# **2012 SURFACE REPORT: TIMMINS SOUTH PROPERTY**

BARTLETT, ENGLISH, ZAVITZ, SEMPLE, HUTT, & MONTROSE TOWNSHIPS PORCUPINE AND LARDER LAKE MINING DIVISIONS, ONTARIO, CANADA



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# TABLE OF CONTENTS

EXECUTIVE SUMMARY	2
1.0 INTRODUCTION	4
2.0 PROPERTY DETAILS	4
2.1 Location and Access	4
2.2 Topography and Vegetation	5
2.3 Claims	
3.0 PREVIOUS WORK	9
4.0 GEOLOGY	15
4.1 Regional Geology	15
4.2 Property Geology	19
5.0 2012 SURFACE PROSPECTING PROGRAM	23
5.1 Methods	23
5.2 Work Completed	23
5.2.1 Beavertail Block	
5.2.2 Otter Block	28
5.2.3 Muskrat Block	29
5.3 Structure	29
5.4 Mineralization	29
5.5 Assay Results	30
	33
7.0 RECOMMENDATIONS	34
	36

#### **LIST OF FIGURES**

Figure 1: Location of the Timmins South Property in Ontario, Canada	6
Figure 2: Tenure of the Timmins South Property.	
Figure 3: Regional Geology (after OGS MRD 216)	
Figure 4: Property Geology (after GSC MRD 094)	

## LIST OF TABLES

Table 1:	Claim Details of the Timmins South Property.	7
Table 2:	Highlights of the 2012 Timmins South Grab Sampling Program.	. 32

### LIST OF APPENDICES

Appendix I Statement of Qualifications Appendix II Surface Sample and Outcrop Descriptions Appendix III Photographs of Grab Samples Appendix IV Assay Certificates

## MAPS (back pocket)

Map 1: Tenure Map 2: Surface Sample Locations

# **EXECUTIVE SUMMARY**

JMK Exploration Consulting was requested by Debut Diamonds Inc. ("Debut") to complete a technical report for assessment purposes on their 2012 prospecting and surface sampling program on the Timmins South ("Property").

The Timmins South Property is situated approximately 50 km south-southwest of Timmins, Ontario in the Porcupine and Larder Lake Mining Divisions. The Property is bounded by UTM coordinates 480630E to 499424E, and 5308173N to 5332968N (NAD83, Z17N) and is covered by National Topographic System (NTS) map sheets 42A/03E and 41P/14E. The Property consists of 65 unpatented mining claims, comprised of 730 units covering 116.5 km<sup>2</sup> in area (Table 1, Figure 2). The claims are divided into three contiguous blocks (Muskrat, Beavertail, and Otter Blocks) that are collectively referred to as the Timmins South Property.

In the fall of 2012, Debut completed a total of 37 days of prospecting and surface sampling on the property. This work was completed from Sept 4<sup>th</sup> to October 31<sup>st</sup>, 2012.

The work program was of reconnaissance nature and targeted areas with outcrop exposure, historical showings, historical diamond drill holes and trenches, as well as the area covered by the recently completed Beavertail Grid. Prospecting on the Otter block was aided by the recently completed VTEM and horizontal magnetic gradiometer surveys.

Prospecting identified several lithologies including metavolcanics that range from mafic to felsic, with mafic to ultramafic being the dominant metavolcanic lithology, metasediments, chemical metasediments including iron formation and chert, quartz veining, and several felsic and mafic intrusives.

A total of 127 grab samples were taken within the property. The sampling was of a reconnaissance nature with sample locations based on lithology, alteration, and sulphide content. Highlights of the program include 6520 ppb Au and 5560 ppb Au (Table 2). An

additional 174 lithological samples were described but not submitted for analysis. Sample descriptions can be found in Appendix II.

Additional work is warranted on the Property and should include a geological compilation and standardisation of previous work completed on the property to aid in tracing mineralized zones. Additional prospecting and sampling in the area of the Road Showing should be completed along with a mechanized trenching and channel sampling program. This should be followed up by an IP survey to aid in tracing mineralization. A small drill program should be implemented pending positive results. Additional prospecting in the areas of the historical Cameco C and D grids should be completed in an attempt to follow the mineralized veins and dykes that produced anomalous results in the 2012 field program. An IP survey should be completed over the newly completed Metawest Extension Grid that covers the Decker Showing and the anomalous grab sample in the northeast corner of Semple Township. Further prospecting and sampling over the grid should be completed. Pending positive results a trenching and channel sampling program on appropriate targets should be carried out. After verifying that much of the property in Montrose Township is covered in overburden a cut grid accompanied by an IP survey will identify possible gold targets. Pending positive results a small drill program to test these targets should be designed.

# **1.0 INTRODUCTION**

In 2012 Debut entered an Option Agreement ("option") with Fletcher Nickel Inc. The terms of the option for the Timmins South Property are to spend \$2,500,000 on the Property by December 31, 2014 (with \$500,000 to be spent by December 31, 2012) to earn an initial 50% interest in the Property. An additional 15% interest in the Property could be earned by Debut underwriting the entire cost of a feasibility study on any deposit found (excluding nickel mineral deposits) within the ensuing 5 years, provided that Debut maintains the Option in good standing by also paying Fletcher \$100,000 per annum commencing January 1, 2013.

From Sept 4th to October 31<sup>st</sup>, 2012, a total of 37 days were spent on the property completing prospecting and surface sampling on the Timmins South property. A total of 127 grab samples were sent in for assay. An additional 174 lithological samples were described but not assayed. This work forms the basis of this report.

## 2.0 PROPERTY DETAILS

#### 2.1 Location and Access

The Timmins South Property is situated approximately 50 km south-southwest of Timmins, Ontario in the Porcupine and Larder Lake Mining Divisions. The Property is bounded by UTM coordinates 480630E to 499424E, and 5308173N to 5332968N (NAD83, Z17N) and is covered by National Topographic System (NTS) map sheets 42A/03E and 41P/14E. The Property consists of 65 unpatented mining claims, comprised of 730 units covering 116.5 km<sup>2</sup> in area. The claims are divided into three contiguous properties (Muskrat, Beavertail, and Otter Blocks) that are collectively referred to as the Timmins South Property (Table 1, Figure 2, Map 1).

Access to the property is provided along well-maintained gravel-covered roads (extending south down Pine Street, Timmins) including new logging roads. During the winter months, snow removal would be required to keep the roads open. Timber

resources are actively being cut to the immediate west of the Property and good gravel logging roads are currently in active use. Abundant gravel resources occur in moraines and eskers along these roads, and sand resources are also available nearby.

A full range of equipment, supplies, services, and skilled labour that would be required for any exploration and mining work are available in the nearby city of Timmins, Ontario.

# 2.2 Topography and Vegetation

The properties have all been logged for lumber in the past, so most of the area is covered by secondary growth forest. A major electric trunk line feeding southern Ontario cuts through the Timmins South Property. The forest has been cleared along a corridor beside this power line. The topography of the area displays a typical "Laurentian Shield" landscape composed of rough forest-covered ridges and outcrops filled in between with boulder and gravel glacial tills, as well as swampy tracts, ephemeral Spring-runoff stream beds and swales, beaver ponds and small lakes. Eskers and extensive moraine ridges can be seen on forest access roads. The nearest main waterway is the Redstone River that runs centrally through the Muskrat and Beavertail blocks, and is part of the Arctic Ocean drainage system of North America flowing into James Bay. Flood stage occurs on the Redstone during the spring (late May and early June), as it drains northwards from the Arctic-Atlantic watershed just a few kilometres to the south. The mean elevation of the property is 360 m above sea level. The average total precipitation is 831 mm (558 mm rain and 313 cm snow). The mean temperature is  $-17.5^{\circ}$ C in January and  $17.4^{\circ}$ C in July.

## 2.3 Claims

The Timmins South Property is situated approximately 50 km south-southwest of Timmins, Ontario in the Porcupine and Larder Lake Mining Divisions. The Property is bounded by UTM coordinates 480630E to 499424E, and 5308173N to 5332968N (NAD83, Z17N) and is covered by National Topographic System (NTS) map sheets 42A/03E and 41P/14E. The Property consists of 65 unpatented mining claims, comprised of 730 units covering 116.5 km<sup>2</sup> in area. The claims are divided into three contiguous properties (Muskrat, Beavertail, and Otter Blocks) that are collectively referred to as the

Timmins South Property (Table 1, Figure 2, Map 1). Debut acquired the property through an Option Agreement with Fletcher Nickel Inc. in 2012.

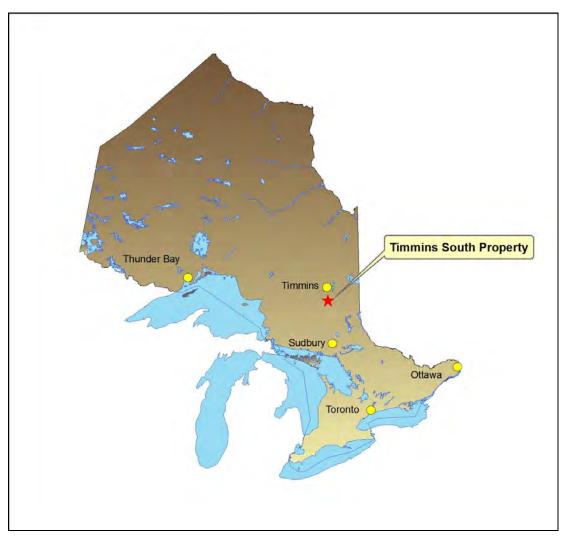


Figure 1: Location of the Timmins South Property in Ontario, Canada

Township /Area	Claim Number	Recording Date	Claim Due Date	Work Required	Total Applied	Total Reserve	Claim Bank
BARTLETT	4203158	2005-Oct-03	2013-Oct-03	\$6,000	\$36,000	\$0	\$0
BARTLETT	4203159	2005-Oct-03	2013-Oct-03	\$6,000	\$36,000	\$0	\$0
BARTLETT	4203161	2005-Oct-03	2013-Oct-03	\$4,800	\$28,800	\$0	\$0
BARTLETT	4214421	2007-May- 28	2013-May- 28	\$6,400	\$25,600	\$0	\$0
BARTLETT	4214422	2007-May- 01	2013-May- 01	\$2,400	\$9,600	\$0	\$0
BARTLETT	4214423	2007-May- 01	2013-May- 01	\$400	\$1,600	\$315	\$0
BARTLETT	4221807	2007-Jul-26	2013-Jul-26	\$4,000	\$16,000	\$4,299	\$0
BARTLETT	4223269	2007-Oct-24	2013-Oct-24	\$800	\$3,200	\$0	\$0
BARTLETT	4257251	2012-Feb-17	2014-Feb-17	\$6,400	\$0	\$0	\$0
ENGLISH	4203160	2005-Oct-03	2013-Oct-03	\$6,000	\$36,000	\$0	\$0
ENGLISH	4207596	2007-Jul-23	2013-Jan-25	\$800	\$2,400	\$0	\$0
ENGLISH	4212954	2007-May- 31	2013-May- 31	\$1,200	\$4,800	\$0	\$0
ENGLISH	4212955	2007-May- 31	2013-May- 31	\$3,200	\$12,800	\$0	\$0
ENGLISH	4212956	2007-May- 31	2013-May- 31	\$4,800	\$19,200	\$0	\$0
ENGLISH	4212957	2007-May- 31	2013-May- 31	\$1,600	\$6,400	\$0	\$0
ENGLISH	4216709	2006-Dec-07	2013-May- 08	\$12,000	\$18,000	\$0	\$0
ENGLISH	4216710	2006-Dec-07	2013-May- 08	\$800	\$1,200	\$0	\$0
ENGLISH	4216711	2006-Dec-07	2013-May- 08	\$800	\$1,200	\$0	\$0
ENGLISH	4216712	2006-Dec-07	2013-May- 08	\$12,000	\$18,000	\$0	\$0
ENGLISH	4216714	2006-Dec-07	2013-May- 08	\$12,000	\$18,000	\$0	\$0
ENGLISH	4220317	2008-Jan-28	2013-Jan-28	\$4,800	\$14,400	\$0	\$0
ENGLISH	4221806	2007-Jul-23	2013-Jul-23	\$4,800	\$19,200	\$1,480	\$0
ENGLISH	4257253	2012-Feb-17	2014-Feb-17	\$4,400	\$0	\$0	\$0
ENGLISH	4257254	2012-Feb-17	2014-Feb-17	\$3,200	\$0	\$0	\$0
ENGLISH	4257255	2012-Feb-17	2014-Feb-17	\$2,800	\$0	\$0	\$0
ENGLISH	4258175	2012-Feb-17	2014-Feb-17	\$3,600	\$0	\$0	\$0
ENGLISH	4258176	2012-Feb-17	2014-Feb-17	\$4,000	\$0	\$0	\$0
ENGLISH	4258178	2012-Feb-17	2014-Feb-17	\$2,800	\$0	\$0	\$0
ENGLISH	4258179	2012-Feb-17	2014-Feb-17	\$1,200	\$0	\$0	\$0

Table 1: Claim Details of the Timmins South Property.

Debut Diamonds Inc.	
2012 Surface Program: Timmins South	Property

ENGLISH	4260916	2011-Aug- 16	2013-Aug- 16	\$3,600	\$0	\$0	\$0
HUTT	4209315	2006-Dec-07	2013-May- 08	\$7,200	\$10,800	\$0	\$0
HUTT	4209326	2006-Dec-07	2013-May- 08	\$12,000	\$18,000	\$0	\$0
HUTT	4216713	2007-Jan-08	2013-Jan-25	\$6,000	\$24,000	\$0	\$0
HUTT	4216717	2006-Dec-07	2013-May- 08	\$12,800	\$19,200	\$0	\$0
HUTT	4216718	2006-Dec-07	2013-May- 08	\$12,800	\$19,200	\$0	\$0
HUTT	4216722	2007-Jan-08	2013-Jan-08	\$2,400	\$9,600	\$0	\$0
HUTT	4216723	2007-Jan-08	2013-Jan-08	\$6,400	\$25,600	\$0	\$0
HUTT	4216724	2007-Jan-08	2013-Jan-08	\$5,600	\$22,400	\$0	\$0
HUTT	4216725	2007-Jan-08	2013-Jan-08	\$3,600	\$14,400	\$0	\$0
HUTT	4216726	2007-Jan-08	2013-Jan-08	\$400	\$1,600	\$0	\$0
HUTT	4216727	2007-Jan-08	2013-Jan-25	\$6,000	\$24,000	\$0	\$0
HUTT	4221810	2007-Jul-26	2013-Jan-25	\$6,000	\$18,000	\$0	\$0
HUTT	4269112	2012-Mar- 23	2014-Mar- 23	\$5,200	\$0	\$0	\$0
HUTT	4269113	2012-Mar- 23	2014-Mar- 23	\$5,600	\$0	\$0	\$0
SEMPLE	4209325	2006-Dec-07	2013-May- 08	\$12,000	\$18,000	\$0	\$0
SEMPLE	4216715	2006-Dec-07	2013-May- 08	\$12,800	\$19,200	\$0	\$0
SEMPLE	4216716	2006-Dec-07	2013-May- 08	\$12,800	\$19,200	\$1,730	\$0
SEMPLE	4216721	2007-Jan-08	2013-Jan-08	\$3,200	\$12,800	\$0	\$0
SEMPLE	4221808	2007-Jul-23	2013-Jan-25	\$4,800	\$14,400	\$0	\$0
ZAVITZ	4207594	2007-Jul-23	2013-Jan-25	\$6,000	\$18,000	\$0	\$0
ZAVITZ	4207595	2007-Jul-23	2013-Jan-25	\$4,800	\$14,400	\$0	\$0
ZAVITZ	4210368	2008-Jan-28	2013-Jan-28	\$3,600	\$10,800	\$0	\$0
MONTROSE	4216728	2007-Jan-08	2013-Jan-25	\$2,400	\$9,600	\$0	\$0
MONTROSE	4265201	2012-Mar- 23	2014-Mar- 23	\$5,600	\$0	\$0	\$0
MONTROSE	4265202	2012-Mar- 23	2014-Mar- 23	\$6,400	\$0	\$0	\$0
MONTROSE	4265203	2012-Mar- 23	2014-Mar- 23	\$6,400	\$0	\$0	\$0
MONTROSE	4265204	2012-Mar- 23	2014-Mar- 23	\$4,000	\$0	\$0	\$0
MONTROSE	4265205	2012-Mar- 23	2014-Mar- 23	\$6,400	\$0	\$0	\$0
MONTROSE	4265206	2012-Mar- 23	2014-Mar- 23	\$6,400	\$0	\$0	\$0
MONTROSE	4265207	2012-Mar- 23	2014-Mar- 23	\$6,400	\$0	\$0	\$0

MONTROSE	4265208	2012-Mar- 23	2014-Mar- 23	\$6,000	\$0	\$0	\$0
MONTROSE	4265209	2012-Mar- 23	2014-Mar- 23	\$6,000	\$0	\$0	\$0
MONTROSE	4265210	2012-Mar- 23	2014-Mar- 23	\$5,600	\$0	\$0	\$0
MONTROSE	4265211	2012-Mar- 23	2014-Mar- 23	\$5,200	\$0	\$0	\$0
MONTROSE	4269114	2012-Mar- 23	2014-Mar- 23	\$5,600	\$0	\$0	\$0

#### **3.0 PREVIOUS WORK**

**1952:** Dominion Golf Ltd. conducted geology and ground magnetic surveys in the northeastern English Township in search of nickel sulphide deposits associated with ultramafic rocks.

**1957:** Queenston Gold Mines Ltd. held 33 mining claims in the south-eastern portion of Bartlett Township of which the northern portion is covered by the current mining claims. The property was mapped in detail; a number of trenches blasted and a total of 653 meters (2,412 feet) of diamond drilling were completed in 5 drill holes. The drill logs on file did not contain any assay results. Low to nil values for gold was obtained from the above activities. It was reported that a sample of "goose egg" size sulphides of pyrite and pyrrhotite in pyroclastic volcanics returned assays up to 0.25% nickel, a sample of nil sulphides but with a high degree of serpentinization returned an assay of 0.25% nickel while barren peridotite masses resulted in 0.16% nickel. It was also reported that pyrite, pyrrhotite and scattered chalcopyrite in fractured basalt returned up to 0.56% nickel located 350 feet west of the former mining claim 42728. It was reported that Queenston obtained 0.56% nickel east of the Redstone River and approximately 1.6 kilometres (1 mile) north of the township line; however, it appears that the company did not follow up on this discovery.

**1962:** Hollinger Consolidation Gold Mines Limited examined a pyritiferous lean iron formation exposed near the Matachewan road at the English-Semple township boundary. A geological mapping program combined with fluxgate magnetic and Crone EM geophysical surveys were conducted. Follow up work to these programs consisted of 24

pack-sack drill holes. No assay values were returned and exact location of these drill holes is unknown.

**1963:** Hollinger Consolidation Gold Mines Limited carried out further geological mapping, fluxgate magnetic, and Crone EM geophysical surveys on newly staked ground. Two targets associated with the gabbro / peridotite contact, as well as a target within the mafic metavolcanics were drill tested. No anomalous values were returned.

**1968:** Ontario Geological Survey completed geological mapping of Zavitz and Hutt townships.

**1972:** Des Rosier conducted a vertical loop electromagnetic survery on 11 claims in the northeastern Semple Township and an additional 6 claims on the north and west shores of Canoeshed Lake.

**1974:** Granges Inc. completed an airborne EM survey covering Hutt, Zavitz, English, and Semple, and parts of Beemer and Bartlett townships. Two diamond drill holes were drilled in the Canoeshed Lake area totalling 276 feet. Both holes intersected graphitic rocks mineralized with pyrite. From the seven samples taken, only two were assayed for gold and returned minor amounts (maximum of 35 ppb Au). Two additional holes of unknown length were drilled in the same area intersecting graphitic sediments mineralized with pyrite. No assay values were reported.

**1978:** Ontario Geological survey completed geological mapping and a report on the geology and mineralization in the Peterlong Lake area.

**1978:** Essex Minerals Company completed prospecting, ground magnetic, and EM surveys in the northwestern quadrant of Hutt Township. An 18.2 g/t Au showing was found and stripped. Exact location is not given.

**1982:** Amax Minerals Exploration undertook a geological mapping program concentrating on a sulphide iron formation north of the Redstone River. No significant results were returned.

**1984:** Ontario Geological Survey produced a geological map and report of the Ferrier Lake-Canoeshed Lake area.

**1984:** Chevron completed a magnetometer survey over the southeastern quadrant of English township.

**1987:** Pamorex Minerals Inc. conducted magnetic and VLF-EM surveys on the Decker property in Semple Township.

**1987:** Dome completed geophysical surveys, geological mapping, and power stripping in claims that are now covered by the Beavertail Block. No electromagnetic anomalies were detected with a Max Min II survey. Pervasively carbonatized ultramafic flows in contact with siliceous iron formation were exposed with trenching.

**1990:** G.S.W Bruce Prospecting Grubstake discovered extensive zones of carbonate alteration and disseminated pyrite contained within siliceous host rock up to 3500 ppb Au over one meter. Grab samples of the occurrence contained up to 7200 ppb Au.

**1990:** Ontario Geological Survey completed an airborne electromagnetic and total intensity magnetic survey over the region.

**1990:** Exploits Exploration Ltd optioned ground from G.S.W. Bruce and completed linecutting and geological mapping. The mapping uncovered numerous zones of ankerite and fuchsite alteration with pyrite on the property.

**1990:** BHP-Utah Mines Ltd completed 16.2 km of line cutting and subsequently performed a pulse EM, Max-Min, and magnetic surveys over the newly cut grid. Following the completion of the geophysical programs geological mapping and sampling of the property was performed. No significant values were returned.

**1990:** Tri Origin staked 67 single claim units and completed initial data compilation and prospecting. These claims intersect the Beavertail and Muskrat properties. Preliminary

sampling of all sulphide-bearing units observed in outcrop returned anomalous gold values ranging from 127-525 ppb Au.

**1991:** Tri Origin completed 107 line kilometers of ground VLF-EM and magnetics surveys over the previously staked claims.

**1991:** BHP-Utah Mines extended the previously cut grid to cover the Esker Lakes property and proceeded to remap and resample the entire grid. A geochemical survey was also conducted over the gridded portion of the property.

**1991:** Tintina Mines Ltd. in a joint venture with NSR Resources Inc. undertook linecutting, geophysical surveys, stripping, channel sampling, lithogeochemical surveys, and geological mapping within the Beavertail block. Two major showings (Road Showing and the 43 North showing) were discovered with values up to 7200 ppb Au.

**1991:** Avon D'Aigle completed prospecting and sampling within Semple and Hutt townships. Nothing of significance was found.

**1991:** Falconbridge Ltd. carried out magnetic and HLEM surveys. One diamond drill hole with a total depth of 345 m was drilled on the north shore of Canoeshed Lake in Hutt Township.

**1991:** Inco Exploration and Technical Services Inc. completed mapping and sampling near the Canoeshed Lake Area

**1992:** G.S.W. Bruce and Halladay Lorne completed prospecting, mapping, and both rock and soil sampling in the Comma Lake area. The presence of anomalous gold values were highlighted in the Comma Lake area.

**1992:** Royal Oak Mines Inc. Completed geological mapping as well as IP and TFM surveys on claims in Semple and Hutt Townships.

**1992:** David V. Mullen completed 5 days of prospecting in Montrose Township. Weakly anomalous gold values up to 100 ppb Au were returned from quartz veins on an island in Montrose Lake. Ten soil samples were also taken but no significant values were returned.

**1994:** Tri Origin completed 57.98 km of linecutting and 15.95 km of IP over the "A", "B", and "C" properties as well as various prospecting.

**1995:** Ontario Geological Survey completed a preliminary map and data compilation on the Grassy River area.

**1995-1998:** Cameco Gold Inc. optioned property from Tri Origin Exploration Ltd and subsequently staked additional claims. Geological mapping, prospecting, and linecutting were performed and followed up by trenching and IP surveys, as well as diamond drilling. The exploration focused on assessing the gold potential of the chlorite, fuchsite, and carbonate altered ultramafic flows adjacent to the contact between the Deloro and Tisdale Groups. Other geological, geophysical, and geochemical targets were not followed up. When Cameco failed to uncover economic grades and widths of gold during the program (maximum 1989 ppb Au over 1 m), the property was handed back to Tri Origin

**1997:** Inmet Mining Corp. conducted linecutting and geophysical surveys that consisted of a magnetometer survey and an IP survey on the property in Hutt and Zavitz Township. A mapping program was carried out in the summer of 1997. The mapping program identified many gold occurrences that are associated with altered basalts and ultramafics (intruded by albitite dykes), close to the sheared contact between the Northern Assemblage and the Southern Assemblage. Porphyritic intrusions and ultramafic sills that are slightly anomalous in gold occur along the contact. No economic mineralization was found.

**1998:** Inmet Mining Corp. conducted a diamond drill program that consisted of five diamond drill holes totalling 1082.85 m. A total of 492 core samples were taken, 471 were assayed for gold and 21 were sent for whole rock analysis. Drilling successfully discovered two types of mineralization; one consisting of disseminated pyrite associated with strong and pervasive iron carbonatization and fuchsitization at the contact of the

mafic and ultramafic volcanics, the second is carried by disseminated pyrite and quartz veining within tonalitic dykes. This drill program intersected values up to 590 ppb Au over 1.5 meters.

**1998:** Triex Resources Ltd conducted geological mapping, 45 km of linecutting, and magnetic and VLF-EM surveys on the West Redstone Property located in northern Semple Township.

**1998:** Tri Origin completed additional staking and linecutting. Soil geochemistry surveys were completed on the "A", "B", "C", and "D" grids and time domain EM and additional magnetics surveys were conducted on the Muskrat Lake and Dead Dog Lake grids.

**1998:** Tri Origin conducted a drilling program with 8 holes totalling 1282 m of drilling in BQ core size. The purpose of the program was to test the variety of time domain EM, Induced Polarization, and the soil and rock chip geochem anomalies throughout the property that were obtained from previous surveys. A total of 473 gold, 44 silver, 103 copper, 101 zinc, and 5 nickel analyses were sent in for assay. Zinc values up to 1929 ppm over 3 meters were intersected in the first three holes (TE98-01 to TE98-03) but the holes had no significant gold values. The last five holes (TE98-04 to TE98-08) intersected several anomalous gold values over 100 ppb Au. Highlights include 6377 ppb Au, 4663 ppb Au over 1 meter, 2774 ppb Au over 1 meter, 1920 ppb Au over 1 meter, 897 ppb Au over 1 meter, and 546 ppb Au over 8 meters.

**2006-2012:** Fletcher Nickel Inc. completed several option agreements and staking that led to the addition of six properties known as the Otter, Beaver Tail, Muskrat, Toner, Pele, and Eloro.

# 4.0 GEOLOGY

The following summarized regional geology has been largely derived from Ontario Geological Survey Report 231, Geology of the Ferrier Lake-Canoeshed Lake area that was published in 1984.

#### 4.1 Regional Geology

The Ferrier Lake-Canoeshed Lake area is situated between Timmins and Shining Tree in the west-central part of the Abitibi Metavolcanic-Metasedimentary Belt in the Superior Province of the Canadian Shield. The bedrock units consist mainly of Early Precambrian (Archean) metavolcanics and mafic to felsic plutonic rocks; however, a few Middle to Late Precambrian diabase dykes are present. Most of the bedrock is covered by thick Pleistocene glacial deposits of silt and sand, or recent alluvium.

The central and eastern parts of the area are largely underlain by isoclinally folded mafic to felsic metavolcanics with subordinate units of iron formation; minor units of ultramafic metavolcanics and metasediments are locally present. Two cycles of volcanism are recognized in Beemer, English, and Zavitz Townships. The oldest cycle, mainly in Beemer and English Townships consist of a lower sequence of mafic to intermediate metavolcanics and an upper sequence of felsic metavolcanics. Oxide and sulphide facies iron formations are restricted to the upper sequence of felsic metavolcanics. A younger volcanic cycle to the east in Zavitz Township consists of a lower and an upper thick sequence of mafic to intermediate metavolcanics in Hutt and eastern Semple Townships, the southeastern part of the map area, is not firmly established.

