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BC Geological Survey  
Assessment Report  
29693

**2007 Assessment Report**  
**Geological Reconnaissance and Rock Sampling on the  
Mount Bisson Property**

**Omineca Mining Division  
North-central British Columbia**

**55°32'25"N 123°58'23"W  
NTS 93N/9, 93O/5, 93O/12**

**Paget Resources Corporation  
1160-1040 W. Georgia St.  
Vancouver, BC  
V6E 4H1**

**Jim Young  
February 27<sup>th</sup>, 2008**

**GEOLOGICAL SURVEY BRANCH  
ASSESSMENT REPORT**

**29,693**

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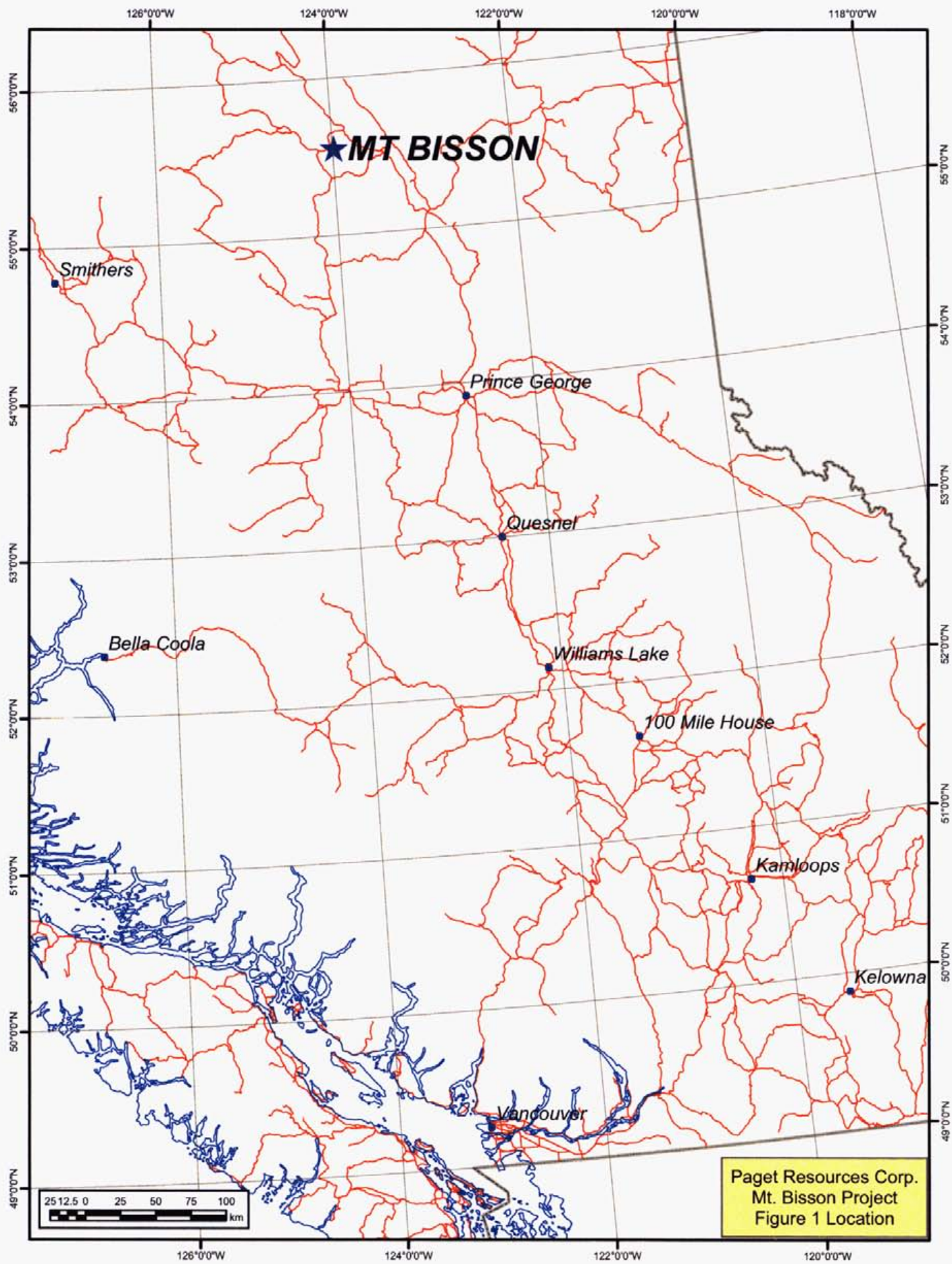
# **Geological Reconnaissance and Rock Sampling on the Mount Bisson Property**

## **Introduction**

The Mount Bisson Property, in the Munro Creek area west of Williston Lake, hosts rare earth mineralization in alkali syenites. The property was acquired in May 2006 by Paget Resources Corporation and is 100% owned by the company. This report describes the results of a reconnaissance rock sampling and geochemistry program carried out in 2007.

## **Location and Access**

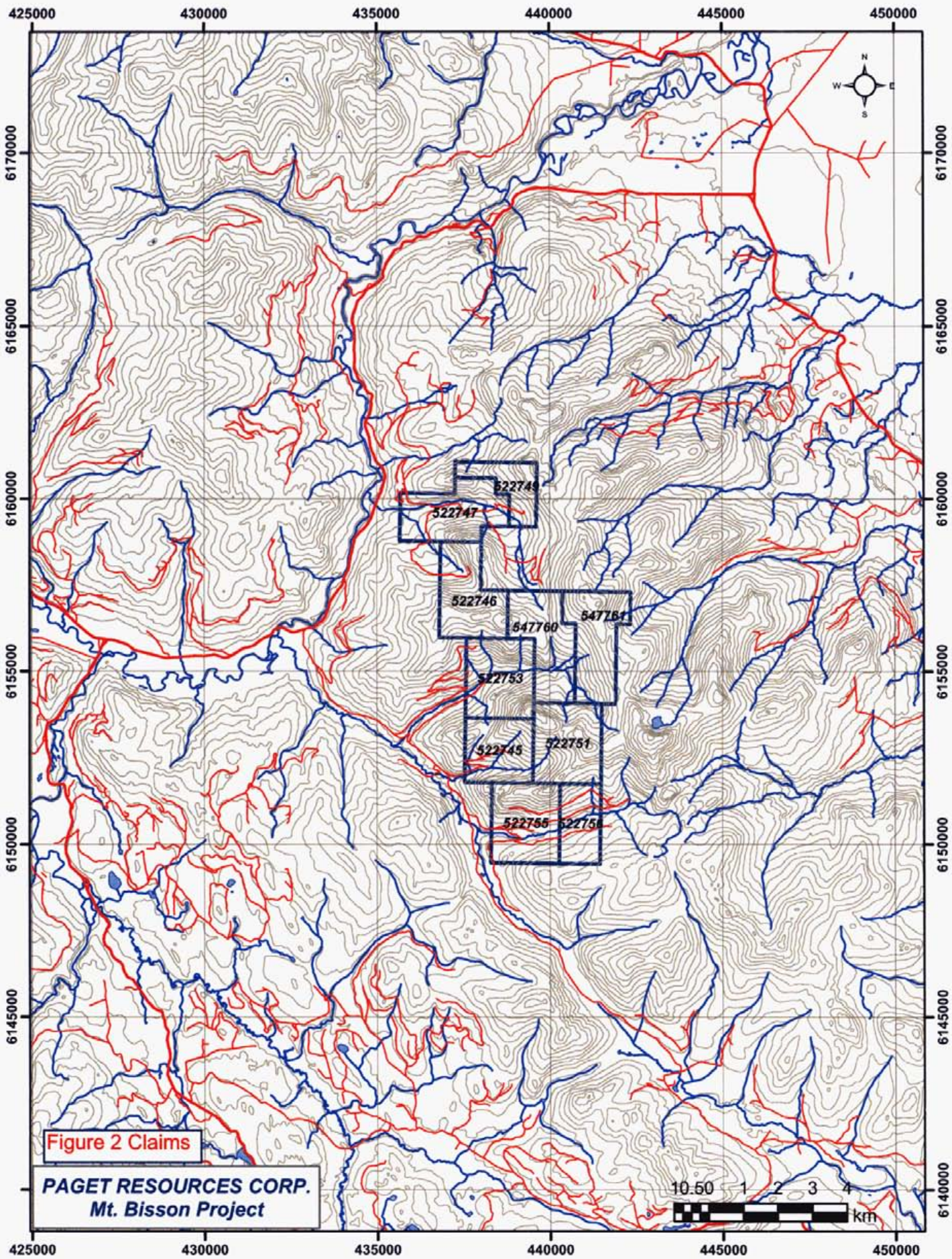
The Mount Bisson Property is located in north-central British Columbia (Figure 1), approximately 58 kilometers northwest of Mackenzie and 36 kilometers southeast of Manson Creek. It straddles a series of roughly east-trending ridges west of Mount Bisson and east of Munro Creek and the Manson River. Elevations range from approximately 1000 to 1600 meters. Numerous logging roads provide access to the southern and western margins of the property. The property is accessible via the Fort St James-Manson Creek logging road or the Finlay-Nation forestry road from Mackenzie.



## Claims and Ownership

The Mount Bisson Property (Figure 2) consists of ten claims in the Omineca Mining Division totalling 4064.16 hectares. Mineral tenure numbers and details are as follows:

Tenure	Claim Name	Owner	Good To Date	Status	Area
522745	BISS 1	201036 (100%)	2010/dec/20	GOOD	366.338
522746	BISS 2	201036 (100%)	2010/dec/20	GOOD	439.150
522747	BISS 3	201036 (100%)	2010/dec/20	GOOD	457.193
522749	BISS 4	201036 (100%)	2010/dec/20	GOOD	237.699
522751	LAURA 1	201036 (100%)	2010/dec/20	GOOD	457.899
522753	LAURA 2	201036 (100%)	2010/dec/20	GOOD	457.701
522755	LAURA 3	201036 (100%)	2010/dec/20	GOOD	458.132
522756	LAURA 4	201036 (100%)	2010/dec/20	GOOD	274.880
547760	BISS 5	201036 (100%)	2010/dec/20	GOOD	457.589
547761	BISS 6	201036 (100%)	2010/dec/20	GOOD	457.582



## Exploration History

Recorded mineral exploration and discovery in the area commenced with a graphite showing discovered along Munro Creek (Halleran, 1985). The Ursa #1 REE showing was found in 1986 along a logging road in the upper reaches of Munro Creek (AR 16781, Halleran, 1988). This was followed by the discovery of the Laura showing in 1987 (AR 17734, Halleran, 1988). In 1988, the Will showings were discovered and detailed mapping, soil sampling and scintillometer surveys were conducted over four small grids on the Laura, Ursa and Will showings (AR 17872, Halleran, 1988). Follow-up mapping and sampling on the Laura grid was completed in 1989 (AR 19404, Halleran, 1989; Halleran and Russell, 1989). Further work in the area was non-existent until 1996 when a short review of the property took place (AR 24861, Leighton, 1997) and several check samples were taken.

