**Division of Geological & Geophysical Surveys**

**PUBLIC-DATA FILE 93-14**

# LAND SELECTION UNIT 14 (GOODNEWS BAY QUADRANGLE): GEOLOGIC SUMMARY, REFERENCES, DGGS SAMPLE LOCATIONS, GEOCHEMICAL AND MAJOR OXIDE DATA

by

DGGS Staff

June 1993

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STATE OF ALASKA
DEPARTMENT OF NATURAL RESOURCES
Division of Geological & Geophysical Surveys
794 University Avenue, Suite 200
Fairbanks, Alaska 99709-3645

# LAND SELECTION UNIT 14 (GOODNEWS BAY QUADRANGLE): GEOLOGIC SUMMARY, REFERENCES, DGGS SAMPLE LOCATIONS, GEOCHEMICAL AND MAJOR OXIDE DATA

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Evaluation unit 14 is in the Goodnews Bay Quadrangle (fig. 1). This publication about unit 14 includes a summary of the geology, tables listing major oxide and trace element data acquired by DGGS for the land selection project (tables 1 and 2), a compositional plot of the major oxide plutonic data (fig. 2), a section describing the plutonic gold discriminant, and a sheet showing sample locations (sheet 1). The potential for mineral deposits of the area, based on geological and geochemical data and estimated by a Monte Carlo simulation process, is outlined in an summary by DGGS staff (in preparation).

Assessment of evaluation unit 14 (fig. 1) was accomplished using previous publications in addition to acquiring our own field data base during June of 1992. Generalized geologic maps of the area have been published by Hoare and Coonrad (1978) and Box (1985). The aeromagnetic interpretation available on the area was by Griscom (1978). Geochemical data has been released by Coonrad and others (1978a, b), Hessin and others (1978a-j), Jones and Kilburn (1992), and Kilburn and Jones (1992). Reports describing the economic geology of the Goodnew Bay region have been published by Barker and Lamal (1986), Mertie (1969, 1976), Southworth (1986), Southworth and Foley (1986), and Frost (1990).

## GEOLOGIC SUMMARY

Unit 14 encompasses 327,000 acres in the southwestern part of the Goodnews Bay Quadrangle. The area is composed largely of sedimentary and mafic volcanic rocks of the Goodnews terrane interspersed with mountains composed of ultramafic and mafic plutonic rocks. Three granitic plutons intrude the volcanic and sedimentary rocks. A small portion near the northern area contains older, foliated metamorphic rocks of the Kilbuck terrane.

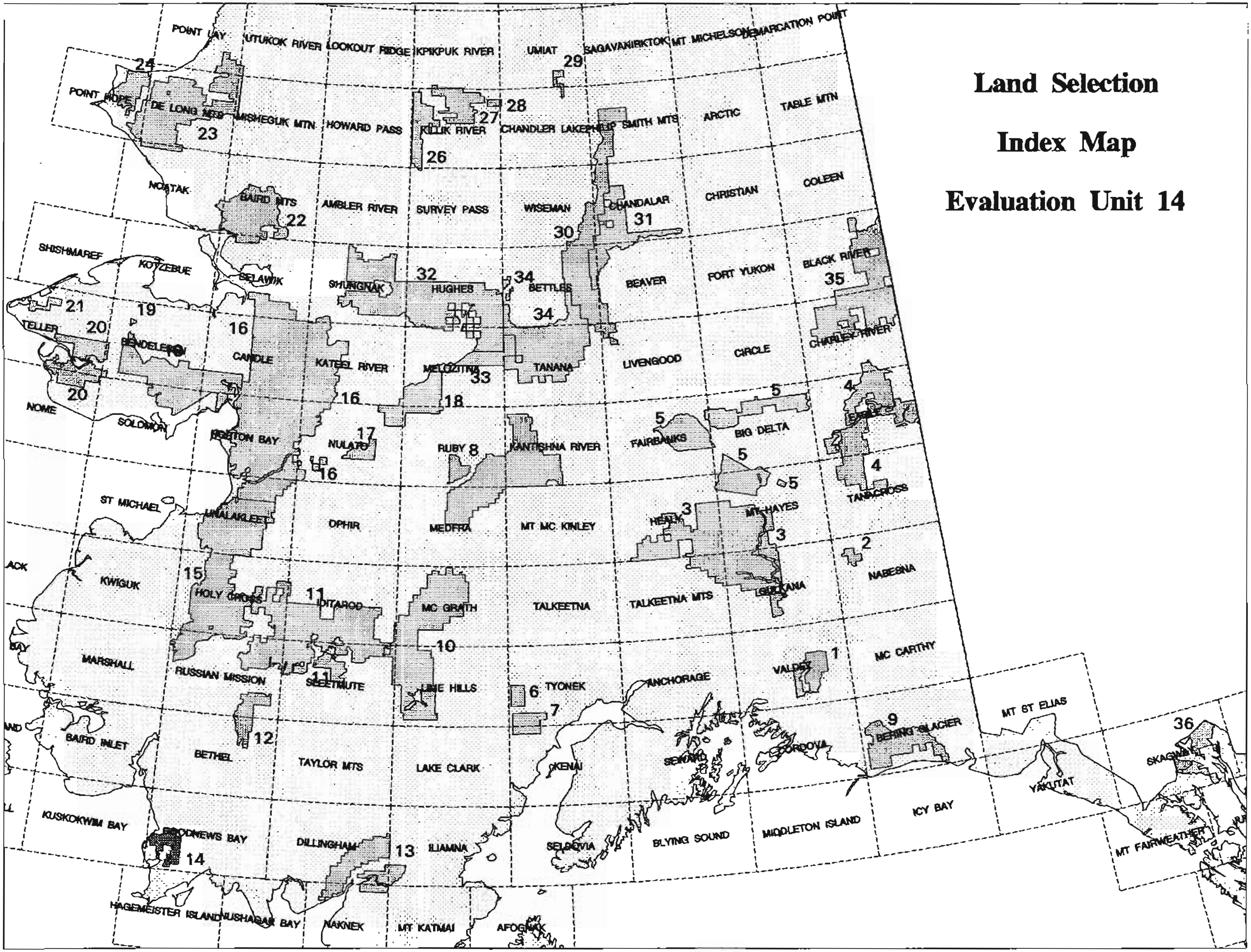
The Kilbuck terrane consists of very foliated metamorphic rocks of preCambrian age that are thought to be the oldest rocks in Alaska (2.1 billion years old; Box and others, 1990; Miller and others, 1991). The Kilbuck terrane exhibits an Early Proterozoic amphibolite-facies metamorphic and an Early Cretaceous greenschist-facies retrograde metamorphic event. The rocks include biotite-hornblende gneiss, garnetiferous amphibolite, quartz-mica schist, and marble.