Prior to regional deformation and metamorphism, numerous small mafic to ultramafic sills and stocks and several large, layered, mafic to ultramafic sill complexes preferentially intruded the felsic metavolcanic sequences. Some mafic dykes associated with these intrusions may in part represent feeders to the overlying mafic to intermediate metavolcanics.

During regional east-west folding, the metavolcanics in the western part of the area were intruded and partially engulfed by the Peterlong Lake Complex, the northeastern margin of a large batholith composed mainly of granodiorite and trondhjemite. Regional metamorphism ranges from lower greenschist facies in the interior portions of the metavolcanic belt to amphibolite facies near the margins of the batholith. The Moher Pluton, a large late tectonic intrusion of porphyritic quartz monzonite, was subsequently emplaced along part of the contact between the Peterlong Lake Complex and the metavolcanics. At this same time, the Giekie porphyritic granodiorite and several related small stocks and dykes or porphyritic granodiorite and syenite intruded various parts of the main metavolcanic belt. Metamorphism under albite-epidote hornfels and hornblende hornfels facies conditions occurred within the narrow contact aureoles of the late granitic plutons. During the emplacement of these stocks, the previously deformed strata was locally cross-faced along north to north-west trending axes.

Subsequently, these rocks were intruded by Early Precambrian north-northwest-trending diabase dykes and Middle to Late Precambrian northwest and northeast-trending diabase dykes.

In the northwestern part of the map area, the metavolcanics adjacent to the Peterlong Lake Complex form a steep dipping, east-facing homoclinal succession. A complimentary northeast to east-plunging synform forms the major fold structure in the southern and eastern parts of the area; subsidiary folds plunge eastward in the western part of this structure, whereas those in the eastern part plunge westward.

Numerous north-northwest-trending and northwest-trending faults traverse the area.

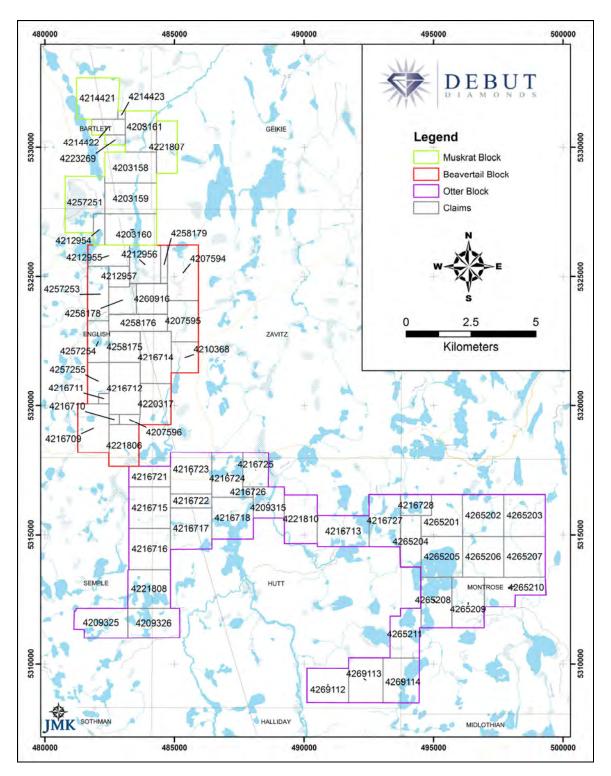


Figure 2: Tenure of the Timmins South Properties.

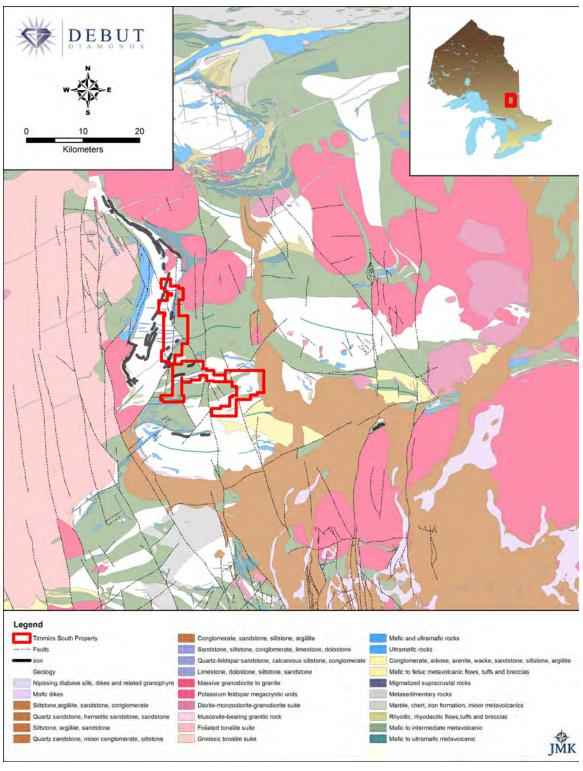


Figure 3: Regional Geology (after OGS MRD 216).

# 4.2 Property Geology

The following summarized regional and property geology has been largely derived from Butler's 43-101 compliant technical report completed on the properties in 2006 and revised in 2007.

Mapping by the OGS in Bartlett, Geikie, English and Zavitz Townships was done in the period 1967 to 1971 (OGS Map 2290, Bright and assistants, 1967; Map 2364, Pyke and assistants, 1971), and recompiled by Ayer *et al.* (2003). The first mapping campaigns were conducted before the time that Viljoen and Viljoen (1969) were creating the komatiitic classification in South Africa, followed shortly by its application in Western Australia (e.g., Nesbitt, 1971), and later applied in the Abitibi greenstone belt (e.g., Pyke *et al.*, 1973). Komatiitic flows can be recognized by spinifex textures – original bladed to skeletal dendritic olivine and pyroxene occurring with pre-metamorphic feathery crystallites and devitrified glass.

### 4.2.1 Muskrat and Beavertail Properties

Bartlett-English Property komatiites are also ascribed to the Bowman assemblage. The ultramafics were described by P. Davis of Outokumpu (1996) as being a series of komatiitic dunites, peridotites, pyroxenites and basalts. Spinifex textures at the tops of lava flows indicate that units face to the east, and that dips are steep to the east. Zones of intensive talc-carbonate alteration in the ultramafics were described by J.M. Allen (1952).

On the western side of the claim group, felsic massive largely-unstratified tuffs, bedded tuff and lapilli tuff, and thin iron formations have been described by the OGS and in assessment reports, and are now ascribed to the Bartlett assemblage. Included within these units are outcrops of gabbro that crosscut the N-S local stratigraphic strike. There is a N-S ridge on the western side of Muskrat Lake with gabbroic bodies intruding porphyritic to massive dacite, dacitic agglomerate, lapilli tuff and ash, with minor "rhyolitic" interflows. Some pillowed to amygdaloidal mafic lavas are present among the felsic units as well as "andesitic" tuff and agglomerate. Of particular note, however, is a regionally significant iron formation bed.

On the eastern margin of the Property, amphibolitized mafic lavas, ascribed to the Geikie assemblage, are intruded by granitoid dykes associated with the western margin of the Geikie pluton. According to Bright (1967), massive and porphyritic dacites are also present in this unit in English Township. The Geikie pluton outcrops beside the Redstone River on the NE corner of the claims. At this location, the pluton intruded across the Geikie assemblage into the Bowman assemblage, causing a weaker magnetic signature associated with Bowman assemblage ultramafics at this location (probably hornfels and/or metasomatic magnetite-destruction reactions).

Outcrops of NNW-trending olivine diabase dykes have been located on the Bartlett-English Property and are likely to be part of the Sudbury dyke swarm. A quartz diabase has been mapped crossing Muskrat Lake near the southern boundary of the Property and might be part of this dyke swarm as well.

#### Road Showing

Located within the Beavertail claim block is the historical showing referred to as the Road Showing, which is located along the Ferrier Creek Road at coordinates 483820E and 5324114N (NAD83 Z17N). The original discovery was part of a larger trenching program and was sampled in 1991 by Tintina Mines Limited. The Road Showing is hosted within heavily altered syenite intrusive that is bounded by mafic volcanics. Alteration is mainly fuchsite and ankerite with smaller amounts of calcite and sericite. The syenitic body is contained within a northeast trending zone of intense carbonatization alteration and shearing. The zone (previously referred to as the North Shear Zone) is characterised by numerous predominantly steep dipping offsets and shears. Gold bearing sills, dykes, irregular intrusions of syenite, porphyries, and felsic dykes are common throughout the shear zone. Historically the intrusions within this structural zone have exhibited higher gold concentrations with historical grab samples returning values up to 6700 ppb. The shear zone has been previously exposed for a strike length of 200 m and observed in outcrops for an additional 300 m to the east of the Road Showing. Past channel samples on the Road Showing have returned values consistently within the range

of 500-1000 ppb (locally up to 1000-2000 ppb range) within the syenitic intrusive. The past channel samples have indicated that gold mineralization is related to pyritization of the syenite at the margins of thin quartz veinlettes.

# 4.2.2 Otter Block

The property is situated near the southwest limit of the Abitibi Greenstone belt and geological mapping by Bright (1984) indicates that the property is underlain by a sequence of isoclinally folded - intercalated mafic & felsic metavolcanics. Bright (1984) mapped an east-west orientation to the isoclinal folds and also noted that the western part of Semple Township, and consequently a large portion of the otter block is covered by glacial eskers and aeolian sand dunes.

Recent interpretation of the airborne magnetic and electromagnetic survey data flown by the government suggests that the geology as mapped by Bright (1984) is complicated by major faults. There are two major northeast trending fault sets that transect Semple Township and the property. The southerly fault set passes through Redstone Lake and truncates the east-west trending, isoclinally folded stratigraphy that underlies Hutt Township. For the purposes of this report, this fault set will be referred to as the "Redstone River Fault set" and separates Structural Domains "A" and "B." The northerly fault set, or Parting Lake Fault (Bright 1984), passes close to the Foisey Gold Showing. Between these two fault sets an examination of the aeromagnetic data suggests that the bedrock lithologies are highly disrupted. Structural Domain A in this report refers to the relatively simple, isoclinally folded stratigraphy underlying Hutt Township, whereas Structural Domain B refers to disrupted lithologies between the Parting Lake Fault and the Redstone River Fault.

Lithologies found within both Structural Domains are typical of Precambrian greenstone belts. In the project area, thickly bedded arenites stratigraphically overly tholeiitic metavolcanics which locally contain turbidite like sequence. In turn these arenites are overlain by felsic metavolcanics with some local fragmental horizons. In Structural Domain "A" the felsic fragmental rocks are intercalated with thin, peridotitic komatiite flows. Other metasediments in Structural Domain "B" include discontinuous, sulphide facies, banded iron formations that occur north of the Otter. All these supracrustal rocks have been intruded by mafic and ultramafic dykes of varying ages. The only plutonic rocks within the area consist of a thin band of diorite - monzodiorite that occurs in the northern part of Semple Township.

## Comma Lake Showing

The Comma Lake Showing is located between Comma Lake and Canoeshed Lake in Hutt Township. The Comma Lake Showing is an east-southeasterly trending, strongly altered zone that is found near a mafic/ultramafic contact. The zone contains intense ankerite alteration along with pyritization, fuchsitization, albitization, and sericitization. The volcanics are intruded by narrow tonalitic (porphyritic) dykes. Assays from drill core returned gold values up to 0.67 g/t Au and 0.25 g/t Au over 1.5 meters within the tonalitic dykes. Historic surface grab samples returned values up to 405 ppb Au and historic chip samples returned values up to 420 ppb Au over 0.8 meters.

# Decker Showing

The Decker Showing (also historically referred to as the Alford-McCall showing) is located in northeast Semple Township, near the township border. The showing is hosted in sheared and carbonatized mafic to intermediate metavolcanics that have been injected with a stockwork of quartz veining. Pyrite mineralization accompanies the quartz mineralization and is found as fine disseminations within the host rock. The surrounding rocks have been intruded by numerous felsic dykes and stringers that contain anomalous gold values. Historic grab samples have returned gold values as high as 6069 ppb Au, 3189 ppb Au, and 0.014 oz/t Au.

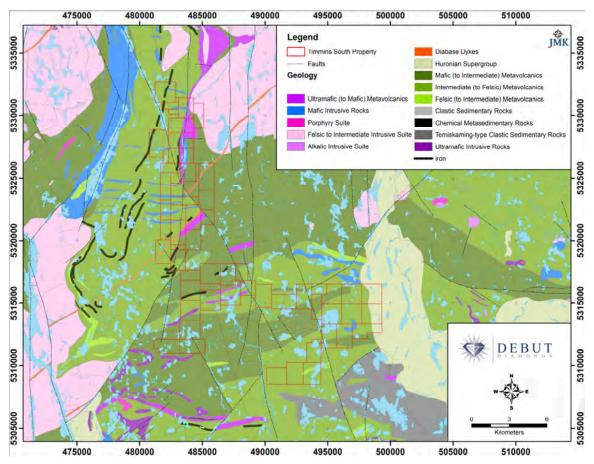


Figure 4: Property Geology (after GSC MRD 094)

#### 5.0 2012 SURFACE PROSPECTING PROGRAM

#### 5.1 Methods

In 2012, Debut completed a surface prospecting program on the Timmins South Property.

The above program was completed on the property from Sept 4<sup>th</sup> through to Oct 31<sup>st</sup>, 2012. A total of 37 days were spent on the program.

#### 5.2 Work Completed

A total of 127 samples were taken throughout the property. Sampling was of a reconnaissance nature, with 1-3 kg grab samples obtained where sulphides were present, quartz veining was present, or favourable alteration or lithology was present. An

additional 174 lithological samples were described but not submitted for analysis. Sample descriptions can be found in Appendix II.

# 5.2.1 Beavertail Block

Exploration on the Beavertail Block was of reconnaissance nature and targeted areas with outcrop exposure as well as the newly completed Beavertail grid, the historical Road Showing and surrounding area, and the historical Cameco trenches and surrounding areas. Lithologies observed during the 2012 field season within the Beavertail Block include; metavolcanics that range from felsic to ultramafic, metasediments, chemical metasediments that include iron formation and chert, quartz veining, gabbro, a variety of intermediate to mafic intrusives, and a variety of felsic intrusives. A brief description of each lithology is included below.

The felsic metavolcanics (VFO) that are found in the Beavertail block range in colour from grey to green to pink, are generally very fine grained with some fine and medium grained varieties present, and exhibit tuffaceous, massive, and foliated to sheared textures with rare brecciated and porphyritic varieties. The unit is generally unaltered with rare silicification, hematite, and potassium feldspar alteration present. Sulphide concentrations range from nil up to 2% of the groundmass. The sulphides consist of pyrite and are found as fine disseminations and fracture fill.

The interemediate metavolcanics (VIO) range in colour from rusty brown to light green, are fine to medium grained, and massive to foliated with rare shearing present. The unit is generally unaltered but rare pervasive sericite alteration does occur. Mineralization is generally restricted to trace amounts of finely disseminated pyrite but semi-massive concentrations of finely disseminated pyrite up to 10% were noted.

The mafic variety of metavolcanics (VMO) range in colour from green to grey, are fine to medium grained, and generally massive to foliated. Alteration is variable with strong pervasive sericite, ankerite, chlorite as well as variable silicifiation present. Quartz-carbonate veining is associated with the outcrops with stronger alteration. Mineralization is restricted to pyrite with concentrations ranging from nil up to 2% of the groundmass.

The pyrite occurs as fine disseminations that are generally associated with the stronger altered outcrops.

The ultramafic metavolcanics (VUO) found within the Beavertail block range in colour from a rusty brown, to a grey, to medium to dark green. They range from fine to medium grained with rare coarse grained sections. Alteration varies greatly with some relatively fresh samples to intensely altered samples. The alteration present is mainly ankerite and fuchsite with weaker amounts of chlorite and talc with local serpentite alteration. The ankerite and fuchsite alteration are generally pervasive but intensity varies from weak to strong. The ultramafic metavolcanics occur as massive, brecciated, and sheared varieties with some outcrops exhibiting well developed spinifex texture. Sulphide content is restricted to pyrite with concentrations that range between nil to 15% of the groundmass. The pyrite occurs as disseminated grains, euhedral crystals, blebs, and fracture fill. Sulphide content has a weak correlation with late stage quartz (+carbonate) veining.

The metasediments (SED) found within the Beavertail Block are brown, fine grained, and contain well developed bedding. The unit is generally unaltered but contains up to 2% pyrite that occurs as disseminated grains, euhedral crystals, and as fracture fill.

The chemical metasediments include iron formation (SED\_if) and chert (SED\_ch) units. The iron formation ranges in colour from brown, to black, to grey to white. The unit is very fine grained and can contain weak, patchy hematite alteration and moderate to strong local quartz veining. The unit generally contains pyrite mineralization in concentrations ranging from trace up to 5% of the groundmass. The pyrite occurs as disseminated grains, euhedral crystals, and fracture fill. The chert unit ranges in colour from brown to grey to black and is generally very fine grained with some fine grained varieties. The unit can contain strong, pervasive silica alteration with rare patchy hematite and potassium feldspar alteration. The unit generally contains pyrite mineralization with concentrations ranging between trace and 5% of the groundmass. The pyrite occurs as disseminated grains, euhedral crystals, and fracture fill.

The quartz veins (QV) encountered in mapping are generally white with a small portion exhibiting a rusty colour. They are very fine to fine grained and generally massive. They are generally unaltered except for the rusty varieties that contain weak, pervasive ankerite alteration. The quartz veins generally contain pyrite mineralization with concentrations ranging from trace up to 3% of the groundmass. The pyrite mineralization occurs as disseminated grains, euhedral crystals, blebs, and fracture fill.

The gabbro (IMG) contained within the Beavertail Block is typically white and green, medium to coarse grained, and massive. The unit is generally unaltered with rare epidote alteration exhibited at one location. The unit is generally unmineralized, but can contain up to 1% of disseminated pyrite.

The diabase dykes (DIA) that cut through the property range in colour from green and white to a dark grey. They range from very fine grained up to coarse grained and are generally massive. They are generally unaltered with up to 0.5% disseminated pyrite.

The intermediate dykes (ID) that are found within the property are generally grey, very fine to fine grained, and massive. They are generally unmineralized with weak, pervasive ankerite alteration present in some. There is a lamprophyre variety (ID\_lamp) is green, fine to coarse grained, and porphyritic. The phenocrysts consist of olivine crystals up to 6 cm in diameter. The lamprophyre dykes contain trace to 0.5% disseminated pyrite.

Several types of felsic intrusives were encountered during the mapping. These include a syenite dyke (FD\_syn), an albitite dyke (FD\_alb), and both feldspar porphyritic (FD\_fp) and quartz feldspar porphyritic (FD\_qfp) dykes. The syenite dykes range in colour from pink, to grey, to tan-grey. They are fine to medium grained and generally massive. The alteration in the syenite dykes is generally weak and can consist of hematite along fractures, pervasive ankerite, and spotty fuchsite that is associated with larger crystals. The dykes can contain quartz veining that makes up to 20% of the groundmass. They are generally mineralized with up to 3% pyrite that occurs as disseminated grains and euhedral crystals both within the syenite and associated with the quartz veining. The albatite dykes are generally white to greyish-tan, fine to medium grained, and massive.

They are generally unaltered but can contain quartz veining. They are generally mineralized and can contain up to 5% pyrite that occurs as both disseminated grains and euhedral crystals. The feldspar porphyry is grey to light grey and fine grained. The can contain weak to moderate, pervasive ankerite alteration but are also unaltered. They are generally mineralized and can contain up to 0.5% pyrite that occurs as both disseminated grains and euhedral crystals. The quartz feldspar porphyry ranges in colour from orange, to pink, to white, to rusty brown. They can contain weak to moderate, pervasive ankerite alteration as well as weak quartz veining. They are generally mineralized and can contain up to 3% pyrite that occurs as both disseminated grains and euhedral crystals.

Five grab samples taken within the vicinity of the Road Showing produced anomalous gold values ranging from 23 ppb Au up to 5560 ppb Au including values of 137 ppb Au and 374 ppb Au. Four of the five anomalous values were found in late stage felsic intrusives with the other value produced from a sample of mafic metavolcanics. The two highest values of 5560 ppb Au and 374 ppb Au were produced from quartz-feldspar porphyries with values of 137 ppb Au and 23 ppb Au produced from syenitic felsic dykes.

Three anomalous values above 20 ppb Au were returned from the Cameco Seska trench and surrounding area. The highest value of 162 ppb Au was returned from the trench within a felsic dyke. Values of 21 and 22 ppb Au were returned from Intermediate to mafic metavolcanics and ultramafic metavolcanics respectively. The latter was produced from the area southwest of the trench.

Many samples were taken within the recently completed Beavertail grid. Thirteen of these samples returned anomalous values above 20 ppb Au. These values range from 20 ppb Au up to 617 ppb Au and form a weak northeast-southwest trend. The highest values were produced from samples within a variety of felsic intrusions and quartz veins with some of the weaker anomalies found within ultramafic volcanics and iron formation

Five samples taken within the Cameco C and D grids returned anomalous gold values above ranging from 22 ppb Au up to 177 ppb Au. The highest values of 117 ppb Au and

54 ppb Au were found in ultramafic metavolcanics and Intermediate volcanics respectively. The remaining values were found in felsic intrusions and a quartz vein.

# 5.2.2 Otter Block

Exploration on the Otter Block was concentrated mainly on Hutt and Semple Townships due to outcrop exposure, ease of access, and location of historical showings. Lithologies observed during the 2012 field season within the Otter Block include; metavolcanics ranging from ultramafic to felsic, metasediments, quartz veins, and minor felsic intrusives. Lithologies found within the Otter block are very similar to those found in the Beavertail block with the exception of metasediments and pillowed mafic metavolcanics. Refer to section 5.2.1 for the remaining lithological descriptions found on the Otter Block.

The metasediments (SED) found within the Otter Block range in colour from white to light pink, are very fine grained, and generally well bedded. The unit is generally unaltered and unmineralized.

The pillowed mafic metavolcanics (VMO\_pil) are similar to the mafic metavolcanics found in the Beavertail Block but exhibit pillow structures. They are generally chlorite altered and unmineralized.

One sample was taken in the probable vicinity of the Decker Showing. The sample returned a value of 6520 ppb Au. The sample was taken in a discontinuous quartz vein that reached a thickness of 0.5 meters. The quartz vein contained 1-2 % fine grained disseminated pyrite. No additional samples were taken in the immediate area.

Several samples were taken in an area to the northeast of Redstone Lake and south of the area of the Decker Showing. Three of these samples returned anomalous values between 17-285 ppb Au. The two highest values were returned from samples taken in chlorite altered mafic metavolcanics that contained local irregular quartz veining up to 30 cm in width that were accompanied by up to 0.5% fine grained disseminated pyrite.

Three samples taken in the vicinity of the Comma Lake Showing produced anomalous gold values between 15 ppb Au and 116 ppb Au. The highest returned value was produced from a heavily ankerite altered ultramafic volcanic with weaker amounts of fuchsite alteration and quartz veining. Up to 1% finely disseminated pyrite was found within the sample.

# 5.2.3 Muskrat Block

Exploration on the Muskrat Block was limited in the 2012 field season. Historical showings on this property are mainly nickel anomalies. The 2012 field season focused mainly on gold exploration and concentrated on the Beavertail and Otter properties as they had more underexplored gold potential and exploration time was limited due to a late start to the field season.

## 5.3 Structure

The lithological contacts within the Timmins South property trend northeast-southwest to east-west with dips ranging from 60-90 degrees towards the south, south-east. There are several shear zones present. The shear zones observed are generally east-west to northeast-southwest trending with a small number of northwest-southeast shears observed. Where foliation was observed it followed a similar trend of shearing. Only one fault was observed during prospecting that had a strike of 160 and a dip of 65 degrees. No geophysical interpretation or geological interpretation of faulting was completed during this field season. There are several outcrops that exhibit brecciation throughout the property.

# **5.4 Mineralization**

Sulphide mineralization can be found in most lithologies throughout the property. The mineralization is generally restricted to pyrite. Concentrations within each lithology type vary greatly and range from trace amounts up to concentrations of 10% of the groundmass with average concentrations between trace and 3% of the groundmass. The pyrite occurs mainly as finely disseminated grains and as fine euhedral crystals, but can also occur as fracture fill, wispy, and semi-massive varieties.

Gold mineralization appears to be associated, but not proportional to sulphide mineralization. The gold mineralization appears to have a stronger correlation with late stage quartz veining, late stage felsic intrusions (syenite and porphyry), and alteration.

#### 5.5 Assay Results

Sampling was of reconnaissance nature with 1-3 kg grab samples obtained from outcrop. Samples were collected from outcrops that contained sulphides, preferential alteration or lithology, or had the presence of quartz veining.

Geochemical grab samples were prepared and assayed for gold by Activation Labratories of Timmins, Ontario.

Upon receiving the samples, the samples are dried prior to any sample preparation. The samples are then crushed to minus 10 mesh (1.7mm), mechanically split (riffle) to obtain a representative sample, then pulverized to at least 95% minus 150 mesh (106 microns).

Samples are then analyzed using the Fire Assay Fusion method with AA Finish (Atomic Absorption). The sample is mixed with fire assay fluxes (borax, soda ash, silica, and litharge) and with Ag added as a collector and the mixture is placed in a fire clay crucible. The mixture is preheated at 850°C, intermediate 950°C and finish 1060°C, the entire fusion process should last 60 minutes. The crucibles are then removed from the assay furnace and the molten slag (lighter material) is carefully poured from the crucible into a mould, leaving a lead button at the base of the mould. The lead button is then placed in a preheated cupel which absorbs the lead when cupelled at 950°C to recover the Ag (doré bead) + Au. For the AA Finish, the entire Ag dore bead is dissolved in aqua regia and the gold content is determined by AA where the element concentration is determined by introducing that element in its atomic form to a light beam of appropriate wavelength causing the atom to absorb light (known as atomic absorption). The reduction in the intensity of the light beam directly correlates with the concentration of the elemental atomic species. The detection limit for gold using this method is 5 ppm, and the upper limit is 3000 ppm. For samples greater than the upper limit of 3000 ppm, the sample is re-analyzed using a gravimetric method where sample is processed by fire assay as previous. However the Au is separated from the Ag in the dore bead by parting with nitric acid. The resulting gold flake is annealed using a torch, then is weighted gravimetrically on a microbalance. The lower and upper detection limit for this process is 3 and 10,000 ppm respectively.

The ICP data is collected by digesting 0.5 g of a sample with aqua regia (0.5 ml H2O, 0.6 ml concentrated HNO3, and 1.8 ml concentrated HCl) for 2 hours at 95° C. The sample is then cooled and diluted with de-ionized water. The samples are then analyzed on a Varian Vista Pro or Varian Vista 735 ICP for the 35 element suite.

A total of 127 grab samples were collected in the Timmins South Property. Samples were labeled with sample numbers and referenced to sample stations. Of the 127 samples that were submitted, 24 samples returned gold values below the detection limit (<5 ppb Au), 63 samples returned between 5-10 ppb Au, 22 samples returned between 11-50 ppb Au, 7 samples returned between 51-100 ppb Au, 6 samples returned between 101-250 ppb Au, and 5 samples returned >250 ppb Au. Of the samples that returned >250 ppb Au, 3 returned between 250-1000 ppb Au and 2 returned between 5500-7000 ppb Au. Highlights of the program are provided in Table 2. Sample descriptions can be found in Appendix II.

		Claim	Au
Sample Number	Rock Type	Block	(ppb)
1313188	Quartz Vein	Otter	6520
999002	Quartz-Feldspar Porphyritic Dyke	Beavertail (Road Showing)	5560
999041	Albitite Dyke	Beavertail	617
1313198	Quartz-Feldspar Porphyritic Dyke	Beavertail (Road Showing)	374
1313185	Mafic Dyke	Otter	285
1313169	Felsic Dyke	Beavertail	162
1313151	Syenitic Dyke	Beavertail (near Road Showing)	137
999077	Quartz Vein	Beavertail	132
999064	Quartz Vein / Syenitic Dyke	Beavertail	122
1313174	Mafic Volcanic	Beavertail	117
1313154	Ultramafic Volcanic- Ankerite altered	Otter	116
999072	Quartz Vein	Beavertail	100

Table 2: Highlights of the 2012 Timmins South Grab Sampling Program.