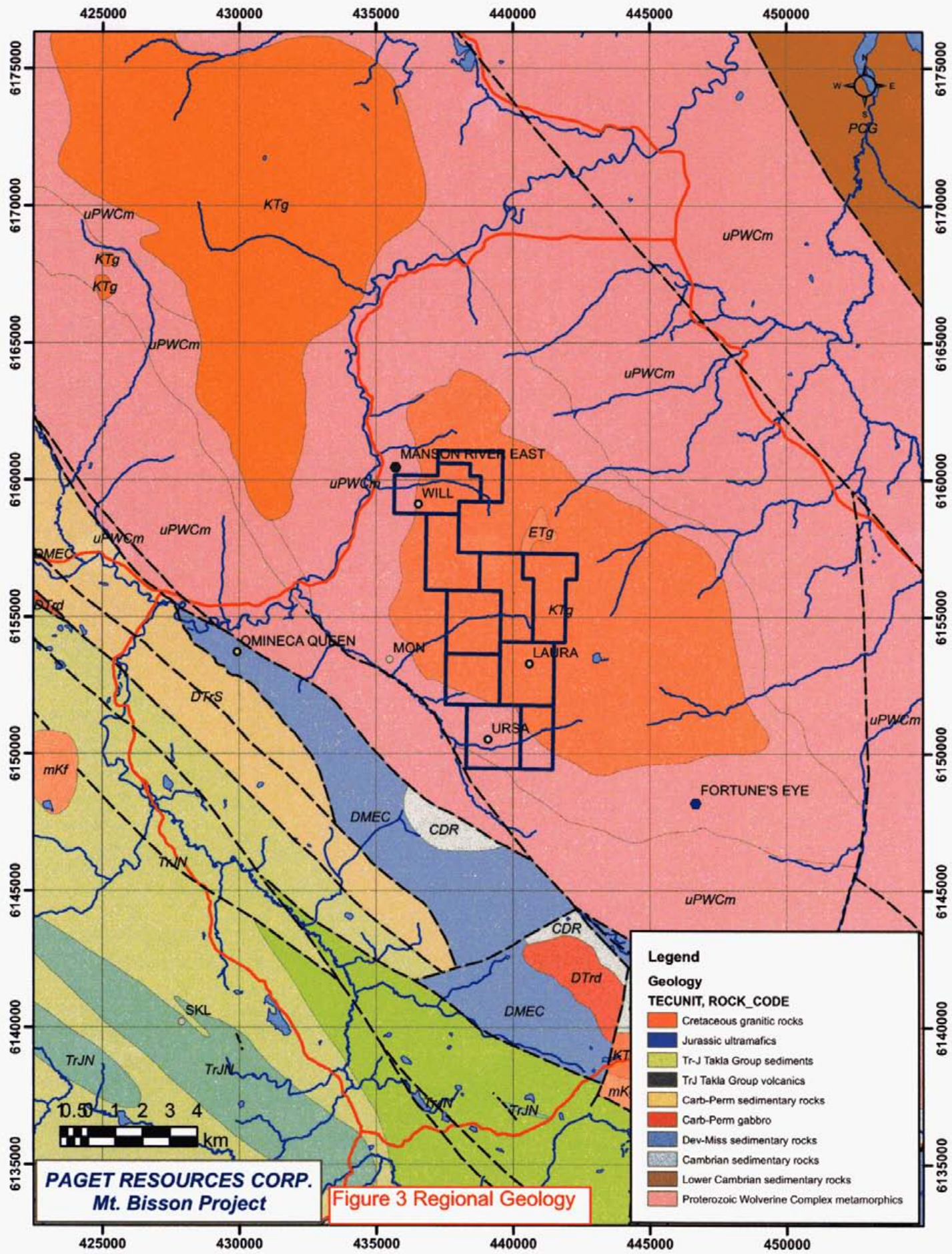
Rare earth mineralization is distributed within several rock units on the property, and REE's are contained primarily in the minerals allanite and monazite. Two units contain the highest grade and most widespread mineralization, an allanite pegmatite and a secondary alkalic unit. The pegmatite has been found in exposures 2 to 5 meters wide and up to 75 meters in length. Allanite crystals up to 2 centimeters in length make up to 35 per cent of the mineral content of the pegmatite in isolated zones. Perthite, sphene, plagioclase, apatite and minor aegirine-augite, quartz, zircon and opaques constitute the remainder of the pegmatite's mineral assemblage. Assays (ICP-MS) of the the allanite pegmatite have returned total cerium, lanthanum, neodymium, samarium and praseodymium (LREE) of 0.3 to 13.5 per cent. Total heavy rare earth element (HREE) concentrations are up to hundreds of parts per million. High thorium and uranium concentrations are associated with high REE concentrations (AR19404, Halleran, 1989). The secondary alkalic unit consists of Wolverine amphibolite gneisses that have been metasomatized and are marked by an increase in allanite, apatite, feldspar, aegirine-augite and sphene and a decrease in quartz, hornblende and biotite. The original fabric of the gneisses is often recognizable. LREE content of this unit ranges from 0.15 to 0.64 per cent, HREE content is up to tens of parts per million.

## Geology

Regional geology has been described in several references (McConnell, 1896; Dolmage, 1927; Armstrong, 1949; Muller, 1961; Tipper *et al*, 1974; Ferri and Melville, 1988). The property lies within the Omineca crystalline belt, which is comprised of schists, micaceous quartzite and crystalline limestone and Proterozoic Wolverine Complex metamorphic rocks, consisting of amphibolite and calcsilicate gneiss. These units strike northwest and dip to the southwest and are intruded by monzonites, syenites and associated pegmatites as dikes and stocks.

Detailed geologic descriptions of the property are available in Halleran and Russell (1990) and in a number of Assessment Reports completed on showings covered by the Mount Bisson Property. Rare earth mineralization on the Mount Bisson Property is hosted by alkalic dikes and pegmatites and within large metasomatic alteration halos within the rocks of the Wolverine Complex. Allanite and monazite are the primary rare earth element (REE) bearing minerals, and are often found as large (2 cm) crystals.





## Work Completed 2007

The Mt Bisson area was examined by the author and geologist Fred Breaks on October 2-5, 2007. The purpose of the visit was to evaluate the economic potential of the claims by documenting the rock types and mineralogy of potential rare earth element mineralization in the vicinity of the property. Geological and sample stations are shown in Figure 4. The following geological descriptions are based on notes by Breaks.

### Geology

#### Ursa Area

In the southern part of the project area (in the area of the Ursa MINFILE showing 0930 041), a series of outcrops along north side of Munro Creek Road comprises a complex assortment of Wolverine gneiss and granitic units (station 07-FWB-05: 0439092E, 6150242N):

- calc-silicate-bearing metasedimentary rock with abundant biotite and coarse grey-green diopside
- amphibolite as narrow fg-mg layers within calc-silicate and metapelitic metasediments
- biotite-rich metapelite
- white alkalic pegmatite locally mineralized with a euhedral, coarse, green-brown mineral, a rectangular, glossy black phase (?allanite) and an orange-brown titanite
- diopside?-biotite white granitic pegmatite, deformed
- hornblende granite and biotite granite as late, discordant, undeformed dykes. Fine-grained, white weathering, that reveal attendant metasomatic reaction zones, 10-20 cm thick, in calc-silicate host rocks

Most of the exposures comprise a rough weathering, calc-silicate metasedimentary rock composed of abundant biotite and a grey-green mineral provisionally identified as diopside.

The highest part of the outcrop area exposes a white granitic pegmatite about 4 m in width. The pegmatite is deformed with a strong lineation and is mostly hosted in calc-silicate rocks. This pegmatite may represent that sampled by Halleran and Russell (1989, p. 303) with 2% total LREE.

External contacts are very sparsely exposed along the west side of the pegmatite where a definite contact metasomatic assemblage very rich in a grey-green mineral is evident with an estimated mode of 30%. Local quartz-rich patches occur in the pegmatite, otherwise the pegmatite contains very low visible quartz (5%). The pegmatite also contains local streak-like aggregates of yellow-green chlorite and biotite and local dark green possible diopside. The pegmatite mass strikes about 030°, with uncertain dip.

The amphibolite occurs as thin units (less than 10 cm thickness) within biotite metapelites and calc-silicate metasediments. These mafic rocks are pervasively invaded by fractures that have guided skarn-like replacement assemblages (plagioclase + ? diopside). The skarn veins are crosscut by late dykes of hornblende granite. A narrow, deformed white feldspar-rich pegmatite dyke within the amphibolite host rocks cuts across an earlier episode of veins with skarn-type assemblages. A biotite-rich, metasomatic selvage along pegmatite dyke locally overprint the dark green skarn mineralogy.

A loose angular boulder about 1m across found near the roadside contains coarse, euhedral green-brown crystals up to 1 by 4cm that are tentatively identified as diopside. This phase is also present in quartz-rich patches within the pegmatite. A black euhedral, rectangular mineral (allanite?) and orange brown titanite were noted in a different angular boulder.

South of Munro Creek (station 07-FWB-15: 439162E, 6150034N) several small outcrops along Munro Creek road consist mainly of metapelite, which is locally rich in sillimanite, and garnet-biotite metawacke invaded by several, white, apparently barren, biotite-quartz-white feldspar pegmatites. The pegmatites are deformed and up to 1 m in width. The metasedimentary rocks contain local layers, 5-30 cm thickness, of white weathering quartz arenite. Further east on the south side of the creek (07-FWB-16: 439633E, 6150103N) are outcrops of massive, homogeneous, fine to medium grained white weathering, biotite granodiorite.

About 1.2 kilometres further to the east (07-FWB-17: 440869E, 6150385N), a rubbly rust-stained outcrop along Munro Creek road consists mainly of well layered metasedimentary rocks (metapelite, garnet-biotite metawacke) and minor calc-silicate-bearing metasediments. Metawacke locally contains an unknown green mineral (possibly diopside) in (~20%). A narrow dike of deformed, white feldspar-rich pegmatite occurs in a rough-weathering, calc-silicate unit. A green currently unidentified mineral is evident in the metasomatized, carbonate-rich host-rock within 2 cm of the pegmatite contact.

### West-Central Area

In a recently logged area in the west-central part of the property (station 07-FWB-13: 436443E, 6153969N) several scattered small outcrops on a steep slope with consist of tonalite migmatitic gneiss. Stromatic migmatite structure due to biotite-hornblende

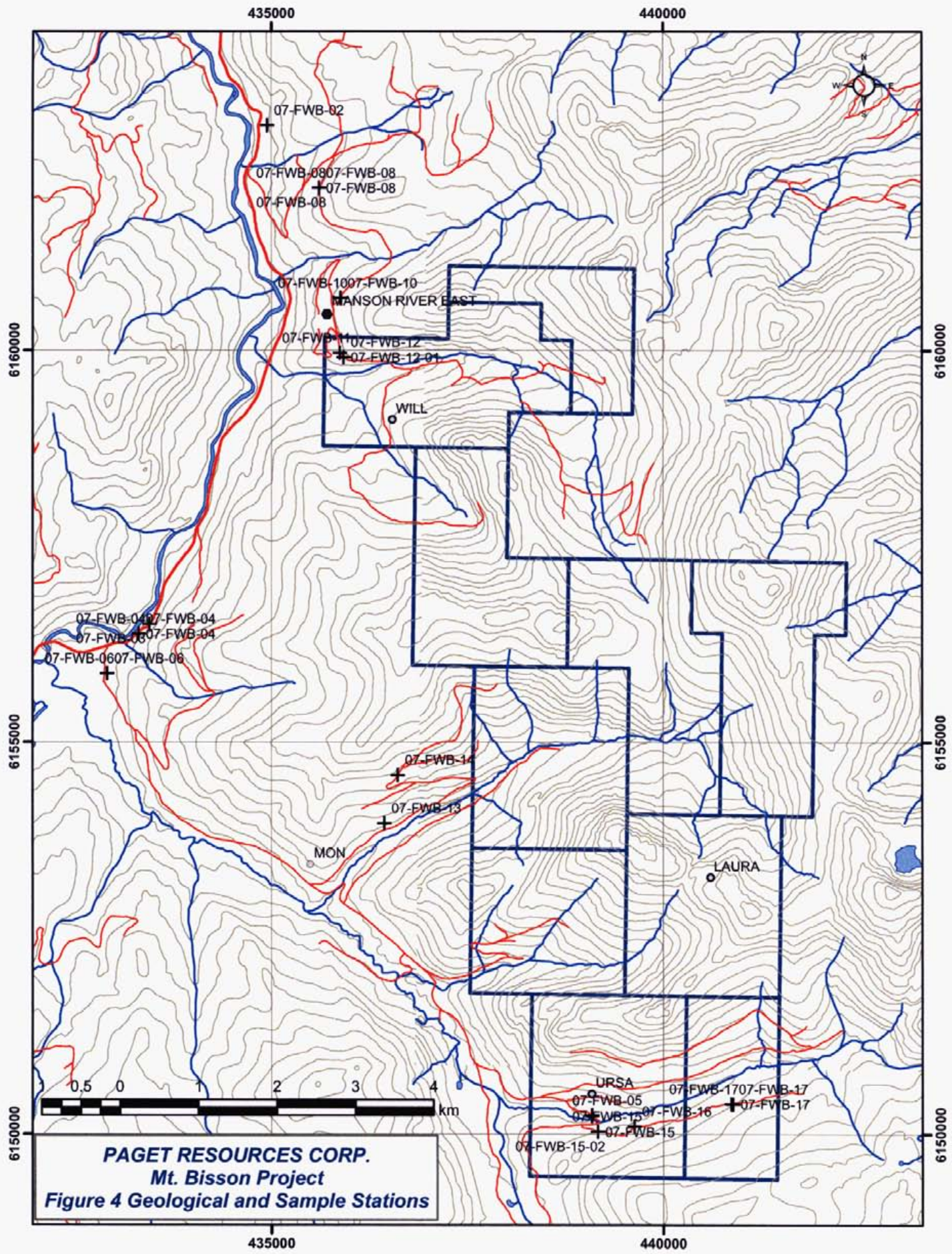
tonalite layered with granite to local syenite leucosome generally concordant to foliation of diorite mesosome is evident. The syenite leucosome is pegmatitic, deep pink and contains no hornblende *vis-à-vis* the tonalite. The gneissosity is cross-cut by late, brittle shears, 0.5-1 cm thickness with fine grained green chlorite.

A small outcrop further upslope in logged area (station 07-FWB-14: 436615E, 6154581N) consists mostly of white, biotite granitic pegmatite with odd enclaves of tonalite migmatitic gneiss. The pegmatite is apparently barren of accessory minerals other than biotite (<5%).