The Goodnews terrane (largely consisting of rocks of the Gemuk Group) is composed of metabasalt, meta-andesite, schist, and lesser graywacke, slate, marble, chert, and limestone, and covers most of Unit 14. The rocks in this unit range from Early Ordovician(?) to Early Cretaceous (about 500 to 115 million years old). Metamorphism generally reached greenschist facies conditions.

The ultramafic and mafic bodies are composed of dunite, clinopyroxenite, and gabbroic rocks. All visible contacts of the bodies are faults. These rocks are probably ophiolitic - and hence represent either oceanic crust of some form or accumulations of material beneath an island arc. These mafic-ultramafic rocks are correlated with similar units of Jurassic age of southeast Alaska near Goodnews Bay and in the Ophir district.

The granitic plutonic rocks range from diorite to granodiorite in composition (fig. 2), and are all thought to be Cretaceous and/or Early Tertiary in age (about 135 to 40 million years old).

# Land Selection Index Map Evaluation Unit 14



Significant gold placer production is known to have occurred in several areas within Unit 14; notably at Snow Gulch, and Wattamuse, Butte, and KowKow Creeks. A small bucketline dredge--now in a state of disrepair--is present in Wattamuse Creek. Total production from the study area from 1916 to 1941 is estimated to be 29,700 oz (924 Kg) of gold and about 3,400 oz (105 Kg) of silver based on compilation of mint records. Also about 150 oz (5 Kg) of platinum were recovered from Snow Gulch. The chance for discovery of new placer gold resources is considered to be moderate in this area.

The potential for plutonic-related gold lode deposits is moderate to good. Two bodies, the Wattamuse and the Ikuktlitlig plutons, are dioritic to monzodioritic in composition, and are similar to plutonic rocks associated with gold in the Iditarod-Flat, Innoko and Vinasale district to the northeast of the area (Bundtzen and others, 1992). We found gold-bearing quartz veins that contain up to 0.45 oz/ton (15 g/tonne) gold in parts of the Wattamuse pluton, and are thought to be the source of placer gold in Wattamuse Creek.

Platinum group element and chromite deposits are potentially present in the ultramafic and mafic rocks in Unit 14. Platinum groups elements have been found associated with gold placers in the north-central part of Unit 14. However, no anomalous values of platinum or palladium were found in the rock samples taken in this survey and no significant chromite concentrations were found anywhere.

Rift-related polymetallic volcanogenic massive sulfide deposits (VMS) may be present in Unit 14. However, the likelihood is low that a VMS deposit of this type could be present in the Goodnews Bay terrane of Unit 14.

## PLUTONIC GOLD DISCRIMINANT SCORES

The discriminant scores presented in this report (table 1) are a reflection of how similar the sample rocks are to other plutonic systems which formed gold deposits around the world. The score is based on the discriminant functions developed by Newberry and Burns (1989) and discussed in detail by Burns and others (1991). The discriminant functions statistically determine the extent to which the composition of an unaltered sampled plutonic rock resembles major-oxide compositions of unaltered plutonic rocks associated with gold deposits worldwide.

The dicriminant score is a number between 0 and 100; a score of 100 indicates that the composition of the sample is indistinguishable from those of gold-associated plutons; a score of 0 indicates the opposite. The score is <u>not</u> directly proportional to the amount of gold present and does <u>not</u> indicate that there is gold is present at the sample site, but it is a good estimate of whether the sample belongs to a plutonic <u>system</u> that had the capability of depositing some gold.

Some important limitations which must be considered in the interpretation of the scores are:

1) Only analyses from relatively unaltered rocks can be used.
2) Rocks from porphyry Cu-Mo deposits (because of alteration) and aplites will both typically have a low discriminant score, even though they may be from systems that area related to gold.
3) Discriminant scores are not given for alkalic (nepheline-normative) rocks, but these rocks may be related to gold.
4). A small percentage of plutonic rocks may appear to be related to gold systems when they are not.
5) A large deeply eroded pluton is interpreted to be less likely to host gold than a small non-eroded pluton even if the deeply eroded pluton had a highly favorable score. The theory is that gold deposits appear to be concentrated in the country rock just above a pluton or in the uppermost part of a pluton, and the areal extent of plutonic exposure generally increases with depth of a given pluton.