# 6.0 CONCLUSIONS

The principle conclusions of the 2012 surface program on the Timmins South Property are as follows:

- Multiple lithologies, including metavolcanics that range from felsic to ultramafic, clastic metasediments, chemical metasediments that include siliceous iron formation and chert, and a variety of intermediate, mafic, and felsic intrusives, were intersected during the 2012 field season. Multiple areas of highly sheared and altered mafic to ultramafic metavolcanics associated with felsic intrusives and quartz veining were found within the Beavertail and Otter blocks.
- Anomalous gold values tend to be associated with late stage quartz veining and late stage intrusives that are hosted within highly altered and sheared host rocks. Gold mineralization is associated with, but not proportional, to the sulphide content.
- Anomalous gold values of 5560 ppb Au, 374 ppb Au, and 137 ppb Au were obtained from the historical Road Showing and the surrounding area.
- Multiple anomalous gold values were returned from grab samples near Comma Lake with values between 15 ppb and 116 ppb Au.
- 5) Gold trends within the Beavertail block form a weak northeast-southwest trend. Thirteen anomalous values were returned between 20-617 ppb Au. The highest values were returned from a variety of felsic intrusives and quartz veins.
- 6) One sample taken within a quartz vein from the probably location of the Decker showing produced a value of 6520 ppb Au.
- Three anomalous gold values were returned in an area north of Redstone Lake, but south of the historical Decker showing. The values ranged from 17-285 ppb Au.

## 7.0 RECOMMENDATIONS

The following recommendations can be made on the basis of the 2012 surface program completed on the Timmins South Property:

- Further geological compilation of previous work should be completed for the Timmins South Property. Compilation and standardisation of current geological data and production of a property bedrock map will aid in generating targets.
- 2) Additional work is warranted in the area of the historical Road Showing. Anomalous grab samples trend northeast-southwest forming a gold trend for approximately 500 m. Trenching should also be completed along with prospecting in order to gain a better knowledge of the characteristics of the host rock and mineralization. Detailed mapping and systematic channel sampling across the exposure will aid in identifying the mineralization characteristics. Induced Polarization and magnetometer survey should be considered if the results from the trenching program are encouraging.
- 3) Anomalous gold values were returned in a northeast-southwest trend on the historical Cameco C and D grids. These values were returned in syenitic felsic dykes and quartz veins. Further prospecting in the area should be completed in an attempt to follow these late stage intrusions as well as find other possible intrusions related to the dykes.
- 4) Further work is warranted within the Otter Block focused on the areas with anomalous gold values within Hutt and Semple townships. An IP and magnetometer survey should be completed on the western half of the Matawest Extension grid that covers the Decker Showing and the anomalous grab samples in the northeast corner of Semple Township. The Matawest Extension grid should also be geologically mapped. Soil geochemistry (MMI) may also help to generate targets in areas of cover.

5) The claims in Montrose Township lack historical showings. Reports indicated much of the property is covered by overburden. Limited prospecting should be completed in order to verify this. The recently completed airborne survey by Fletcher Nickel Inc. in 2012 also indicated the presence of some ultramafic intrusions that require further investigation.

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## Appendix I

## **Statement of Qualifications**

### **Statement of Qualifications**

I, Nathan Joseph Lintner of 332 Grand Desert Rd, Bonfield, Ontario, do hereby certify that:

I am a graduate of Laurentian University, Sudbury, Ontario with a B.Sc. Geology, 2011, and have been practising my profession as a geologist since.

I am a member with the Association of Professional Geoscientists of Ontario (GIT #12220).

I hold no interests in the securities of Debut Diamonds Inc.

"nathan lintner"

Nathan Joseph Lintner JMK Exploration Consulting North Bay, ON March 15<sup>th</sup>, 2013

### **Statement of Qualifications**

I, Joerg Martin Kleinboeck of 147 Lakeside Drive, North Bay, Ontario, do hereby certify that:

I am a graduate of Laurentian University, Sudbury, Ontario with a B.Sc. Geology, 2000, and have been practising my profession as a geologist since.

I am a member with the Association of Professional Geoscientists of Ontario (#1411).

I am a member of the Prospectors & Developers Association of Canada (PDAC).

I hold no interests in the securities of Debut Diamonds Inc.

Joerg Martin Kleinboeck March 15<sup>th</sup>, 2013 North Bay, Ontario

# Appendix II

**Descriptions of Outcrops and Grab Samples** 

Sample	Easting	Northing	Lithology	Colour	Texture	Alteration	Structure	Mineralization	Comments	Certificate	Au (ppb)
999001	484127	5324369	VMO_ank	brown	fg	s per ank		0.5% diss py	sample taken near contact with FD_qfp	A12-10677	5
999002	484126	5324368	FD_qfp	rusty brown	porphyritic	w irreg qv	contact 230/70	0.5% diss py		A12-10677	5560
999003	483273	5324370	VIO	light green	fg		shr'd 250/70	no visible sulphides	heavily fractured	A12-10677	5
999004	483267	5324493	VFO tf	light green	fg		shr'd	1-2% diss py		A12-10677	6
999005	483260	5325263	GOSSAN	rusty brown				10% diss py	Gossan zone, brecciated with chlorite-rich matrix, sample heavily oxidized	A12-10677	< 5
999006	483400	5325365	SED_ch	grey	vfg	s per sil		2% finely diss and fracture controlled pyrite	boulder, at base of cliff of similar rock type	A12-10677	< 5
999007	483396	5325370	SED_ch	grey	vfg	s per sil		2% finely diss and fracture controlled pyrite		A12-10677	< 5
999008	483111	5325849	SED_ch, VFO	grey to green	bx	s per sil, w irreg qv	bedding 201/85	0.5-1% finely diss py	alternating beds of tab chert bx and chert, local tuffaceous interflows	A12-10677	3
999009	483225	5325141	SED_ch	rusty brown	bx			5% diss + euhedral py	gossan zone in BIF	A12-10677	5
999010	484759	5322379	SED_ch	grey	vfg	s per sil	bedding 038/72	1% diss + banded py		A12-11195	8
999011	484684	5322499	VIO/VMO	green	f-mg	m-s per ank, vw irreg qv 2-3mm in thickness, vw per kspar		0.5% diss and ff py	non-magnetic	A12-11195	21
999012	484705	5322503	VUO	green	fg	m per ank, local 1-3mm ank+qv		1% diss+wispy+ff py	weakly magnetic	A12-11195	22
999013	484718	5322485	VFO/VIO	green	fg	vw irreg qv	fol'd	tr - 0.5% finely diss + ff py	non-magnetic, infront of TE98- 04 that did not intersect felsic volcanic had elevated gold values	A12-11195	< 2
999014	484659	5321862	VUO	rusty brown	mg	m per chl, w qtz + carb veins, s per ank		tr diss py	non-magnetic, sample taken in old trench 25 m in length orientated @ 280	A12-11195	< 2
999015	484779	5321781	FD_ab	light brown	mg	w irreg qtz + carb veining up to 1cm	mass	1% diss py		A12-11195	< 2
999016	484602	5321783	SY	reddish-pink	fg		bx	1% diss+ff py	contains 5% green angular VMO clasts up to 2 cm, similar to Hare Lake/Matachewan syenite, angular boulder at bottom of trench, proximal		< 2
999017	484539	5321905	ID_lamp	green	f-cg		porphyritic	tr-0.5% diss py	local olivine phenocrysts up to 6mm in diameter, spotted texture	A12-11195	< 2
999018	484539	5321905	VMO/VUO	green	mg	s qtz+carb veining, w per kspar		1-2% diss py		A12-11195	< 2
999019	484535	5321899	QV	white				tr diss py	small boulder, angular, source proximal	A12-11195	< 2
999020	484524	5321898	QV	rusty		qtz + ank vn		0.5-1% diss py		A12-11195	< 2
999021	483770	5320651	VUO_gc	medium green		vw per fu, w-m per ank, w qtz + carb veins		tr diss py		A12-11195	< 2
999022	483791	5320626	SY	reddish-grey	vfg	w per bio	mass	no visible sulphides		A12-11195	< 2
999023	483709	5320720	FD_alb	white to grey	f-mg	w-m qtz+carb veinlets	mass	tr-0.5% diss py		A12-11195	< 2

999024	483704	5320738	FD_fp	grey	porphyritic			tr-0.5% diss py		A12-11195	< 2
999025	483345	5321115	VFO	grey	vfg		shr'd	tr-0.5% finely diss py		A12-11195	< 2
999026	483346	5320513	VUO	green	mg	s per ank, m per qv+carb veining		tr diss py		A12-11195	< 2
999027	483119	5320063	VUO	green	bx	s per ank, m per sil		2% diss + euhedral py	local spinifex	A12-11195	< 2
999028	483145	5320106	SED_if	white to grey	vfg	s per sil	bedding 036/85	tr diss + ff py	· ·	A12-11195	3
999029	483438	5320668	VMO	green	fg	s per ank, m per qtz+carb veining	mass	tr diss py		A12-11195	< 2
999030	483455	5320688	FD_qfp	orange to pink	porphyritic	s per ank, w-m qtz+carb veining		0.5-1% diss py		A12-11195	< 2
999031	483458	5320688	FD_qfp	orange to pink	porphyritic	s per ank, s qtz+carb veining		2-3% diss py		A12-11195	< 2
999032	483431	5320717	BX, SED_if	green	bx	s per hem, kspar, qtz veining		2-% diss + euhedral py		A12-11195	< 2
999033	483368	5320618	VUO	green	mg		shr'd 320/57	no visible sulphides		A12-11195	< 2
999034	482849	5319829	FD_fp	light grey to brown	fg	w-m per ank, local qv up to 3 cm	porphyritic	tr diss py		A12-11723	< 5
999035	483485	5321102	VFO	grey	vfg		mass	tr diss py		A12-11723	< 5
999036	483582	5321132	SED_if	dark grey and white	vfg			0.5% diss + euhedral py	very strongly magnetic	A12-11723	57
999037	483270	5320423	VUO_gc	green	bx	m-s per+patchy fu, m-s per ank, m qtz+carb veining	bx	tr-0.5% diss + ff py		A12-11723	27
999038	483259	5320405	VUO_gc	green	bx	s per+patchy fu, s per ank, local w qtz+carb veining	bx	0.5-1% diss py		A12-11723	7
999039	482997	5320655	SED_if	grey and white	vfg	s irreg qtz+carb veining		5% diss + euhedral py	strongly magnetic	A12-11723	47
999040	483337	5320085	VUO_gc	green	bx	s per fu, s per ank, w-m qtz+carb veining	bx	1% diss py	low lying o/c in cedar swamp	A12-11723	< 5
999041	483207	5320075	FD_alb	white to pink	fg	w-m qv	mass	1% diss py	sulphides within qv and matrix	A12-11723	617
999042	483140	5320150	QV	white		m qtz+carb veining	mass	3% diss + wispy py	adjacent to SED_if unit	A12-11723	40
999043	483209	5320229	VUO	green to brown	mg	s per ank, w per fu, w qtz+carb veining up to 4mm	mass	tr diss py	non-magnetic	A12-11723	< 5
999044	483062	5319932	VUO_ank	light green to green	cg	s per ank, m carb +/- qtz veining			non-magnetic	A12-11723	< 5
999045	483126	5319871	VUO_ank	green and pink		w-m carb +/- qtz veining, w per fu		1-2% finely diss py		A12-11723	7
999046	483016	5319847	VUO_ank			s per ank, w ank+qtz veining, w per fu				A12-11723	< 5
999047	483087	5319760	VUO_ank			w per ank, m qtz veining (irreg stockwork), w per chl				A12-11723	11
999048	482977	5319729	VUO_gc			m-s per patchy fu, m-s qtz+carb veining, w-mod per ank		tr-0.5% diss py		A12-11723	17
999049	482972	5319741	VUO_ank			m-s per ank, m carb+qtz veining		0.5% diss and euhedral py		A12-11723	< 5
999050	483012	5319549	VUO_ank	rusty brown		s per ank, w-m ank+qtz veining				A12-11723	< 5
999051	483929	5320963	VUO	dark green		s per chl	st sh'd with <4cm cal/ank veins+qtz veins		non-magnetic	A12-11723	< 5
999052	483803	5321051	VUO_ank	dark green		m-s per ank, w-m qtz+carb veining	fol'd	tr diss py	non-magnetic	A12-11723	< 5

							well developed				
999053	483641	5321253	SED_if	grey		local qtz veining	bedding	tr-0.5% diss py	strongly magnetic	A12-11723	10
999054	483902	5321101	FD_sy	brown to red	fg	m-s per ank, local spec hem along fractures	mass	1% diss and euhedral py	moderately to strongly magnetic, gold zone	A12-11723	< 5
999055	483905	5321136	VUO_ank	green and brown		s per ank, w qtz+carb veining		tr diss py	non-magnetic, gold zone	A12-11723	< 5
999056	483913	5321107	VUO_gc			s per fu, qv+carb		4% diss and euhedral pyrite	old pit	A12-11723	79
999057	483913	5321107	QV			minor carb		2-3% diss py		A12-11723	< 5
999058	483925	5321111	VUO_gc			s per ank, s qtz+carb veining		tr diss py	non-magnetic	A12-11723	< 5
999059	483913	5321117	FD_ab	greyish-tan	mg	m qtz veining <1cm in thickness	mass	4-5% diss py	non-magnetic	A12-11723	8
999060	483913	5321116	FD_sy	pink to red	vfg-fg		mass	2% diss py	weakly magnetic	A12-11723	< 5
999061	484053	5321102	QV/FD_sy			local spec hem along fractures		2% diss and euhedral and ff py	non-magnetic, 20% angular fragments of FG_sy, old trench	A12-11723	< 5
999062	484037	5321103	FD_sy	tan to pink	fg	mg qtz vein <5mm in thickness	mass	tr-0.5% finely diss py		A12-11723	< 5
999063	484046	5321107	FD_sy	pink	fg	15% qtz veining/stockwork		2% diss and euhedral py	non-magnetic	A12-11723	< 5
999064	483978	5321163	QV/FD_sy					1% diss and fc py	QV in FD_sy	A12-11723	122
999065	483978	5321163	FD_sy	pink to tan	fg	20% qtz+ank veining	mass	2% diss py in veins and matrix		A12-11723	30
999066	483974	5321180	VUO_gc			s per fu, m per ank, m carb+qtz veining		0.5% diss py	non-magnetic	A12-11723	< 5
999067	483935	5321197	FD_sy/FD_ab	tan grey		s qtz veining, w-m per ank		1% diss and fc py	non-magnetic	A12-11723	7
999068	483943	5321350	VUO			w-m per ank, w qtz+carb veining <2mm in thickness		tr-0.5% diss py	weakly magnetic	A12-11723	< 5
999069	484101	5321179	FD_sy		vfg-fg	w qv <2mm-1cm	mass	2-3% diss py	non-magnetic	A12-11723	99
999070	484029	5321140	VUO_gc			s per fu, m per ank, m carb veining		0.5% diss py	non-magnetic	A12-11723	13
999071	484081	5321164	VUO_gc			s per fu, m per ank, m carb veining		1% diss to blebby py	non-magnetic	A12-11723	< 5
999072	484182	5321248	QV					3% diss to blebby py	non-magnetic, wall rock is VUO_gc	A12-11723	100
999073	484177	5321244	VUO_gc			20% qtz+carb veining, m per ank		3-4% diss and blebby py	non-magnetic, local loose blocks of sy	A12-11723	94
999074	484014	5321408	VUO_ank			s per ank+ta			non-magnetic	A12-11723	< 5
999075	484090	5321470	VUO_gc	white and green		s carb+qtz veining, s per fu within VUO clasts (40%)	bx'd	tr diss py		A12-11723	< 5
999076	484135	5321438	VUO_ank			m-s per ank, vw per fu, w-m qtz veining up to 4cm	qv trend 230-240	0.5% very finely diss py		A12-11723	< 5
999077	484385	5320870	QV				trend 200	3% diss py	non-magnetic, local fragments of VUO_gc	A12-11723	132
999078	484209	5321512	FD_sy	pink to red	fg		mass	2% diss and euhedral py in qv and matrix	non-magnetic, old trench, sample in QV		
999079	484300	5321538	FD_sy	pink	f-mg	w per fu associated with coarser grained sections	mass	0.5-1% diss py	non-magnetic, local qv		
1313151	483820	5324114	FD_sy	reddish-pink	f-mg	w irreg qv, <5mm in width		1% diss + euhedral py	road showing	A12-10091	137
1313152	483818	5324113	FD_sy	reddish-pink	f-mg	w irreg qv, <5mm in width, m per ank		2% diss + euhedral py	road showing	A12-10091	10
1212152	483846	5324092	VMO	green	f-mg	m per ser	fol'd 215/90	1% finely diss py	road showing	A12-10091	24

1313154	487992	5316493	VUO_ank	brown	f-mg, bx	vs per ank, w per fu, w-m irreg qv	brecciated	0.5 - 1% finely diss py	comma lake showing	A12-10091	116
1313155	488010	5316464	VUO_ank	brown	f-mg, bx	vs per ank, s per sil, w irreg qv	brecciated	0.5 - 1% finely diss + euhedral py	sulphides locally concentrated adjacent to or along fractures	A12-10091	< 5
1313156	488063	5316436	VUO_ank	brown	f-mg, bx	vs per ank, s per sil, w irreg qv	brecciated	0.5 - 1% finely diss + euhedral py	as previous with irregular qtz veins up to 2 cm in width	A12-10091	< 5
1313157	482773	5318070	FD_ap	white to pink	fg			1% diss + euhedral py		A12-10091	22
1313158	482426	5317652	VIO	rusty brown	fg			10% diss to semi-massive pyrite	gossan zone	A12-10091	54
1313159	482534	5317759	FD_sy	pink	fg	w irreg qv, m per ank		tr diss + euhedral pyrite	pyrite concentrated within or adjacent to quartz veins, taken from rubble pile beside 3m by 3m pit	A12-10091	34
1313160	482556	5317861	VMO	green	fg	w qv oriented II to shearing, w per/banded hem	shr'd 275/38	1-2% diss + euhedral py, trace diss cp		A12-10091	< 5
1313161	482586	5317875	SED	brown	fg		bedding 360/48	2% vf diss py	bedding 1mm to 10mm in thickness with occasional pyritic beds, locally micro-folded, schistose	A12-10091	10
1313162	482611	5317874	QV	white	fg			0.5% diss + euhedral py	quartz + calcite vein, loose boulder, but proximal	A12-10091	15
1313163	482624	5317886	VMO	green	fg	s irreg qv+/-ank	veining 270/35	2% diss + euhedral py	pyrite concentrated mainly associated within mafic sections	A12-10091	< 5
1313164	482622	5317898	SED_ch	grey	vfg	s per sil, w irreg qv, vw per hem		1% diss + euhedral py		A12-10091	6
1313165	482880	5319008	SED_if	grey to black	vfg	m-s irreg qv, w per/patchy hem		5% diss + euhedral py	tabular chert breccia	A12-10091	8
1313166	482884	5319008	QV	white	vfg	s irreg qv		0.5-1% diss + ff py	sample taken of qv hosted in SED_if	A12-10091	7
1313167	482893	5319031	SED_if	rusty brown	vfg	m-s irreg qv, w per/patchy hem		2-3% diss + euh + ff py	tabular chert breccia, sulphide- rich	A12-10091	< 5
1313168	484794	5322643	FD	white	fg	w-m irreg qv	040/90	tr diss py	sample taken on Seska Trench, adjacent to historical channel sample, vein appears to be 5m in width	A12-10091	11
1313169	484795	5322641	FD	white	fg	w-m irreg qv, w per hem		tr diss py	sample taken along adjacent to south contact of dyke	A12-10091	162
1313170	483607	5321999	FD_ab	white	vfg	w-m irreg qv		tr diss py	sample taken near contact with sheared VFO_tuff	A12-10091	32
1313171	484210	5321272	QV	white	vfg	w per ank	230/90	tr finely diss py	1 ft wide qv w 5% ank	A12-10091	15
1313172	484210	5321272	VUO_gc	green	bx	s per fu, w per ank, m irreg qv		0.5% diss py		A12-10091	< 5
1313173	484216	5321300	VUO_gc	green	bx	s per fu, vs irreg qv		0.5-1% diss py within VUO & qtz+carb veining		A12-10091	20
1313174	482659	5318521	VUO	green	fg	m per chl, m irreg qtz + carb vn/stringers, vw per fu		15% diss py	old pit (1960's?)	A12-10091	117

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1313175	483603	5315782	VUO_gc	green	bx	w per fu, w irreg carb+qv		tr diss py	heavily rusted on weathered surface	A12-10677	< 5
1313176	483463	5315116	VUO_gc	green	bx	s per fu, w irreg carb+qv	shr'd 215/45	tr - 0.5% diss py	extension of main green carb zone?	A12-10677	< 5
1313177	485916	5315629	VUO_gc	green	bx	s per fu, w irreg carb+qv, s per ank	shr'd 079/70	no visible sulphides	main zone - green carb zone	A12-10677	< 5
1313178	485920	5315666	VUO_gc	green	bx	s per fu, w irreg carb+qv, s per ank, w per chl		no visible sulphides	north contact of main zone, sample taken w 80% carb+qtz veining	A12-10677	< 5
1313179	484290	5315964	VFO	grey to green	vfg	w irreg qv		tr diss py within qv		A12-10677	< 5
1313180	484402	5316302	FD_sy	reddish-pink	fg	local m irreg qv up to 2cm	mass	tr diss py		A12-10677	< 5
1313181	483290	5314856	VUO_gc	green	bx	s per fu	bx	0.5% diss py		A12-10677	< 5
1313182		5315243	VMO_cb	greyish-brown	fg	m-s per carb, local irreg ank veining <1cm in width		0.5% diss py		A12-10677	17
1313183	483312	5315254	VMO	green	fg	local s irreg qv 20-30cm in width		tr diss py		A12-10677	10
1313184	483310	5315244	VMO	green	fg	m per chl, local w irreg qtz+carb veining		0.5% diss py		A12-10677	48
1313185	483313	5315233	VMO	green	fg	local s irreg qv up to 30cm in width		tr-0.5% diss py		A12-10677	285
1313186	483315	5315225	VMO	grey to pink	fg		sheared	0.5% diss py	altered/mylonitized vmo	A12-10677	< 5
1313187	483505	5315167	VUO/VMO	white and green		m per ank, w irreg qv	sheared	no visible sulphides	surface weathered brown, very weak reaction to acid	A12-10677	6
1313188	483852	5316511	QV	white			mass	1-2% diss py	discontinuous quartz veining up to 0.5 m in width (decker showing?)	A12-10677	6520
1313189	485740	5315667	VUO	rusty brown	bx	m per ank, w irreg qv	shrd 260/80	no visible sulphides		A12-10677	< 5
1313190	487935	5316492	QV	white				0.5% diss/wispy galena	local rusty weathered sections, cross cutting felsic intrusive	A12-10677	7
1313191	487935	5316492	FD, QV	pink, white		w per ank		tr diss py	up to 15% irregular quartz veining trening 090/50 and 356/90	A12-10677	15
1313192	482618	5318583	FD_qfp	tan brown	porphyritic	w per ank, w irreg qv		tr - 0.5% diss py		A12-10677	5
1313193	482657	5318569	QV	rusty brown				2% diss + stringers py		A12-10677	30
1313194	488050	5316452	VUO	green to brown		s per ank + ser, m qv		2% diss py	sample taken in old trench (25m in length)	A12-10677	78
1313195	488050	5316452	VUO	green to brown		s per ank + ser, m qv		2% diss py		A12-10677	< 5
1313196	484005	5324216	VMO/VIO	grey to green	fg		fol 230/70	no visible sulphides		A12-10677	< 5
1313197	484004	5324225	VMO	grey	fg	s per ser	shr'd	tr - 0.5% finely diss py		A12-10677	< 5
1313198	484016	5324283	FD_qfp	white	porphyritic	w per ank, w irreg qv	contact 270/60	tr -0.5% diss py		A12-10677	374
1313199	484016	5324282	VMO	green	fg	s per ank, ser	contact 270/60, strongly shr'd	trace diss py	locally micro-folded	A12-10677	10
1313200	484118	5324365	FD_qfp	white	porphyritic	w irreg qv		0.5% diss+euhedral py		A12-10677	23
	413681	5321185	DIA	white and green	cg		mass	tr diss py	strongly magnetic		
	482436	5317658	VIO	light green	fg	m per ser			with up to 5% mafic fragments up to 6mm in size, bleached weathered surface		

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4825	28 5320060	VFO_tf	white/grey to pink					weakly magnetic	
4825	53 5320042	DIA	white and green/black	mg		mass		strongly magnetic	
4825	76 5320005	DIA	white and green	cg		mass		non-magnetic	
4825	85 5320156	VIO/VFO_tf?	green	fg		remnant bedding 1- 3mm thick		local weakly magnetic	
4826	02 5319982	DIA	white and green	cg		mass		weakly magnetic	
4826	32 5320113	SED ch	black	vfg		weakly bedded	tr diss/ff py		
4826	55 5320086	DIA	white and green	cg		mass		strongly magnetic	
4826	80 5320203	FD_sy	grey to pink	vfg				strongly magnetic	
4826	80 5320203	VFO_tf	pink to grey	vfg					
4827		FD_sy						strongly magnetic	
4827	05 5320175	VFO_tf							
4827	14 5320027	DIA	white and green	cg		mass		weakly magnetic	
4827	40 5319986	FD?		mg		mass to fol'd		non-magnetic, local patches of kspar	
4827	87 5320226	IMG/DIA	white and green	mg		mass	tr diss py	moderately magnetic	
4828	04 5320372	VFO	grey	fg		mass		non-magnetic	
4828	17 5320061	SED_ch	grey	vfg	m patchy/banded hem/kspar			locally weakly magnetic	
4828	50 5320179	IMG/DIA	white and green	cg		mass		non-magnetic	
4828	60 5320308	SED_ch/IF?	dark grey	vfg				strongly magnetic, cut by 20cm mafic dyke @ 105/90	
4828	65 5320148	DIA	white and black	cg		mass		moderatly magnetic	
4828	75 5320292	IMG/DIA	white and black	mg		mass	tr diss py	non-magnetic	
4828	89 5320558	VFO	greyish green	fg		mass	no visible sulphides	non-magnetic	
4828	96 5320122	DIA	white and green	mg		mass		weakly magnetic	
4829	07 5320258	DIA	white and green	cg		mass	0.5% diss py	strongly magnetic	
4829	18 5319663	VUO_ank			s per ank, w-m qtz veining up to 5cm	s fol'd 332/40, qtz veining 090/80		non-magnetic	
4829	23 5320234	DIA	white and green	cg		mass	0.5% diss py	strongly magnetic	
4829	46 5320361	DIA	dark grey to green	m-cg		mass	tr diss py	non-magnetic	
4829	62 5320196	DIA	dark grey to black	vfg		mass		non-magnetic	
4829	62 5320196	VUO	grey	vfg	m per sil, m per hem/kspar		tr vfg diss py		
4829		VFO	grey to green	vfg	m per sil		no visible sulphides		
4829						fault 160/65			
4829	89 5320462	DIA	dark grey	mg		mass	0.5% diss py	moderately magnetic	

								fault to grid south, strongly	
483001	5320292	SED_if	dark grey	vfg		mass	0.5% diss + ff py	magnetic	
483007	5320154	VUO	green			shr'd 260/75	0.5% euhedral py	-	
483013	5320439	DIA	dark grey	mg		mass	0.5% diss py	moderately magnetic	
483024	5320419	DIA	dark grey	cg		mass	tr diss py	non-magnetic	
483024	5320274	FD_alb	light grey to pink	fg		mass	tr diss py	in contact with green, fg mass VMO	
483040	5320250	SED_ch	dark grey	vfg		mass	0.5% diss py		
483064	5320989	VIO/VFO	grey to green	vfg	w-m per ank, m qv		no visible sulphides		
483069	5319630	VUO_ank			m per chl, m per ank, w qtz+carb veining			non-magnetic	
483120	5319417	DIA	white and black	mg		mass		strongly magnetic	
483121	5325827	VIO	grey to green	f-mg			tr diss py		
483126	5320163	VMO	dark green	f-mg		mass	1% diss+euhedral py	altered VUO, strongly magnetic	
483138	5319994	VUO_gc	green	bx	s per fu, m irreg carb+qv		no visible sulphides	old sample MGH-070	
483140	5320406	SED_if	grey and white	vfg	w irreg qtz+carb veining		tr diss py	strongly magnetic	
483142	5320152	SED_if	grey to black	vfg	- · · · · · · · · · · · · · · · · · · ·		tr diss py		İ
483148	5319521	VUO	dark green	-	m per chl			non-magnetic	İ
483158	5325677	VIO_bx	grey	bx	w irreg qv	bx	no visible sulphides		
483209	5319638	VUO	dark green		m per chl			non-magnetic	
483216	5320516	VFO	dark to medium grey	f-mg			no visible sulphides	altered vfo, very weakly magnetic	
483216	5319506	VUO	dark green		m per chl			very weakly magnetic	
483226	5325807	VUO_tc	grey to green	fg	s per talc		tr euhedral pyrite up to 3mm in size	very soft	
483250	5320769	VFO_tf	grey to green	vfg			no visible sulphides	local high sus readings up to 80.40	
483256	5320447	VUO_ank	brown and green	fg	w per ank		no visible sulphides	local spinifex	
483266	5319717	VMO	green	f-mg		mass		non-magnetic	
483271	5326079	VFO_tf	grey to green	vfg			1% diss + euhedral +ff py		
483271	5320418	VUO_ank	brown	fg	s per ank	mass	no visible sulphides		
483295	5320868	VFO_tf	light grey	vfg		fol'd	no visible sulphides		
483299	5320416	VMO	green	f-mg	w qtz + carb veinlets	fol'd	mass	moderately magnetic, in proximity to SY dyke	
483308	5320712	DIA	dark grey to black	cg		mass	no visible sulphides		
483317	5320398	SY	dark grey	fg	w per kspar, bio		tr dis py, mt	very strongly magnetic	
483319	5320545	VMO	grey	mg	s per ank, sil	mass	tr diss py		İ
483322	5325285	VMO/VUO	green	f-mg		mass to fol'd	no visible sulphides		
483345	5324268	VIO	grey to green	f-mg		mass	no visible sulphides		
483346	5320676	VFO_tf	grey to green	fg		bedding 268/56	no visible sulphides	local high sus readings up to 92.81	
483353	5325296	VIO	green	fg		mass	no visible sulphides		
483359	5320609	VMO	green	fg		mass, fol'd	no visible sulphides	fz to south 010	
483366	5321224	VFO	grey	vfg-fg		fol'd	no visible sulphides		
483376	5320606	VUO	green	mg	m per ank, w qtz+carb veining		no visible sulphides		
	5315230	VMO	green	bx	s per ank	bx	no visible sulphides		

