6, and 27</p>
<p>CROWSNEST PASS AREA, B.C.</p>
<p>LBH 1995.12</p>



SYMBOLS

—(50)— Flight line for aerial photography with locations of some photographs for reference (numbers in circles)



SCALE

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Fig. 1.4 Index of Aerial Photographs

CROWSNEST PASS AREA, B.C.

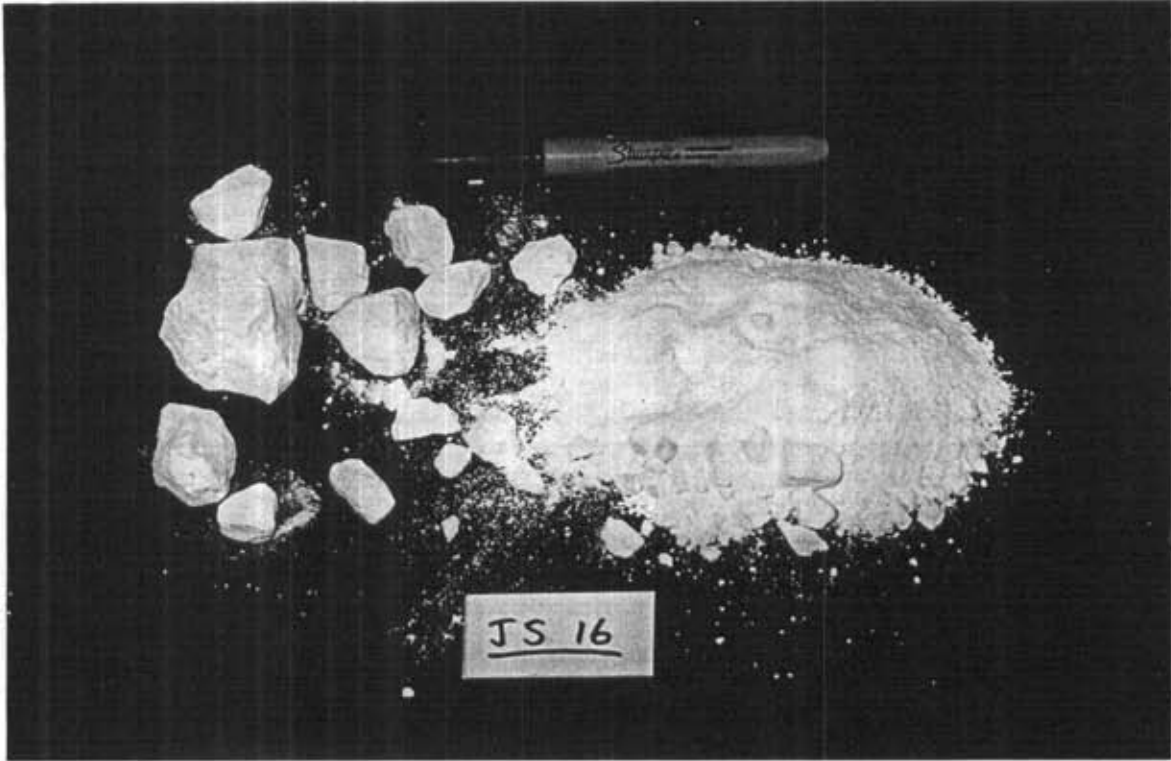


Fig. 4.1 Lime Pebbles and Fines after Decrepitation Testing of Sample JS-16.

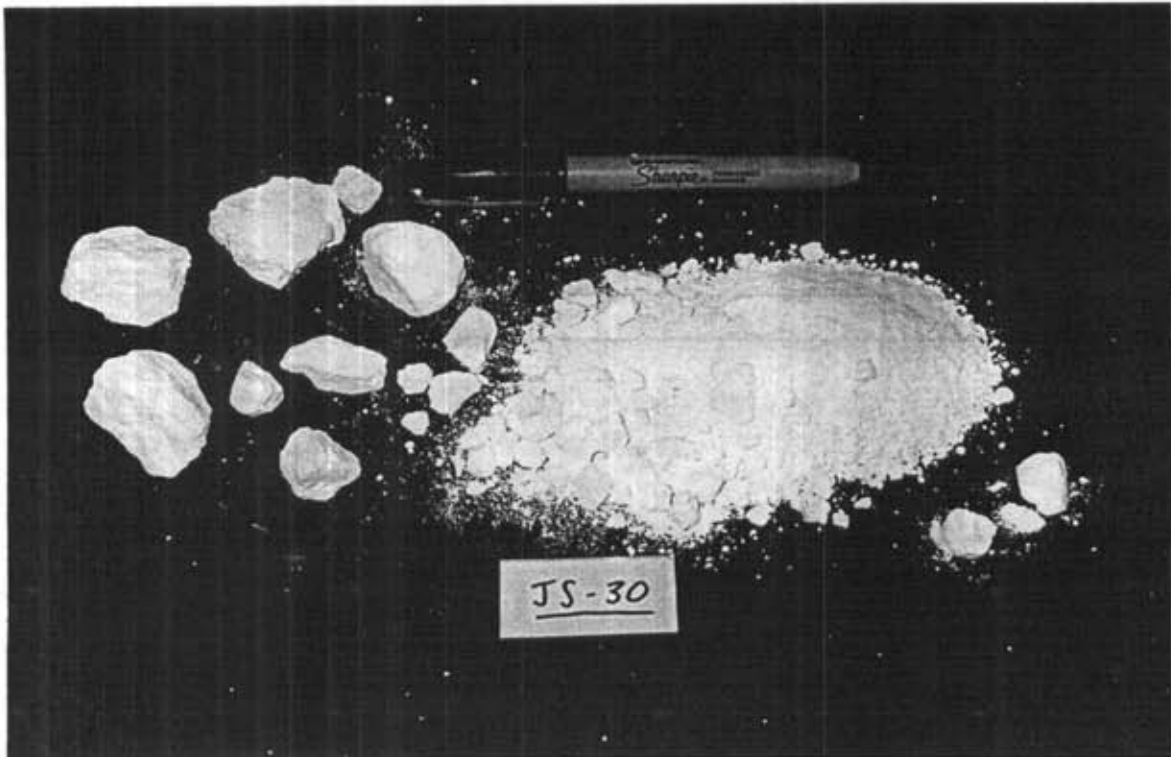


Fig. 4.2 Lime Pebbles and Fines after Decrepitation Testing of Sample JS-30.

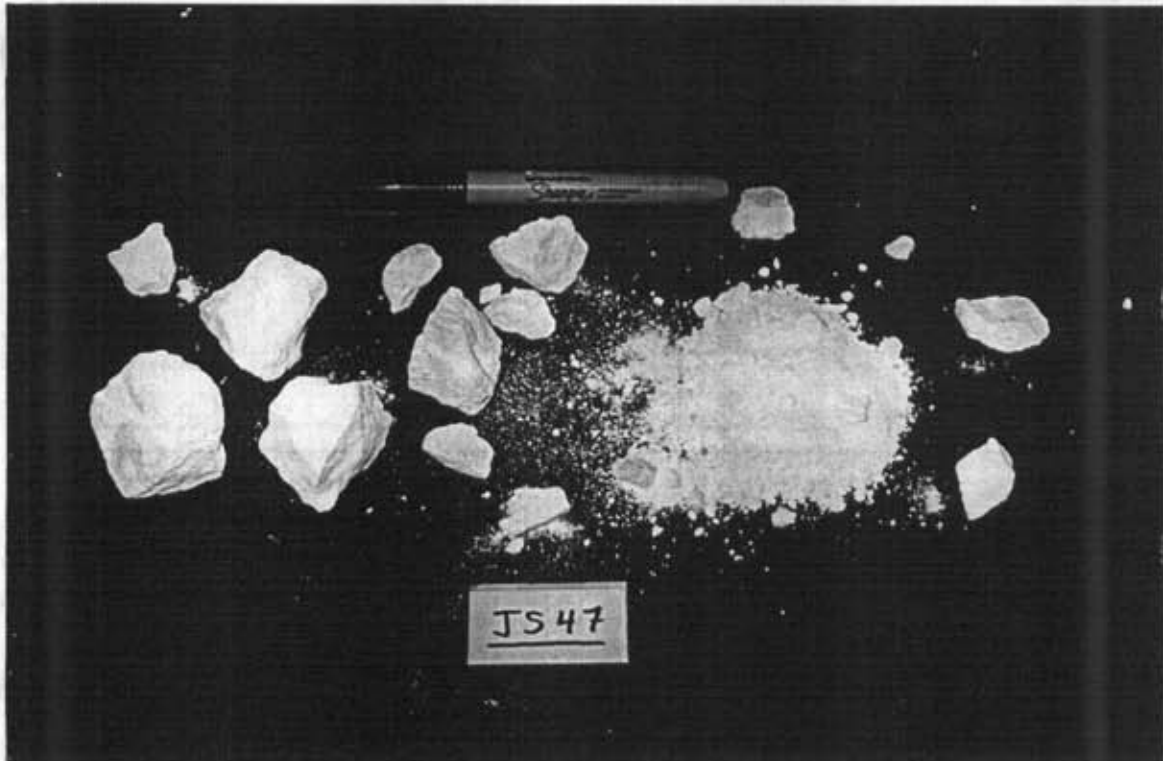


Fig. 4.3 Lime Pebbles and Fines after Decrepitation Testing of Sample JS-47.



Fig. 4.4 Lime Pebbles and Fines after Decrepitation Testing of Sample RV-37.

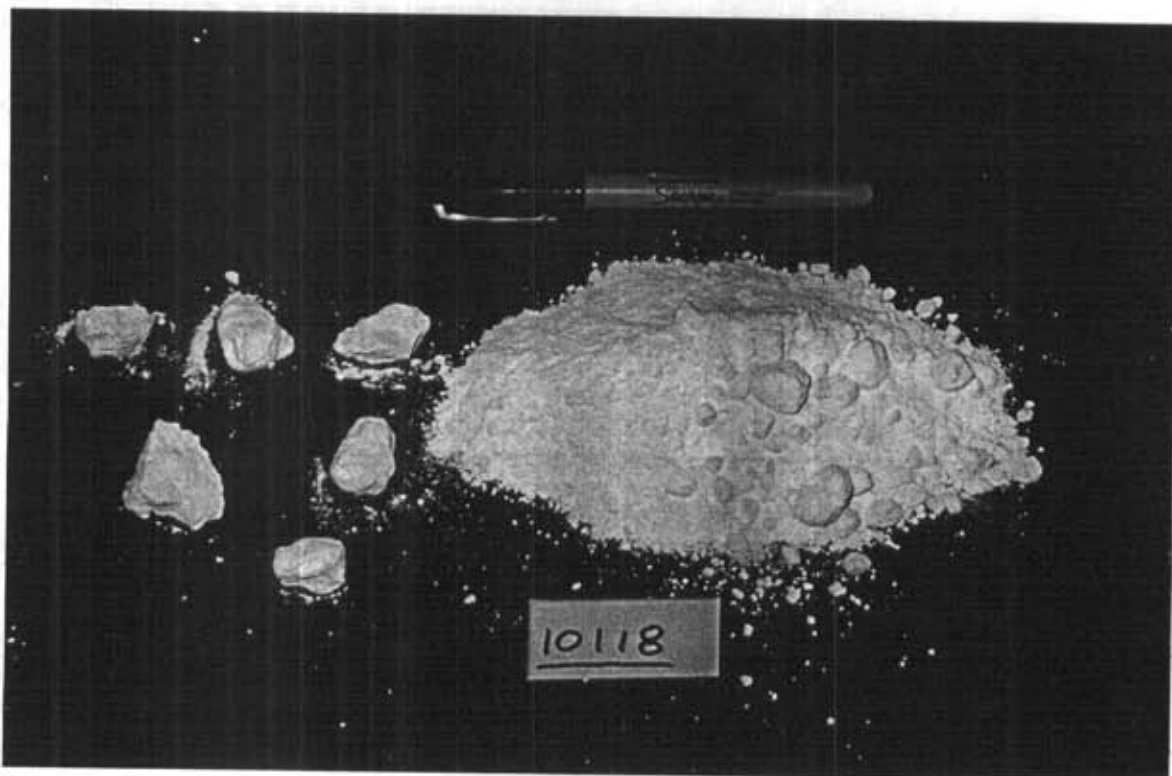


Fig. 4.5 Lime Pebbles and Fines after Decrepitation Testing of Sample 10118.

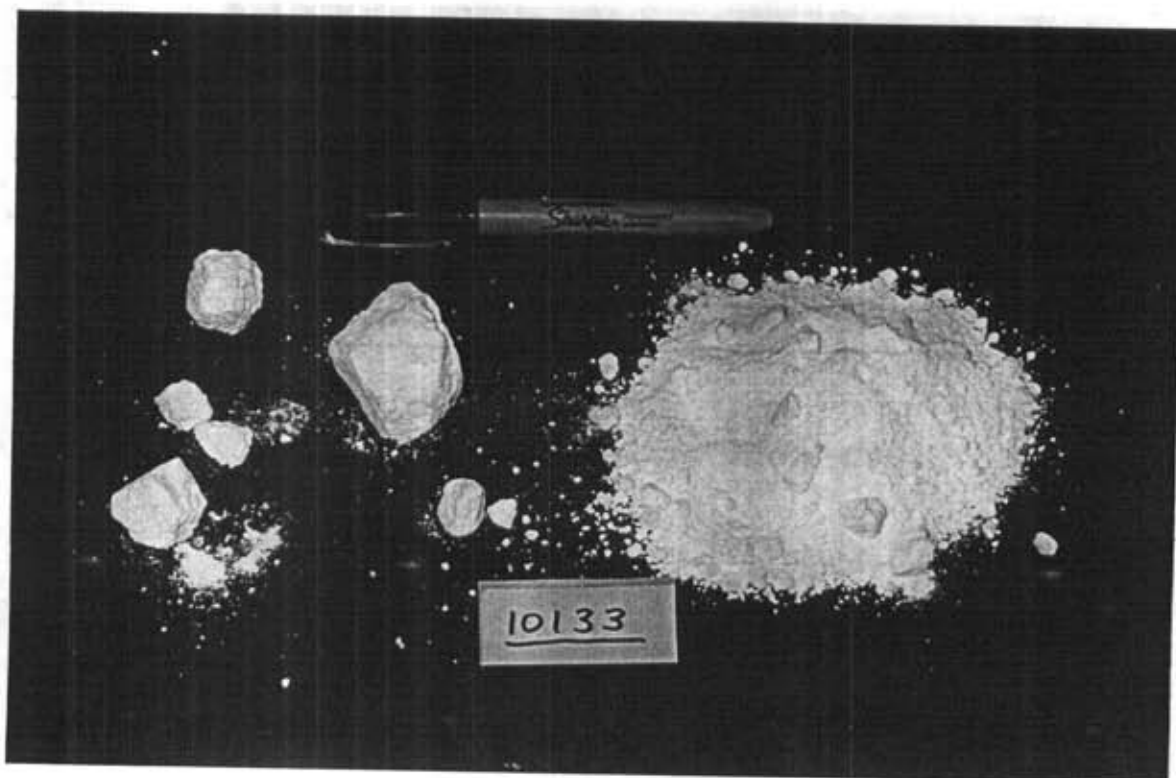


Fig. 4.6 Lime Pebbles and Fines after Decrepitation Testing of Sample 10133.

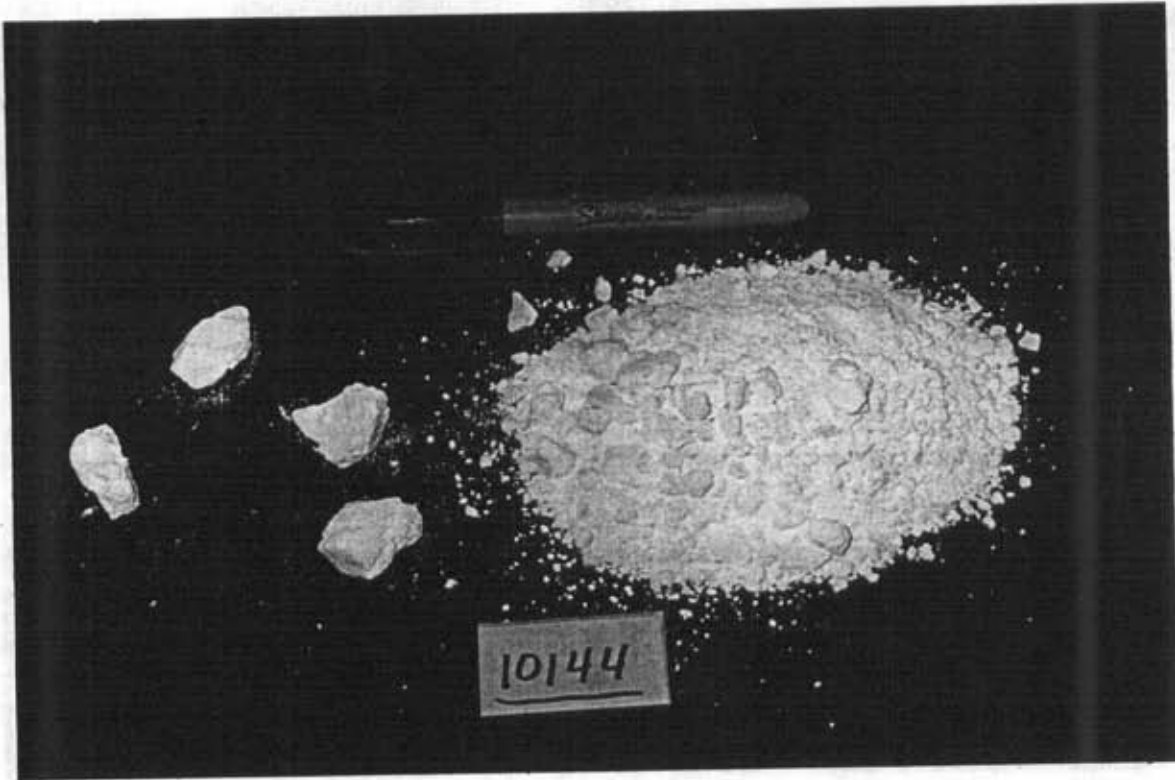


Fig. 4.7 Lime Pebbles and Fines after Decrepitation Testing of Sample 10144.

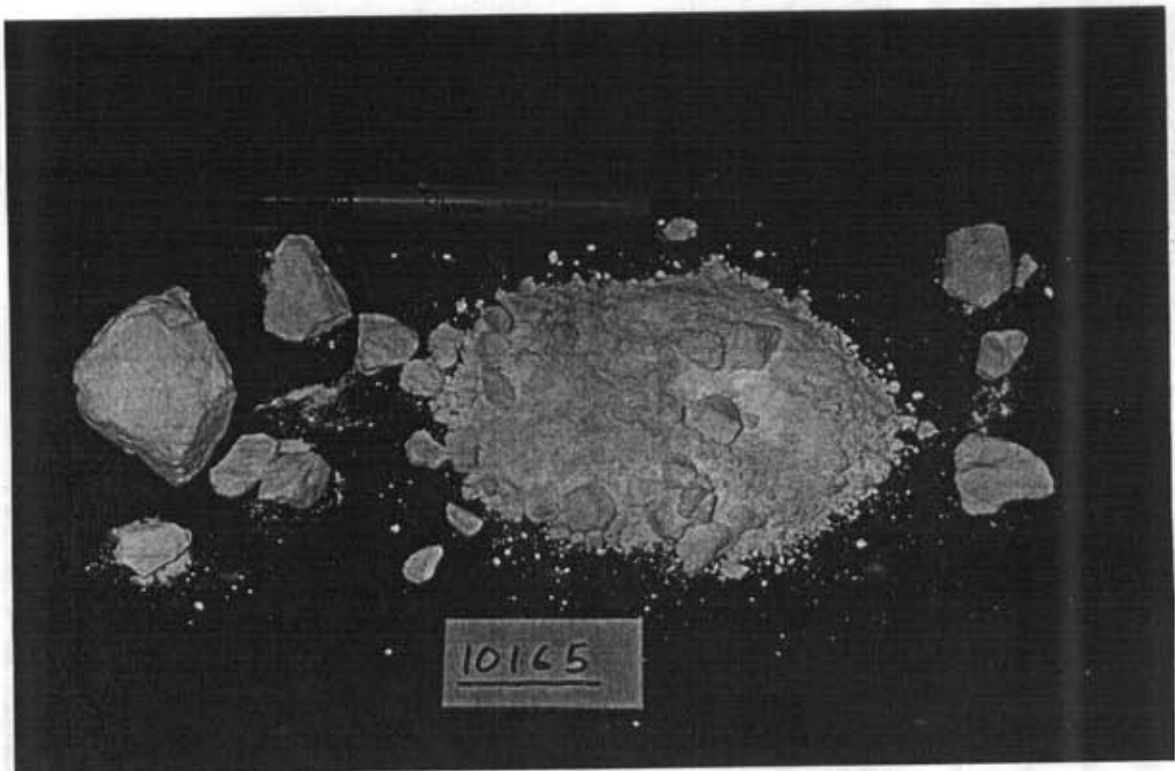


Fig. 4.8 Lime Pebbles and Fines after Decrepitation Testing of Sample 10165.

**APPENDIX 1: ANALYTICAL REPORTS OF LIMESTONE SAMPLES AS RECEIVED BY MODEM FROM THE CENTRAL ANALYTICAL
LABORATORY OF CONTINENTAL LIME INC.**

Sample	%	%	%	%	%	%	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%
	CaCO3	CaO	MgCO3	MgO	Fe2O3	Al2O3	SrCO3	MnO	SiO2	BaO	K2O	Na2O	P2O5	TiO2	Total
10004	96.01	53.79	1.70	0.81	0.036	0.102	404	25	1.16	9	400	130	102	55	99.12
10008	98.65	55.27	0.76	0.36	0.019	0.014	264	17	0.14	7	<30	255	<70	10	99.64
10016	97.15	54.43	1.80	0.86	0.033	0.043	302	23	0.26	10	58	126	284	25	99.37
10018	97.02	54.36	1.09	0.52	0.044	0.029	252	19	0.23	12	37	45	88	31	98.46
10019	98.19	55.01	1.37	0.65	0.024	0.028	287	17	0.13	7	<30	216	117	17	99.81
10021	97.91	54.86	1.53	0.73	0.045	0.033	275	29	0.46	11	44	90	136	18	100.04
10031	98.60	55.24	0.85	0.41	0.044	0.052	216	38	0.23	14	108	225	642	69	99.91
10061	97.36	54.55	0.93	0.45	0.040	0.046	314	34	0.92	9	116	171	521	30	99.41
10125	83.52	46.79	15.51	7.41	0.036	0.052	167	53	0.43	8	225	370	414	29	99.68
10126	98.87	55.40	0.70	0.34	0.056	0.035	247	30	0.31	15	103	206	389	41	100.08
10213	97.63	54.70	1.12	0.54	0.108	0.159	856	131	1.02	24	710	109	<70	81	100.23
10237	77.00	43.14	14.26	6.82	0.169	0.539	323	60	6.49	17	2349	303	556	368	98.86
10257	92.18	51.65	3.06	1.46	0.110	0.112	543	35	4.63	20	675	165	232	180	100.28
10259	93.32	52.29	2.36	1.13	0.200	0.569	1128	73	3.14	27	2863	621	255	336	100.11
10260	95.83	53.69	0.94	0.45	0.123	0.103	904	89	2.04	9	593	43	97	48	99.21
10263	97.25	54.49	1.17	0.56	0.096	0.095	841	48	0.42	22	362	152	<70	109	99.19
10265	97.65	54.71	0.94	0.45	0.092	0.067	319	39	0.64	15	215	241	124	49	99.48
10267	97.32	54.53	1.18	0.57	0.054	0.086	688	35	0.71	10	300	157	<70	44	99.48
10281	95.52	53.52	3.67	1.75	0.039	0.105	194	51	0.24	9	129	159	555	56	99.68
10298	97.16	54.44	1.12	0.54	0.048	0.055	1137	32	1.16	11	99	317	<70	29	99.72
10300	96.48	54.06	1.16	0.55	0.127	0.162	943	59	1.43	18	702	140	<70	108	99.55
10301	97.36	54.55	0.95	0.46	0.050	0.083	359	27	0.63	7	210	97	<70	36	99.16
10304	93.00	52.11	4.20	2.01	0.064	0.135	342	28	1.23	9	313	156	162	71	98.74
10305	89.76	50.29	6.69	3.20	0.096	0.192	312	32	2.11	11	646	212	218	104	99.00
10309	97.66	54.72	0.97	0.46	0.035	0.091	361	24	0.73	9	365	111	135	46	99.59
10429	96.11	53.85	1.13	0.54	0.092	0.155	279	122	1.81	13	636	260	176	102	99.46
10431	97.77	54.78	0.92	0.44	0.032	0.058	366	34	0.82	12	183	237	<70	34	99.69
10434	98.10	54.96	0.98	0.47	0.030	0.067	388	25	0.66	16	215	204	148	27	99.93
10435	97.84	54.82	0.86	0.41	0.030	0.047	393	34	0.46	15	121	143	129	22	99.33
10437	98.17	55.01	0.80	0.38	0.115	0.082	346	37	0.66	12	189	130	201	36	99.93
10438	97.32	54.53	0.91	0.44	0.074	0.062	317	38	0.58	22	180	77	176	55	99.04
10440	96.14	53.86	0.95	0.46	0.110	0.157	296	58	1.45	14	532	122	134	104	98.94
10442	97.67	54.72	0.94	0.45	0.040	0.059	324	31	0.69	11	174	222	133	31	99.50
10443	90.63	50.78	3.89	1.86	0.163	0.362	285	54	3.13	21	2094	216	285	253	98.51
10444	96.63	54.14	0.97	0.46	0.081	0.087	315	43	0.60	19	306	99	75	74	98.45
10446	98.00	54.91	1.01	0.48	0.082	0.079	347	43	0.82	18	237	97	106	41	100.08
10447	97.04	54.37	0.93	0.45	0.071	0.074	333	37	1.22	9	172	263	105	43	99.44
10448	97.38	54.56	0.97	0.46	0.054	0.089	437	61	1.04	11	244	163	143	49	99.65
10449	96.43	54.03	1.09	0.52	0.114	0.233	436	94	2.01	18	1065	163	178	139	100.08
10450	95.86	53.71	1.18	0.57	0.057	0.208	425	68	1.89	13	909	202	190	126	99.40
10451	96.32	53.97	1.21	0.58	0.062	0.178	491	39	1.53	12	824	276	159	112	99.50
10452	96.39	54.00	1.14	0.54	0.121	0.243	485	83	2.02	14	1079	169	182	146	100.13
10453	93.89	52.60	1.12	0.53	0.230	0.472	1043	94	3.78	18	2832	137	103	242	99.93
10456	87.27	48.90	1.03	0.49	0.245	0.326	774	64	10.73	17	2390	300	107	381	100.00

A1

APPENDIX 1: CONTINUED

Sample	%	%	%	%	%	%	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%
	CaCO3	CaO	MgCO3	MgO	Fe2O3	Al2O3	SrCO3	MnO	SiO2	BaO	K2O	Na2O	P2O5	TiO2	Total
10468	97.71	54.75	0.95	0.46	0.041	0.297	482	30	0.75	10	372	194	110	42	99.88
10470	97.56	54.66	0.99	0.48	0.051	0.075	501	28	1.25	11	250	273	<70	30	100.04
10480	96.72	54.19	2.26	1.08	0.034	0.043	299	23	0.61	8	47	289	337	21	99.77
10488	97.79	54.79	0.94	0.45	0.028	0.052	370	30	0.69	11	159	271	137	27	99.61
10500	97.62	54.70	0.97	0.46	0.025	0.034	330	21	0.31	10	65	169	202	20	99.04
11005	94.49	52.94	3.92	1.87	0.051	0.061	236	28	0.45	8	247	274	478	37	99.10
11008	97.64	54.71	1.09	0.52	0.024	0.032	211	28	0.43	6	<30	127	381	16	99.30
11031	70.27	39.37	28.60	13.67	0.133	0.040	95	61	0.13	10	<30	379	187	26	99.25
11037	98.20	55.02	0.84	0.40	0.027	0.024	284	18	0.14	14	<30	206	142	14	99.31
11058	92.30	51.72	3.87	1.85	0.107	0.342	502	53	2.38	15	1686	289	191	203	99.30
11081	97.15	54.43	1.49	0.71	0.041	0.102	377	23	0.86	10	306	146	185	58	99.75
11090	97.44	54.59	1.07	0.51	0.058	0.124	517	51	0.99	12	499	248	139	68	99.84
11100	96.59	54.12	1.39	0.66	0.094	0.117	988	37	0.33	11	413	246	<70	60	98.70
11102	97.59	54.68	1.84	0.88	0.037	0.030	315	23	0.17	11	<30	101	161	17	99.74
11113	84.17	47.16	15.37	7.35	0.087	0.053	218	37	0.33	12	65	215	98	18	100.08
11117	91.32	51.16	7.02	3.36	0.043	0.056	243	29	0.64	8	199	308	227	36	99.18
11134	95.68	53.61	2.21	1.06	0.076	0.118	348	28	0.79	15	318	153	153	60	98.99
11136	98.58	55.23	0.94	0.45	0.062	0.059	395	30	0.58	21	165	74	<70	57	100.30
11150	85.62	47.97	8.62	4.12	0.138	0.348	250	58	3.04	17	1991	291	291	236	98.08
11151	97.59	54.68	1.45	0.69	0.086	0.115	1206	32	0.41	12	397	317	<70	73	99.87
11190	97.23	54.48	1.22	0.58	0.164	0.115	315	51	0.88	26	582	135	150	183	99.75
11200	98.00	54.91	0.78	0.37	0.017	0.029	281	18	0.15	6	<30	100	<70	12	99.02

A2

APPENDIX 1: CONTINUED

Sample	%	%	%	%	%	%	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%
	CaCO3	CaO	MgCO3	MgO	Fe2O3	Al2O3	SrCO3	MnO	SiO2	BaO	K2O	Na2O	P2O5	TiO2	Total
10117	98.72	55.31	0.71	0.34	0.029	0.024	199	43	0.08	5	60	157	480	14	99.66
10119	90.15	50.51	8.66	4.14	0.025	0.018	167	30	0.13	4	49	207	488	13	99.07
10124	89.19	49.97	9.76	4.66	0.036	0.034	190	31	0.28	6	117	248	685	26	99.43
10128	88.95	49.84	9.58	4.58	0.061	0.066	197	41	0.54	4	356	228	404	39	99.33
10130	93.56	52.42	6.05	2.89	0.055	0.086	222	33	0.59	9	520	230	428	44	100.49
10258	96.03	53.81	1.16	0.55	0.113	0.175	1421	70	2.06	8	914	125	94	71	99.81
10261	97.48	54.62	1.15	0.55	0.065	0.061	814	29	0.78	11	231	165	<70	28	99.67
10264	97.27	54.50	1.08	0.51	0.056	0.083	857	35	0.75	7	316	126	99	34	99.38
10266	96.78	54.22	0.93	0.44	0.091	0.097	813	68	0.73	13	269	92	90	42	98.76
10271	89.37	50.07	5.91	2.83	0.114	0.274	371	32	3.41	13	1204	220	230	148	99.30
10272	98.46	55.17	0.98	0.47	0.060	0.079	350	26	0.69	10	153	179	118	38	100.36
10274	97.74	54.76	0.93	0.44	0.047	0.115	348	25	0.65	12	311	197	201	63	99.59
10293	81.41	45.61	0.84	0.40	0.420	0.132	921	74	16.20	10	246	120	110	41	99.16
10302	97.75	54.77	1.05	0.50	0.044	0.133	362	25	0.86	11	336	211	177	59	99.96
10306	84.21	47.18	13.04	6.23	0.122	0.270	223	44	2.32	13	1284	227	312	182	100.19
10310	98.31	55.08	0.83	0.39	0.025	0.054	214	32	0.38	5	82	192	1069	23	99.76
10312	97.38	54.56	1.69	0.81	0.020	0.046	296	29	0.28	9	55	188	862	22	99.56
10313	79.95	44.79	17.98	8.60	0.062	0.104	151	51	0.88	5	147	256	474	68	99.09
10318	92.94	52.07	6.55	3.13	0.027	0.040	216	33	0.26	8	70	232	733	23	99.94
10323	86.10	48.24	12.60	6.02	0.042	0.057	167	41	0.22	6	95	235	704	32	99.15
10378	98.74	55.32	1.00	0.48	0.035	0.099	229	41	0.42	9	363	242	351	45	100.42
10379	97.83	54.81	1.16	0.55	0.041	0.218	241	34	0.37	11	270	261	564	51	99.76
10383	97.31	54.52	1.17	0.56	0.083	0.170	277	32	0.64	9	637	242	663	79	99.57
10387	97.18	54.45	2.23	1.06	0.014	0.025	212	29	0.15	10	57	169	400	14	99.68
10390	90.03	50.44	9.04	4.32	0.090	0.170	254	36	0.53	15	301	176	198	40	99.96
10396	95.59	53.56	2.80	1.34	0.054	0.104	306	29	0.94	12	265	180	137	47	99.58
10399	63.54	35.60	33.84	16.17	0.166	0.092	97	52	0.46	5	174	295	284	50	98.19
10400	87.72	49.15	11.55	5.52	0.097	0.037	202	31	0.38	8	88	246	161	19	99.87
10401	92.46	51.80	6.96	3.33	0.063	0.052	236	26	0.35	9	93	236	88	24	99.96
10402	90.23	50.55	8.89	4.25	0.082	0.053	209	30	0.40	6	128	222	258	30	99.74
10403	93.08	52.15	6.13	2.93	0.073	0.061	233	31	0.37	10	122	202	143	33	99.78
10404	87.96	49.28	10.85	5.19	0.122	0.053	209	36	0.49	8	118	214	293	31	99.57
10408	98.58	55.24	1.50	0.72	0.026	0.042	264	21	0.31	13	167	186	426	18	100.57
10419	94.41	52.90	5.23	2.50	0.046	0.071	298	36	0.49	10	351	187	207	36	100.37
10426	97.75	54.77	0.86	0.41	0.050	0.022	282	18	0.32	8	80	205	130	17	99.07
10478	98.18	55.01	0.98	0.47	0.040	0.062	389	50	0.51	11	138	165	119	32	99.87
10479	92.97	52.09	6.14	2.94	0.075	0.042	220	30	0.61	17	73	171	216	20	99.92
10484	97.02	54.36	0.94	0.45	0.057	0.058	339	42	0.38	9	137	152	<70	29	98.53
10496	94.41	52.90	4.49	2.14	0.054	0.050	250	24	0.72	9	119	278	271	33	99.82
10499	98.78	55.34	0.93	0.45	0.030	0.033	319	23	0.23	10	99	166	226	18	100.09
11061	97.85	54.82	1.01	0.48	0.052	0.053	320	26	0.65	8	215	144	142	26	99.70
11065	96.24	53.92	2.40	1.15	0.042	0.052	364	27	0.85	6	192	175	140	26	99.68
11067	92.77	51.98	3.95	1.89	0.105	0.211	383	42	1.83	12	827	181	113	122	99.04
11078	97.17	54.45	0.95	0.46	0.099	0.106	335	24	0.85	8	212	158	136	48	99.27

APPENDIX 1: CONTINUED

Sample	%	%	%	%	%	%	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%
	CaCO3	CaO	MgCO3	MgO	Fe2O3	Al2O3	SrCO3	MnO	SiO2	BaO	K2O	Na2O	P2O5	TiO2	Total
11079	97.65	54.71	1.06	0.51	0.074	0.128	356	33	0.84	9	245	155	91	47	99.85
11086	97.50	54.63	1.38	0.66	0.110	0.240	1059	33	0.76	10	818	233	<70	104	100.22
11091	97.74	54.76	0.84	0.40	0.174	0.076	348	73	0.67	10	286	120	83	36	99.60
11094	96.77	54.22	1.44	0.69	0.108	0.477	718	36	0.94	11	1081	240	<70	131	99.96
11103	98.27	55.06	0.87	0.41	0.031	0.035	322	23	0.24	7	81	133	271	18	99.52
11104	98.73	55.31	0.81	0.39	0.038	0.055	307	24	0.22	14	73	119	205	25	99.93
11106	96.22	53.91	3.03	1.45	0.044	0.164	278	33	0.23	9	112	188	135	20	99.77
11108	95.26	53.37	4.48	2.14	0.056	0.036	255	27	0.14	11	88	173	240	22	100.05
11110	87.85	49.22	12.45	5.95	0.057	0.025	178	31	0.14	7	51	228	<70	15	100.57
11111	97.58	54.67	1.38	0.66	0.043	0.021	287	39	0.28	10	51	200	138	12	99.38
11138	98.19	55.01	1.48	0.71	0.120	0.037	248	25	0.16	9	71	190	123	14	100.06
11141	83.60	46.84	13.96	6.67	0.111	0.124	182	45	1.74	10	558	261	133	82	99.67
11143	99.00	55.47	0.98	0.47	0.054	0.022	266	29	0.21	5	66	177	89	13	100.33
11144	97.87	54.83	1.46	0.70	0.037	0.038	285	28	0.27	10	126	178	203	24	99.76
11146	98.69	55.30	0.86	0.41	0.046	0.045	279	29	0.20	10	133	135	178	25	99.93
11149	87.50	49.03	10.75	5.14	0.064	0.066	169	39	0.65	17	316	225	553	41	99.17
11152	96.62	54.14	1.51	0.72	0.211	0.349	884	64	0.94	9	1400	238	86	167	99.93
11153	96.23	53.91	1.65	0.79	0.162	0.327	851	43	0.97	12	1225	308	<70	193	99.60
11158	96.26	53.93	1.76	0.84	0.145	0.218	539	52	1.17	11	826	177	104	131	99.74
11161	96.33	53.97	0.94	0.45	0.141	0.146	925	85	1.50	5	944	112	118	92	99.28
11173	72.56	40.65	15.57	7.44	0.392	1.271	492	88	7.16	38	5516	806	137	855	97.74
11177	95.05	53.26	3.29	1.57	0.075	0.095	288	33	0.72	12	484	235	406	58	99.38
11179	91.25	51.13	6.47	3.09	0.160	0.382	318	54	2.10	16	1533	266	319	172	100.63
11181	97.93	54.87	0.98	0.47	0.037	0.295	271	37	0.43	10	87	220	236	13	99.76
11182	97.12	54.41	2.39	1.14	0.380	0.033	252	25	0.71	12	119	213	195	26	100.72
11184	96.69	54.17	1.61	0.77	0.044	0.073	282	41	1.62	9	194	226	255	31	100.14
11187	96.13	53.86	3.30	1.58	0.043	0.059	226	24	0.34	13	73	179	365	26	99.96
11196	66.95	37.51	30.42	14.54	0.157	0.255	126	62	1.66	9	539	289	322	173	99.60