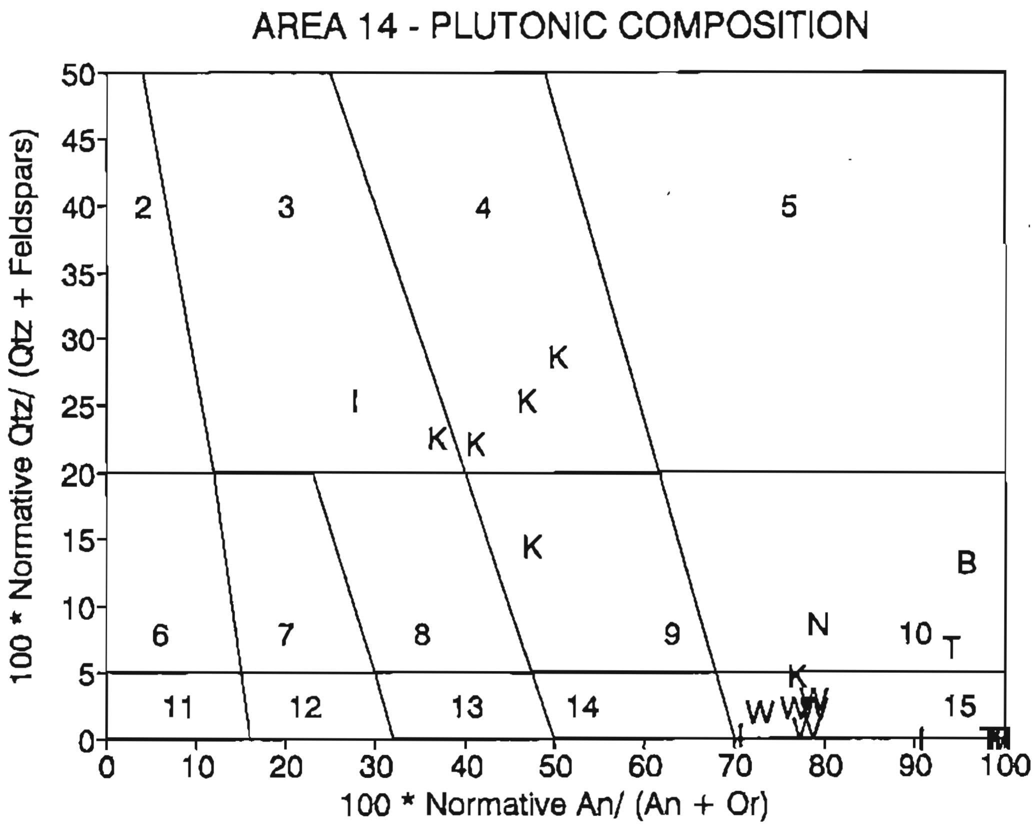



Figure 2: Streckeisen-Le Maitre (1979) diagram showing normative mineral compositions of plutonic rocks analyzed in evaluation unit 14. Axis abbreviations include An - anorthite, Or - orthoclase, Qtz-quartz. Rock names are: 2 - alkali granite; 3 - granite; 4 - granodiorite; 5 - tonalite; 6 - alkali quartz syenite; 7 - quartz syenite; 8 - quartz monzonite; 9 - quartz monzodiorite; 10 - quartz diorite; 11 - alkali syenite; 12 - syenite; 13 - monzonite; 14 - monzodiorite; 15 - diorite and gabbro. Symbols used include: T - Tatlignagpeke Mtn.; B - sill above Butte Creek; I - Ikuktlitlig pluton; K - Kisogle Mtn. pluton; M - Mitlak Mtn.; N - Twin Mtn.; and W - Wattamuse pluton.

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Table 1: Major oxide compositions and CIPW Normative minerals: see end of table for explanation

| SAMPLE | 92BT11A | 92BT11 | 92BT11H | 92BT13B | 92BT13C | 92BT13D | 92BT17 |
|---|---|---|---|---|---|---|---|
| LOCATION | WP | WP | WP | IP | IP | IP | TM |
| ROCK TYPE | Diorite | Diorite | Diorite | Rhyolite?-granite? | Dio/gab | Dio/gab | Felsic vx |
| CODE | W | W | W | ? | I | I | V |
| SIO2 | 54.5 | 51.9 | 51.3 | 66.9 | 46.7 | 52.1 | 65.3 |
| AL2O3 | 18.3 | 19.7 | 18.4 | 15.2 | 2.56 | 16.6 | 15.8 |
| FE2O3 | 1.2 | 1.7 | 1.6 | 1.0 | 2.5 | 1.1 | 1.6 |
| FEO | 5.5 | 6.0 | 6.2 | 2.6 | 10.4 | 7.0 | 1.5 |
| MGO | 3.84 | 3.94 | 3.95 | 1.36 | 21.5 | 5.3 | 2 |
| CAO | 7.45 | 8.12 | 7.49 | 2.16 | 13.6 | 8.47 | 2.98 |
| NA2O | 4.6 | 3.32 | 3.25 | 3.6 | 0.2 | 3.12 | 5.07 |
| K2O | 1.22 | 1.55 | 1.9 | 4.24 | 0.1 | 1.82 | 1.99 |
| MNO | 0.15 | 0.13 | 0.13 | 0.07 | 0.25 | 0.16 | 0.07 |
| P2O5 | 0.3 | 0.45 | 0.46 | 0.18 | 0.03 | 0.32 | 0.15 |
| TIO2 | 0.77 | 1.03 | 0.93 | 0.55 | 0.47 | 1.06 | 0.46 |
| LOI | 0.75 | 1.70 | 1.50 | 1.55 | 0.50 | 0.60 | 3.00 |
| SUM | 98.58 | 99.53 | 97.14 | 99.45 | 98.76 | 97.68 | 99.88 |
| CIPW MINERALS | | | | | | | |
| QTZ | 0.57 | 1.64 | 1.47 | 22.64 | 0.00 | 0.11 | 19.48 |
| COR | 0.00 | 0.00 | 0.00 | 1.22 | 0.00 | 0.00 | 0.25 |
| OR | 7.37 | 9.36 | 11.74 | 25.59 | 0.60 | 11.08 | 12.14 |
| AB | 39.78 | 28.71 | 28.75 | 31.11 | 1.72 | 27.19 | 44.28 |
| AN | 26.25 | 35.03 | 31.37 | 9.75 | 5.89 | 26.69 | 14.25 |
| DIOP | 7.84 | 2.58 | 3.57 | 0.00 | 50.06 | 11.85 | 0.00 |
| HYP | 14.21 | 17.10 | 17.67 | 6.66 | 10.46 | 18.55 | 6.00 |
| OL | 0.00 | 0.00 | 0.00 | 0.00 | 26.66 | 0.00 | 0.00 |
| MT | 1.78 | 2.51 | 2.47 | 1.54 | 3.63 | 1.69 | 2.35 |
| HEM | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| ILM | 1.50 | 2.00 | 1.85 | 1.07 | 0.91 | 2.07 | 0.90 |
| SPH | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RUT | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| AP | 0.71 | 1.07 | 1.11 | 0.43 | 0.07 | 0.76 | 0.36 |
| 100*An/(An+Or) | 78.1 | 78.9 | 72.8 | 27.6 | 90.8 | 70.7 | 54.0 |
| 100 * Qtz/(Qtz+An+Or+A b) | 0.8 | 2.2 | 2.0 | 25.4 | 0.0 | 0.2 | 21.6 |
| Discrimant Gold Score | 100.0 | 100.0 | 100.0 | 96.1 | 100.0 | 100.0 | n.a. |