483398	5321019	VFO	grey	vfg	m per sil	mass	1% diss py	1	
483398		VUO	green	mg		mass	no visible sulphides		
			dark grey to	-		111035	•		
483400	5320867	DIA	black	fg		mass	no visible sulphides		
483412	5320753	SED_if	grey	bx					
483412	5315268	VMO	green	bx	s per ank	bx	tr diss py		
483432	5321152	VFO	grey	vfg		mass to weakly fol'd	no visible sulphides		
483437	5321280	VFO	grey	vfg-fg		fol'd	no visible sulphides		
483458	5320990	IMG	white and green	bx		bx	1% diss py		
483484	5320810	VMO	green	vfg		mass	no visible sulphides		
483505	5320945	IMG	white and green	cg		mass	tr diss py		
483537	5321172	VFO	dark grey	vfg			0.5% diss py		
483569		VMO	green	fg	w per hem, w per chl		no visible sulphides		
483615		VFO_tf	grey to green to pink	0			tr-0.5% diss+ff py	non-magnetic	
483623	5321418	VIO/VFO	green	porphyritic					
483684	5324175	DIA	dark grey to black	fg		mass	no visible sulphides		
483684	5324172	VMO	green	fg		mass	no visible sulphides		
483704	5315000	SED	white	vfg			no visible sulphides		
483718	5314907	SED	light pink to white	vfg		bedded	no visible sulphides	fine ash tuff/metasediment	
483718	5315117	VMO_pil	green	fg	local w irreg qv	pillowed	no visible sulphides		
483719	5315169	VIO/VMO	greyish-green	bx		bx	tr diss py	angular clasts of VMO in VIO matrix with local felsic veining	
483725	5321118	DIA	white and green	cg		mass	tr diss py	strongly magnetic	
483735	5321282	VUO	dark green to black		local serp/carb veins			strongly magnetic	
483740	5314981	SED	light pink to white	vfg		bedding well developed at 070	no visible sulphides	fine ash tuff/metasediment	
483761	5315024	SED	light pink to white	vfg		bedded	no visible sulphides	fine ash tuff/metasediment	
483773	5321218	DIA	white and green	mg		mass		weakly magnetic	
483779	5321137	MD	dark grey	f-mg		mass	tr finely diss py	strongly magnetic	
483786		SED	light pink to white	vfg		bedded	no visible sulphides	fine ash tuff/metasediment	
483798	5321351	IMG/DIA	light green		w-m per epi			non-magnetic, leucrocratic gabbro	
483811	5321201	DIA	green to black	fg		mass		non-magnetic	
483834		DIA	white and green	cg		mass	tr diss py	non-magnetic	
483842	5321158	VUO_ank	green		w per ank, local vw carb+qtz veinlets		tr diss py	non-magnetic	
483850	5320974	VUO_ank			w-m per ank, serp, vw carb+qtz veining			non-magnetic	

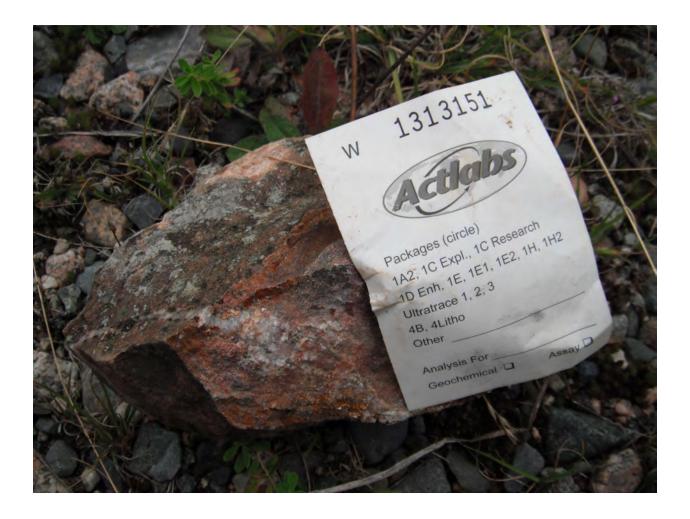
									bedding well developed 1-	
483	855 5316	511 VIO	_tuff	grey to green	vfg		bedding 208/84	no visible sulphides	30mm in thickness	
483	862 5321	153 VUO	_ank	brown to green		s per ank			non-magnetic	
483	862 5321	284 VUC	_spx						radiating xtls up to 2cm, poorly to moderatly developed	
483	872 5315	877 VN	лO	green	fg		mass, locally vesicular	no visible sulphides	location of sample 09EC081	
483	891 5321	413 IMG	/DIA	white and green	mg		mass		weakly magnetic	
483	905 5324	INX	_sy, D_ank	pink, brown	f-mg, fg	m per ank, w irreg qv	contact 205/90	tr diss py	road showing, syenite dyke 2.5m in width, contains 1-2 cm qv orientated perpendicular to dyke	
483	913 5321	537 D	IA	white and green	cg		mass		non-magnetic	
483	914 5321	210 FD	_sy	red to pink	vfg			tr-0.5% very finely diss py	strongly magnetic	
483	916 5321	396 DI	Α?	dark green to black	vfg-fg		mass	tr diss py	weakly magnetic	
483	920 5321	547 D	IA	white and green	mg		mass		weakly to moderately magnetic	
483	938 5324	256 VMC	0/VI0	green	fg		fol 250/45	no visible sulphides		
483	938 5321	514 VMO/V	'UO/MD				contacts 205?			
483	939 5320	854 V	10	light green	mg		mass to fol'd	tr diss py	non-magnetic	
483	945 5320	869 V	10	light green	mg		mass to fol'd	tr diss py	non-magnetic	
483	947 5316	005 V	10	grey to green	fg		mass to weakly fol'd	no visible sulphides		
483	957 5321	617 D	IA	white and green/black	cg				non-magnetic	
483	957 5320	857 FD	_sy	grey to pink	porphyritic	w per ank		tr diss py	weakly to moderately magnetic, bt/hb porphyritic	
483	960 5321	330 VUC	)_spx			w per ank, minor qv			non-magnetic, xtls up to 30cm in length	
483	961 5321	478 D	IA	dark grey to green	fg		mass		moderately magnetic	
483	963 5324	244 VN	NO	green	f-mg		mass	no visible sulphides		
483	971 5321	027 VUO	_ank			m per ank, local qtz+carb veins			non-magnetic	
483	976 5324	216 VN	٨O	green	f-mg		mass	no visible sulphides		
483	979 5321	732 SED_ch	/SED_if	dark grey	vfg		mass	0.5% finely diss py	non magnetic	
483			_ank			m per ank			non-magnetic	
483	994 5324	215 VN	NO	green	f-mg		mass	no visible sulphides		
484	006 5321	711 D	IA	white and black	cg		mass		non-magnetic	
	015 5321		_talc	green	fg		mass		moderately magnetic	
484	017 5321	267 VUO	_ank							

					m per hem/kspar, local				
484025	5321802	VFO_tf	grey to reddish pink silver		qtz+kspar veins up to 5cm in width		tr diss py	non-magnetic	
484029	5321528	VUO	green	fg	w per talc				
484041		VUO ank	Breen	'8	w per tute		tr diss py		
	5321253	VUO ank			s per ank				
484051		DIA	white and green	Cg			tr diss py	non-magnetic	
484055	5316040	VMO	green	fg	w patchy kspar		no visible sulphides	at edge of fault	
484057	5321782	SED_ch	dark grey	vfg		bedding 230	locally semi-massive py	strongly magnetic	
484057	5320660	VMO	light green	fg	w per ser, local w qv <2mm in width	mass	no visible sulphides		
484061	5321516	ID	grey	vfg	w per ank	mass		strongly magnetic	
484070	5320638	VMO	light green	fg	local w irreg qv up to 5mm	mass	tr ff py		
484072	5321762	DIA	white and green	m-cg		mass		moderately magnetic	
484079	5321460	FD_sy	grey	f-mg			tr diss py	non-magnetic	
484099	5321335	VUO_ank			s per ank			non-magnetic	
484107	5321176	VUO_ank			m per ank+chl			non-magnetic	
484113	5321603	FD_sy?	pink to dark green				0.5% diss py	weakly to moderately magnetic, in contact with VFO flow? Or chert?	
484126	5321602	ID	grey	fg		mass			
484126	5321602	VUO	dark green					local subhedral olivines? And small pillow like <6" joints	
484135	5321581	VUO_ank	dark green to brown					weakly magnetic	
484148	5320672	VIO/VMO	light green	fg		mass	tr finely diss py	non-magnetic	
484148	5321026	VMO	green	mg		fol'd to mass		strongly magnetic	
484174	5321394	VUO_ank						non-magnetic	
484179	5321093	VMO/VUO	green	mg		mass		non-magnetic	
484197	5316003	VMO	green	fg	w irreg qv, w patchy epi	mass	no visible sulphides		
484200	5321627	VUO_ank	brown and green	f-mg		mass		non-magnetic	
484483	5324570	IMG	white and green	mg		mass	no visible sulphides		
484490	5321963	VUO	dark green to black	mg	w qtz + carb veinlets		no visible sulphides		
484519	5324603	IMG	white and green	mg		mass	no visible sulphides		
484520	5322042	IMG	white and green	cg		mass	no visible sulphides	non-magnetic	
484527	5321906	VUO_ank	grey to brown	mg	s per ank		no visible sulphides		
484529	5321891	VUO_ank	grey to brown	mg	s per ank		no visible sulphides		
484563	5324567	IMG	white and green	mg		mass	no visible sulphides		
484567	5322331	VUO_ank	brown	f-mg	s per ank		no visible sulphides		
484568	5322001	VUO	dark grey to green	mg		mass	no visible sulphides	intrusive	

484667	5322076	VUO	dark grey to green	bx		bx	no visible sulphides	intrusive, old cameco sample WI932928		
484927	5314840	VFO/VIO	light grey	vfg		fol'd	no visible sulphides			
484962	5315990	VIO	light grey to green	vfg		mass	no visible sulphides			
486255	5316486	VMO_pil	green	f-mg	m per chl	pillowed	no visible sulphides			
487960	5316703	VMO	green	fg		mass	no visible sulphides			
487961	5316609	VMO	green	fg			no visible sulphides		A12-10677	
488166	5316624	VIO	green	f-mg		mass	no visible sulphides			
492908	5312889	VFO_rh	light grey/green		bleached			non-magnetic, qtz eyes up to 3mm		
494071	5314610	VMO	green	fg		mass		stations 179-180		

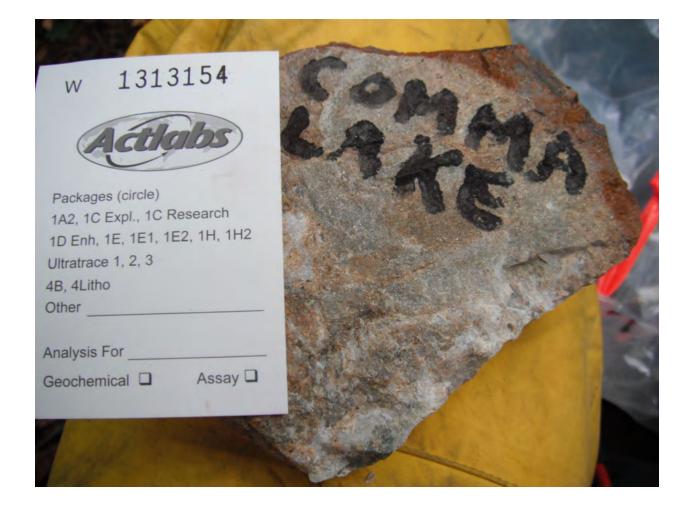
## Appendix III

## Photographs of Grab Samples



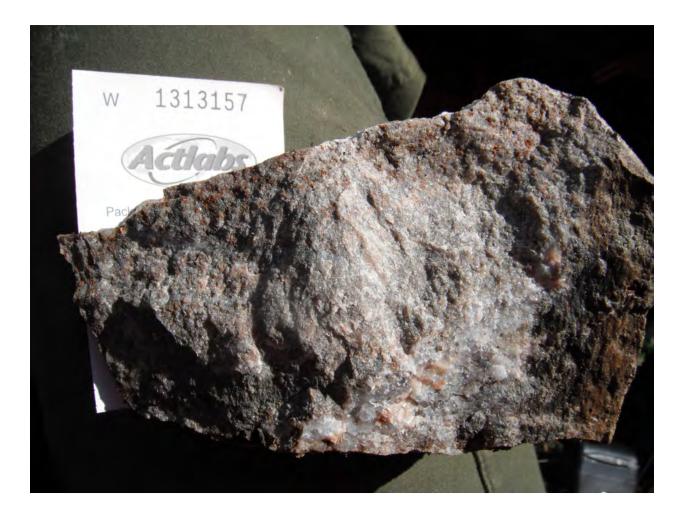
w 1313152 .	
Actiabs	
Packages (circle)	
1A2, 1C Expl., 1C Research 1D Enh, 1E, 1E1, 1E2, 1H, 1H2	
Ultratrace 1, 2, 3	
4B, 4Litho	
Other Analysis For	
Geochemical Assay	





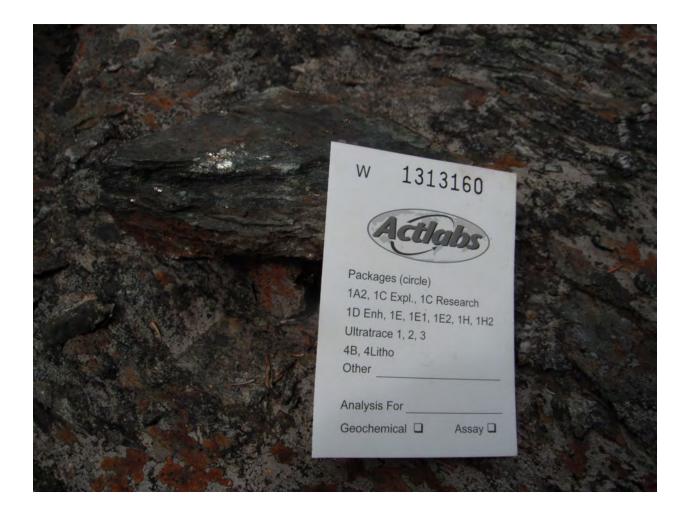




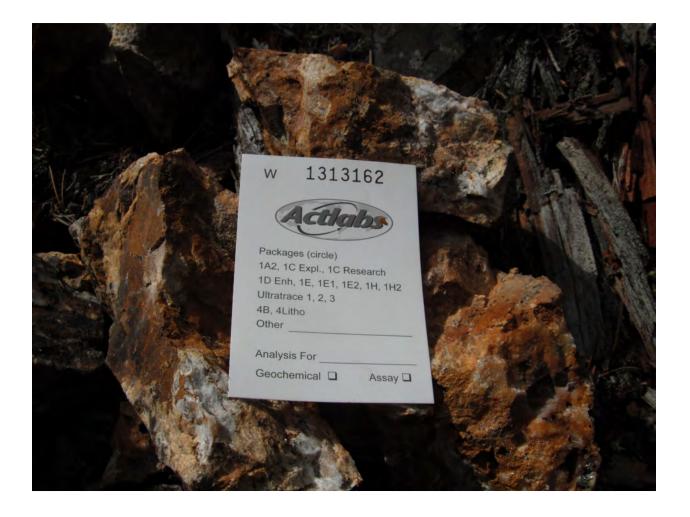


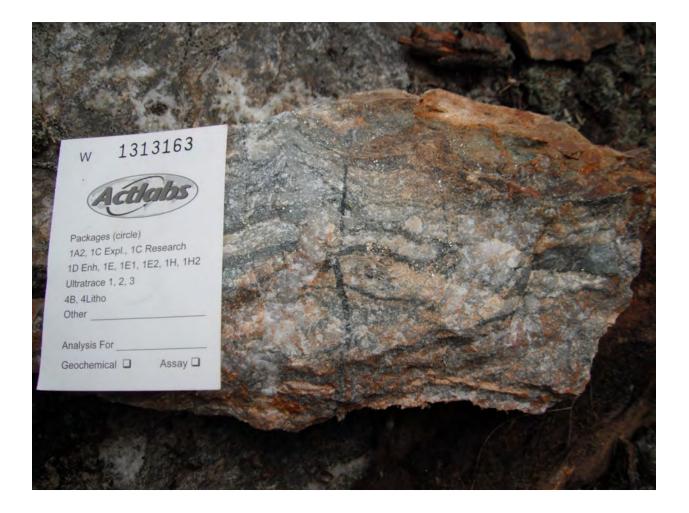




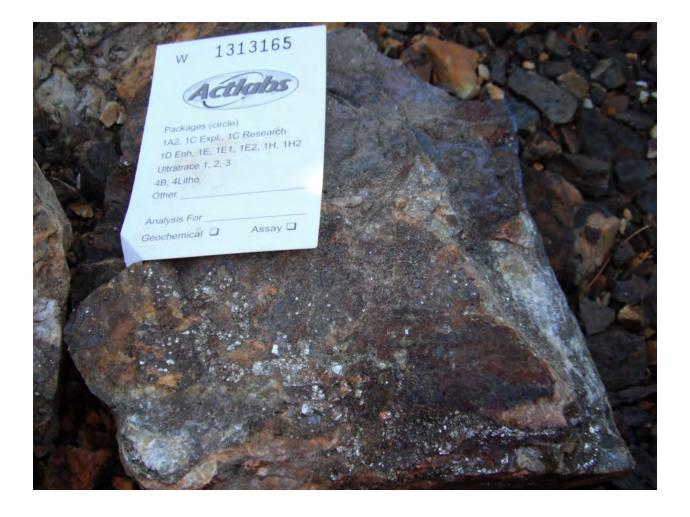








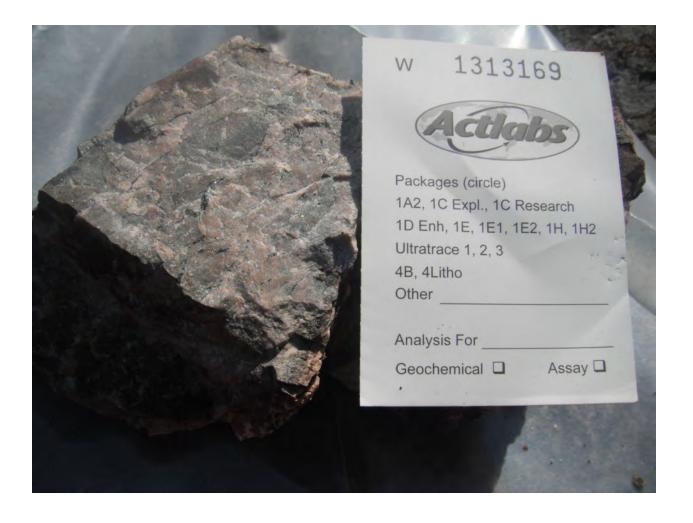












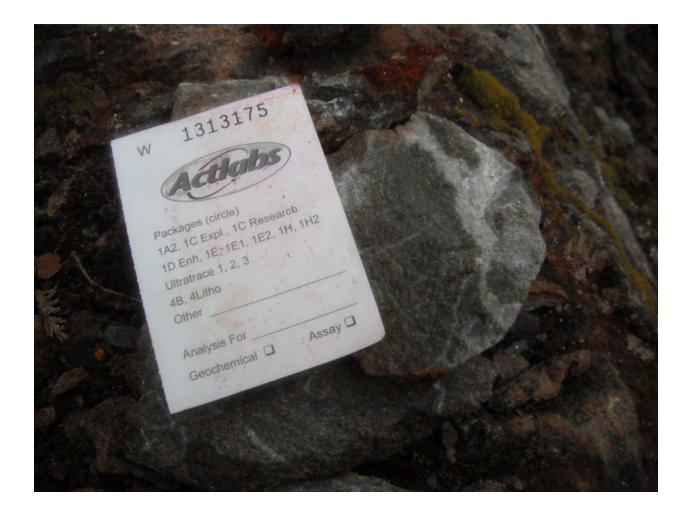




	w 1313172
	Actiabs
	Packages (circle) 1A2, 1C Expl., 1C Research 1D Enh, 1E, 1E1, 1E2, 1H, 1H2
	Ultratrace 1, 2, 3 4B, 4Litho Other
No.	Analysis For Geochemical Assay A
U/ C	

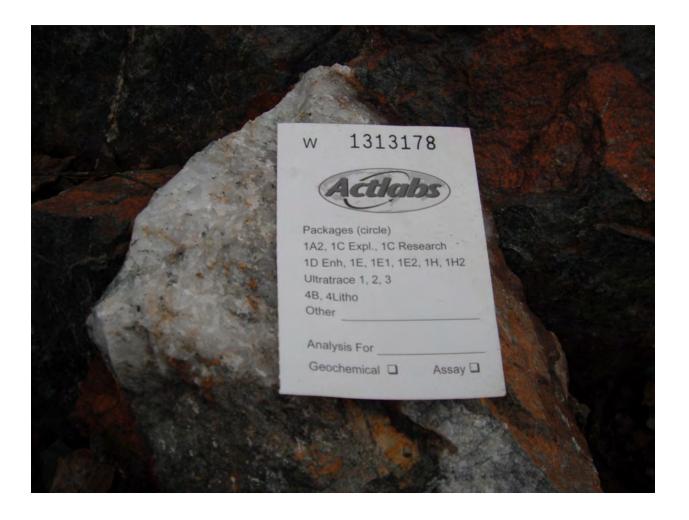




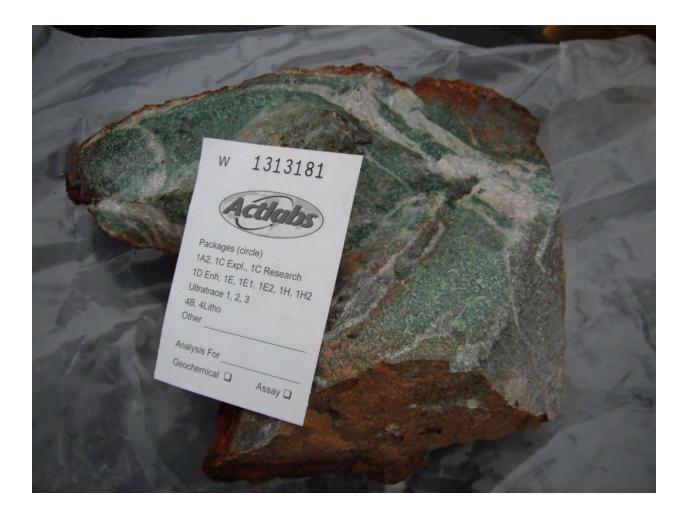


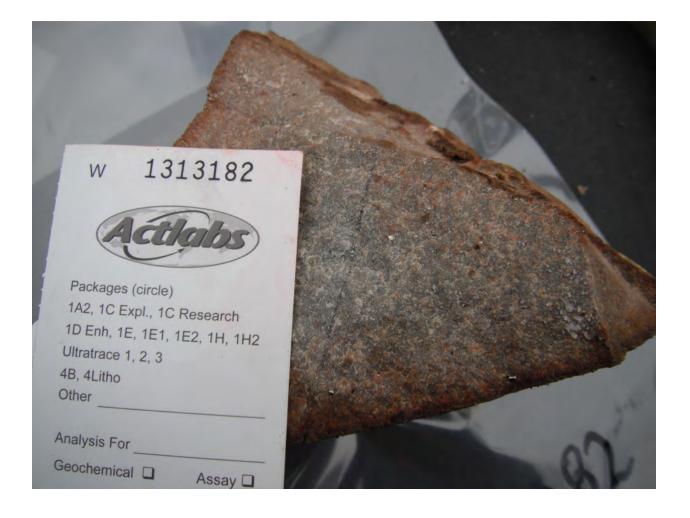


w 1313177			1
Actiabs	15/32	<b>C</b> an	
Packages (circle)		Carago T	A Com
1A2, 1C Expl., 1C Research 1D Enh, 1E, 1E1, 1E2, 1H, 1H2	CHART .		
Ultratrace 1, 2, 3 4B, 4Litho	10000		Nº Ex-
Other.			
Analysis For	the states	and and an	the Co
Geochemical D Assay			
	Sec. 1		
	Actor		
	the second		