AA

APPENDIX 1: CONTINUED

Sample	%	%	%	%	%	%	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%
	CaCO3	CaO	MgCO3	MgO	Fe2O3	Al2O3	SrCO3	MnO	SiO2	BaO	K2O	Na2O	P2O5	TiO2	Total
10023	91.08	51.03	8.75	4.18	0.019	0.026	173	30	0.19	3	70	171	733	20	100.19
10026	98.61	55.25	1.18	0.56	0.023	0.051	208	39	0.21	7	83	262	1280	28	100.27
10030	98.98	55.46	0.88	0.42	0.023	0.054	220	36	0.26	9	110	262	775	28	100.34
10032	98.67	55.29	0.88	0.42	0.017	0.040	232	36	0.15	6	98	247	769	25	99.90
10034	98.66	55.28	0.86	0.41	0.053	0.173	221	39	0.40	9	349	173	712	78	100.32
10036	98.32	55.09	0.77	0.37	0.025	0.067	218	48	0.18	7	115	151	696	36	99.49
10037	98.14	54.99	0.91	0.44	0.071	0.091	287	49	0.71	7	383	161	203	52	100.05
10042	97.60	54.68	0.72	0.34	0.036	0.029	258	33	0.33	9	81	118	346	33	98.80
10044	95.49	53.50	0.96	0.46	0.119	0.245	413	96	2.67	15	1354	142	497	217	99.76
10048	97.60	54.69	1.21	0.58	0.081	0.102	370	55	0.91	11	480	137	326	58	100.04
10050	95.36	53.43	1.96	0.94	0.111	0.165	288	54	2.07	14	927	150	415	114	99.86
10121	99.22	55.59	0.64	0.31	0.021	0.017	199	29	0.08	5	<30	149	577	9	100.08
10127	74.36	41.66	25.19	12.04	0.059	0.051	119	44	0.36	7	210	288	518	31	100.14
10165	95.11	53.29	3.28	1.57	0.020	0.033	203	25	0.30	6	90	179	372	29	98.84
10219	95.87	53.71	1.73	0.83	0.119	0.163	322	41	0.85	11	770	164	474	98	98.91
10238	77.34	43.33	12.80	6.12	0.202	0.615	330	59	6.67	22	2895	301	570	452	98.09
10241	76.31	42.75	14.47	6.92	0.222	0.618	359	52	5.75	20	2919	307	608	380	97.83
10275	96.40	54.01	2.09	1.00	0.065	0.151	359	30	1.11	14	561	195	225	75	99.96
10294	84.80	47.51	0.91	0.43	0.451	0.176	873	90	11.69	11	1070	158	300	92	98.29
10296	86.61	48.53	1.01	0.48	0.086	0.102	994	38	11.73	11	243	164	<70	45	99.69
10303	97.58	54.67	1.31	0.63	0.050	0.110	362	27	0.82	12	290	147	291	53	99.99
10307	97.17	54.44	1.41	0.67	0.040	0.075	298	31	0.63	8	299	127	113	34	99.41
10311	98.54	55.21	1.23	0.59	0.017	0.028	200	30	0.16	7	55	165	491	15	100.06
10317	97.78	54.78	2.04	0.97	0.017	0.020	242	26	0.19	3	<30	169	937	9	100.18
10322	84.32	47.24	14.73	7.04	0.038	0.056	148	37	0.28	5	161	243	729	31	99.56
10361	88.33	49.49	5.26	2.51	0.173	0.622	510	40	5.44	21	3195	245	200	459	100.29
10362	91.09	51.04	4.01	1.92	0.161	0.387	531	34	4.01	16	2152	250	<70	216	99.98
10384	98.64	55.27	0.83	0.40	0.051	0.045	204	35	0.15	9	71	167	667	24	99.83
10388	88.20	49.42	11.43	5.47	0.036	0.032	191	37	0.28	11	111	242	1113	20	100.15
10391	91.99	51.54	7.56	3.61	0.090	0.067	289	35	0.40	20	268	147	118	42	100.20
10392	85.47	47.89	11.89	5.68	0.099	0.225	326	34	1.72	15	1034	193	257	156	99.61
10393	87.54	49.05	10.14	4.85	0.089	0.212	283	37	1.47	12	1032	209	144	117	99.63
10394	91.09	51.04	7.09	3.39	0.070	0.089	235	33	1.70	10	397	184	195	52	100.14
10395	98.13	54.98	1.22	0.58	0.042	0.081	325	33	0.70	10	259	147	143	39	100.26
10397	98.29	55.07	1.16	0.56	0.045	0.054	295	27	0.57	9	113	112	<70	28	100.18
10398	93.98	52.65	5.20	2.49	0.100	0.104	237	32	0.61	9	239	152	238	58	100.09
10405	97.20	54.46	1.72	0.82	0.038	0.043	270	24	0.30	5	76	145	314	23	99.39
10416	98.27	55.06	1.37	0.65	0.061	0.059	298	33	0.49	6	225	160	177	33	100.33
10418	98.69	55.29	0.88	0.42	0.028	0.041	318	29	0.27	10	151	144	266	21	100.00
10421	98.20	55.02	1.22	0.59	0.029	0.036	306	22	0.42	9	153	151	97	22	99.98
10422	68.33	38.28	13.29	6.35	0.483	1.009	243	80	12.57	38	7435	327	491	823	96.63
10423	97.61	54.69	1.47	0.70	0.035	0.069	322	23	0.97	6	250	200	159	33	100.25
10425	96.89	54.29	1.33	0.64	0.027	0.061	339	22	1.05	9	281	164	106	33	99.45
10489	97.76	54.78	1.30	0.62	0.043	0.056	362	25	0.80	9	238	157	168	26	100.07

A5

APPENDIX 1: CONTINUED

Sample	%	%	%	%	%	%	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%
	CaCO3	CaO	MgCO3	MgO	Fe2O3	Al2O3	SrCO3	MnO	SiO2	BaO	K2O	Na2O	P2O5	TiO2	Total
10491	96.67	54.16	1.18	0.56	0.041	0.070	347	25	0.78	9	297	156	146	39	98.85
10494	77.42	43.38	20.79	9.94	0.119	0.053	141	42	0.42	5	138	272	254	32	98.90
10498	98.94	55.43	0.94	0.45	0.039	0.033	309	25	0.24	8	99	131	176	19	100.27
10689	97.25	54.49	1.96	0.94	0.066	0.064	268	26	0.48	9	211	145	262	33	99.92
11112	84.68	47.44	14.33	6.85	0.043	0.052	192	30	0.52	5	106	207	95	39	99.69
11147	99.00	55.47	0.89	0.42	0.033	0.045	299	28	0.29	10	120	147	349	30	100.35
11157	93.42	52.34	2.02	0.97	0.152	0.367	675	36	2.66	9	2353	225	107	212	98.97
11159	96.72	54.19	0.99	0.47	0.168	0.119	1125	95	1.97	9	692	126	148	77	100.19
11163	94.57	52.99	1.16	0.55	0.143	0.265	837	57	3.49	7	1269	240	232	164	99.91
11164	93.37	52.32	1.48	0.71	0.256	0.250	667	63	4.13	11	1035	223	211	140	99.73
11166	97.97	54.89	0.95	0.45	0.055	0.093	364	24	0.91	8	412	169	99	55	100.09
11168	90.03	50.44	6.74	3.22	0.098	0.264	329	31	2.21	12	1161	241	120	142	99.55
11170	74.48	41.73	4.07	1.94	0.425	0.326	388	50	18.98	13	1685	240	148	208	98.55
11171	65.76	36.85	10.27	4.91	0.608	0.831	425	91	20.23	28	4324	589	220	539	98.32
11175	96.51	54.07	1.10	0.53	0.070	0.163	466	59	1.92	10	915	151	88	89	99.94
11176	97.70	54.74	1.64	0.78	0.176	0.041	287	21	0.37	5	215	209	314	20	100.03
11183	85.90	48.13	9.04	4.32	0.098	0.287	269	37	3.49	14	1806	284	962	203	99.17

APPENDIX 1: CONTINUED

Sample	%	%	%	%	%	%	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%
	CaCO3	CaO	MgCO3	MgO	Fe2O3	Al2O3	SrCO3	MnO	SiO2	BaO	K2O	Na2O	P2O5	TiO2	Total
10005	97.59	54.68	1.39	0.66	0.039	0.067	370	27	0.74	13	276	151	103	46	99.92
10009	98.16	55.00	0.73	0.35	0.021	0.014	266	16	0.07	5	36	82	94	11	99.04
10020	88.25	49.44	8.72	4.17	0.107	0.299	275	55	1.93	24	1001	313	83	301	99.51
10024	89.34	50.05	10.64	5.09	0.017	0.016	166	26	0.14	5	43	201	445	10	100.24
10025	96.98	54.34	2.70	1.29	0.026	0.034	200	30	0.24	6	79	188	674	34	100.10
10027	99.23	55.60	0.70	0.33	0.018	0.024	210	36	0.18	15	59	196	376	24	100.24
10028	99.44	55.71	0.74	0.35	0.015	0.026	249	31	0.10	6	85	292	544	13	100.43
10033	99.00	55.47	0.78	0.37	0.025	0.049	212	44	0.15	13	126	129	608	30	100.12
10035	97.53	54.65	1.72	0.82	0.047	0.138	233	40	0.46	9	427	207	765	68	100.07
10038	96.99	54.34	0.83	0.39	0.031	0.046	290	31	0.45	9	198	140	274	38	98.45
10039	98.72	55.31	0.78	0.37	0.038	0.049	279	29	0.48	11	178	172	527	48	100.19
10040	98.95	55.44	0.73	0.35	0.027	0.033	293	29	0.30	12	85	123	223	17	100.12
10041	98.86	55.39	0.69	0.33	0.037	0.034	308	31	0.22	11	64	108	1023	27	100.00
10043	97.25	54.49	0.89	0.42	0.055	0.059	426	48	0.79	16	203	91	253	115	99.16
10045	96.83	54.25	1.18	0.56	0.079	0.154	433	57	1.39	19	871	171	363	249	99.84
10046	97.57	54.67	0.94	0.45	0.094	0.168	356	56	1.29	17	915	190	306	95	100.25
10047	97.78	54.79	0.78	0.37	0.078	0.114	301	59	1.23	7	618	92	319	65	100.13
10049	96.95	54.32	1.49	0.71	0.094	0.155	381	55	1.33	14	869	178	386	88	100.22
10052	98.68	55.29	0.82	0.39	0.027	0.028	302	27	0.25	5	84	208	290	17	99.89
10054	99.31	55.64	0.70	0.33	0.036	0.026	298	25	0.14	10	74	197	420	29	100.31
10055	99.02	55.48	0.88	0.42	0.052	0.030	345	24	0.21	9	95	263	288	14	100.30
10057	97.84	54.82	1.35	0.64	0.038	0.026	349	21	0.28	9	92	174	195	17	99.62
10059	94.24	52.80	4.18	2.00	0.060	0.032	302	23	0.63	5	154	198	221	29	99.24
10060	97.62	54.70	0.86	0.41	0.031	0.029	318	26	0.36	10	138	184	117	71	98.99
10062	95.80	53.68	3.54	1.69	0.044	0.042	274	28	0.56	6	220	212	564	21	100.12
10063	98.56	55.22	0.99	0.47	0.032	0.044	337	31	0.84	12	173	168	149	22	100.56
10064	97.64	54.71	0.90	0.43	0.047	0.065	334	32	0.84	10	266	151	137	35	99.59
10068	92.41	51.77	5.93	2.84	0.101	0.158	296	40	1.19	12	694	222	85	72	99.93
10069	97.27	54.50	1.56	0.75	0.065	0.113	405	38	0.93	11	469	236	145	57	100.07
10071	97.96	54.89	1.06	0.51	0.061	0.094	392	60	0.59	14	328	180	184	55	99.90
10072	98.18	55.01	1.07	0.51	0.057	0.085	395	45	0.54	12	333	237	218	46	100.07
10073	97.40	54.57	1.02	0.49	0.047	0.042	411	32	1.13	10	152	182	148	26	99.73
10075	98.28	55.06	1.19	0.57	0.044	0.046	290	23	0.46	5	81	143	178	25	100.09
10080	82.94	46.47	12.27	5.86	0.295	0.755	592	67	2.81	22	3411	447	245	376	99.59
10081	98.78	55.35	0.87	0.42	0.057	0.038	307	40	0.32	7	89	136	213	19	100.16
10083	97.84	54.82	1.35	0.64	0.064	0.097	879	35	0.86	9	482	183	191	45	100.40
10084	97.50	54.63	1.08	0.52	0.054	0.046	756	31	1.25	11	215	179	118	39	100.06
10085	97.58	54.68	1.07	0.51	0.068	0.091	822	39	0.79	11	448	153	209	41	99.78
10106	87.49	49.02	11.50	5.50	0.026	0.037	197	26	0.31	6	120	196	698	19	99.49
10107	78.07	43.74	19.83	9.48	0.036	0.041	138	37	0.53	22	154	301	565	108	98.64
10109	98.72	55.31	0.76	0.36	0.032	0.083	223	44	0.50	9	241	136	358	40	100.20
10110	98.49	55.18	0.76	0.36	0.027	0.093	221	39	0.30	9	220	265	530	37	99.79
10113	98.42	55.14	1.02	0.49	0.025	0.074	241	77	0.20	10	145	211	1052	35	99.92
10114	98.80	55.36	0.81	0.39	0.045	0.053	224	65	0.15	15	120	203	678	184	100.01

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APPENDIX 1: CONTINUED

Sample	%	%	%	%	%	%	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%
	CaCO3	CaO	MgCO3	MgO	Fe2O3	Al2O3	SrCO3	MnO	SiO2	BaO	K2O	Na2O	P2O5	TiO2	Total
10115	98.70	55.30	0.81	0.39	0.049	0.088	199	70	0.28	6	253	157	530	52	100.06
10123	97.62	54.69	0.60	0.28	0.017	0.036	198	30	0.26	7	51	165	552	20	98.63
10129	84.58	47.39	13.70	6.55	0.060	0.084	163	39	0.81	8	482	219	377	56	99.38
10131	94.35	52.87	3.82	1.83	0.038	0.069	209	35	0.60	6	411	161	596	43	99.03
10133	94.05	52.70	4.83	2.31	0.031	0.032	176	31	0.18	5	35	186	980	13	99.27
10134	88.30	49.47	10.25	4.90	0.029	0.018	158	32	0.15	5	<30	209	633	9	98.86
10135	96.26	53.93	3.60	1.72	0.021	0.037	165	30	0.25	8	46	161	611	25	100.27
10136	97.56	54.66	1.73	0.83	0.019	0.050	212	32	0.44	6	40	148	434	25	99.88
10137	97.17	54.44	2.26	1.08	0.018	0.040	195	29	0.30	6	46	159	536	24	99.89
10138	65.71	36.82	32.52	15.55	0.125	0.104	103	60	0.90	6	120	320	412	95	99.47
10139	69.81	39.11	29.51	14.10	0.057	0.044	105	47	0.46	5	95	315	312	47	99.97
10140	97.82	54.81	1.08	0.52	0.019	0.022	203	35	0.28	4	<30	128	356	10	99.30
10142	90.46	50.68	8.15	3.90	0.016	0.021	248	31	0.25	8	<30	162	766	11	99.02
10143	96.63	54.14	2.03	0.97	0.032	0.016	301	33	0.10	12	<30	110	318	7	98.89
10146	98.69	55.29	0.80	0.38	0.011	0.018	354	23	0.07	419	37	99	560	10	99.74
10147	80.08	44.87	19.79	9.46	0.037	0.021	130	32	0.19	4	30	278	639	9	100.24
10148	98.98	55.46	0.96	0.46	0.013	0.029	190	25	0.18	8	46	191	754	12	100.29
10150	99.40	55.70	0.63	0.30	0.013	0.027	215	30	0.10	9	33	119	690	13	100.29
10151	96.35	53.98	3.48	1.66	0.036	0.101	230	33	0.32	9	331	163	590	52	100.43
10152	99.24	55.60	0.77	0.37	0.020	0.043	224	33	0.22	6	56	186	588	18	100.40
10155	96.62	54.14	1.72	0.82	0.032	0.067	193	29	0.39	5	106	157	754	39	98.96
10156	91.19	51.09	8.67	4.14	0.028	0.023	144	29	0.17	5	<30	211	680	11	100.18
10158	95.72	53.63	3.60	1.72	0.011	0.018	189	23	0.18	7	<30	160	635	8	99.63
10159	80.39	45.04	18.85	9.01	0.043	0.016	127	37	0.16	6	<30	280	637	8	99.57
10161	98.92	55.42	0.65	0.31	0.024	0.053	204	32	0.23	51	90	169	1033	22	100.03
10163	92.11	51.61	5.51	2.63	0.013	0.025	184	24	0.36	11	<30	204	594	11	98.12
10166	95.53	53.52	3.07	1.47	0.028	0.026	211	24	0.23	7	81	175	320	14	98.97
10167	98.76	55.34	0.87	0.42	0.025	0.061	255	22	0.47	9	193	258	355	27	100.30
10169	97.67	54.72	1.44	0.69	0.030	0.038	237	22	0.33	6	178	179	384	27	99.61
10201	92.91	52.06	4.85	2.32	0.056	0.071	249	36	0.87	18	230	242	330	176	98.89
10204	98.36	55.11	0.75	0.36	0.038	0.058	239	20	0.37	11	86	135	932	41	99.72
10211	98.85	55.39	0.81	0.39	0.040	0.034	262	25	0.18	7	76	148	353	19	100.00
10212	96.35	53.99	2.34	1.12	0.082	0.109	242	31	0.82	9	378	165	261	62	99.83
10216	96.75	54.21	1.69	0.81	0.113	0.156	316	39	0.95	12	987	171	486	80	99.86
10218	93.43	52.35	4.10	1.96	0.166	0.195	274	46	1.66	12	870	157	542	144	99.76
10220	97.67	54.72	1.40	0.67	0.148	0.155	320	49	0.87	12	700	150	391	76	100.41
10221	95.12	53.29	2.88	1.38	0.124	0.204	338	46	1.39	14	1224	186	448	114	99.96
10223	98.20	55.02	1.32	0.63	0.024	0.038	264	27	0.35	9	138	175	272	19	100.02
10230	77.32	43.32	9.53	4.55	0.303	0.910	243	79	8.10	34	3911	288	595	757	96.76
10231	82.10	46.00	7.60	3.64	0.182	0.386	372	40	6.89	15	1929	264	652	228	97.51
10232	54.26	30.40	12.39	5.92	0.748	0.611	263	80	28.84	22	2833	265	527	376	97.29
10233	86.37	48.39	9.10	4.35	0.338	0.394	432	46	3.76	19	1842	286	376	212	100.29
10240	93.73	52.52	3.10	1.48	0.432	0.214	299	55	1.82	14	942	191	268	118	99.49
10244	96.68	54.17	2.73	1.30	0.056	0.041	192	35	0.15	9	66	113	267	24	99.73

APPENDIX 1: CONTINUED

Sample	%	%	%	%	%	%	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%
	CaCO3	CaO	MgCO3	MgO	Fe2O3	Al2O3	SrCO3	MnO	SiO2	BaO	K2O	Na2O	P2O5	TiO2	Total
10247	97.92	54.86	0.80	0.38	0.028	0.027	300	30	0.24	15	62	77	222	70	99.10
10249	99.26	55.61	0.80	0.38	0.036	0.038	300	35	0.19	9	122	186	146	20	100.39
10251	98.32	55.09	1.00	0.48	0.031	0.045	303	28	0.44	10	204	140	81	25	99.92
10252	98.55	55.21	0.69	0.33	0.025	0.020	255	29	0.42	16	47	164	118	134	99.77
10269	88.52	49.60	5.21	2.49	0.142	0.387	525	37	3.84	16	1941	224	138	228	98.41
10282	59.83	33.52	20.78	9.93	0.445	0.293	165	55	15.13	12	906	241	1022	179	96.73
10283	53.05	29.72	23.12	11.05	0.450	0.372	140	59	19.97	9	1377	236	1142	264	97.29
10284	68.39	38.32	23.41	11.19	0.192	0.215	148	49	5.79	10	605	281	1100	126	98.23
10285	83.53	46.80	13.87	6.63	0.070	0.082	170	42	0.85	6	196	246	1048	48	98.57
10286	97.89	54.85	1.58	0.75	0.037	0.064	246	49	0.30	6	215	218	753	25	100.02
10287	98.72	55.31	1.11	0.53	0.030	0.044	241	42	0.14	6	119	241	821	21	100.19
10288	95.90	53.73	2.99	1.43	0.061	0.130	147	42	0.27	9	208	139	1023	58	99.52
10291	94.97	53.21	1.17	0.56	0.118	0.134	686	34	2.75	10	561	159	75	67	99.30
10308	97.00	54.35	2.21	1.06	0.059	0.084	296	28	0.74	10	291	106	175	48	100.19
10314	87.88	49.24	11.74	5.61	0.024	0.031	243	38	0.41	64	44	230	424	18	100.18
10316	98.03	54.92	1.58	0.76	0.015	0.021	253	28	0.24	5	59	215	569	13	99.99
10319	97.82	54.81	0.86	0.41	0.018	0.034	207	24	0.23	6	48	175	572	17	99.07
10320	95.56	53.54	4.13	1.98	0.018	0.040	199	26	0.12	6	58	163	476	18	99.96
10321	95.24	53.36	4.65	2.22	0.020	0.047	202	30	0.27	9	93	254	478	23	100.33
10324	95.88	53.72	2.57	1.23	0.023	0.055	205	32	0.49	7	102	165	499	26	99.12
10325	93.30	52.28	5.35	2.56	0.048	0.104	219	32	0.42	7	404	186	524	45	99.37
10328	96.53	54.09	1.74	0.83	0.043	0.058	869	37	0.41	16	147	86	107	86	98.92
10330	96.87	54.27	1.16	0.55	0.117	0.295	1455	59	1.48	15	1251	121	144	151	100.23
10331	96.57	54.11	1.21	0.58	0.064	0.128	1109	41	0.80	10	438	200	122	56	98.97
10344	97.41	54.58	1.25	0.60	0.074	0.104	1149	69	1.13	10	520	193	160	48	100.19
10351	89.27	50.02	6.71	3.21	0.265	0.378	697	54	1.90	15	1655	351	110	195	98.83
10355	96.00	53.79	1.52	0.73	0.133	0.337	805	31	1.08	13	1567	226	<70	154	99.36
10357	97.70	54.74	1.68	0.80	0.082	0.124	800	34	0.77	12	497	148	<70	54	100.51
10358	97.69	54.73	1.35	0.65	0.105	0.131	864	45	0.83	10	554	145	139	61	100.29
10360	78.49	43.98	4.03	1.93	0.353	0.598	530	49	14.49	21	2682	274	157	282	98.37
10363	82.64	46.30	9.11	4.35	0.303	0.858	473	51	6.51	29	4487	346	153	520	100.02
10364	78.29	43.87	6.04	2.89	0.504	0.798	478	55	13.42	26	3764	318	171	475	99.58
10376	97.67	54.73	1.26	0.60	0.064	0.202	255	38	0.77	9	823	251	911	78	100.20
10377	98.34	55.10	1.08	0.52	0.029	0.091	234	38	0.44	10	330	221	842	44	100.15
10380	96.26	53.93	1.03	0.49	0.050	0.065	230	35	1.51	9	141	175	793	37	99.05
10381	98.54	55.21	0.80	0.38	0.031	0.064	216	40	0.25	6	131	163	447	29	99.79
10382	97.17	54.44	1.95	0.93	0.076	0.189	237	48	0.65	11	634	250	744	73	100.23
10386	99.37	55.67	0.71	0.34	0.009	0.015	217	24	0.10	8	50	211	299	20	100.28
10406	98.67	55.28	0.91	0.44	0.026	0.032	282	22	0.37	9	150	114	201	17	100.09
10409	98.26	55.05	0.88	0.42	0.027	0.028	272	23	0.23	7	133	199	438	15	99.53
10411	98.03	54.93	1.21	0.58	0.121	0.098	313	37	0.60	15	547	149	660	61	100.24
10413	99.26	55.61	0.79	0.38	0.049	0.029	271	38	0.18	7	33	83	142	13	100.37
10414	98.85	55.38	0.79	0.38	0.035	0.037	287	41	0.18	9	58	87	121	18	99.95
10417	97.94	54.88	0.96	0.46	0.037	0.028	298	28	0.19	6	99	155	129	15	99.24

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APPENDIX 1: CONTINUED

Sample	%	%	%	%	%	%	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%
	CaCO3	CaO	MgCO3	MgO	Fe2O3	Al2O3	SrCO3	MnO	SiO2	BaO	K2O	Na2O	P2O5	TiO2	Total
10420	97.56	54.66	2.19	1.05	0.034	0.046	302	23	0.56	6	178	156	280	27	100.49
10427	98.84	55.38	0.93	0.44	0.019	0.028	301	18	0.24	9	64	146	71	14	100.12
10428	98.02	54.92	0.87	0.42	0.029	0.029	284	24	0.22	7	61	155	120	16	99.23
10454	96.38	54.00	1.12	0.53	0.105	0.153	1041	87	1.82	12	1191	152	150	176	99.86
10455	94.55	52.97	1.08	0.52	0.119	0.162	744	102	2.88	22	852	214	74	322	99.02
10459	91.91	51.50	0.98	0.47	0.381	0.682	615	208	5.54	15	3512	123	190	256	99.98
10460	90.39	50.64	1.46	0.70	0.346	0.758	749	79	6.53	23	5164	405	361	443	100.21
10461	86.26	48.33	1.55	0.74	0.427	0.857	796	69	8.63	23	5742	372	318	553	98.52
10471	95.31	53.40	1.95	0.93	0.117	0.255	328	66	2.23	13	1343	169	273	147	100.10
10472	94.57	52.99	1.26	0.60	0.138	0.225	385	54	2.84	18	1103	218	213	255	99.26
10473	98.26	55.05	0.89	0.43	0.039	0.048	360	28	0.47	10	233	165	181	39	99.81
10474	98.60	55.24	0.99	0.47	0.028	0.061	366	21	0.64	9	287	211	117	28	100.41
10475	97.47	54.61	0.90	0.43	0.032	0.041	371	29	0.55	23	104	195	117	163	99.10
10476	98.28	55.07	0.93	0.45	0.042	0.063	400	30	0.51	12	129	99	156	57	99.92
10490	97.27	54.50	1.08	0.52	0.041	0.052	352	22	0.81	7	215	152	102	26	99.34
10492	98.26	55.06	1.07	0.51	0.036	0.053	360	23	0.54	9	251	107	155	31	100.06
10493	78.21	43.82	20.32	9.71	0.099	0.046	147	42	0.39	9	100	308	171	88	99.15
11001	95.57	53.55	2.92	1.40	0.029	0.053	220	25	0.42	7	285	153	478	27	99.11
11002	95.90	53.73	2.79	1.33	0.031	0.064	235	31	0.50	9	369	156	619	44	99.43
11003	98.84	55.38	0.71	0.34	0.032	0.051	273	33	0.39	24	195	198	436	31	100.14
11006	96.31	53.96	3.29	1.57	0.039	0.043	201	29	0.38	5	171	229	216	24	100.15
11007	98.66	55.28	0.72	0.35	0.038	0.035	247	48	0.27	18	112	286	398	89	99.85
11012	97.37	54.56	0.69	0.33	0.033	0.038	232	43	0.24	11	79	108	368	38	98.46
11013	99.06	55.50	0.72	0.34	0.034	0.043	243	48	0.19	8	94	224	846	20	100.19
11014	97.01	54.35	0.66	0.32	0.036	0.053	211	49	0.21	6	97	97	349	41	98.05
11015	98.44	55.15	0.64	0.30	0.026	0.023	245	31	0.08	13	60	187	474	17	99.30
11017	99.12	55.54	0.62	0.30	0.023	0.032	229	52	0.09	9	64	78	465	16	99.98
11018	98.08	54.95	0.71	0.34	0.029	0.041	256	32	0.18	9	84	146	363	38	99.13
11019	97.23	54.48	0.75	0.36	0.043	0.030	281	33	0.11	14	81	235	486	122	98.29
11020	97.13	54.42	1.20	0.57	0.079	0.112	287	43	0.75	10	593	149	403	59	99.42
11030	95.46	53.49	4.10	1.96	0.029	0.036	255	21	0.32	6	147	189	101	24	100.02
11062	65.84	36.89	25.66	12.27	0.223	0.463	184	48	4.54	16	1772	252	227	272	97.00
11068	92.99	52.10	2.85	1.36	0.096	0.184	416	30	3.02	14	946	243	71	180	99.33
11069	92.33	51.73	3.24	1.55	0.137	0.241	521	38	2.32	12	1272	205	116	138	98.49
11076	83.18	46.60	13.44	6.43	0.167	0.328	286	38	1.93	13	992	247	240	163	99.24
11080	97.94	54.88	1.42	0.68	0.033	0.067	364	23	0.66	10	225	144	132	40	100.22
11088	97.13	54.42	1.25	0.60	0.074	0.144	1166	28	0.72	10	617	168	77	69	99.53
11093	94.08	52.71	3.66	1.75	0.183	0.233	651	51	0.82	11	940	308	120	114	99.20
11095	92.86	52.03	4.88	2.33	0.132	0.305	584	51	0.90	11	1171	235	<70	161	99.31
11096	96.45	54.04	1.49	0.71	0.099	0.163	536	28	0.68	10	723	170	<70	74	99.04
11109	69.21	38.78	28.81	13.77	0.115	0.029	112	47	0.10	13	72	362	188	110	98.35
11114	97.31	54.52	2.59	1.24	0.036	0.024	270	22	0.16	15	41	114	83	14	100.17
11119	90.38	50.64	7.37	3.52	0.055	0.088	251	44	1.91	9	398	282	128	63	99.92
11122	98.52	55.20	0.83	0.40	0.019	0.019	269	17	0.32	12	58	208	86	16	99.78

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APPENDIX 1: CONTINUED

Sample	%	%	%	%	%	%	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%
	CaCO3	CaO	MgCO3	MgO	Fe2O3	Al2O3	SrCO3	MnO	SiO2	BaO	K2O	Na2O	P2O5	TiO2	Total
11123	98.51	55.19	0.88	0.42	0.041	0.035	274	24	0.24	7	71	100	127	25	99.77
11124	98.48	55.18	1.21	0.58	0.037	0.032	274	27	0.48	14	81	147	211	74	100.32
11126	90.37	50.63	9.09	4.35	0.077	0.040	225	28	0.50	6	84	223	188	24	100.15
11128	96.53	54.08	1.97	0.94	0.051	0.071	274	31	0.78	10	171	104	176	38	99.48
11133	96.38	54.00	2.28	1.09	0.066	0.114	370	28	0.85	11	377	172	154	61	99.82
11137	95.82	53.69	2.11	1.01	0.042	0.030	270	22	0.33	50	45	157	<70	12	98.40
11139	99.02	55.48	0.81	0.39	0.033	0.022	285	20	0.17	6	45	93	80	12	100.12
11142	97.45	54.60	0.83	0.40	0.044	0.027	270	19	0.98	9	66	149	80	17	99.39
11148	96.79	54.23	2.44	1.17	0.047	0.032	288	24	0.52	5	130	204	96	21	99.90
11155	97.61	54.69	1.08	0.52	0.094	0.209	1007	37	1.05	11	910	97	84	94	100.27
11159	96.86	54.27	0.97	0.47	0.169	0.129	1128	94	1.80	9	726	118	171	79	100.16
11160	97.64	54.70	1.17	0.56	0.112	0.073	1262	51	1.50	7	405	171	114	79	100.70
11164	92.37	51.75	1.47	0.70	0.257	0.269	665	64	3.49	11	1068	222	206	151	98.09
11174	80.43	45.06	11.91	5.69	0.291	0.854	607	77	4.66	27	4362	611	130	533	98.77
11176	97.53	54.65	1.58	0.76	0.169	0.044	281	21	0.36	9	215	192	265	23	99.78
11185	90.60	50.76	8.62	4.12	0.044	0.064	197	27	0.72	9	192	234	346	35	100.15
11186	80.89	45.32	15.04	7.19	0.103	0.253	194	38	2.16	30	1386	239	549	411	98.73
11189	97.69	54.74	1.96	0.93	0.041	0.051	248	25	0.48	8	215	172	211	27	100.32
11191	83.30	46.67	10.81	5.17	0.160	0.472	277	54	4.09	19	2689	296	463	307	99.24
11192	95.82	53.68	2.83	1.35	0.035	0.114	308	27	0.88	11	524	254	458	69	99.84
11194	97.42	54.58	1.30	0.62	0.033	0.017	302	22	0.20	19	47	144	340	235	99.08
11197	87.53	49.04	10.02	4.79	0.058	0.054	217	28	0.61	10	124	201	242	38	98.36

APPENDIX 1: CONTINUED

Sample	%	%	%	%	%	%	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%
	CaCO3	CaO	MgCO3	MgO	Fe2O3	Al2O3	SrCO3	MnO	SiO2	BaO	K2O	Na2O	P2O5	TiO2	Total
10002	97.80	54.80	1.08	0.51	0.050	0.126	436	30	0.91	11	707	208	277	55	100.13
10012	97.76	54.78	1.01	0.48	0.039	0.078	338	25	0.61	9	211	185	233	44	99.61
10015	98.84	55.38	0.88	0.42	0.029	0.042	310	24	0.30	10	134	139	201	57	100.18
10022	90.55	50.73	9.15	4.38	0.023	0.021	182	39	0.16	5	78	263	942	10	100.06
10029	99.24	55.60	0.71	0.34	0.031	0.039	210	38	0.14	8	58	241	529	19	100.27
10053	98.04	54.93	0.76	0.37	0.028	0.027	276	25	0.20	9	52	227	289	11	99.14
10056	97.05	54.37	1.32	0.63	0.047	0.056	309	27	0.82	8	155	158	581	35	99.41
10058	96.87	54.28	1.87	0.89	0.030	0.036	309	20	0.57	9	109	168	209	21	99.45
10066	96.76	54.21	0.96	0.46	0.065	0.076	341	31	1.44	14	322	189	<70	47	99.39
10077	96.87	54.28	0.91	0.44	0.241	0.105	299	38	1.59	10	358	153	118	63	99.83
10078	93.88	52.60	3.89	1.86	0.079	0.172	353	37	1.84	12	581	243	91	89	100.01
10082	97.84	54.82	1.17	0.56	0.049	0.060	780	31	0.75	8	231	226	<70	26	100.01
10101	92.60	51.88	1.31	0.63	0.249	0.566	437	81	4.83	22	3255	290	138	304	100.01
10102	93.79	52.55	1.56	0.75	0.152	0.357	478	87	3.93	19	1784	340	126	234	100.09
10103	95.84	53.70	1.34	0.64	0.090	0.196	546	48	2.29	13	992	204	<70	123	99.96
10104	94.06	52.70	1.42	0.68	0.073	0.223	449	33	3.50	16	1177	239	125	133	99.50
10105	94.30	52.83	3.19	1.53	0.056	0.132	392	27	1.17	12	742	197	98	87	99.01
10108	80.69	45.21	18.43	8.81	0.052	0.066	164	41	0.85	8	314	314	778	69	100.26
10111	98.36	55.11	0.85	0.41	0.038	0.127	224	56	0.44	8	463	230	966	51	100.02
10112	97.98	54.90	1.11	0.53	0.086	0.216	227	71	0.71	12	414	232	625	94	100.26
10116	99.06	55.50	0.78	0.37	0.038	0.052	226	49	0.23	8	110	380	695	29	100.31
10118	98.79	55.35	1.20	0.57	0.024	0.025	194	27	0.21	7	107	231	530	25	100.36
10120	77.21	43.26	22.67	10.84	0.042	0.018	114	41	0.10	5	55	316	422	22	100.14
10122	92.71	51.95	6.81	3.25	0.032	0.030	180	36	0.35	10	84	300	388	21	100.04
10132	96.10	53.84	3.25	1.55	0.047	0.043	312	25	0.52	5	212	197	252	25	100.06
10141	97.31	54.52	2.00	0.96	0.061	0.028	230	35	0.22	9	<30	169	736	15	99.74
10144	97.94	54.88	1.47	0.70	0.010	0.018	516	21	0.14	16	<30	122	754	11	99.73
10145	98.19	55.01	1.17	0.56	0.012	0.029	188	26	0.13	9	40	182	477	27	99.63
10153	98.73	55.32	0.83	0.40	0.028	0.033	214	33	0.12	5	31	139	301	15	99.82
10154	90.31	50.60	7.94	3.79	0.047	0.123	176	36	0.81	11	508	196	559	82	99.38
10157	91.62	51.34	7.33	3.50	0.017	0.020	161	29	0.21	8	36	305	568	10	99.32
10160	87.23	48.87	11.42	5.46	0.018	0.020	158	34	0.11	5	42	281	533	8	98.89
10162	98.57	55.23	0.77	0.37	0.011	0.024	207	26	0.12	7	<30	220	592	14	99.61
10164	59.48	33.32	38.34	18.33	0.034	0.055	87	44	0.41	6	57	334	547	31	98.43
10168	98.07	54.95	1.36	0.65	0.084	0.035	260	29	0.21	10	139	292	615	18	99.90
10202	96.07	53.83	1.28	0.61	0.062	0.108	239	40	0.70	11	265	196	473	85	98.36
10209	97.20	54.46	0.99	0.47	0.026	0.039	615	22	0.43	11	154	177	253	18	98.80
10214	96.92	54.30	1.74	0.83	0.089	0.181	342	38	0.99	13	904	249	217	75	100.10
10217	79.15	44.34	16.92	8.09	0.273	0.399	206	66	2.93	15	2338	315	354	229	100.02
10224	95.42	53.47	2.39	1.14	0.038	0.108	294	27	1.12	13	545	257	441	67	99.24
10227	92.09	51.60	2.86	1.37	0.124	0.203	370	28	4.23	13	991	282	426	114	99.73
10229	72.70	40.73	12.60	6.02	0.341	0.695	280	65	11.41	23	3444	416	1012	470	98.31
10235	72.93	40.86	13.19	6.31	0.334	0.429	196	89	12.75	29	1854	224	336	322	99.93
10236	87.48	49.02	7.16	3.42	0.089	0.210	346	44	3.58	13	1087	258	516	121	98.76
10239	94.25	52.81	3.20	1.53	0.051	0.126	312	34	1.44	13	626	211	204	78	99.22

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APPENDIX 1: CONTINUED

Sample	%	%	%	%	%	%	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%
	CaCO3	CaO	MgCO3	MgO	Fe2O3	Al2O3	SrCO3	MnO	SiO2	BaO	K2O	Na2O	P2O5	TiO2	Total
10245	95.60	53.56	2.02	0.97	0.045	0.063	241	30	1.09	22	204	172	259	38	98.92
10246	98.97	55.45	0.83	0.39	0.033	0.037	277	24	0.12	8	53	168	197	18	100.06
10250	97.38	54.56	1.62	0.78	0.055	0.073	309	36	0.57	12	261	181	133	38	99.79
10253	98.55	55.22	0.77	0.37	0.038	0.202	267	30	0.66	10	81	424	96	25	100.31
10254	98.83	55.37	0.80	0.38	0.065	0.052	217	53	0.22	9	151	207	255	22	100.05
10255	98.78	55.34	0.85	0.41	0.035	0.038	296	66	0.33	10	219	228	290	20	100.14
10256	95.27	53.38	1.92	0.92	0.086	0.116	591	34	1.85	11	652	170	317	153	99.43
10268	97.34	54.54	1.17	0.56	0.116	0.132	931	57	1.24	8	872	221	306	51	100.24
10270	91.29	51.15	5.17	2.47	0.102	0.309	446	31	2.96	14	1512	296	283	196	100.11
10273	98.13	54.98	0.86	0.41	0.038	0.097	344	25	0.83	8	260	185	221	52	100.06
10277	71.78	40.22	27.10	12.96	0.060	0.086	113	44	0.60	8	466	331	782	115	99.81
10278 or 79	99.12	55.53	0.78	0.37	0.023	0.028	202	27	0.18	5	215	235	585	14	100.25
10289	95.89	53.73	1.33	0.63	0.110	0.280	929	33	1.75	8	1618	246	177	146	99.67
10290	97.17	54.44	1.14	0.54	0.057	0.093	674	53	0.57	11	381	188	128	35	99.17
10295	92.64	51.91	1.14	0.55	0.306	0.607	973	102	4.60	15	3867	218	413	283	99.89
10297	86.86	48.67	1.04	0.50	0.058	0.087	860	32	11.94	9	240	245	166	33	100.15
10299	98.39	55.13	1.08	0.52	0.058	0.088	1188	38	0.53	7	354	236	122	37	100.34
10327	97.27	54.50	1.15	0.55	0.079	0.149	869	42	1.27	9	552	243	199	67	100.11
10336	98.74	55.32	0.99	0.47	0.036	0.047	580	24	0.38	10	133	203	272	21	100.32
10338	96.88	54.28	1.50	0.72	0.083	0.170	751	39	1.02	11	951	265	76	81	99.87
10341	94.46	52.92	1.05	0.50	0.123	0.131	773	45	3.24	14	635	190	102	120	99.19
10342	97.20	54.46	0.87	0.42	0.085	0.069	870	31	0.42	9	291	88	<70	48	98.78
10343	97.14	54.43	1.13	0.54	0.060	0.110	1146	36	0.64	11	473	227	96	54	99.29
10345	95.26	53.37	1.76	0.84	0.104	0.246	979	40	1.40	14	1243	243	100	128	99.05
10352	93.14	52.19	4.14	1.98	0.226	0.366	567	54	1.93	14	1880	421	<70	208	100.12
10407	98.12	54.97	1.09	0.52	0.015	0.039	288	20	0.40	8	132	127	327	18	99.75
10410	99.18	55.57	0.70	0.34	0.033	0.030	273	23	0.20	9	154	194	328	45	100.25
10412	91.79	51.43	5.05	2.41	0.104	0.173	302	43	1.85	11	1207	238	399	109	99.19
10415	98.97	55.45	0.94	0.45	0.033	0.033	290	24	0.26	12	98	239	92	20	100.32
10424	97.39	54.57	1.02	0.49	0.044	0.054	339	25	1.49	8	202	511	<70	33	100.11
10458	80.02	44.83	0.97	0.47	0.327	0.423	773	111	16.20	24	2916	231	347	507	98.43
10462	92.34	51.74	1.33	0.64	0.259	0.442	834	77	5.03	14	2859	289	340	294	99.88
10463	87.52	49.03	1.51	0.72	0.433	0.967	801	105	7.00	25	5887	343	517	594	98.25
10465	96.83	54.25	0.87	0.41	0.110	0.138	309	124	1.92	9	726	181	641	82	100.06
10466	93.79	52.55	1.30	0.62	0.239	0.339	598	56	3.34	13	2071	297	324	176	99.37
10467	90.61	50.77	1.50	0.72	0.297	0.674	762	55	5.49	18	4422	385	534	396	99.23
10469	98.50	55.19	0.94	0.45	0.057	0.068	476	26	0.60	9	313	215	206	32	100.29
10477	97.15	54.43	0.96	0.46	0.064	0.090	414	38	0.56	15	290	165	212	30	98.94
10481	97.56	54.66	0.92	0.44	0.039	0.051	351	30	0.71	10	244	218	233	68	99.39
10485	98.68	55.29	0.84	0.40	0.026	0.059	334	26	0.53	9	301	230	179	25	100.24
10486	98.16	55.00	0.88	0.42	0.027	0.054	380	38	0.47	11	328	190	188	29	99.71
10487	98.72	55.31	0.86	0.41	0.030	0.063	363	32	0.55	8	252	208	190	28	100.34
10495	95.64	53.59	3.44	1.64	0.040	0.042	263	20	0.64	9	180	244	315	40	99.91
11009	98.83	55.37	0.68	0.33	0.029	0.037	261	29	0.21	10	195	199	321	20	99.89
11010	98.24	55.04	0.84	0.40	0.067	0.128	191	58	0.60	9	341	168	706	59	100.03