Table 1: Major oxide compositions and CIPW Normative minerals: see end of table for explanation

| SAMPLE | 92BT27 | 92BT29 | 92BU10 | 92BU11 | 92BU17B | 92BU18 | 92BU2 |
|---|---|---|---|---|---|---|---|
| LOCATION | LR | LR | WP | WP | TAT | TAT | BC |
| ROCK TYPE | Qtz vein | Qtz vein | Diorite | Diorite | Gabbroic | Gabbroic | Qtz dio |
| CODE | | | W | W | T | T | N |
| SIO2 | 96.2 | 96.1 | 51.5 | 51.4 | 43.7 | 44.1 | 47.8 |
| AL2O3 | 0.78 | 0.38 | 18.5 | 18 | 17.3 | 18.1 | 11.3 |
| FE2O3 | 0.4 | 0.4 | 1.4 | 1.5 | 5.4 | 5.9 | 3.5 |
| FEO | 0.0 | 0.0 | 6.8 | 7.3 | 6.0 | 5.8 | 14.0 |
| MGO | 0.18 | 0.12 | 4.45 | 4.14 | 8.94 | 7.59 | 4.66 |
| CAO | 0.27 | 0.28 | 8.13 | 8.5 | 13.6 | 16.1 | 9.68 |
| NA2O | 0 | 0 | 3.02 | 3.08 | 1 | 0.72 | 1.97 |
| K2O | 0.16 | 0.07 | 1.65 | 1.41 | 0.1 | 0.06 | 0.16 |
| MNO | 0.01 | 0.03 | 0.15 | 0.17 | 0.17 | 0.15 | 0.28 |
| P2O5 | 0.02 | 0.02 | 0.46 | 0.56 | 0.04 | 0.06 | 0.27 |
| TIO2 | 0.17 | 0.10 | 1.17 | 1.14 | 0.68 | 0.80 | 3.27 |
| LOI | 0.85 | 0.80 | 1.50 | 0.90 | 2.15 | 0.40 | 1.15 |
| SUM | 99.04 | 98.32 | 98.70 | 98.10 | 99.12 | 99.74 | 98.00 |
| CIPW MINERALS | | | | | | | |
| QTZ | 96.44 | 97.51 | 1.63 | 2.11 | 0.00 | 0.00 | 6.16 |
| COR | 0.17 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| OR | 0.96 | 0.42 | 10.03 | 8.57 | 0.61 | 0.36 | 0.98 |
| AB | 0.00 | 0.00 | 26.29 | 26.81 | 8.73 | 6.13 | 17.21 |
| AN | 1.23 | 0.85 | 32.97 | 32.02 | 43.75 | 46.28 | 22.22 |
| DIOP | 0.00 | 0.16 | 4.47 | 6.29 | 20.37 | 26.87 | 21.45 |
| HYP | 0.46 | 0.23 | 19.18 | 18.39 | 11.55 | 7.89 | 19.75 |
| OL | 0.00 | 0.00 | 0.00 | 0.00 | 5.45 | 2.26 | 0.00 |
| MT | 0.00 | 0.00 | 2.04 | 2.24 | 8.13 | 8.55 | 5.18 |
| HEM | 0.52 | 0.54 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| ILM | 0.02 | 0.07 | 2.29 | 2.23 | 1.33 | 1.53 | 6.41 |
| SPH | 0.00 | 0.17 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RUT | 0.16 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| AP | 0.05 | 0.05 | 1.10 | 1.33 | 0.10 | 0.14 | 0.65 |
| 100*An/(An+Or) | 56.2 | 66.9 | 76.7 | 78.9 | 98.6 | 99.2 | 95.8 |
| 100 * Qtz/ (Qtz+An+Or+A | 97.8 | 98.7 | 2.3 | 3.0 | 0.0 | 0.0 | 13.2 |
| Discrimant Gold Score | n.a. | n.a. | 100.0 | 100.0 | 51.3 | 89.2 | 100.0 |

Table 1: Major oxide compositions and CIPW Normative minerals: see end of table for explanation

| SAMPLE | 92BU20 | 92BU27 | 92BU7 | 92BU8 | 92BU8B | 92HA5 | 92JK8 |
|---|---|---|---|---|---|---|---|
| LOCATION | TAT | TM | MM | TAT | TAT | KM | KM |
| ROCK TYPE | Qtz dio | Qtz dio | Gabbroic | Cpxite | Cpxite | Granite | Granodio |
| CODE | T | B | M | T | T | K | K |
| SIO2 | 49.9 | 55.2 | 45.4 | 44.9 | 44.6 | 66.2 | 65.6 |
| AL2O3 | 14.3 | 17.6 | 15.5 | 2.81 | 2.75 | 15 | 13.7 |
| FE2O3 | 4.5 | 2.9 | 3.6 | 3.9 | 3.8 | 1.1 | 1.4 |
| FEO | 8.5 | 4.6 | 5.5 | 5.6 | 5.3 | 3.1 | 5.0 |
| MGO | 5.12 | 3.95 | 11.2 | 24.7 | 24.8 | 1.96 | 2.6 |
| CAO | 9.02 | 6.86 | 13.9 | 12.2 | 12.1 | 3.66 | 2.62 |
| NA2O | 3.25 | 4 | 0.77 | 0.14 | 0.14 | 3.49 | 4.04 |
| K2O | 0.25 | 1.18 | 0.04 | 0.02 | 0.02 | 3.96 | 1.91 |
| MNO | 0.23 | 0.13 | 0.18 | 0.17 | 0.17 | 0.1 | 0.13 |
| P2O5 | 0.23 | 0.2 | 0.03 | 0.02 | 0.02 | 0.18 | 0.24 |
| TIO2 | 2.03 | 0.71 | 0.37 | 0.24 | 0.24 | 0.54 | 0.86 |
| LOI | 1.10 | 2.40 | 2.65 | 4.80 | 4.60 | 0.65 | 1.15 |
| SUM | 98.40 | 99.69 | 99.19 | 99.49 | 98.58 | 99.90 | 99.29 |
| CIPW MINERALS | | | | | | | |
| QTZ | 3.97 | 6.56 | 0.00 | 0.00 | 0.00 | 19.50 | 23.31 |
| COR | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.81 |
| OR | 1.52 | 7.17 | 0.25 | 0.13 | 0.13 | 23.58 | 11.50 |
| AB | 28.26 | 34.79 | 6.75 | 1.25 | 1.26 | 29.75 | 34.83 |
| AN | 24.35 | 27.32 | 40.11 | 7.37 | 7.25 | 13.67 | 11.65 |
| DIOP | 16.44 | 5.12 | 24.78 | 44.42 | 44.43 | 2.83 | 0.00 |
| HYP | 14.30 | 12.93 | 16.05 | 13.36 | 13.16 | 7.67 | 13.54 |
| OL | 0.00 | 0.00 | 5.80 | 27.00 | 27.31 | 0.00 | 0.00 |
| MT | 6.66 | 4.26 | 5.48 | 5.94 | 5.94 | 1.55 | 2.13 |
| HEM | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| ILM | 3.96 | 1.39 | 0.73 | 0.48 | 0.49 | 1.03 | 1.66 |
| SPH | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| RUT | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| AP | 0.55 | 0.48 | 0.07 | 0.05 | 0.05 | 0.42 | 0.57 |
| 100*An/(An+Or) | 94.1 | 79.2 | 99.4 | 98.3 | 98.2 | 36.7 | 50.3 |
| 100 * Qtz/ (Qtz+An+Or+A | 6.8 | 8.6 | 0.0 | 0.0 | 0.0 | 22.5 | 28.7 |
| Discrimant Gold Score | 100.0 | 96.5 | 100.0 | 100.0 | 100.0 | 99.4 | n.a. |