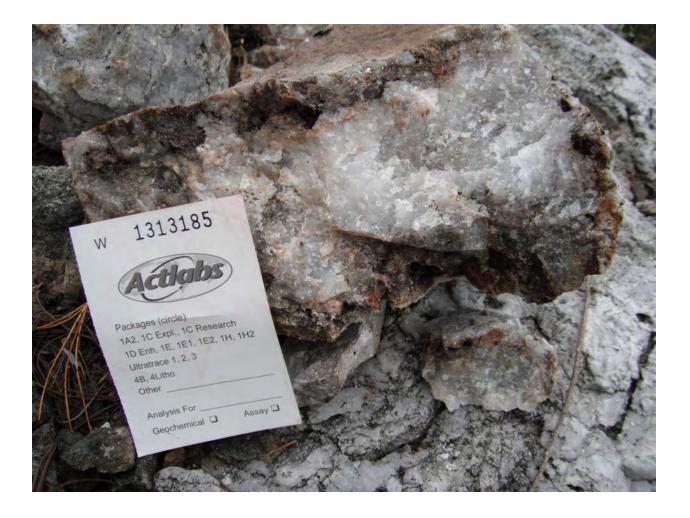


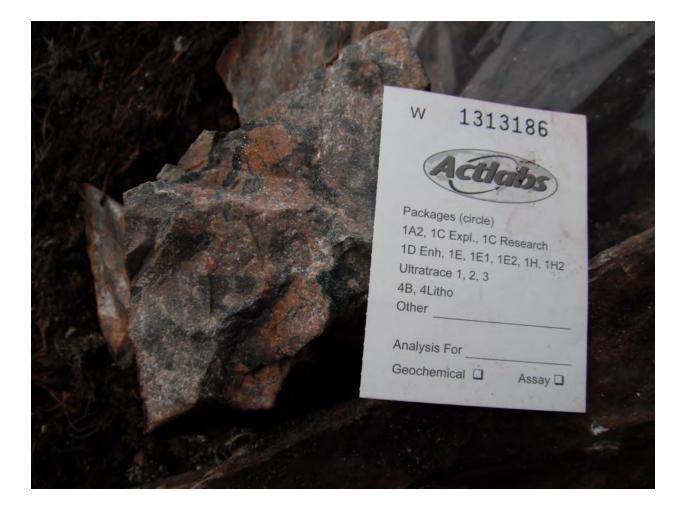


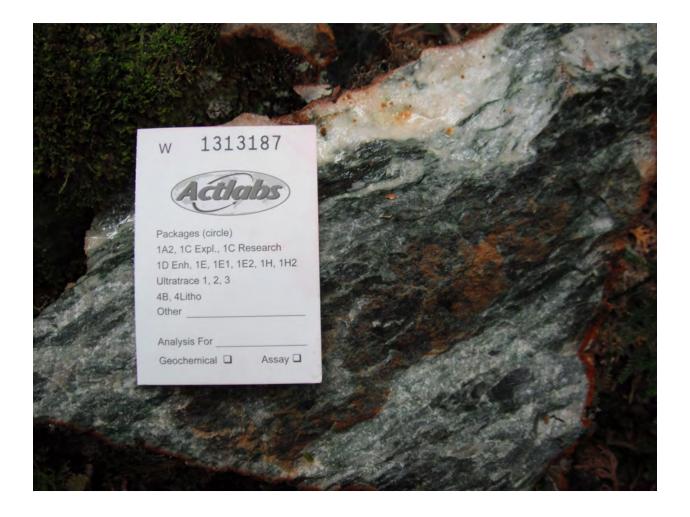


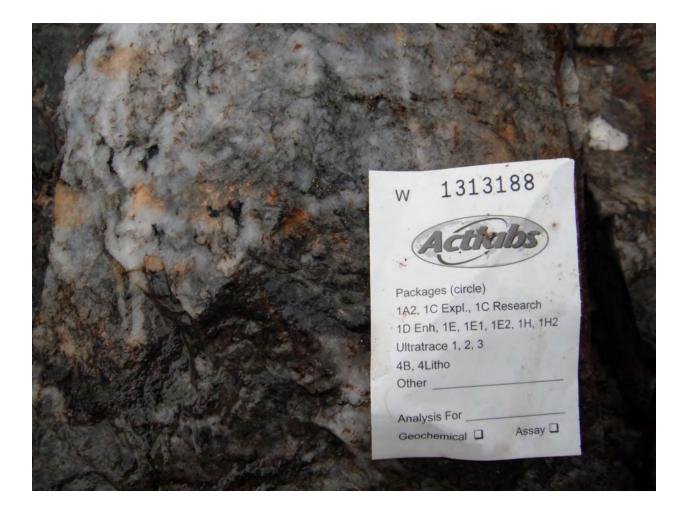
1313183 W Action Packages (circle) 1A2, 1C Expl., 1C Research 1D Enh, 1E, 1E1, 1E2, 1H, 1H2 Ultratrace 1, 2, 3 4B, 4Litho Other Analysis For Geochemical Assay D



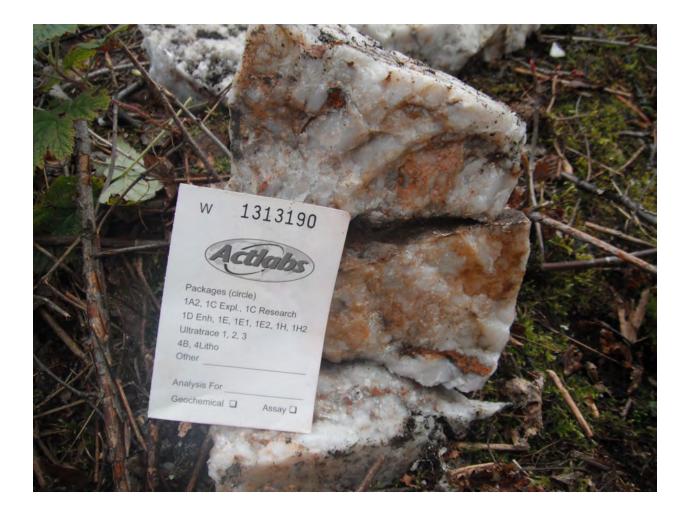




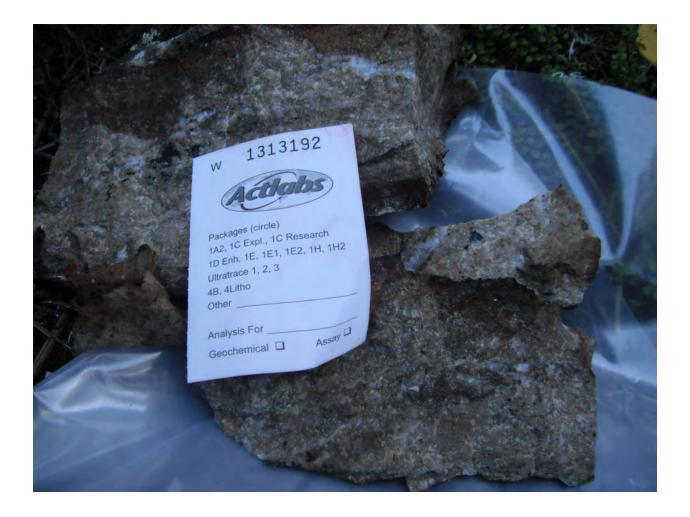


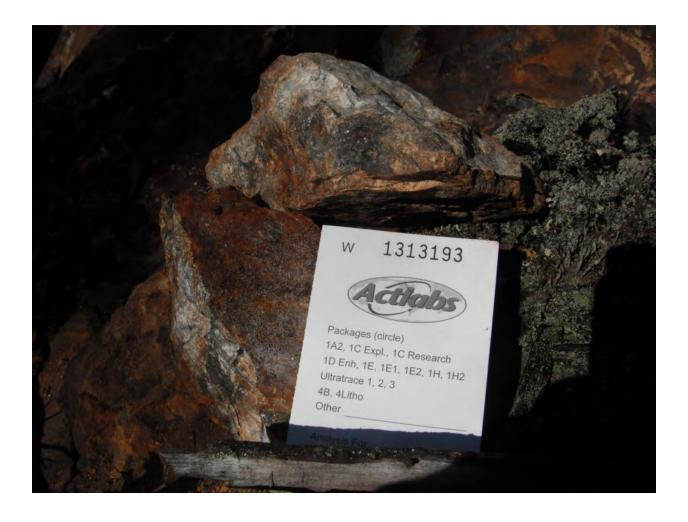






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w 13	13191			12
Ada	labs			
Packages (circle, 1A2, 1C Expl., 10 1D Enh, 1E, 1E1,	C Research			
Ultratrace 1, 2, 3 4B, 4Litho Other				
Analysis For		and sol	Che good	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Geochemical	Assay 🗆			1. A.A.
Dir History				
Stall 10 p	7-2-20		A. C.	











1313197 Acticabs N 1A2, 1C EXpl., 1C Research Packages (circle) 1D Enh. 1E, 1E1, 1E2, 1H, 1H2 Ultratrace 1, 2, 3 4B, 4Litho Other Assay Analysis For mical D







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			1995. 1972 -
- Ala			
	w 0999002		
STE .	Actiabs	Contraction of the	
Salatin	Packages (circle) 1A2, 1C Expl., 1C Research	1	
	1D Enh, 1E, 1E1, 1E2, 1H, 1H2 Ultratrace 1, 2, 3 4B, 4Litho	and the state	p.
	Other		
	Geochemical Assay		

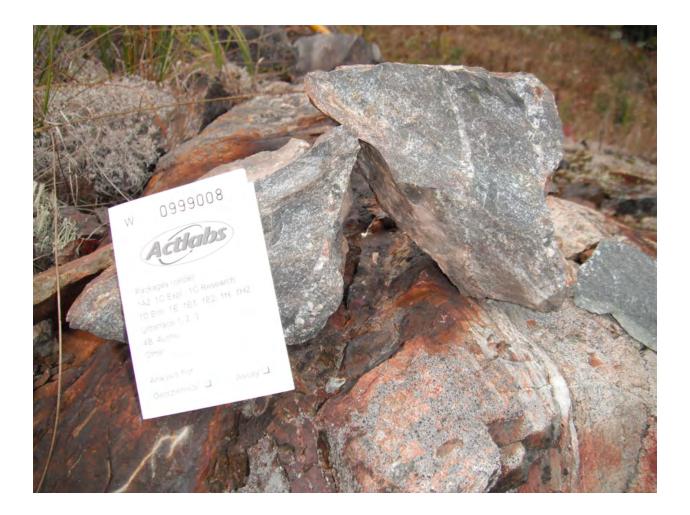
















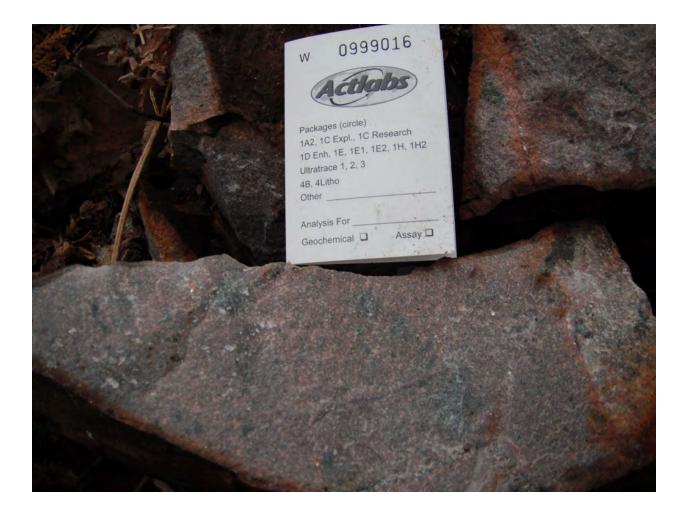


w 0999012 Actions Packages (circle) 1A2, 1C Expl., 1C Research 1D Enh, 1E, 1E1, 1E2, 1H, 1H2 Ultratrace 1, 2, 3 4B, 4Litho Other Analysis For Geochemical J

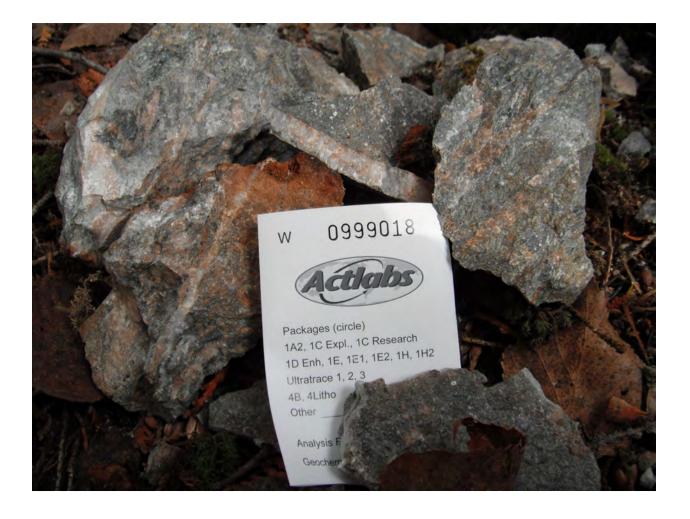




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w 0999015	
Actiabs	
Packages (circle)	
IA2, 1C Expl., 1C Research	
1D Enh, 1E, 1E1, 1E2, 1H, 1H2	
Ultratrace 1, 2, 3	
4B, 4Litho	
Other	
Apolysis For	
Analysis For	
Geochemical Assay	



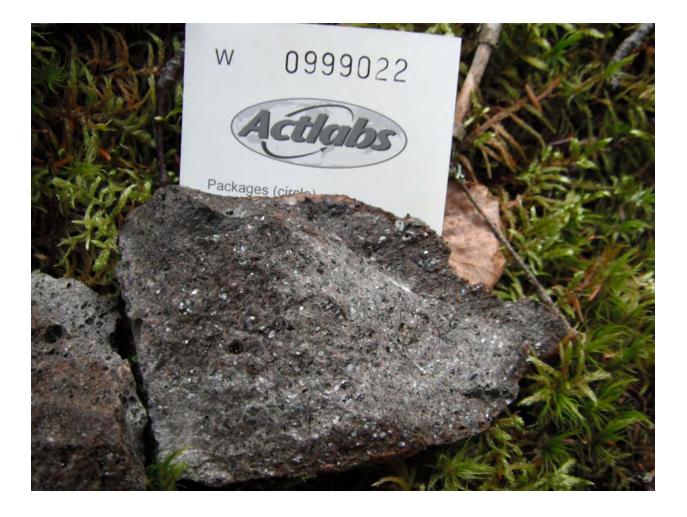








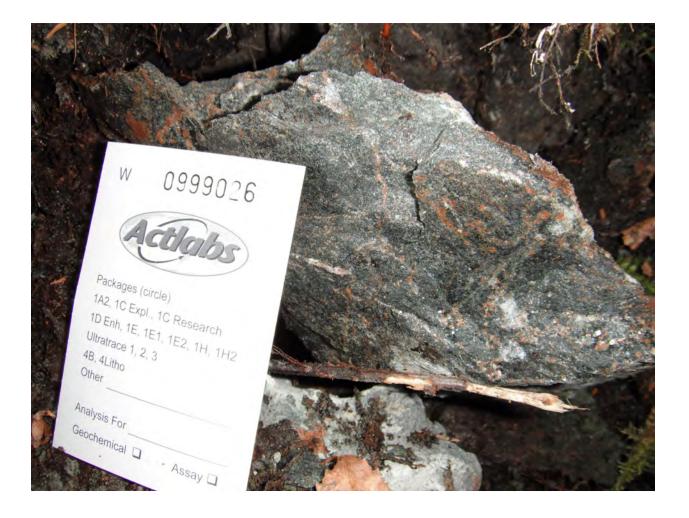








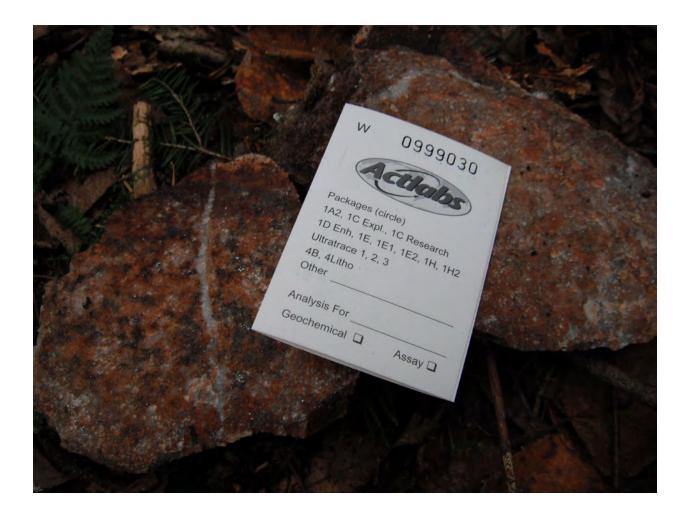






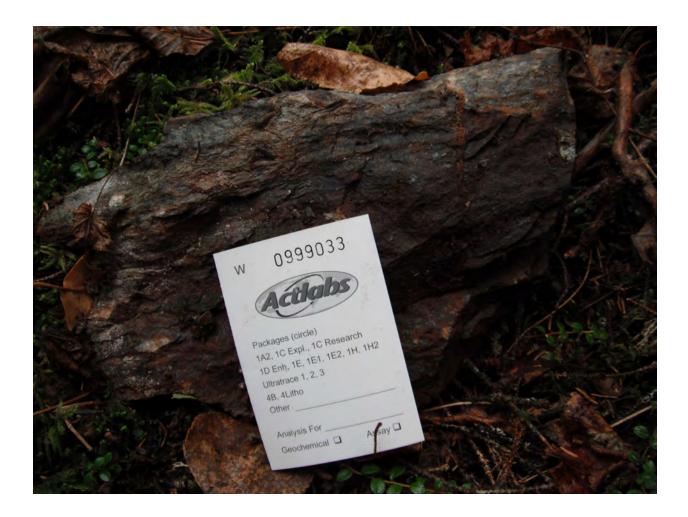




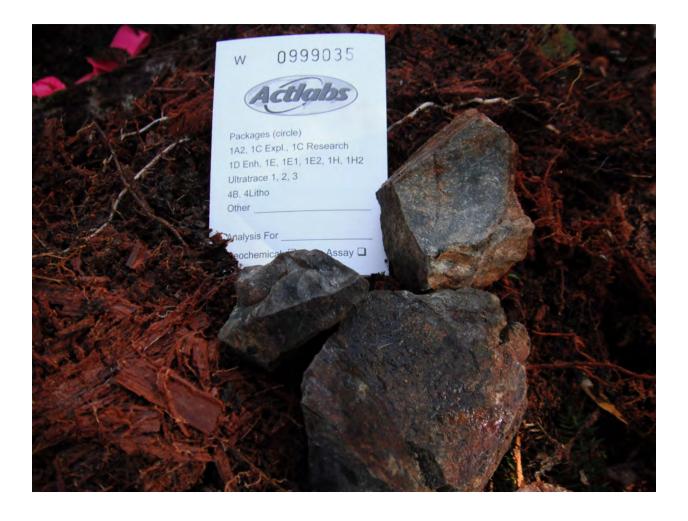




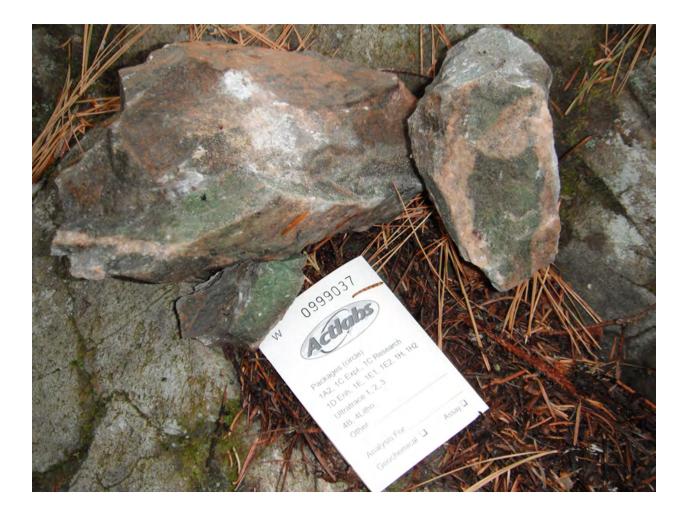








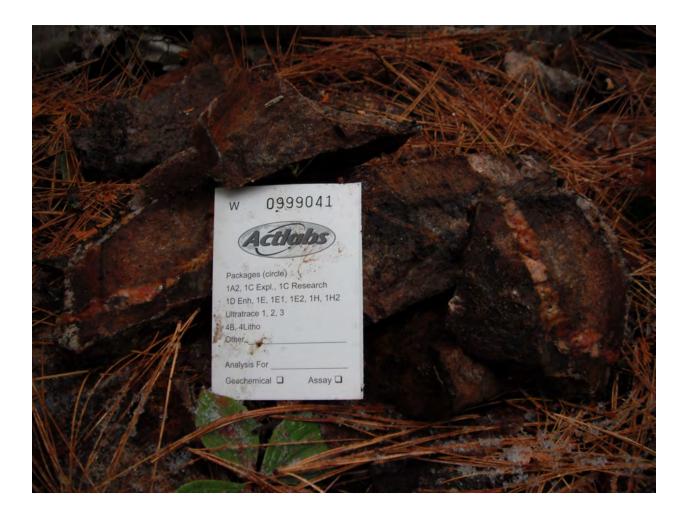








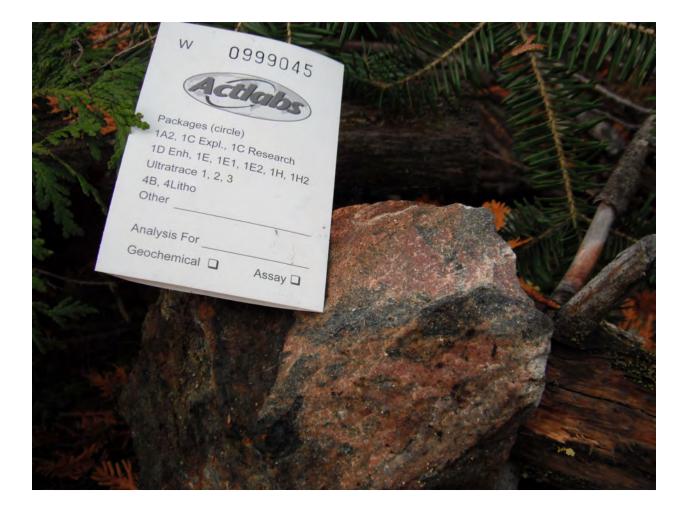




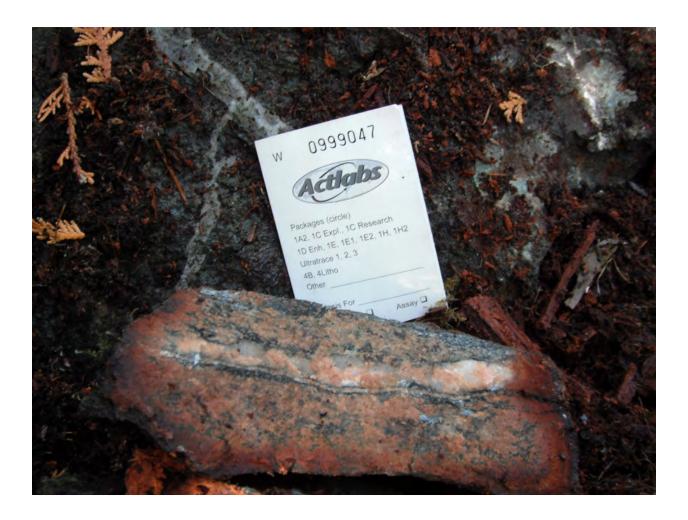




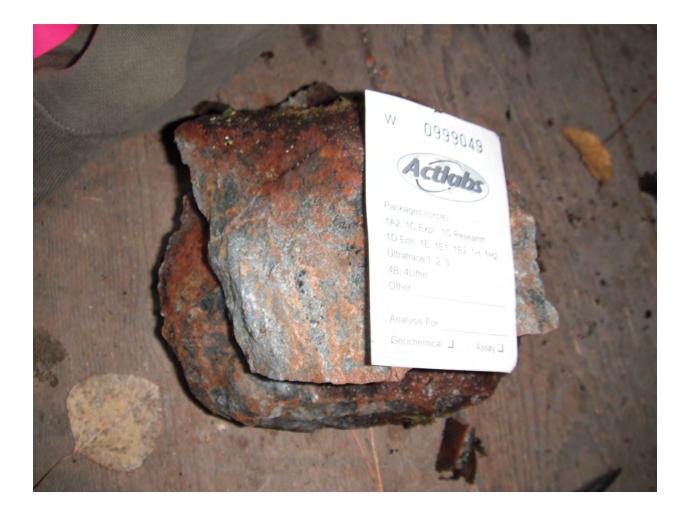




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W 09999046 Accidence Packages (circle) 1A2, 1C Expl., 1C Research 1D Enh, 1E, 1E1, 1E2, 1H, 1H2 Ultratrace 1, 2, 3 4B, 4Litho Other	
Analysis For	
Geochemical D Assay D	







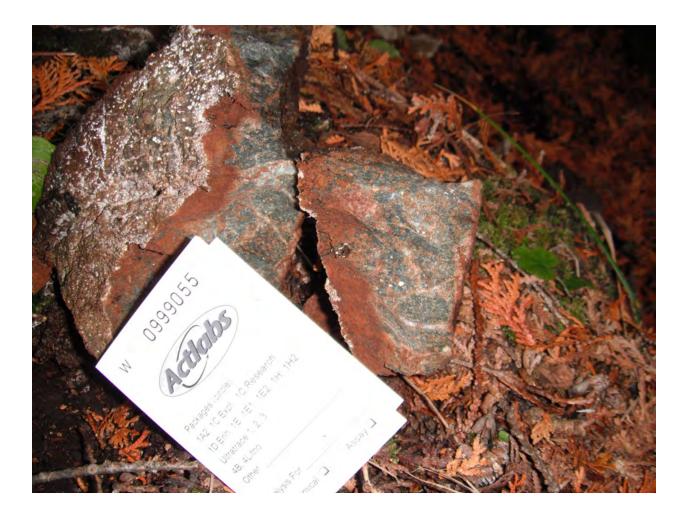


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	Analysis For Geochemical  Assay



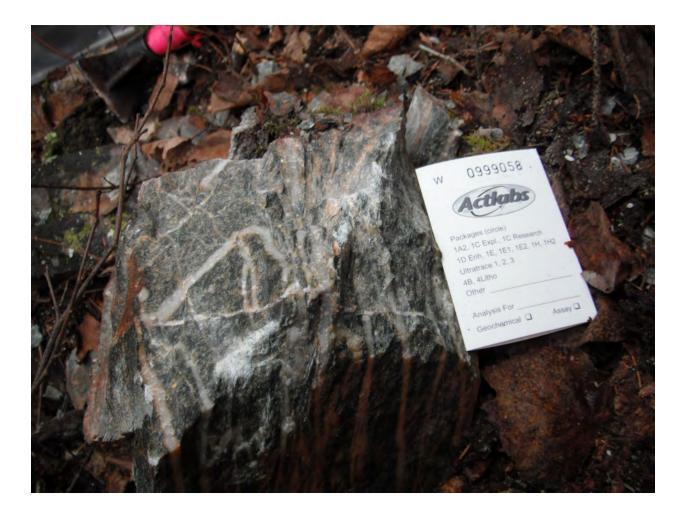








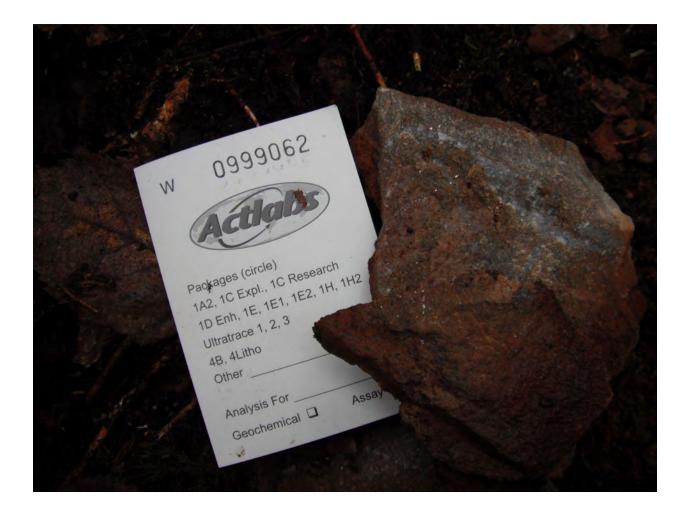






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Analysis - Geochemical			
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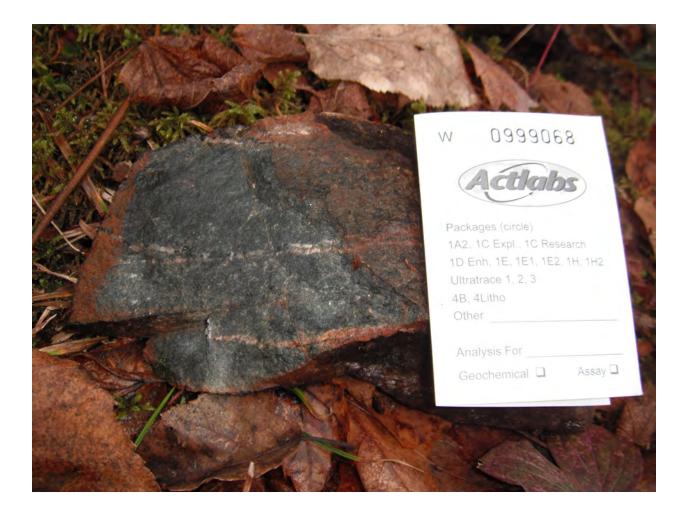




w 0999065	
Actiabs	
Packages (circle) 1A2, 1C Expl., 1C Research 1D Enh, 1E, 1E1, 1E2, 1H, 1H2	
Ultratrace 1, 2, 3 4B, 4Litho Other	
Analysis For Geochemical D _ Assay D	





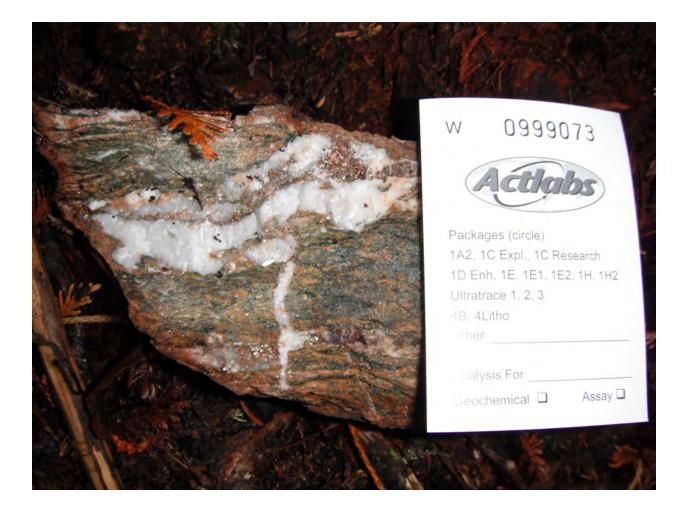


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w 0999069	
Actilabs	
Packages (circle) 1A2, 1C Expl., 1C Research 1D Enh, 1E, 1E1, 1E2, 1H, 1H2 Ultratrace 1, 2, 3	
4B, 4Litho Other	
Analysis For Geochemical D Assay	
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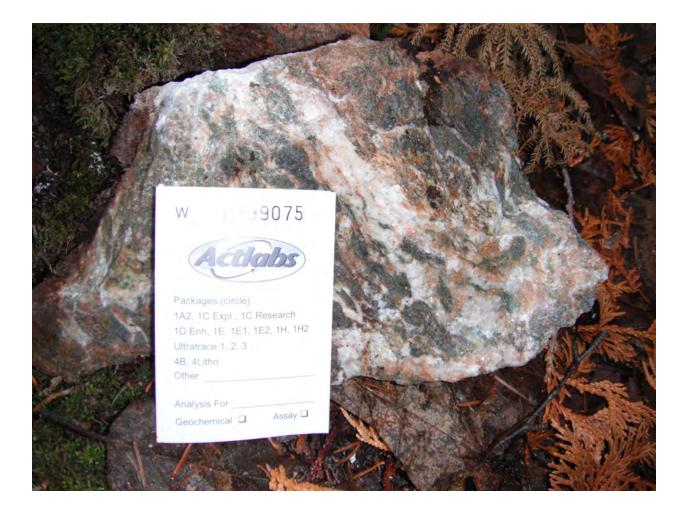




















### Appendix IV

### Assay Certificates



Innovative Technologies

Invoice No.: Invoice Date: Your Reference: Date Submitted: South Timmins A12-10091 13-Sep-12 24-Sep-12

Canada **Toronto Ontario M5H 3L5** Suite #1000 141 Adelaide St, West, Fletcher Nickel

ATTN: Joerg Kleinboeck

# CERTIFICATE OF ANALYSIS

24 Rock samples were submitted for analysis

The following analytical packages were requested:

REPORT A12-10091

Code 1A2-Timmins Au - Fire Assay AA Code 1E3 Aqua Regia ICP(AQUAGEO)

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Notes:

If value exceeds upper limit we recommend reassay by fire assay gravimetric-Code 1A3 Values which exceed the upper limit should be assayed for accurate numbers.