APPENDIX 1: CONTINUED

Sample	%	%	%	%	%	%	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%
	CaCO3	CaO	MgCO3	MgO	Fe2O3	Al2O3	SrCO3	MnO	SiO2	BaO	K2O	Na2O	P2O5	TiO2	Total
11011	98.83	55.38	0.71	0.34	0.036	0.038	244	40	0.40	9	130	180	308	18	100.11
11021	86.10	48.24	4.87	2.33	0.107	0.293	272	47	7.32	16	1741	215	506	183	99.00
11023	97.67	54.72	0.96	0.46	0.051	0.118	393	39	0.86	12	481	262	2929	67	100.08
11024	97.56	54.66	0.89	0.43	0.042	0.047	302	35	1.12	10	168	321	284	35	99.78
11025	78.04	43.73	4.19	2.00	0.398	0.453	414	52	15.61	18	2181	226	718	289	99.09
11026	90.94	50.95	5.04	2.41	0.131	0.330	332	55	3.30	17	1571	394	230	255	100.03
11027	96.82	54.25	2.88	1.38	0.032	0.043	308	22	0.38	10	157	300	71	26	100.25
11033	93.99	52.66	5.88	2.81	0.038	0.027	276	26	0.16	5	102	221	269	14	100.19
11034	98.34	55.10	1.47	0.70	0.030	0.026	314	23	0.18	6	64	128	211	20	100.13
11035	98.84	55.38	0.80	0.38	0.028	0.024	304	23	0.28	5	81	175	309	11	100.07
11036	98.62	55.26	0.87	0.42	0.046	0.024	291	23	0.44	11	66	318	78	14	100.09
11038	98.01	54.92	0.80	0.38	0.043	0.027	267	22	0.16	8	73	441	70	11	99.13
11041	98.94	55.44	0.79	0.38	0.041	0.042	329	20	0.32	12	50	215	<70	21	100.21
11042	98.68	55.29	0.80	0.38	0.049	0.062	326	23	0.40	12	100	191	95	34	100.07
11043	98.79	55.35	0.86	0.41	0.039	0.048	328	24	0.52	9	113	374	167	26	100.36
11046	98.17	55.00	0.88	0.42	0.042	0.036	305	28	0.95	8	58	139	<70	19	100.13
11047	98.05	54.93	0.88	0.42	0.039	0.033	305	30	0.90	13	122	242	<70	25	99.98
11050	99.10	55.52	0.80	0.38	0.025	0.023	288	20	0.20	9	110	195	184	11	100.24
11053	99.03	55.48	0.86	0.41	0.042	0.033	272	27	0.30	9	51	218	<70	19	100.32
11055	98.84	55.38	0.84	0.40	0.055	0.040	296	36	0.19	11	78	269	183	20	100.06
11056	97.82	54.81	0.96	0.46	0.053	0.055	317	33	0.91	12	220	370	109	32	99.90
11057	98.49	55.18	0.85	0.41	0.027	0.045	343	25	0.78	9	187	157	163	26	100.28
11060	97.97	54.89	1.05	0.50	0.028	0.044	319	20	0.51	11	124	237	143	22	99.69
11063	97.53	54.64	1.05	0.50	0.034	0.099	385	22	0.97	10	402	144	136	47	99.79
11064	78.83	44.17	13.80	6.60	0.270	0.670	297	54	5.66	24	3674	512	223	482	99.76
11066	97.01	54.35	1.62	0.78	0.037	0.082	390	28	1.10	10	277	171	100	42	99.95
11070	96.53	54.08	1.43	0.68	0.161	0.168	540	32	1.11	11	877	244	<70	88	99.58
11071	97.20	54.46	1.02	0.49	0.080	0.077	696	54	1.25	11	356	225	78	42	99.78
11073	97.62	54.69	1.62	0.77	0.049	0.061	374	24	0.60	10	260	398	<70	28	100.06
11074	77.78	43.58	17.00	8.13	0.157	0.336	213	46	3.08	14	1196	293	231	241	98.58
11077	95.67	53.60	1.99	0.95	0.097	0.111	337	25	1.07	10	270	160	194	58	99.04
11082	97.13	54.42	1.00	0.48	0.048	0.090	376	24	0.68	9	287	188	72	42	99.05
11083	96.49	54.06	1.81	0.86	0.061	0.172	388	28	1.16	14	829	182	186	98	99.87
11084	94.22	52.79	3.97	1.90	0.064	0.162	380	29	1.50	11	700	276	125	94	100.08
11085	95.93	53.75	1.46	0.70	0.163	0.391	739	28	1.17	13	1606	363	76	187	99.42
11087	96.91	54.30	1.20	0.57	0.068	0.144	1292	24	0.64	10	675	208	<70	75	99.20
11092	84.76	47.49	9.03	4.32	0.253	0.715	527	79	4.11	31	3103	365	<70	479	99.33
11097	92.54	51.85	4.34	2.08	0.153	0.353	636	41	1.19	18	1555	294	<70	184	98.86
11098	95.94	53.75	1.45	0.69	0.155	0.367	638	38	1.31	14	1590	306	<70	181	99.50
11105	98.51	55.20	0.86	0.41	0.022	0.023	315	27	0.24	8	165	172	190	11	99.74
11107	84.94	47.59	14.12	6.75	0.077	0.036	179	37	0.16	4	56	245	209	16	99.42
11115	98.01	54.91	1.33	0.64	0.032	0.025	280	20	0.33	11	169	216	193	54	99.82
11120	96.39	54.01	2.27	1.08	0.035	0.040	228	21	1.28	8	104	226	143	18	100.09
11121	98.99	55.46	0.72	0.34	0.020	0.020	261	19	0.45	7	89	188	185	10	100.26
11125	99.12	55.53	0.79	0.38	0.033	0.042	289	27	0.26	8	127	165	236	21	100.33

APPENDIX 1: CONTINUED

Sample	%	%	%	%	%	%	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%
	CaCO3	CaO	MgCO3	MgO	Fe2O3	Al2O3	SrCO3	MnO	SiO2	BaO	K2O	Na2O	P2O5	TiO2	Total
11127	97.78	54.79	1.74	0.83	0.056	0.051	270	33	0.38	14	136	177	211	25	100.10
11129	96.29	53.95	1.45	0.69	0.041	0.068	319	30	0.86	10	238	157	188	103	98.81
11130	96.01	53.79	2.85	1.36	0.063	0.093	322	30	0.87	11	257	188	764	45	100.05
11131	82.73	46.35	14.60	6.98	0.131	0.332	263	37	2.18	14	1407	251	303	161	100.21
11132	95.52	53.52	2.71	1.30	0.049	0.108	400	25	1.07	12	521	230	189	103	99.61
11135	98.09	54.96	1.06	0.50	0.076	0.130	366	32	0.76	14	214	214	249	57	100.23
11140	98.84	55.38	0.77	0.37	0.026	0.033	274	23	0.12	10	30	109	<70	10	99.84
11145	99.00	55.47	0.90	0.43	0.033	0.039	306	23	0.21	8	155	165	300	21	100.29
11162	97.01	54.35	1.09	0.52	0.132	0.104	1086	64	1.60	9	579	145	186	103	100.15
11165	92.15	51.63	2.04	0.98	0.273	0.433	661	77	4.79	16	2107	308	191	251	100.05
11169	91.96	51.52	2.59	1.24	0.079	0.167	435	28	4.13	13	829	261	106	98	99.09
11172	90.63	50.78	2.95	1.41	0.358	0.713	576	95	4.11	28	3415	374	129	448	99.26
11178	94.23	52.80	4.11	1.96	0.069	0.159	308	41	1.30	14	883	211	360	81	100.06
11180	97.43	54.59	2.09	1.00	0.036	0.066	257	30	0.51	8	436	248	244	31	100.26
11188	97.55	54.65	2.09	1.00	0.027	0.035	241	20	0.26	6	131	189	379	15	100.06
11193	98.27	55.06	1.20	0.58	0.031	0.043	292	23	0.40	10	159	221	273	23	100.05
11195	79.04	44.29	19.46	9.30	0.079	0.083	181	36	0.64	10	279	230	238	80	99.41
11198	96.32	53.97	2.74	1.31	0.044	0.044	250	23	0.82	8	146	231	152	28	100.06

APPENDIX 1: CONTINUED

Sample	%	%	%	%	%	%	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%
	CaCO3	CaO	MgCO3	MgO	Fe2O3	Al2O3	SrCO3	MnO	SiO2	BaO	K2O	Na2O	P2O5	TiO2	Total
10001	97.66	54.72	1.45	0.69	0.093	0.081	757	38	0.36	8	378	225	<70	37	99.80
10003	81.51	45.67	14.45	6.91	0.171	0.422	286	45	2.59	16	1946	246	175	251	99.43
10004	96.01	53.79	1.70	0.81	0.036	0.102	404	25	1.16	9	400	130	102	55	99.12
10006	98.25	55.05	1.02	0.49	0.037	0.058	331	22	0.70	12	199	206	168	27	100.16
10007	98.19	55.01	0.86	0.41	0.031	0.032	292	21	0.22	11	71	194	79	17	99.40
10008	98.65	55.27	0.76	0.36	0.019	0.014	264	17	0.14	7	<30	255	<70	10	99.64
10010	98.83	55.37	0.84	0.40	0.023	0.023	283	17	0.28	11	43	153	80	14	100.05
10011	98.53	55.21	0.86	0.41	0.054	0.035	316	25	0.51	6	85	139	92	19	100.06
10013	98.58	55.23	0.94	0.45	0.043	0.037	322	21	0.32	13	95	212	72	21	99.99
10014	98.47	55.17	1.11	0.53	0.057	0.033	340	26	0.20	11	62	134	199	17	99.94
10016	97.15	54.43	1.80	0.86	0.033	0.043	302	23	0.26	10	58	126	284	25	99.37
10017	98.56	55.22	1.16	0.55	0.027	0.032	298	18	0.28	6	53	149	119	16	100.12
10018	97.02	54.36	1.09	0.52	0.044	0.029	252	19	0.23	12	37	45	88	31	98.46
10019	98.19	55.01	1.37	0.65	0.024	0.028	287	17	0.13	7	<30	216	117	17	99.81
10021	97.91	54.86	1.53	0.73	0.045	0.033	275	29	0.46	11	44	90	136	18	100.04
10031	98.60	55.24	0.85	0.41	0.044	0.052	216	38	0.23	14	108	225	642	69	99.91
10051	98.92	55.43	0.71	0.34	0.037	0.038	245	47	0.30	11	97	224	208	20	100.09
10061	97.36	54.55	0.93	0.45	0.040	0.046	314	34	0.92	9	116	171	521	30	99.41
10065	97.07	54.39	0.93	0.44	0.060	0.068	338	29	0.91	14	305	167	83	50	99.13
10067	97.84	54.82	1.02	0.49	0.051	0.063	365	33	0.97	12	281	237	156	26	100.06
10070	97.92	54.86	1.15	0.55	0.066	0.122	388	58	0.72	14	368	229	218	61	100.11
10072	98.00	54.91	1.10	0.52	0.050	0.092	454	39	0.88	10	442	217	<70	58	100.25
10074	96.33	53.97	1.36	0.65	0.075	0.094	447	31	1.33	13	411	203	<70	90	99.31
10076	97.93	54.87	1.30	0.62	0.023	0.051	366	25	0.83	10	174	199	165	26	100.22
10079	96.67	54.16	1.90	0.91	0.116	0.179	693	50	1.03	14	866	276	125	94	100.10
10125	83.52	46.79	15.51	7.41	0.036	0.052	167	53	0.43	8	225	370	414	29	99.68
10126	98.87	55.40	0.70	0.34	0.056	0.035	247	30	0.31	15	103	206	389	41	100.08
10149	94.82	53.12	4.42	2.11	0.026	0.026	177	25	0.15	6	52	226	641	14	99.55
10203	81.79	45.83	9.21	4.40	0.155	0.153	192	39	7.77	11	495	285	771	82	99.27
10205	95.84	53.70	2.54	1.21	0.047	0.042	233	24	0.27	12	74	190	281	28	98.82
10206	98.88	55.40	0.71	0.34	0.058	0.053	232	28	0.26	8	98	199	383	29	100.06
10207	97.85	54.83	1.91	0.91	0.054	0.032	216	28	0.22	9	46	170	381	15	100.15
10208	98.93	55.43	0.77	0.37	0.030	0.024	245	20	0.16	13	40	185	373	21	100.00
10210	99.01	55.47	0.97	0.46	0.020	0.035	269	16	0.23	13	75	197	477	17	100.37
10213	97.63	54.70	1.12	0.54	0.108	0.159	856	131	1.02	24	710	109	<70	81	100.23
10215	95.97	53.77	1.98	0.95	0.151	0.172	324	46	1.07	18	1034	179	249	114	99.54
10222	98.21	55.03	1.27	0.61	0.056	0.083	287	33	0.64	12	331	184	269	44	100.38
10225	85.53	47.92	6.50	3.11	0.262	0.489	297	52	5.31	29	2805	241	398	389	98.51
10226	96.12	53.86	0.90	0.43	0.083	0.141	336	32	1.79	9	351	165	605	99	99.20
10228	70.57	39.54	6.58	3.15	0.571	0.473	357	70	17.52	25	2232	253	507	315	96.10
10234	55.43	31.06	25.44	12.16	0.673	1.062	211	99	11.70	36	4683	392	475	699	94.97
10237	77.00	43.14	14.26	6.82	0.169	0.539	323	60	6.49	17	2349	303	556	368	98.86
10242	69.72	39.06	17.64	8.43	0.263	0.688	307	56	7.79	27	3216	378	708	448	96.61
10243	98.08	54.95	2.07	0.99	0.035	0.037	241	22	0.12	9	75	186	233	29	100.42

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APPENDIX 1: CONTINUED

Sample	%	%	%	%	%	%	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%
	CaCO3	CaO	MgCO3	MgO	Fe2O3	Al2O3	SrCO3	MnO	SiO2	BaO	K2O	Na2O	P2O5	TiO2	Total
10248	99.03	55.48	0.78	0.37	0.022	0.041	277	27	0.24	11	75	216	111	19	100.19
10257	92.18	51.65	3.06	1.46	0.110	0.112	543	35	4.63	20	675	165	232	180	100.28
10259	93.32	52.29	2.36	1.13	0.200	0.569	1128	73	3.14	27	2863	621	255	336	100.11
10260	95.83	53.69	0.94	0.45	0.123	0.103	904	89	2.04	9	593	43	97	48	99.21
10262	98.43	55.15	1.01	0.48	0.050	0.043	743	34	0.56	13	164	187	<70	20	100.21
10263	97.25	54.49	1.17	0.56	0.096	0.095	841	48	0.42	22	362	152	<70	109	99.19
10265	97.65	54.71	0.94	0.45	0.092	0.067	319	39	0.64	15	215	241	124	49	99.48
10267	97.32	54.53	1.18	0.57	0.054	0.086	688	35	0.71	10	300	157	<70	44	99.48
10276	80.18	44.92	18.67	8.92	0.030	0.040	152	33	0.78	8	133	276	658	25	99.83
10279	98.65	55.27	1.04	0.50	0.030	0.044	275	28	0.23	12	108	243	881	26	100.16
10280	98.58	55.24	0.82	0.39	0.048	0.110	214	38	0.36	12	208	334	499	46	100.06
10281	95.52	53.52	3.67	1.75	0.039	0.105	194	51	0.24	9	129	159	555	56	99.68
10292	97.07	54.39	1.22	0.58	0.133	0.207	910	52	1.25	12	1034	184	327	95	100.14
10298	97.16	54.44	1.12	0.54	0.048	0.055	1137	32	1.16	11	99	317	<70	29	99.72
10300	96.48	54.06	1.16	0.55	0.127	0.162	943	59	1.43	18	702	140	<70	108	99.55
10301	97.36	54.55	0.95	0.46	0.050	0.083	359	27	0.63	7	210	97	<70	36	99.16
10304	93.00	52.11	4.20	2.01	0.064	0.135	342	28	1.23	9	313	156	162	71	98.74
10305	89.76	50.29	6.69	3.20	0.096	0.192	312	32	2.11	11	646	212	218	104	99.00
10309	97.66	54.72	0.97	0.46	0.035	0.091	361	24	0.73	9	365	111	135	46	99.59
10315	74.36	41.66	24.83	11.87	0.046	0.029	132	48	0.23	9	71	358	328	23	99.59
10326	95.56	53.54	1.17	0.56	0.088	0.232	796	42	1.34	12	808	190	80	117	98.59
10329	97.96	54.88	1.01	0.48	0.049	0.089	1100	39	0.88	10	295	176	116	42	100.16
10333	97.08	54.39	1.61	0.77	0.093	0.174	1363	59	1.03	13	821	225	118	83	100.26
10334	97.01	54.35	1.31	0.63	0.098	0.181	1292	55	1.26	12	973	199	128	90	100.13
10335	97.48	54.62	1.22	0.59	0.048	0.108	1591	32	0.86	12	529	162	255	52	99.99
10337	95.27	53.38	2.30	1.10	0.102	0.254	828	46	1.90	13	1635	227	171	124	100.14
10339	95.71	53.63	1.58	0.75	0.106	0.185	913	36	1.81	11	1055	222	168	104	99.64
10340	95.77	53.66	1.85	0.89	0.118	0.250	926	46	1.76	12	1456	244	125	141	100.05
10353	94.52	52.96	1.37	0.65	0.201	0.351	536	37	1.37	15	1534	257	<70	180	98.07
10354	96.62	54.14	1.43	0.68	0.104	0.244	597	32	0.96	13	1129	239	80	126	99.59
10356	96.54	54.09	1.23	0.59	0.076	0.231	952	34	0.79	14	919	220	76	104	99.11
10359	97.32	54.53	1.09	0.52	0.159	0.123	974	66	0.92	12	561	262	94	56	99.81
10385	95.08	53.27	4.33	2.07	0.027	0.022	202	29	0.14	11	34	169	372	19	99.68
10429	96.11	53.85	1.13	0.54	0.092	0.155	279	122	1.81	13	636	260	176	102	99.46
10430	98.03	54.92	0.92	0.44	0.032	0.068	355	36	1.26	11	236	225	142	31	100.41
10431	97.77	54.78	0.92	0.44	0.032	0.058	366	34	0.82	12	183	237	<70	34	99.69
10432	98.05	54.94	0.93	0.45	0.036	0.074	364	22	0.69	16	249	219	179	46	99.89
10433	98.10	54.96	0.98	0.47	0.031	0.077	383	27	0.75	14	255	246	198	32	100.05
10434	98.10	54.96	0.98	0.47	0.030	0.067	388	25	0.66	16	215	204	148	27	99.93
10435	97.84	54.82	0.86	0.41	0.030	0.047	393	34	0.46	15	121	143	129	22	99.33
10436	98.39	55.13	0.80	0.38	0.057	0.076	352	45	0.75	15	252	111	170	40	100.18
10437	98.17	55.01	0.80	0.38	0.115	0.082	346	37	0.66	12	189	130	201	36	99.93
10438	97.32	54.53	0.91	0.44	0.074	0.062	317	38	0.58	22	180	77	176	55	99.04
10439	98.45	55.16	0.78	0.37	0.071	0.077	230	37	0.73	10	218	150	259	43	100.21

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APPENDIX 1: CONTINUED

Sample	%	%	%	%	%	%	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%
	CaCO3	CaO	MgCO3	MgO	Fe2O3	Al2O3	SrCO3	MnO	SiO2	BaO	K2O	Na2O	P2O5	TiO2	Total
10440	96.14	53.86	0.95	0.46	0.110	0.157	296	58	1.45	14	532	122	134	104	98.94
10441	96.62	54.13	1.17	0.56	0.097	0.101	322	53	1.24	11	423	216	150	48	99.36
10442	97.67	54.72	0.94	0.45	0.040	0.059	324	31	0.69	11	174	222	133	31	99.50
10443	90.63	50.78	3.89	1.86	0.163	0.362	285	54	3.13	21	2094	216	285	253	98.51
10444	96.63	54.14	0.97	0.46	0.081	0.087	315	43	0.60	19	306	99	75	74	98.45
10445	97.26	54.49	0.95	0.45	0.108	0.209	280	47	1.37	15	616	150	201	134	100.04
10446	98.00	54.91	1.01	0.48	0.082	0.079	347	43	0.82	18	237	97	106	41	100.08
10447	97.04	54.37	0.93	0.45	0.071	0.074	333	37	1.22	9	172	263	105	43	99.44
10448	97.38	54.56	0.97	0.46	0.054	0.089	437	61	1.04	11	244	163	143	49	99.65
10449	96.43	54.03	1.09	0.52	0.114	0.233	436	94	2.01	18	1065	163	178	139	100.08
10450	95.86	53.71	1.18	0.57	0.057	0.208	425	68	1.89	13	909	202	190	126	99.40
10451	96.32	53.97	1.21	0.58	0.062	0.178	491	39	1.53	12	824	276	159	112	99.50
10452	96.39	54.00	1.14	0.54	0.121	0.243	485	83	2.02	14	1079	169	182	146	100.13
10453	93.89	52.60	1.12	0.53	0.230	0.472	1043	94	3.78	18	2832	137	103	242	99.93
10456	87.27	48.90	1.03	0.49	0.245	0.326	774	64	10.73	17	2390	300	107	381	100.00
10457	75.97	42.56	0.83	0.40	0.161	0.347	702	41	17.92	27	2447	272	227	676	95.66
10464	94.67	53.04	1.15	0.55	0.172	0.173	777	67	3.21	12	1002	189	87	96	99.61
10468	97.71	54.75	0.95	0.46	0.041	0.297	482	30	0.75	10	372	194	110	42	99.88
10470	97.56	54.66	0.99	0.48	0.051	0.075	501	28	1.25	11	250	273	<70	30	100.04
10480	96.72	54.19	2.26	1.08	0.034	0.043	299	23	0.61	8	47	289	337	21	99.77
10482	98.24	55.04	1.03	0.49	0.041	0.073	346	25	0.77	14	230	186	101	54	100.24
10483	97.60	54.68	1.02	0.49	0.059	0.076	348	32	0.72	9	222	174	97	42	99.57
10488	97.79	54.79	0.94	0.45	0.028	0.052	370	30	0.69	11	159	271	137	27	99.61
10497	85.68	48.01	13.77	6.58	0.115	0.064	210	38	0.50	9	163	430	371	31	100.26
10500	97.62	54.70	0.97	0.46	0.025	0.034	330	21	0.31	10	65	169	202	20	99.04
11004	98.86	55.39	0.90	0.43	0.024	0.044	253	21	0.34	10	212	251	347	23	100.28
11005	94.49	52.94	3.92	1.87	0.051	0.061	236	28	0.45	8	247	274	478	37	99.10
11008	97.64	54.71	1.09	0.52	0.024	0.032	211	28	0.43	6	<30	127	381	16	99.30
11016	98.80	55.36	0.67	0.32	0.086	0.042	252	35	0.24	11	58	139	235	20	99.92
11022	98.60	55.24	0.93	0.44	0.021	0.035	261	27	0.51	12	144	284	360	20	100.20
11028	95.85	53.70	3.79	1.81	0.023	0.042	277	18	0.38	11	112	204	108	29	100.16
11029	96.40	54.01	2.89	1.38	0.039	0.043	273	20	0.32	10	108	175	<70	24	99.76
11031	70.27	39.37	28.60	13.67	0.133	0.040	95	61	0.13	10	<30	379	187	26	99.25
11032	86.10	48.24	12.65	6.05	0.076	0.032	199	36	0.13	10	56	232	165	20	99.06
11037	98.20	55.02	0.84	0.40	0.027	0.024	284	18	0.14	14	<30	206	142	14	99.31
11039	98.47	55.17	0.80	0.38	0.034	0.025	276	20	0.17	10	37	95	149	17	99.56
11040	99.01	55.48	0.92	0.44	0.023	0.032	321	17	0.23	11	53	140	197	18	100.29
11044	98.57	55.23	0.91	0.43	0.039	0.061	349	21	0.61	10	102	177	114	30	100.26
11045	98.52	55.20	0.82	0.39	0.031	0.045	315	18	0.40	12	96	208	135	31	99.89
11048	81.41	45.61	15.12	7.23	0.198	0.143	186	50	1.99	10	812	235	116	105	99.01
11049	95.85	53.70	3.82	1.82	0.033	0.034	249	22	0.47	14	118	241	149	73	100.29
11051	98.88	55.40	0.91	0.43	0.025	0.031	335	20	0.23	13	112	253	213	30	100.17
11052	95.42	53.46	3.17	1.52	0.071	0.055	236	34	0.52	6	155	188	81	32	99.31
11054	98.34	55.10	0.80	0.38	0.046	0.028	282	38	0.33	11	80	208	150	15	99.62

A18

APPENDIX 1: CONTINUED

Sample	%	%	%	%	%	%	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%
	CaCO3	CaO	MgCO3	MgO	Fe2O3	Al2O3	SrCO3	MnO	SiO2	BaO	K2O	Na2O	P2O5	TiO2	Total
11058	92.30	51.72	3.87	1.85	0.107	0.342	502	53	2.38	15	1686	289	191	203	99.30
11059	98.18	55.01	1.19	0.57	0.041	0.081	431	46	0.57	10	348	189	144	40	100.18
11075	82.85	46.42	13.77	6.58	0.157	0.177	229	42	1.69	11	632	250	188	94	98.79
11081	97.15	54.43	1.49	0.71	0.041	0.102	377	23	0.86	10	306	146	185	58	99.75
11089	98.17	55.00	0.79	0.38	0.045	0.057	511	55	1.00	11	235	121	83	29	100.16
11090	97.44	54.59	1.07	0.51	0.058	0.124	517	51	0.99	12	499	248	139	68	99.84
11099	96.63	54.14	1.56	0.74	0.121	0.290	799	36	0.87	19	1182	258	70	154	99.72
11100	96.59	54.12	1.39	0.66	0.094	0.117	988	37	0.33	11	413	246	<70	60	98.70
11101	94.85	53.14	4.55	2.18	0.085	0.048	268	26	0.64	10	172	250	272	27	100.28
11102	97.59	54.68	1.84	0.88	0.037	0.030	315	23	0.17	11	<30	101	161	17	99.74
11113	84.17	47.16	15.37	7.35	0.087	0.053	218	37	0.33	12	65	215	98	18	100.08
11117	91.32	51.16	7.02	3.36	0.043	0.056	243	29	0.64	8	199	308	227	36	99.18
11134	95.68	53.61	2.21	1.06	0.076	0.118	348	28	0.79	15	318	153	153	60	98.99
11136	98.58	55.23	0.94	0.45	0.062	0.059	395	30	0.58	21	165	74	<70	57	100.30
11150	85.62	47.97	8.62	4.12	0.138	0.348	250	58	3.04	17	1991	291	291	236	98.08
11151	97.59	54.68	1.45	0.69	0.086	0.115	1206	32	0.41	12	397	317	<70	73	99.87
11154	96.53	54.08	1.44	0.69	0.159	0.319	772	30	0.85	14	1142	312	87	151	99.55
11156	93.99	52.66	1.39	0.66	0.194	0.463	629	76	2.28	13	2666	208	108	243	98.71
11167	93.48	52.37	1.82	0.87	0.129	0.103	334	29	3.43	9	470	265	107	56	99.08
11190	97.23	54.48	1.22	0.58	0.164	0.115	315	51	0.88	26	582	135	150	183	99.75
11199	98.05	54.94	0.72	0.35	0.049	0.022	221	22	0.29	5	39	159	<70	16	99.19
11200	98.00	54.91	0.78	0.37	0.017	0.029	281	18	0.15	6	<30	100	<70	12	99.02

APPENDIX 2: CHEMICAL ANALYSES FROM APPENDIX 1 WITH SAMPLES IN NUMERICAL ORDER

Of the 70 samples in Appendix 1 with analyses listed twice, the analyses for only four samples differ: 10072, 11159, 11164, and 11176. Here the analyses for samples 10072, 11159, and 11176 are averages of those in Appendix 1. The analyses for sample 11164 are those which report 93.37 per cent CaO, as the 92.37 per cent CaO reported for the other sample, whose total is 98.09 per cent, may be a typographical error. Sample 10689 in Appendix 1 appears to have been mislabelled; it has been changed to 10389 in Appendices 2 and 5. Samples 10332, 11072, 11116, and 11118 are missing.

Sample	CaCO ₃ %	CaO %	MgCO ₃ %	MgO %	Fe ₂ O ₃ %	Al ₂ O ₃ %	SrCO ₃ ppm	MnO ppm	SiO ₂ %	BaO ppm	K ₂ O ppm	Na ₂ O ppm	P ₂ O ₅ ppm	TiO ₂ ppm	Total %
10001	97.66	54.72	1.45	0.69	0.093	0.081	757	38	0.36	8	378	225	<70	37	99.80
10002	97.80	54.80	1.08	0.51	0.050	0.126	436	30	0.91	11	707	208	277	55	100.13
10003	81.51	45.67	14.45	6.91	0.171	0.422	286	45	2.59	16	1946	246	175	251	99.43
10004	96.01	53.79	1.70	0.81	0.036	0.102	404	25	1.16	9	400	130	102	55	99.12
10005	97.59	54.68	1.39	0.66	0.039	0.067	370	27	0.74	13	276	151	103	46	99.92
10006	98.25	55.05	1.02	0.49	0.037	0.058	331	22	0.70	12	199	206	168	27	100.16
10007	98.19	55.01	0.86	0.41	0.031	0.032	292	21	0.22	11	71	194	79	17	99.40
10008	98.65	55.27	0.76	0.36	0.019	0.014	264	17	0.14	7	<30	255	<70	10	99.64
10009	98.16	55.00	0.73	0.35	0.021	0.014	266	16	0.07	5	36	82	94	11	99.04
10010	98.83	55.37	0.84	0.40	0.023	0.023	283	17	0.28	11	43	153	80	14	100.05
10011	98.53	55.21	0.86	0.41	0.054	0.035	316	25	0.51	6	85	139	92	19	100.06
10012	97.76	54.78	1.01	0.48	0.039	0.078	338	25	0.61	9	211	185	233	44	99.61
10013	98.58	55.23	0.94	0.45	0.043	0.037	322	21	0.32	13	95	212	72	21	99.99
10014	98.47	55.17	1.11	0.53	0.057	0.033	340	26	0.20	11	62	134	199	17	99.94
10015	98.84	55.38	0.88	0.42	0.029	0.042	310	24	0.30	10	134	139	201	57	100.18
10016	97.15	54.43	1.80	0.86	0.033	0.043	302	23	0.26	10	58	126	284	25	99.37
10017	98.56	55.22	1.16	0.55	0.027	0.032	298	18	0.28	6	53	149	119	16	100.12
10018	97.02	54.36	1.09	0.52	0.044	0.029	252	19	0.23	12	37	45	88	31	98.46
10019	98.19	55.01	1.37	0.65	0.024	0.028	287	17	0.13	7	<30	216	117	17	99.81
10020	88.25	49.44	8.72	4.17	0.107	0.299	275	55	1.93	24	1001	313	83	301	99.51
10021	97.91	54.86	1.53	0.73	0.045	0.033	275	29	0.46	11	44	90	136	18	100.04
10022	90.55	50.73	9.15	4.38	0.023	0.021	182	39	0.16	5	78	263	942	10	100.06
10023	91.08	51.03	8.75	4.18	0.019	0.026	173	30	0.19	3	70	171	733	20	100.19
10024	89.34	50.05	10.64	5.09	0.017	0.016	166	26	0.14	5	43	201	445	10	100.24
10025	96.98	54.34	2.70	1.29	0.026	0.034	200	30	0.24	6	79	188	674	34	100.10
10026	98.61	55.25	1.18	0.56	0.023	0.051	208	39	0.21	7	83	262	1280	28	100.27
10027	99.23	55.60	0.70	0.33	0.018	0.024	210	36	0.18	15	59	196	376	24	100.24
10028	99.44	55.71	0.74	0.35	0.015	0.026	249	31	0.10	6	85	292	544	13	100.43
10029	99.24	55.60	0.71	0.34	0.031	0.039	210	38	0.14	8	58	241	529	19	100.27
10030	98.98	55.46	0.88	0.42	0.023	0.054	220	36	0.26	9	110	262	775	28	100.34
10031	98.60	55.24	0.85	0.41	0.044	0.052	216	38	0.23	14	108	225	642	69	99.91
10032	98.67	55.29	0.88	0.42	0.017	0.040	232	36	0.15	6	98	247	769	25	99.90
10033	99.00	55.47	0.78	0.37	0.025	0.049	212	44	0.15	13	126	129	608	30	100.12
10034	98.66	55.28	0.86	0.41	0.053	0.173	221	39	0.40	9	349	173	712	78	100.32
10035	97.53	54.65	1.72	0.82	0.047	0.138	233	40	0.46	9	427	207	765	68	100.07

APPENDIX 2: CONTINUED

Sample	CaCO ₃ %	CaO %	MgCO ₃ %	MgO %	Fe ₂ O ₃ %	Al ₂ O ₃ %	SrCO ₃ ppm	MnO ppm	SiO ₂ %	BaO ppm	K ₂ O ppm	Na ₂ O ppm	P ₂ O ₅ ppm	TiO ₂ ppm	Total %
10036	98.32	55.09	0.77	0.37	0.025	0.067	218	48	0.18	7	115	151	696	36	99.49
10037	98.14	54.99	0.91	0.44	0.071	0.091	287	49	0.71	7	383	161	203	52	100.05
10038	96.99	54.34	0.83	0.39	0.031	0.046	290	31	0.45	9	198	140	274	38	98.45
10039	98.72	55.31	0.78	0.37	0.038	0.049	279	29	0.48	11	178	172	527	48	100.19
10040	98.95	55.44	0.73	0.35	0.027	0.033	293	29	0.30	12	85	123	223	17	100.12
10041	98.86	55.39	0.89	0.33	0.037	0.034	308	31	0.22	11	64	108	1023	27	100.00
10042	97.60	54.68	0.72	0.34	0.036	0.029	258	33	0.33	9	81	118	346	33	98.80
10043	97.25	54.49	0.89	0.42	0.055	0.059	426	48	0.79	16	203	91	253	115	99.16
10044	95.49	53.50	0.96	0.46	0.119	0.245	413	96	2.67	15	1354	142	497	217	99.76
10045	96.83	54.25	1.18	0.56	0.079	0.154	433	57	1.39	19	871	171	363	249	99.84
10046	97.57	54.67	0.94	0.45	0.094	0.168	356	56	1.29	17	915	190	306	95	100.25
10047	97.78	54.79	0.78	0.37	0.078	0.114	301	59	1.23	7	618	92	319	65	100.13
10048	97.60	54.89	1.21	0.58	0.081	0.102	370	55	0.91	11	480	137	326	58	100.04
10049	96.95	54.32	1.49	0.71	0.094	0.155	381	55	1.33	14	869	178	386	88	100.22
10050	95.36	53.43	1.96	0.94	0.111	0.165	288	54	2.07	14	927	150	415	114	99.86
10051	98.92	55.43	0.71	0.34	0.037	0.038	245	47	0.30	11	97	224	208	20	100.09
10052	98.68	55.29	0.82	0.39	0.027	0.028	302	27	0.25	5	84	208	290	17	99.89
10053	98.04	54.93	0.76	0.37	0.028	0.027	276	25	0.20	9	52	227	289	11	99.14
10054	99.31	55.84	0.70	0.33	0.036	0.026	298	25	0.14	10	74	197	420	29	100.31
10055	99.02	55.48	0.88	0.42	0.052	0.030	345	24	0.21	9	95	263	288	14	100.30
10056	97.05	54.37	1.32	0.63	0.047	0.056	309	27	0.82	8	155	158	581	35	99.41
10057	97.84	54.82	1.35	0.64	0.038	0.026	349	21	0.28	9	92	174	195	17	99.62
10058	96.87	54.28	1.87	0.89	0.030	0.036	309	20	0.57	9	109	168	209	21	99.45
10059	94.24	52.80	4.18	2.00	0.060	0.032	302	23	0.63	5	154	198	221	29	99.24
10060	97.62	54.70	0.86	0.41	0.031	0.029	318	26	0.36	10	138	184	117	71	98.99
10061	97.36	54.55	0.93	0.45	0.040	0.046	314	34	0.92	9	116	171	521	30	99.41
10062	95.80	53.68	3.54	1.69	0.044	0.042	274	28	0.56	6	220	212	564	21	100.12
10063	98.56	55.22	0.99	0.47	0.032	0.044	337	31	0.84	12	173	168	149	22	100.56
10064	97.64	54.71	0.90	0.43	0.047	0.065	334	32	0.84	10	266	151	137	35	99.59
10065	97.07	54.39	0.93	0.44	0.060	0.068	338	29	0.91	14	305	167	83	50	99.13
10066	96.76	54.21	0.96	0.46	0.065	0.076	341	31	1.44	14	322	189	<70	47	99.39
10067	97.84	54.82	1.02	0.49	0.051	0.063	365	33	0.97	12	281	237	156	26	100.06
10068	92.41	51.77	5.93	2.84	0.101	0.158	296	40	1.19	12	694	222	85	72	99.93
10069	97.27	54.50	1.56	0.75	0.065	0.113	405	38	0.93	11	469	236	145	57	100.07
10070	97.92	54.86	1.15	0.55	0.066	0.122	388	58	0.72	14	368	229	218	61	100.11
10071	97.96	54.89	1.06	0.51	0.061	0.094	392	60	0.59	14	328	180	184	55	99.90
10072	98.09	54.96	1.09	0.52	0.054	0.089	425	42	0.71	11	388	227	127	52	100.16
10073	97.40	54.57	1.02	0.49	0.047	0.042	411	32	1.13	10	152	182	148	26	99.73
10074	96.33	53.97	1.36	0.65	0.075	0.094	447	31	1.33	13	411	203	<70	90	99.31
10075	98.28	55.06	1.19	0.57	0.044	0.046	290	23	0.46	5	81	143	178	25	100.09