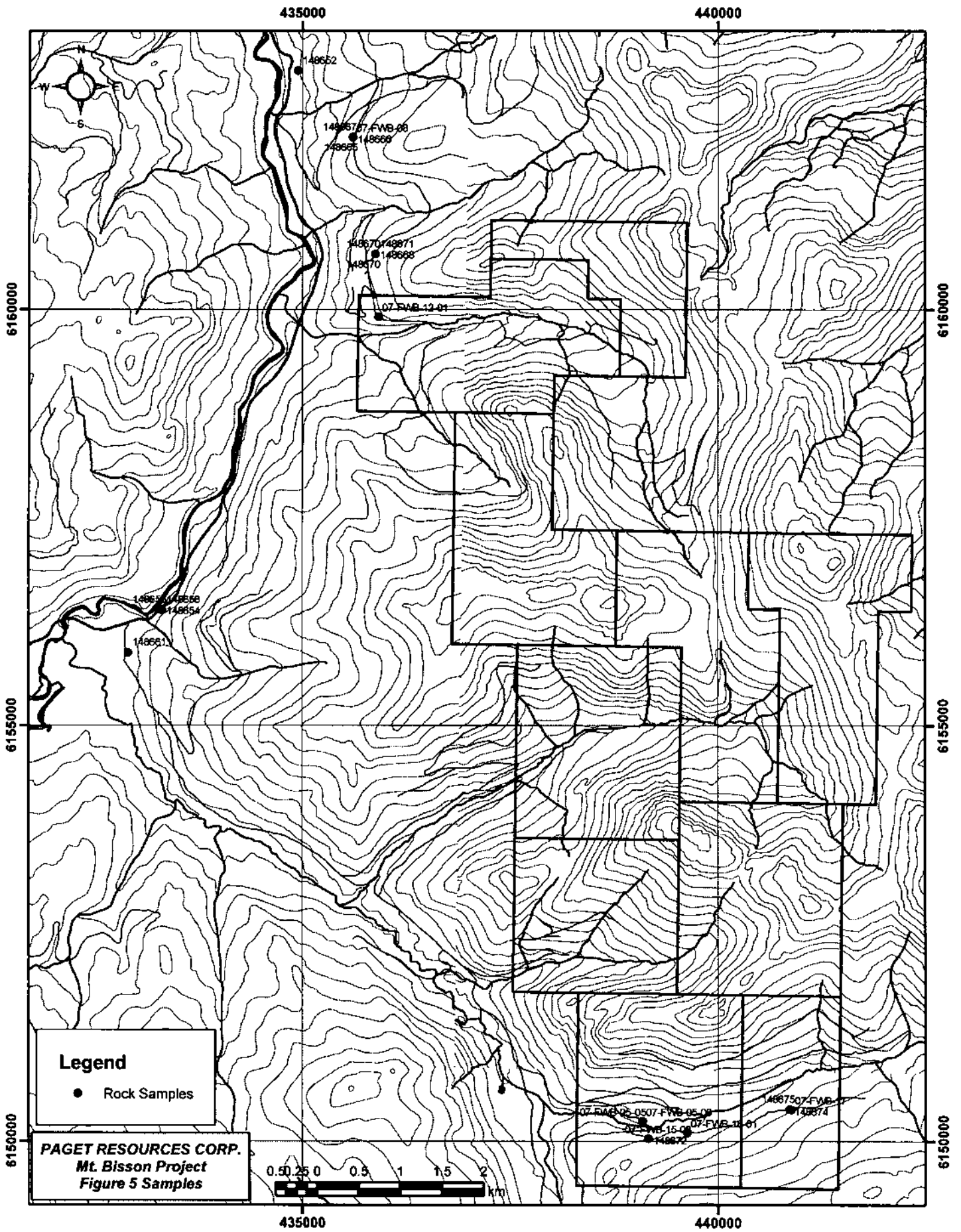
### Manson River East Area

Near the northwestern corner of the property near the Manson River East MINFILE showing (093N 180; station 07-FWB-10: 435881E, 6160665N), a granitic outcrop contains several different internal units. The outcrop is generally massive but a strong foliation is locally evident. Mostly massive, fine to medium grained hornblende monzonite contains hornblende as small phenocrysts up to 5 mm diameter. Quartz is <5%. More mafic, medium grained diorite dominates in the western part of exposure (mafics = 40-50%). One enclave, 0.6 by 1 m, of possibly related potassic mafic rock occurs in the monzonite unit and consists of a biotite-K-feldspar-plagioclase<<hornblende rock and is given provisional name hornblendite. Sparse titanite, epidote, pyrite and chalcopyrite also occur in this unit. This massive, coarse grained rock contains 15-20% biotite, 30% K-feldspar, 20% plagioclase, with the rest = hornblende. Sparse titanite, pyrite and chalcopyrite are also present. Sulphide mineralization occurs along a fracture surface for a minimum length of 30 cm and has a thickness of about 5 cm. A significant amount of chalcopyrite occurs in this seam (40%) with minor pyrite.

About 750 metres south of this exposure (07-FWB-11: 435873E, 6159965N), foliated medium grained biotite-hornblende diorite similar to mafic unit of previous exposure crops out. The diorite is crosscut by undeformed, aplite dikes with local pods of green amphibole or pyroxene. Nearby foliated diorite has undergone chlorite alteration. Some of the alteration has been induced by fluids dispersed along thin, brittle shears especially in the top part of the outcrop. Seams rich in epidote are also notable.



**PAGET RESOURCES CORP.**  
**Mt. Bisson Project**  
**Figure 4 Geological and Sample Stations**



**Legend**

- Rock Samples

**PAGET RESOURCES CORP.**  
**Mt. Bisson Project**  
**Figure 5 Samples**



## **Rock Geochemistry- Gold-ICP**

Character rock samples were collected from three areas in order to define the trace element profile, and rare earth element and base and precious metal potential of these zones. Samples were collected in plastic sample bags and sealed with plastic zip ties. Sample locations were recorded by GPS. Sample locations are marked with flagging tape and embossed aluminum tags. Samples were taken to International ALS Chemex Laboratory of North Vancouver directly from the project area in sealed bags with security tags.

At the laboratory, the samples were dried crushed and pulverized using standard rock preparation procedures. The pulps were then analyzed for Au using a 30 gram fire assay with AA finish and for 38 rare earth and trace elements by ICP-MS following lithium metaborate fusion. Quality control at the laboratory is maintained by submitting blanks, standards and re-assaying duplicate samples from each analytical batch.

Rock sample descriptions and analytical results are in Appendix C. Sample locations are plotted on Figures 4 and 5.

### **Ursa Area**

Two samples of metasedimentary rocks were taken in the Ursa showing area near Munro Creek (samples 148658, 148672). Both samples contained total rare earth elements (REE's) of <200 ppm. Sample 148672 (garnet-sillimanite-biotite metapelite) contained weakly anomalous W (40 ppm).

### **Manson Forest Service Road**

Two samples of metasedimentary and mafic dyke rocks from outcrops west of the property along the Manson Forest Service Road (148653, 148654) contained low values in all elements, including total REE values of 213 and 431 ppm.

### **Manson River East Area**

Mineralized intrusive rocks from the Manson River East area returned low REE's but elevated base metal values in two samples (148669, 148670). Sample 148669 (monzonite/diorite with sulphide blobs) returned 7480 ppm Cu, 547 ppm Zn and 11 ppm W; sample 148670 (biotite altered? hornblende) returned 2120 ppm Cu, 303 ppm Zn and 917 ppm W. Total REE values are low.

### **Rock Geochemistry- Whole Rock/Trace Element ICP**

A second suite of rock samples was analyzed by Activation Labs of Ancaster, Ontario using a combination of lithium metaborate/tetraborate fusion ICP whole rock and trace element ICP. Large samples (5 kg) were collected in plastic buckets with sealed lids. Sample locations were recorded by GPS. Sample locations are marked with flagging tape and embossed aluminum tags. Samples were trucked to Prince George by the author and shipped by truck (Bandstra Transportation Systems Ltd.) to Activation Labs of Ancaster, Ontario.

Rock sample descriptions and analytical results are in Appendix C. Sample locations are plotted on Figure 4. A description of analytical procedures is in Appendix D.

#### **Ursa Area**

Sixteen samples from the Ursa area were analyzed for 35 rare earth elements (REE's), other trace elements and chalcophile metals. The highest total REE values were from a hornblende granite dyke (871 ppm; sample 148657), a metawacke (756 ppm; sample 148674), and from a pegmatite with an allanite-bearing border zone (667 ppm; sample 07-FWB-05-03).

#### **Manson Forest Service Road**

Seven samples from outcrops along the Manson FSR and Munro Camp road west of the property returned low total REE's with the best values from mafic dykes (405 ppm; sample 148654-A and 409 ppm sample 148654). Pegmatite samples (148656 and 148661) were very low in REE's (<100 ppm) although one sample had elevated Pb (533 ppm; sample 148661).

#### **Manson River East Area**

Nine samples of intrusive rocks from the northwestern part of the property also returned generally low REE values, with the highest value being 528 ppm from a diorite (sample 07-FWB-12-01).

### **Conclusions and Recommendations**

The Mount Bisson Property has had several small scale mapping and sampling programs conducted over it. Historical work has shown that rare earth elements are contained in allanite and monazite in pegmatites and metasomatized alkalic units. Historical sampling has been focused on four small grids and samples of economic interest have been



collected from these grids. Samples with the highest REE assays have been collected from a grid in the central part of the property which was not accessible during the 2007 program because of snow cover.

Detailed lithological descriptions have demonstrated that the project area is underlain by a variety of sillimanite-grade metapelitic sedimentary rocks intruded by variably deformed suites of mafic to felsic intrusions. Limited rock sampling of the metasediments returned low total REE values. In the northwestern part of the project area, sulfide mineralization in biotite altered(?) monzonite to hornblendite intrusions returned elevated Cu, W and Zn values.

Further work in the Mt. Bisson area should focus on the main area of interest in the central part of the property (Laura MINFILE showing 093O 021). Here the extent of mineralized pegmatites is poorly constrained by historical mapping and a variety of analytical techniques have produced widely varying results.

## References

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- Dolmage V. (1927): Finlay River District, B.C.; *Geological Survey of Canada*, Summary Report 1927 Part A, Pages 19-41.
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- Halleran, A.A.D. and Russell, J.K. (1990) Geology and Descriptive Petrology of the Mount Bisson Alkaline Complex, Munroe Creek, British Columbia (93N/ 9E, 93O/ 12W, 5W); in Geological fieldwork 1989, *B.C. Ministry of Energy, Mines and Petroleum Resources*, Paper 1990-1, pages 297-304.
- Leighton, D.G. (1997) Geological Report on the ERZ Property, Mt. Bisson Area, North-Central B.C.; *B.C. Ministry of Energy Mines and Petroleum Resources*, Assessment Report 24861.
- McConnell R.G. (1896): Report on an Exploration of the Finlay and Omineca Rivers; *Geological Survey of Canada*, Annual Report New Series, Volume VII Part C.
- Muller J.E. (1961): Geology of Pine Pass, British Columbia; *Geological Survey of Canada*, Map 11.
- Tipper H.W., Campbell R.B., Taylor G.C. and Stott D.F. (1974); Parsnip River, B.C.; *Geological Survey of Canada*, Map 142A, Sheet 93.

## **Appendix A Statement of Qualifications**

I, Jim Young, certify that:

1. I am presently employed by Paget Resources Corporation with a business address located at:  
1160-1040 W. Georgia St.  
Vancouver, BC, Canada  
V6E 4H1
2. Since 1996 I have been continuously employed in exploration for diamonds, base and precious metals in Ontario and B.C..
3. I participated in the 2007 exploration program on October 2-5, 2007 and am therefore personally familiar with the geology of the Mt Bisson Property and the work conducted in 2007. I have prepared all sections of this report.

Dated this 27 Day of February 2008

Signature 

Jim Young

***Appendix B Statement of Costs***

Paget Resources Corporation  
Project Allocation Detail

					Amount
<b>Mt Bisson 2007 Expenditures for Assessment</b>					
<b>Professional Fees and Wages</b>					
	10-15-2007	Frederick Breaks	15 Days	\$ 800.00	\$ 9,000.00
	10-15-2007	William J. Young	7 Days	\$ 276.52	\$ 1,935.65
	<b>Sub Total</b>				<b>\$ 10,935.65</b>
<b>Expenses</b>					
<i>Mob/Demob - Travel to/from site</i>					
	10-10-2007	Airfare		\$	371.67
	10-10-2007	Fuel		\$	117.27
	11-13-2007	Airfare		\$	421.67
	10-15-2007	Airfare		\$	2,244.92
	10-10-2007	Fuel		\$	83.51
	<b>Sub Total</b>				<b>\$ 3,239.04</b>
<i>Accommodation</i>					
	11-13-2007	Alexander Mackenzie Hotel		\$	983.90
	<b>Sub Total</b>				<b>\$ 983.90</b>
<i>Food</i>					
	10-10-2007	William J. Young		\$	31.13
	10-15-2007	Frederick Breaks		\$	176.76
	<b>Sub Total</b>				<b>\$ 207.89</b>
<i>equipment and supplies</i>					
	10-10-2007	William J. Young		\$	365.33
	10-15-2007	Frederick Breaks		\$	36.70
	11-07-2007	William J. Young		\$	254.88
	<b>Sub Total</b>				<b>\$ 1,056.91</b>
<i>Helicopter</i>					
	10-15-2007	Yellowhead Helicopters		\$	827.75
	<b>Sub Total</b>				<b>\$ 827.75</b>
<i>Freight &amp; Transportation Costs</i>					
	10-06-2007	Bandstra Transportation		\$	58.93
	10-15-2007	Samples to Activation Labs		\$	465.40
	<b>Sub Total</b>				<b>\$ 524.33</b>
<i>Assays / geochemical - drill sample</i>					
	11-10-2007	ALS Chemex		\$	346.97
	12-14-2007	Activation Laboratories Ltd		\$	281.96
	12-14-2007	Activation Laboratories Ltd		\$	174.90
	12-14-2007	Activation Laboratories Ltd		\$	2,127.42
	<b>Sub Total</b>				<b>\$ 2,931.25</b>
<i>Vehicle - rental</i>					
	11-01-2007	Enterprise Rent-A-Car		\$	348.55
	<b>Sub Total</b>				<b>\$ 348.55</b>
	<b>Sub Total</b>				<b>\$ 9,135.72</b>
<b>Report</b>					
			3 Days	\$ 800.00	\$ 1,800.00
	<b>Sub Total</b>				<b>\$ 1,800.00</b>
<b>Total</b>					<b>\$ 22,855.27</b>