**CERTIFIED BY**:

Emmanuel Eseme, Ph.D. Quality Control

SCC

ACTIVATION LABORATORIES LTD.

Analyte Symbol	Au	Ag	Cd	Cu	Mn	Mo	Ni	Pb	Zn	AI	As	В	Ba	Be	Bi	Ca	Co	Cr	Fe	Ga	Hg	К	La	Mg
Unit Symbol	ppb	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	%							
Detection Limit	5	0.2	0.5	1	5	1	1	2	2	0.01	2	10	10	0.5	2	0.01	1	1	0.01	10	1	0.01	10	0.01
Analysis Method	FA-AA	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP
1313151	137	< 0.2	< 0.5	40	1470	< 1	7	5	67	0.55	4	< 10	45	< 0.5	< 2	3.63	14	3	5.25	< 10	< 1	0.09	67	1.16
1313152	10	< 0.2	< 0.5	7	358	1	4	< 2	14	0.34	< 2	< 10	74	< 0.5	< 2	0.17	2	3	0.89	< 10	< 1	0.07	< 10	0.04
1313153	24	0.6	< 0.5	319	28	< 1	21	8	9	1.32	45	< 10	41	< 0.5	< 2	0.04	18	49	6.82	< 10	< 1	0.26	< 10	0.03
1313154	116	< 0.2	< 0.5	34	1360	< 1	80	3	71	0.77	3	< 10	40	< 0.5	< 2	4.08	28	16	4.41	< 10	< 1	0.45	< 10	1.66
1313155	< 5	< 0.2	0.7	79	2490	4	115	< 2	120	0.80	6	< 10	61	< 0.5	< 2	6.82	33	16	7.18	< 10	< 1	0.30	< 10	2.31
1313156	< 5	0.3	0.9	168	1880	11	119	5	263	1.10	70	< 10	26	< 0.5	< 2	2.51	50	21	8.22	< 10	< 1	0.46	< 10	1.20
1313157	22	< 0.2	< 0.5	8	395	< 1	4	5	20	0.95	5	< 10	97	< 0.5	< 2	1.07	5	2	1.21	< 10	< 1	0.48	54	0.14
1313158	54	0.9	1.1	8	4820	1	52	21	100	0.64	71	< 10	< 10	< 0.5	< 2	0.08	26	3	30.6	< 10	< 1	< 0.01	< 10	0.61
1313159	34	< 0.2	< 0.5	1	737	< 1	2	5	47	1.15	< 2	< 10	130	0.5	< 2	2.83	7	< 1	2.38	< 10	< 1	0.56	60	0.78
1313160	< 5	0.2	1.1	28	1940	2	51	< 2	275	5.38	7	< 10	18	< 0.5	< 2	0.10	26	18	19.2	10	< 1	0.02	< 10	1.56
1313161	10	0.3	< 0.5	9	191	1	15	3	36	1.45	10	< 10	15	< 0.5	< 2	< 0.01	5	11	9.12	< 10	< 1	0.03	< 10	0.29
1313162	15	< 0.2	< 0.5	3	160	4	5	< 2	9	0.05	18	< 10	14	< 0.5	< 2	< 0.01	< 1	4	1.39	< 10	< 1	0.01	58	< 0.01
1313163	< 5	< 0.2	< 0.5	13	2940	< 1	8	< 2	27	0.44	6	< 10	14	< 0.5	< 2	2.17	4	2	5.64	< 10	< 1	0.02	< 10	0.51
1313164	6	< 0.2	0.6	13	995	< 1	12	2	36	1.69	5	< 10	11	< 0.5	2	0.14	6	5	8.34	< 10	< 1	0.08	< 10	0.46
1313165	8	< 0.2	0.9	301	4760	3	31	3	60	0.99	27	< 10	< 10	< 0.5	< 2	0.04	25	23	11.9	< 10	< 1	< 0.01	< 10	0.75
1313166	7	< 0.2	< 0.5	6	111	< 1	< 1	< 2	9	0.07	9	< 10	13	< 0.5	< 2	< 0.01	< 1	3	1.13	< 10	< 1	0.04	< 10	< 0.01
1313167	< 5	< 0.2	1.4	112	4410	< 1	15	2	62	1.34	7	< 10	14	< 0.5	< 2	0.06	3	7	12.6	< 10	< 1	0.10	< 10	0.68
1313168	11	< 0.2	< 0.5	2	78	2	< 1	2	12	0.46	< 2	< 10	687	< 0.5	< 2	0.08	2	2	0.52	< 10	< 1	0.02	< 10	0.11
1313169	162	0.3	< 0.5	8	445	< 1	45	< 2	36	0.74	4	< 10	158	< 0.5	< 2	0.97	6	86	1.25	< 10	< 1	0.01	< 10	0.58
1313170	32	< 0.2	< 0.5	14	47	< 1	< 1	< 2	6	0.43	< 2	< 10	72	< 0.5	< 2	0.07	< 1	< 1	0.46	< 10	< 1	0.12	< 10	0.02
1313171	15	0.7	< 0.5	12	538	22	267	4	20	0.46	2	< 10	30	< 0.5	< 2	0.90	35	274	2.28	< 10	< 1	0.17	< 10	0.89
1313172	< 5	0.3	0.5	191	967	< 1	927	< 2	73	1.16	< 2	< 10	32	< 0.5	< 2	3.05	61	879	6.03	< 10	< 1	0.43	< 10	8.80
1313173	20	0.6	< 0.5	905	1510	20	601	< 2	59	0.85	2	< 10	69	< 0.5	< 2	4.97	46	439	5.88	< 10	< 1	0.53	< 10	5.75
1313174	117	0.7	0.9	108	2330	3	672	13	43	1.72	28	< 10	< 10	< 0.5	3	4.24	41	807	11.0	< 10	< 1	< 0.01	< 10	4.39

Analyte Symbol Unit Symbol	Na	Р	S	Sb	Sc	Sr	т:	π.	71					
Unit Symbol				00	00	31	Ti	Te	TI	U	V	W	Y	Zr
	%	%	%	ppm	ppm	ppm	%	ppm						
Detection Limit	0.001	0.001	0.01	2	1	1	0.01	1	2	10	1	10	1	1
Analysis Method	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP
1313151	0.045	0.300	0.66	3	6	212	< 0.01	3	< 2	< 10	57	< 10	19	4
1313152	0.214	0.019	0.28	< 2	< 1	16	< 0.01	< 1	< 2	< 10	4	< 10	1	4
1313153	0.274	0.009	0.75	3	3	46	< 0.01	8	2	< 10	37	< 10	< 1	5
1313154	0.033	0.027	1.41	< 2	13	266	< 0.01	< 1	< 2	< 10	40	< 10	5	6
1313155	0.122	0.034	0.62	2	19	100	< 0.01	< 1	< 2	< 10	50	< 10	5	4
1313156	0.090	0.052	2.32	4	22	38	< 0.01	3	< 2	< 10	67	< 10	5	8
1313157	0.113	0.088	0.53	< 2	1	62	< 0.01	< 1	< 2	< 10	7	< 10	4	3
1313158	0.012	0.006	10.7	10	4	1	< 0.01	< 1	3	< 10	26	< 10	3	22
1313159	0.109	0.170	0.36	< 2	2	166	< 0.01	< 1	< 2	< 10	14	< 10	10	2
1313160	0.015	0.039	2.04	8	7	5	< 0.01	< 1	2	< 10	82	< 10	2	24
1313161	0.021	0.013	1.31	3	3	2	< 0.01	< 1	< 2	< 10	29	< 10	< 1	16
1313162	0.020	0.007	0.05	< 2	< 1	3	< 0.01	2	< 2	< 10	3	< 10	2	1
1313163	0.021	0.004	1.21	< 2	2	23	< 0.01	2	< 2	< 10	11	< 10	1	5
1313164	0.030	0.024	2.56	2	3	8	< 0.01	< 1	< 2	< 10	29	< 10	1	10
1313165	0.013	0.015	5.60	6	6	2	< 0.01	< 1	< 2	< 10	23	< 10	1	13
1313166	0.016	0.002	0.11	< 2	< 1	1	< 0.01	< 1	< 2	< 10	3	< 10	< 1	2
1313167	0.018	0.011	1.72	5	3	3	< 0.01	< 1	< 2	< 10	18	< 10	2	15
1313168	0.373	0.026	0.09	< 2	< 1	30	< 0.01	< 1	< 2	< 10	7	< 10	< 1	3
1313169	0.259	0.032	0.18	< 2	2	69	< 0.01	< 1	< 2	< 10	22	< 10	2	2
1313170	0.235	0.015	0.11	< 2	< 1	16	< 0.01	< 1	< 2	< 10	2	< 10	< 1	7
1313171	0.027	0.001	0.83	< 2	3	36	< 0.01	< 1	3	< 10	22	< 10	1	2
1313172	0.019	0.004	0.55	4	14	117	0.01	< 1	< 2	< 10	56	< 10	2	4
1313173	0.020	0.002	0.78	2	12	136	0.01	< 1	< 2	< 10	44	< 10	4	4
1313174	0.012	0.004	5.77	4	9	253	< 0.01	< 1	< 2	< 10	65	< 10	3	8

Quality Control	I																							
Analyte Symbol	Au	Ag	Cd	Cu	Mn	Мо	Ni	Pb	Zn	AI	As	в	Ba	Be	Bi	Ca	Co	Cr	Fe	Ga	Hg	к	La	Mg
Unit Symbol	ppb	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	%							
Detection Limit	5	0.2	0.5	1	5	1	1	2	2	0.01	2	10	10	0.5	2	0.01	1	1	0.01	10	1	0.01	10	0.01
Analysis Method	FA-AA	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP
GXR-1 Meas		28.7	3.7	1170	841	14	45	600	673	0.33	359	< 10	344	0.8	1360	0.73	2	6	21.4	< 10	2	0.03	< 10	0.13
GXR-1 Cert		31.0	3.30	1110	852	18.0	41.0	730	760	3.52	427	15.0	750	1.22	1380	0.960	8.20	12.0	23.6	13.8	3.90	0.050	7.50	0.217
GXR-4 Meas		3.9	0.5	6730	154	332	38	42	72	2.85	101	< 10	43	1.4	19	0.91	12	58	3.07	10	< 1	1.80	50	1.66
GXR-4 Cert		4.00	0.860	6520	155	310	42.0	52.0	73.0	7.20	98.0	4.50	1640	1.90	19.0	1.01	14.6	64.0	3.09	20.0	0.110	4.01	64.5	1.66
GXR-6 Meas		0.4	0.5	72	1130	1	23	90	124	7.16	219	< 10	921	0.9	< 2	0.16	11	85	5.67	20	< 1	1.21	11	0.41
GXR-6 Cert		1.30	1.00	66.0	1010	2.40	27.0	101	118	17.7	330	9.80	1300	1.40	0.290	0.180	13.8	96.0	5.58	35.0	0.0680	1.87	13.9	0.609
OxJ95 Meas	2290																							
OxJ95 Cert	2331.000																							
OxG99 Meas	905																							
OxG99 Cert	932																							
1313160 Orig	< 5																							
1313160 Dup	< 5																							
1313163 Orig		< 0.2	< 0.5	13	2940	< 1	7	< 2	28	0.44	5	< 10	14	< 0.5	< 2	2.18	4	2	5.70	< 10	< 1	0.02	< 10	0.51
1313163 Dup		< 0.2	< 0.5	13	2930	< 1	8	< 2	26	0.43	7	< 10	13	< 0.5	< 2	2.16	4	3	5.58	< 10	< 1	0.02	< 10	0.50
1313170 Orig	27																							
1313170 Dup	37																							
Method Blank		< 0.2	< 0.5	< 1	< 5	< 1	< 1	< 2	< 2	< 0.01	< 2	< 10	< 10	< 0.5	< 2	< 0.01	< 1	< 1	< 0.01	< 10	< 1	< 0.01	< 10	< 0.01

Quality Control														
Analyte Symbol	Na	Р	s	Sb	Sc	Sr	Ti	Te	TI	U	v	w	Y	Zr
Unit Symbol	%	%	%	ppm	ppm	ppm	%	ppm						
Detection Limit	0.001	0.001	0.01	2	1	1	0.01	1	2	10	1	10	1	1
Analysis Method	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP
GXR-1 Meas	0.051	0.044	0.17	80	1	183		13	< 2	29	79	138	25	18
GXR-1 Cert	0.0520	0.0650	0.257	122	1.58	275		13.0	0.390	34.9	80.0	164	32.0	38.0
GXR-4 Meas	0.143	0.133	1.72	4	7	77		2	2	< 10	85	12	12	10
GXR-4 Cert	0.564	0.120	1.77	4.80	7.70	221		0.970	3.20	6.20	87.0	30.8	14.0	186
GXR-6 Meas	0.097	0.033	0.01	6	22	34		2	< 2	< 10	179	< 10	6	11
GXR-6 Cert	0.104	0.0350	0.0160	3.60	27.6	35.0		0.0180	2.20	1.54	186	1.90	14.0	110
OxJ95 Meas														
OxJ95 Cert														
OxG99 Meas														
OxG99 Cert														
1313160 Orig														
1313160 Dup														
1313163 Orig	0.021	0.005	1.23	4	2	23	< 0.01	1	< 2	< 10	11	< 10	1	5
1313163 Dup	0.021	0.004	1.20	< 2	2	22	< 0.01	3	< 2	< 10	11	< 10	1	5
1313170 Orig														
1313170 Dup														
Method Blank	0.013	< 0.001	< 0.01	< 2	< 1	< 1	< 0.01	< 1	< 2	< 10	< 1	< 10	< 1	< 1



Innovative Technologies

Invoice No.: Invoice Date: Your Reference: Date Submitted: South Timmins A12-10677 (i) 27-Sep-12 12-Oct-12

Canada **Toronto Ontario M5H 3L5** Suite #1000 141 Adelaide St, West, Fletcher Nickel

ATTN: Joerg Kleinboeck

# CERTIFICATE OF ANALYSIS

35 Rock samples were submitted for analysis

The following analytical packages were requested:

REPORT A12-10677 (i)

Code 1A2-Timmins Au - Fire Assay AA Code 1A3-Timmins Au - Fire Assay Gravimetric Code 1E3 Aqua Regia ICP(AQUAGEO)

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Notes:

If value exceeds upper limit we recommend reassay by fire assay gravimetric-Code 1A3 Values which exceed the upper limit should be assayed for accurate numbers.

**CERTIFIED BY**:

**Quality Control** Emmanuel Eseme, Ph.D.

SCC

ACTIVATION LABORATORIES LTD.

																•	•							
Analyte Symbol	Au	Ag	Cd	Cu	Mn	Mo	Ni	Pb	Zn	AI	As	В	Ba	Be	Bi	Ca	Co	Cr	Fe	Ga	Hg	к	La	Mg
Unit Symbol	ppb	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	%							
Detection Limit	5	0.2	0.5	1	5	1	1	2	2	0.01	2	10	10	0.5	2	0.01	1	1	0.01	10	1	0.01	10	0.01
Analysis Method	FA-AA	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP
1313175	< 5	< 0.2	1.1	21	1130	< 1	1010	< 2	36	2.52	< 2	< 10	26	< 0.5	5	4.32	60	1670	5.38	< 10	< 1	< 0.01	< 10	8.85
1313176	< 5	< 0.2	0.7	47	1410	< 1	1120	< 2	34	1.44	< 2	< 10	45	< 0.5	< 2	8.00	48	1100	5.86	< 10	< 1	0.12	< 10	6.24
1313177	< 5	< 0.2	< 0.5	4	426	< 1	151	< 2	12	0.31	< 2	< 10	13	< 0.5	< 2	1.30	10	239	1.15	< 10	< 1	< 0.01	< 10	0.71
1313178	< 5	< 0.2	1.3	19	2070	< 1	1180	9	32	1.01	11	< 10	28	< 0.5	< 2	5.62	55	984	4.62	< 10	< 1	< 0.01	< 10	3.85
1313179	< 5	< 0.2	0.7	56	1500	< 1	31	< 2	41	2.23	< 2	< 10	12	< 0.5	< 2	5.82	16	31	4.13	< 10	< 1	0.01	< 10	2.21
1313180	< 5	< 0.2	0.6	15	511	< 1	7	12	68	1.66	< 2	< 10	315	0.6	< 2	2.18	10	9	2.89	< 10	< 1	0.50	73	0.78
1313181	< 5	< 0.2	< 0.5	18	1180	< 1	962	8	33	0.65	< 2	< 10	22	< 0.5	< 2	4.49	62	438	5.46	< 10	< 1	0.35	< 10	8.02
1313182	17	< 0.2	< 0.5	10	603	< 1	7	13	42	1.66	< 2	< 10	549	< 0.5	< 2	3.74	10	5	2.11	< 10	< 1	1.02	67	1.12
1313183	10	0.4	< 0.5	44	869	24	18	7	15	0.54	2	< 10	22	< 0.5	3	2.52	14	16	2.15	< 10	< 1	0.12	< 10	0.74
1313184	48	0.3	0.8	95	1440	115	45	3	74	1.93	< 2	< 10	38	< 0.5	< 2	4.01	28	35	6.46	< 10	< 1	0.18	< 10	2.87
1313185	285	2.5	< 0.5	8	607	130	10	7	18	0.50	< 2	< 10	29	< 0.5	< 2	2.02	9	7	1.83	< 10	< 1	0.12	< 10	0.37
1313186	< 5	< 0.2	0.8	105	2030	< 1	44	< 2	55	0.90	< 2	< 10	48	< 0.5	< 2	6.85	29	26	5.86	< 10	< 1	0.52	< 10	2.37
1313187	6	< 0.2	< 0.5	31	1170	< 1	910	< 2	27	1.32	< 2	< 10	147	< 0.5	< 2	9.46	50	809	4.30	< 10	< 1	0.13	< 10	7.44
1313188	> 3000	2.3	< 0.5	20	397	41	16	< 2	18	0.47	< 2	< 10	23	< 0.5	< 2	1.61	17	7	3.15	< 10	< 1	0.07	< 10	0.34
1313189	< 5	< 0.2	0.8	17	1730	< 1	961	6	32	1.70	2	< 10	12	< 0.5	< 2	9.37	50	1110	5.47	< 10	< 1	< 0.01	< 10	6.16
1313190	7	< 0.2	< 0.5	7	66	< 1	5	8	7	0.11	< 2	< 10	45	< 0.5	< 2	0.12	1	9	0.45	< 10	< 1	0.05	< 10	0.05
1313191	15	< 0.2	< 0.5	5	443	< 1	17	< 2	30	0.83	< 2	< 10	179	< 0.5	< 2	1.55	7	22	1.43	< 10	< 1	0.44	12	0.62
1313192	5	< 0.2	< 0.5	2	831	< 1	32	< 2	14	0.31	< 2	< 10	26	< 0.5	< 2	1.85	17	5	1.86	< 10	< 1	< 0.01	< 10	0.78
1313193	30	< 0.2	0.9	7	1060	7	81	< 2	34	0.33	33	< 10	< 10	< 0.5	< 2	0.88	19	18	5.15	< 10	< 1	< 0.01	< 10	0.31
1313194	78	< 0.2	1.0	50	1400	12	73	2	97	0.90	16	< 10	52	< 0.5	< 2	2.84	37	16	6.88	< 10	< 1	0.49	< 10	1.58
1313195	< 5	< 0.2	1.1	106	1310	< 1	28	< 2	173	0.89	14	< 10	40	< 0.5	4	3.81	40	4	5.98	< 10	< 1	0.36	< 10	1.58
1313196	< 5	< 0.2	0.5	86	907	< 1	61	< 2	125	2.76	3	< 10	44	< 0.5	< 2	2.10	31	72	3.63	< 10	< 1	0.14	< 10	1.46
1313197	< 5	< 0.2	< 0.5	122	632	< 1	56	< 2	47	1.63	3	< 10	51	< 0.5	< 2	2.18	23	56	2.16	< 10	< 1	0.19	< 10	0.73
1313198	374	0.4	< 0.5	8	499	1	11	4	27	0.29	< 2	< 10	41	< 0.5	< 2	1.69	5	7	1.32	< 10	< 1	0.04	< 10	0.18
1313199	10	< 0.2	0.7	85	1830	< 1	83	4	40	1.69	2	< 10	146	< 0.5	2	6.56	34	91	5.39	< 10	< 1	0.41	< 10	2.33
1313200	23	< 0.2	< 0.5	6	65	< 1	< 1	< 2	11	0.56	< 2	< 10	141	< 0.5	< 2	0.11	1	3	0.54	< 10	< 1	0.18	< 10	0.03
0999001	5	< 0.2	< 0.5	32	629	< 1	47	5	52	1.68	< 2	< 10	749	0.6	< 2	3.08	15	14	2.96	< 10	< 1	0.66	80	1.36
0999002	> 3000	6.0	< 0.5	30	40	68	2	18	12	0.34	4	< 10	69	< 0.5	4	0.04	2	4	1.22	< 10	< 1	0.06	< 10	0.01
0999003	5	< 0.2	0.9	25	1300	< 1	25	3	106	2.44	2	< 10	92	< 0.5	< 2	2.51	25	21	6.64	< 10	< 1	0.30	15	0.42
0999004	6	0.2	0.7	9	912	< 1	28	< 2	56	2.42	5	< 10	83	< 0.5	< 2	2.74	21	10	4.78	< 10	< 1	0.49	11	0.66
0999005	< 5	0.3	1.6	24	2410	< 1	45	< 2	92	2.60	12	< 10	13	0.5	2	0.10	6	21	27.4	< 10	< 1	0.03	< 10	1.12
0999006	< 5	< 0.2	1.4	13	3500	< 1	29	< 2	15	0.09	5	< 10	11	< 0.5	< 2	0.04	1	88	10.9	< 10	< 1	0.01	< 10	0.48
0999007	< 5	< 0.2	< 0.5	< 1	1460	< 1	2	< 2	12	0.13	2	< 10	12	< 0.5	< 2	0.03	< 1	< 1	2.63	< 10	< 1	0.03	< 10	0.08
0999008	< 5	< 0.2	1.7	36	7000	< 1	5	5	45	0.62	3	< 10	19	< 0.5	< 2	0.32	4	3	9.70	< 10	< 1	0.01	< 10	0.59
0999009	< 5	0.3	1.8	4	6450	2	18	< 2	70	2.86	5	< 10	< 10	< 0.5	< 2	0.84	3	16	19.5	< 10	< 1	< 0.01	< 10	1.43