Table 1: Major oxide compositions and CIPW Normative minerals: see end of table for explanation

| SAMPLE | 92JK9 | 92JK10 | 92KC117 | 92KC118 |
|---|---|---|---|---|
| LOCATION | KM | KM | KM | KM |
| ROCK TYPE | Dio | Granodio | Qtz mzodio | Granodio |
| CODE | K | K | K | K |
| SIO2 | 54.9 | 67.2 | 60 | 66.2 |
| AL2O3 | 18.3 | 15.5 | 15.6 | 15.6 |
| FE2O3 | 4.6 | 1.4 | 1.5 | 1.0 |
| FEO | 2.5 | 1.9 | 4.3 | 2.6 |
| MGO | 3.93 | 1.84 | 3.42 | 1.8 |
| CAO | 7.57 | 3.77 | 5.24 | 3.24 |
| NA2O | 4.74 | 3.77 | 3.31 | 3.84 |
| K2O | 1.26 | 3.11 | 3.35 | 3.59 |
| MNO | 0.15 | 0.07 | 0.12 | 0.09 |
| P2O5 | 0.3 | 0.16 | 0.27 | 0.18 |
| TIO2 | 0.80 | 0.53 | 0.70 | 0.47 |
| LOI | 0.90 | 0.65 | 1.00 | 1.30 |
| SUM | 99.94 | 99.92 | 98.81 | 99.94 |
| CIPW MINERALS | | | | |
| QTZ | 3.62 | 22.77 | 11.39 | 19.81 |
| COR | 0.00 | 0.00 | 0.00 | 0.00 |
| OR | 7.52 | 18.51 | 20.24 | 21.51 |
| AB | 40.49 | 32.13 | 28.63 | 32.94 |
| AN | 25.17 | 16.31 | 18.21 | 14.93 |
| DIOP | 8.38 | 1.19 | 5.36 | 0.14 |
| HYP | 6.00 | 5.63 | 11.94 | 7.84 |
| OL | 0.00 | 0.00 | 0.00 | 0.00 |
| MT | 6.29 | 2.07 | 2.22 | 1.50 |
| HEM | 0.31 | 0.00 | 0.00 | 0.00 |
| ILM | 1.53 | 1.01 | 1.36 | 0.91 |
| SPH | 0.00 | 0.00 | 0.00 | 0.00 |
| RUT | 0.00 | 0.00 | 0.00 | 0.00 |
| AP | 0.70 | 0.37 | 0.64 | 0.42 |
| 100*An/(An+Or) | 77.0 | 46.8 | 47.4 | 41.0 |
| 100 * Qtz/ (Qtz+An+Or+A | 4.7 | 25.4 | 14.5 | 22.2 |
| Discrimant Gold Score | n.a. | 3.8 | 100 | 92.9 |

Abbreviations for rock type include:

cpxite - clinopyroxenite
dio - diorite
gab - gabbroic
granodio - granodiorite
mzodio - monzodiorite
qtz - quartz
vx - volcanic rocks

Location abbreviations are:

BC = Above Butte Creek
IP - Ikuktlitlig pluton
KM - Kisogle Mountain pluton
LR - Limestone Ridge
MM - Mitlak Mountain
TAT - Tatlignagpeke Mtn.
TM - Twin Mountain
WP - Wattamuse pluton

Code symbols are used to designate samples on fig. 2 .