***Appendix C Rock Samples***

Sample #	Rock Type	Location	Lab	Easting	Northing	Zone	La	Ce
							ppm	ppm
148651	Marble	Manson FSR	Actlabs	435953	6167362	9	14.8	25
148652	Biotite granite	Manson FSR	Actlabs	434947	6162862	9	20	37.3
148654	Mafic dyke	Manson FSR	Actlabs	433309	6156383	9	98.6	189
148655	Diopside-rich calc-silicate rock	Manson FSR	Actlabs	433309	6156383	9	33.9	65.3
148656	Granitic pegmatite in clastic metaseds	Manson FSR	Actlabs	433309	6156383	9	8.7	15.7
148657	Hornblende granite dyke	Ursa	Actlabs	439092	6150242	9	146	387
148659	Diopside-rich calc-silicate skarn rind	Ursa	Actlabs	439092	6150242	9	35.1	65.9
148660	Ursa potassic pegmatite core zone	Ursa	Actlabs	439092	6150242	9	13.4	24.4
148661	Granitic pegmatite in clastic metaseds	Munro Camp Road	Actlabs	432906	6155873	9	9.3	19.1
148664	Diorite	M12000 Road	Actlabs	435609	6162066	9	34.1	63.5
148665	Sillimanite-biotite metapelite	Ursa	Actlabs	435609	6162066	9	40.4	86.1
148666	Silica-rich part of alkalic pegmatite	M12000 Road	Actlabs	435609	6162066	9	48.2	98.7
148667	Diopside granite	M12000 Road	Actlabs	435609	6162066	9	45.5	77.7
148668	Biotite granite	M12000 Road	Actlabs	435881	6160665	9	38.7	66.2
148670	Hornblendite	M12000 Road	Actlabs	435881	6160665	9	13.9	28.9
148671	Hornblende monzonite	M12000 Road	Actlabs	435881	6160665	9	69.2	111
148672	Garnet-sillimanite-biotite metapelite	Ursa	Actlabs	439162	6150034	9	24.5	45.1
148674	Garnet-biotite metawacke	Ursa	Actlabs	440869	6150385	9	179	344
148675	Feldspar-rich pegmatite in calc-silicate host	Ursa	Actlabs	440869	6150385	9	9.3	16.6
07-FWB-05-03	Ursa pegmatite: allanite-border zone	Ursa	Actlabs	439092	6150242	9	184	327
07-FWB-05-04	Diopside-rich skarn rind	Ursa	Actlabs	439092	6150242	9	35.9	66.9
07-FWB-05-05	Biotite granite dyke	Ursa	Actlabs	439092	6150242	9	29.4	54.5
07-FWB-05-06	Diopside-rich skarn rind	Ursa	Actlabs	439092	6150242	9	32.2	58.9
07-FWB-05-08	Diopside-phlogopite calc-silicate rock	Ursa	Actlabs	439092	6150242	9	31.4	57
07-FWB-12-01	Diorite	M12000 Road	Actlabs	435921	6159911	9	89.6	235
07-FWB-15-02	Quartz arenite	Ursa	Actlabs	439162	6150034	9	37.1	79.3
07-FWB-16-01	Biotite granite	Ursa	Actlabs	439633	6150103	9	26.4	49.2

Sample #	Rock Type	Location	Lab	Easting	Northing	Zone	La	Ce
							ppm	ppm
148658-A	Calc-silicate-rich metased with disseminated pyrite	Ursa	ALS-Chemex	439088	6150230	9	20.5	40.5
148669-A	Hornblende monzonite with chalcopyrite	M12000 Road	ALS-Chemex	435884	6160668	9	53.6	97.7
148670-A	Hornblende with cpy	M12000 Road	ALS-Chemex	435881	6160665	9	20.8	41.6
148673-A	Garnet-sillimanite-biotite metapelite with pyrite	Ursa	ALS-Chemex	440889	6150383	9	39.1	64.5



Sample #	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	REE <sub>T</sub>	Ag
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
148651	3.01	9.4	1.6	0.46	1.4	0.2	1	0.2	0.5	0.08	0.5	0.07	58.22	< 0.5
148652	3.94	14	3.1	0.23	3.5	0.6	3.5	0.7	1.8	0.27	1.7	0.24	90.88	< 0.5
148654	20.5	66.9	10.6	2.55	8.3	1	5	0.9	2.5	0.36	2.2	0.33	408.74	< 0.5
148655	7.55	25	4.3	0.89	3.8	0.6	3.1	0.6	1.7	0.25	1.6	0.24	148.83	< 0.5
148656	1.92	6.9	1.7	1.62	1.9	0.3	1.2	0.2	0.3	< 0.05	0.2	< 0.04	40.64	< 0.5
148657	51.1	184	34.4	7.5	26.7	3.2	14.9	2.6	6.8	0.9	5.3	0.72	871.12	< 0.5
148659	7.82	25.5	4.4	1.21	3.7	0.5	2.6	0.5	1.3	0.18	1.1	0.15	149.96	< 0.5
148660	2.52	7.6	1.3	0.58	1.1	0.2	1	0.2	0.7	0.14	1	0.16	54.3	< 0.5
148661	2.14	7.4	1.7	0.7	2.3	0.5	3.1	0.6	1.9	0.28	1.8	0.27	51.09	2.5
148664	7.5	24.8	4.4	1.18	3.6	0.5	2.5	0.5	1.3	0.18	1	0.14	145.2	< 0.5
148665	9.49	31.1	5.5	1.34	4.7	0.6	3.2	0.6	1.7	0.25	1.6	0.25	186.83	< 0.5
148666	10.4	31.8	5.1	0.94	3.8	0.5	2.5	0.5	1.4	0.21	1.3	0.22	205.57	< 0.5
148667	7.63	21.8	3.2	0.64	2.4	0.3	1.6	0.3	0.8	0.11	0.7	0.12	162.8	< 0.5
148668	6.49	18.9	2.9	0.56	2.2	0.3	1.6	0.3	0.9	0.13	0.9	0.13	140.21	< 0.5
148670	3.43	12.2	2.7	1.44	2.8	0.5	2.4	0.5	1.4	0.19	1.2	0.18	71.74	< 0.5
148671	10.4	27.4	3.7	1.15	2.8	0.3	1.5	0.3	0.9	0.13	0.9	0.14	229.82	1.1
148672	5.48	17.8	3.4	0.8	3.2	0.5	2.6	0.5	1.4	0.2	1.3	0.18	106.96	< 0.5
148674	40.9	124	22	3.52	17.9	2.2	10.4	1.8	5	0.72	4.3	0.61	756.35	< 0.5
148675	1.79	5.5	1.1	1.26	0.9	0.1	0.6	< 0.1	0.2	< 0.05	0.2	< 0.04	37.55	< 0.5
07-FWB-05-03	33.8	91.2	13.9	2.64	9	0.7	2.4	0.4	0.9	0.12	0.6	0.07	666.73	< 0.5
07-FWB-05-04	7.82	25.1	4.4	1.11	3.9	0.5	2.5	0.5	1.3	0.18	1.1	0.17	151.38	< 0.5
07-FWB-05-05	5.62	16.8	2.7	0.72	2.1	0.3	1.1	0.2	0.6	0.09	0.6	0.09	114.82	< 0.5
07-FWB-05-06	6.92	22.3	4	0.8	3.6	0.5	2.5	0.5	1.3	0.19	1.2	0.18	135.09	< 0.5
07-FWB-05-08	6.78	21.9	3.9	0.84	3.5	0.5	2.4	0.4	1.2	0.18	1.1	0.17	131.27	< 0.5
07-FWB-12-01	29.9	107	20.4	6.12	17.8	2.2	10.1	1.6	4.1	0.52	2.9	0.41	527.65	< 0.5
07-FWB-15-02	8.5	27.1	5	0.95	4	0.5	2.4	0.4	1.2	0.17	1.1	0.16	167.88	< 0.5
07-FWB-16-01	5.08	15.4	2.6	0.72	2.3	0.3	1.4	0.3	0.8	0.12	0.8	0.11	105.53	< 0.5

Sample #	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	REE <sub>T</sub>	Ag
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
148658-A	5.64	23.2	5.27	1.57	5.01	0.7	4.09	0.75	1.95	0.27	1.6	0.22	111.27	<1
148669-A	11.05	41.6	8.16	3.19	7.94	1.14	6.52	1.26	3.55	0.47	3.1	0.4	239.68	9
148670-A	5.08	21.2	4.47	1.53	4.28	0.65	3.88	0.79	2.19	0.3	1.95	0.27	108.99	4
148673-A	8.18	30.1	5.23	1.25	4.88	0.65	3.57	0.75	1.91	0.26	1.67	0.22	162.27	<1

Sample #	As	Au	Ba	Be	Bi	Co	Cr	Cs	Cu	Ga	Ge	Hf	In	Mo	Nb	Ni	Pb
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
148651	< 5		372	1	< 0.4	3	30	1.2	20	9	< 1	0.7	< 0.2	< 2	3	< 20	12
148652	< 5		525	5	< 0.4	1	30	14.4	< 10	22	2	1.9	< 0.2	2	21	< 20	17
148654	< 5		2280	3	< 0.4	17	40	1.3	30	21	1	6.3	< 0.2	5	38	40	10
148655	< 5		393	2	< 0.4	11	70	3.1	30	17	1	3	< 0.2	< 2	17	30	20
148656	< 5		1922	3	< 0.4	1	< 20	1.6	< 10	18	2	0.3	< 0.2	< 2	5	< 20	50
148657	< 5		123	5	1.1	4	70	12.4	20	18	2	5	< 0.2	3	24	< 20	59
148659	< 5		50	6	< 0.4	12	100	0.6	< 10	25	2	3	< 0.2	< 2	21	30	11
148660	< 5		2727	3	0.4	1	< 20	7.4	< 10	14	2	1	< 0.2	< 2	13	< 20	49
148661	< 5		492	4	< 0.4	1	30	2.4	< 10	17	1	1.4	< 0.2	< 2	16	< 20	533
148664	< 5		57	6	< 0.4	12	110	0.6	< 10	26	2	3.3	< 0.2	< 2	21	30	17
148665	< 5		1131	4	< 0.4	13	80	1.1	10	20	2	5.7	< 0.2	< 2	16	20	20
148666	< 5		696	2	< 0.4	8	40	3	30	26	1	7.2	< 0.2	< 2	18	< 20	14
148667	< 5		1899	2	< 0.4	2	30	3.7	< 10	19	1	4.9	< 0.2	< 2	9	< 20	17
148668	< 5		1857	2	< 0.4	2	< 20	6.1	< 10	19	1	4.7	< 0.2	< 2	15	< 20	20
148670	< 5		1346	6	1.3	64	260	3.9	300	30	5	1.9	0.9	< 2	15	130	36
148671	< 5		4961	2	< 0.4	5	20	0.7	20	20	1	8.5	< 0.2	< 2	7	< 20	12
148672	< 5		428	2	1.9	12	80	2.7	20	21	2	1.6	< 0.2	< 2	9	40	8
148674	< 5		529	2	< 0.4	19	140	4.5	10	35	2	6.9	< 0.2	< 2	23	60	14
148675	< 5		2655	2	< 0.4	< 1	< 20	6.1	< 10	19	< 1	0.4	< 0.2	< 2	9	< 20	28
07-FWB-05-03	< 5		684	5	< 0.4	< 1	< 20	8.7	< 10	31	< 1	4.5	< 0.2	< 2	15	< 20	18
07-FWB-05-04	< 5		84	2	< 0.4	10	90	4.6	10	22	2	2.1	< 0.2	< 2	11	40	7
07-FWB-05-05	< 5		1540	2	< 0.4	4	< 20	1.8	80	17	< 1	4.7	< 0.2	< 2	9	< 20	171
07-FWB-05-06	< 5		303	2	< 0.4	14	70	3.6	< 10	20	3	2.1	< 0.2	< 2	9	40	12
07-FWB-05-08	< 5		336	2	< 0.4	10	80	4.9	20	19	2	1.6	< 0.2	< 2	7	40	6
07-FWB-12-01	< 5		4324	4	< 0.4	29	110	1.1	< 10	22	2	4.7	< 0.2	< 2	118	50	30
07-FWB-15-02	< 5		37	< 1	< 0.4	4	80	< 0.5	< 10	10	2	5.8	< 0.2	5	7	< 20	< 5
07-FWB-16-01	< 5		1709	1	< 0.4	3	< 20	3.3	< 10	20	1	4.9	< 0.2	< 2	8	< 20	11