APPENDIX 2: CONTINUED

Sample	CaCO ₃ %	CaO %	MgCO ₃ %	MgO %	Fe ₂ O ₃ %	Al ₂ O ₃ %	SrCO ₃ ppm	MnO ppm	SiO ₂ %	BaO ppm	K ₂ O ppm	Na ₂ O ppm	P ₂ O ₅ ppm	TiO ₂ ppm	Total %
10076	97.93	54.87	1.30	0.62	0.023	0.051	366	25	0.83	10	174	199	165	26	100.22
10077	96.87	54.28	0.91	0.44	0.241	0.105	299	38	1.59	10	358	153	118	63	99.83
10078	93.88	52.60	3.89	1.86	0.079	0.172	353	37	1.84	12	581	243	91	89	100.01
10079	96.67	54.16	1.90	0.91	0.116	0.179	693	50	1.03	14	866	276	125	94	100.10
10080	82.94	46.47	12.27	5.86	0.295	0.755	592	67	2.81	22	3411	447	245	376	99.59
10081	98.78	55.36	0.87	0.42	0.057	0.038	307	40	0.32	7	89	136	213	19	100.16
10082	97.84	54.82	1.17	0.56	0.049	0.060	780	31	0.75	8	231	226	<70	26	100.01
10083	97.84	54.82	1.35	0.64	0.064	0.097	879	35	0.86	9	482	183	191	45	100.40
10084	97.50	54.63	1.08	0.52	0.054	0.046	756	31	1.25	11	215	179	118	39	100.06
10085	97.58	54.68	1.07	0.51	0.068	0.091	822	39	0.79	11	448	153	209	41	99.78
10101	92.60	51.88	1.31	0.63	0.249	0.566	437	81	4.83	22	3255	290	138	304	100.01
10102	93.79	52.55	1.56	0.75	0.152	0.357	478	87	3.93	19	1784	340	126	234	100.09
10103	95.84	53.70	1.34	0.64	0.090	0.196	546	48	2.29	13	992	204	<70	123	99.96
10104	94.06	52.70	1.42	0.68	0.073	0.223	449	33	3.50	16	1177	239	125	133	99.50
10105	94.30	52.83	3.19	1.53	0.056	0.132	392	27	1.17	12	742	197	98	87	99.01
10106	87.49	49.02	11.50	5.50	0.026	0.037	197	26	0.31	6	120	196	698	19	99.49
10107	78.07	43.74	19.83	9.48	0.036	0.041	138	37	0.53	22	154	301	565	108	98.64
10108	80.69	45.21	18.43	8.81	0.052	0.066	164	41	0.85	8	314	314	778	69	100.26
10109	98.72	55.31	0.76	0.36	0.032	0.083	223	44	0.50	9	241	136	358	40	100.20
10110	98.49	55.18	0.76	0.36	0.027	0.093	221	39	0.30	9	220	265	530	37	99.79
10111	98.36	55.11	0.85	0.41	0.038	0.127	224	56	0.44	8	463	230	966	51	100.02
10112	97.98	54.90	1.11	0.53	0.086	0.216	227	71	0.71	12	414	232	625	94	100.26
10113	98.42	55.14	1.02	0.49	0.025	0.074	241	77	0.20	10	145	211	1052	35	99.92
10114	98.80	55.36	0.81	0.39	0.045	0.053	224	65	0.15	15	120	203	678	184	100.01
10115	98.70	55.30	0.81	0.39	0.049	0.088	199	70	0.28	6	253	157	530	52	100.06
10116	99.06	55.50	0.78	0.37	0.038	0.052	226	49	0.23	8	110	380	695	29	100.31
10117	98.72	55.31	0.71	0.34	0.029	0.024	199	43	0.08	5	60	157	480	14	99.66
10118	98.79	55.35	1.20	0.57	0.024	0.025	194	27	0.21	7	107	231	530	25	100.36
10119	90.15	50.51	8.66	4.14	0.025	0.018	167	30	0.13	4	49	207	488	13	99.07
10120	77.21	43.26	22.67	10.84	0.042	0.018	114	41	0.10	5	55	316	422	22	100.14
10121	99.22	55.59	0.64	0.31	0.021	0.017	199	29	0.08	5	<30	149	577	9	100.08
10122	92.71	51.95	6.81	3.25	0.032	0.030	180	36	0.35	10	84	300	388	21	100.04
10123	97.62	54.69	0.60	0.28	0.017	0.036	198	30	0.26	7	51	165	552	20	98.63
10124	89.19	49.97	9.76	4.66	0.036	0.034	190	31	0.28	6	117	248	685	26	99.43
10125	83.52	46.79	15.51	7.41	0.036	0.052	167	53	0.43	8	225	370	414	29	99.68
10126	98.87	55.40	0.70	0.34	0.056	0.035	247	30	0.31	15	103	206	389	41	100.08
10127	74.36	41.66	25.19	12.04	0.059	0.051	119	44	0.36	7	210	288	518	31	100.14
10128	88.95	49.84	9.58	4.58	0.061	0.066	197	41	0.54	4	356	228	404	39	99.33
10129	84.58	47.39	13.70	6.55	0.060	0.084	163	39	0.81	8	482	219	377	56	99.38
10130	93.56	52.42	6.05	2.89	0.055	0.086	222	33	0.59	9	520	230	428	44	100.49

APPENDIX 2: CONTINUED

Sample	CaCO ₃ %	CaO %	MgCO ₃ %	MgO %	Fe ₂ O ₃ %	Al ₂ O ₃ %	SrCO ₃ ppm	MnO ppm	SiO ₂ %	BaO ppm	K ₂ O ppm	Na ₂ O ppm	P ₂ O ₅ ppm	TiO ₂ ppm	Total %
10131	94.35	52.87	3.82	1.83	0.038	0.069	209	35	0.60	6	411	161	596	43	99.03
10132	96.10	53.84	3.25	1.55	0.047	0.043	312	25	0.52	5	212	197	252	25	100.06
10133	94.05	52.70	4.83	2.31	0.031	0.032	176	31	0.18	5	35	186	980	13	99.27
10134	88.30	49.47	10.25	4.90	0.029	0.018	158	32	0.15	5	<30	209	633	9	98.86
10135	96.26	53.93	3.60	1.72	0.021	0.037	165	30	0.25	8	46	161	611	25	100.27
10136	97.56	54.66	1.73	0.83	0.019	0.050	212	32	0.44	6	40	148	434	25	99.88
10137	97.17	54.44	2.26	1.08	0.018	0.040	195	29	0.30	6	46	159	536	24	99.89
10138	65.71	36.82	32.52	15.55	0.125	0.104	103	60	0.90	6	120	320	412	95	99.47
10139	69.81	39.11	29.51	14.10	0.057	0.044	105	47	0.46	5	95	315	312	47	99.97
10140	97.82	54.81	1.08	0.52	0.019	0.022	203	35	0.28	4	<30	128	356	10	99.30
10141	97.31	54.52	2.00	0.96	0.061	0.028	230	35	0.22	9	<30	169	736	15	99.74
10142	90.46	50.68	8.15	3.90	0.016	0.021	248	31	0.25	8	<30	162	766	11	99.02
10143	96.63	54.14	2.03	0.97	0.032	0.016	301	33	0.10	12	<30	110	318	7	98.89
10144	97.94	54.88	1.47	0.70	0.010	0.018	516	21	0.14	16	<30	122	754	11	99.73
10145	98.19	55.01	1.17	0.56	0.012	0.029	188	26	0.13	9	40	182	477	27	99.63
10146	98.69	55.29	0.80	0.38	0.011	0.018	354	23	0.07	419	37	99	560	10	99.74
10147	80.08	44.87	19.79	9.46	0.037	0.021	130	32	0.19	4	30	278	639	9	100.24
10148	98.98	55.46	0.96	0.46	0.013	0.029	190	25	0.18	8	46	191	754	12	100.29
10149	94.82	53.12	4.42	2.11	0.026	0.026	177	25	0.15	6	52	226	641	14	99.55
10150	99.40	55.70	0.63	0.30	0.013	0.027	215	30	0.10	9	33	119	690	13	100.29
10151	96.35	53.98	3.48	1.66	0.036	0.101	230	33	0.32	9	331	163	590	52	100.43
10152	99.24	55.60	0.77	0.37	0.020	0.043	224	33	0.22	6	56	186	588	18	100.40
10153	98.73	55.32	0.83	0.40	0.028	0.033	214	33	0.12	5	31	139	301	15	99.82
10154	90.31	50.60	7.94	3.79	0.047	0.123	176	36	0.81	11	508	196	559	82	99.38
10155	96.62	54.14	1.72	0.82	0.032	0.067	193	29	0.39	5	106	157	754	39	98.96
10156	91.19	51.09	8.67	4.14	0.028	0.023	144	29	0.17	5	<30	211	680	11	100.18
10157	91.62	51.34	7.33	3.50	0.017	0.020	161	29	0.21	8	36	305	568	10	99.32
10158	95.72	53.63	3.60	1.72	0.011	0.018	189	23	0.18	7	<30	160	635	8	99.63
10159	80.39	45.04	18.85	9.01	0.043	0.016	127	37	0.16	6	<30	280	637	8	99.57
10160	87.23	48.87	11.42	5.46	0.018	0.020	158	34	0.11	5	42	281	533	8	98.89
10161	98.92	55.42	0.65	0.31	0.024	0.053	204	32	0.23	51	90	169	1033	22	100.03
10162	98.57	55.23	0.77	0.37	0.011	0.024	207	26	0.12	7	<30	220	592	14	99.61
10163	92.11	51.61	5.51	2.63	0.013	0.025	184	24	0.36	11	<30	204	594	11	98.12
10164	59.48	33.32	38.34	18.33	0.034	0.055	87	44	0.41	6	57	334	547	31	98.43
10165	95.11	53.29	3.28	1.57	0.020	0.033	203	25	0.30	6	90	179	372	29	98.84
10166	95.53	53.52	3.07	1.47	0.028	0.026	211	24	0.23	7	81	175	320	14	98.97
10167	98.76	55.34	0.87	0.42	0.025	0.061	255	22	0.47	9	193	258	355	27	100.30
10168	98.07	54.95	1.36	0.65	0.084	0.035	260	29	0.21	10	139	292	615	18	99.90
10169	97.67	54.72	1.44	0.69	0.030	0.038	237	22	0.33	6	178	179	384	27	99.61
10201	92.91	52.06	4.85	2.32	0.056	0.071	249	36	0.87	18	230	242	330	176	98.89

APPENDIX 2: CONTINUED

Sample	CaCO ₃ %	CaO %	MgCO ₃ %	MgO %	Fe ₂ O ₃ %	Al ₂ O ₃ %	SrCO ₃ ppm	MnO ppm	SiO ₂ %	BaO ppm	K ₂ O ppm	Na ₂ O ppm	P ₂ O ₅ ppm	TiO ₂ ppm	Total %
10202	96.07	53.83	1.28	0.61	0.062	0.108	239	40	0.70	11	265	196	473	85	98.36
10203	81.79	45.83	9.21	4.40	0.155	0.153	192	39	7.77	11	495	285	771	82	99.27
10204	98.36	55.11	0.75	0.36	0.038	0.058	239	20	0.37	11	86	135	932	41	99.72
10205	95.84	53.70	2.54	1.21	0.047	0.042	233	24	0.27	12	74	190	281	28	98.82
10206	98.88	55.40	0.71	0.34	0.058	0.053	232	28	0.26	8	98	199	383	29	100.06
10207	97.85	54.83	1.91	0.91	0.054	0.032	216	28	0.22	9	46	170	381	15	100.15
10208	98.93	55.43	0.77	0.37	0.030	0.024	245	20	0.16	13	40	185	373	21	100.00
10209	97.20	54.46	0.99	0.47	0.026	0.039	615	22	0.43	11	154	177	253	18	98.80
10210	99.01	55.47	0.97	0.46	0.020	0.035	269	16	0.23	13	75	197	477	17	100.37
10211	98.85	55.39	0.81	0.39	0.040	0.034	262	25	0.18	7	76	148	353	19	100.00
10212	96.35	53.99	2.34	1.12	0.082	0.109	242	31	0.82	9	378	165	261	62	99.83
10213	97.63	54.70	1.12	0.54	0.108	0.159	856	131	1.02	24	710	109	<70	81	100.23
10214	96.92	54.30	1.74	0.83	0.089	0.181	342	38	0.99	13	904	249	217	75	100.10
10215	95.97	53.77	1.98	0.95	0.151	0.172	324	46	1.07	18	1034	179	249	114	99.54
10216	96.75	54.21	1.69	0.81	0.113	0.156	316	39	0.95	12	987	171	486	80	99.86
10217	79.15	44.34	16.92	8.09	0.273	0.399	206	66	2.93	15	2338	315	354	229	100.02
10218	93.43	52.35	4.10	1.96	0.166	0.195	274	46	1.66	12	870	157	542	144	99.76
10219	95.87	53.71	1.73	0.83	0.119	0.163	322	41	0.85	11	770	164	474	98	98.91
10220	97.67	54.72	1.40	0.67	0.148	0.155	320	49	0.87	12	700	150	391	76	100.41
10221	95.12	53.29	2.88	1.38	0.124	0.204	338	46	1.39	14	1224	186	448	114	99.96
10222	98.21	55.03	1.27	0.61	0.056	0.083	287	33	0.64	12	331	184	269	44	100.38
10223	98.20	55.02	1.32	0.63	0.024	0.038	264	27	0.35	9	138	175	272	19	100.02
10224	95.42	53.47	2.39	1.14	0.038	0.108	294	27	1.12	13	545	257	441	67	99.24
10225	85.53	47.92	6.50	3.11	0.262	0.489	297	52	5.31	29	2805	241	398	389	98.51
10226	96.12	53.86	0.90	0.43	0.083	0.141	336	32	1.79	9	351	165	605	99	99.20
10227	92.09	51.60	2.86	1.37	0.124	0.203	370	28	4.23	13	991	282	426	114	99.73
10228	70.57	39.54	6.58	3.15	0.571	0.473	357	70	17.52	25	2232	253	507	315	96.10
10229	72.70	40.73	12.60	6.02	0.341	0.695	280	65	11.41	23	3444	416	1012	470	98.31
10230	77.32	43.32	9.53	4.55	0.303	0.910	243	79	8.10	34	3911	288	595	757	96.76
10231	82.10	46.00	7.60	3.64	0.182	0.386	372	40	6.89	15	1929	264	652	228	97.51
10232	54.26	30.40	12.39	5.92	0.748	0.611	263	80	28.84	22	2833	265	527	376	97.29
10233	86.37	48.39	9.10	4.35	0.338	0.394	432	46	3.76	19	1842	286	376	212	100.29
10234	55.43	31.06	25.44	12.16	0.673	1.062	211	99	11.70	36	4683	392	475	699	94.97
10235	72.93	40.86	13.19	6.31	0.334	0.429	196	89	12.75	29	1854	224	336	322	99.93
10236	87.48	49.02	7.16	3.42	0.089	0.210	346	44	3.58	13	1087	258	516	121	98.76
10237	77.00	43.14	14.26	6.82	0.169	0.539	323	60	6.49	17	2349	303	556	368	98.86
10238	77.34	43.33	12.80	6.12	0.202	0.615	330	59	6.67	22	2895	301	570	452	98.09
10239	94.25	52.81	3.20	1.53	0.051	0.126	312	34	1.44	13	626	211	204	78	99.22
10240	93.73	52.52	3.10	1.48	0.432	0.214	299	55	1.82	14	942	191	268	118	99.49
10241	76.31	42.75	14.47	6.92	0.222	0.618	359	52	5.75	20	2919	307	608	380	97.83

APPENDIX 2: CONTINUED

Sample	CaCO ₃ %	CaO %	MgCO ₃ %	MgO %	Fe ₂ O ₃ %	Al ₂ O ₃ %	SrCO ₃ ppm	MnO ppm	SiO ₂ %	BaO ppm	K ₂ O ppm	Na ₂ O ppm	P ₂ O ₅ ppm	TiO ₂ ppm	Total %
10242	69.72	39.06	17.64	8.43	0.263	0.688	307	56	7.79	27	3216	378	708	448	96.61
10243	98.08	54.95	2.07	0.99	0.035	0.037	241	22	0.12	9	75	186	233	29	100.42
10244	96.68	54.17	2.73	1.30	0.056	0.041	192	35	0.15	9	66	113	267	24	99.73
10245	95.60	53.56	2.02	0.97	0.045	0.063	241	30	1.09	22	204	172	259	38	98.92
10246	98.97	55.45	0.83	0.39	0.033	0.037	277	24	0.12	8	53	168	197	18	100.06
10247	97.92	54.86	0.80	0.38	0.028	0.027	300	30	0.24	15	62	77	222	70	99.10
10248	99.03	55.48	0.78	0.37	0.022	0.041	277	27	0.24	11	75	216	111	19	100.19
10249	99.26	55.61	0.80	0.38	0.036	0.038	300	35	0.19	9	122	186	146	20	100.39
10250	97.38	54.56	1.62	0.78	0.055	0.073	309	36	0.57	12	261	181	133	38	99.79
10251	98.32	55.09	1.00	0.48	0.031	0.045	303	28	0.44	10	204	140	81	25	99.92
10252	98.55	55.21	0.69	0.33	0.025	0.020	255	29	0.42	16	47	164	118	134	99.77
10253	98.55	55.22	0.77	0.37	0.038	0.202	267	30	0.66	10	81	424	96	25	100.31
10254	98.83	55.37	0.80	0.38	0.065	0.052	217	53	0.22	9	151	207	255	22	100.05
10255	98.78	55.34	0.85	0.41	0.035	0.038	296	66	0.33	10	219	228	290	20	100.14
10256	95.27	53.38	1.92	0.92	0.086	0.116	591	34	1.85	11	652	170	317	153	99.43
10257	92.18	51.65	3.06	1.46	0.110	0.112	543	35	4.63	20	675	165	232	180	100.28
10258	96.03	53.81	1.16	0.55	0.113	0.175	1421	70	2.06	8	914	125	94	71	99.81
10259	93.32	52.29	2.36	1.13	0.200	0.569	1128	73	3.14	27	2863	621	255	336	100.11
10260	95.83	53.69	0.94	0.45	0.123	0.103	904	89	2.04	9	593	43	97	48	99.21
10261	97.48	54.62	1.15	0.55	0.065	0.061	814	29	0.78	11	231	165	<70	28	99.67
10262	98.43	55.16	1.01	0.48	0.050	0.043	743	34	0.56	13	164	187	<70	20	100.21
10263	97.25	54.49	1.17	0.56	0.096	0.095	841	48	0.42	22	362	152	<70	109	99.19
10264	97.27	54.50	1.08	0.51	0.056	0.083	857	35	0.75	7	316	126	99	34	99.38
10265	97.65	54.71	0.94	0.45	0.092	0.067	319	39	0.64	15	215	241	124	49	99.48
10266	96.78	54.22	0.93	0.44	0.091	0.097	813	68	0.73	13	269	92	90	42	98.76
10267	97.32	54.53	1.18	0.57	0.054	0.086	688	35	0.71	10	300	157	<70	44	99.48
10268	97.34	54.54	1.17	0.56	0.116	0.132	931	57	1.24	8	872	221	306	51	100.24
10269	88.52	49.60	5.21	2.49	0.142	0.387	525	37	3.84	16	1941	224	138	228	98.41
10270	91.29	51.15	5.17	2.47	0.102	0.309	446	31	2.96	14	1512	296	283	196	100.11
10271	89.37	50.07	5.91	2.83	0.114	0.274	371	32	3.41	13	1204	220	230	148	99.30
10272	98.46	55.17	0.98	0.47	0.060	0.079	350	26	0.69	10	153	179	118	38	100.36
10273	98.13	54.98	0.86	0.41	0.038	0.097	344	25	0.83	8	260	185	221	52	100.06
10274	97.74	54.76	0.93	0.44	0.047	0.115	348	25	0.65	12	311	197	201	63	99.59
10275	96.40	54.01	2.09	1.00	0.065	0.151	359	30	1.11	14	561	195	225	75	99.96
10276	80.18	44.92	18.67	8.92	0.030	0.040	152	33	0.78	8	133	276	658	25	99.83
10277	71.78	40.22	27.10	12.96	0.060	0.086	113	44	0.60	8	466	331	782	115	99.81
10278	99.12	55.53	0.78	0.37	0.023	0.028	202	27	0.18	5	215	235	585	14	100.25
10279	98.65	55.27	1.04	0.50	0.030	0.044	275	28	0.23	12	108	243	881	26	100.16
10280	98.58	55.24	0.82	0.39	0.048	0.110	214	38	0.36	12	208	334	499	46	100.06
10281	95.52	53.52	3.67	1.75	0.039	0.105	194	51	0.24	9	129	159	555	56	99.68

APPENDIX 2: CONTINUED

Sample	CaCO ₃ %	CaO %	MgCO ₃ %	MgO %	Fe ₂ O ₃ %	Al ₂ O ₃ %	SrCO ₃ ppm	MnO ppm	SiO ₂ %	BaO ppm	K ₂ O ppm	Na ₂ O ppm	P ₂ O ₅ ppm	TiO ₂ ppm	Total %
10282	59.83	33.62	20.78	9.93	0.445	0.293	165	55	15.13	12	906	241	1022	179	96.73
10283	53.05	29.72	23.12	11.06	0.450	0.372	140	59	19.97	9	1377	236	1142	264	97.29
10284	68.39	38.32	23.41	11.19	0.192	0.215	148	49	5.79	10	605	281	1100	126	98.23
10285	83.53	46.80	13.87	6.63	0.070	0.082	170	42	0.85	6	196	246	1048	48	98.57
10286	97.89	54.85	1.58	0.75	0.037	0.064	246	49	0.30	6	215	218	753	25	100.02
10287	98.72	55.31	1.11	0.53	0.030	0.044	241	42	0.14	6	119	241	821	21	100.19
10288	95.90	53.73	2.99	1.43	0.061	0.130	147	42	0.27	9	208	139	1023	58	99.52
10289	95.89	53.73	1.33	0.63	0.110	0.280	929	33	1.75	8	1618	246	177	146	99.67
10290	97.17	54.44	1.14	0.54	0.057	0.093	674	53	0.57	11	381	188	128	35	99.17
10291	94.97	53.21	1.17	0.56	0.118	0.134	686	34	2.75	10	561	159	75	67	99.30
10292	97.07	54.39	1.22	0.58	0.133	0.207	910	52	1.25	12	1034	184	327	95	100.14
10293	81.41	45.61	0.84	0.40	0.420	0.132	921	74	16.20	10	246	120	110	41	99.16
10294	84.80	47.51	0.91	0.43	0.451	0.176	873	90	11.69	11	1070	158	300	92	98.29
10295	92.64	51.91	1.14	0.55	0.306	0.607	973	102	4.60	15	3867	218	413	283	99.89
10296	86.61	48.53	1.01	0.48	0.086	0.102	994	38	11.73	11	243	164	<70	45	99.69
10297	86.86	48.67	1.04	0.50	0.058	0.087	860	32	11.94	9	240	245	166	33	100.15
10298	97.16	54.44	1.12	0.54	0.048	0.055	1137	32	1.16	11	99	317	<70	29	99.72
10299	98.39	55.13	1.08	0.52	0.058	0.088	1188	38	0.53	7	354	236	122	37	100.34
10300	96.48	54.06	1.16	0.55	0.127	0.162	943	59	1.43	18	702	140	<70	108	99.55
10301	97.36	54.55	0.95	0.46	0.050	0.083	359	27	0.63	7	210	97	<70	36	99.16
10302	97.75	54.77	1.05	0.50	0.044	0.133	362	25	0.86	11	336	211	177	59	99.96
10303	97.58	54.67	1.31	0.63	0.050	0.110	362	27	0.82	12	290	147	291	53	99.99
10304	93.00	52.11	4.20	2.01	0.064	0.135	342	28	1.23	9	313	156	162	71	98.74
10305	89.76	50.29	6.69	3.20	0.096	0.192	312	32	2.11	11	646	212	218	104	99.00
10306	84.21	47.18	13.04	6.23	0.122	0.270	223	44	2.32	13	1284	227	312	182	100.19
10307	97.17	54.44	1.41	0.67	0.040	0.075	298	31	0.63	8	299	127	113	34	99.41
10308	97.00	54.35	2.21	1.06	0.059	0.084	296	28	0.74	10	291	106	175	48	100.19
10309	97.66	54.72	0.97	0.46	0.035	0.091	361	24	0.73	9	365	111	135	46	99.59
10310	98.31	55.08	0.83	0.39	0.025	0.054	214	32	0.38	5	82	192	1069	23	99.76
10311	98.54	55.21	1.23	0.59	0.017	0.028	200	30	0.16	7	55	165	491	15	100.06
10312	97.38	54.56	1.69	0.81	0.020	0.046	296	29	0.28	9	55	188	862	22	99.56
10313	79.95	44.79	17.98	8.60	0.062	0.104	151	51	0.88	5	147	256	474	68	99.09
10314	87.88	49.24	11.74	5.61	0.024	0.031	243	38	0.41	64	44	230	424	18	100.18
10315	74.36	41.66	24.83	11.87	0.046	0.029	132	48	0.23	9	71	358	328	23	99.59
10316	98.03	54.92	1.58	0.76	0.015	0.021	253	28	0.24	5	59	215	569	13	99.99
10317	97.78	54.78	2.04	0.97	0.017	0.020	242	26	0.19	3	<30	169	937	9	100.18
10318	92.94	52.07	6.55	3.13	0.027	0.040	216	33	0.26	8	70	232	733	23	99.94
10319	97.82	54.81	0.86	0.41	0.018	0.034	207	24	0.23	6	48	175	572	17	99.07
10320	95.56	53.54	4.13	1.98	0.018	0.040	199	26	0.12	6	58	163	476	18	99.96
10321	95.24	53.36	4.65	2.22	0.020	0.047	202	30	0.27	9	93	254	478	23	100.33

APPENDIX 2: CONTINUED

Sample	CaCO ₃ %	CaO %	MgCO ₃ %	MgO %	Fe ₂ O ₃ %	Al ₂ O ₃ %	SrCO ₃ ppm	MnO ppm	SiO ₂ %	BaO ppm	K ₂ O ppm	Na ₂ O ppm	P ₂ O ₅ ppm	TiO ₂ ppm	Total %
10322	84.32	47.24	14.73	7.04	0.038	0.056	148	37	0.28	5	161	243	729	31	99.56
10323	86.10	48.24	12.60	6.02	0.042	0.057	167	41	0.22	6	95	235	704	32	99.15
10324	95.88	53.72	2.57	1.23	0.023	0.055	205	32	0.49	7	102	165	499	26	99.12
10325	93.30	52.28	5.35	2.56	0.048	0.104	219	32	0.42	7	404	186	524	45	99.37
10326	95.56	53.54	1.17	0.56	0.088	0.232	796	42	1.34	12	808	190	80	117	98.59
10327	97.27	54.50	1.15	0.55	0.079	0.149	869	42	1.27	9	552	243	199	67	100.11
10328	96.53	54.09	1.74	0.83	0.043	0.058	869	37	0.41	16	147	86	107	86	98.92
10329	97.96	54.88	1.01	0.48	0.049	0.089	1100	39	0.88	10	295	176	116	42	100.16
10330	96.87	54.27	1.16	0.55	0.117	0.295	1455	59	1.48	15	1251	121	144	151	100.23
10331	96.57	54.11	1.21	0.58	0.064	0.128	1109	41	0.80	10	438	200	122	56	98.97
10333	97.08	54.39	1.61	0.77	0.093	0.174	1363	59	1.03	13	821	225	118	83	100.26
10334	97.01	54.35	1.31	0.63	0.098	0.181	1292	55	1.26	12	973	199	128	90	100.13
10335	97.48	54.62	1.22	0.59	0.048	0.108	1591	32	0.86	12	529	162	255	52	99.99
10336	98.74	55.32	0.99	0.47	0.036	0.047	580	24	0.38	10	133	203	272	21	100.32
10337	95.27	53.38	2.30	1.10	0.102	0.254	828	46	1.90	13	1635	227	171	124	100.14
10338	96.88	54.28	1.50	0.72	0.083	0.170	751	39	1.02	11	951	265	76	81	99.87
10339	95.71	53.63	1.58	0.75	0.106	0.185	913	36	1.81	11	1055	222	168	104	99.64
10340	95.77	53.66	1.85	0.89	0.118	0.250	926	46	1.76	12	1456	244	125	141	100.05
10341	94.46	52.92	1.05	0.50	0.123	0.131	773	45	3.24	14	635	190	102	120	99.19
10342	97.20	54.46	0.87	0.42	0.085	0.069	870	31	0.42	9	291	88	<70	48	98.78
10343	97.14	54.43	1.13	0.54	0.060	0.110	1146	36	0.64	11	473	227	96	54	99.29
10344	97.41	54.58	1.25	0.60	0.074	0.104	1149	69	1.13	10	520	193	160	48	100.19
10345	95.26	53.37	1.76	0.84	0.104	0.246	979	40	1.40	14	1243	243	100	128	99.05
10351	89.27	50.02	6.71	3.21	0.265	0.378	697	54	1.90	15	1655	351	110	195	98.83
10352	93.14	52.19	4.14	1.98	0.226	0.366	567	54	1.93	14	1880	421	<70	208	100.12
10353	94.52	52.96	1.37	0.65	0.201	0.351	536	37	1.37	15	1534	257	<70	180	98.07
10354	96.62	54.14	1.43	0.68	0.104	0.244	597	32	0.96	13	1129	239	80	126	99.59
10355	96.00	53.79	1.52	0.73	0.133	0.337	805	31	1.08	13	1567	226	<70	154	99.36
10356	96.54	54.09	1.23	0.59	0.076	0.231	952	34	0.79	14	919	220	76	104	99.11
10357	97.70	54.74	1.68	0.80	0.082	0.124	800	34	0.77	12	497	148	<70	54	100.51
10358	97.69	54.73	1.35	0.65	0.105	0.131	864	45	0.83	10	554	145	139	61	100.29
10359	97.32	54.53	1.09	0.52	0.159	0.123	974	66	0.92	12	561	262	94	56	99.81
10360	78.49	43.98	4.03	1.93	0.353	0.598	530	49	14.49	21	2682	274	157	282	98.37
10361	88.33	49.49	5.26	2.51	0.173	0.622	510	40	5.44	21	3195	245	200	459	100.29
10362	91.09	51.04	4.01	1.92	0.161	0.387	531	34	4.01	16	2152	250	<70	216	99.98
10363	82.64	46.30	9.11	4.35	0.303	0.858	473	51	6.51	29	4487	346	153	520	100.02
10364	78.29	43.87	6.04	2.89	0.504	0.798	478	55	13.42	26	3764	318	171	475	99.58
10376	97.67	54.73	1.26	0.60	0.064	0.202	255	38	0.77	9	823	251	911	78	100.20
10377	98.34	55.10	1.08	0.52	0.029	0.091	234	38	0.44	10	330	221	842	44	100.15
10378	98.74	55.32	1.00	0.48	0.035	0.099	229	41	0.42	9	363	242	351	45	100.42

APPENDIX 2: CONTINUED

Sample	CaCO ₃ %	CaO %	MgCO ₃ %	MgO %	Fe ₂ O ₃ %	Al ₂ O ₃ %	SrCO ₃ ppm	MnO ppm	SiO ₂ %	BaO ppm	K ₂ O ppm	Na ₂ O ppm	P ₂ O ₅ ppm	TiO ₂ ppm	Total %
10379	97.83	54.81	1.16	0.55	0.041	0.218	241	34	0.37	11	270	261	564	51	99.76
10380	96.26	53.93	1.03	0.49	0.050	0.065	230	35	1.51	9	141	175	793	37	99.05
10381	98.54	55.21	0.80	0.38	0.031	0.064	216	40	0.25	6	131	163	447	29	99.79
10382	97.17	54.44	1.95	0.93	0.076	0.189	237	48	0.65	11	634	250	744	73	100.23
10383	97.31	54.52	1.17	0.56	0.083	0.170	277	32	0.64	9	637	242	663	79	99.57
10384	98.64	55.27	0.83	0.40	0.051	0.045	204	35	0.15	9	71	167	667	24	99.83
10385	95.08	53.27	4.33	2.07	0.027	0.022	202	29	0.14	11	34	169	372	19	99.68
10386	99.37	55.67	0.71	0.34	0.009	0.015	217	24	0.10	8	50	211	299	20	100.28
10387	97.18	54.45	2.23	1.06	0.014	0.025	212	29	0.15	10	57	169	400	14	99.68
10388	88.20	49.42	11.43	5.47	0.036	0.032	191	37	0.28	11	111	242	1113	20	100.15
10389	97.25	54.49	1.96	0.94	0.066	0.064	268	26	0.48	9	211	145	262	33	99.92
10390	90.03	50.44	9.04	4.32	0.090	0.170	254	36	0.53	15	301	176	198	40	99.96
10391	91.99	51.54	7.56	3.61	0.090	0.067	289	35	0.40	20	268	147	118	42	100.20
10392	85.47	47.89	11.89	5.68	0.099	0.225	326	34	1.72	15	1034	193	257	156	99.61
10393	87.54	49.05	10.14	4.85	0.089	0.212	283	37	1.47	12	1032	209	144	117	99.63
10394	91.09	51.04	7.09	3.39	0.070	0.089	235	33	1.70	10	397	184	195	52	100.14
10395	98.13	54.98	1.22	0.58	0.042	0.081	325	33	0.70	10	259	147	143	39	100.26
10396	95.59	53.56	2.80	1.34	0.054	0.104	306	29	0.94	12	265	180	137	47	99.58
10397	98.29	55.07	1.16	0.56	0.045	0.054	295	27	0.57	9	113	112	<70	28	100.18
10398	93.98	52.65	5.20	2.49	0.100	0.104	237	32	0.61	9	239	152	238	58	100.09
10399	63.54	36.60	33.84	16.17	0.166	0.092	97	52	0.46	5	174	295	284	50	98.19
10400	87.72	49.15	11.55	5.52	0.097	0.037	202	31	0.38	8	88	246	161	19	99.87
10401	92.46	51.80	6.96	3.33	0.063	0.052	236	26	0.35	9	93	236	88	24	99.96
10402	90.23	50.55	8.89	4.25	0.082	0.053	209	30	0.40	6	128	222	258	30	99.74
10403	93.08	52.15	6.13	2.93	0.073	0.061	233	31	0.37	10	122	202	143	33	99.78
10404	87.96	49.28	10.85	5.19	0.122	0.053	209	36	0.49	8	118	214	293	31	99.57
10405	97.20	54.46	1.72	0.82	0.038	0.043	270	24	0.30	5	76	145	314	23	99.39
10406	98.67	55.28	0.91	0.44	0.026	0.032	282	22	0.37	9	150	114	201	17	100.09
10407	98.12	54.97	1.09	0.52	0.015	0.039	288	20	0.40	8	132	127	327	18	99.75
10408	98.58	55.24	1.50	0.72	0.026	0.042	264	21	0.31	13	167	186	426	18	100.57
10409	98.26	55.05	0.88	0.42	0.027	0.028	272	23	0.23	7	133	199	438	15	99.53
10410	99.18	55.57	0.70	0.34	0.033	0.030	273	23	0.20	9	154	194	328	45	100.25
10411	98.03	54.93	1.21	0.58	0.121	0.098	313	37	0.60	15	547	149	660	61	100.24
10412	91.79	51.43	5.05	2.41	0.104	0.173	302	43	1.85	11	1207	238	399	109	99.19
10413	99.26	55.61	0.79	0.38	0.049	0.029	271	38	0.18	7	33	83	142	13	100.37
10414	98.85	55.38	0.79	0.38	0.035	0.037	287	41	0.18	9	58	87	121	18	99.95
10415	98.97	55.45	0.94	0.45	0.033	0.033	290	24	0.26	12	98	239	92	20	100.32
10416	98.27	55.06	1.37	0.65	0.061	0.059	298	33	0.49	6	225	160	177	33	100.33
10417	97.94	54.88	0.96	0.46	0.037	0.028	298	28	0.19	6	99	155	129	15	99.24
10418	98.69	55.29	0.88	0.42	0.028	0.041	318	29	0.27	10	151	144	266	21	100.00

APPENDIX 2: CONTINUED

Sample	CaCO ₃ %	CaO %	MgCO ₃ %	MgO %	Fe ₂ O ₃ %	Al ₂ O ₃ %	SrCO ₃ ppm	MnO ppm	SiO ₂ %	BaO ppm	K ₂ O ppm	Na ₂ O ppm	P ₂ O ₅ ppm	TiO ₂ ppm	Total %
10419	94.41	52.90	5.23	2.50	0.046	0.071	298	36	0.49	10	351	187	207	36	100.37
10420	97.56	54.86	2.19	1.05	0.034	0.046	302	23	0.56	6	178	156	280	27	100.49
10421	98.20	55.02	1.22	0.59	0.029	0.036	306	22	0.42	9	153	151	97	22	99.98
10422	68.33	38.28	13.29	6.35	0.483	1.009	243	80	12.57	38	7435	327	491	823	96.63
10423	97.61	54.69	1.47	0.70	0.035	0.069	322	23	0.97	6	250	200	159	33	100.25
10424	97.39	54.57	1.02	0.49	0.044	0.054	339	25	1.49	8	202	511	<70	33	100.11
10425	96.89	54.29	1.33	0.64	0.027	0.061	339	22	1.05	9	281	164	106	33	99.45
10426	97.75	54.77	0.86	0.41	0.050	0.022	282	18	0.32	8	80	205	130	17	99.07
10427	98.84	55.38	0.93	0.44	0.019	0.028	301	18	0.24	9	64	146	71	14	100.12
10428	98.02	54.92	0.87	0.42	0.029	0.029	284	24	0.22	7	61	155	120	16	99.23
10429	96.11	53.85	1.13	0.54	0.092	0.155	279	122	1.81	13	636	260	176	102	99.46
10430	98.03	54.92	0.92	0.44	0.032	0.068	355	36	1.26	11	236	225	142	31	100.41
10431	97.77	54.78	0.92	0.44	0.032	0.058	366	34	0.82	12	183	237	<70	34	99.69
10432	98.05	54.94	0.93	0.45	0.036	0.074	364	22	0.69	16	249	219	179	46	99.89
10433	98.10	54.96	0.98	0.47	0.031	0.077	383	27	0.75	14	255	246	198	32	100.05
10434	98.10	54.96	0.98	0.47	0.030	0.067	388	25	0.66	16	215	204	148	27	99.93
10435	97.84	54.82	0.86	0.41	0.030	0.047	393	34	0.46	15	121	143	129	22	99.33
10436	98.39	55.13	0.80	0.38	0.057	0.076	352	45	0.75	15	252	111	170	40	100.18
10437	98.17	55.01	0.80	0.38	0.115	0.082	346	37	0.66	12	189	130	201	36	99.93
10438	97.32	54.53	0.91	0.44	0.074	0.062	317	38	0.58	22	180	77	176	55	99.04
10439	98.45	55.16	0.78	0.37	0.071	0.077	230	37	0.73	10	218	150	259	43	100.21
10440	96.14	53.86	0.95	0.46	0.110	0.157	296	58	1.45	14	532	122	134	104	98.94
10441	96.62	54.13	1.17	0.56	0.097	0.101	322	53	1.24	11	423	216	150	48	99.36
10442	97.67	54.72	0.94	0.45	0.040	0.059	324	31	0.69	11	174	222	133	31	99.50
10443	90.63	50.78	3.89	1.86	0.163	0.362	285	54	3.13	21	2094	216	285	253	98.51
10444	96.63	54.14	0.97	0.46	0.081	0.087	315	43	0.60	19	306	99	75	74	98.45
10445	97.26	54.49	0.95	0.45	0.108	0.209	280	47	1.37	15	616	150	201	134	100.04
10446	98.00	54.91	1.01	0.48	0.082	0.079	347	43	0.82	18	237	97	106	41	100.08
10447	97.04	54.37	0.93	0.45	0.071	0.074	333	37	1.22	9	172	263	105	43	99.44
10448	97.38	54.56	0.97	0.46	0.054	0.089	437	61	1.04	11	244	163	143	49	99.65
10449	96.43	54.03	1.09	0.52	0.114	0.233	436	94	2.01	18	1065	163	178	139	100.08
10450	95.86	53.71	1.18	0.57	0.057	0.208	425	68	1.89	13	909	202	190	126	99.40
10451	96.32	53.97	1.21	0.58	0.062	0.178	491	39	1.53	12	824	276	159	112	99.50
10452	96.39	54.00	1.14	0.54	0.121	0.243	485	83	2.02	14	1079	169	182	146	100.13
10453	93.89	52.80	1.12	0.53	0.230	0.472	1043	94	3.78	18	2832	137	103	242	99.93
10454	96.38	54.00	1.12	0.53	0.105	0.153	1041	87	1.82	12	1191	152	150	176	99.86
10455	94.55	52.97	1.08	0.52	0.119	0.162	744	102	2.88	22	852	214	74	322	99.02
10456	87.27	48.90	1.03	0.49	0.245	0.326	774	64	10.73	17	2390	300	107	381	100.00
10457	75.97	42.56	0.83	0.40	0.161	0.347	702	41	17.92	27	2447	272	227	676	95.66
10458	80.02	44.83	0.97	0.47	0.327	0.423	773	111	16.20	24	2916	231	347	507	98.43