# Table 2. Geochemistry for land evaluation unit 14 - Goodnews Bay.



| Element | Method | Units | Limits Lower | Limits Upper | 92BT1 | 92BT 11B | 92BT 11F | 92BT 11G | 92BT 12A | 92BT 12B | 92BT13 | 92BT14B | 92BT14D | 92BT16 | 92BT17 | 92BT18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Longitude, west | | | 161.445 | 161.334 | 161.334 | 161.334 | 161.334 | 161.334 | 161.506 | 161.496 | 161.495 | 161.696 | 161.703 | 161.712 |
| | | Latitude | | | 59.497 | 59.349 | 59.349 | 59.349 | 59.349 | 59.349 | 59.258 | 59.262 | 59.262 | 59.394 | 59.397 | 59.399 |
| Au | INAA | PPB | 5 | 10000 | 7 | 1100 | 10000 | 63 | 77 | 92 | 7 | 85 | 7 | -5 | -5 | -5 |
| Ag | INAA | PPM | 5 | 300 | -5 | -5 | -5 | -5 | -5 | -5 | -5 | -5 | -5 | -5 | -5 | -5 |
| Zn | INAA | PPM | 200 | 30000 | -200 | -200 | -200 | 210 | -200 | -200 | -200 | -200 | -200 | -200 | -200 | -200 |
| Mo | INAA | PPM | 2 | 30000 | -2 | -4 | -8 | -2 | -2 | -2 | 5 | -2 | -2 | -2 | -2 | -2 |
| Ni | INAA | PPM | 20 | 30000 | 48 | -20 | -46 | 42 | 21 | 38 | -20 | 360 | 58 | 28 | -20 | 22 |
| Co | INAA | PPM | 10 | 20000 | 54 | -10 | 11 | 20 | 28 | 23 | -10 | 120 | 37 | 13 | -10 | 21 |
| Cd | INAA | PPM | 10 | 2000 | -10 | -10 | -44 | -10 | -10 | -10 | -10 | -10 | -10 | -10 | -10 | -10 |
| As | INAA | PPM | 1 | 10000 | 2 | 10000 | 10000 | 718 | 348 | 156 | 382 | 28 | 98 | 7 | 9 | 6 |
| Sb | INAA | PPM | 0.2 | 9999 | 2.9 | 110 | 286 | 2.4 | 1.2 | 1.1 | 1 | 0.4 | 4.8 | 0.3 | 1.8 | 0.9 |
| Fe | INAA | PCT | 0.5 | 10 | 10 | 8.5 | 10 | 6.4 | 6.5 | 7.6 | 0.5 | 10 | 10 | 3.4 | 0.9 | 4.7 |
| Se | INAA | PPM | 10 | 30000 | -10 | -12 | -33 | -10 | -10 | -10 | -10 | -10 | -10 | -10 | -10 | -10 |
| Te | INAA | PPM | 20 | 2000 | -20 | -20 | -84 | -20 | -20 | -20 | -20 | -20 | -20 | -20 | -20 | -20 |
| Ba | INAA | PPM | 100 | 20000 | -100 | -100 | -100 | 2400 | 1500 | 630 | -100 | 210 | 300 | 400 | -100 | 400 |
| Cr | INAA | PPM | 50 | 30000 | -50 | -50 | -50 | -50 | 170 | 95 | -50 | 180 | 310 | 79 | -50 | -50 |
| Sn | INAA | PPM | 200 | 30000 | -200 | -200 | -200 | -200 | -200 | -200 | -200 | -200 | -200 | -200 | -200 | -200 |
| W | INAA | PPM | 2 | 30000 | -2 | -27 | -54 | -2 | -2 | -2 | 120 | -2 | -2 | -2 | -2 | -2 |
| Cs | INAA | PPM | 1 | 10000 | -1 | -1 | -1 | 3 | 5 | 2 | 4 | 1 | 13 | 1 | -1 | 2 |
| La | INAA | PPM | 5 | 30000 | 7 | -5 | -5 | 19 | 18 | 8 | 5 | -5 | 6 | 24 | 6 | 10 |
| Ce | INAA | PPM | 10 | 30000 | 29 | -10 | -24 | 37 | 37 | 14 | -10 | -10 | -10 | 53 | 12 | 67 |
| Sm | INAA | PPM | 0.2 | 2000 | 7.4 | -0.2 | -0.2 | 5.7 | 5.5 | 2.8 | -1.2 | 1.3 | 1.6 | 7.5 | 1.1 | 2.2 |
| Eu | INAA | PPM | 2 | 30000 | 2 | -2 | -2 | 2 | -2 | -2 | -2 | -2 | -2 | 2 | -2 | -2 |
| Tb | INAA | PPM | 1 | 30000 | 1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | 1 | -1 | -1 |
| Yb | INAA | PPM | 5 | 2000 | 5 | -9 | -11 | 5 | -5 | -5 | -5 | -5 | -5 | -5 | -5 | -5 |
| Lu | INAA | PPM | 0.5 | 2000 | 0.7 | -0.7 | -0.9 | -0.5 | -0.5 | -0.5 | 0.6 | -0.5 | -0.5 | 0.8 | -0.5 | -0.5 |
| Sc | INAA | PPM | 0.5 | 2000 | 49 | -0.5 | -0.5 | 19 | 28 | 30 | 1.5 | 28 | 30 | 9 | 1.1 | 11 |
| Hf | INAA | PPM | 2 | 30000 | 4 | -2 | -2 | 3 | 2 | -2 | 4 | -2 | -2 | 7 | -2 | 4 |
| Ta | INAA | PPM | 1 | 2000 | -1 | -1 | -1 | -1 | -1 | -1 | 4 | -1 | -1 | -1 | -1 | -1 |
| Th | INAA | PPM | 0.5 | 3000 | -0.5 | -0.5 | -0.5 | 3.5 | 4 | 1.1 | 21 | -0.5 | -0.5 | 4.7 | 0.8 | 7.3 |
| U | INAA | PPM | 0.5 | 2000 | -0.5 | -0.5 | -2.1 | 2.1 | 1.9 | 0.8 | 32 | -0.5 | -0.5 | 1.2 | -0.5 | 0.8 |
| Na | INAA | PCT | 0.05 | 10 | 1.9 | -6.2 | -9 | 2.6 | 1.1 | 1.4 | 2 | 0.81 | 1.5 | 1.7 | 0.14 | 0.19 |
| Br | INAA | PPM | 1 | 30000 | -1 | -80 | -143 | 2 | 1 | 1 | 2 | -1 | -1 | -1 | -1 | -1 |
| Rb | INAA | PPM | 10 | 10000 | -10 | -10 | -10 | 50 | 17 | 11 | 190 | -10 | 34 | 64 | 12 | 110 |
| Zr | INAA | PPM | 500 | 10000 | -500 | -600 | -500 | -500 | -500 | -500 | -500 | -500 | -500 | -500 | -500 | -500 |