Sample #	As	Au	Ba	Be	Bi	Co	Cr	Cs	Cu	Ga	Ge	Hf	In	Mo	Nb	Ni	Pb
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
148658-A	<0.005	149				49	230	1.23	188	21.3		2.9		2	25.4	157	13
148669-A	0.015	816				28.5	50	2.97	7480	29.6		4.2		3	19.2	20	99
148670-A	<0.005	1460				59	240	8.3	2120	28.8		2.4		7	14.5	134	28
148673-A	<0.005	285				38.9	200	1.79	218	25.1		3.2		2	14.3	103	16

Sample #	Rb	Sb	Sc	Sn	Sr	Ta	Th	Tl	U	V	W	Y	Zn	Zr	SiO2	Al2O3
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%
148651	40	8.3	4	< 1	1006	0.2	2.8	0.3	1	30	< 1	5	60	20	13.11	5.96
148652	286	6.1	5	2	104	3.5	12.5	1.8	3.2	13	< 1	19	< 30	43	74.85	13.65
148654	79	< 0.5	11	2	1264	1.5	14.9	0.5	4.6	128	< 1	26	70	279	55.65	14.97
148655	88	2	10	2	867	0.9	10	0.5	2.2	56	< 1	17	80	111	40.66	12.26
148656	164	7.7	< 1	< 1	519	0.5	1.2	0.9	1.5	13	< 1	5	< 30	9	69.35	15.9
148657	34	8.6	14	3	457	0.5	15.5	0.2	3.1	85	69	69	120	183	67.11	12.16
148659	22	7.2	13	4	549	1.3	12.4	0.1	3.8	69	3	13	120	100	46.88	16.56
148660	364	2.5	2	1	290	1.6	4.8	2.2	6.4	< 5	< 1	6	30	30	71.91	13.96
148661	125	1.7	< 1	< 1	144	2.1	7.9	0.8	6.4	< 5	1	17	< 30	16	69.21	13.33
148664	22	9.7	13	4	552	1.3	11.9	0.1	3.7	67	3	13	130	103	47.71	16.76
148665	72	2.3	14	3	571	0.8	15.4	0.5	4.8	109	< 1	19	70	215	62.15	15.17
148666	124	3.1	7	2	60	0.9	22.7	0.6	3.2	57	2	11	40	253	71.24	15.74
148667	172	7.3	2	< 1	273	0.9	24.4	1.3	4.3	29	< 1	8	40	176	73.38	14.3
148668	166	2.1	2	1	270	0.9	21.3	1.6	3.1	19	< 1	7	40	182	70.1	14.19
148670	125	8.1	27	8	515	0.3	3.2	0.8	1	245	6	12	380	59	43.64	10.89
148671	80	8.2	4	< 1	683	0.3	15	0.6	2.9	46	< 1	8	50	381	65.4	16.95
148672	97	8	12	1	684	0.8	8.7	0.6	1.6	63	< 1	14	70	49	32.85	15.18
148674	210	7.9	22	2	132	1.6	33.2	1.3	7.7	122	< 1	49	170	231	52.53	24.09
148675	303	6.8	2	< 1	589	0.4	3.4	1.5	1.9	13	< 1	3	40	11	68.88	16.43
07-FWB-05-03	52	8.9	1	2	612	1.1	68	0.3	7.6	11	2	9	90	149	49.62	25.26
07-FWB-05-04	8	6	12	3	581	0.8	10.1	< 0.1	2.3	65	4	13	150	71	42.96	14.82
07-FWB-05-05	132	< 0.5	2	< 1	286	0.3	12.5	0.9	2.1	28	< 1	5	60	157	66.72	13.65
07-FWB-05-06	72	7.1	11	3	516	0.7	9.1	0.5	3	53	4	13	210	65	46.18	13.05
07-FWB-05-08	110	7.6	14	< 1	762	0.6	9.1	0.7	1.3	75	< 1	11	90	48	30.27	13.6
07-FWB-12-01	78	9.4	22	3	835	0.8	4.6	0.4	1.4	181	< 1	44	190	175	51.28	15.88
07-FWB-15-02	4	7.8	2	< 1	48	0.5	9.8	< 0.1	2	28	< 1	12	60	213	81.56	7.08
07-FWB-16-01	168	8	3	< 1	284	0.7	12	1	3.4	54	< 1	7	50	178	72.1	14.31

Sample #	Rb	Sb	Sc	Sn	Sr	Ta	Th	Tl	U	V	W	Y	Zn	Zr	SiO2	Al2O3
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%
148658-A	33.3			7	508	1.4	5.98	<0.5	1.77	262	4	17.7	143	100		
148669-A	49.6			14	654	0.9	12.45	0.5	2.76	163	11.0	34.8	547	144		
148670-A	147.5			7	699	0.4	8.54	0.6	1	238	917	20.1	303	78		
148673-A	56.6			3	672	1.1	9.62	<0.5	2.02	165	40	17.4	211	97		

Sample #	Fe2O3*	MgO	CaO	Na2O	K2O	TiO2	MnO	P2O5	CO2	F	LOI	Total
	%	%	%	%	%	%	%	%	%	%	%	%
148651	2.03	3.89	42.97	0.42	0.78	0.19	0.019	0.02	31	0.13	30.63	100.0
148652	0.74	0.1	0.93	3.82	5.42	0.081	0.032	0.03			0.27	99.94
148654	6.79	2.78	5.91	3.95	3.32	1.039	0.071	0.88			1.24	96.6
148655	4.36	5.42	24.37	1.15	2.11	0.481	0.06	0.08	8.14	0.14	9	99.96
148656	1.02	0.27	2.81	2.65	5.89	0.085	0.011	0.17			0.4	98.54
148657	2.29	2.62	11.11	2.52	0.4	0.347	0.161	0.31			0.92	99.94
148659	5.51	4.32	21.24	1.63	0.31	0.625	0.056	0.14	2.01	0.02	2.26	99.52
148660	0.55	0.14	0.54	1.86	8.47	0.076	0.004	0.04	0.2	< 0.01	0.38	97.93
148661	0.61	0.16	1.06	3.66	3.68	0.058	0.018	0.07			0.44	92.29
148664	5.49	4.32	21.21	1.63	0.24	0.614	0.057	0.14			2.27	100.4
148665	4.95	3.08	5.72	3.74	2.47	0.656	0.097	0.3			0.4	98.72
148666	3.31	1.15	0.48	0.71	2.75	0.399	0.03	0.15	< 0.01	0.06	0.58	96.54
148667	1.55	0.36	1.5	3.58	4.97	0.236	0.027	0.07			0.73	100.7
148668	1.83	0.43	1.58	3.6	4.4	0.25	0.032	0.08			0.29	96.78
148670	16.86	6.95	11.59	1.14	3.24	0.882	0.43	0.11			4.12	99.83
148671	2.47	1.13	2.73	5.8	3.91	0.525	0.037	0.2			0.42	99.55
148672	5.23	3.17	26.59	0.83	1.7	0.482	0.098	0.07			12.92	99.14
148674	9.01	3.25	0.86	1.32	3.45	1.078	0.096	0.11			3.03	98.82
148675	0.86	0.23	3.1	2.1	7.68	0.095	0.008	0.03			0.67	100.1
07-FWB-05-03	0.62	0.16	15.6	3.64	1.37	0.288	0.013	0.05	1.27	< 0.01	1.6	98.22
07-FWB-05-04	5.8	4.21	25.29	1.22	0.16	0.504	0.086	0.09	5.6	0.02	4.95	100.1
07-FWB-05-05	2.26	0.59	1.96	3.74	3.76	0.275	0.027	0.12			0.38	93.47
07-FWB-05-06	8.76	3.75	21.75	1.63	0.84	0.44	0.215	0.06	3.99	0.02	4.11	100.8
07-FWB-05-08	4.88	4.2	28.2	0.86	1.74	0.434	0.044	0.06	14.6	0.13	15.33	99.61
07-FWB-12-01	8.77	5.15	7.51	4.36	3.46	1.178	0.213	0.53			0.16	98.48
07-FWB-15-02	4.21	1.23	4.58	0.28	0.12	0.253	0.168	0.04			0.07	99.46
07-FWB-16-01	2.29	0.55	1.88	3.78	3.92	0.294	0.029	0.1			0.11	99.37

Sample #	Fe2O3*	MgO	CaO	Na2O	K2O	TiO2	MnO	P2O5	CO2	F	LOI	Total
	%	%	%	%	%	%	%	%	%	%	%	%
148658-A												
148669-A												
148670-A												
148673-A												



***Appendix D Analytical Techniques***

### Code 4Litho

A combination of packages Code 4B (lithium metaborate/tetraborate fusion ICP whole rock) and Code 4B2 (trace element ICP).

For accurate levels of base metals (Cu, Pb, Zn and Ni) option 4B1 (see below) is recommended. Option 4B-INAA (see below) is recommended for As, Bs, high W >100 ppm and Cr > 1,000 ppm. Code 5D is recommended for Sn >50 ppm. Mineralized samples should have the "Quant" option (see below) selected or request assays for values which exceed the range of option 4B1.

#### Fusion ICP

Oxide	Detection Limit (%)
SiO <sub>2</sub>	0.01
Al <sub>2</sub> O <sub>3</sub>	0.01
Fe <sub>2</sub> O <sub>3</sub>	0.01
MgO	0.01
MnO	0.001
CaO	0.01
TiO <sub>2</sub>	0.001
Na <sub>2</sub> O	0.01
K <sub>2</sub> O	0.01
P <sub>2</sub> O <sub>5</sub>	0.01
Loss on Ignition	0.01

#### Trace Elements and Detection Limits (ppm)

Element	Detection Limit	Upper Limit
Ag	0.5	100
As	5	2,000
Ba	3	
Be	1	
Bi	0.4	2,000
Co	1	1,000
Cr	20	10,000
Cs	0.5	1,000
Cu	10	10,000
Ga	1	500
Ge	1	500
Hf	0.2	1,000
In	0.2	200
Mo	2	100
Nb	1	1,000

Element	Detection Limit	Upper Limit
Ni	20	10,000
Pb	5	10,000
Rb	2	1,000
Sb	0.5	200
Sc	1	
Sn	1	1,000
Sr	2	10,000
Ta	0.1	500
Tl	0.1	1,000
V	5	10,000
W	1	5,000
Y	2	10,000
Zn	30	10,000
Zr	4	10,000
La	0.1	2,000

Element	Detection Limit	Upper Limit
Ce	0.1	3,000
Pr	0.05	1,000
Nd	0.1	2,000
Sm	0.1	1,000
Eu	0.05	1,000
Gd	0.1	1,000
Tb	0.1	1,000
Dy	0.1	1,000
Ho	0.1	1,000
Er	0.1	1,000
Tm	0.05	1,000
Yb	0.1	1,000
Lu	0.04	1,000
U	0.1	1,000
Th	0.1	2,000

### Code 4Litho - Options

#### 4LithoQuant

A 1 g sample is digested with aqua regia and diluted to 250 ml volumetrically. Appropriate international reference materials for the metals of interest are digested at the same time. The samples and standards are analyzed on a Thermo Jarrell Ash ENVIRO II simultaneous and sequential ICP or a Perkin Elmer Optima 3000 ICP.

#### **4B1**

A 0.25 g sample is digested with four acids beginning with hydrofluoric, followed by a mixture of nitric and perchloric acids, heated using precise programmer controlled heating in several ramping and holding cycles which takes the samples to dryness. After dryness is attained, samples are brought back into solution using hydrochloric acid. With this digestion certain phases may be only partially solubilized. These phases include zircon, monazite, sphene, gahnite, chromite, cassiterite, rutile and barite. Ag greater than 100 ppm and Pb greater than 5,000 ppm should be assayed as high levels may not be solubilized. Only sulphide sulfur will be solubilized.

An in-lab standard (traceable to certified reference materials) or certified reference materials are used for quality control.

Samples are analyzed using a Perkin Elmer Optima 3000 ICP.

#### **Option 4B1 Elements and Detection Limits (ppm)**

Element	Detection Limit	Upper Limit
Cd	0.5	2,000
Cu	1	10,000
Ni	1	10,000
S	0.01%	20%
Zn	1	100,000
Rb	1	1,000
Ag	0.3	100
Pb	5	5,000

#### **4B-INAA**

An approximately 30 g aliquot if available is encapsulated and weighed in a polyethylene vial and irradiated with flux wires and an internal standard (1 for 11 samples) at a thermal neutron flux of  $7 \times 10^{12} \text{ n cm}^{-2} \text{ s}^{-1}$ . After a seven day decay to allow Na-24 to decay the samples are counted on a high purity Ge detector with a resolution of better than 1.7 KeV for the 1332 KeV Co-60. Using the flux wires the decay corrected activities are compared to a calibration developed from multiple certified international reference materials. The standard present is only a check on accuracy of the analysis and is not used for calibration purposes. From 10-30% of samples are rechecked by re-measurement.

Further details are available on isotopes and gamma-ray energies used in Hoffman, E.L., 1992. Instrumental Neutron Activation in Geoanalysis. Journal of Geochemical Exploration, volume 44, pp. 297-319.