APPENDIX 2: CONTINUED

Sample	CaCO ₃ %	CaO %	MgCO ₃ %	MgO %	Fe ₂ O ₃ %	Al ₂ O ₃ %	SrCO ₃ ppm	MnO ppm	SiO ₂ %	BaO ppm	K ₂ O ppm	Na ₂ O ppm	P ₂ O ₅ ppm	TiO ₂ ppm	Total %
10459	91.91	51.50	0.98	0.47	0.381	0.682	615	208	5.54	15	3512	123	190	256	99.98
10460	90.39	50.64	1.46	0.70	0.346	0.758	749	79	6.53	23	5164	405	361	443	100.21
10461	86.26	48.33	1.55	0.74	0.427	0.857	796	69	8.63	23	5742	372	318	553	98.52
10462	92.34	51.74	1.33	0.64	0.259	0.442	834	77	5.03	14	2859	289	340	294	99.88
10463	87.52	49.03	1.51	0.72	0.433	0.967	801	105	7.00	25	5887	343	517	594	98.25
10464	94.67	53.04	1.15	0.55	0.172	0.173	777	67	3.21	12	1002	189	87	96	99.61
10465	96.83	54.25	0.87	0.41	0.110	0.138	309	124	1.92	9	726	181	641	82	100.06
10466	93.79	52.65	1.30	0.62	0.239	0.339	598	56	3.34	13	2071	297	324	176	99.37
10467	90.61	50.77	1.50	0.72	0.297	0.674	762	55	5.49	18	4422	385	534	396	99.23
10468	97.71	54.75	0.95	0.46	0.041	0.297	482	30	0.75	10	372	194	110	42	99.88
10469	98.50	55.19	0.94	0.46	0.057	0.068	476	26	0.60	9	313	215	206	32	100.29
10470	97.56	54.66	0.99	0.48	0.051	0.075	501	28	1.25	11	250	273	<70	30	100.04
10471	95.31	53.40	1.95	0.93	0.117	0.255	328	66	2.23	13	1343	169	273	147	100.10
10472	94.57	52.99	1.26	0.60	0.138	0.225	385	54	2.84	18	1103	218	213	255	99.26
10473	98.26	55.05	0.89	0.43	0.039	0.048	360	28	0.47	10	233	165	181	39	99.81
10474	98.60	55.24	0.99	0.47	0.028	0.061	366	21	0.64	9	287	211	117	28	100.41
10475	97.47	54.61	0.90	0.43	0.032	0.041	371	29	0.55	23	104	195	117	163	99.10
10476	98.28	55.07	0.93	0.45	0.042	0.063	400	30	0.51	12	129	99	156	57	99.92
10477	97.15	54.43	0.96	0.46	0.064	0.090	414	38	0.56	15	290	165	212	30	98.94
10478	98.18	55.01	0.98	0.47	0.040	0.062	389	50	0.51	11	138	165	119	32	99.87
10479	92.97	52.09	6.14	2.94	0.075	0.042	220	30	0.61	17	73	171	216	20	99.92
10480	96.72	54.19	2.26	1.08	0.034	0.043	299	23	0.61	8	47	289	337	21	99.77
10481	97.56	54.66	0.92	0.44	0.039	0.051	351	30	0.71	10	244	218	233	68	99.39
10482	98.24	55.04	1.03	0.49	0.041	0.073	346	25	0.77	14	230	186	101	54	100.24
10483	97.60	54.68	1.02	0.49	0.059	0.076	348	32	0.72	9	222	174	97	42	99.57
10484	97.02	54.36	0.94	0.45	0.057	0.058	339	42	0.38	9	137	152	<70	29	98.53
10485	98.68	55.29	0.84	0.40	0.026	0.059	334	26	0.53	9	301	230	179	25	100.24
10486	98.16	55.00	0.88	0.42	0.027	0.054	380	38	0.47	11	328	190	188	29	99.71
10487	98.72	55.31	0.86	0.41	0.030	0.063	363	32	0.55	8	252	208	190	28	100.34
10488	97.79	54.79	0.94	0.45	0.028	0.052	370	30	0.69	11	159	271	137	27	99.61
10489	97.76	54.78	1.30	0.62	0.043	0.056	362	25	0.80	9	238	157	168	26	100.07
10490	97.27	54.60	1.08	0.52	0.041	0.052	352	22	0.81	7	215	152	102	26	99.34
10491	96.67	54.16	1.18	0.56	0.041	0.070	347	25	0.78	9	297	156	146	39	98.85
10492	98.26	55.06	1.07	0.51	0.036	0.053	360	23	0.54	9	251	107	155	31	100.06
10493	78.21	43.82	20.32	9.71	0.099	0.046	147	42	0.39	9	100	308	171	88	99.15
10494	77.42	43.38	20.79	9.94	0.119	0.053	141	42	0.42	5	138	272	254	32	98.90
10495	95.64	53.59	3.44	1.64	0.040	0.042	263	20	0.64	9	180	244	315	40	99.91
10496	94.41	52.90	4.49	2.14	0.054	0.050	250	24	0.72	9	119	278	271	33	99.82
10497	85.68	48.01	13.77	6.58	0.115	0.064	210	38	0.50	9	163	430	371	31	100.26
10498	98.94	55.43	0.94	0.45	0.039	0.033	309	25	0.24	8	99	131	176	19	100.27

APPENDIX 2: CONTINUED

Sample	CaCO ₃ %	CaO %	MgCO ₃ %	MgO %	Fe ₂ O ₃ %	Al ₂ O ₃ %	SrCO ₃ ppm	MnO ppm	SiO ₂ %	BaO ppm	K ₂ O ppm	Na ₂ O ppm	P ₂ O ₅ ppm	TiO ₂ ppm	Total %
10499	98.78	55.34	0.93	0.45	0.030	0.033	319	23	0.23	10	99	166	226	18	100.09
10500	97.62	54.70	0.97	0.46	0.025	0.034	330	21	0.31	10	65	169	202	20	99.04
11001	95.57	53.55	2.92	1.40	0.029	0.053	220	25	0.42	7	285	153	478	27	99.11
11002	95.90	53.73	2.79	1.33	0.031	0.064	235	31	0.50	9	369	156	619	44	99.43
11003	98.84	55.38	0.71	0.34	0.032	0.051	273	33	0.39	24	195	198	436	31	100.14
11004	98.86	55.39	0.90	0.43	0.024	0.044	253	21	0.34	10	212	251	347	23	100.28
11005	94.49	52.94	3.92	1.87	0.051	0.061	236	28	0.45	8	247	274	478	37	99.10
11006	96.31	53.96	3.29	1.57	0.039	0.043	201	29	0.38	5	171	229	216	24	100.15
11007	98.66	55.28	0.72	0.35	0.038	0.035	247	48	0.27	18	112	286	398	89	99.85
11008	97.64	54.71	1.09	0.52	0.024	0.032	211	28	0.43	6	<30	127	381	16	99.30
11009	98.83	55.37	0.68	0.33	0.029	0.037	261	29	0.21	10	195	199	321	20	99.89
11010	98.24	55.04	0.84	0.40	0.067	0.128	191	58	0.60	9	341	168	706	59	100.03
11011	98.83	55.38	0.71	0.34	0.036	0.038	244	40	0.40	9	130	180	308	18	100.11
11012	97.37	54.56	0.69	0.33	0.033	0.038	232	43	0.24	11	79	108	368	38	98.46
11013	99.06	55.50	0.72	0.34	0.034	0.043	243	48	0.19	8	94	224	846	20	100.19
11014	97.01	54.35	0.66	0.32	0.036	0.053	211	49	0.21	6	97	97	349	41	98.05
11015	98.44	55.15	0.64	0.30	0.026	0.023	245	31	0.08	13	60	187	474	17	99.30
11016	98.80	55.36	0.67	0.32	0.086	0.042	252	35	0.24	11	58	139	235	20	99.92
11017	99.12	55.54	0.62	0.30	0.023	0.032	229	52	0.09	9	64	78	465	16	99.98
11018	98.08	54.95	0.71	0.34	0.029	0.041	256	32	0.18	9	84	146	363	38	99.13
11019	97.23	54.48	0.75	0.36	0.043	0.030	281	33	0.11	14	81	235	486	122	98.29
11020	97.13	54.42	1.20	0.57	0.079	0.112	287	43	0.75	10	593	149	403	59	99.42
11021	86.10	48.24	4.87	2.33	0.107	0.293	272	47	7.32	16	1741	215	506	183	99.00
11022	98.60	55.24	0.93	0.44	0.021	0.035	261	27	0.51	12	144	284	360	20	100.20
11023	97.67	54.72	0.96	0.46	0.051	0.118	393	39	0.86	12	481	262	2929	67	100.08
11024	97.56	54.66	0.89	0.43	0.042	0.047	302	35	1.12	10	168	321	284	35	99.78
11025	78.04	43.73	4.19	2.00	0.398	0.453	414	52	15.61	18	2181	226	718	289	99.09
11026	90.94	50.95	5.04	2.41	0.131	0.330	332	55	3.30	17	1571	394	230	255	100.03
11027	96.82	54.25	2.88	1.38	0.032	0.043	308	22	0.38	10	157	300	71	26	100.25
11028	95.85	53.70	3.79	1.81	0.023	0.042	277	18	0.38	11	112	204	108	29	100.16
11029	96.40	54.01	2.89	1.38	0.039	0.043	273	20	0.32	10	108	175	<70	24	99.76
11030	95.46	53.49	4.10	1.96	0.029	0.036	255	21	0.32	6	147	189	101	24	100.02
11031	70.27	39.37	28.60	13.67	0.133	0.040	95	61	0.13	10	<30	379	187	26	99.25
11032	86.10	48.24	12.65	6.05	0.076	0.032	199	36	0.13	10	56	232	165	20	99.06
11033	93.99	52.66	5.88	2.81	0.038	0.027	276	26	0.16	5	102	221	269	14	100.19
11034	98.34	55.10	1.47	0.70	0.030	0.026	314	23	0.18	6	64	128	211	20	100.13
11035	98.84	55.38	0.80	0.38	0.028	0.024	304	23	0.28	5	81	175	309	11	100.07
11036	98.62	55.26	0.87	0.42	0.046	0.024	291	23	0.44	11	66	318	78	14	100.09
11037	98.20	55.02	0.84	0.40	0.027	0.024	284	18	0.14	14	<30	206	142	14	99.31
11038	98.01	54.92	0.80	0.38	0.043	0.027	267	22	0.16	8	73	441	70	11	99.13

APPENDIX 2: CONTINUED

Sample	CaCO ₃ %	CaO %	MgCO ₃ %	MgO %	Fe ₂ O ₃ %	Al ₂ O ₃ %	SrCO ₃ ppm	MnO ppm	SiO ₂ %	BaO ppm	K ₂ O ppm	Na ₂ O ppm	P ₂ O ₅ ppm	TiO ₂ ppm	Total %
11039	98.47	55.17	0.80	0.38	0.034	0.025	276	20	0.17	10	37	95	149	17	99.56
11040	99.01	55.48	0.92	0.44	0.023	0.032	321	17	0.23	11	53	140	197	18	100.29
11041	98.94	55.44	0.79	0.38	0.041	0.042	329	20	0.32	12	50	215	<70	21	100.21
11042	98.68	55.29	0.80	0.38	0.049	0.062	326	23	0.40	12	100	191	95	34	100.07
11043	98.79	55.35	0.86	0.41	0.039	0.048	328	24	0.52	9	113	374	167	26	100.36
11044	98.57	55.23	0.91	0.43	0.039	0.061	349	21	0.61	10	102	177	114	30	100.26
11045	98.52	55.20	0.82	0.39	0.031	0.045	315	18	0.40	12	96	208	135	31	99.89
11046	98.17	55.00	0.88	0.42	0.042	0.036	305	28	0.95	8	58	139	<70	19	100.13
11047	98.05	54.93	0.88	0.42	0.039	0.033	305	30	0.90	13	122	242	<70	25	99.98
11048	81.41	45.61	15.12	7.23	0.198	0.143	186	50	1.99	10	812	235	116	105	99.01
11049	95.85	53.70	3.82	1.82	0.033	0.034	249	22	0.47	14	118	241	149	73	100.29
11050	99.10	55.52	0.80	0.38	0.025	0.023	288	20	0.20	9	110	195	184	11	100.24
11051	98.88	55.40	0.91	0.43	0.025	0.031	335	20	0.23	13	112	253	213	30	100.17
11052	95.42	53.46	3.17	1.52	0.071	0.055	236	34	0.52	6	155	188	81	32	99.31
11053	99.03	55.48	0.86	0.41	0.042	0.033	272	27	0.30	9	51	218	<70	19	100.32
11054	98.34	55.10	0.80	0.38	0.046	0.028	282	38	0.33	11	80	208	150	15	99.62
11055	98.84	55.38	0.84	0.40	0.055	0.040	296	36	0.19	11	78	269	183	20	100.06
11056	97.82	54.81	0.96	0.46	0.053	0.055	317	33	0.91	12	220	370	109	32	99.90
11057	98.49	55.18	0.85	0.41	0.027	0.045	343	25	0.78	9	187	157	163	26	100.28
11058	92.30	51.72	3.87	1.85	0.107	0.342	502	53	2.38	15	1686	289	191	203	99.30
11059	98.18	55.01	1.19	0.57	0.041	0.081	431	46	0.57	10	348	189	144	40	100.18
11060	97.97	54.89	1.05	0.50	0.028	0.044	319	20	0.51	11	124	237	143	22	99.69
11061	97.85	54.82	1.01	0.48	0.052	0.053	320	26	0.65	8	215	144	142	26	99.70
11062	65.84	36.89	25.66	12.27	0.223	0.463	184	48	4.54	16	1772	252	227	272	97.00
11063	97.53	54.64	1.05	0.50	0.034	0.099	385	22	0.97	10	402	144	136	47	99.79
11064	78.83	44.17	13.80	6.60	0.270	0.670	297	54	5.66	24	3674	512	223	482	99.76
11065	96.24	53.92	2.40	1.16	0.042	0.052	364	27	0.85	6	192	175	140	26	99.68
11066	97.01	54.35	1.62	0.78	0.037	0.082	390	28	1.10	10	277	171	100	42	99.95
11067	92.77	51.98	3.95	1.89	0.105	0.211	383	42	1.83	12	827	181	113	122	99.04
11068	92.99	52.10	2.85	1.36	0.096	0.184	416	30	3.02	14	946	243	71	180	99.33
11069	92.33	51.73	3.24	1.55	0.137	0.241	521	38	2.32	12	1272	205	116	138	98.49
11070	96.53	54.08	1.43	0.68	0.161	0.168	540	32	1.11	11	877	244	<70	88	99.58
11071	97.20	54.46	1.02	0.49	0.080	0.077	696	54	1.25	11	356	225	78	42	99.78
11073	97.62	54.69	1.62	0.77	0.049	0.061	374	24	0.60	10	260	398	<70	28	100.06
11074	77.78	43.58	17.00	8.13	0.157	0.336	213	46	3.08	14	1196	293	231	241	98.58
11075	82.85	46.42	13.77	6.58	0.157	0.177	229	42	1.69	11	632	250	188	94	98.79
11076	83.18	46.60	13.44	6.43	0.167	0.328	286	38	1.93	13	992	247	240	163	99.24
11077	95.67	53.60	1.99	0.95	0.097	0.111	337	25	1.07	10	270	160	194	58	99.04
11078	97.17	54.45	0.95	0.46	0.099	0.106	335	24	0.85	8	212	158	136	48	99.27
11079	97.65	54.71	1.06	0.51	0.074	0.128	356	33	0.84	9	245	155	91	47	99.85

APPENDIX 2: CONTINUED

Sample	CaCO ₃ %	CaO %	MgCO ₃ %	MgO %	Fe ₂ O ₃ %	Al ₂ O ₃ %	SrCO ₃ ppm	MnO ppm	SiO ₂ %	BaO ppm	K ₂ O ppm	Na ₂ O ppm	P ₂ O ₅ ppm	TiO ₂ ppm	Total %
11080	97.94	54.88	1.42	0.68	0.033	0.067	364	23	0.66	10	225	144	132	40	100.22
11081	97.15	54.43	1.49	0.71	0.041	0.102	377	23	0.86	10	306	146	185	58	99.75
11082	97.13	54.42	1.00	0.48	0.048	0.090	376	24	0.68	9	287	188	72	42	99.05
11083	96.49	54.06	1.81	0.86	0.061	0.172	388	28	1.16	14	829	182	186	98	99.87
11084	94.22	52.79	3.97	1.90	0.064	0.162	380	29	1.50	11	700	276	125	94	100.08
11085	95.93	53.75	1.46	0.70	0.163	0.391	739	28	1.17	13	1606	363	76	187	99.42
11086	97.50	54.63	1.38	0.66	0.110	0.240	1059	33	0.76	10	818	233	<70	104	100.22
11087	96.91	54.30	1.20	0.57	0.068	0.144	1292	24	0.64	10	675	208	<70	75	99.20
11088	97.13	54.42	1.25	0.60	0.074	0.144	1166	28	0.72	10	617	168	77	69	99.53
11089	98.17	55.00	0.79	0.38	0.045	0.057	511	55	1.00	11	235	121	83	29	100.16
11090	97.44	54.59	1.07	0.51	0.058	0.124	517	51	0.99	12	499	248	139	68	99.84
11091	97.74	54.76	0.84	0.40	0.174	0.076	348	73	0.67	10	286	120	83	36	99.60
11092	84.76	47.49	9.03	4.32	0.253	0.715	527	79	4.11	31	3103	365	<70	479	99.33
11093	94.08	52.71	3.66	1.75	0.183	0.233	651	51	0.82	11	940	308	120	114	99.20
11094	96.77	54.22	1.44	0.69	0.108	0.477	718	36	0.94	11	1081	240	<70	131	99.96
11095	92.86	52.03	4.88	2.33	0.132	0.305	584	51	0.90	11	1171	235	<70	161	99.31
11096	96.45	54.04	1.49	0.71	0.099	0.163	536	28	0.68	10	723	170	<70	74	99.04
11097	92.54	51.85	4.34	2.08	0.153	0.353	636	41	1.19	18	1555	294	<70	184	98.86
11098	95.94	53.75	1.45	0.69	0.155	0.367	638	38	1.31	14	1590	306	<70	181	99.50
11099	96.63	54.14	1.56	0.74	0.121	0.290	799	36	0.87	19	1182	258	70	154	99.72
11100	96.59	54.12	1.39	0.66	0.094	0.117	988	37	0.33	11	413	246	<70	60	98.70
11101	94.85	53.14	4.55	2.18	0.085	0.048	268	26	0.64	10	172	250	272	27	100.28
11102	97.59	54.68	1.84	0.88	0.037	0.030	315	23	0.17	11	<30	101	161	17	99.74
11103	98.27	55.06	0.87	0.41	0.031	0.035	322	23	0.24	7	81	133	271	18	99.52
11104	98.73	55.31	0.81	0.39	0.038	0.055	307	24	0.22	14	73	119	205	25	99.93
11105	98.51	55.20	0.86	0.41	0.022	0.023	315	27	0.24	8	165	172	190	11	99.74
11106	96.22	53.91	3.03	1.45	0.044	0.164	278	33	0.23	9	112	188	135	20	99.77
11107	84.94	47.59	14.12	6.75	0.077	0.036	179	37	0.16	4	56	245	209	16	99.42
11108	95.26	53.37	4.48	2.14	0.056	0.036	255	27	0.14	11	88	173	240	22	100.05
11109	69.21	38.78	28.81	13.77	0.115	0.029	112	47	0.10	13	72	362	188	110	98.35
11110	87.85	49.22	12.45	5.95	0.057	0.025	178	31	0.14	7	51	228	<70	15	100.57
11111	97.58	54.67	1.38	0.66	0.043	0.021	287	39	0.28	10	51	200	138	12	99.38
11112	84.68	47.44	14.33	6.85	0.043	0.052	192	30	0.52	5	106	207	95	39	99.69
11113	84.17	47.16	15.37	7.35	0.087	0.053	218	37	0.33	12	65	215	98	18	100.08
11114	97.31	54.52	2.59	1.24	0.036	0.024	270	22	0.16	15	41	114	83	14	100.17
11115	98.01	54.91	1.33	0.64	0.032	0.025	280	20	0.33	11	169	216	193	54	99.82
11117	91.32	51.16	7.02	3.36	0.043	0.056	243	29	0.64	8	199	308	227	36	99.18
11119	90.38	50.64	7.37	3.52	0.055	0.088	251	44	1.91	9	398	282	128	63	99.92
11120	96.39	54.01	2.27	1.08	0.035	0.040	228	21	1.28	8	104	226	143	18	100.09
11121	98.99	55.46	0.72	0.34	0.020	0.020	261	19	0.45	7	89	188	185	10	100.26

APPENDIX 2: CONTINUED

Sample	CaCO ₃ %	CaO %	MgCO ₃ %	MgO %	Fe ₂ O ₃ %	Al ₂ O ₃ %	SrCO ₃ ppm	MnO ppm	SiO ₂ %	BaO ppm	K ₂ O ppm	Na ₂ O ppm	P ₂ O ₅ ppm	TiO ₂ ppm	Total %
11122	98.52	55.20	0.83	0.40	0.019	0.019	269	17	0.32	12	58	208	86	16	99.78
11123	98.51	55.19	0.88	0.42	0.041	0.035	274	24	0.24	7	71	100	127	25	99.77
11124	98.48	55.18	1.21	0.58	0.037	0.032	274	27	0.48	14	81	147	211	74	100.32
11125	99.12	55.53	0.79	0.38	0.033	0.042	289	27	0.26	8	127	165	236	21	100.33
11126	90.37	50.63	9.09	4.36	0.077	0.040	225	28	0.50	6	84	223	188	24	100.15
11127	97.78	54.79	1.74	0.83	0.056	0.051	270	33	0.38	14	136	177	211	25	100.10
11128	96.53	54.08	1.97	0.94	0.051	0.071	274	31	0.78	10	171	104	176	38	99.48
11129	96.29	53.95	1.45	0.69	0.041	0.068	319	30	0.86	10	238	157	188	103	98.81
11130	96.01	53.79	2.85	1.36	0.063	0.093	322	30	0.87	11	257	188	764	45	100.05
11131	82.73	46.35	14.60	6.98	0.131	0.332	263	37	2.18	14	1407	251	303	161	100.21
11132	95.52	53.52	2.71	1.30	0.049	0.108	400	25	1.07	12	521	230	189	103	99.61
11133	96.38	54.00	2.28	1.09	0.066	0.114	370	28	0.85	11	377	172	154	61	99.82
11134	95.68	53.61	2.21	1.06	0.076	0.118	348	28	0.79	15	318	153	153	60	98.99
11135	98.09	54.96	1.06	0.50	0.076	0.130	366	32	0.76	14	214	214	249	57	100.23
11136	98.58	55.23	0.94	0.45	0.062	0.059	395	30	0.58	21	165	74	<70	57	100.30
11137	95.82	53.69	2.11	1.01	0.042	0.030	270	22	0.33	50	45	157	<70	12	98.40
11138	98.19	55.01	1.48	0.71	0.120	0.037	248	25	0.16	9	71	190	123	14	100.06
11139	99.02	55.48	0.81	0.39	0.033	0.022	285	20	0.17	6	45	93	80	12	100.12
11140	98.84	55.38	0.77	0.37	0.026	0.033	274	23	0.12	10	30	109	<70	10	99.84
11141	83.60	46.84	13.96	6.67	0.111	0.124	182	45	1.74	10	558	261	133	82	99.67
11142	97.45	54.60	0.83	0.40	0.044	0.027	270	19	0.98	9	66	149	80	17	99.39
11143	99.00	55.47	0.98	0.47	0.054	0.022	266	29	0.21	5	66	177	89	13	100.33
11144	97.67	54.83	1.46	0.70	0.037	0.038	285	28	0.27	10	126	178	203	24	99.76
11145	99.00	55.47	0.90	0.43	0.033	0.039	306	23	0.21	8	155	165	300	21	100.29
11146	98.69	55.30	0.86	0.41	0.046	0.045	279	29	0.20	10	133	135	178	25	99.93
11147	99.00	55.47	0.89	0.42	0.033	0.045	299	28	0.29	10	120	147	349	30	100.35
11148	96.79	54.23	2.44	1.17	0.047	0.032	288	24	0.52	5	130	204	96	21	99.90
11149	87.50	49.03	10.75	5.14	0.064	0.066	169	39	0.65	17	316	225	553	41	99.17
11150	85.62	47.97	8.62	4.12	0.138	0.348	250	58	3.04	17	1991	291	291	236	98.08
11151	97.59	54.68	1.45	0.69	0.086	0.115	1206	32	0.41	12	397	317	<70	73	99.87
11152	96.62	54.14	1.51	0.72	0.211	0.349	884	64	0.94	9	1400	238	86	167	99.93
11153	96.23	53.91	1.65	0.79	0.162	0.327	851	43	0.97	12	1225	308	<70	193	99.60
11154	96.53	54.08	1.44	0.69	0.159	0.319	772	30	0.85	14	1142	312	87	151	99.55
11155	97.61	54.69	1.08	0.52	0.094	0.209	1007	37	1.05	11	910	97	84	94	100.27
11156	93.99	52.66	1.39	0.66	0.194	0.463	629	76	2.28	13	2666	208	108	243	98.71
11157	93.42	52.34	2.02	0.97	0.152	0.367	675	36	2.66	9	2353	225	107	212	98.97
11158	96.26	53.93	1.76	0.84	0.145	0.218	539	52	1.17	11	826	177	104	131	99.74
11159	96.79	54.23	0.98	0.47	0.169	0.124	1127	95	1.89	9	709	122	160	78	100.18
11160	97.64	54.70	1.17	0.56	0.112	0.073	1262	51	1.50	7	405	171	114	79	100.70
11161	96.33	53.97	0.94	0.45	0.141	0.146	925	85	1.50	5	944	112	118	92	99.28

APPENDIX 2: CONTINUED

Sample	CaCO ₃ %	CaO %	MgCO ₃ %	MgO %	Fe ₂ O ₃ %	Al ₂ O ₃ %	SrCO ₃ ppm	MnO ppm	SiO ₂ %	BaO ppm	K ₂ O ppm	Na ₂ O ppm	P ₂ O ₅ ppm	TiO ₂ ppm	Total %
11162	97.01	54.35	1.09	0.52	0.132	0.104	1086	64	1.60	9	579	145	186	103	100.15
11163	94.57	52.99	1.16	0.55	0.143	0.265	837	57	3.49	7	1269	240	232	164	99.91
11164	93.37	52.32	1.48	0.71	0.256	0.250	667	63	4.13	11	1035	223	211	140	99.73
11165	92.15	51.63	2.04	0.98	0.273	0.433	661	77	4.79	16	2107	308	191	251	100.05
11166	97.97	54.89	0.95	0.45	0.055	0.093	364	24	0.91	8	412	169	99	55	100.09
11167	93.48	52.37	1.82	0.87	0.129	0.103	334	29	3.43	9	470	265	107	56	99.08
11168	90.03	50.44	6.74	3.22	0.098	0.264	329	31	2.21	12	1161	241	120	142	99.55
11169	91.96	51.52	2.59	1.24	0.079	0.167	435	28	4.13	13	829	261	106	98	99.09
11170	74.48	41.73	4.07	1.94	0.425	0.326	388	50	18.98	13	1685	240	148	208	98.55
11171	65.76	36.85	10.27	4.91	0.608	0.831	425	91	20.23	28	4324	589	220	539	98.32
11172	90.63	50.78	2.95	1.41	0.358	0.713	576	95	4.11	28	3415	374	129	448	99.26
11173	72.56	40.65	15.57	7.44	0.392	1.271	492	88	7.16	38	5516	806	137	855	97.74
11174	80.43	45.06	11.91	5.69	0.291	0.854	607	77	4.66	27	4362	611	130	533	98.77
11175	96.51	54.07	1.10	0.53	0.070	0.163	466	59	1.92	10	915	151	88	89	99.94
11176	97.62	54.70	1.61	0.77	0.173	0.043	284	21	0.37	7	215	201	290	22	99.92
11177	95.05	53.26	3.29	1.57	0.075	0.095	288	33	0.72	12	484	235	406	58	99.38
11178	94.23	52.80	4.11	1.96	0.069	0.159	308	41	1.30	14	883	211	360	81	100.06
11179	91.25	51.13	6.47	3.09	0.160	0.382	318	54	2.10	16	1533	266	319	172	100.63
11180	97.43	54.59	2.09	1.00	0.036	0.066	257	30	0.51	8	436	248	244	31	100.26
11181	97.93	54.87	0.98	0.47	0.037	0.295	271	37	0.43	10	87	220	236	13	99.76
11182	97.12	54.41	2.39	1.14	0.380	0.033	252	25	0.71	12	119	213	195	26	100.72
11183	85.90	48.13	9.04	4.32	0.098	0.287	269	37	3.49	14	1806	284	962	203	99.17
11184	96.69	54.17	1.61	0.77	0.044	0.073	282	41	1.62	9	194	226	255	31	100.14
11185	90.60	50.76	8.62	4.12	0.044	0.064	197	27	0.72	9	192	234	346	35	100.15
11186	80.89	45.32	15.04	7.19	0.103	0.253	194	38	2.16	30	1386	239	549	411	98.73
11187	96.13	53.86	3.30	1.58	0.043	0.059	226	24	0.34	13	73	179	365	26	99.96
11188	97.55	54.65	2.09	1.00	0.027	0.035	241	20	0.26	6	131	189	379	15	100.06
11189	97.69	54.74	1.96	0.93	0.041	0.051	248	25	0.48	8	215	172	211	27	100.32
11190	97.23	54.48	1.22	0.58	0.164	0.115	315	51	0.88	26	582	135	150	183	99.75
11191	83.30	46.67	10.81	5.17	0.160	0.472	277	54	4.09	19	2689	296	463	307	99.24
11192	95.82	53.68	2.83	1.35	0.035	0.114	308	27	0.88	11	524	254	458	69	99.84
11193	98.27	55.06	1.20	0.58	0.031	0.043	292	23	0.40	10	159	221	273	23	100.05
11194	97.42	54.58	1.30	0.62	0.033	0.017	302	22	0.20	19	47	144	340	235	99.08
11195	79.04	44.29	19.46	9.30	0.079	0.083	181	36	0.64	10	279	230	238	80	99.41
11196	66.95	37.51	30.42	14.54	0.157	0.255	126	62	1.66	9	539	289	322	173	99.60
11197	87.53	49.04	10.02	4.79	0.058	0.054	217	28	0.61	10	124	201	242	38	98.36
11198	96.32	53.97	2.74	1.31	0.044	0.044	250	23	0.82	8	146	231	152	28	100.06
11199	98.05	54.94	0.72	0.35	0.049	0.022	221	22	0.29	5	39	159	<70	16	99.19
11200	98.00	54.91	0.78	0.37	0.017	0.029	281	18	0.15	6	<30	100	<70	12	99.02

**APPENDIX 3: ANALYTICAL PROCEDURES IN THE CENTRAL LABORATORY
OF CONTINENTAL LIME INC.**

Fusions Method For ICP Analysis

Lithium metaborate, which melts at 845° C, is used for sample dissolution. Lithium metaborate is well suited for attacking and dissolving acidic oxides. The procedure for fusion with lithium metaborate is as follows:

1. Weigh a 0.5 g sample of powdered rock, pulverized to minus 100 mesh, into a graphite crucible of approximately 30 ml capacity. Graphite crucibles must be manufactured from high-purity graphite, and they have a limited lifetime.
2. Add anhydrous lithium metaborate to the crucible and mix the contents well. The ratio of flux to sample should be 4:1. If resistant minerals such as zircon are present, a larger ratio must be used for a successful attack.
3. Fuse the mixture in a muffle furnace at 900° C for 15 minutes. Remove the crucible and swirl the contents. Replace the crucible in the muffle furnace for an additional 15 minutes at 900° C.
4. Remove the crucible from the muffle furnace and allow the fusion to cool to room temperature. Leave any graphite dust in the crucible. Immerse the crucible in a solution of 165 ml of water and 10 ml of concentrated nitric acid. An internal standard, cobalt, is added at this point. The solids will dissolve in 1-2 hrs.

The following analytical lines are used for ICP analysis:

P	213.618	Ti	334.941
Si	251.611	Al	396.152
Mn	257.610	Sr	407.771
Fe	259.940	Ba	455.403
Mg	280.270	Na	589.592
Ca	317.933	K	766.491

APPENDIX 4: LIST OF SAMPLE STATIONS IN NUMERICAL ORDER

Sample Locality	UTM		Sample Locality	UTM		Sample Locality	UTM	
	Easting	Northing		Easting	Northing		Easting	Northing
JS-01	667880	5503330	JS-43	668190	5504590	RV-26	668130	5504160
JS-02	667860	5503400	JS-44	667990	5504760	RV-27	667960	5505000
JS-03	667650	5503360	JS-45	667950	5504800	RV-28	667990	5505080
JS-04	667600	5503430	JS-46	667890	5505950	RV-29	668030	5505030
JS-05	667130	5506500	JS-47	668150	5505770	RV-30	667870	5505290
JS-06	667390	5506480	JS-48	667630	5504860	RV-31	667530	5505090
JS-07	667440	5506560	JS-49	668510	5502730	RV-32	667460	5505090
JS-08	667450	5506580	JS-50	668720	5502660	RV-33	667810	5504490
JS-09	667740	5506920	JS-51	668670	5502510	RV-34	667760	5504490
JS-10	667650	5506320	JS-52	667410	5503030	RV-35	667690	5504480
JS-11	667080	5505720	JS-53	667730	5502690	RV-36	667630	5504460
JS-12	668020	5501550	JS-54	667490	5502510	RV-37	667420	5505090
JS-13	668120	5502160	JS-55	667340	5502390	RV-38	667390	5505090
JS-14	668050	5502180	JS-56	667290	5502400	RV-39	667360	5505090
JS-15	667930	5502010	JS-57	667300	5501810	RV-40	667250	5505070
JS-16	667720	5506200	JS-58	666850	5502040	RV-41	667140	5504860
JS-17	667580	5501840	JS-59	666990	5502720	RV-42	667190	5504930
JS-18	667660	5501900	RV-01	668310	5503420	RV-43	667040	5504820
JS-19	667960	5502700	RV-02	668330	5503370	RV-44	668190	5504740
JS-20	667930	5502710	RV-03	668350	5503350	RV-45	668170	5504690
JS-21	667910	5502720	RV-04	668210	5503130	RV-46	667400	5504830
JS-22	667780	5502640	RV-05	667590	5506610	RV-47	667340	5504820
JS-23	667440	5503400	RV-06	667600	5506440	RV-48	667280	5504800
JS-24	667220	5503440	RV-07	---not used---		RV-49	667260	5504770
JS-25	666930	5503760	RV-08	667520	5506170	RV-50	667180	5504720
JS-26	667030	5504090	RV-09	667510	5506190	RV-51	668420	5502770
JS-27	667420	5504160	RV-10	667520	5506220	RV-52	668370	5502760
JS-28	667110	5503610	RV-11	667520	5506250	RV-53	668290	5502740
JS-29	667430	5503630	RV-12	667250	5506210	RV-54	668250	5502730
JS-30	667390	5503640	RV-13	667350	5505850	RV-55	667710	5502760
JS-31	667150	5503680	RV-14	668230	5502950	RV-56	668480	5503080
JS-32	667440	5503580	RV-15	667980	5502940	RV-57	668480	5503160
JS-33	667520	5503600	RV-16	667880	5502980	RV-58	668440	5503250
JS-34	667810	5503940	RV-17	667850	5502960	RV-59	668400	5503210
JS-35	667900	5503940	RV-18	667810	5502900	RV-60	668330	5503170
JS-36	667780	5505420	RV-19	667750	5502860	RV-61	668240	5503150
JS-37	667680	5505430	RV-20	667700	5502840	RV-62	668170	5503120
JS-38	667630	5505440	RV-21	667640	5502830	RV-63	668100	5503100
JS-39	667510	5505380	RV-22	667720	5504380	RV-64	668060	5503120
JS-40	668370	5504300	RV-23	668300	5504360	RV-65	668060	5503170
JS-41	668150	5504100	RV-24	668200	5504230	RV-66	668040	5503220
JS-42	668050	5503960	RV-25	668180	5504200	RV-67	668010	5503200

APPENDIX 5: MEASURED AND SAMPLED SECTIONS INCLUDING DESCRIPTIONS AND COMPOSITIONS OF CHIP SAMPLES

Sections are listed in order from north to south. Stations in each section and samples at each station are in order from stratigraphic top to bottom.

Samples consist of chips at intervals of 33 cm collected normal to the strata, except those with an asterisk which are chip samples at other intervals.

Thicknesses of covered intervals have been mostly scaled from Fig. 3.1. Elevations are as recorded without corrections. Attitudes are strikes and dips. See Appendix 4 for listing of stations in numerical order along with UTM coordinates. See Appendices 1 and 2 for more complete analytical data. The analyses listed here are from Appendix 2.