| Ir | INAA | PPB | 100 | 1000 | -100 | -100 | -100 | -100 | -100 | -100 | -100 | -100 | -100 | -100 | -100 | -100 |
| AG | ICP | PPM | 0.5 | 50 | -0.5 | -0.5 | 9.6 | -0.5 | -0.5 | -0.5 | -0.5 | 1.9 | -0.5 | -0.5 | -0.5 | -0.5 |
| Cu | ICP | PPM | 1 | 20000 | 279 | 3 | 8 | 85 | 106 | 160 | 8 | 3389 | 414 | 10 | 9 | 6 |
| Pb | ICP | PPM | 2 | 10000 | 18 | -2 | 44 | 9 | 4 | 18 | 12 | 10 | 13 | 8 | 17 | 6 |
| ZN | ICP | PPM | 2 | 20000 | 149 | 10 | 6 | 68 | 89 | 131 | 11 | 74 | 101 | 36 | 46 | 51 |
| Mo | ICP | PPM | 1 | 20000 | 10 | 4 | 4 | 4 | -1 | 5. | 8 | 3 | 8 | 4 | 3 | 1 |
| NI | ICP | PPM | 1 | 20000 | 44 | 4 | 5 | 27 | 22 | 36 | 4 | 354 | 53 | 28 | 3 | 15 |
| Co | ICP | PPM | 1 | 20000 | 45 | 8 | 10 | 22 | 27 | 23 | 6 | 122 | 37 | 11 | 7 | 21 |
| Cd | ICP | PPM | 2 | 2000 | -2 | 75.8 | 98.8 | -2 | -2 | -2 | -2 | -2 | -2 | -2 | -2 | -2 |
| BI | ICP | PPM | 5 | 2000 | 15 | -5 | 88 | 6 | -5 | 25 | -5 | 25 | 6 | -5 | 21 | -5 |
| As | ICP | PPM | 5 | 2000 | 9 | 2000 | 2000 | 731 | 332 | 160 | 312 | 91 | 105 | -5 | 18 | 79 |
| SB | ICP | PPM | 5 | 2000 | -5 | 105 | 239 | 17 | 22 | -5 | 6 | 10 | -5 | -5 | -5 | 12 |
| Fe | ICP | PCT | 0.01 | 10 | 10 | 9.64 | 10 | 5.72 | 6.01 | 8.71 | 0.43 | 10 | 9.48 | 2.97 | 0.63 | 4.45 |
| Mn | ICP | PPM | 5 | 20000 | 1854 | 7 | -5 | 834 | 1427 | 2609 | 83 | 971 | 1404 | 300 | 744 | 303 |
| Te | ICP | PPM | 25 | 2000 | -25 | -25 | 45 | -25 | -25 | -25 | -25 | -25 | -25 | -25 | -25 | -25 |
| Ba | ICP | PPM | 6 | 2000 | 88 | 9 | 8 | 1947 | 1264 | 609 | 201 | 231 | 303 | 316 | 33 | 339 |
| CR | ICP | PPM | 2 | 20000 | 43 | 6 | -2 | 30 | 118 | 73 | 10 | 169 | 261 | 66 | 5 | 38 |
| V | ICP | PPM | 2 | 2000 | 415 | -2 | -2 | 184 | 201 | 285 | 13 | 101 | 184 | 72 | 17 | 46 |
| SN | ICP | PPM | 20 | 2000 | 48 | -20 | -20 | 32 | 33 | -20 | -20 | 22 | -20 | -20 | -20 | -20 |
| W | ICP | PPM | 20 | 2000 | -20 | -20 | -20 | -20 | -20 | -20 | 34 | -20 | -20 | -20 | -20 | -20 |
| LI | ICP | PPM | 2 | 2000 | 37 | 16 | 4 | 20 | 9 | 10 | 4 | 9 | 14 | 18 | 9 | 12 |
| GA | ICP | PPM | 10 | 2000 | 30 | -10 | -10 | 21 | 25 | 24 | 12 | 20 | 22 | 17 | 12 | 14 |
| LA | ICP | PPM | 5 | 2000 | 6 | -5 | -5 | 9 | 12 | 8 | -5 | -5 | -5 | 15 | 5 | 9 |
| Ta | ICP | PPM | 5 | 2000 | -100 | -100 | -100 | -100 | -100 | -100 | -100 | -100 | -100 | -100 | -100 | -100 |
| TI | ICP | PCT | 0.01 | 10 | 1.36 | -0.01 | -0.01 | 0.43 | 0.43 | 0.3 | 0.04 | 0.11 | 0.21 | 0.35 | 0.01 | 0.22 |
| Al | ICP | PCT | 0.01 | 10 | 4.87 | 0.11 | 0.03 | 5.35 | 6.01 | 7.82 | 4.38 | 8.71 | 6.1 | 3.39 | 0.51 | 4.81 |
| MG | ICP | PCT | 0.01 | 10 | 3.04 | -0.01 | -0.01 | 1.9 | 3.7 | 3.79 | 0.16 | 6.15 | 6.4 | 0.78 | 10 | 2.09 |
| CA | ICP | PCT | 0.01 | 10 | 6.58 | 0.01 | -0.01 | 4.97 | 6.47 | 5.81 | 0.46 | 10 | 8.94 | 0.54 | 10 | 2.67 |
| NA | ICP | PCT | 0.01 | 10 | 2.62 | 0.05 | 0.03 | 2.64 | 1.32 | 1.86 | 2.09 | 1.27 | 2.23 | 2.01 | 0.1 | 0.38 |
| K | ICP | PCT | 0.01 | 10 | 0.42 | 0.04 | -0.01 | 1.05 | 0.52 | 0.56 | 1.58 | 0.28 | 0.61 | 1.49 | 0.3 | 1.43 |
| Nb | ICP | PPM | 5 | 2000 | 14 | -5 | 12 | 7 | 7 | 7 | -5 | 9 | 5 | 10 | -5 | 10 |
| Sr | ICP | PPM | 1 | 2000 | 197 | 2 | -1 | 775 | 548 | 436 | 127 | 838 | 770 | 21 | 62 | 25 |
| Y | ICP | PPM | 5 | 2000 | 22 | -5 | -5 | 8 | 12 | 9 | 6 | -5 | -5 | 11 | -5 | 8 |
| Zr | ICP | PPM | 5 | 2000 | 19 | -5 | -5 | -5 | -5 | -5 | 40 | 12 | 12 | 22 | -5 | 9 |
| Pb | AA | PPM | 2 | 10000 | 4 | 5 | 49 | 7 | 3 | 4 | 3 | 6 | 5 | 3 | 14 | 5 |
| Bi | AA | PPM | 1 | 2000 | -1 | 7 | 114 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 |
| S_Tot | LECO | PCT | 0.02 | 100 | -9 | -9 | -9 | -9 | -9 | -9 | -9 | -9 | -9 | -9 | -9 | -9 |
| Zr | XRF | PPM | 1 | 20000 | | | | | | | | | | | | |
| Pt | FADCP | PPB | 5 | 10000 | -9 | -5 | -9 | -9 | -9 | 8 | -5 | -9 | 5 | -9 | -9 | -9 |
| Pd | FADCP | PPB | 1 | 10000 | -9 | -1 | -9 | -9 | -9 | 8 | -1 | -9 | 1 | -9 | -9 | -9 |
| HG | CV AA | PPM | 0.01 | 50 | | | | | | | | | | | | |
| Sn | XRF | PPM | 1 | 10000 | | | | | | | | | | | | |