	N/ -	Р	~	Ci	0	0	-	т.	TI		V	141	Y	Zr	
Analyte Symbol	Na		S	Sb	Sc	Sr	Ti	Te				W			Au
Unit Symbol	%	%	%	ppm	ppm	ppm	%	ppm	g/tonne						
Detection Limit	0.001	0.001	0.01	2	1	1	0.01	1	2	10	1	10	1	1	0.03
Analysis Method	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	FA-GRA
1313175	0.014	0.007	0.03	8	16	110	< 0.01	< 1	< 2	< 10	95	< 10	2	2	
1313176	0.019	0.006	0.13	6	15	150	< 0.01	5	< 2	< 10	60	< 10	3	2	
1313177	0.044	0.010	< 0.01	< 2	3	12	< 0.01	< 1	< 2	< 10	16	< 10	1	< 1	
1313178	0.036	0.005	0.05	5	12	30	< 0.01	8	< 2	< 10	56	< 10	3	2	
1313179	0.019	0.009	0.14	2	10	12	0.13	3	< 2	< 10	89	< 10	8	2	
1313180	0.112	0.110	0.18	< 2	6	391	0.36	< 1	< 2	< 10	63	< 10	11	6	
1313181	0.024	0.006	0.29	2	14	139	< 0.01	< 1	< 2	< 10	30	< 10	3	3	
1313182	0.065	0.181	0.20	< 2	3	184	0.01	5	< 2	< 10	23	< 10	9	2	
1313183	0.086	0.013	0.83	< 2	7	20	< 0.01	< 1	< 2	< 10	20	< 10	3	6	
1313184	0.065	0.017	0.82	2	29	100	< 0.01	< 1	< 2	< 10	127	< 10	5	5	
1313185	0.060	0.012	0.77	< 2	6	59	< 0.01	3	< 2	< 10	17	< 10	2	3	
1313186	0.048	0.019	0.49	2	17	141	0.02	2	< 2	< 10	77	< 10	6	2	
1313187	0.021	0.007	0.01	4	11	133	< 0.01	< 1	< 2	< 10	41	< 10	3	2	
1313188	0.086	0.020	2.13	< 2	6	52	< 0.01	< 1	< 2	< 10	58	< 10	3	7	6.52
1313189	0.022	0.006	0.05	6	14	53	< 0.01	< 1	< 2	< 10	76	< 10	4	2	
1313190	0.034	0.014	0.05	< 2	< 1	15	< 0.01	< 1	< 2	< 10	2	< 10	< 1	3	
1313191	0.108	0.054	0.42	< 2	3	126	< 0.01	< 1	< 2	< 10	15	< 10	4	2	
1313192	0.275	0.069	0.68	< 2	3	80	< 0.01	< 1	< 2	< 10	4	< 10	2	2	
1313193	0.016	0.004	2.26	3	5	21	< 0.01	5	< 2	< 10	11	< 10	< 1	5	
1313194	0.053	0.027	1.97	< 2	15	130	< 0.01	< 1	< 2	< 10	54	< 10	4	5	
1313195	0.137	0.048	1.40	< 2	22	62	< 0.01	< 1	< 2	< 10	94	< 10	5	4	
1313196	0.228	0.025	0.09	< 2	21	27	< 0.01	< 1	< 2	< 10	162	< 10	5	2	
1313197	0.160	0.015	0.06	< 2	13	25	< 0.01	2	< 2	< 10	107	< 10	3	2	
1313198	0.204	0.016	0.39	< 2	3	79	< 0.01	< 1	< 2	< 10	4	279	2	11	
1313199	0.204	0.015	0.14	3	19	138	< 0.01	< 1	< 2	< 10	61	< 10	3	2	
1313200	0.274	0.011	0.05	< 2	< 1	20	< 0.01	< 1	< 2	< 10	4	< 10	< 1	9	
0999001	0.089	0.155	0.08	< 2	5	140	< 0.01	< 1	< 2	< 10	23	< 10	11	2	
0999002	0.272	0.015	0.16	< 2	< 1	20	< 0.01	8	< 2	< 10	3	18	< 1	13	5.56
0999003	0.265	0.069	0.41	2	8	79	< 0.01	< 1	< 2	< 10	45	< 10	4	4	
0999004	0.083	0.057	1.12	2	5	51	< 0.01	< 1	< 2	< 10	33	< 10	5	10	
0999005	0.013	0.029	0.71	13	10	4	0.04	< 1	< 2	< 10	73	< 10	3	22	
0999006	0.019	0.004	1.26	5	3	1	< 0.01	< 1	< 2	< 10	14	< 10	- 1	7	
0999007	0.018	0.005	0.14	< 2	< 1	3	< 0.01	< 1	< 2	< 10	4	< 10	< 1	2	
0999008	0.014	0.005	0.43	4	2	7	0.02	< 1	< 2	< 10	15	< 10	< 1	6	
0999009	0.014	0.020	0.76	10	7	16	0.04	< 1	< 2	< 10	41	< 10	4	28	
000000	0.014	0.020	0.70	10	'	10	0.04	~ 1	~ 2	< 10	-1	< 10	4	20	

Quality Control																								
Analyte Symbol	Au	Ag	Cd	Cu	Mn	Мо	Ni	Pb	Zn	AI	As	в	Ba	Be	Bi	Ca	Co	Cr	Fe	Ga	Hg	к	La	Mg
Unit Symbol	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	%
Detection Limit	5	0.2	0.5	1	5	1	1	2	2	0.01	2	10	10	0.5	2	0.01	1	1	0.01	10	1	0.01	10	0.01
Analysis Method	FA-AA	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP
GXR-1 Meas		25.4	3.7	1020	826	14	21	576	603	0.31	345	11	332	0.7	1410	0.71	3	6	20.1	< 10	2	0.03	< 10	0.13
GXR-1 Cert		31.0	3.30	1110	852	18.0	41.0	730	760	3.52	427	15.0	750	1.22	1380	0.960	8.20	12.0	23.6	13.8	3.90	0.050	7.50	0.217
GXR-4 Meas		3.4	0.8	6360	146	324	36	38	65	2.64	100	< 10	44	1.4	< 2	0.88	12	57	2.96	< 10	< 1	1.69	48	1.70
GXR-4 Cert		4.00	0.860	6520	155	310	42.0	52.0	73.0	7.20	98.0	4.50	1640	1.90	19.0	1.01	14.6	64.0	3.09	20.0	0.110	4.01	64.5	1.66
GXR-6 Meas		0.2	0.9	65	1110	2	19	85	117	6.96	217	< 10	936	0.9	< 2	0.17	12	81	5.27	10	< 1	1.17	11	0.42
GXR-6 Cert		1.30	1.00	66.0	1010	2.40	27.0	101	118	17.7	330	9.80	1300	1.40	0.290	0.180	13.8	96.0	5.58	35.0	0.0680	1.87	13.9	0.609
SAR-M (U.S.G.S.) Meas		3.6	6.1	365	5160	14	46	1060	1020	1.27	38		199	1.1	< 2	0.33	10	96	2.98	< 10		0.33	50	0.40
SAR-M (U.S.G.S.) Cert		3.64	5.27	331	5220	13.10	41.50	982	930.0	6.30	38.8		801	2.20	1.94	0.61	10.70	79.7	2.99	16.8		2.94	57.4	0.50
OREAS 13b (4-Acid)		0.8		2470		9	2650		54		51						47	479						
Meas OREAS 13b (4-Acid) Cert		0.86		2300.000		9.0	2247		133		57						75	8650						
OxK79 Meas																								
OxK79 Cert																								
OxJ95 Meas	2310																							
	2331.000																							
OxJ95 Meas	2410																							
	2331.000																							
SE58 Meas	606																							
SE58 Cert	607.00																							
1313184 Orig	49																							
1313184 Dup	48																							
1313187 Orig		< 0.2	< 0.5	31	1180	< 1	910	< 2	27	1.32	< 2	< 10	148	< 0.5	< 2	9.51	52	813	4.32	< 10	< 1	0.13	< 10	7.53
1313187 Dup		< 0.2	0.7	31	1170	< 1	911	6	26	1.31	< 2	< 10	146	< 0.5	< 2	9.40	48	805	4.28	< 10	3	0.13	< 10	7.36
1313194 Orig	72							-													-			
1313194 Dup	85																							
0999001 Orig		< 0.2	0.5	31	617	< 1	46	5	51	1.64	< 2	< 10	727	0.6	< 2	3.03	15	14	2.90	< 10	< 1	0.64	79	1.33
0999001 Dup		< 0.2	< 0.5	32	641	< 1	48	5	53	1.72	< 2	< 10	771	0.6	< 2	3.14	16	15	3.02	< 10	< 1	0.67	81	1.40
0999004 Orig	6	0.2	0.7	9	912	< 1	28	< 2	56	2.42	5	< 10	83	< 0.5	< 2	2.74	21	10	4.78	< 10	< 1	0.49	11	0.66
0999004 Split	6	< 0.2	< 0.5	8	930	< 1	29	4	57	2.45	7	< 10	83	< 0.5	< 2	2.78	22	.0	4.92	< 10	< 1	0.49	< 10	0.68
0999005 Orig	< 5	- 0.2	- 0.0	0	000		20	-	01	2.10	'	0	00	- 0.0	- 2	20		5				0.10	0	0.00
0999005 Dup	6																							
Method Blank	0	< 0.2	< 0.5	< 1	< 5	< 1	< 1	< 2	< 2	< 0.01	< 2	< 10	< 10	< 0.5	< 2	< 0.01	< 1	< 1	< 0.01	< 10	< 1	< 0.01	< 10	< 0.01
Method Blank	< 5	- 0.2	- 0.0		~ 0			~2	~2	- 0.01	~2	\$ 10	2.10	- 0.0	~2	- 0.01		~ 1	- 0.01	< 10		- 5.01	< 10	- 0.01
Method Blank	< 5																							
Method Blank	< 5																							
Method Blank	~ 5																							

Quality Control															
Analyte Symbol	Na	Р	S	Sb	Sc	Sr	Ti	Te	TI	U	V	W	Y	Zr	Au
Unit Symbol	%	%	%	ppm	ppm	ppm	%	ppm	g/tonne						
Detection Limit	0.001	0.001	0.01	2	1	1	0.01	1	2	10	1	10	1	1	0.03
Analysis Method	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	FA-GRA
GXR-1 Meas	0.046	0.041	0.18	79	1	153		11	< 2	27	68	135	22	15	
GXR-1 Cert	0.0520	0.0650	0.13	122	1.58	275		13.0	0.390	34.9	80.0	164	32.0	38.0	
GXR-4 Meas	0.134	0.126	1.67	3	8	67		< 1	< 2	< 10	80	11	12	10	
GXR-4 Cert	0.564	0.120	1.77	4.80	7.70	221		0.970	3.20	6.20	87.0	30.8	14.0	186	
GXR-6 Meas	0.082	0.034	0.01	4	26	33		< 1	< 2	< 10	164	< 10	7	10	
GXR-6 Cert	0.104	0.0350	0.0160	3.60	27.6	35.0		0.0180	2.20	1.54	186	1.90	14.0	110	
SAR-M (U.S.G.S.) Meas	0.038	0.070		6	4	31	0.06	6	< 2	< 10	38	< 10	22		
SAR-M (U.S.G.S.) Cert	1.140	0.070		6.00	7.83	151.0	2.7	0.96	2.88	3.57	67.20	9.78	28.00		
OREAS 13b (4-Acid) Meas			1.14												
OREAS 13b (4-Acid) Cert			1.20												
OxK79 Meas															3.44
OxK79 Cert															3.53
OxJ95 Meas															
OxJ95 Cert															
OxJ95 Meas															
OxJ95 Cert															
SE58 Meas															
SE58 Cert															
1313184 Orig															
1313184 Dup															
1313187 Orig	0.021	0.007	0.01	4	11	133	< 0.01	< 1	< 2	< 10	41	< 10	3	2	
1313187 Dup	0.020	0.007	0.01	5	11	133	< 0.01	6	< 2	< 10	40	< 10	3	1	
1313194 Orig															
1313194 Dup															
0999001 Orig	0.088	0.151	0.08	< 2	4	137	< 0.01	< 1	2	< 10	23	< 10	11	2	
0999001 Dup	0.091	0.159	0.08	< 2	5	143	< 0.01	4	< 2	< 10	23	< 10	11	2	
0999004 Orig	0.083	0.057	1.12	2	5	51	< 0.01	< 1	< 2	< 10	33	< 10	5	10	
0999004 Split	0.083	0.059	1.13	3	5	50	< 0.01	7	< 2	< 10	33	< 10	5	10	
0999005 Orig															
0999005 Dup															
Method Blank	0.016	< 0.001	< 0.01	< 2	< 1	< 1	< 0.01	< 1	< 2	< 10	< 1	< 10	< 1	< 1	
Method Blank															
Method Blank															
Method Blank															
Method Blank															< 0.03



Innovative Technologies

Date Submitted:10-Oct-12Invoice No.:A12-11195Invoice Date:25-Oct-12Your Reference:South Timmins

Fletcher Nickel 141 Adelaide St, West, Suite #1000 Toronto Ontario M5H 3L5 Canada

ATTN: Joerg Kleinboeck

# CERTIFICATE OF ANALYSIS

24 Rock samples were submitted for analysis.

The following analytical packages were requested:

REPORT A12-11195

Code 1A2-Timmins Au - Fire Assay AA Code 1E3 Aqua Regia ICP(AQUAGEO)

This report may be reproduced without our consent. If only selected portions of the report are reproduced, permission must be obtained. If no instructions were given at time of sample submittal regarding excess material, it will be discarded within 90 days of this report. Our liability is limited solely to the analytical cost of these analyses. Test results are representative only of material submitted for analysis.

Notes:

If value exceeds upper limit we recommend reassay by fire assay gravimetric-Code 1A3 Values which exceed the upper limit should be assayed for accurate numbers.

CERTIFIED BY :

Emmanuel Eseme , Ph.D. Quality Control

SCC Accredited

ACTIVATION LABORATORIES LTD.

Activation Laboratories Ltd. Re
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Re	po	rt:	

							A	ctivati	on Lal	borato	ries Lt	d.	Repo	ort:										
Analyte Symbol	Au	Ag	Cd	Cu	Mn	Мо	Ni	Pb	Zn	AI	As	В	Ba	Be	Bi	Ca	Co	Cr	Fe	Ga	Hg	К	La	Mg
Unit Symbol	ppb	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	%						
Detection Limit	5	0.2	0.5	1	5	1	1	2	2	0.01	2	10	10	0.5	2	0.01	1	1	0.01	10	1	0.01	10	0.01
Analysis Method	FA-AA	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP
999010	17	< 0.2	< 0.5	60	400	< 1	44	< 2	8	1.09	8	< 10	73	< 0.5	< 2	0.76	83	19	1.86	< 10	< 1	0.46	< 10	0.14
999011	12	0.3	1.0	514	1870	< 1	837	< 2	94	3.22	21	< 10	31	< 0.5	< 2	3.93	87	159	9.66	< 10	3	0.05	< 10	3.85
999012	6	< 0.2	1.2	56	1250	< 1	192	< 2	105	3.70	22	< 10	66	< 0.5	< 2	1.40	53	117	9.88	< 10	< 1	0.24	< 10	1.61
999013	< 5	< 0.2	0.7	105	1750	< 1	61	< 2	90	3.91	< 2	< 10	20	< 0.5	< 2	6.47	29	62	7.36	< 10	< 1	0.12	< 10	2.53
999014	< 5	< 0.2	< 0.5	4	1520	< 1	559	< 2	18	1.66	< 2	< 10	22	< 0.5	< 2	5.48	31	1100	3.90	< 10	< 1	< 0.01	< 10	6.51
999015	46	0.3	< 0.5	36	458	< 1	23	5	22	0.48	< 2	< 10	39	< 0.5	< 2	1.72	10	18	2.20	< 10	< 1	0.12	20	0.70
999016	22	0.3	0.7	64	544	< 1	57	3	34	1.20	< 2	< 10	98	0.5	< 2	3.43	18	33	3.17	< 10	< 1	0.56	49	2.00
999017	< 5	< 0.2	0.6	48	1330	< 1	266	5	66	2.23	< 2	< 10	204	0.9	< 2	5.82	31	187	5.61	< 10	2	0.42	86	6.47
999018	< 5	< 0.2	< 0.5	47	1330	< 1	732	3	64	1.53	< 2	< 10	58	0.5	< 2	5.75	37	649	4.69	< 10	< 1	0.23	18	7.69
999019	19	0.2	0.6	21	1500	17	297	4	34	1.39	< 2	< 10	58	< 0.5	< 2	3.40	26	350	4.08	< 10	< 1	0.08	14	3.52
999020	< 5	< 0.2	0.6	14	683	31	113	3	16	0.59	< 2	< 10	29	< 0.5	5	1.96	16	118	2.11	< 10	< 1	0.05	< 10	1.67
999021	< 5	< 0.2	0.8	453	934	< 1	1040	< 2	83	2.86	< 2	< 10	22	< 0.5	< 2	2.46	68	1820	6.19	< 10	1	< 0.01	< 10	9.97
999022	< 5	< 0.2	1.1	34	814	< 1	162	7	59	2.29	< 2	< 10	1690	1.8	< 2	4.35	23	438	4.42	< 10	< 1	0.84	52	4.11
999023	34	0.3	< 0.5	19	481	3	35	4	28	0.53	< 2	< 10	37	< 0.5	2	1.96	9	21	2.00	< 10	< 1	0.27	18	0.97
999024	24	0.4	0.9	29	1070	2	84	5	78	2.21	< 2	< 10	42	0.5	< 2	4.01	21	173	4.87	< 10	< 1	0.15	17	2.77
999025	< 5	< 0.2	0.6	30	896	< 1	9	2	68	2.87	< 2	< 10	40	< 0.5	< 2	0.48	11	11	4.14	< 10	< 1	0.24	18	1.32
999026	< 5	< 0.2	0.6	9	1130	< 1	624	< 2	27	3.42	< 2	< 10	55	< 0.5	< 2	5.07	50	1510	6.17	< 10	2	< 0.01	< 10	9.62
999027	7	0.3	0.7	6	1530	< 1	695	3	44	1.80	< 2	< 10	44	< 0.5	< 2	5.46	55	798	5.75	< 10	2	0.13	< 10	5.92
999028	< 5	< 0.2	< 0.5	2	24	< 1	4	< 2	< 2	0.04	3	< 10	< 10	< 0.5	< 2	0.05	< 1	12	0.22	< 10	< 1	0.01	< 10	0.05
999029	< 5	< 0.2	0.7	35	982	< 1	1010	< 2	47	2.77	< 2	< 10	51	< 0.5	< 2	2.64	60	1690	6.40	< 10	< 1	0.03	< 10	9.44
999030	30	< 0.2	< 0.5	11	309	< 1	11	3	13	0.40	< 2	< 10	33	< 0.5	2	0.98	6	15	1.40	< 10	< 1	0.17	20	0.44
999031	440	0.3	< 0.5	7	273	13	14	6	7	0.21	< 2	< 10	11	< 0.5	< 2	1.23	17	3	2.42	< 10	< 1	0.03	38	0.46
999032	8	0.3	1.1	100	872	3	22	4	12	0.26	< 2	< 10	27	< 0.5	< 2	0.40	8	5	11.4	< 10	1	0.08	< 10	0.50
999033	< 5	< 0.2	0.5	48	885	< 1	954	< 2	35	2.36	< 2	< 10	30	< 0.5	< 2	5.36	48	1430	4.95	< 10	2	0.02	< 10	8.85

							Α	ctivati	on Lal	oorato	ries Lt	d.	Repo	ort:
Analyte Symbol	Na	Р	S	Sb	Sc	Sr	Ti	Te	TI	U	V	W	Y	Zr
Unit Symbol	%	%	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	0.001	0.001	0.01	2	1	1	0.01	1	2	10	1	10	1	1
Analysis Method	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP
999010	0.047	0.011	0.61	< 2	6	20	0.10	< 1	< 2	< 10	49	< 10	4	1
999011	0.023	0.012	0.31	4	22	78	< 0.01	< 1	< 2	< 10	123	< 10	1	3
999012	0.020	0.013	0.79	4	16	17	< 0.01	< 1	< 2	< 10	124	< 10	2	4
999013	0.028	0.017	0.27	2	18	63	< 0.01	< 1	< 2	< 10	135	< 10	2	2
999014	0.012	0.004	< 0.01	4	14	96	< 0.01	1	< 2	< 10	55	< 10	4	< 1
999015	0.120	0.071	0.69	< 2	3	66	< 0.01	3	< 2	< 10	12	< 10	5	1
999016	0.050	0.191	0.32	< 2	4	129	0.02	< 1	< 2	< 10	23	< 10	10	< 1
999017	0.019	0.486	0.25	< 2	11	397	0.01	< 1	< 2	< 10	69	< 10	20	2
999018	0.014	0.095	0.47	3	10	344	< 0.01	< 1	< 2	< 10	55	< 10	6	2
999019	0.022	0.020	0.39	< 2	14	124	< 0.01	< 1	< 2	< 10	54	< 10	5	9
999020	0.027	0.029	0.34	< 2	5	83	< 0.01	1	< 2	< 10	15	< 10	3	7
999021	0.010	0.007	0.34	8	20	54	< 0.01	< 1	2	< 10	105	< 10	1	2
999022	0.098	0.272	0.05	2	13	390	0.16	< 1	< 2	< 10	114	< 10	21	6
999023	0.072	0.095	0.94	< 2	3	206	< 0.01	2	< 2	< 10	11	< 10	6	1
999024	0.060	0.125	1.36	2	11	347	< 0.01	< 1	< 2	< 10	71	< 10	9	2
999025	0.081	0.057	0.01	< 2	3	20	< 0.01	< 1	< 2	< 10	30	< 10	4	1
999026	0.012	0.011	< 0.01	6	23	98	< 0.01	< 1	< 2	< 10	122	< 10	2	1
999027	0.015	0.008	1.31	5	17	383	< 0.01	< 1	< 2	< 10	47	< 10	2	6
999028	0.010	< 0.001	0.03	< 2	< 1	3	< 0.01	3	< 2	< 10	< 1	< 10	< 1	< 1
999029	0.010	0.010	< 0.01	7	18	105	< 0.01	3	3	< 10	93	< 10	1	2
999030	0.107	0.059	0.54	< 2	2	45	< 0.01	< 1	< 2	< 10	7	< 10	3	< 1
999031	0.121	0.179	1.80	< 2	2	56	< 0.01	< 1	< 2	< 10	4	< 10	5	1
999032	0.031	0.007	0.82	6	2	5	0.02	2	< 2	< 10	29	< 10	2	6
999033	0.012	0.005	0.07	5	16	162	< 0.01	< 1	3	< 10	85	< 10	3	2

Report:	
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Quality Control																								
Analyte Symbol	Au	Ag	Cd	Cu	Mn	Mo	Ni	Pb	Zn	AI	As	в	Ba	Be	Bi	Ca	Co	Cr	Fe	Ga	Hg	к	La	Mg
Unit Symbol	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	%
Detection Limit	5	0.2	0.5	1	5	1	1	2	2	0.01	2	10	10	0.5	2	0.01	1	1	0.01	10	1	0.01	10	0.01
Analysis Method	FA-AA	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP
GXR-1 Meas		27.2	3.5	1040	788	14	32	613	614	0.34	359	< 10	325	0.8	1330	0.73	< 1	7	21.4	< 10	3	0.03	< 10	0.14
GXR-1 Cert		31.0	3.30	1110	852	18.0	41.0	730	760	3.52	427	15.0	750	1.22	1380	0.960	8.20	12.0	23.6	13.8	3.90	0.050	7.50	0.217
GXR-4 Meas		3.4	0.9	6220	141	318	37	41	67	2.69	98	< 10	35	1.3	20	0.86	13	57	3.04	< 10	< 1	1.73	50	1.70
GXR-4 Cert		4.00	0.860	6520	155	310	42.0	52.0	73.0	7.20	98.0	4.50	1640	1.90	19.0	1.01	14.6	64.0	3.09	20.0	0.110	4.01	64.5	1.66
GXR-6 Meas		0.3	0.8	66	1080	3	24	89	119	7.20	232	< 10	850	0.9	< 2	0.14	11	83	5.51	10	< 1	1.18	12	0.42
GXR-6 Cert		1.30	1.00	66.0	1010	2.40	27.0	101	118	17.7	330	9.80	1300	1.40	0.290	0.180	13.8	96.0	5.58	35.0	0.0680	1.87	13.9	0.609
SAR-M (U.S.G.S.) Meas		3.1	5.6	331	4530	13	43	972	947	1.22	34		192	1.0	< 2	0.33	10	95	2.99	< 10		0.32	54	0.39
SAR-M (U.S.G.S.) Cert		3.64	5.27	331	5220	13.10	41.50	982	930.0	6.30	38.8		801	2.20	1.94	0.61	10.70	79.7	2.99	16.8		2.94	57.4	0.50
OREAS 13b (4-Acid) Meas		0.9		2240		10	2300		51		51						40	450						
OREAS 13b (4-Acid) Cert		0.86		2300.000		9.0	2247		133		57						75	8650						
999015 Orig		0.3	< 0.5	36	459	< 1	24	5	22	0.48	< 2	< 10	37	< 0.5	3	1.72	11	19	2.20	< 10	< 1	0.12	19	0.70
999015 Dup		0.4	< 0.5	35	457	< 1	23	5	22	0.47	< 2	< 10	40	< 0.5	< 2	1.72	10	18	2.21	< 10	< 1	0.12	20	0.70
999019 Orig	19																							
999019 Dup	20																							
999029 Orig	< 5	< 0.2	0.7	35	976	< 1	1010	< 2	46	2.76	< 2	< 10	51	< 0.5	< 2	2.63	60	1700	6.37	< 10	< 1	0.03	< 10	9.41
999029 Dup	< 5	< 0.2	0.8	36	987	< 1	1010	< 2	47	2.79	< 2	< 10	52	< 0.5	< 2	2.64	60	1690	6.43	< 10	2	0.03	< 10	9.48
999033 Orig	< 5	< 0.2	0.5	48	885	< 1	954	< 2	35	2.36	< 2	< 10	30	< 0.5	< 2	5.36	48	1430	4.95	< 10	2	0.02	< 10	8.85
999033 Split	< 5	< 0.2	0.6	52	935	1	1010	< 2	36	2.49	< 2	< 10	31	< 0.5	< 2	5.61	50	1500	5.28	< 10	1	0.02	< 10	9.47
Method Blank	< 5																							
Method Blank		< 0.2	< 0.5	< 1	< 5	< 1	< 1	< 2	< 2	< 0.01	< 2	< 10	< 10	< 0.5	< 2	< 0.01	< 1	< 1	< 0.01	< 10	< 1	< 0.01	< 10	< 0.01
Method Blank		< 0.2	< 0.5	< 1	< 5	< 1	< 1	< 2	< 2	< 0.01	< 2	< 10	< 10	< 0.5	< 2	< 0.01	< 1	< 1	< 0.01	< 10	< 1	< 0.01	< 10	< 0.01

Report:

Quality Control															
Analyte Symbol	Na	Р	S	Sb	Sc	Sr	Ti	Te	ті	U	V	w	Y	Zr	
Unit Symbol	%	%	%	ppm	ppm	ppm	%	ppm							
Detection Limit	0.001	0.001	0.01	2	1	1	0.01	1	2	10	1	10	1	1	
Analysis Method	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	
GXR-1 Meas	0.052	0.042	0.19	88	1	175		11	< 2	28	72	160	23	13	
GXR-1 Cert	0.0520	0.0650	0.257	122	1.58	275		13.0	0.390	34.9	80.0	164	32.0	38.0	
GXR-4 Meas	0.126	0.124	1.69	7	8	68		< 1	3	< 10	78	15	12	10	
GXR-4 Cert	0.564	0.120	1.77	4.80	7.70	221		0.970	3.20	6.20	87.0	30.8	14.0	186	
GXR-6 Meas	0.087	0.034	0.01	5	26	29		< 1	< 2	< 10	174	< 10	7	13	
GXR-6 Cert	0.104	0.0350	0.0160	3.60	27.6	35.0		0.0180	2.20	1.54	186	1.90	14.0	110	
SAR-M (U.S.G.S.) Meas	0.039	0.066		6	4	31	0.06	< 1	< 2	< 10	37	< 10	22		
SAR-M (U.S.G.S.) Cert	1.140	0.070		6.00	7.83	151.0	2.7	0.96	2.88	3.57	67.20	9.78	28.00		
OREAS 13b (4-Acid) Meas			1.07												
OREAS 13b (4-Acid) Cert			1.20												
999015 Orig	0.121	0.071	0.70	< 2	3	67	< 0.01	2	< 2	< 10	12	< 10	5	1	
999015 Dup	0.120	0.071	0.69	< 2	3	66	< 0.01	4	< 2	< 10	12	< 10	5	1	
999019 Orig															
999019 Dup															
999029 Orig	0.010	0.010	< 0.01	6	17	106	< 0.01	2	3	< 10	93	< 10	1	2	
999029 Dup	0.010	0.010	< 0.01	7	18	105	< 0.01	4	3	< 10	93	< 10	1	2	
999033 Orig	0.012	0.005	0.07	5	16	162	< 0.01	< 1	3	< 10	85	< 10	3	2	
999033 Split	0.011	0.006	0.08	5	17	177	< 0.01	1	< 2	< 10	88	< 10	3	2	
Method Blank															
Method Blank	0.007	< 0.001	< 0.01	< 2	< 1	< 1	< 0.01	< 1	< 2	< 10	< 1	< 10	< 1	< 1	
Method Blank	0.007	< 0.001	< 0.01	< 2	< 1	< 1	< 0.01	< 1	< 2	< 10	< 1	< 10	< 1	< 1	



Innovative Technologies

Date Submitted:22-Oct-12Invoice No.:A12-11723Invoice Date:07-Nov-12Your Reference:South Timmins

Fletcher Nickel 141 Adelaide St, West, Suite #1000 Toronto Ontario M5H 3L5 Canada

ATTN: Joerg Kleinboeck

# CERTIFICATE OF ANALYSIS

44 Rock samples were submitted for analysis.

The following analytical packages were requested:

REPORT A12-11723

Code 1A2-Timmins Au - Fire Assay AA Code 1E3-Tbay Aqua Regia ICP(AQUAGEO)

This report may be reproduced without our consent. If only selected portions of the report are reproduced, permission must be obtained. If no instructions were given at time of sample submittal regarding excess material, it will be discarded within 90 days of this report. Our liability is limited solely to the analytical cost of these analyses. Test results are representative only of material submitted for analysis.