Station	Sample	Strat. Thick. (m)	Description	CaO %	MgO %	SiO ₂ %	Al ₂ O ₃ %	Fe ₂ O ₃ %	SrCO ₃ ppm	MnO ppm	P ₂ O ₅ ppm
SECTION ON NORTHERN SLOPE OF RUDOLF RIDGE; STATIONS JS-09, JS-46, JS-47											
Mount Head Formation											
JS-09	10268	2	<u>Wackestone</u> , dark-brown-grey fresh, light-grey weathered, grains ¼ - ½ mm, brachiopods, bryozoans, crinoids, beds 50 cm - 1 m thick	54.54	0.56	1.24	0.132	0.116	931	57	306
	10267	2	<u>Wackestone</u> , as above, bedding 180°/19°W, elevation 2362 m	54.53	0.57	0.71	0.086	0.054	688	35	<70
	-	~50	covered								
JS-46	10001	2	<u>Lime mudstone</u> , black, with layer of black grainstone (light-grey weathered) with grains ¼ - 3 mm, 1 m thick, bedding 170°/23°W, elevation 2313 m	54.72	0.69	0.36	0.081	0.093	757	38	<70
	-	~130	covered								
JS-47	10002	2	<u>Grainstone-packstone</u> , dark-grey-brown fresh, light-grey weathered, grains ¼ - 2 mm, 30 - 70% oolites, brachiopods, bryozoans, crinoids, bedding 180°/34°W, elevation 2256 m	54.80	0.51	0.91	0.126	0.050	436	30	277
	10003	2	<u>Dolomitic grainstone-packstone</u> , as above	45.67	6.91	2.59	0.422	0.171	286	45	175
	-	2	covered								
	10004	2	<u>Oolitic grainstone</u> , medium-grey fresh, grains ¼ - ½ mm, 90% oolites	53.79	0.81	1.16	0.102	0.036	404	25	102
	-	4	covered								
	10005	2	<u>Oolitic grainstone</u> , dark-grey fresh, grains ¼ - 1 mm, 60% oolites, elevation 2231 m	54.68	0.66	0.74	0.067	0.039	370	27	103
	10006	2	<u>Oolitic grainstone</u> , as above	55.05	0.49	0.70	0.058	0.037	331	22	168
	-	4	partly covered, <u>grainstone</u> , grains ¼ - ½ mm, recessive								
	10007	2	<u>Oolitic grainstone</u> , light-grey fresh and weathered, grains ¼ - ¾ mm, 90% oolites, elevation 2140 m	55.01	0.41	0.22	0.032	0.031	292	21	79
	10008	2	<u>Oolitic grainstone</u> , as above but dark-grey fresh	55.27	0.36	0.14	0.014	0.019	264	17	<70
	10009	2	<u>Oolitic grainstone</u> , as above	55.00	0.35	0.07	0.014	0.021	266	16	94
	10010	2	<u>Oolitic grainstone</u> , as above	55.37	0.40	0.28	0.023	0.023	283	17	80
	-	6	partly covered, <u>dolomudstone</u> , light-brown fresh, buff-brown weathered, platy fracture								
	10011	2	<u>Oolitic grainstone</u> , as 10008	55.21	0.41	0.51	0.035	0.054	316	25	92
	10012	2	<u>Oolitic grainstone</u> , as above	54.78	0.48	0.61	0.078	0.039	338	25	233
	10013	2	<u>Oolitic grainstone</u> , as above	55.23	0.45	0.32	0.037	0.043	322	21	72
	10014	3	<u>Oolitic grainstone</u> , as above	55.17	0.53	0.20	0.033	0.057	340	26	199
	-	4	covered								
	10015	2	<u>Grainstone</u> , dark-grey fresh, light-grey weathered, grains ¼ - 1½ mm, 20% oolites	55.38	0.42	0.30	0.042	0.029	310	24	201
	10016	2	<u>Grainstone</u> , as above	54.43	0.86	0.26	0.043	0.033	302	23	284
	10017	3	<u>Oolitic grainstone</u> , light-grey fresh and weathered, grains ¼ - ¾ mm, 80 - 90% oolites	55.22	0.55	0.28	0.032	0.027	298	18	119
	-	2	covered								

APPENDIX 5: CONTINUED

Station	Sample	Strat. Thick. (m)	Description	CaO %	MgO %	SiO ₂ %	Al ₂ O ₃ %	Fe ₂ O ₃ %	SrCO ₃ ppm	MnO ppm	P ₂ O ₅ ppm
JS-47	10018	2	<u>Oolitic grainstone</u> , as 10017 but dark-grey fresh, bedding 180°/32°W	54.36	0.52	0.23	0.029	0.044	252	19	88
	10019	2	<u>Oolitic grainstone</u> , as above, less oolites in bottom 1 m	55.01	0.65	0.13	0.028	0.024	287	17	117
	-	4	covered								
	10020	2	<u>Lime mudstone</u> , dark-grey fresh, buff-brown weathered	49.44	4.17	1.93	0.299	0.107	275	55	83

SECTION NEAR TOP OF RUDOLF RIDGE: STATIONS JS-05, JS-06, JS-07, JS-08, RV-05, RV-06

Etherington Formation

JS-05	-	2	<u>Chert nodules</u> in limestone								
	10257	2	<u>Grainstone</u> , medium-grey fresh, light-grey weathered, grains ¼ - ½ mm	51.65	1.46	4.63	0.112	0.110	543	35	232
	10256	2	<u>Grainstone</u> , as above, bedding 180°/40°W, elevation 2210 m	53.38	0.92	1.85	0.116	0.086	591	34	317
	-	~175	partly covered, partly <u>dolomitic mudstone</u> , light- to medium-green-grey fresh, buff weathered, black chert nodules								
JS-06	10260	2	<u>Wackestone-packstone</u> , medium-brown-grey fresh, light-grey weathered, grains ⅙ - ¼ mm, beds 5 - 40 cm thick	53.69	0.45	2.04	0.103	0.123	904	89	97
	10259	2	<u>Wackestone-packstone</u> , as above, with layer of green-brown wackestone 5 cm thick; brachiopods, bryozoans, crinoids near middle	52.29	1.13	3.14	0.569	0.200	1128	73	255
	10258	2	<u>Wackestone-packstone</u> , as 10260, bedding 15°/46°W, elevation 2192 m	53.81	0.55	2.06	0.175	0.113	1421	70	94
	-	5	covered								
	-	~25	partly covered, <u>dolomite</u> on top, green-grey fresh, orange-brown weathered, with angular black clasts 1 - 2 cm in size, locally siliceous								

Mount Head Formation

JS-07	10264	2	<u>Wackestone-mudstone</u> , dark-brown-grey fresh, light-green-grey weathered, grains ⅙ - ¼ mm, beds 20 cm - 2 m thick	54.50	0.51	0.75	0.083	0.056	857	35	99
	10263	2	<u>Wackestone-mudstone</u> , as above	54.49	0.56	0.42	0.095	0.096	841	48	<70
	10262	2	<u>Wackestone-mudstone</u> , as above	55.15	0.48	0.56	0.043	0.050	743	34	<70
	10261	2	<u>Wackestone-mudstone</u> , as above, bedding 180°/31°W, elevation 2198 m	54.62	0.55	0.78	0.061	0.065	814	29	<70
	-	~10	covered								
JS-08	10266	3	<u>Wackestone-packstone</u> , medium-brown-grey fresh, light-grey weathered, grains ¼ - ⅓ mm, beds 20 cm - 2 m thick	54.22	0.44	0.73	0.097	0.091	813	68	90
	-	2	covered								
	10265	3	<u>Wackestone-packstone</u> , as above, elevation 2193 m	54.71	0.45	0.64	0.067	0.092	319	39	124
	-	~13	covered								
RV-05	10295	2	<u>Limestone</u> , light- to buff-grey fresh and weathered, micritic, 10 - 20% light-buff-toffee chert lenses and nodules	51.91	0.55	4.60	0.607	0.306	973	102	413
	10294	2	<u>Limestone</u> , dark-grey-brown, grains ½ - 1 mm, with chert nodules and layers, rugose corals, crinoids	47.51	0.43	11.69	0.176	0.451	873	90	300
	10293	2	<u>Lime mudstone</u> , brown-purple-grey, very fine grained, 35% chert, fractures	45.61	0.40	16.20	0.132	0.420	921	74	110
	10292	2	<u>Grainstone</u> , dark-grey, grains slightly coarser, chert nodules and lenses 2 - 50 cm, brachiopods	54.39	0.58	1.25	0.207	0.133	910	52	327
	10291	2	<u>Grainstone</u> , dark-grey, grains ⅙ - ¼ mm, silty, with black chert nodules	53.21	0.56	2.75	0.134	0.118	686	34	75

APPENDIX 5: CONTINUED

Station	Sample	Strat. Thick. (m)	Description	CaO %	MgO %	SiO ₂ %	Al ₂ O ₃ %	Fe ₂ O ₃ %	SrCO ₃ ppm	MnO ppm	P ₂ O ₅ ppm
RV-11	*10355	10	<u>Limestone</u> , as above, but dark-grey, intermittent outcrops	53.79	0.73	1.08	0.337	0.133	805	31	<70
	-	~13	covered								
RV-10	10354	2	<u>Limestone</u> , dark-grey to grey-brown, grains to 1/8 mm, calcite veins	54.14	0.68	0.96	0.244	0.104	597	32	80
	10353	3	<u>Limestone</u> , as above, elevation 2115 m	52.96	0.65	1.37	0.351	0.201	536	37	<70
	-	~8	<u>Limestone</u> , as above								
RV-09	10352	3/8	<u>Limestone</u> , dark-brown-grey to grey-black, some grains to 1/8 mm, white calcite veins, joints 20°/70°E, 102°/86°S, elevation 2100 m	52.19	1.98	1.93	0.366	0.226	567	54	<70
	-	~15	<u>Limestone</u> , as above								
RV-08	10351	1/2	<u>Limestone</u> , as above, bedding 128°/27°SW, elevation 2088 m	50.02	3.21	1.90	0.378	0.265	697	54	110
	-	~3	covered								
RV-13	10364	2	<u>Limestone</u> , grains to 1/4 mm, calcite veins	43.87	2.89	13.42	0.798	0.504	478	55	171
	10363	2	<u>Limestone</u> , as above	46.30	4.35	6.51	0.858	0.303	473	51	153
	10362	2	<u>Limestone</u> , as above	51.04	1.92	4.01	0.387	0.161	531	34	<70
	10361	2	<u>Limestone</u> , as above	49.49	2.51	5.44	0.622	0.173	510	40	200
	10360	2	<u>Limestone</u> , grains to 1/4 mm, calcite veins, few chert nodules	43.98	1.93	14.49	0.598	0.353	530	49	157
	-	~13	covered								
JS-10	-	11	<u>Packstone</u> , medium-brown-grey fresh, light-grey weathered, beds 1 - 50 cm thick, 50% grey (white, buff or blue-grey weathered) chert beds 5 - 20 cm thick in top half and decreasing downwards to 5% nodules, tabulate coral bed 15 cm thick near middle								
	10269	3	<u>Packstone</u> , medium-brown-grey fresh, light-grey weathered, grains 1/4 - 3/4 mm, wackestone at top, bedding 180°/28°W, elevation 2085 m	49.60	2.49	3.84	0.387	0.142	525	37	138
	10270	2	<u>Packstone</u> , as above	51.15	2.47	2.96	0.309	0.102	446	31	283
	10271	2	<u>Packstone</u> , as above	50.07	2.83	3.41	0.274	0.114	371	32	230
	-	4	<u>Wackestone</u> , medium-brown-grey fresh, light-grey weathered, grains 1/4 - 1/2 mm, 10% grey chert beds and nodules								
	10272	2	<u>Grainstone</u> , medium-brown-grey fresh, light-grey weathered, several layers of white to light-grey grainstone 20 cm thick, grains 1/8 - 1 1/2 mm, oolites, bryozoans, crinoids, beds 1/2 - 2 m thick, bedding 5°/19°W, elevation 2070 m	55.17	0.47	0.69	0.079	0.060	350	26	118
	10273	2	<u>Grainstone</u> , as above	54.98	0.41	0.83	0.097	0.038	344	25	221
	10274	2	<u>Grainstone</u> , as above	54.76	0.44	0.65	0.115	0.047	348	25	201
	10275	2	<u>Grainstone</u> , medium-brown-grey fresh, light-grey weathered, grains 1/8 - 1 1/2 mm, oolites, bryozoans, crinoids, beds 1/2 - 2 m thick	54.01	1.00	1.11	0.151	0.065	359	30	225
	10301	2	<u>Grainstone</u> , as above, bedding 5°/19°W, elevation 2124 m	54.55	0.46	0.63	0.083	0.050	359	27	<70
	10302	2	<u>Grainstone</u> , as above, but with one chert lens 3 x 15 cm near top	54.77	0.50	0.86	0.133	0.044	362	25	177
	10303	2	<u>Grainstone</u> , as 10275	54.67	0.63	0.82	0.110	0.050	362	27	291
	10304	2	<u>Grainstone</u> , as above	52.11	2.01	1.23	0.135	0.064	342	28	162
	10305	2	<u>Grainstone</u> , as above	50.29	3.20	2.11	0.192	0.096	312	32	218
	10306	2	<u>Grainstone</u> , as above, with 80 cm thick porous medium-brown grainstone near middle	47.18	6.23	2.32	0.270	0.122	223	44	312
	10307	2	<u>Grainstone</u> , as 10275	54.44	0.67	0.63	0.075	0.040	298	31	113
	10308	2	<u>Grainstone</u> , as above, elevation 2048 m	54.35	1.06	0.74	0.084	0.059	296	28	175
	10389	3	<u>Grainstone</u> , as above	54.49	0.94	0.48	0.064	0.066	2.68	26	262
	-	10	covered								
JS-16	10390	2	<u>Grainstone-wackestone</u> , medium-grey fresh, light-grey weathered, grains 1/4 - 1 mm	50.44	4.32	0.53	0.170	0.090	254	36	198

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APPENDIX 5: CONTINUED

Station	Sample	Strat. Thick. (m)	Description	CaO %	MgO %	SiO ₂ %	Al ₂ O ₃ %	Fe ₂ O ₃ %	SrCO ₃ ppm	MnO ppm	P ₂ O ₅ ppm
JS-16	10391	2	<u>Grainstone-wackestone</u> , as above, bedding 170°/35°W	51.54	3.61	0.40	0.067	0.090	289	35	118
	10392	3	<u>Grainstone-wackestone</u> , as above, medium-brown-grey in top 1 m, light-brown-grey weathered, several coarse bioclastic layers with grains ½ - 2 mm and fining-upward to wackestone, 5% chert nodules 4 x 20 cm, brachiopods, bryozoans, crinoids	47.89	5.68	1.72	0.225	0.099	326	34	257
	10393	2	<u>Grainstone</u> , medium-brown-grey fresh, medium-grey weathered, grains ½ - 1½ mm, prominent fracture 75°/33° NW	49.05	4.85	1.47	0.212	0.089	283	37	144
	10394	1	<u>Grainstone</u> , as above	51.04	3.39	1.70	0.089	0.070	235	33	195
	-	1	covered								
	10395	2	<u>Grainstone</u> , as above	54.98	0.58	0.70	0.081	0.042	325	33	143
	10396	2	<u>Grainstone</u> , as above	53.56	1.34	0.94	0.104	0.054	306	29	137
	10397	2	<u>Grainstone</u> , as above	55.07	0.56	0.57	0.054	0.045	295	27	<70
	10398	2	<u>Grainstone</u> , as above	52.65	2.49	0.61	0.104	0.100	237	32	238
	10399	2	<u>Grainstone</u> , as above, with dark-brown wackestone	35.60	16.17	0.46	0.092	0.166	97	52	284
	10400	2	<u>Grainstone</u> , as 10398	49.15	5.52	0.38	0.037	0.097	202	31	161
	10401	2	<u>Grainstone</u> , as above	51.80	3.33	0.35	0.052	0.063	236	26	88
	10402	2	<u>Grainstone</u> , as above	50.55	4.25	0.40	0.053	0.082	209	30	258
	10403	2	<u>Grainstone</u> , as above	52.15	2.93	0.37	0.061	0.073	233	31	143
	10404	2	<u>Grainstone</u> , as above	49.28	5.19	0.49	0.053	0.122	209	36	293
	10405	2	<u>Grainstone</u> , as above, with coarse bioclastic grains 1 - 3 mm, elevation 1996 m	54.46	0.82	0.30	0.043	0.038	270	24	314

DISCONTINUOUS SECTION NEAR KNOX CREEK: STATIONS JS-11, JS-48

Mount Head Formation											
JS-11	10309	3	<u>Oolitic grainstone</u> , dark-brown fresh, light-grey weathered, grains ½ - ½ mm, beds 30 cm - 1 m thick, bedding 180°/33°W, elevation 1798 m	54.72	0.46	0.73	0.091	0.035	361	24	135
	-	?	covered								
JS-48	10021	2	<u>Grainstone</u> , light- to medium-grey fresh, light-grey weathered, grains ½ - 1½ mm, 50% oolites, bedding 180°/31°W, elevation 1914 m	54.86	0.73	0.46	0.033	0.045	275	29	136

SECTION NORTHEAST OF KNOX CREEK: STATIONS JS-45, JS-44, JS-43

Mount Head Formation											
JS-45	11200	3	<u>Grainstone</u> , medium-grey-brown fresh, light-grey weathered, grains ¼ - 1½ mm, 50 - 80% oolites	54.91	0.37	0.15	0.029	0.017	281	18	<70
	11199	2	<u>Grainstone</u> , as above	54.94	0.35	0.29	0.022	0.049	221	22	<70
	11198	2	<u>Grainstone</u> , as above, bedding 180°/26°W, elevation 2042 m	53.97	1.31	0.82	0.044	0.044	250	23	152
	-	6	covered, <u>dolomitic mudstone</u> at top, dark-grey fresh, buff weathered								
JS-44	11197	2	<u>Grainstone</u> , medium-grey fresh, light-grey weathered, grains ¼ - ¾ mm, lime mudstone at top	49.04	4.79	0.61	0.054	0.058	217	28	242
	11196	2	<u>Dolomudstone</u> , light-grey fresh and weathered, 10% grains ¼ - ½ mm, coarse grains weather out giving porous appearance	37.51	14.54	1.66	0.255	0.157	126	62	322
	11195	2	<u>Dolomudstone</u> , in upper 1 m, as above; <u>oolitic grainstone</u> , in lower 1 m, as above	44.29	9.30	0.64	0.083	0.079	181	36	238

APPENDIX 5: CONTINUED

Station	Sample	Strat. Thick. (m)	Description	CaO %	MgO %	SiO ₂ %	Al ₂ O ₃ %	Fe ₂ O ₃ %	SrCO ₃ ppm	MnO ppm	P ₂ O ₅ ppm
JS-44	11194	2	<u>Oolitic grainstone</u> , light- to medium-grey fresh, light-grey weathered, grains 1/8 - 2 mm, 80% oolites, bedding 165°/37°W, elevation 2118 m	54.58	0.62	0.20	0.017	0.033	302	22	340
	-	6	covered								
JS-43	-	6	<u>Lime mudstone</u> , medium- to dark-grey fresh, buff to light-grey weathered, 10 - 15% dark-grey chert nodules and layers 1 - 10 cm thick: resistant laminae on weathered surfaces at ends of chert lenses interpreted as laterally continuous deposition of silica								
	-	8	covered, elevation 2006 m								
	-	20	<u>Lime mudstone</u> , medium-grey fresh and weathered, 5 - 10% irregular grey (buff weathered) chert nodules 1 - 10 cm in size, black chert lens 5 cm at base and discontinuous light-grey grainstone up to 1 m thick with grains 1/4 - 1/2 mm of light-grey calcite and 20% black bitumen between grains; 1-m thick layer of yellow-brown <u>wackestone</u> (buff-brown weathered), 10% grains 1/8 - 1/2 mm, recessive								
	-	2	<u>Wackestone</u> , as below, with grey chert nodules and lenses 2 - 20 cm thick at base								
	11193	2	<u>Wackestone</u> , light-grey fresh, light-grey to buff weathered, 30% grains to 1/2 mm, 40 - 80% oolites, abundant crinoids, bryozoans, bioclastics, wispy dark-weathering layers up to 20 cm thick containing greater concentrations of bioclastics, elevation 1999 m	55.06	0.58	0.40	0.043	0.031	292	23	273
	11192	2	<u>Wackestone</u> , as above	53.68	1.35	0.88	0.114	0.035	308	27	458
	11191	2	<u>Wackestone</u> , as above	46.67	5.17	4.09	0.472	0.160	277	54	463
	11190	2	<u>Grainstone</u> , light- to medium-brown-grey fresh, light-grey weathered, grains 1/8 - 1 1/2 mm, 40 - 80% oolites, abundant bryozoans, crinoids, bioclastics	54.48	0.58	0.88	0.115	0.164	315	51	150
	11189	2	<u>Grainstone</u> , as above	54.74	0.93	0.48	0.051	0.041	248	25	211
	11188	2	<u>Grainstone</u> , as above	54.65	1.00	0.26	0.035	0.027	241	20	379
	11187	2	<u>Grainstone</u> , as above, but with several chert nodules laterally away from sample point	53.86	1.58	0.34	0.059	0.043	226	24	365
	11186	2	<u>Grainstone</u> , as above, oolites decreasing to 10 - 20%, with light-grey <u>wackestone</u> interbeds with 50% grains to 1/8 mm	45.32	7.19	2.16	0.253	0.103	194	38	549
	11185	2	<u>Grainstone</u> , as above, but without <u>wackestone</u> interbeds	50.76	4.12	0.72	0.064	0.044	197	27	346
	11150	2	<u>Grainstone</u> , light- to medium-brown-grey fresh, light-grey weathered, grains 1/8 - 1 1/2 mm, 80% oolites, crinoids, weathers to coarse brown	47.97	4.12	3.04	0.348	0.138	250	58	291
	11149	2	<u>Grainstone</u> , light-grey fresh and weathered, grains 1/8 - 1/4 mm, beds 5 - 10 cm thick	49.03	5.14	0.65	0.066	0.064	169	39	553
	-	-	<u>Lime mudstone</u> , medium-grey fresh, light-grey weathered, 5% grey chert nodules (white to grey weathered) 1 - 3 cm long, bedding 180°/41°W, elevation 2045 m								

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APPENDIX 5: CONTINUED

Station	Sample	Strat. Thick. (m)	Description	CaO %	MgO %	SiO ₂ %	Al ₂ O ₃ %	Fe ₂ O ₃ %	SrCO ₃ ppm	MnO ppm	P ₂ O ₅ ppm
SECTION ON KNOX RIDGE: STATIONS RV-43, RV-42, RV-41, RV-40, RV-39, RV-38, RV-37, RV-32, RV-31, JS-39, JS-38, JS-37, JS-36											
Etherington Formation											
RV-43	*11165	2½	<u>Limestone</u> , light- to medium-grey, coarsening upward, elevation 1879 m	51.63	0.98	4.79	0.433	0.273	661	77	191
-	-	1	partly covered, <u>shaly unit</u>								
RV-42	11164	2	<u>Wackestone-grainstone</u> , light-grey, coarse- to medium-coarse-grained, <u>shaly</u>	52.32	0.71	4.13	0.250	0.256	667	63	211
RV-41	-	28	<u>Limestone-conglomerate</u> , light-grey to black, massive, partly cross-bedded, with black chert nodules 25 cm in size								
	11163	2	<u>Limestone</u> , grains ½ mm, siliceous, elevation 1957 m	52.99	0.55	3.49	0.265	0.143	837	57	232
RV-40	11159	2	<u>Limestone</u> , light-tan-grey, grains ¼ mm to cryptocrystalline, brittle, beds 30 cm - 1 m thick, layer of light-brown to tan-grey siliceous limestone nodules at the bottom, elevation 2018 m	54.23	0.47	1.89	0.124	0.169	1127	95	160
	11160	2	<u>Limestone</u> , as above	54.70	0.56	1.50	0.073	0.112	1262	51	114
	11161	2	<u>Limestone</u> , as above	53.97	0.45	1.50	0.146	0.141	925	85	118
	11162	3	<u>Limestone</u> , as above	54.35	0.52	1.60	0.104	0.132	1086	64	186
	-	~20	<u>Limestone</u> , grey, grains to 0.3 mm, silty, irregular chert nodules, white calcite-filled vugs, bedding 167°/40°W								
RV-39	11158	2	<u>Limestone-breccia-conglomerate</u> (intraformational?), rounded dark-grey limestone clasts (about 30 cm in size) as clast-supported to mostly angular brown silty limestone and light-grey-white to dark-grey chert clasts as matrix-supported	53.93	0.84	1.17	0.218	0.145	539	52	104
	11157	2	<u>Limestone-breccia-conglomerate</u> , as above	52.34	0.97	2.66	0.367	0.152	675	36	107
	11156	2	<u>Limestone-breccia-conglomerate</u> , as above, elevation 2011 m	52.66	0.66	2.28	0.463	0.194	629	76	108
Mount Head Formation											
RV-38	*11155	7	<u>Limestone</u> , medium- to dark-grey, micritic, irregular fractures, very subtle to blocky brecciation	54.69	0.52	1.05	0.209	0.094	1007	37	84
RV-37	*11154	10	<u>Limestone</u> , black, grains ½ mm, silty, irregular calcite veinlets, calcite-filled vugs, rugose corals, bedding 173°/38°W, elevation 2041 m	54.08	0.69	0.85	0.319	0.159	772	30	87
RV-32	11088	2	<u>Limestone</u> , black, grains ½ mm, abundant brachiopods, calcite veins	54.42	0.60	0.72	0.144	0.074	1166	28	77
	11087	2	<u>Limestone</u> , as above	54.30	0.57	0.64	0.144	0.068	1292	24	<70
	11086	2	<u>Limestone</u> , as above, bedding 179°/35°W	54.63	0.66	0.76	0.240	0.110	1059	33	<70
	-	~10	covered								
RV-31	*11085	5	<u>Limestone</u> , black to grey-black, grains ¼ mm, brachiopods, rugose corals, beds 15 cm thick to massive, calcite veins, bedding 167°/17°W, elevation 1989 m	53.75	0.70	1.17	0.391	0.163	739	28	76
	-	~110	covered, <u>fault?</u>								
JS-39	11136	2	<u>Grainstone</u> , medium-grey fresh, light-grey weathered, grains ¼ - ¾ mm, brachiopods, bryozoans, beds 2 - 10 cm thick	55.23	0.45	0.58	0.059	0.062	395	30	<70
	11135	2	<u>Grainstone</u> , as above	54.96	0.50	0.76	0.130	0.076	366	32	249
	11134	2	<u>Grainstone</u> , as above	53.61	1.06	0.79	0.118	0.076	348	28	153
	11133	2	<u>Grainstone</u> , as above	54.00	1.09	0.85	0.114	0.066	370	28	154
	11132	2	<u>Grainstone</u> , as above	53.52	1.30	1.07	0.108	0.049	400	25	189
	11131	2	<u>Grainstone</u> , as above but middle 1 m as dolomudstone, bedding 150°/16°SW, elevation 1893 m	46.35	6.98	2.18	0.332	0.131	263	37	303
	-	~16	covered								

A44

APPENDIX 5: CONTINUED

Station	Sample	Strat. Thick. (m)	Description	CaO %	MgO %	SiO ₂ %	Al ₂ O ₃ %	Fe ₂ O ₃ %	SrCO ₃ ppm	MnO ppm	P ₂ O ₅ ppm
JS-38	11130	2	<u>Oolitic grainstone</u> , medium-grey-brown fresh, light-grey weathered, grains ½ - 1½ mm, 30 - 90% oolites	53.79	1.36	0.87	0.093	0.063	322	30	764
	11129	2	<u>Oolitic grainstone</u> , as above	53.95	0.69	0.86	0.068	0.041	319	30	188
	11128	2	<u>Oolitic grainstone</u> , as above	54.08	0.94	0.78	0.071	0.051	274	31	176
	11127	2	<u>Oolitic grainstone</u> , as above, elevation 1951 m, bedding 5°/29°W	54.79	0.83	0.38	0.051	0.056	270	33	211
JS-37	-	10	covered								
	11126	3	<u>Oolitic grainstone</u> , light-grey fresh, buff-brown weathered, grains ¼ - 1 mm, elevation 1972 m	50.63	4.35	0.50	0.040	0.077	225	28	188
	-	7	covered								
JS-36	11125	2	<u>Oolitic grainstone</u> , medium-grey fresh, light-grey weathered, grains ¼ - 1½ mm, 30 - 90% oolites, periodic dark-grey patches 5 - 10 mm devoid of oolites, elevation 1966 m	55.53	0.38	0.26	0.042	0.033	289	27	236
	11124	2	<u>Oolitic grainstone</u> , as above	55.18	0.58	0.48	0.032	0.037	274	27	211
	11123	2	<u>Oolitic grainstone</u> , as above	55.19	0.42	0.24	0.035	0.041	274	24	127
	11122	2	<u>Oolitic grainstone</u> , as above	55.20	0.40	0.32	0.019	0.019	269	17	86
	11121	2	<u>Oolitic grainstone</u> , as above	55.46	0.34	0.45	0.020	0.020	261	19	185
	11120	2	<u>Oolitic grainstone</u> , as above, with few oolites	54.01	1.08	1.28	0.040	0.035	228	21	143
	-	2	<u>Wackestone</u> , dark-grey fresh, buff-brown weathered, grains ½ - ½ mm, 10% medium-grey chert lenses 3 - 10 cm thick								
	-	3	<u>Dolomitic mudstone</u>								
	11119	2	<u>Grainstone</u> , medium-grey to dark-brown fresh, light-grey weathered, grains ¼ - ¾ mm	50.64	3.52	1.91	0.088	0.055	251	44	128
	-	1	<u>Dolomitic mudstone</u> , medium-brown-grey fresh, light-grey to brown-buff weathered, 20% coarser grains ½ - 2 mm, bryozoans								
	-	2	<u>Grainstone</u> , medium-grey fresh, light-grey weathered, grains ¼ - ¾ mm								
	-	4	<u>Dolomitic mudstone</u> , medium-brown-grey fresh, light-grey to brown-buff weathered, 20% coarser grains ½ - 2 mm, bryozoans								
	11117	2	<u>Oolitic grainstone</u> , light- to medium-grey fresh, light-grey weathered, grains ¼ - 1 mm, 80% oolites, 5 - 10 mm dark-grey patches without oolites	51.16	3.36	0.64	0.056	0.043	243	29	227
	-	2	covered								
	-	2	<u>Oolitic grainstone</u> , as above								
	11115	2	<u>Oolitic grainstone</u> , as above	54.91	0.64	0.33	0.025	0.032	280	20	193
	11114	2	<u>Oolitic grainstone</u> , as above	54.52	1.24	0.16	0.024	0.036	270	22	83
	11113	2	<u>Dolomitic grainstone</u> , medium-grey fresh, light- to medium-grey weathered, grains ½ - 1½ mm	47.16	7.35	0.33	0.053	0.087	218	37	98
	11112	2	<u>Dolomitic grainstone</u> , as above, bedding 165°/24°W, elevation 1932 m	47.44	6.85	0.52	0.052	0.043	192	30	95

A45

APPENDIX 5: CONTINUED

Station	Sample	Strat. Thick. (m)	Description	CaO %	MgO %	SiO ₂ %	Al ₂ O ₃ %	Fe ₂ O ₃ %	SrCO ₃ ppm	MnO ppm	P ₂ O ₅ ppm
SECTION ON UPPER KNOX RIDGE: STATIONS RV-27, RV-28, RV-29, RV-30											
Mount Head Formation											
RV-27	*11070	½	<u>Lime mudstone</u> , medium- to dark-brown-grey, fine-grained to micritic, calcite veins, elevation 2176 m	54.08	0.68	1.11	0.168	0.161	540	32	<70
RV-28	11071	2	<u>Lime mudstone</u> , dark-brown-grey, fine-grained to micritic, massive to thick-bedded, brittle, elevation 2165 m	54.46	0.49	1.25	0.077	0.080	696	54	78
	-	2	<u>Lime mudstone</u> , as above								
	-	16	partly covered, <u>limestone</u> , light-grey, thin-bedded argillaceous with cherty interbeds								
RV-29	11073	3	<u>Limestone</u> , grey-brown, fine- to medium-grained, brittle	54.69	0.77	0.60	0.061	0.049	374	24	<70
RV-30	-	~12	covered								
	11084	2	<u>Grainstone</u> , grey-brown, grains ¼ mm, grading into micritic limestone and chert-bearing layers above this unit, thick-bedded, elevation 2040 m	52.79	1.90	1.50	0.162	0.064	380	29	125
	11083	2	<u>Grainstone</u> , as above	54.06	0.86	1.16	0.172	0.061	388	28	186
	11082	2	<u>Grainstone</u> , as above	54.42	0.48	0.68	0.090	0.048	376	24	72
	11081	2	<u>Grainstone</u> , as above	54.43	0.71	0.86	0.102	0.041	377	23	185
	11080	2	<u>Grainstone</u> , as above	54.88	0.68	0.66	0.067	0.033	364	23	132
	11079	2	<u>Grainstone</u> , as above	54.71	0.51	0.84	0.128	0.074	356	33	91
	11078	2	<u>Grainstone</u> , as above	54.45	0.46	0.85	0.106	0.099	335	24	136
	11077	2	<u>Grainstone</u> , as above	53.60	0.95	1.07	0.111	0.097	337	25	194
	11076	2	<u>Dolomitic grainstone</u> , as above, grains ½ - 1 mm, with small amount of silty limestone	46.60	6.43	1.93	0.328	0.167	286	38	240
	11075	2	<u>Dolomitic grainstone</u> , as above, with 30-cm lens of silty mudstone, locally abundant rugose coral fragments and bryozoans	46.42	6.58	1.69	0.177	0.157	229	42	188
	11074	2	<u>Dolomitic grainstone</u> , grey to grey-brown fresh, light-grey weathered, grains ½ - 1 mm, rugose corals, crinoids, beds 1 - 1½ m thick, joints 42°/70°E, 98°/78°N, bedding 169°/30°W, elevation 2032 m	43.58	8.13	3.08	0.336	0.157	213	46	231

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SECTION ON DAVID CREEK: STATIONS RV-50, RV-49, RV-48, RV-47, RV-46

Mount Head Formation											
RV-50	10105	2	<u>Grainstone</u> , light- to medium-grey fresh, grains ½ mm, rugose corals, massive	52.83	1.53	1.17	0.132	0.056	392	27	98
	10104	2	<u>Grainstone</u> , as above	52.70	0.68	3.50	0.223	0.073	449	33	125
	10103	2	<u>Grainstone</u> , as above	53.70	0.64	2.29	0.196	0.090	546	48	<70
	10102	2	<u>Grainstone</u> , as above	52.55	0.75	3.93	0.357	0.152	478	87	126
	10101	2	<u>Grainstone</u> , as above, elevation 1823 m	51.88	0.63	4.83	0.566	0.249	437	81	138
	-	~2	partly covered, <u>limestone</u> with chert beds								
RV-49	11175	2	<u>Limestone</u> , light-grey-green, grains average ½ mm, calcite veins, with fragments of limestone and chert, bedding 168°/28°W	54.07	0.53	1.92	0.163	0.070	466	59	88
	-	-	fault?								
RV-48	*11174	10	<u>Dolomitic limestone</u> , black, fine-grained, brittle, dense, calcite veins	45.06	5.69	4.66	0.854	0.291	607	77	130
	11173	2	<u>Dolomitic limestone</u> , as above, bedding 173°/33°W	40.65	7.44	7.16	1.271	0.392	492	88	137
RV-47	*11172	7	<u>Limestone</u> , black, micritic, pyrite and calcite veins, elevation 1886 m	50.78	1.41	4.11	0.713	0.358	576	95	129

APPENDIX 5: CONTINUED

Station	Sample	Strat. Thick. (m)	Description	CaO %	MgO %	SiO ₂ %	Al ₂ O ₃ %	Fe ₂ O ₃ %	SrCO ₃ ppm	MnO ppm	P ₂ O ₅ ppm
RV-46	-	4	partly covered, <u>cherty</u>								
	11171	2	<u>Limestone</u> , black to dark-grey, very fine-grained to cryptocrystalline, siliceous, very dense, elevation 1920 m, bedding 168°/39°W	36.85	4.91	20.23	0.831	0.608	425	91	220
	-	~75	partly covered, <u>cherty</u>								

SECTION ON BOUNDARY RIDGE ABOVE DAVID CREEK; STATIONS RV-45, RV-44

Mount Head Formation

RV-45	11170	3	<u>Limestone</u> , grey to light-tan-grey, grains to ½ mm, massive, calcite veinlets	41.73	1.94	18.98	0.326	0.425	388	50	148
	11169	2½	<u>Limestone</u> , as above, elevation 2280 m	51.52	1.24	4.13	0.167	0.079	435	28	106
	-	~5	<u>Limestone</u> , with chert nodules								
RV-44	11168	2	<u>Grainstone</u> , grey, grains ½ - 1 mm, platy to massive	50.44	3.22	2.21	0.264	0.098	329	31	120
	11167	2	<u>Grainstone</u> , light-grey to grey, grains 1 mm, beds platy to massive	52.37	0.87	3.43	0.103	0.129	334	29	107
	*11166	5	<u>Grainstone</u> , as above, elevation 2274 m	54.89	0.45	0.91	0.093	0.055	364	24	99

SECTION ON LOWER DAVID RIDGE AND MIRIAM CREEK; STATIONS JS-25, JS-26, JS-27

Etherington Formation

	-	-	<u>Wackestone</u> , medium- to dark-grey fresh, light-grey weathered, grains ¼ - ½ mm, 10% dark-grey (white weathered) chert nodules to 8 cm in size, many crinoids and brachiopods, bedding 175°/36° SW								
JS-25	10465	3	<u>Grainstone</u> , dark-grey fresh, light-grey weathered, grains ½ - 1 mm, elevation 1670 m	54.25	0.41	1.92	0.138	0.110	309	124	641
	-	3	covered								
	-	3	<u>Wackestone</u> , with chert nodules								
	10464	3	<u>Packstone-wackestone</u> , medium-grey fresh, light-grey weathered, coarse grains ¼ - ¾ mm, beds 1 - 50 cm thick	53.04	0.55	3.21	0.173	0.172	777	67	87
	10463	2	<u>Packstone-wackestone</u> , as above but lime mudstone in upper 1 m, dark-grey fresh, light-grey weathered, brachiopods, bryozoans, beds 2 - 4 cm thick	49.03	0.72	7.00	0.967	0.433	801	105	517
	10462	2	<u>Packstone-wackestone</u> , as 10464	51.74	0.64	5.03	0.442	0.259	834	77	340
	10461	2	<u>Packstone-wackestone</u> , medium-grey fresh, light-grey weathered, coarse grains ¼ - ¾ mm, red flecks in mud matrix near middle, beds 1 - 50 cm thick	48.33	0.74	8.63	0.857	0.427	796	69	318
	10460	2	<u>Packstone-wackestone</u> , as above, but without red flecks	50.64	0.70	6.53	0.758	0.346	749	79	361
	10459	2	<u>Packstone-wackestone</u> , as above	51.50	0.47	5.54	0.682	0.381	615	208	190
	10458	2	<u>Packstone-wackestone</u> , as above	44.83	0.47	16.20	0.423	0.327	773	111	347
	-	4½	<u>Wackestone-mudstone</u> , dark-grey-brown fresh, light-grey weathered, coarse grains ½ - ½ mm, 10% grey chert lenses								
	10457	1½	<u>Wackestone</u> , medium-grey fresh, light-grey weathered, grains ½ - ½ mm	42.56	0.40	17.92	0.347	0.161	702	41	227
	10456	2½	<u>Wackestone-mudstone</u> , dark-grey-brown fresh, light-grey weathered, coarse grains ½ - ½ mm, chert lens 5 cm thick at bottom	48.90	0.49	10.73	0.326	0.245	774	64	107

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APPENDIX 5: CONTINUED

Station	Sample	Strat. Thick. (m)	Description	CaO %	MgO %	SiO ₂ %	Al ₂ O ₃ %	Fe ₂ O ₃ %	SrCO ₃ ppm	MnO ppm	P ₂ O ₅ ppm
JS-25	10455	1½	<u>Wackestone-packstone</u> , medium-grey fresh, light-grey weathered, grains ¼ - ½ mm increasing upward to ½ - ¾ mm, oolites 20% increasing upward to 90%	52.97	0.52	2.88	0.162	0.119	744	102	74
	10454	2	<u>Wackestone-packstone</u> , as above	54.00	0.53	1.82	0.153	0.105	1041	87	150
	10453	2	<u>Wackestone-packstone</u> , as above	52.60	0.53	3.78	0.472	0.230	1043	94	103
JS-26	-	½	<u>Wackestone</u> , dark-brown-grey fresh, buff weathered, 30% grains ¼ - ½ mm, with grey (white, buff to blue-grey weathered) chert lenses 2 - 3 cm thick, bedding 170°/37°W, elevation 1637 m								
	10467	2	<u>Packstone-wackestone</u> , dark-grey fresh, light-grey weathered, grains ½ - 1½ mm fining upward to ¼ - ¾ mm, oolites, beds 2 - 8 cm thick	50.77	0.72	5.49	0.674	0.297	762	55	534
	10466	2	<u>Packstone-wackestone</u> , as above, bedding 165°/34°SW, elevation 1759 m	52.55	0.62	3.34	0.339	0.239	598	56	324
	-	~100	mostly covered, one small outcrop of <u>lime mudstone</u> , medium-grey fresh, light-grey weathered, 10% white-weathering chert nodules								
Mount Head Formation											
JS-27	-	6	<u>Packstone-wackestone</u> , as below but with 2 - 5% irregular light-grey chert nodules (white weathered), layer with abundant rugose corals near base								
	10472	2	<u>Packstone-wackestone</u> , dark-brown-grey fresh, light-grey to buff weathered, grains ¼ - 1 mm, beds 5 cm - 2 m thick	52.99	0.60	2.84	0.225	0.138	385	54	213
	10471	2	<u>Packstone-wackestone</u> , as above but wackestone in lower 1 m, yellow-brown fresh, buff to light-grey and friable weathered, 30% grains up to 1 mm, recessive	53.40	0.93	2.23	0.255	0.117	328	66	273
	10470	2	<u>Packstone-wackestone</u> , as 10472	54.66	0.48	1.25	0.075	0.051	501	28	<70
	10469	2	<u>Packstone-wackestone</u> , as above	55.19	0.45	0.60	0.068	0.057	476	26	206
	10468	2	<u>Packstone-wackestone</u> , as above, bedding 160°/26°SW, elevation 1814 m	54.75	0.46	0.75	0.297	0.041	482	30	110

A48

SECTION ON UPPER DAVID RIDGE: STATIONS RV-36, RV-35, RV-34, RV-33, RV-22

Station	Sample	Strat. Thick. (m)	Description	CaO %	MgO %	SiO ₂ %	Al ₂ O ₃ %	Fe ₂ O ₃ %	SrCO ₃ ppm	MnO ppm	P ₂ O ₅ ppm
Mount Head Formation											
RV-36	11153	2	<u>Limestone</u> , light- to medium-grey, fine-grained to micritic, beds 30 cm - 1 m thick, calcite veins, bedding 174°/40°W	53.91	0.79	0.97	0.327	0.162	851	43	<70
	11152	2	<u>Limestone</u> , as above	54.14	0.72	0.94	0.349	0.211	884	64	86
	11151	2	<u>Limestone</u> , as above, elevation 2043 m	54.68	0.69	0.41	0.115	0.086	1206	32	<70
	11100	2	<u>Limestone</u> , as above	54.12	0.66	0.33	0.117	0.094	988	37	<70
	11099	2	<u>Limestone</u> , grey to dark-grey, micritic, beds 60 cm thick, joints 170°/50°E, 80°/67°S	54.14	0.74	0.87	0.290	0.121	799	36	70
	11098	2	<u>Limestone</u> , light-grey fresh and weathered, cryptocrystalline, thick-bedded to massive	53.75	0.69	1.31	0.367	0.155	638	38	<70
	11097	2	<u>Limestone</u> , black to dark-grey, fine-grained to micritic, beds 10 - 50 cm thick, calcite veins	51.85	2.08	1.19	0.353	0.153	636	41	<70
	11096	2	<u>Limestone</u> , as above, bedding 174°/40°W, elevation 2008 m	54.04	0.71	0.68	0.163	0.099	536	28	<70
	-	~16	covered								
RV-35	11095	2	<u>Limestone</u> , dark-grey, fine-grained to micritic	52.03	2.33	0.90	0.305	0.132	584	51	<70
	11094	2	<u>Limestone</u> , dark-grey, micritic, dense, minor calcite veins	54.22	0.69	0.94	0.477	0.108	718	36	<70

APPENDIX 5: CONTINUED

Station	Sample	Strat. Thick. (m)	Description	CaO %	MgO %	SiO ₂ %	Al ₂ O ₃ %	Fe ₂ O ₃ %	SrCO ₃ ppm	MnO ppm	P ₂ O ₅ ppm
RV-35	11093	2	From top to bottom: <u>limestone</u> , grey to dark-grey, grains ½ mm, with 15% black 2-mm large spheroids of micritic limestone on top, rugose corals, thin-bedded; <u>dolomudstone</u> , dense, fine-grained, brittle; <u>wackestone</u> , dark-grey, coarse-grained, clast-supported with fossil fragments and rounded to subangular black dolomite clasts, grey-brown calcite clasts, brachiopod, bryozoan, crinoid and coral fragments, elevation 2039 m	52.71	1.75	0.82	0.233	0.183	651	51	120
	-	~20	covered								
RV-34	11092	2	<u>Limestone</u> , dark-grey to dark-grey-brown to black fresh, pale-white-grey weathered, micritic, irregular calcite veins, very hard and brittle, bedding 176°/46°W, elevation 2057 m	47.49	4.32	4.11	0.715	0.253	527	79	<70
RV-33	11091	3	<u>Limestone</u> , light-grey, grains ¼ mm, pyrite, brittle fractures	54.76	0.40	0.67	0.076	0.174	348	73	83
	-	4	<u>Chert-bearing unit</u>								
	11090	3	<u>Limestone</u> , medium-grey, fine-grained	54.59	0.51	0.99	0.124	0.058	517	51	139
	11089	3	<u>Limestone</u> , as above, elevation 2063 m	55.00	0.38	1.00	0.057	0.045	511	55	83
	-	17	partly covered, <u>dolomitic limestone</u> , silty, with chert nodules								
RV-22	11058	2	<u>Limestone</u> , dark-grey, grains ½ - ¼ mm, silty, brittle, brachiopods, crinoids, cross-bedded, joints 9°/58°E and 98°/85°S, bedding 169°/34°W, elevation 1952 m	51.72	1.85	2.38	0.342	0.107	502	53	191
	11059	2	<u>Limestone</u> , as above	55.01	0.57	0.57	0.081	0.041	431	46	144