#### **Option 4B-INAA Elements and Detection Limits (ppm)**

Element	Detection Limit	Upper Limit
As	0.5	0.5
Au	2 ppb	30,000 ppb
Br	0.5	
Cr	5	
Ir	5 ppb	
Sb	0.2	10,000
Sc	0.1	
Se	3	
Rb	1	1,000

**Code 4B**

Samples are prepared and analyzed in a batch system. Each batch contains a method reagent blank, certified reference material and 17% replicates. Samples are mixed with a flux of lithium metaborate and lithium tetraborate and fused in an induction furnace. The molten melt is immediately poured into a solution of 5% nitric acid containing an internal standard, and mixed continuously until completely dissolved (~30 minutes). The samples are run for major oxides and selected trace elements (Code 4B) on a combination simultaneous/sequential Thermo Jarrell-Ash ENVIRO II ICP or a Spectro Cirros ICP. Calibration is performed using 7 prepared USGS and CANMET certified reference materials. One of the 7 standards is used during the analysis for every group of ten samples.

Totals should be between 98.5% and 101%. If results come out lower, samples are scanned for base metals. Low reported totals may indicate sulphate being present or other elements like Li which won't normally be scanned for. Samples with low totals however are automatically refused and reanalyzed.

Advantages of using the Spectro Cirros new generation ICP allows for the simultaneous determination of Cl.

For accurate levels of base metals (Cu, Pb, Zn, Ni and Ag), option 4B1 (see below) is recommended. Option 4B-INAA (see below) is recommended for As, Sb, high W >100 ppm and Cr > 1,000 ppm.

**Fusion ICP**

Oxide	Detection Limit (%)
SiO <sub>2</sub>	0.01
Al <sub>2</sub> O <sub>3</sub>	0.01
Fe <sub>2</sub> O <sub>3</sub>	0.01
MgO	0.01
MnO	0.001
CaO	0.01
TiO <sub>2</sub>	0.001
Na <sub>2</sub> O	0.01
K <sub>2</sub> O	0.01
P <sub>2</sub> O <sub>5</sub>	0.01
Loss on Ignition	0.01

**Trace Elements**

Element	Detection Limit (ppm)
Ba	3
Sr	2
Y	2
Zr	4
Sc	1
Be	1
V	5

**Typical ICP Standards Analysis (Oxides - %, Trace - ppm)**

	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	Fe <sub>2</sub> O <sub>3</sub>	MnO	MgO	CaO	Na <sub>2</sub> O	K <sub>2</sub> O	TiO <sub>2</sub>	P <sub>2</sub> O <sub>5</sub>	Ba	Sr	Y	Sc	Zr	Be	V
SY3	59.51	11.62	6.47	0.32	2.54	8.25	4.17	4.23	0.14	0.52	435	306	718	8	327	22	44
<b>Cert</b>	<b>59.68</b>	<b>11.76</b>	<b>6.49</b>	<b>0.32</b>	<b>2.67</b>	<b>8.25</b>	<b>4.12</b>	<b>4.23</b>	<b>0.15</b>	<b>0.54</b>	<b>450</b>	<b>302</b>	<b>718</b>	<b>6.8</b>	<b>320</b>	<b>20</b>	<b>50</b>
DNC1	46.91	18.46	9.76	0.15	10.05	11.27	1.99	0.24	0.47	0.07	102	141	16	31	32	-1	141
<b>Cert</b>	<b>470.4</b>	<b>18.30</b>	<b>9.93</b>	<b>0.15</b>	<b>10.05</b>	<b>11.27</b>	<b>1.87</b>	<b>0.23</b>	<b>0.48</b>	<b>0.08</b>	<b>114</b>	<b>145</b>	<b>18</b>	<b>31</b>	<b>41</b>	<b>1</b>	<b>148</b>
W2	52.58	15.35	10.72	0.16	6.37	10.98	2.31	0.64	1.05	0.12	170	194	21	35	86	1	262
<b>Cert</b>	<b>52.44</b>	<b>15.35</b>	<b>10.74</b>	<b>0.16</b>	<b>6.37</b>	<b>10.87</b>	<b>2.14</b>	<b>0.63</b>	<b>1.06</b>	<b>0.13</b>	<b>182</b>	<b>194</b>	<b>24</b>	<b>35</b>	<b>94</b>	<b>1.3</b>	<b>262</b>
STM1	59.64	18.07	5.24	0.22	0.07	1.09	8.87	4.24	0.13	0.16	583	700	44	-1	1210	9	-5
<b>Cert</b>	<b>59.64</b>	<b>18.39</b>	<b>5.22</b>	<b>0.22</b>	<b>0.1</b>	<b>1.09</b>	<b>8.94</b>	<b>4.28</b>	<b>0.14</b>	<b>0.16</b>	<b>560</b>	<b>700</b>	<b>46</b>	<b>0.61</b>	<b>1210</b>	<b>9.6</b>	<b>8.7</b>
MRG1	39.43	8.59	17.93	0.17	13.74	14.77	0.73	0.18	3.78	0.07	48	272	13	55	96	1	528
<b>Cert</b>	<b>39.12</b>	<b>8.47</b>	<b>17.94</b>	<b>0.17</b>	<b>13.55</b>	<b>14.7</b>	<b>0.74</b>	<b>0.18</b>	<b>3.77</b>	<b>0.08</b>	<b>61</b>	<b>266</b>	<b>14</b>	<b>55</b>	<b>108</b>	<b>0.62</b>	<b>526</b>
BIR1	47.78	15.43	11.52	0.17	9.7	13.75	1.86	0.02	0.95	0.02	7	107	16	44	15	-1	320
<b>Cert</b>	<b>47.77</b>	<b>15.35</b>	<b>11.26</b>	<b>0.17</b>	<b>9.68</b>	<b>13.24</b>	<b>1.75</b>	<b>0.02</b>	<b>0.96</b>	<b>0.05</b>	<b>7</b>	<b>108</b>	<b>16</b>	<b>44</b>	<b>15.5</b>	<b>0.58</b>	<b>313</b>
G2	68.72	14.95	2.65	0.03	0.71	1.87	4.08	4.48	0.48	0.13	1882	471	9	3	318	2	36
<b>Cert</b>	<b>69.14</b>	<b>15.39</b>	<b>2.66</b>	<b>0.03</b>	<b>0.75</b>	<b>1.96</b>	<b>4.08</b>	<b>4.48</b>	<b>0.48</b>	<b>0.14</b>	<b>1882</b>	<b>478</b>	<b>11</b>	<b>3.5</b>	<b>309</b>	<b>2.5</b>	<b>36</b>

## Code 4B - Options

### 4B1 - Base Metals

A 0.25 g sample is digested with four acids beginning with hydrofluoric, followed by a mixture of nitric and perchloric acids, heated using precise programmer controlled heating in several ramping and holding cycles which takes the samples to dryness. After dryness is attained, samples are brought back into solution using hydrochloric acid. With this digestion certain phases may be only partially solubilized. These phases include zircon, monazite, sphene, gahnite, chromite, cassiterite, rutile and barite. Ag greater than 100 ppm and Pb greater than 5,000 ppm should be assayed as high levels may not be solubilized. Only sulphide sulfur will be solubilized.

An in-lab standard (traceable to certified reference materials) or certified reference materials are used for quality control.

Samples are analyzed using a Perkin Elmer Optima 3000 ICP.

### Option 4B1 Elements and Detection Limits (ppm)

Element	Detection Limit	Upper Limit
Ag*	0.3	100
Cd	0.5	2,000
Cu	1	10,000
Ni*	1	10,000
Pb*	5	5,000
Zn*	1	10,000
Bi	10	
S*	0.01%	20%

Notes: \* May not be total. Unaltered silicates and resistate minerals may not be dissolved. Assays are recommended for values which exceed the upper limits.

### 4B-INAA

An approximately 30 gram aliquot if available is encapsulated and weighed in a polyethylene vial and irradiated with flux wires and an internal standard (1 for 11 samples) at a thermal neutron flux of  $7 \times 10^{12} \text{ n cm}^{-2} \text{ s}^{-1}$ . After a seven day decay to allow Na-24 to decay the samples are counted on a high purity Ge detector with a resolution of better than 1.7 KeV for the 1332 KeV Co-60. Using the flux wires the decay corrected activities are compared to a calibration developed from multiple certified international reference materials. The standard present is only a check on accuracy of the analysis and is not used for calibration purposes. From 10-30% of samples are rechecked by re-measurement. Assays are recommended for values which exceed the upper limits.

Further details are available on isotopes and gamma-ray energies used in Hoffman, E.L., 1992. Instrumental Neutron Activation in Geoanalysis. Journal of Geochemical Exploration, volume 44, pp. 297-319.

### Option 4B-INAA Elements and Detection Limits (ppm)

Element	Detection Limit	Upper Limit
As	0.5	
Au	2 ppb	30,000 ppb
Br	0.5	
Co	1	10,000
Cr	5	100,000
Cs	1	
Sb	0.2	10,000
Ir	5 ppb	
Sc	0.1	

Element	Detection Limit
Mo	5
Rb	20
Hf	1
Se	3
Ta	0.5
W	1
La	0.5
Ce	3

Element	Detection Limit
Nd	5
Sm	0.1
Eu	0.2
Tb	0.5
Yb	0.2
Lu	0.05
U	0.5
Th	0.2

### Code 4B2-std

The sample solution prepared under Code 4B is spiked with internal standards to cover the entire mass range, and is further diluted to cover the entire mass range, is further diluted and is introduced into a Perkin Elmer SCIEX ELAN 6000 ICP-MS using a proprietary sample introduction methodology.

For accurate levels of base metals (Cu, Pb, Zn, Ni and Ag), option 4B1 (see below) is recommended. Option 4B-INAA (see below) is recommended for As, Bs, high W >100 ppm and Cr > 1,000 ppm. Code 5D is recommended for Sn >50 ppm. Mineralized samples should have the "Quant" option (see below) selected or request assays for values which exceed the range of option 4B1.

#### Code 4B2-std Elements and Detection Limits (ppm)

Element	Detection Limit	Upper Limit
Ag	0.5	100
As	5	2,000
Ba	3	300,000
Bi	0.4	2,000
Co	1	1,000
Cr	20	10,000
Cs	0.5	1,000
Cu	10	10,000
Ga	1	500
Ge	1	500
Hf	0.2	1,000
In	0.2	200
Mo	2	100
Nb	1	1,000
Ni	20	10,000

Element	Detection Limit	Upper Limit
Pb	5	10,000
Rb	2	1,000
Sb	0.5	200
Sn	1	1,000
Sr	2	10,000
Ta	0.1	500
Th	0.1	2,000
Tl	0.1	1,000
U	0.1	1,000
V	5	5,000
W	1	5,000
Y	1	1,000
Zn	30	10,000
Zr	5	10,000

Element	Detection Limit	Upper Limit
La	0.1	2,000
Ce	0.1	3,000
Pr	0.05	1,000
Nd	0.1	2,000
Sm	0.1	1,000
Eu	0.05	1,000
Gd	0.1	1,000
Tb	0.1	1,000
Dy	0.1	1,000
Ho	0.1	1,000
Er	0.1	1,000
Tm	0.05	1,000
Yb	0.1	1,000
Lu	0.04	1,000

#### Typical ICP-MS Standards Analysis (Sept 1996 to April 1997, 119 measurements)

Element	W2	Cert.
V	256	262
Cr	90	93
Co	44	44
Ni	67	70
Cu	105	103
Zn	72	77
Ga	18	20
Ge	2	1
As	<5	1.24
Rb	20	20
Sr	193	194

Element	W2	Cert.
Y	21	24
Zr	99	94
Nb	7.5	7.9
Mo	0.7	0.6
Ag	<0.5	0.05
In	<0.2	-
Sn	<0.5	-
Sb	0.78	0.79
Cs	0.95	0.99
Ba	164	182
La	11.3	11.4

Element	W2	Cert.
Ce	24	24
Pr	2.5	5.9?
Nd	14	14
Sm	3.38	3.25
Eu	1.1	1.1
Gd	3.5	3.6
Tb	0.62	0.63
Dy	3.8	3.8
Ho	0.76	0.76
Er	2.3	2.5
Tm	0.32	0.38

Element	W2	Cert.
Yb	2.06	20.5
Lu	0.33	0.33
Hf	2.64	2.56
Ta	0.5	0.5
W	<0.2	0.3
Tl	0.1	0.2
Pb	8	9.3
Bi	<0.05	0.03
Th	2.3	2.5
U	0.49	0.53

### Code 4B2-std Options

#### Quant

A 1 g sample is digested with aqua regia and diluted to 250 ml volumetrically. Appropriate international reference materials for the metals of interest are digested at the same time. The samples and standards are analyzed on a Thermo Jarrell Ash ENVIRO II simultaneous and sequential ICP or a Perkin Elmer Optima 3000 ICP.

#### 4B1 – Base Metals

A 0.25 g sample is digested with four acids beginning with hydrofluoric, followed by a mixture of nitric and perchloric acids, heated using precise programmer controlled heating in several ramping and holding cycles which takes the samples to dryness. After dryness is attained, samples are brought back into solution using hydrochloric acid. With this digestion certain phases may be only partially solubilized. These phases include zircon, monazite, sphene, gahnite, chromite, cassiterite, rutile and barite. Ag greater than 100 ppm and Pb greater than 5,000 ppm should be assayed as high levels may not be solubilized. Only sulphide sulfur will be solubilized.