Notes:

If value exceeds upper limit we recommend reassay by fire assay gravimetric-Code 1A3 Values which exceed the upper limit should be assayed for accurate numbers.

Emmanuel Eseme , Ph.D. Quality Control

SCC Accredited

ACTIVATION LABORATORIES LTD.

								•••••																
Analyte Symbol	Au	Ag	Cd	Cu	Mn	Mo	Ni	Pb	Zn	AI	As	В	Ba	Be	Bi	Ca	Co	Cr	Fe	Ga	Hg	К	La	Mg
Unit Symbol	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	%
Detection Limit	5	0.2	0.5	1	5	1	1	2	2	0.01	2	10	10	0.5	2	0.01	1	1	0.01	10	1	0.01	10	0.01
Analysis Method	FA-AA	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP
999034	< 5	< 0.2	< 0.5	6	174	< 1	4	4	21	0.77	< 2	< 10	190	< 0.5	< 2	0.51	4	2	1.32	< 10	< 1	0.39	29	0.22
999035	< 5	< 0.2	0.6	11	1050	< 1	13	< 2	121	2.20	< 2	< 10	98	< 0.5	< 2	0.33	6	35	4.68	< 10	< 1	0.31	16	1.10
999036	57	0.4	0.7	20	404	< 1	2	4	17	0.16	5	< 10	29	< 0.5	< 2	0.06	< 1	4	11.2	< 10	< 1	0.08	< 10	0.14
999037	27	< 0.2	0.5	40	938	< 1	808	< 2	41	1.74	< 2	< 10	22	< 0.5	< 2	5.06	64	944	5.52	< 10	< 1	0.14	< 10	7.80
999038	7	< 0.2	0.9	33	1280	< 1	808	3	50	1.84	< 2	< 10	41	< 0.5	2	5.45	51	1140	4.95	< 10	< 1	0.08	< 10	6.88
999039	47	0.6	1.8	1020	5720	5	34	5	102	1.64	< 2	< 10	12	< 0.5	4	3.17	16	121	14.4	< 10	< 1	0.02	< 10	2.47
999040	< 5	< 0.2	< 0.5	33	1740	< 1	1090	< 2	23	1.80	< 2	< 10	27	< 0.5	< 2	5.04	51	873	5.19	< 10	< 1	0.08	< 10	4.67
999041	617	0.3	< 0.5	15	372	1	10	3	34	0.50	< 2	< 10	29	< 0.5	8	0.65	6	7	1.89	< 10	< 1	0.23	43	0.27
999042	40	0.3	< 0.5	3	32	33	3	5	12	0.03	15	< 10	13	< 0.5	3	< 0.01	2	2	1.25	< 10	< 1	0.04	< 10	< 0.01
999043	< 5	< 0.2	1.1	41	978	< 1	852	5	56	2.44	< 2	< 10	30	< 0.5	< 2	3.56	58	1360	5.92	< 10	< 1	0.08	< 10	7.43
999044	< 5	< 0.2	0.6	14	842	< 1	1040	< 2	42	1.60	3	< 10	29	< 0.5	< 2	2.14	59	1130	5.20	< 10	< 1	0.08	< 10	9.56
999045	7	< 0.2	0.6	64	677	< 1	116	< 2	56	2.17	< 2	< 10	16	0.7	< 2	2.69	34	40	4.68	< 10	< 1	0.44	46	3.47
999046	< 5	< 0.2	< 0.5	11	741	< 1	1140	3	18	1.85	< 2	< 10	21	< 0.5	< 2	2.11	57	1390	5.22	< 10	< 1	0.03	< 10	10.2
999047	11	< 0.2	0.5	153	1410	< 1	315	< 2	78	2.65	< 2	< 10	136	< 0.5	< 2	4.68	55	57	6.29	< 10	< 1	< 0.01	< 10	5.91
999048	17	0.3	0.8	52	966	< 1	712	3	41	2.11	< 2	< 10	18	< 0.5	< 2	4.61	53	1080	5.40	< 10	< 1	0.07	< 10	8.06
999049 999050	< 5 < 5	< 0.2	0.8 0.7	37	878 954	< 1 < 1	718 1120	< 2 < 2	48 22	2.23 1.38	< 2	< 10 < 10	25	< 0.5 < 0.5	< 2 < 2	3.66	50 50	1210 1000	5.82 4.06	< 10 < 10	<1 <1	0.07 < 0.01	< 10	8.15 11.3
999050		< 0.2 < 0.2	0.7	3	954 2140	< 1	1120 322	< 2	22	0.71	< 2 < 2	< 10 < 10	68 178	< 0.5 < 0.5	< 2	3.28 7.49	50 20	417	4.06 3.31	< 10 < 10		< 0.01 0.02	< 10 < 10	6.26
999051	< 5 < 5	< 0.2 < 0.2	0.9	7 31	2140 1310	< 1	322 791	< 2	38	2.16	< 2	< 10 < 10	34	< 0.5	< 2	7.49 5.14	20 45	1090	4.56	< 10 < 10	< 1 < 1	< 0.02	< 10 < 10	6.26 8.00
999052	< 5 10	< 0.2	0.9	15	689	< 1 6	8	< 2	30 11	0.35	< 2	< 10 < 10	52	< 0.5	< 2	0.32	45 < 1	1090	9.03	< 10 < 10	< 1	0.09	< 10 < 10	0.53
999054	< 5	< 0.2	< 0.5	120	1170	< 1	96	5	73	0.69	< 2	< 10	54	0.7	< 2	3.64	35	68	5.97	< 10	< 1	0.41	32	2.67
999055	< 5	< 0.2	0.6	49	898	< 1	991	7	45	2.40	< 2	< 10	21	< 0.5	< 2	3.81	50	1600	4.83	< 10	< 1	0.03	< 10	7.87
999056	79	1.1	1.1	7	2450	31	638	24	47	0.30	< 2	< 10	23	< 0.5	8	7.79	38	188	5.19	< 10	< 1	0.21	< 10	6.46
999057	< 5	< 0.2	< 0.5	3	344	5	47	2	9	0.04	< 2	< 10	25	< 0.5	< 2	1.12	3	26	0.70	< 10	< 1	0.03	< 10	0.61
999058	< 5	< 0.2	0.5	2	991	< 1	849	3	34	1.16	< 2	< 10	37	< 0.5	< 2	5.00	46	819	4.45	< 10	< 1	0.12	< 10	8.16
999059	8	< 0.2	< 0.5	19	645	2	36	6	25	0.24	< 2	< 10	32	< 0.5	< 2	2.24	7	7	2.25	< 10	< 1	0.08	< 10	1.28
999060	< 5	< 0.2	< 0.5	90	1000	< 1	33	5	47	0.50	< 2	< 10	188	1.1	< 2	4.29	23	96	5.32	< 10	< 1	0.34	31	3.18
999061	< 5	1.0	< 0.5	13	589	2	122	16	18	0.35	< 2	< 10	26	< 0.5	41	2.02	16	137	1.82	< 10	< 1	0.16	< 10	1.69
999062	< 5	< 0.2	< 0.5	10	1030	< 1	248	5	70	1.00	< 2	< 10	210	< 0.5	< 2	4.22	28	205	4.77	< 10	< 1	0.39	38	4.65
999063	< 5	0.2	< 0.5	7	942	< 1	166	3	42	1.07	< 2	< 10	41	< 0.5	< 2	3.60	25	213	3.53	< 10	< 1	0.17	14	3.64
999064	122	0.4	0.5	59	774	42	24	4	17	0.38	< 2	< 10	27	< 0.5	< 2	1.66	48	10	4.86	< 10	< 1	0.15	< 10	0.97
999065	30	1.5	< 0.5	61	460	< 1	10	5	18	0.75	< 2	< 10	16	< 0.5	3	1.42	6	6	2.34	< 10	< 1	0.41	23	0.72
999066	< 5	< 0.2	< 0.5	22	715	< 1	968	< 2	15	0.71	< 2	< 10	35	< 0.5	< 2	2.33	55	545	4.75	< 10	< 1	0.17	< 10	9.95
999067	7	< 0.2	< 0.5	7	188	1	9	3	13	0.96	< 2	< 10	27	< 0.5	< 2	0.50	7	10	1.54	< 10	< 1	0.49	31	0.28
999068	< 5	< 0.2	0.9	79	1510	< 1	72	< 2	85	2.31	< 2	< 10	32	< 0.5	< 2	3.35	32	57	9.31	< 10	< 1	0.06	< 10	1.93
999069	99	< 0.2	< 0.5	17	283	< 1	17	< 2	10	0.87	< 2	< 10	18	< 0.5	< 2	2.27	15	6	2.63	< 10	< 1	0.52	38	1.07
999070	13	< 0.2	1.0	120	760	3	949	53	106	0.59	< 2	< 10	33	< 0.5	< 2	1.67	55	458	5.31	< 10	< 1	0.35	< 10	8.45
999071	< 5	< 0.2	0.8	135	839	< 1	579	6	41	0.56	< 2	< 10	25	< 0.5	< 2	3.11	44	446	4.64	< 10	< 1	0.42	< 10	7.74
999072	100	0.7	< 0.5	137	448	28	316	3	31	0.30	< 2	< 10	46	< 0.5	< 2	1.66	21	151	2.76	< 10	< 1	0.20	< 10	2.48
999073	94	0.4	< 0.5	270	924	60	853	< 2	66	0.89	< 2	< 10	26	< 0.5	< 2	3.01	60	462	6.33	< 10	< 1	0.52	< 10	6.34
999074	< 5	< 0.2	< 0.5	42	910	< 1	1250	< 2	38	1.88	< 2	< 10	32	< 0.5	< 2	3.53	53	1250	4.79	< 10	< 1	0.04	< 10	8.10
999075	< 5	< 0.2	0.9	6	1290	< 1	861	2	23	0.54	< 2	< 10	40	< 0.5	< 2	4.49	47	291	4.71	< 10	< 1	0.15	< 10	9.52
999076	< 5	2.0	0.6	17	1140	< 1	708	3	32	1.63	< 2	< 10	54	0.7	< 2	3.86	43	981	4.30	< 10	< 1	0.25	< 10	5.06
999077	132	1.5	< 0.5	190	218	17	117	< 2	13	0.15	< 2	< 10	36	< 0.5	10	0.76	26	85	1.91	< 10	< 1	0.09	< 10	0.76

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Analyte Symbol	Na	Р	S	Sb	Sc	Sr	Ti	Te	TI	U	V	W	Y	Zr	
Unit Symbol	%	%	%	ppm	ppm	ppm	%	ppm							
Detection Limit	0.001	0.001	0.01	2	1	1	0.01	1	2	10	1	10	1	1	
Analysis Method	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	
999034	0.093	0.062	0.33	< 2	1	36	< 0.01	< 1	< 2	< 10	9	< 10	3	2	
999035	0.136	0.062	0.13	< 2	8	23	0.20	< 1	< 2	< 10	73	< 10	6	13	
999036	0.025	0.013	0.45	5	1	6	0.03	4	< 2	< 10	15	< 10	1	6	
999037	0.021	0.010	0.55	6	13	100	< 0.01	14	< 2	< 10	48	< 10	2	2	
999038	0.016	0.011	0.38	7	13	59	< 0.01	< 1	< 2	< 10	56	< 10	2	2	
999039	0.022	0.064	4.05	5	13	113	< 0.01	2	< 2	< 10	92	< 10	4	35	
999040	0.018	0.005	0.10	5	12	53	< 0.01	3	< 2	< 10	71	< 10	3	2	
999041	0.123	0.089	0.81	< 2	1	30	< 0.01	6	< 2	< 10	9	< 10	4	3	
999042	0.017	0.001	0.32	< 2	< 1	< 1	< 0.01	< 1	< 2	< 10	1	< 10	< 1	1	
999043	0.017	0.010	0.05	5	16	55	< 0.01	< 1	< 2	< 10	77	< 10	1	3	
999044	0.017	0.007	0.03	7	15	60	< 0.01	< 1	< 2	< 10	60	< 10	2	2	
999045	0.039	0.162	1.02	< 2	5	140	0.01	8	< 2	< 10	46	< 10	11	3	
999046	0.016	0.007	< 0.01	7	14	54	< 0.01	< 1	< 2	< 10	68	< 10	1	2	
999047	0.018	0.010	0.04	2	18	108	< 0.01	< 1	< 2	< 10	101	< 10	4	2	
999048	0.017	0.008	0.27	6	14	57	< 0.01	4	< 2	< 10	61	< 10	2	2	
999049	0.016	0.011	0.13	7	16	43	< 0.01	< 1	< 2	< 10	70	< 10	2	2	
999050	0.016	0.007	< 0.01	4	10	135	< 0.01	4	< 2	< 10	52	< 10	2	1	
999051	0.020	0.005	0.08	3	6	288	< 0.01	7	< 2	< 10	30	< 10	2	1	
999052	0.016	0.009	< 0.01	5	13	135	< 0.01	< 1	< 2	< 10	82	< 10	3	2	
999053	0.030	0.008	0.42	5	< 1	5	0.01	< 1	< 2	< 10	27	< 10	2	6	
999054	0.070	0.378	0.34	< 2	17	169	0.02	< 1	< 2	< 10	88	< 10	16	2	
999055	0.015	0.007	0.02	7	17	112	< 0.01	< 1	< 2	< 10	89	< 10	2	2	
999056	0.022	< 0.001	2.75	3	10	529	< 0.01	3	< 2	< 10	24	< 10	7	3	
999057	0.030	< 0.001	0.24	< 2	< 1	67	< 0.01	< 1	< 2	< 10	3	< 10	< 1	< 1	
999058	0.016	0.006	0.01	3	11	163	< 0.01	4	< 2	< 10	36	< 10	2	2	
999059	0.115	0.031	1.25	< 2	3	93	< 0.01	< 1	< 2	< 10	5	< 10	3	7	
999060	0.056	0.291	0.12	< 2	16	210	0.02	< 1	< 2	< 10	76	< 10	15	2	
999061	0.040	0.009	0.53	< 2	4	126	0.01	11	< 2	< 10	25	< 10	2	7	
999062	0.043	0.182	0.24	< 2	16	176	< 0.01	< 1	< 2	< 10	64	< 10	9	2	
999063	0.050	0.122	0.76	< 2	12	163	0.02	< 1	< 2	< 10	87	< 10	6	2	
999064	0.069	0.051	2.87	< 2	9	55	< 0.01	2	< 2	< 10	28	< 10	3	6	
999065	0.076	0.102	1.62	5	2	53	< 0.01	5	< 2	< 10	14	< 10	4	2	
999066	0.017	0.005	0.31	5	13	71	< 0.01	< 1	< 2	< 10	32	< 10	1	2	
999067	0.138	0.083	0.64	< 2	1	30	< 0.01	< 1	< 2	< 10	15	< 10	3	2	
999068	0.054	0.035	0.12	4	28	37	< 0.01	< 1	< 2	< 10	228	< 10	3	4	
999069	0.085	0.236	1.62	< 2	4	112	0.01	1	< 2	< 10	30	< 10	8	2	
999070	0.019	0.004	0.38	3	12	60	< 0.01	< 1	< 2	< 10	27	< 10	1	3	
999071	0.019	0.005	0.16	4	12	56	0.01	< 1	< 2	< 10	27	< 10	1	3	
999072	0.028	< 0.001	1.16	< 2	4	79	< 0.01	4	< 2	< 10	19	< 10	< 1	2	
999073	0.019	0.001	1.73	3	11	136	0.01	5	< 2	< 10	45	< 10	2	5	
999074	0.027	0.007	< 0.01	5	15	70	< 0.01	< 1	< 2	< 10	70	< 10	1	2	
999075	0.021	0.006	0.27	3	10	119	< 0.01	< 1	< 2	< 10	24	< 10	2	2	
999076	0.021	0.004	1.04	5	12	136	0.02	< 1	< 2	< 10	76	< 10	2	2	
999077	0.032	< 0.001	1.10	< 2	2	44	< 0.01	6	< 2	< 10	11	< 10	< 1	1	

Quality Control																								
Analyte Symbol	Au	Ag	Cd	Cu	Mn	Mo	Ni	Pb	Zn	AI	As	в	Ba	Be	Bi	Ca	Co	Cr	Fe	Ga	Hg	к	La	Mg
Unit Symbol	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	%
Detection Limit	5	0.2	0.5	1	5	1	1	2	2	0.01	2	10	10	0.5	2	0.01	1	1	0.01	10	1	0.01	10	0.01
Analysis Method	FA-AA	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP
GXR-1 Meas		25.7	3.4	1010	791	14	21	607	625	0.31	349	< 10	201	0.7	1430	0.72	- 1	7	20.9	< 10	3	0.03	< 10	0.13
GXR-1 Cert		31.0	3.30	1110	852	14	41.0	730	760	3.52	427	15.0	750	1.22	1430	0.960	< 1 8.20	12.0	20.5	13.8	3.90	0.050	7.50	0.13
GXR-4 Meas		3.3	< 0.5	6200	144	309	38	41	63	2.60	96	< 10	18	1.3	19	0.89	12	55	2.98	< 10	< 1	1.64	45	1.68
GXR-4 Cert		4.00	0.860	6520	155	310	42.0	52.0	73.0	7.20	98.0	4.50	1640	1.90	19.0	1.01	14.6	64.0	3.09	20.0	0.110	4.01	64.5	1.66
GXR-6 Meas		< 0.2	< 0.5	65	1080	1	22	89	118	7.08	200	< 10	949	0.9	< 2	0.17	11	87	5.66	10	< 1	1.17	12	0.43
GXR-6 Cert		1.30	1.00	66.0	1010	2.40	27.0	101	118	17.7	330	9.80	1300	1.40	0.290	0.180	13.8	96.0	5.58	35.0	0.0680	1.87	13.9	0.609
SAR-M (U.S.G.S.) Meas		3.1	5.7	354	4930	13	42	1020	980	1.23	35		196	1.1	< 2	0.32	10	96	2.97	< 10		0.31	49	0.39
SAR-M (U.S.G.S.) Cert		3.64	5.27	331	5220	13.10	41.50	982	930.0	6.30	38.8		801	2.20	1.94	0.61	10.70	79.7	2.99	16.8		2.94	57.4	0.50
OREAS 13b (4-Acid) Meas		0.7		2250		8	2400		52		47						44	456						
OREAS 13b (4-Acid) Cert		0.86		2300.000		9.0	2247		133		57						75	8650						
OxJ95 Meas	2350																							
OxJ95 Cert	2331.000																							
999043 Orig	< 5																							
999043 Dup	< 5																							
999046 Orig		< 0.2	1.0	11	747	< 1	1140	2	18	1.87	< 2	< 10	21	< 0.5	< 2	2.12	57	1400	5.21	< 10	< 1	0.03	< 10	10.2
999046 Dup		< 0.2	< 0.5	11	735	< 1	1130	3	18	1.83	< 2	< 10	20	< 0.5	< 2	2.10	58	1380	5.22	< 10	< 1	0.03	< 10	10.2
999053 Orig	10																							
999053 Dup	9								10	0.40		10	475						5.05	10		0.04		0.40
999060 Orig 999060 Dup		< 0.2 < 0.2	0.6 < 0.5	89 92	980 1020	<1 <1	32 34	4	46 47	0.49 0.50	< 2 < 2	< 10 < 10	175 200	1.1 1.1	< 2 < 2	4.21 4.37	23 23	96 97	5.25 5.39	< 10 < 10	< 1 < 1	0.34 0.34	30 32	3.13 3.24
999063 Orig	< 5	< 0.2 0.2	< 0.5	92	942	< 1	166	3	47	1.07	< 2	< 10	200 41	< 0.5	< 2	3.60	25	213	3.53	< 10	< 1	0.34	32 14	3.64
999063 Split	< 5	< 0.2	< 0.5	7	956	< 1	168	3	41	1.08	< 2	< 10	50	< 0.5	< 2	3.66	25	216	3.63	< 10	< 1	0.17	15	3.71
999063 Orig	< 5	4 0. <u>2</u>	4 0.0		000	• • •	100	0		1.00		4.10	00	4 0.0	12	0.00	20	210	0.00	4.10		0.11	10	0.11
999063 Dup	< 5																							
999073 Orig		0.4	< 0.5	274	928	60	859	< 2	66	0.90	< 2	< 10	22	< 0.5	< 2	3.03	61	470	6.28	< 10	< 1	0.53	< 10	6.40
999073 Dup		0.4	1.4	266	920	60	846	8	65	0.87	< 2	< 10	29	< 0.5	< 2	2.99	58	455	6.38	< 10	< 1	0.51	< 10	6.28
999077 Orig	122																							
999077 Dup	143																							
Method Blank	< 5																							
Method Blank	< 5																							
Method Blank	< 5																							
Method Blank		< 0.2	< 0.5	< 1	< 5	< 1	< 1	< 2	< 2	< 0.01	< 2	< 10	< 10	< 0.5	< 2	< 0.01	< 1	< 1	< 0.01	< 10	< 1	< 0.01	< 10	< 0.01
Method Blank		< 0.2	< 0.5	< 1	< 5	< 1	< 1	< 2	< 2	< 0.01	< 2	< 10	< 10	< 0.5	< 2	< 0.01	< 1	< 1	< 0.01	< 10	< 1	< 0.01	< 10	< 0.01
Method Blank		< 0.2	< 0.5	< 1	< 5	< 1	< 1	< 2	< 2	< 0.01	< 2	< 10	< 10	< 0.5	< 2	< 0.01	< 1	< 1	< 0.01	< 10	< 1	< 0.01	< 10	< 0.01
Method Blank		< 0.2	< 0.5	< 1	< 5	< 1	< 1	< 2	< 2	< 0.01	< 2	< 10	< 10	< 0.5	< 2	< 0.01	< 1	< 1	< 0.01	< 10	< 1	< 0.01	< 10	< 0.01
Method Blank Method Blank		< 0.2 < 0.2	< 0.5 < 0.5	< 1 < 1	< 5 < 5	< 1 < 1	< 1 < 1	< 2 < 2	< 2 < 2	< 0.01 < 0.01	< 2 < 2	< 10 < 10	< 10 < 10	< 0.5 < 0.5	< 2	< 0.01 < 0.01	< 1	< 1	< 0.01 < 0.01	< 10 < 10	< 1	< 0.01 < 0.01	< 10	< 0.01 < 0.01
Method Blank		< 0.2	< 0.5	< 1	< 5	< 1	< 1	< 2	< 2	< 0.01	< 2	< 10 < 10	< 10 < 10	< 0.5	< 2 < 2	< 0.01	< 1 < 1	< 1 < 1	< 0.01	< 10 < 10	< 1 < 1	< 0.01	< 10 < 10	< 0.01
Method Blank		< 0.2	< 0.5	< 1	< 5 < 5	< 1	< 1	< 2	< 2	< 0.01	< 2	< 10 < 10	< 10 < 10	< 0.5	< 2	< 0.01	< 1	< 1	< 0.01	< 10 < 10	< 1	< 0.01	< 10 < 10	< 0.01
Method Blank		< 0.2	< 0.5	< 1	< 5	< 1	< 1	< 2	< 2	< 0.01	< 2	< 10	< 10	< 0.5	< 2	< 0.01	< 1	< 1	< 0.01	< 10	< 1	< 0.01	< 10	< 0.01
Motilu Dialik		< 0.Z	< 0.0		< 5			×2	×2	< 0.01	×2	< 10	< 10	< 0.5	× 2	< 0.01			< 0.01	< 10		< 0.01	< 10	< 0.01

Quality Control														
Analyte Symbol	Na	Р	S	Sb	Sc	Sr	Ti	Te	ті	U	v	w	Y	Zr
Unit Symbol	%	%	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	0.001	0.001	0.01	2	1	pp 1	0.01	pp 1	2	10	1	10	1	2 pp 1
	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP
Analysis Method	ANTIOF		ANTIOF	ANTIOF			ANTIOF	ANTIOF	ANTIOF		ANTIOF			711-101-
GXR-1 Meas	0.046	0.041	0.17	83	1	168		12	< 2	28	71	137	23	14
GXR-1 Cert	0.0520	0.0650	0.257	122	1.58	275		13.0	0.390	34.9	80.0	164	32.0	38.0
GXR-4 Meas	0.135	0.126	1.66	3	7	67		< 1	< 2	< 10	80	11	11	9
GXR-4 Cert	0.564	0.120	1.77	4.80	7.70	221		0.970	3.20	6.20	87.0	30.8	14.0	186
GXR-6 Meas	0.088	0.034	0.01	4	28	34		< 1	< 2	< 10	166	< 10	7	7
GXR-6 Cert	0.104	0.0350	0.0160	3.60	27.6	35.0		0.0180	2.20	1.54	186	1.90	14.0	110
SAR-M (U.S.G.S.) Meas	0.040	0.069		4	4	31	0.05	1	< 2	< 10	37	< 10	21	
SAR-M (U.S.G.S.) Cert	1.140	0.070		6.00	7.83	151.0	2.7	0.96	2.88	3.57	67.20	9.78	28.00	
OREAS 13b (4-Acid) Meas			1.07											
OREAS 13b (4-Acid) Cert			1.20											
OxJ95 Meas														
OxJ95 Cert														
999043 Orig														
999043 Dup														
999046 Orig	0.017	0.007	< 0.01	7	14	53	< 0.01	< 1	< 2	< 10	68	< 10	1	2
999046 Dup	0.015	0.007	< 0.01	8	14	54	< 0.01	3	< 2	< 10	67	< 10	1	2
999053 Orig														
999053 Dup														
999060 Orig	0.056	0.287	0.12	< 2	15	205	0.02	1	< 2	< 10	75	< 10	15	2
999060 Dup	0.056	0.296	0.12	< 2	16	215	0.02	< 1	< 2	< 10	77	< 10	15	2
999063 Orig	0.050	0.122	0.76	< 2	12	163	0.02	< 1	< 2	< 10	87	< 10	6	2
999063 Split	0.052	0.124	0.78	3	12	166	0.02	< 1	< 2	< 10	87	< 10	6	2
999063 Orig														
999063 Dup														
999073 Orig	0.020	0.002	1.75	4	11	138	0.01	8	< 2	< 10	45	< 10	2	5
999073 Dup	0.018	0.001	1.70	2	11	134	0.01	3	< 2	< 10	44	< 10	2	5
999077 Orig														
999077 Dup														
Method Blank														
Method Blank														
Method Blank														
Method Blank	0.007	< 0.001	< 0.01	< 2	< 1	< 1	< 0.01	< 1	< 2	< 10	< 1	< 10	< 1	< 1
Method Blank	0.008	< 0.001	< 0.01	< 2	< 1	< 1	< 0.01	< 1	< 2	< 10	< 1	< 10	< 1	< 1
Method Blank	0.008	< 0.001	< 0.01	< 2	< 1	< 1	< 0.01	1	< 2	< 10	< 1	< 10	< 1	< 1
Method Blank	0.009	< 0.001	< 0.01	< 2	< 1	< 1	< 0.01	< 1	< 2	< 10	< 1	< 10	< 1	< 1
Method Blank	0.009	< 0.001	< 0.01	< 2	< 1	< 1	< 0.01	< 1	< 2	< 10	< 1	< 10	< 1	< 1
Method Blank	0.007	< 0.001	< 0.01	< 2	< 1	< 1	< 0.01	< 1	< 2	< 10	< 1	< 10	< 1	< 1
Method Blank	0.013	< 0.001	< 0.01	< 2	< 1	< 1	< 0.01	< 1	< 2	< 10	< 1	< 10	< 1	< 1
Method Blank	0.015	< 0.001	< 0.01	< 2	< 1	< 1	< 0.01	< 1	< 2	< 10	< 1	< 10	< 1	< 1
Method Blank	0.013	< 0.001	< 0.01	< 2	< 1	< 1	< 0.01	< 1	< 2	< 10	< 1	< 10	< 1	< 1
				-					-	-		-		

### Maps

(Back Pocket)