SECTION ALONG MARY CREEK; STATIONS JS-31, JS-28, JS-30, JS-29, JS-32, JS-33, JS-34, JS-35

Mount Head Formation

JS-31	10488	2	<u>Grainstone</u> , medium-brown-grey fresh, light-grey weathered, grains ¼ - 1½ mm, crinoids, oolites easily recognizable on weathered surface, bottom beds massive, top ones 10 - 30 cm thick	54.79	0.45	0.69	0.052	0.028	370	30	137
	10487	2	<u>Grainstone</u> , as above	55.31	0.41	0.55	0.063	0.030	363	32	190
	10486	2	<u>Grainstone</u> , as above	55.00	0.42	0.47	0.054	0.027	380	38	188
	10485	2	<u>Grainstone</u> , as above, bedding 165°/30°SW, elevation 1649 m	55.29	0.40	0.53	0.059	0.026	334	26	179
JS-28	10474	3	<u>Grainstone</u> , medium-brown-grey fresh, light-grey weathered, grains ¼ - 1½ mm, beds 10 - 20 cm thick	55.24	0.47	0.64	0.061	0.028	366	21	117
	10473	2	<u>Grainstone</u> , as above, bedding 170°/53°W, elevation 1588 m	55.05	0.43	0.47	0.048	0.039	360	28	181
	-	~10	<u>fault?</u> , covered								
JS-30	10484	2	<u>Packstone</u> , medium-brown fresh, light-grey weathered, 90% grains ¼ - 1 mm, scarce fossils	54.36	0.45	0.38	0.058	0.057	339	42	<70
	10483	2	<u>Packstone</u> , as above	54.68	0.49	0.72	0.076	0.059	348	32	97
	10482	2	<u>Packstone</u> , as above	55.04	0.49	0.77	0.073	0.041	346	25	101
	10481	2	<u>Packstone</u> , as above	54.66	0.44	0.71	0.051	0.039	351	30	233
	-	2	covered								
	10480	3	<u>Packstone</u> , as above	54.19	1.08	0.61	0.043	0.034	299	23	337
	10479	2	<u>Packstone</u> , as above, bedding 160°/36°SW, elevation 1716 m	52.09	2.94	0.61	0.042	0.075	220	30	216
JS-29	10478	3	<u>Grainstone</u> , dark-brown-grey fresh, medium-grey weathered, grains ¼ - ½ mm, beds 10 - 30 cm thick	55.01	0.47	0.51	0.062	0.040	389	50	119
	10477	2	<u>Grainstone</u> , as above	54.43	0.46	0.56	0.090	0.064	414	38	212
	10476	2	<u>Grainstone</u> , as above	55.07	0.45	0.51	0.063	0.042	400	30	156

APPENDIX 5: CONTINUED

Station	Sample	Strat. Thick. (m)	Description	CaO %	MgO %	SiO ₂ %	Al ₂ O ₃ %	Fe ₂ O ₃ %	SrCO ₃ ppm	MnO ppm	P ₂ O ₅ ppm
JS-29	10475	2	<u>Grainstone</u> , as above, bedding 5°/45°W, elevation 1722 m	54.61	0.43	0.55	0.041	0.032	371	29	117
	-	~15	covered								
JS-32	10492	2	<u>Grainstone</u> , medium-brown fresh, buff to medium-grey weathered, grains ¼ - 1 mm	55.06	0.51	0.54	0.053	0.036	360	23	155
	10491	2	<u>Grainstone</u> , as above	54.16	0.56	0.78	0.070	0.041	347	25	146
	10490	2	<u>Grainstone</u> , as above	54.50	0.52	0.81	0.052	0.041	352	22	102
	10489	2	<u>Grainstone</u> , as above, bedding 5°/35°W, elevation 1673 m	54.78	0.62	0.80	0.056	0.043	362	25	168
JS-33	10497	2	<u>Grainstone</u> , dark-brown, coarse-grained; recessive, medium-brown (buff-brown weathered) dolomitic mudstone in bottom 50 cm	48.01	6.58	0.50	0.064	0.115	210	38	371
	10496	2	<u>Grainstone</u> , dark-brown, coarser-grained	52.90	2.14	0.72	0.050	0.054	250	24	271
	10495	2	<u>Grainstone</u> , as above	53.59	1.64	0.64	0.042	0.040	263	20	315
	10494	2	<u>Dolomitic grainstone-packstone</u> , light-brown-grey fresh, buff to light-grey weathered, cross-bedded appearance from weathering of bioclastic fragments, grains ½ - 1 mm with crinoids debris up to 4 mm	43.38	9.94	0.42	0.053	0.119	141	42	254
	10493	2	<u>Dolomitic grainstone-packstone</u> , as above, bedding 172°/34°W, elevation 1747 m	43.82	9.71	0.39	0.046	0.099	147	42	171
JS-34	10498	2	<u>Grainstone</u> , medium-brown-grey fresh, buff to medium-grey weathered, grains ¼ - 1 mm, bedding 165°/36°SW, elevation 1926 m	55.43	0.45	0.24	0.033	0.039	309	25	176
	10499	2	<u>Grainstone</u> , as above	55.34	0.45	0.23	0.033	0.030	319	23	226
	10500	2	<u>Grainstone</u> , as above	54.70	0.46	0.31	0.034	0.025	330	21	202
	11101	2	<u>Grainstone</u> , as above	53.14	2.18	0.64	0.048	0.085	268	26	272
	11102	2	<u>Grainstone</u> , as above	54.68	0.88	0.17	0.030	0.037	315	23	161
	11103	2	<u>Grainstone</u> , as above, with bryozoans, 30 - 60% oolites	55.06	0.41	0.24	0.035	0.031	322	23	271
	11104	3	<u>Grainstone</u> , as above	55.31	0.39	0.22	0.055	0.038	307	24	205
	-	4	covered								
JS-35	11105	2	<u>Grainstone</u> , medium-brown-grey fresh, buff to medium-grey weathered, grains ¼ - 1 mm, 10 - 20% oolites	55.20	0.41	0.24	0.023	0.022	315	27	190
	11106	2	<u>Grainstone</u> , as above	53.91	1.45	0.23	0.164	0.044	278	33	135
	11107	2	<u>Dolomitic grainstone</u> , as above	47.59	6.75	0.16	0.036	0.077	179	37	209
	11108	2	<u>Grainstone</u> , as above	53.37	2.14	0.14	0.036	0.056	255	27	240
	11109	2	<u>Dolomitic grainstone</u> , as above	38.78	13.77	0.10	0.029	0.115	112	47	188
	11110	2	<u>Dolomitic grainstone</u> , as above	49.22	5.95	0.14	0.025	0.057	178	31	<70
	11111	2	<u>Grainstone</u> , as above	54.67	0.66	0.28	0.021	0.043	287	39	138
	-	2	<u>Dolomitic mudstone</u> , dark-brown, with banded white to dark-grey chert layers, bedding 175°/42°W, elevation 1966 m								

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SECTION ON UPPER MARY CREEK; STATIONS RV-26, RV-25, RV-24, RV-23, JS-40, JS-41, JS-42

Mount Head Formation											
RV-26	11069	3	<u>Limestone</u> , fine-grained, grains ½ mm, chert bed 5 cm thick on top	51.73	1.55	2.32	0.241	0.137	521	38	116
	11068	2	<u>Limestone</u> , as above, with chert	52.10	1.36	3.02	0.184	0.096	416	30	71
	-	16	<u>Limestone</u> , as above, chert nodules and layers								
	11067	2	<u>Limestone</u> , as above	51.98	1.89	1.83	0.211	0.105	383	42	113
	11066	2	<u>Limestone</u> , as above	54.35	0.78	1.10	0.082	0.037	390	28	100
RV-25	11065	2	<u>Limestone</u> , fine-grained, rugose corals	53.92	1.15	0.85	0.052	0.042	364	27	140

APPENDIX 5: CONTINUED

Station	Sample	Strat. Thick. (m)	Description	CaO %	MgO %	SiO ₂ %	Al ₂ O ₃ %	Fe ₂ O ₃ %	SrCO ₃ ppm	MnO ppm	P ₂ O ₅ ppm
RV-25	11064	2	Dolomitic limestone, fine-grained, silty, rugose corals	44.17	6.60	5.66	0.670	0.270	297	54	223
	11063	2	Limestone, fine-grained, rugose corals	54.64	0.50	0.97	0.099	0.034	385	22	136
	11062	2	Dolomitic limestone, fine-grained, silty, rugose corals	36.89	12.27	4.54	0.463	0.223	184	48	227
RV-24	11061	3	Limestone, light-brown-grey, grains ~½ mm, few crinoids, bedding 172°/43°W, elevation 2234 m	54.82	0.48	0.65	0.053	0.052	320	26	142
	-	~7	covered								
RV-23	11060	4	Limestone, light-brown-grey, grains ½ - 1½ mm, elevation 2335 m	54.89	0.50	0.51	0.044	0.028	319	20	143
JS-40	11148	3	Grainstone, medium-grey-brown fresh, medium-grey weathered, grains ¼ - 1 mm, 20% oolites	54.23	1.17	0.52	0.032	0.047	288	24	96
	-	1	Dolomudstone, light-brown fresh, buff-brown weathered, grey (chalky-white weathered) chert nodules and lenses, bioclastic fragments								
	11147	2	Grainstone, light-grey fresh, light-grey weathered, grains ¼ - 1½ mm, 60 - 90% oolites, darker patches ½ - 1 cm devoid of oolites, beds 10 cm - 2 m thick	55.47	0.42	0.29	0.045	0.033	299	28	349
	11146	2	Grainstone, as above	55.30	0.41	0.20	0.045	0.046	279	29	178
	11145	2	Grainstone, medium-grey-brown fresh, light-grey weathered, grains ¼ - 1½ mm, 60 - 90% oolites, darker patches ½ - 1 cm devoid of oolites, beds 10 cm - 2 m thick	55.47	0.43	0.21	0.039	0.033	306	23	300
	11144	2	Grainstone, as above	54.83	0.70	0.27	0.038	0.037	285	28	203
	11143	2	Grainstone, as above	55.47	0.47	0.21	0.022	0.054	266	29	89
	11142	2	Grainstone, as above	54.60	0.40	0.98	0.027	0.044	270	19	80
	11141	2	Dolomitic grainstone, as above	46.84	6.67	1.74	0.124	0.111	182	45	133
	-	3	Dolomudstone, dark-grey fresh, light-grey weathered, beds 1 - 2 cm thick								
	-	1	Dolomudstone, dark-grey fresh, rusty-brown weathered, cherty, distinct platy cleavage								
	-	4	Dolomite, medium-brown fresh, buff-brown weathered, grains ½ - ¼ mm, recessive, beds 10 cm - 2 m thick								
	11140	3	Grainstone, as 11145	55.38	0.37	0.12	0.033	0.026	274	23	<70
	11139	2	Grainstone, as above	55.48	0.39	0.17	0.022	0.033	285	20	80
	11138	2	Grainstone, as above	55.01	0.71	0.16	0.037	0.120	248	25	123
	11137	2	Grainstone, as above, bedding 180°/30°W, elevation 2329 m	53.69	1.01	0.33	0.030	0.042	270	22	<70
JS-41	-	6	Lime mudstone, light-brown-grey fresh, buff-brown weathered, platy beds, bedding 0°/44°W, elevation 2182 m								
	-	16	Dolomudstone, dark-grey fresh, light-grey weathered, 2 - 5% grey chert nodules, quartz-lined vugs 1 - 2 cm, some areas more dolomitic than others								
	11176	2	Grainstone, medium- to dark-brown-grey fresh, light-grey weathered, grains ¼ - 1 mm, 10 - 50% oolites, several lime mudstone interbeds 30 cm thick	54.70	0.77	0.37	0.043	0.173	284	21	290
	11177	2	Grainstone, as above	53.26	1.57	0.72	0.095	0.075	288	33	406
	11178	2	Grainstone, as above	52.80	1.96	1.30	0.159	0.069	308	41	360
	11179	2	Grainstone, as above	51.13	3.09	2.10	0.382	0.160	318	54	319
JS-42	11180	2	Grainstone, medium- to dark-brown-grey fresh, light-grey weathered, grains ¼ - 2 mm, brachiopods, bryozoans, beds 5 - 15 cm thick, bedding 175°/38°W, elevation 2060 m	54.59	1.00	0.51	0.066	0.036	257	30	244

APPENDIX 5: CONTINUED

Station	Sample	Strat. Thick. (m)	Description	CaO %	MgO %	SiO ₂ %	Al ₂ O ₃ %	Fe ₂ O ₃ %	SrCO ₃ ppm	MnO ppm	P ₂ O ₅ ppm
JS-42	11181	2	<u>Grainstone</u> , as above	54.87	0.47	0.43	0.295	0.037	271	37	236
	11182	2	<u>Grainstone</u> , as above	54.41	1.14	0.71	0.033	0.380	252	25	195
	11183	2	<u>Grainstone</u> , as above	48.13	4.32	3.49	0.287	0.098	269	37	962
	11184	2	<u>Grainstone</u> , as above	54.17	0.77	1.62	0.073	0.044	282	41	255
	-	4	<u>Lime mudstone</u> , dark-grey fresh, buff-brown weathered, 5% grey chert nodules								
	-	?	<u>Grainstone</u> (exposed in bed of creek), coarse bioclastics, bryozoans, crinoids								

SECTION NEAR WATERFALL CREEK: STATIONS JS-24, JS-23, JS-04, JS-03, JS-02, JS-01

Mount Head Formation

JS-24	10452	2	<u>Wackestone</u> , medium-grey fresh, light-grey weathered, 50% grains ¼ - ½ mm, beds 30 cm - 2 m thick	54.00	0.54	2.02	0.243	0.121	485	83	182
	10451	2	<u>Wackestone</u> , as above	53.97	0.58	1.53	0.178	0.062	491	39	159
	10450	2	<u>Wackestone</u> , as above	53.71	0.57	1.89	0.208	0.057	425	68	190
	10449	2	<u>Wackestone</u> , as above	54.03	0.52	2.01	0.233	0.114	436	94	178
	10448	2	<u>Wackestone</u> , as above, bedding 175°/37°W, elevation 1652 m	54.56	0.46	1.04	0.089	0.054	437	61	143
	-	~14?	covered								
JS-23	10447	2	<u>Grainstone</u> , medium-grey-brown fresh, light-grey weathered, grains ½ - ¾ mm, corals, crinoids, 30% oolites, beds 2 m thick to massive, elevation 1707 m	54.37	0.45	1.22	0.074	0.071	333	37	105
	10446	2	<u>Grainstone</u> , as above	54.91	0.48	0.82	0.079	0.082	347	43	106
	10445	2	<u>Grainstone</u> , as above	54.49	0.45	1.37	0.209	0.108	280	47	201
	10444	2	<u>Grainstone</u> , as above, but upper 1 m with flecks of rose-colored mud matrix	54.14	0.46	0.60	0.087	0.081	315	43	75
	10443	2	<u>Grainstone</u> , as 10445	50.78	1.86	3.13	0.362	0.163	285	54	285
	10442	2	<u>Grainstone</u> , as above	54.72	0.45	0.69	0.059	0.040	324	31	133
	10441	2	<u>Grainstone</u> , medium-grey-brown fresh, light-grey weathered, grains ½ - ¾ mm, corals, crinoids	54.13	0.56	1.24	0.101	0.097	322	53	150
	10440	2	<u>Grainstone</u> , as above, but middle 50 cm with flecks of rose-colored mud matrix	53.86	0.46	1.45	0.157	0.110	296	58	134
	10439	2	<u>Grainstone</u> , as 10441	55.16	0.37	0.73	0.077	0.071	230	37	259
	10438	2	<u>Grainstone</u> , as above	54.53	0.44	0.58	0.062	0.074	317	38	176
	10437	2	<u>Grainstone</u> , as above but light-grey-brown in lower 1 m, 40% oolites	55.01	0.38	0.66	0.082	0.115	346	37	201
	10436	2	<u>Grainstone</u> , medium-grey-brown fresh, light-grey weathered, grains ½ - ¾ mm, corals, crinoids, beds ¼ - ¾ m thick	55.13	0.38	0.75	0.076	0.057	352	45	170
	10435	2	<u>Grainstone</u> , as above, bedding 170°/34°W	54.82	0.41	0.46	0.047	0.030	393	34	129
	10434	2	<u>Grainstone</u> , as above, massive	54.96	0.47	0.66	0.067	0.030	388	25	148
	10433	2	<u>Grainstone</u> , as above, massive	54.96	0.47	0.75	0.077	0.031	383	27	198
	10432	2	<u>Grainstone</u> , as above, massive	54.94	0.45	0.69	0.074	0.036	364	22	179
	10431	2	<u>Grainstone</u> , as above, but buff-brown weathered wackestone in bottom 50 cm with friable fracture, 50% bioclastic fragments ½ - 3 mm in pink-brown matrix	54.78	0.44	0.82	0.058	0.032	366	34	<70
	10430	2	<u>Grainstone</u> , as 10432	54.92	0.44	1.26	0.068	0.032	355	36	142

APPENDIX 5: CONTINUED

Station	Sample	Strat. Thick. (m)	Description	CaO %	MgO %	SiO ₂ %	Al ₂ O ₃ %	Fe ₂ O ₃ %	SrCO ₃ ppm	MnO ppm	P ₂ O ₅ ppm
JS-23	10429	2	<u>Grainstone</u> , as above, bedding 165°/40°SW, elevation 1686 m	53.85	0.54	1.81	0.155	0.092	279	122	176
JS-04	-	~30?	covered								
	10255	2	<u>Bioclastic grainstone</u> , medium-brown-grey fresh, light-grey weathered, grains ¼ - ½ mm, oolites, brachiopods, crinoids	55.34	0.41	0.33	0.038	0.035	296	66	290
	10254	2	<u>Bioclastic grainstone</u> , as above	55.37	0.38	0.22	0.052	0.065	217	53	255
	10253	2	<u>Bioclastic grainstone</u> , as above	55.22	0.37	0.66	0.202	0.038	267	30	96
	10252	2	<u>Bioclastic grainstone</u> , as above, elevation 1774 m	55.21	0.33	0.42	0.020	0.025	255	29	118
	-	~2	covered								
JS-03	10251	2	<u>Bioclastic grainstone</u> , medium-brown-grey fresh, light-grey weathered, blurred textures from recrystallization, bryozoans, brachiopods, crinoids, beds 10 cm - 1 m thick	55.09	0.48	0.44	0.045	0.031	303	28	81
	10250	2	<u>Bioclastic grainstone</u> , as above	54.56	0.78	0.57	0.073	0.055	309	36	133
	10249	2	<u>Bioclastic grainstone</u> , as above	55.61	0.38	0.19	0.038	0.036	300	35	146
	10248	2	<u>Oolitic grainstone</u> , as above	55.48	0.37	0.24	0.041	0.022	277	27	111
	10247	2	<u>Bioclastic grainstone</u> , medium-brown-grey, fossiliferous	54.86	0.38	0.24	0.027	0.028	300	30	222
	-	2	<u>Bioclastic grainstone</u> , as 10251, inaccessible								
	10246	2	<u>Bioclastic grainstone</u> , as above	55.45	0.39	0.12	0.037	0.033	277	24	197
	10245	2	<u>Bioclastic grainstone</u> , as above	53.56	0.97	1.09	0.063	0.045	241	30	259
	10244	2	<u>Bioclastic grainstone</u> , as above	54.17	1.30	0.15	0.041	0.056	192	35	267
	10243	2	<u>Bioclastic grainstone</u> , as above, bedding 180°/48°W, elevation 1759 m	54.95	0.99	0.12	0.037	0.035	241	22	233
	-	~15	covered								
JS-02	10242	2	<u>Dolomudstone</u> , medium-brown-grey fresh, light-grey weathered, grains ¼ - ½ mm, 10% black irregular chert nodules/lenses 2 - 20 cm long, beds 2 - 50 cm thick, elevation 1740 m	39.06	8.43	7.79	0.688	0.263	307	56	708
	10241	2	<u>Dolomudstone</u> , as above, bedding 170°/37°W	42.75	6.92	5.75	0.618	0.222	359	52	608
	10240	2	<u>Grainstone</u> , medium-brown-grey fresh, light-grey weathered, grains, ½ - ¾ mm, bioclastics, beds 5 cm - 1 m thick	52.52	1.48	1.82	0.214	0.432	299	55	268
	10239	2	<u>Grainstone</u> , as above	52.81	1.53	1.44	0.126	0.051	312	34	204
	10238	2	<u>Dolomitic grainstone</u> , as above, bedding 180°/50°W	43.33	6.12	6.67	0.615	0.202	330	59	570
	10237	2	<u>Dolomudstone</u> , medium-brown-grey fresh, buff weathered, locally siliceous with no visible indication, 3 - 10 cm irregular blebs of black-to buff-brown-weathered chert, some as continuous layers 5 - 10 cm thick	43.14	6.82	6.49	0.539	0.169	323	60	556
	10236	2	<u>Dolomitic lime mudstone</u> , as above, with calcite vugs 1 - 2 cm in size	49.02	3.42	3.58	0.210	0.089	346	44	516
	10235	2	<u>Dolomudstone</u> , as above	40.86	6.31	12.75	0.429	0.334	196	89	336
	10234	2	<u>Dolomudstone</u> , as above but without chert	31.06	12.16	11.70	1.062	0.673	211	99	475
	10233	1	<u>Grainstone</u> , medium-brown-grey fresh, buff weathered, interbedded with wackestone of same color, grains 1 mm	48.39	4.35	3.76	0.394	0.338	432	46	376
	10232	2	<u>Dolomitic grainstone</u> , as above	30.40	5.92	28.84	0.611	0.748	263	80	527
	10231	2	<u>Grainstone</u> , as above	46.00	3.64	6.89	0.386	0.182	372	40	652
	10230	2	<u>Grainstone</u> , as above	43.32	4.55	8.10	0.910	0.303	243	79	595
	10229	2	<u>Dolomitic grainstone</u> , dark-grey fresh, buff weathered, grains 1 mm, blurred texture from recrystallization	40.73	6.02	11.41	0.695	0.341	280	65	1012
	10228	2	<u>Grainstone</u> , dark-grey fresh, grains ¼ - ½ mm, 10% dark-grey (buff-brown weathered) irregular chert nodules ½ - 10 cm long	39.54	3.15	17.52	0.473	0.571	357	70	507
	10227	2	<u>Grainstone</u> , as above	51.60	1.37	4.23	0.203	0.124	370	28	426

APPENDIX 5: CONTINUED

Station	Sample	Strat. Thick. (m)	Description	CaO %	MgO %	SiO ₂ %	Al ₂ O ₃ %	Fe ₂ O ₃ %	SrCO ₃ ppm	MnO ppm	P ₂ O ₅ ppm
RV-03	10281	2	Limestone, light-buff-grey, grains < 1 mm to micritic, small vugs and open spaces, bedding 160°/51°SW, elevation 2060 m	53.52	1.75	0.24	0.105	0.039	194	51	555
	10280	2	Limestone, as above	55.24	0.39	0.36	0.110	0.048	214	38	499

SECTION ALONG CAROLINE CREEK: STATIONS RV-67, RV-66, RV-65, RV-64, RV-63, RV-62, RV-04, RV-61, RV-60, RV-59, RV-58, RV-57, RV-56

Mount Head Formation

RV-67	10169	3	Grainstone, grey to medium-grey-brown, medium-coarse-grained	54.72	0.69	0.33	0.038	0.030	237	22	384
	10168	2	Grainstone, as above	54.95	0.65	0.21	0.035	0.084	260	29	615
	10167	2	Grainstone, as above, elevation 1859 m	55.34	0.42	0.47	0.061	0.025	255	22	355
	-	~10	covered								
RV-66	10166	3	Grainstone, medium-grey to medium-dark-grey, coarse- to very coarse grained, fossiliferous, elevation 1871 m	53.52	1.47	0.23	0.026	0.028	211	24	320
	-	~13	covered								
RV-65	10165	3	Grainstone, grey to medium-dark-grey, grains ¾ - 1½ mm, skeletal, elevation 1871 m	53.29	1.57	0.30	0.033	0.020	203	25	372
	-	~10	covered								
RV-64	10164	2	Dolomitic grainstone, medium-grey fresh, buff weathered, fine-grained, brittle, silty	33.32	18.33	0.41	0.055	0.034	87	44	547
	10163	½	Grainstone, medium-grey fresh, dark-grey weathered, medium-grained, silty	51.61	2.63	0.36	0.025	0.013	184	24	594
	-	~10	covered								

Livingstone Formation

RV-63	10162	3	Grainstone, light-grey, grains 1- 3 mm	55.23	0.37	0.12	0.024	0.011	207	26	592
	10161	2	Grainstone, very light grey, grains 1 - 2 mm, regular laminae	55.42	0.31	0.23	0.053	0.024	204	32	1033
	10160	2	Grainstone, as above	48.87	5.46	0.11	0.020	0.018	158	34	533
	10159	4	Dolomitic grainstone, light-grey to white, grains ¾ mm, laminated	45.04	9.01	0.16	0.016	0.043	127	37	637
	10158	4	Grainstone, light-grey, grains ½ - 1 mm, fining upward, bedding 171°/40°W, elevation 1859 m	53.63	1.72	0.18	0.018	0.011	189	23	635
	-	~5	covered								
RV-62	10157	5	Grainstone, medium- to very light grey, grains 1- 2 mm	51.34	3.50	0.21	0.020	0.017	161	29	568
	10156	4	Grainstone, as above	51.09	4.14	0.17	0.023	0.028	144	29	680
	10155	2	Grainstone, as above	54.14	0.82	0.39	0.067	0.032	193	29	754
	10154	2	Grainstone, light-grey, medium- to coarse-grained, massive to thick-bedded	50.60	3.79	0.81	0.123	0.047	176	36	559
	10153	2	Grainstone, as above	55.32	0.40	0.12	0.033	0.028	214	33	301
	10152	4	Lime mudstone, medium-grey to brown-grey, micritic to fine-grained	55.60	0.37	0.22	0.043	0.020	224	33	588
	10151	2	Lime mudstone, as above, darker and finer, elevation 1856 m	53.98	1.66	0.32	0.101	0.036	230	33	590
	-	-	Fault? see sample 10288 below								
RV-04	10288	2	Grainstone, buff-grey to grey, coarse-grained, karst zone with strong brecciation, karst parallel to bedding	53.73	1.43	0.27	0.130	0.061	147	42	1023
	10287	2	Grainstone, buff-grey to grey, grains 2 - 3 mm, massive, brachiopods	55.31	0.53	0.14	0.044	0.030	241	42	821
	10286	2	Grainstone, as above, grains ¾ - 1½ mm	54.85	0.75	0.30	0.064	0.037	246	49	753
	10285	2	Dolomitic limestone, grey, sucrosic, grains < ¼ mm, silty, numerous irregular to lamellar chert nodules, dense	46.80	6.63	0.85	0.082	0.070	170	42	1048

APPENDIX 5: CONTINUED

Station	Sample	Strat. Thick. (m)	Description	CaO %	MgO %	SiO ₂ %	Al ₂ O ₃ %	Fe ₂ O ₃ %	SrCO ₃ ppm	MnO ppm	P ₂ O ₅ ppm
RV-04	10284	2	Dolomitic limestone, as above, silty	38.32	11.19	5.79	0.215	0.192	148	49	1100
	10283	2	Dolomitic limestone, as above	29.72	11.05	19.97	0.372	0.450	140	59	1142
	10282	2	Dolomitic limestone, as above, joints 133°/81°SW, 59°/86°SE, 48°/46°SE, bedding 172°/42°W, elevation 1854 m	33.52	9.93	15.13	0.293	0.445	165	55	1022
		~2	covered								
RV-61	10145	3	Grainstone, medium-grey, grains 1 - 3 mm, massive, bedding 169°/45°W, elevation 1881 m	55.01	0.56	0.13	0.029	0.012	188	26	477
		~2	covered								
RV-60	10150	2	Grainstone, medium-grey, coarse-grained	55.70	0.30	0.10	0.027	0.013	215	30	690
	10149	4	Grainstone, as above, very coarse grained, bedding 177°/42°W	53.12	2.11	0.15	0.026	0.026	177	25	641
	10148	4	Grainstone, light-grey, grains 1 - 3 mm	55.46	0.46	0.18	0.029	0.013	190	25	754
	10147	2	Dolomitic grainstone, light-grey, fine- to medium-grained	44.87	9.46	0.19	0.021	0.037	130	32	639
	10146	4	Grainstone, medium-grey, medium- to coarse-grained, speckled	55.29	0.38	0.07	0.018	0.011	354	23	560
	10144	2	Grainstone, as above	54.88	0.70	0.14	0.018	0.010	516	21	754
	-	-	Fault, attitude 0°/58°W								
	10143	2	Grainstone, medium-grey, medium-grained, speckled, calcite veins	54.14	0.97	0.10	0.016	0.032	301	33	318
	-	~20	covered								
RV-59	10142	3	Grainstone, massive, light-grey, fine- to medium-grained, silty, vuggy, bedding 167°/51°W	50.68	3.90	0.25	0.021	0.016	248	31	766
	10141	2	Grainstone, as above	54.52	0.96	0.22	0.028	0.061	230	35	736
	10140	2	Grainstone, as above	54.81	0.52	0.28	0.022	0.019	203	35	356
	10139	2	Dolomitic grainstone, as above	39.11	14.10	0.46	0.044	0.057	105	47	312
	10138	2	Dolomitic grainstone, as above	36.82	15.55	0.90	0.104	0.125	103	60	412
	10137	2	Grainstone, light-grey, coarse- to fine-grained cycles, grains ½ - 3 mm, numerous brachiopods and bryozoans	54.44	1.08	0.30	0.040	0.018	195	29	536
	-	~10	covered								
RV-58	*10136	½	Grainstone, light-grey, grains 1 - 4 mm, elevation 1981 m	54.66	0.83	0.44	0.050	0.019	212	32	434
	-	~14	covered								
RV-57	10135	2	Grainstone, light-buff-grey, coarse-grained, bedding 177°/39°W	53.93	1.72	0.25	0.037	0.021	165	30	611
RV-56	10134	2	Grainstone, light-grey fresh and weathered, grains 1 - 2 mm, silty, bryozoans, crinoids, beds 1 m thick, cross-bedded	49.47	4.90	0.15	0.018	0.029	158	32	633
	10133	2	Grainstone, light-grey, grains 1 - 2 mm, bryozoans, crinoids, beds 1 m thick, bedding 174°/42°W, elevation 1975 m	52.70	2.31	0.18	0.032	0.031	176	31	980

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SECTION ON NORTHERN SLOPE OF VAUGHAN RIDGE: STATIONS JS-52, RV-21, RV-20, RV-19, RV-18, RV-17, RV-16, RV-15, RV-14

Mount Head Formation

JS-52	10074	2	Packstone-wackestone, medium-grey fresh, light-grey weathered, grains ¼ - ¾ mm, 10 - 30% oolites, elevation 1673 m	53.97	0.65	1.33	0.094	0.075	447	31	<70
	10073	2	Packstone-wackestone in upper 1 m, as above, oolitic grainstone in lower 1 m with grains ½ - 1 mm, 90% oolites	54.57	0.49	1.13	0.042	0.047	411	32	148
	10072	2	Oolitic grainstone in upper 1 m, packstone-wackestone in lower 1 m, as above	54.96	0.52	0.71	0.089	0.054	425	42	127
	10071	2	Packstone-wackestone, as above	54.89	0.51	0.59	0.094	0.061	392	60	184
	10070	2	Packstone-wackestone, as above	54.86	0.55	0.72	0.122	0.066	388	58	218

APPENDIX 5: CONTINUED

Station	Sample	Strat. Thick. (m)	Description	CaO %	MgO %	SiO ₂ %	Al ₂ O ₃ %	Fe ₂ O ₃ %	SrCO ₃ ppm	MnO ppm	P ₂ O ₅ ppm	
JS-52	10069	2	Packstone-wackestone, as above	54.50	0.75	0.93	0.113	0.065	405	38	145	
	10068	2	Packstone-wackestone, as above, but several chert nodules 1 - 2 cm long and oriented laterally in lower 1 m	51.77	2.84	1.19	0.158	0.101	296	40	85	
	10067	2	Packstone-wackestone, as 10074	54.82	0.49	0.97	0.063	0.051	365	33	156	
	-	6	covered									
	10066	2	Packstone, medium-grey fresh, light-grey weathered, grains, ¼ - ¾ mm, 10% matrix, 60% oolites	54.21	0.46	1.44	0.076	0.065	341	31	<70	
	10065	2	Packstone, as above	54.39	0.44	0.91	0.068	0.060	338	29	83	
	10064	2	Packstone, as above	54.71	0.43	0.84	0.065	0.047	334	32	137	
	10063	2	Packstone, as above, bedding 10°/42°W, elevation 1643 m	55.22	0.47	0.84	0.044	0.032	337	31	149	
-	~60	covered										
RV-21	11057	2	Grainstone, grey to grey-brown, grains 1 - 1½ mm	55.18	0.41	0.78	0.045	0.027	343	25	163	
	11056	2	Grainstone, as above, bedding 168°/42°W, elevation 1738 m	54.81	0.46	0.91	0.055	0.053	317	33	109	
-	~15	covered										
RV-20	11055	3	Grainstone, dark-brown-grey, grains to ¾ mm, beds massive, joints 2°/59°E, 8°/84°N	55.38	0.40	0.19	0.040	0.055	296	36	183	
	11054	2	Grainstone, as above	55.10	0.38	0.33	0.028	0.046	282	38	150	
	11053	2	Grainstone, as above	55.48	0.41	0.30	0.033	0.042	272	27	<70	
	11052	2	Grainstone, as above, bedding 164°/53°SW, elevation 1738 m	53.46	1.52	0.52	0.055	0.071	236	34	81	
	-	~28	covered									
RV-19	11051	2	Grainstone, light-grey-brown to grey-brown fresh, grey to blue-grey weathered, grains ¾ mm, rugose corals, crinoids, rare to no oolites, beds 30 cm - 2 m thick	55.40	0.43	0.23	0.031	0.025	335	20	213	
	11050	2	Grainstone, as above	55.52	0.38	0.20	0.023	0.025	288	20	184	
	11049	2	Grainstone, as above	53.70	1.82	0.47	0.034	0.033	249	22	149	
	11048	2	Dolomitic grainstone, as above	45.61	7.23	1.99	0.143	0.198	186	50	116	
	11047	2	Grainstone, as above	54.93	0.42	0.90	0.033	0.039	305	30	<70	
	11046	2	Grainstone, as above	55.00	0.42	0.95	0.036	0.042	305	28	<70	
	11045	2	Grainstone, as above	55.20	0.39	0.40	0.045	0.031	315	18	135	
	11044	2	Grainstone, as above, bedding 167°/52°W, elevation 1783 m	55.23	0.43	0.61	0.061	0.039	349	21	114	
	RV-18	11043	2	Grainstone, medium-brown-grey, grains ¾ mm	55.35	0.41	0.52	0.048	0.039	328	24	167
		11042	2	Grainstone, as above	55.29	0.38	0.40	0.062	0.049	326	23	95
		11041	2	Grainstone, as above	55.44	0.38	0.32	0.042	0.041	329	20	<70
		11040	2	Grainstone, as above	55.48	0.44	0.23	0.032	0.023	321	17	197
		11039	2	Grainstone, as above	55.17	0.38	0.17	0.025	0.034	276	20	149
		11038	2	Grainstone, as above	54.92	0.38	0.16	0.027	0.043	267	22	70
		11037	2	Grainstone, as above	55.02	0.40	0.14	0.024	0.027	284	18	142
11036		2	Grainstone, medium-brown-grey, grains ~¾ mm, bedding 168°/39°W	55.26	0.42	0.44	0.024	0.046	291	23	78	
11035		2	Grainstone, as above	55.38	0.38	0.28	0.024	0.028	304	23	309	
11034		2	Grainstone, as above	55.10	0.70	0.18	0.026	0.030	314	23	211	
11033		2	Grainstone, as above	52.66	2.81	0.16	0.027	0.038	276	26	269	
11032	2	Dolomitic grainstone, as above	48.24	6.05	0.13	0.032	0.076	199	36	165		
11031	2	Dolomitic limestone, grains to ½ mm, silty, easily weathered and crumbly	39.37	13.67	0.13	0.040	0.133	95	61	187		

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APPENDIX 5: CONTINUED

Station	Sample	Strat. Thick. (m)	Description	CaO %	MgO %	SiO ₂ %	Al ₂ O ₃ %	Fe ₂ O ₃ %	SrCO ₃ ppm	MnO ppm	P ₂ O ₅ ppm
RV-18	11030	2	<u>Grainstone</u> , light- to medium-light-grey fresh, medium-light-grey weathered, grains to ¼ mm, homogeneous	53.49	1.96	0.32	0.036	0.029	255	21	101
	11029	2	<u>Grainstone</u> , as above	54.01	1.38	0.32	0.043	0.039	273	20	<70
	11028	2	<u>Grainstone</u> , as above	53.70	1.81	0.38	0.042	0.023	277	18	108
	11027	2	<u>Grainstone</u> , as above, talus below cliff rich in oolites, bedding 162°/43°SW, elevation 1800 m	54.25	1.38	0.38	0.043	0.032	308	22	71
RV-17	-	~42	covered								
	-	4	<u>Limestone</u> , buff weathered, chert nodules, undulating surface, elevation 1731 m								
	11026	2	<u>Lime mudstone</u> , medium-light-grey, grains ½ - ½ mm	50.95	2.41	3.30	0.330	0.131	332	55	230
	-	2	<u>Limestone</u> , cherty								
	11025	2	<u>Grainstone-mudstone</u> interbeds, light- to medium-light-grey, grains ½ - ½ mm, 10% chert nodules	43.73	2.00	15.61	0.453	0.398	414	52	718
	11024	2	<u>Grainstone-mudstone</u> interbeds, as above, chert nodules in upper 50 cm	54.66	0.43	1.12	0.047	0.042	302	35	284
	11023	2	<u>Grainstone</u> , light-grey, grains to ¾ mm, veintlets	54.72	0.46	0.86	0.118	0.051	393	39	2929
	11022	2	<u>Grainstone</u> , as above, grains 1 - 1½ mm	55.24	0.44	0.51	0.035	0.021	261	27	360
	11021	4½	<u>Limestone</u> , grains to ½ mm, cherty	48.24	2.33	7.32	0.293	0.107	272	47	506
	-	~16	covered, <u>fault</u> ?								
Livingstone Formation											
RV-16	11020	3	<u>Grainstone</u> , grey, grains ¾ mm, beds very thick to massive, joints 73°/88°S, 108°/77°NE, 150°/54°NE	54.42	0.57	0.75	0.112	0.079	287	43	403
	11019	2	<u>Grainstone</u> , as above, grains ¾ mm	54.48	0.36	0.11	0.030	0.043	281	33	486
	11018	2	<u>Grainstone</u> , as above	54.95	0.34	0.18	0.041	0.029	256	32	363
	11017	2	<u>Grainstone</u> , as above, grains ¾ - 1½ mm, bedding 174°/40°W, elevation 1743 m	55.54	0.30	0.09	0.032	0.023	229	52	465
	-	~3	covered								
RV-15	11016	3	<u>Grainstone</u> , light-grey, grains 1 - 2 mm, massive, bedding 170°/39°W	55.36	0.32	0.24	0.042	0.086	252	35	235
	11015	2	<u>Grainstone</u> , as above	55.15	0.30	0.08	0.023	0.026	245	31	474
	11014	2	<u>Grainstone</u> , as above, grains 1 - 2 mm	54.35	0.32	0.21	0.053	0.036	211	49	349
	11013	2	<u>Grainstone</u> , light- to medium-light-grey, grains ½ - ¾ mm, beds 20 - 40 cm thick, joints 66°/63°SE, 112°/82°N, 160°/64°E	55.50	0.34	0.19	0.043	0.034	243	48	846
	11012	2	<u>Grainstone</u> , light-grey, grains ¾ - 1 mm, fining-upward cycles	54.56	0.33	0.24	0.038	0.033	232	43	368
	11011	2	<u>Grainstone</u> , as above, grains 1 mm	55.38	0.34	0.40	0.038	0.036	244	40	308
	11010	2	<u>Grainstone</u> , as above, grains ¾ - 1 mm, coarsening and fining cycles, bedding 170°/39°W, elevation 1743 m	55.04	0.40	0.60	0.128	0.067	191	58	706
	-	~54	covered, recessive, sampled at RV-53 and RV-54 on ridge top								
RV-14	11009	3	<u>Grainstone</u> , light-grey, grains 1 - 1½ mm, massive, fairly uniform joints	55.37	0.33	0.21	0.037	0.029	261	29	321
	11008	2	<u>Grainstone</u> , as above, with rare calcite veins	54.71	0.52	0.43	0.032	0.024	211	28	381
	11007	2	<u>Grainstone</u> as above, very uniform light-grey-tan	55.28	0.35	0.27	0.035	0.038	247	48	398
	11006	2	<u>Grainstone</u> , light-brown-grey fresh, light-white-grey weathered, grains 1 - 1½ mm, rare calcite veins, massive, joints 95°/69°N, 43°/73°SE, 40°/8°SE, bedding 168°/49°W	53.96	1.57	0.38	0.043	0.039	201	29	216
	11005	2	<u>Grainstone</u> , as above, but grains ¾ - 1½ mm	52.94	1.87	0.45	0.061	0.051	236	28	478
	11004	2	<u>Grainstone</u> , as above	55.39	0.43	0.34	0.044	0.024	253	21	347