An in-lab standard (traceable to certified reference materials) or certified reference materials are used for quality control.

Samples are analyzed using a Perkin Elmer Optima 3000 ICP.

#### **Option 4B1 Elements and Detection Limits (ppm)**

Element	Detection Limit	Upper Limit
S	0.01%	20%
Ni	1	10,000
Zn	1	10,000
Cu	1	10,000
Cd	0.5	2,000
Ag	0.3	100
Pb	5	5,000

#### 4B-INAA

An approximately 30 g aliquot if available is encapsulated and weighed in a polyethylene vial and irradiated with flux wires and an internal standard (1 for 11 samples) at a thermal neutron flux of  $7 \times 10^{12} \text{ n cm}^{-2} \text{ s}^{-1}$ . After a seven day decay to allow Na-24 to decay the samples are counted on a high purity Ge detector with a resolution of better than 1.7 KeV for the 1332 KeV Co-60. Using the flux wires the decay corrected activities are compared to a calibration developed from multiple certified international reference materials. The standard present is only a check on accuracy of the analysis and is not used for calibration purposes. From 10-30% of samples are rechecked by re-measurement.

Further details are available on isotopes and gamma-ray energies used in Hoffman, E.L., 1992. Instrumental Neutron Activation in Geoanalysis. Journal of Geochemical Exploration, volume 44, pp. 297-319.

#### **Option 4B-INAA Elements and Detection Limits (ppm)**

Element	Detection Limit	Upper Limit
Sc	0.1	
Se	3	
Sb	0.2	10,000
As	0.5	
Au	2 ppb	30,000 ppb
Fe	0.01%	
Na	0.01%	
Cr	5	
Br	0.5	
Ir	5 ppb	

**Appendix E Analytical Certificates**





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920 - 1040 W. GEORGIA ST.  
VANCOUVER BC V6E 4H1

Page: 1  
Finalized Date: 10-NOV-2007  
Account: PAGRES

## CERTIFICATE VA07119464

Project: MT. BISSON

P.O. No.:

This report is for 7 Rock samples submitted to our lab in Vancouver, BC, Canada on 17-OCT-2007.

The following have access to data associated with this certificate:

JOHN BRADFORD

FRED BREAKS

K MAHER

## SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
CRU-QC	Crushing QC Test
LOG-22	Sample login - Rcd w/o BarCode
CRU-31	Fine crushing - 70% <2mm
SPL-21	Split sample - riffle splitter
PUL-31	Pulverize split to 85% <75 um

## ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
ME-MS81	38 element fusion ICP-MS	ICP-MS
Au-AA23	Au 30g FA-AA finish	AAS

To: PAGET RESOURCES  
ATTN: K MAHER  
920 - 1040 W. GEORGIA ST.  
VANCOUVER BC V6E 4H1

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

Signature:

Lawrence Ng, Laboratory Manager - Vancouver



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Page: 2 - A  
Total # Pages: 2 (A - C)  
Finalized Date: 10-NOV-2007  
Account: PAGRES

Project: MT. BISSON

## CERTIFICATE OF ANALYSIS VA07119464

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt. kg	ME-MS81 Ag ppm	ME-MS81 Ba ppm	ME-MS81 Ca ppm	ME-MS81 Co ppm	ME-MS81 Cr ppm	ME-MS81 Cs ppm	ME-MS81 Cu ppm	ME-MS81 Dy ppm	ME-MS81 Er ppm	ME-MS81 Eu ppm	ME-MS81 Ga ppm	ME-MS81 Gd ppm	ME-MS81 Hf ppm	ME-MS81 Ho ppm
		0.02	1	0.5	0.5	0.5	10	0.01	5	0.05	0.03	0.03	0.1	0.05	0.2	0.01
148653		2.26	<1	2890	86.9	14.9	100	1.61	66	3.15	1.60	1.62	24.7	5.43	10.2	0.58
148654		1.64	<1	2400	174.0	16.2	40	0.96	25	5.55	3.03	2.69	22.8	10.60	7.9	1.09
148658		2.82	<1	149.0	40.5	49.0	230	1.23	188	4.09	1.95	1.57	21.3	5.01	2.9	0.75
148663		3.50	<1	25.8	12.7	2.5	10	0.16	5	0.65	0.32	0.25	1.9	1.02	0.3	0.10
148669		1.66	9	816	97.7	28.5	50	2.97	7480	6.52	3.55	3.19	29.6	7.94	4.2	1.26
148670		2.76	4	1460	41.6	59.0	240	8.30	2120	3.88	2.19	1.53	28.8	4.28	2.4	0.79
148673		2.78	<1	285	64.5	38.9	200	1.79	218	3.57	1.91	1.25	25.1	4.88	3.2	0.75



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Total # Pages: 2 (A - C)  
Finalized Date: 10-NOV-2007  
Account: PAGRES

Project: MT. BISSON

## CERTIFICATE OF ANALYSIS VA07119464

Sample Description	Method Analyte Units LOR	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81
		La	Lu	Mo	Nb	Nd	Ni	Pb	Pr	Rb	Sm	Sn	Sr	Ta	Tb	Th
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
		0.5	0.01	2	0.2	0.1	5	5	0.03	0.2	0.03	1	0.1	0.1	0.01	0.05
148653		45.7	0.21	4	26.8	35.9	23	23	9.88	154.5	5.80	1	293	1.2	0.67	14.00
148654		95.7	0.36	5	33.5	75.8	18	8	20.6	82.8	11.35	2	1315	1.7	1.19	15.60
148658		20.5	0.22	2	25.4	23.2	157	13	5.64	33.3	5.27	7	508	1.4	0.70	5.98
148663		5.0	0.03	<2	1.1	6.9	<5	<5	1.71	7.2	1.23	<1	443	0.2	0.13	0.87
148669		53.6	0.40	3	19.2	41.6	20	99	11.05	49.6	8.16	14	654	0.9	1.14	12.45
148670		20.8	0.27	7	14.5	21.2	134	28	5.08	147.5	4.47	7	699	0.4	0.65	8.54
148673		39.1	0.22	2	14.3	30.1	103	16	8.18	56.6	5.23	3	672	1.1	0.65	9.62



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Total # Pages: 2 (A - C)  
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Account: PAGRES

Project: MT. BISSON

## CERTIFICATE OF ANALYSIS VA07119464

Sample Description	Method Analyte Units LOR	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	Au-AA23
		Tl	Tm	U	V	W	Y	Yb	Zn	Zr	Au
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
		0.5	0.01	0.05	5	1	0.5	0.03	5	2	0.005
148653		<0.5	0.21	2.41	105	1	14.3	1.45	86	331	<0.005
148654		<0.5	0.40	3.83	156	4	25.9	2.65	61	298	<0.005
148658		<0.5	0.27	1.77	262	4	17.7	1.60	143	100	<0.005
148663		<0.5	0.03	0.30	8	1	3.3	0.23	8	6	<0.005
148669		0.5	0.47	2.76	163	11	34.8	3.10	547	144	0.015
148670		0.6	0.30	1.00	238	917	20.1	1.95	303	78	<0.005
148673		<0.5	0.26	2.02	165	40	17.4	1.67	211	97	<0.005

Report: A07-5688 rev 1 Rev, 1			Final Report													
Report Date: 2/12/2008			Activation Laboratories													
Analyte Symbol	CO2	F	SiO2	Al2O3	Fe2O3(T)	MnO	MgO	CaO	Na2O	K2O	TiO2	P2O5	LOI	Total	Sc	Be
Unit Symbol	%	%	%	%	%	%	%	%	%	%	%	%	%	%	ppm	ppm
Detection Limit	0.01	0.01	0.01	0.01	0.01	0.001	0.01	0.01	0.01	0.01	0.001	0.01	0.01	0.01	1	1
Analysis Method	COUL	FUS-ISE	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP
148651	31	0.13	13.11	5.96	2.03	0.019	3.89	42.97	0.42	0.78	0.19	0.02	30.63	100	4	1
148654			55.65	14.97	6.79	0.071	2.78	5.91	3.95	3.32	1.039	0.88	1.24	96.6	11	3
148655	8.14	0.14	40.66	12.26	4.36	0.06	5.42	24.37	1.15	2.11	0.481	0.08	9	99.96	10	2
148656			69.35	15.9	1.02	0.011	0.27	2.81	2.65	5.89	0.085	0.17	0.4	98.54	< 1	3
148657			67.11	12.16	2.29	0.161	2.62	11.11	2.52	0.4	0.347	0.31	0.92	99.94	14	5
148664			74.85	13.65	0.74	0.032	0.1	0.93	3.82	5.42	0.081	0.03	0.27	99.94	5	5
148665			62.15	15.17	4.95	0.097	3.08	5.72	3.74	2.47	0.656	0.3	0.4	98.72	14	4
148666	< 0.01	0.06	71.24	15.74	3.31	0.03	1.15	0.48	0.71	2.75	0.399	0.15	0.58	96.54	7	2
148667			73.38	14.3	1.55	0.027	0.36	1.5	3.58	4.97	0.236	0.07	0.73	100.7	2	2
148668			70.1	14.19	1.83	0.032	0.43	1.58	3.6	4.4	0.25	0.08	0.29	96.78	2	2
148652			47.71	16.76	5.49	0.057	4.32	21.21	1.63	0.24	0.614	0.14	2.27	100.4	13	6
148659	2.01	0.02	46.88	16.56	5.51	0.056	4.32	21.24	1.63	0.31	0.625	0.14	2.26	99.52	13	6
148670			43.64	10.89	16.86	0.43	6.95	11.59	1.14	3.24	0.882	0.11	4.12	99.83	27	6
148671			65.4	16.95	2.47	0.037	1.13	2.73	5.8	3.91	0.525	0.2	0.42	99.55	4	2
148672			32.85	15.18	5.23	0.098	3.17	26.59	0.83	1.7	0.482	0.07	12.92	99.14	12	2
148674			52.53	24.09	9.01	0.096	3.25	0.86	1.32	3.45	1.078	0.11	3.03	98.82	22	2
148675			68.88	16.43	0.86	0.008	0.23	3.1	2.1	7.68	0.095	0.03	0.67	100.1	2	2
07-FWB-05-03	1.27	< 0.01	49.62	25.26	0.62	0.013	0.16	15.6	3.64	1.37	0.288	0.05	1.6	98.22	1	5
07-FWB-05-04	5.6	0.02	42.96	14.82	5.8	0.086	4.21	25.29	1.22	0.16	0.504	0.09	4.95	100.1	12	2
07-FWB-05-05			66.72	13.65	2.26	0.027	0.59	1.96	3.74	3.76	0.275	0.12	0.38	93.47	2	2
07-FWB-05-06	3.99	0.02	46.18	13.05	8.76	0.215	3.75	21.75	1.63	0.84	0.44	0.06	4.11	100.8	11	2
07-FWB-05-08	14.6	0.13	30.27	13.6	4.88	0.044	4.2	28.2	0.86	1.74	0.434	0.06	15.33	99.61	14	2
07-FWB-12-01			51.28	15.88	8.77	0.213	5.15	7.51	4.36	3.46	1.178	0.53	0.16	98.48	22	4
07-FWB-15-02			81.56	7.08	4.21	0.168	1.23	4.58	0.28	0.12	0.253	0.04	-0.07	99.46	2	< 1
07-FWB-16-01			72.1	14.31	2.29	0.029	0.55	1.88	3.78	3.92	0.294	0.1	0.11	99.37	3	1
148660	0.2	< 0.01	71.91	13.96	0.55	0.004	0.14	0.54	1.86	8.47	0.076	0.04	0.38	97.93	2	3
148661			69.21	13.33	0.61	0.018	0.16	1.06	3.66	3.68	0.058	0.07	0.44	92.29	< 1	4

Report: A07-5688 rev 1 Rev, 1		Final Report															
Report Date: 2/1:		Activation Laboratories															
Analyte Symbol	V	Ba	Sr	Y	Zr	Cr	Co	Ni	Cu	Zn	Ga	Ge	As	Rb	Nb	Mo	
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
Detection Limit	5	3	2	2	4	20	1	20	10	30	1	1	5	2	1	2	
Analysis Method	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	
148651	30	372	1006	5	20	30	3	< 20	20	60	9	< 1	< 5	40	3	< 2	
148654	128	2280	1264	26	279	40	17	40	30	70	21	1	< 5	79	38	5	
148655	56	393	867	17	111	70	11	30	30	80	17	1	< 5	88	17	< 2	
148656	13	1922	519	5	9	< 20	1	< 20	< 10	< 30	18	2	< 5	164	5	< 2	
148657	85	123	457	69	183	70	4	< 20	20	120	18	2	< 5	34	24	3	
148664	13	525	104	19	43	30	1	< 20	< 10	< 30	22	2	< 5	286	21	2	
148665	109	1131	571	19	215	80	13	20	10	70	20	2	< 5	72	16	< 2	
148666	57	696	60	11	253	40	8	< 20	30	40	26	1	< 5	124	18	< 2	
148667	29	1899	273	8	176	30	2	< 20	< 10	40	19	1	< 5	172	9	< 2	
148668	19	1857	270	7	182	< 20	2	< 20	< 10	40	19	1	< 5	166	15	< 2	
148652	67	57	552	13	103	110	12	30	< 10	130	26	2	< 5	22	21	< 2	
148659	69	50	549	13	100	100	12	30	< 10	120	25	2	< 5	22	21	< 2	
148670	245	1346	515	12	59	260	64	130	300	380	30	5	< 5	125	15	< 2	
148671	46	4961	683	8	381	20	5	< 20	20	50	20	1	< 5	80	7	< 2	
148672	63	428	684	14	49	80	12	40	20	70	21	2	< 5	97	9	< 2	
148674	122	529	132	49	231	140	19	60	10	170	35	2	< 5	210	23	< 2	
148675	13	2655	589	3	11	< 20	< 1	< 20	< 10	40	19	< 1	< 5	303	9	< 2	
07-FWB-05-03	11	684	612	9	149	< 20	< 1	< 20	< 10	90	31	< 1	< 5	52	15	< 2	
07-FWB-05-04	65	84	581	13	71	90	10	40	10	150	22	2	< 5	8	11	< 2	
07-FWB-05-05	28	1540	286	5	157	< 20	4	< 20	80	60	17	< 1	< 5	132	9	< 2	
07-FWB-05-06	53	303	516	13	65	70	14	40	< 10	210	20	3	< 5	72	9	< 2	
07-FWB-05-08	75	336	762	11	48	80	10	40	20	90	19	2	< 5	110	7	< 2	
07-FWB-12-01	181	4324	835	44	175	110	29	50	< 10	190	22	2	< 5	78	118	< 2	
07-FWB-15-02	28	37	48	12	213	80	4	< 20	< 10	60	10	2	< 5	4	7	5	
07-FWB-16-01	54	1709	284	7	178	< 20	3	< 20	< 10	50	20	1	< 5	168	8	< 2	
148660	< 5	2727	290	6	30	< 20	1	< 20	< 10	30	14	2	< 5	364	13	< 2	
148661	< 5	492	144	17	16	30	1	< 20	< 10	< 30	17	1	< 5	125	16	< 2	

Report: A07-5688 rev 1 Rev. 1			Final Report													
Report Date: 2/1:			Activation Laboratories													
Analyte Symbol	Ag	In	Sn	Sb	Cs	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	0.5	0.2	1	0.5	0.5	0.1	0.1	0.05	0.1	0.1	0.05	0.1	0.1	0.1	0.1	0.1
Analysis Method	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS
148651	< 0.5	< 0.2	< 1	8.3	1.2	14.8	25	3.01	9.4	1.6	0.46	1.4	0.2	1	0.2	0.5
148654	< 0.5	< 0.2	2	< 0.5	1.3	98.6	189	20.5	66.9	10.6	2.55	8.3	1	5	0.9	2.5
148655	< 0.5	< 0.2	2	2	3.1	33.9	65.3	7.55	25	4.3	0.89	3.8	0.6	3.1	0.6	1.7
148656	< 0.5	< 0.2	< 1	7.7	1.6	8.7	15.7	1.92	6.9	1.7	1.62	1.9	0.3	1.2	0.2	0.3
148657	< 0.5	< 0.2	3	8.6	12.4	146	387	51.1	184	34.4	7.5	26.7	3.2	14.9	2.6	6.8
148664	< 0.5	< 0.2	2	6.1	14.4	20	37.3	3.94	14	3.1	0.23	3.5	0.6	3.5	0.7	1.8
148665	< 0.5	< 0.2	3	2.3	1.1	40.4	86.1	9.49	31.1	5.5	1.34	4.7	0.6	3.2	0.6	1.7
148666	< 0.5	< 0.2	2	3.1	3	48.2	98.7	10.4	31.8	5.1	0.94	3.8	0.5	2.5	0.5	1.4
148667	< 0.5	< 0.2	< 1	7.3	3.7	45.5	77.7	7.63	21.8	3.2	0.64	2.4	0.3	1.6	0.3	0.8
148668	< 0.5	< 0.2	1	2.1	6.1	38.7	66.2	6.49	18.9	2.9	0.56	2.2	0.3	1.6	0.3	0.9
148652	< 0.5	< 0.2	4	9.7	0.6	34.1	63.5	7.5	24.8	4.4	1.18	3.6	0.5	2.5	0.5	1.3
148659	< 0.5	< 0.2	4	7.2	0.6	35.1	65.9	7.82	25.5	4.4	1.21	3.7	0.5	2.6	0.5	1.3
148670	< 0.5	0.9	8	8.1	3.9	13.9	28.9	3.43	12.2	2.7	1.44	2.8	0.5	2.4	0.5	1.4
148671	1.1	< 0.2	< 1	8.2	0.7	69.2	111	10.4	27.4	3.7	1.15	2.8	0.3	1.5	0.3	0.9
148672	< 0.5	< 0.2	1	8	2.7	24.5	45.1	5.48	17.8	3.4	0.8	3.2	0.5	2.8	0.5	1.4
148674	< 0.5	< 0.2	2	7.9	4.5	179	344	40.9	124	22	3.52	17.9	2.2	10.4	1.8	5
148675	< 0.5	< 0.2	< 1	6.8	6.1	9.3	16.6	1.79	5.5	1.1	1.26	0.9	0.1	0.6	< 0.1	0.2
07-FWB-05-03	< 0.5	< 0.2	2	8.9	8.7	184	327	33.8	91.2	13.9	2.64	9	0.7	2.4	0.4	0.9
07-FWB-05-04	< 0.5	< 0.2	3	6	4.6	35.9	66.9	7.82	25.1	4.4	1.11	3.9	0.5	2.5	0.5	1.3
07-FWB-05-05	< 0.5	< 0.2	< 1	< 0.5	1.8	29.4	54.5	5.62	16.8	2.7	0.72	2.1	0.3	1.1	0.2	0.6
07-FWB-05-06	< 0.5	< 0.2	3	7.1	3.6	32.2	58.9	6.92	22.3	4	0.8	3.6	0.5	2.5	0.5	1.3
07-FWB-05-08	< 0.5	< 0.2	< 1	7.6	4.9	31.4	57	6.78	21.9	3.9	0.84	3.5	0.5	2.4	0.4	1.2
07-FWB-12-01	< 0.5	< 0.2	3	9.4	1.1	89.6	235	29.9	107	20.4	6.12	17.8	2.2	10.1	1.6	4.1
07-FWB-15-02	< 0.5	< 0.2	< 1	7.8	< 0.5	37.1	79.3	8.5	27.1	5	0.95	4	0.5	2.4	0.4	1.2
07-FWB-16-01	< 0.5	< 0.2	< 1	8	3.3	26.4	49.2	5.08	15.4	2.6	0.72	2.3	0.3	1.4	0.3	0.8
148660	< 0.5	< 0.2	1	2.5	7.4	13.4	24.4	2.52	7.6	1.3	0.58	1.1	0.2	1	0.2	0.7
148661	2.5	< 0.2	< 1	1.7	2.4	9.3	19.1	2.14	7.4	1.7	0.7	2.3	0.5	3.1	0.6	1.9

Report: A07-5688 rev 1 Rev. 1			Final Report									
Report Date: 2/1:			Activation Laboratories									
Analyte Symbol	Tm	Yb	Lu	Hf	Ta	W	Ti	Pb	Bi	Th	U	
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
Detection Limit	0.05	0.1	0.04	0.2	0.1	1	0.1	5	0.4	0.1	0.1	
Analysis Method	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	
148651	0.08	0.5	0.07	58.22	0.7	0.2	<1	0.3	12	<0.4	2.8	1
148654	0.36	2.2	0.33	408.74	6.3	1.5	<1	0.5	10	<0.4	14.9	4.6
148655	0.25	1.6	0.24	148.83	3	0.9	<1	0.5	20	<0.4	10	2.2
148656	<0.05	0.2	<0.04	40.64	0.3	0.5	<1	0.9	50	<0.4	1.2	1.5
148657	0.9	5.3	0.72	871.12	5	0.5	69	0.2	59	1.1	15.5	3.1
148664	0.27	1.7	0.24	90.88	1.9	3.5	<1	1.8	17	<0.4	12.5	3.2
148665	0.25	1.6	0.25	186.83	5.7	0.8	<1	0.5	20	<0.4	15.4	4.8
148666	0.21	1.3	0.22	205.57	7.2	0.9	2	0.6	14	<0.4	22.7	3.2
148667	0.11	0.7	0.12	162.8	4.9	0.9	<1	1.3	17	<0.4	24.4	4.3
148668	0.13	0.9	0.13	140.21	4.7	0.9	<1	1.6	20	<0.4	21.3	3.1
148652	0.18	1	0.14	145.2	3.3	1.3	3	0.1	17	<0.4	11.9	3.7
148659	0.18	1.1	0.15	149.96	3	1.3	3	0.1	11	<0.4	12.4	3.8
148670	0.19	1.2	0.18	71.74	1.9	0.3	6	0.8	36	1.3	3.2	1
148671	0.13	0.9	0.14	229.82	8.5	0.3	<1	0.6	12	<0.4	15	2.9
148672	0.2	1.3	0.18	106.96	1.6	0.8	<1	0.6	8	1.9	8.7	1.6
148674	0.72	4.3	0.61	756.35	6.9	1.6	<1	1.3	14	<0.4	33.2	7.7
148675	<0.05	0.2	<0.04	37.55	0.4	0.4	<1	1.5	28	<0.4	3.4	1.9
07-FWB-05-03	0.12	0.6	0.07	666.73	4.5	1.1	2	0.3	18	<0.4	68	7.6
07-FWB-05-04	0.18	1.1	0.17	151.38	2.1	0.8	4	<0.1	7	<0.4	10.1	2.3
07-FWB-05-05	0.09	0.6	0.09	114.82	4.7	0.3	<1	0.9	171	<0.4	12.5	2.1
07-FWB-05-06	0.19	1.2	0.18	135.09	2.1	0.7	4	0.5	12	<0.4	9.1	3
07-FWB-05-08	0.18	1.1	0.17	131.27	1.6	0.6	<1	0.7	6	<0.4	9.1	1.3
07-FWB-12-01	0.52	2.9	0.41	527.65	4.7	0.8	<1	0.4	30	<0.4	4.6	1.4
07-FWB-15-02	0.17	1.1	0.16	167.88	5.8	0.5	<1	<0.1	<5	<0.4	9.8	2
07-FWB-16-01	0.12	0.8	0.11	105.53	4.9	0.7	<1	1	11	<0.4	12	3.4
148660	0.14	1	0.16	54.3	1	1.6	<1	2.2	49	0.4	4.8	6.4
148661	0.28	1.8	0.27	51.09	1.4	2.1	1	0.8	533	<0.4	7.9	6.4



Report: A07-6183 (j)		Final Report														
Report Date: 2/12/2008		Activation Laboratories														
Analyte Symbol	CO2	F	SiO2	Al2O3	Fe2O3(T)	MnO	MgO	CaO	Na2O	K2O	TiO2	P2O5	LOI	Total	Sc	Be
Unit Symbol	%	%	%	%	%	%	%	%	%	%	%	%	%	%	ppm	ppm
Detection Limit	0.01	0.01	0.01	0.01	0.01	0.001	0.01	0.01	0.01	0.01	0.001	0.01	0.01	0.01	1	1
Analysis Method	COUL	FUS-ISE	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP
07-FWB-17-01	0.23	0.02	61.23	13.87	4.28	0.071	1.88	12.19	1.4	2.15	0.593	0.14	0.72	98.52	11	3

Report: A07-6183 (i)		Final Report														
Report Date: 2/1:		Activation Laboratories														
Analyte Symbol	V	Cr	Co	Ni	Cu	Zn	Ga	Ge	As	Rb	Sr	Y	Zr	Nb	Mo	Ag
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	5	20	1	20	10	30	1	1	5	2	2	2	4	1	2	0.5
Analysis Method	FUS-ICP	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-ICP	FUS-ICP	FUS-ICP	FUS-MS	FUS-MS	FUS-MS
07-FWB-17-01	51	90	11	20	40	90	21	2	< 5	71	328	24	302	11	3	< 0.5

Report: A07-6183 (i)		Final Report														
Report Date: 2/1:		Activation Laboratories														
Analyte Symbol	In	Sn	Sb	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	0.2	1	0.5	0.5	3	0.1	0.1	0.05	0.1	0.1	0.05	0.1	0.1	0.1	0.1	0.1
Analysis Method	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-ICP	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS
07-FWB-17-01	<0.2	2	0.6	2	532	50.6	98.7	9.45	32.9	6.6	1.33	5.1	0.8	4.1	0.8	2.2

Report: A07-6183 (i)		Final Report									
Report Date: 2/1:		Activation Laboratories									
Analyte Symbol	Tm	Yb	Lu	Hf	Ta	W	Tl	Pb	Bi	Th	U
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	0.05	0.1	0.04	0.2	0.1	1	0.1	5	0.4	0.1	0.1
Analysis Method	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS
07-FWB-17-01	0.32	2.1	0.31	8.1	1	1	0.3	7	< 0.4	17.1	3.6