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APPENDIX 5: CONTINUED

Station	Sample	Strat. Thick. (m)	Description	CaO %	MgO %	SiO ₂ %	Al ₂ O ₃ %	Fe ₂ O ₃ %	SrCO ₃ ppm	MnO ppm	P ₂ O ₅ ppm
RV-14	11003	2	<u>Grainstone</u> , as above, grain size slightly finer than underlying units, massive with bedding indiscernable	55.38	0.34	0.39	0.051	0.032	273	33	436
	11002	2	<u>Grainstone</u> , as above	53.73	1.33	0.50	0.064	0.031	235	31	619
	11001	2	<u>Grainstone</u> , as above, joints 132°/58°NE, 154°/61°NE, 29°/50°SE, 60°/47°SE, bedding 174°/37°W	53.55	1.40	0.42	0.053	0.029	220	25	478
SECTION ALONG VAUGHAN RIDGE; STATIONS JS-59, JS-56, JS-55, JS-54, RV-55, JS-53, JS-22, JS-21, JS-20, JS-19, RV-54, RV-53, RV-52, RV-51											
Mount Head Formation											
JS-59	10085	3	<u>Wackestone</u> , black fresh, light-grey weathered, 20% grains with black calcite fragments up to 1 mm, minor packstone at top	54.68	0.51	0.79	0.091	0.068	822	39	209
	10084	2	<u>Wackestone</u> , as above, bedding 175°/37°W, elevation 1564 m	54.63	0.52	1.25	0.046	0.054	756	31	118
	-	~124	covered, <u>fault</u> ?								
JS-56	10080	2	<u>Dolomudstone</u> , dark-grey fresh, light- to green-grey weathered	46.47	5.86	2.81	0.755	0.295	592	67	245
	10079	2	<u>Lime mudstone</u> , as above, but wackestone 50 cm thick on top with 50% black calcite bioclastics up to 3 mm in light-grey matrix, elevation 1570 m	54.16	0.91	1.03	0.179	0.116	693	50	125
	-	~9	covered								
JS-55	-	8	<u>Wackestone-lime mudstone</u> interbeds, individually light-grey and light-green-grey weathered, irregular chert nodules 2 - 5 cm long								
	10078	2	<u>Wackestone</u> , medium-grey fresh, light-grey weathered, 60% grains ¼ - 1 mm, crinoids, rugose and tabulate corals	52.60	1.86	1.84	0.172	0.079	353	37	91
	10077	2	<u>Wackestone</u> , as above, bedding 175°/34°W, elevation 1573 m	54.28	0.44	1.59	0.105	0.241	299	38	118
	-	~7	partly covered, <u>lime mudstone</u> , medium-grey fresh, light-green-grey weathered, irregular chert nodules with smooth boundaries 2 - 10 cm in size								
JS-54	10076	3	<u>Wackestone-packstone</u> , medium-grey fresh, light-grey weathered, grains ½ - ¾ mm, bedding 175°/38°W, elevation 1689 m	54.87	0.62	0.83	0.051	0.023	366	25	165
	-	~11	covered								
RV-55	10132	2	<u>Grainstone</u> , medium- to light-grey, grains 1 - 2 mm, crinoids, brachiopods, bedding 170°/36°W, elevation 1783 m	53.84	1.55	0.52	0.043	0.047	312	25	252
	-	~3	covered								
JS-53	10075	2	<u>Grainstone</u> , light-grey fresh, light-grey weathered, grains ¼ - 1½ mm, crinoids	55.06	0.57	0.46	0.046	0.044	290	23	178
	-	~9	covered								
JS-22	10428	2	<u>Grainstone</u> , dark-brown-grey fresh, light-grey weathered, grains ½ - 1 mm, 20% oolites, beds 20 - 40 cm thick	54.92	0.42	0.22	0.029	0.029	284	24	120
	10427	2	<u>Grainstone</u> , as above	55.38	0.44	0.24	0.028	0.019	301	18	71
	10426	2	<u>Grainstone</u> , as above, bedding 170°/43°W, elevation 1844 m	54.77	0.41	0.32	0.022	0.050	282	18	130
	-	~10	covered								
JS-21	10425	3	<u>Grainstone</u> , medium-brown-grey fresh, light-grey weathered, grains ¼ - ½ mm, oolites increasing from 20% to 80% at top, elevation 1889 m	54.29	0.64	1.05	0.061	0.027	339	22	106
	10424	2	<u>Grainstone</u> , as above	54.57	0.49	1.49	0.054	0.044	339	25	<70
	10423	2	<u>Grainstone</u> , as above	54.69	0.70	0.97	0.069	0.035	322	23	159
	10422	2	<u>Grainstone</u> , as above, but dolomite in upper 1 m, medium-grey fresh, medium-brown weathered, grains < ¼ mm	38.28	6.35	12.57	1.009	0.483	243	80	491
	10421	2	<u>Grainstone</u> , as 10422	55.02	0.59	0.42	0.036	0.029	306	22	97
	10420	2	<u>Grainstone</u> , as above, bedding 170°/29°W	54.66	1.05	0.56	0.046	0.034	302	23	280

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APPENDIX 5: CONTINUED

Station	Sample	Strat. Thick. (m)	Description	CaO %	MgO %	SiO ₂ %	Al ₂ O ₃ %	Fe ₂ O ₃ %	SrCO ₃ ppm	MnO ppm	P ₂ O ₅ ppm
JS-20	-	7	covered								
	10419	2	Oolitic grainstone, medium-brown-grey fresh, light-grey weathered, grains ½ - ¾ mm, 90% oolites, sparse bryozoans, beds 2 - 50 cm thick with undulating surfaces	52.90	2.50	0.49	0.071	0.046	298	36	207
	10418	2	Oolitic grainstone, as above	55.29	0.42	0.27	0.041	0.028	318	29	266
	10417	3	Oolitic grainstone, as above	54.88	0.46	0.19	0.028	0.037	298	28	129
	10416	2	Oolitic grainstone, as above	55.06	0.65	0.49	0.059	0.061	298	33	177
	10415	2	Oolitic grainstone, as above, elevation 1926 m	55.45	0.45	0.26	0.033	0.033	290	24	92
	-	6	covered								
JS-19	10414	2	Oolitic grainstone, medium-brown-grey fresh, light-grey weathered, grains ½ - ¾ mm, 90% oolites, beds 2 - 50 cm thick with undulating surfaces	55.38	0.38	0.18	0.037	0.035	287	41	121
	10413	2	Oolitic grainstone, as above, bedding 165°/45°SW, elevation 1926 m	55.61	0.38	0.18	0.029	0.049	271	38	142
	-	~75	not sampled at this location								
			Livingstone Formation								
	-	~27	not sampled at this location, <u>thrust fault</u> at base								
			Mount Head Formation								
RV-54	10131	2	Grainstone, medium-grey, grains ¾ - 1½ mm, recessive	52.87	1.83	0.60	0.069	0.038	209	35	596
	-	1½	covered								
	10130	2	Grainstone, as above	52.42	2.89	0.59	0.086	0.055	222	33	428
	10129	2	Dolomitic grainstone, as above, elevation 1957 m	47.39	6.55	0.81	0.084	0.060	163	39	377
	-	~15	covered								
RV-53	*10128	3	Grainstone, medium- to dark-grey, coarse-grained, recessive	49.84	4.58	0.54	0.066	0.061	197	41	404
	*10127	8	Dolomitic grainstone, as above	41.66	12.04	0.36	0.051	0.059	119	44	518
	10126	2	Grainstone, light-grey, grains 1¼ mm, recessive	55.40	0.34	0.31	0.035	0.056	247	30	389
	*10125	10	Dolomitic grainstone, light-grey to grey-white, grains ¾ - 2 mm,	46.79	7.41	0.43	0.052	0.036	167	53	414
	*10124	3	Grainstone, as above, elevation 1969 m	49.97	4.66	0.28	0.034	0.036	190	31	685
	-	35?	covered								
			Livingstone Formation								
RV-52	*10123	5	Grainstone, medium- to medium-light-grey fresh and slightly lighter weathered, medium- to coarse-grained, locally very coarse grained, beds massive	54.69	0.28	0.26	0.036	0.017	198	30	552
	*10122	10	Grainstone, as above	51.95	3.25	0.35	0.030	0.032	180	36	388
	10121	2	Grainstone, as above	55.59	0.31	0.08	0.017	0.021	199	29	577
	10120	2	Dolomitic grainstone, as above	43.26	10.84	0.10	0.018	0.042	114	41	422
	10119	2	Grainstone, as above	50.51	4.14	0.13	0.018	0.025	167	30	488
	10118	2	Grainstone, as above, elevation 1974 m	55.35	0.57	0.21	0.025	0.024	194	27	530
	-	~25	covered								
RV-51	10117	3	Grainstone, light- to medium-light-grey, grains ¾ mm, massive	55.31	0.34	0.08	0.024	0.029	199	43	480
	10116	2	Grainstone, as above	55.50	0.37	0.23	0.052	0.038	226	49	695
	10115	2	Grainstone, as above	55.30	0.39	0.28	0.088	0.049	199	70	530
	10114	2	Grainstone, as above	55.36	0.39	0.15	0.053	0.045	224	65	678
	10113	2	Grainstone, as above	55.14	0.49	0.20	0.074	0.025	241	77	1052
	10112	2	Grainstone, as above	54.90	0.53	0.71	0.216	0.086	227	71	625
	10111	2	Grainstone, as above	55.11	0.41	0.44	0.127	0.038	224	56	966

APPENDIX 5: CONTINUED

Station	Sample	Strat. Thick. (m)	Description	CaO %	MgO %	SiO ₂ %	Al ₂ O ₃ %	Fe ₂ O ₃ %	SrCO ₃ ppm	MnO ppm	P ₂ O ₅ ppm
RV-51	10110	2	<u>Grainstone</u> , as above but rusty material in open spaces and fractures	55.18	0.36	0.30	0.093	0.027	221	39	530
	10109	2	<u>Grainstone</u> , as 10117	55.31	0.36	0.50	0.083	0.032	223	44	358
	-	2½	<u>Chert-bearing unit</u>								
	10108	2	<u>Dolomitic grainstone</u> , light-white-grey, coarse-grained, fining upward, thick-bedded to massive	45.21	8.81	0.85	0.066	0.052	164	41	778
	10107	2	<u>Dolomitic grainstone</u> , as above	43.74	9.48	0.53	0.041	0.036	138	37	565
	10106	2	<u>Dolomitic grainstone</u> , as above, grains ½ - 2 mm, bedding 166°/40°SW, elevation 2537 m	49.02	5.50	0.31	0.037	0.026	197	26	698

SECTION NEAR UPPER KIRSTEN CREEK; STATIONS JS-49, JS-50, JS-51

Livingstone Formation

JS-49	10022	2	<u>Grainstone</u> , white to light-grey fresh, light-grey weathered, grains ¼ - 1½ mm, grain boundaries indistinct, bedding 160°/33°SW, elevation 1984 m	50.73	4.38	0.16	0.021	0.023	182	39	942
	10023	2	<u>Grainstone</u> , as above	51.03	4.18	0.19	0.026	0.019	173	30	733
	10024	2	<u>Grainstone</u> , as above	50.05	5.09	0.14	0.016	0.017	166	26	445
	-	2	covered								
	10025	3	<u>Grainstone</u> , as above but dark-grey (light-grey weathered) wackestone 80 cm thick, crystalline	54.34	1.29	0.24	0.034	0.026	200	30	674
	-	2	covered								
	10026	2	<u>Grainstone</u> , as 10022	55.25	0.56	0.21	0.051	0.023	208	39	1280
	10027	2	<u>Grainstone</u> , as above	55.60	0.33	0.18	0.024	0.018	210	36	376
	10028	2	<u>Grainstone</u> , as above	55.71	0.35	0.10	0.026	0.015	249	31	544
	10029	2	<u>Grainstone</u> , as above but medium-grey wackestone in bottom 1 m	55.60	0.34	0.14	0.039	0.031	210	38	529
	10030	2	<u>Grainstone</u> , as 10022, but medium- to dark-grey fresh, poorly defined bedding plane due to recrystallization	55.46	0.42	0.26	0.054	0.023	220	36	775
	10031	2	<u>Grainstone</u> , as above	55.24	0.41	0.23	0.052	0.044	216	38	642
	10032	2	<u>Grainstone</u> , as above	55.29	0.42	0.15	0.040	0.017	232	36	769
	10033	2	<u>Grainstone</u> , as above	55.47	0.37	0.15	0.049	0.025	212	44	608
	10034	2	<u>Grainstone</u> , as above	55.28	0.41	0.40	0.173	0.053	221	39	712
	10035	2	<u>Wackestone</u> , medium-grey fresh, lesser grainstone, crinoids, bryozoans	54.65	0.82	0.46	0.138	0.047	233	40	765
	10036	2	<u>Wackestone</u> , as above, elevation 1942 m	55.09	0.37	0.18	0.067	0.025	218	48	696
	-	14	<u>Lime mudstone</u> , coarsening down to medium-grey grainstone, 10 - 20% chert at top decreasing downward, chert laminae 2 - 10 cm long grouped in an irregular patch								
	10037	2	<u>Grainstone</u> , medium-grey fresh, light-grey weathered, grains ¼ - 1 mm, calcite-coated fractures	54.99	0.44	0.71	0.091	0.071	287	49	203
	10038	2	<u>Grainstone</u> , as above	54.34	0.39	0.45	0.046	0.031	290	31	274
	10039	2	<u>Grainstone</u> , as above	55.31	0.37	0.48	0.049	0.038	279	29	527
	10040	2	<u>Grainstone</u> , as above	55.44	0.35	0.30	0.033	0.027	293	29	223
	10041	2	<u>Grainstone</u> , as above, with rusty weathered spots ½ - 1 mm	55.39	0.33	0.22	0.034	0.037	308	31	1023
	10042	2	<u>Grainstone</u> , as 10037	54.68	0.34	0.33	0.029	0.036	258	33	346
	10043	2	<u>Grainstone</u> , as above	54.49	0.42	0.79	0.059	0.055	426	48	253
	10044	2	<u>Grainstone</u> , as above	53.50	0.46	2.67	0.245	0.119	413	96	497
	10045	2	<u>Grainstone</u> , as above	54.25	0.56	1.39	0.154	0.079	433	57	363
	10046	2	<u>Oolitic grainstone</u> , as above, but lighter-grey, 80% oolites	54.67	0.45	1.29	0.168	0.094	356	56	306

APPENDIX 5: CONTINUED

Station	Sample	Strat. Thick. (m)	Description	CaO %	MgO %	SiO ₂ %	Al ₂ O ₃ %	Fe ₂ O ₃ %	SrCO ₃ ppm	MnO ppm	P ₂ O ₅ ppm	
JS-49	10047	2	<u>Grainstone</u> , as 10037	54.79	0.37	1.23	0.114	0.078	301	59	319	
	10048	2	<u>Grainstone</u> , as above	54.69	0.58	0.91	0.102	0.081	370	55	326	
	10049	3	<u>Grainstone</u> , as above, elevation 1917 m	54.32	0.71	1.33	0.155	0.094	381	55	386	
	10050	3	<u>Grainstone</u> , as above	53.43	0.94	2.07	0.165	0.111	288	54	415	
-	-	7	covered, <u>fault?</u> along Kirsten Creek									
JS-50	10051	2	<u>Grainstone</u> , medium-grey-brown fresh, buff to light-grey weathered, grains ¼ - 2 mm, crinoids, bedding 180°/40°W, elevation 1987 m	55.43	0.34	0.30	0.038	0.037	245	47	208	
	10052	2	<u>Grainstone</u> , as above	55.29	0.39	0.25	0.028	0.027	302	27	290	
	10053	2	<u>Grainstone</u> , as above, but grains ¼ - ½ mm	54.93	0.37	0.20	0.027	0.028	276	25	289	
	10054	2	<u>Grainstone</u> , as 10053, with rose-brown patches ¼ - 1 mm, calcite coating on fractures, bedding 170°/46°W	55.64	0.33	0.14	0.026	0.036	298	25	420	
	10055	2	<u>Grainstone</u> , as above	55.48	0.42	0.21	0.030	0.052	345	24	288	
	10056	3	<u>Grainstone</u> , as above	54.37	0.63	0.82	0.056	0.047	309	27	581	
	10057	2	<u>Grainstone</u> , as above	54.82	0.64	0.28	0.026	0.038	349	21	195	
	10058	2	<u>Grainstone</u> , as above	54.28	0.89	0.57	0.036	0.030	309	20	209	
	10059	2	<u>Grainstone</u> , as above	52.80	2.00	0.63	0.032	0.060	302	23	221	
	-	-	8	<u>Grainstone</u> , as above, but with 2% chert nodules at top as buff weathered pitted patches and downward as orange-brown weathered knobby patches, highly fractured								
	-	-	6	<u>Wackestone</u> , medium-brown-grey fresh, light-grey weathered, 50% grains up to ½ mm, flat wispy chert blebs, some with coarse silicified bioclastics								
-	-	4	<u>Lime mudstone</u> , medium-grey-brown fresh, buff to light-green weathered, 10% grey chert nodules and lenses 1¼ x 5 - 30 cm in size with smooth boundaries									
JS-51	10060	2	<u>Grainstone-packstone</u> , medium-grey-brown fresh, light-grey weathered, grains ¼ - 1 mm, bedding 5°/43°W, elevation 1896 m	54.70	0.41	0.36	0.029	0.031	318	26	117	
	10061	2	<u>Grainstone</u> , as above	54.55	0.45	0.92	0.046	0.040	314	34	521	
	10062	2	<u>Grainstone</u> , as above	53.68	1.69	0.56	0.042	0.044	274	28	564	
	-	-	2	<u>Lime mudstone</u> , with smooth-bordered chert lenses, coarsening downward to wackestone with wispy pitted chert patches which weather white								

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SECTION ON KIRSTEN CREEK: STATIONS JS-58, JS-57, JS-17, JS-18, JS-15, JS-14, JS-13

Mount Head Formation

JS-58	10083	3	<u>Wackestone</u> , dark-grey to black fresh, light-grey weathered, 20 - 50% grains ¼ - ½ mm, black calcite bioclastics up to 2 mm	54.82	0.64	0.86	0.097	0.064	879	35	191
	10082	3	<u>Wackestone</u> , as above, bedding 170°/29°W, elevation 1454 m	54.82	0.56	0.75	0.060	0.049	780	31	<70
-	-	~220	covered, <u>fault?</u>								
JS-57	*10081	4	<u>Oolitic grainstone</u> , light-grey fresh and weathered, grains ¼ - 1 mm, 50 - 90% oolites, bedding 180°/29°W, elevation 1494 m	55.35	0.42	0.32	0.038	0.057	307	40	213
	-	-	~118	covered							

APPENDIX 5: CONTINUED

Station	Sample	Strat. Thick. (m)	Description	CaO %	MgO %	SiO ₂ %	Al ₂ O ₃ %	Fe ₂ O ₃ %	SrCO ₃ ppm	MnO ppm	P ₂ O ₅ ppm
Livingstone Formation											
JS-17	10407	2	<u>Grainstone</u> , medium-brown-grey fresh, light-grey weathered, grains ½ - 1 mm, brown-grey (buff weathered) chert nodules 5 x 40 cm in size	54.97	0.52	0.40	0.039	0.015	288	20	327
	10406	2	<u>Grainstone</u> , as above but without chert nodules in lower 1 m, bedding 175°/34°W, elevation 1512 m	55.28	0.44	0.37	0.032	0.026	282	22	201
	-	~25	covered								
JS-18	10412	1	<u>Grainstone</u> , medium-brown-grey fresh, light-grey weathered, grains ½ - 1½ mm, bioclastics, bryozoans, irregular chert blebs 1 - 2 mm, beds 2 - 30 cm thick	51.43	2.41	1.85	0.173	0.104	302	43	399
	10411	2	<u>Grainstone</u> , as above but without chert blebs	54.93	0.58	0.60	0.098	0.121	313	37	660
	10410	2	<u>Grainstone</u> , as 10411	55.57	0.34	0.20	0.030	0.033	273	23	328
	10409	2	<u>Grainstone</u> , as above	55.05	0.42	0.23	0.028	0.027	272	23	438
	10408	2	<u>Grainstone</u> , as above, bedding 170°/42°W, elevation 1530 m	55.24	0.72	0.31	0.042	0.026	264	21	426
	-	~140	covered								
JS-15	10388	2	<u>Grainstone</u> , white to light-grey fresh, light-grey weathered, grains ½ - 1½ mm, bioclastics, locally oolitic, beds 2 cm - 1 m thick	49.42	5.47	0.28	0.032	0.036	191	37	1113
	10387	2	<u>Grainstone</u> , as above	54.45	1.06	0.15	0.025	0.014	212	29	400
	10386	2	<u>Grainstone</u> , as above	55.67	0.34	0.10	0.015	0.009	217	24	299
	10385	2	<u>Grainstone</u> , as above, bedding 175°/38°W, elevation 1548 m	53.27	2.07	0.14	0.022	0.027	202	29	372
	-	~40	covered, <u>thrust fault?</u>								
Mount Head Formation											
JS-14	10384	2	<u>Wackestone-packstone</u> , medium-grey fresh, light-grey weathered, grains ½ - 1½ mm, several fining-upward cycles, bryozoans, crinoids, local vugs 2 - 3 mm in size, poorly developed bedding	55.27	0.40	0.15	0.045	0.051	204	35	667
	10383	2	<u>Wackestone-packstone</u> , as above	54.52	0.56	0.64	0.170	0.083	277	32	663
	-	3	covered								
	10382	2	<u>Wackestone-packstone</u> , as above	54.44	0.93	0.65	0.189	0.076	237	48	744
	10381	2	<u>Wackestone-packstone</u> , as above	55.21	0.38	0.25	0.064	0.031	216	40	447
	10380	2	<u>Wackestone-packstone</u> , as above	53.93	0.49	1.51	0.065	0.050	230	35	793
	10379	2	<u>Wackestone-packstone</u> , as above	54.81	0.55	0.37	0.218	0.041	241	34	564
	10378	2	<u>Wackestone-packstone</u> , as above	55.32	0.48	0.42	0.099	0.035	229	41	351
	10377	2	<u>Wackestone-packstone</u> , as above	55.10	0.52	0.44	0.091	0.029	234	38	842
	10376	2	<u>Wackestone-packstone</u> , as above	54.73	0.60	0.77	0.202	0.064	255	38	911
	10325	2	<u>Wackestone-packstone</u> , as above	52.28	2.56	0.42	0.104	0.048	219	32	524
	10324	2	<u>Wackestone-packstone</u> , as above, bedding 195°/26°W, elevation 1640 m	53.72	1.23	0.49	0.055	0.023	205	32	499
	-	~30	partly covered, partly <u>dolomitic mudstone</u> , medium-brown fresh, buff weathered, 10% irregular chert nodules 1 - 2 cm in size								
Livingstone Formation											
JS-13	10323	3	<u>Dolomitic grainstone</u> , light- to medium-grey fresh, light-grey weathered, grains ½ - 2 mm, grain boundaries indistinct from recrystallization, bioclastics, brachiopods, crinoids, bryozoans, beds 10 - 50 cm	48.24	6.02	0.22	0.057	0.042	167	41	704
	10322	2	<u>Dolomitic grainstone</u> , as above	47.24	7.04	0.28	0.056	0.038	148	37	729

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APPENDIX 5: CONTINUED

Station	Sample	Strat. Thick. (m)	Description	CaO %	MgO %	SiO ₂ %	Al ₂ O ₃ %	Fe ₂ O ₃ %	SrCO ₃ ppm	MnO ppm	P ₂ O ₅ ppm
JS-13	10321	2	<u>Grainstone</u> , as above	53.36	2.22	0.27	0.047	0.020	202	30	478
	10320	2	<u>Grainstone</u> , as above	53.54	1.98	0.12	0.040	0.018	199	26	476
	10319	2	<u>Grainstone</u> , as above, bedding 180°/44°W, elevation 1637 m	54.81	0.41	0.23	0.034	0.018	207	24	572

SECTION ON PIPELINE ROAD CUT ON HILLCREST: STATION JS-12

Livingstone Formation

JS-12	10318	2	<u>Grainstone</u> , light-grey to medium-grey-brown fresh, dark-grey weathered, grains ½ - 2 mm, bryozoans, crinoids, brachiopods, blurred grain boundaries from dolomitization, cross-bedding shown by bioclastic laminae	52.07	3.13	0.26	0.040	0.027	216	33	733
	10317	2	<u>Grainstone</u> , as above	54.78	0.97	0.19	0.020	0.017	242	26	937
	10316	2	<u>Grainstone</u> , as above	54.92	0.76	0.24	0.021	0.015	253	28	569
	10315	2	<u>Dolomitic grainstone</u> , as above	41.66	11.87	0.23	0.029	0.046	132	48	328
	10314	2	<u>Dolomitic grainstone</u> , as above	49.24	5.61	0.41	0.031	0.024	243	38	424
	10313	2	<u>Dolomitic grainstone</u> , as above	44.79	8.60	0.88	0.104	0.062	151	51	474
	10312	2	<u>Grainstone</u> , as above	54.56	0.81	0.28	0.046	0.020	296	29	862
	10311	2	<u>Grainstone</u> , as above	55.21	0.59	0.16	0.028	0.017	200	30	491
	10310	2	<u>Grainstone</u> , as above, bedding 190°/29°W, elevation 1622 m	55.08	0.39	0.38	0.054	0.025	214	32	1069

APPENDIX 6: CMM CLAIMS 1995, ITEMIZED COST STATEMENT

a) Personnel

Wayne Choquette, professional archeologist		
1 day August 22, 1995 examining drillsites	\$	450.00
Paul Glombick, junior assistant		
helping with mapping and sampling, splitting samples, travelling between June 15 and July 13, 1995		
23 days @ \$200		4,600.00
L.B. Halferdahl, geological engineer		
15 days planning and organizing work, consultations with Steven Wuschke, B.C. Mines, Cranbrook; officials of Crestbrook Forest Industries		
19½ days supervising sampling and mapping, flagging potential access trails, checking proposed drill sites with professional archeologist and official of Crestbrook Forest Industries, travelling between June 15 and August 23, 1995		
11 days supervising and preparing report		
45½ days @ \$550		25,025.00
Yaojun Han, geological assistant		
27 days assisting with mapping and sampling, checking potential access trails, splitting samples, travelling between June 15 and July 17, 1995		
30 days compiling and checking field data		
57 days @ \$270		15,390.00
Robert Hardy, geologist		
1 day organizing work and field gear		
23 days mapping and sampling, flagging potential access trails, travelling between June 15 and July 13, 1995		
½ day compiling field data		
24½ days @ \$325		7,962.50
Ike Jelic, assistant		
crushing and splitting samples		
16¼ h @ \$8.00		130.00
Ben Jelic, assistant		
crushing and splitting samples		
19 h @ \$8.00		152.00

APPENDIX 6: CONTINUED

W. McGuire, draftsman, computer operator preparing maps and sections 223 h @ \$30		6,690.00	
John Sefton, geologist mapping and sampling, flagging potential access trails, travelling between June 14 and July 15, 1995 26 days @ \$350		<u>9,100.00</u>	\$ 69,499.50
b) Food and Accommodation 123½ man-days in motel and restaurants @ \$45.87			5,664.95
c) Transportation			
Airfares			
3 Edmonton - Coleman return (includes car rental)	\$ 944.40		
1 Edmonton - Fernie return	<u>239.98</u>		
		\$ 1,184.38	
Busfares			
1 Edmonton - Coleman return	\$ 127.87		
1 Coleman - Edmonton	<u>63.83</u>		
		191.70	
Vehicles			
Rental van for driving Victoria - Coleman return and use for 30 days	\$ 2,186.68		
4x4 pick-up truck 3571 km @ 0.35	1,249.85		
Cabs and parking	<u>85.42</u>		
		\$ 3,521.95	
Helicopter Charter B206B3 13.0 h @ \$ 743.65 1661.8 l @ \$0.749	\$ 9,667.45 <u>1,244.69</u>		
		10,912.14	
Freight Samples Calgary - Salt Lake City (195.3 kg)		<u>1,247.00</u>	
			17,057.17
d) n/a			
e) n/a			
f) Analyses			
634 samples prepared and analyzed for 12 constituents by ICP @ 8.75	\$ 5,547.50		
8 samples tested for decrepitation @ \$100	<u>800.00</u>		
			6,347.50
g) Report typing, reproduction, assembly			838.00

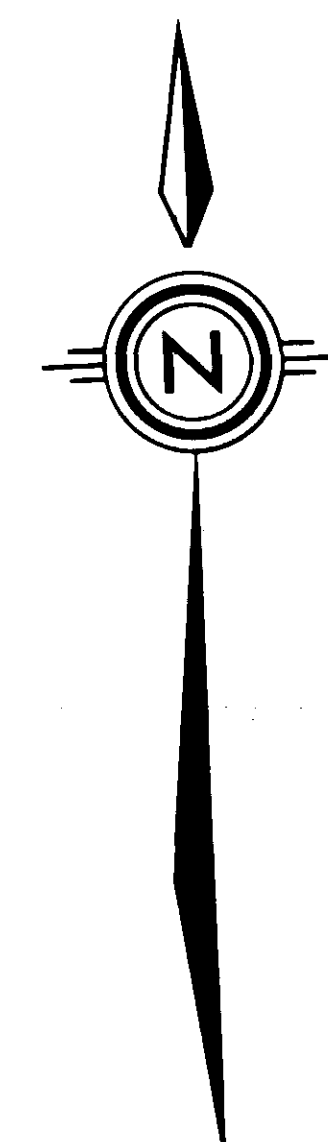
APPENDIX 6: CONTINUED

h) Other

Reclamation bond fee	\$ 150.00	
Field Supplies	46.98	
Aerial photographs (from flying before 1995)	97.59	
Aerial photographs with ground control (from 1995 flying)	10,490.81	
Base and other maps including detailed topographic maps of part of property	828.87	
Long distance telephone	301.65	
Courier	38.38	
Rental of two 2-way radios	192.60	
		<u>12,146.88</u>
		\$ 111,554.00

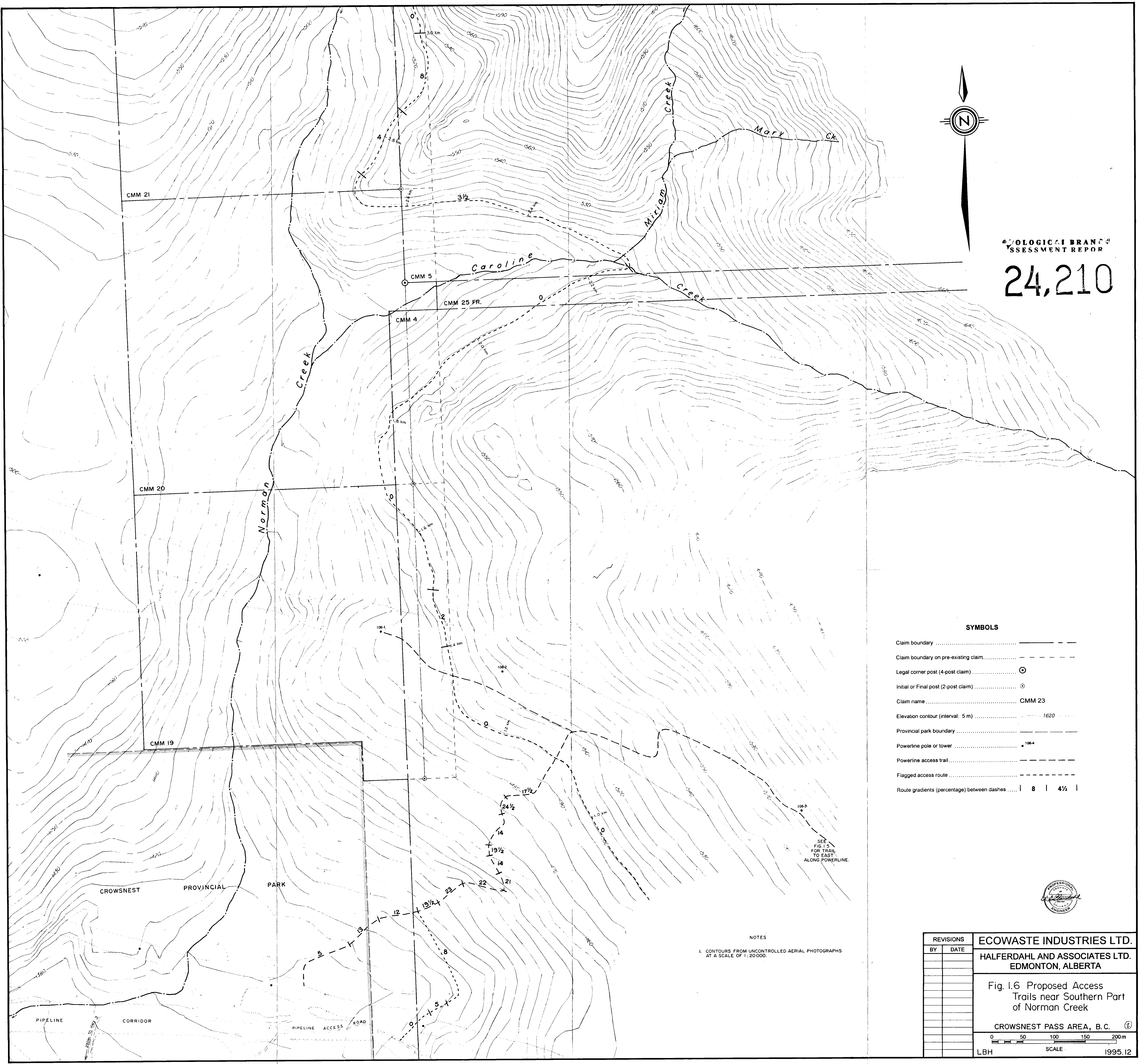
APPENDIX 7: QUALIFICATIONS

The work described in the report was under the supervision of L.B. Halferdahl, who obtained degrees in geological engineering from Queen's University, Kingston, Ontario in 1952 and 1954, and in geology from The Johns Hopkins University, Baltimore, Maryland in 1959. He has more than 35 years experience as a practising engineer and geologist in research and mining exploration, including consulting since 1969. He is a member of the Canadian Institute of Mining and Metallurgy, and is registered as P. Eng. and P. Geol. in the Association of Professional Engineers, Geologists, and Geophysicists of Alberta, and registered as P. Eng. in the Association of Professional Engineers and Geoscientists of British Columbia.



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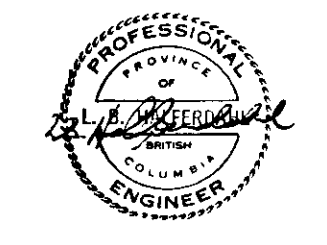
SYMBOLS

- Claim boundary - - - - -
- Claim boundary on pre-existing claim - - - - -
- Legal corner post (4-post claim) ⊙
- Initial or Final post (2-post claim) ⊙
- Claim name CMM 23
- Elevation contour (interval: 5 m) 1620
- Provincial park boundary - - - - -
- Powerline pole or tower 106-4
- Powerline access trail - - - - -
- Flagged access route - - - - -
- Route gradients (percentage) between dashes | 8 | 4 1/2 |

SEE FIG. 1.5 FOR TRAIL TO EAST ALONG POWERLINE.

NOTES

1. CONTOURS FROM UNCONTROLLED AERIAL PHOTOGRAPHS AT A SCALE OF 1:20,000.

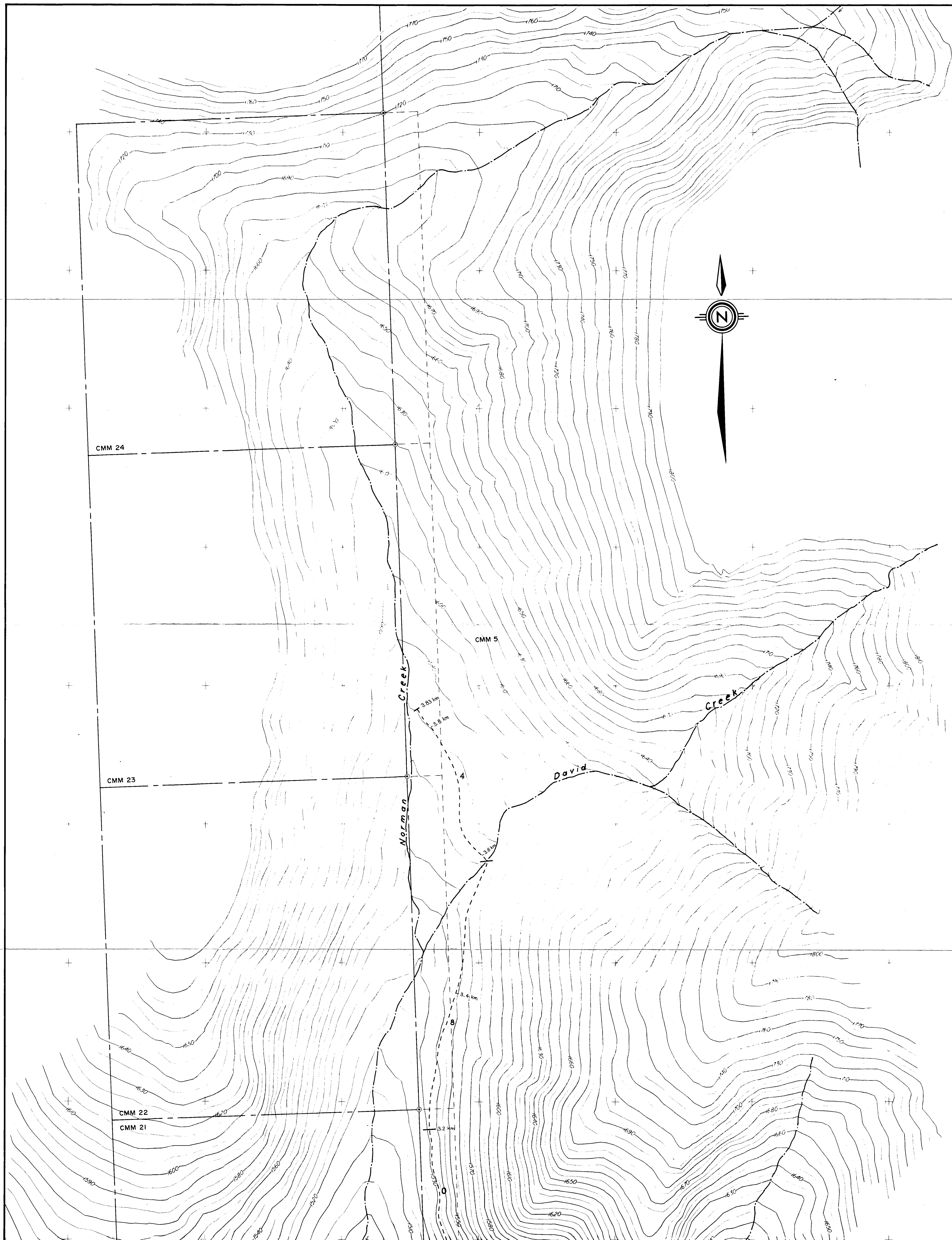


REVISIONS		ECOWASTE INDUSTRIES LTD. HALFERDAHL AND ASSOCIATES LTD. EDMONTON, ALBERTA
BY	DATE	
		Fig. 1.6 Proposed Access Trails near Southern Part of Norman Creek

CROWNEST PASS AREA, B. C. (2)

0 50 100 150 200 m

LBH SCALE 1995.12



SYMBOLS

- Claim boundary
- Claim boundary on pre-existing claim
- Legal corner post (4-post claim)
- Initial or Final post (2-post claim)
- Claim name
- Elevation contour (interval: 5 m)
- Flagged access route
- Route gradients (percentage) between dashes

NOTES

1. CONTOURS FROM UNCONTROLLED AERIAL PHOTOGRAPHS AT A SCALE OF 1:20000.



REVISIONS		ECOWASTE INDUSTRIES LTD. HALFERDAHL AND ASSOCIATES LTD. EDMONTON, ALBERTA
BY	DATE	
		Fig. I.7 Proposed Access Trails near Northern Part of Norman Creek.
		CROWSNEST PASS AREA, B.C. ③
		0 50 100 150 200 m
		LBH SCALE 1995.12