# Table 2. Geochemistry for land evaluation unit 14 - Goodnews Bay.

| Element | Method | Units | Limits Lower | Limits Upper | 92BT19 | 92BT20 | 92BT25 | 92BT27 | 92BT28 | 92BT32 | 92BU10 | 92BU11 | 92BU12 | 92BU12 | 92BU14 | 92BU17 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Sample | | | 92BT19 | 92BT20 | 92BT25 | 92BT27 | 92BT28 | 92BT32 | 92BU10 | 92BU11 | 92BU12 | 92BU12 | 92BU14 | 92BU17 |
| | | Longitude, west | | | 161.718 | 161.726 | 161.858 | 161.652 | 161.668 | 161.439 | 161.331 | 161.331 | 161.399 | 161.399 | 161.409 | 161.472 |
| | | Latitude | | | 59.397 | 59.393 | 59.208 | 59.216 | 59.221 | 59.466 | 59.345 | 59.345 | 59.376 | 59.378 | 59.372 | 59.366 |
| Au | INAA | PPB | 5 | 10000 | -5 | -5 | -5 | -5 | -5 | -5 | 10000 | 33 | -5 | -5 | 65 | 8 |
| Ag | INAA | PPM | 5 | 300 | -5 | -5 | -5 | -5 | -5 | -5 | -23 | -5 | -5 | -5 | -5 | 5 |
| Zn | INAA | PPM | 200 | 30000 | -200 | -200 | -200 | -200 | 210 | -200 | -1200 | -200 | -200 | -200 | 210 | -200 |
| Mo | INAA | PPM | 2 | 30000 | 5 | -2 | -2 | -2 | -2 | -2 | -29 | -2 | -2 | -2 | -2 | -2 |
| Ni | INAA | PPM | 20 | 30000 | -20 | -20 | 91 | -20 | 86 | -20 | -180 | -20 | -20 | 950 | 32 | -20 |
| Co | INAA | PPM | 10 | 20000 | -10 | -10 | 46 | -10 | 57 | 17 | -10 | 29 | 28 | 170 | 34 | 42 |
| Cd | INAA | PPM | 10 | 2000 | -10 | -10 | -10 | -10 | -10 | -10 | -140 | -10 | -10 | -10 | -10 | -10 |
| As | INAA | PPM | 1 | 10000 | 21 | 20 | 3 | 11 | 6 | 2 | 10000 | 13 | 2 | 2 | 308 | 36 |
| Sb | INAA | PPM | 0.2 | 9999 | 1.9 | 2.8 | -0.2 | 0.6 | -0.2 | -0.2 | 388 | 1.5 | -0.2 | -0.2 | 1 | -0.2 |
| Fe | INAA | PCT | 0.5 | 10 | 1.4 | 0.8 | 9.2 | 1.7 | 9.4 | 2.4 | 10 | 7.8 | 6 | 10 | 4.3 | 8.2 |
| Se | INAA | PPM | 10 | 30000 | -10 | -10 | -10 | -10 | -10 | -10 | -70 | -10 | -10 | -10 | -10 | -10 |
| Te | INAA | PPM | 20 | 2000 | -20 | -20 | -20 | -20 | -20 | -20 | -420 | -20 | -20 | -20 | -20 | -20 |
| Ba | INAA | PPM | 100 | 20000 | 360 | 810 | -100 | -100 | 640 | 490 | -710 | 2200 | 250 | -100 | -100 | -100 |
| Cr | INAA | PPM | 50 | 30000 | -50 | -50 | 230 | -50 | 220 | -50 | -330 | -50 | -50 | 2300 | 270 | 50 |
| Sn | INAA | PPM | 200 | 30000 | -200 | -200 | -200 | -200 | -200 | -200 | -2400 | -200 | -200 | -200 | -200 | -200 |
| W | INAA | PPM | 2 | 30000 | -2 | -2 | -2 | -2 | -2 | -2 | -47 | -2 | -2 | -2 | -2 | -2 |
| Cs | INAA | PPM | 1 | 10000 | -1 | -1 | -1 | -1 | -1 | -1 | -3 | 3 | -1 | -1 | -1 | -1 |
| La | INAA | PPM | 5 | 30000 | 24 | 22 | -5 | 19 | -5 | 14 | -5 | 22 | -5 | -5 | -5 | -5 |
| Ce | INAA | PPM | 10 | 30000 | 110 | 66 | -10 | 51 | -10 | 32 | -160 | 57 | -10 | -10 | -10 | -10 |
| Sm | INAA | PPM | 0.2 | 2000 | 6.7 | 4.9 | 4.1 | 3.2 | 2.6 | 3.5 | -0.5 | 7.1 | 1.9 | 0.2 | 0.6 | 0.9 |
| Eu | INAA | PPM | 2 | 30000 | -2 | -2 | -2 | -2 | -2 | -2 | -7 | -2 | -2 | -2 | -2 | -2 |
| Tb | INAA | PPM | 1 | 30000 | 1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 |
| Yb | INAA | PPM | 5 | 2000 | 9 | -5 | -5 | -5 | -5 | -5 | -61 | -5 | -5 | -5 | -5 | -5 |
| Lu | INAA | PPM | 0.5 | 2000 | 1.5 | 0.6 | 0.7 | -0.5 | 0.5 | -0.5 | -3.1 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 |
| Sc | INAA | PPM | 0.5 | 2000 | 6.8 | 5.7 | 46 | 5.3 | 56.4 | 7.4 | -1.2 | 21 | 29 | 8.8 | 21 | 45 |
| Hf | INAA | PPM | 2 | 30000 | 13 | 6 | 3 | 3 | -2 | -2 | -12 | -2 | -2 | -2 | -2 | -2 |
| Ta | INAA | PPM | 1 | 2000 | 1 | 1 | -1 | -1 | -1 | -1 | -3 | -1 | -1 | -1 | -1 | -1 |
| Th | INAA | PPM | 0.5 | 3000 | 9.1 | 6.2 | -0.5 | 4.9 | -0.5 | 1 | -5 | 3.5 | -0.5 | -0.5 | -0.5 | -0.5 |
| U | INAA | PPM | 0.5 | 2000 | 2.4 | 1.8 | -0.5 | 0.8 | -0.5 | -0.5 | -6.6 | 2.1 | -0.5 | -0.5 | -0.5 | -0.5 |
| Na | INAA | PCT | 0.05 | 10 | 2.7 | 3.7 | 2.4 | 0.92 | 2.6 | 5.41 | -1.1 | 2.6 | 1.5 | 0.26 | 0.83 | 1.1 |
| Br | INAA | PPM | 1 | 30000 | -1 | -1 | -1 | -1 | -1 | -1 | -3370 | -1 | -1 | 4 | 6 | -1 |
| Rb | INAA | PPM | 10 | 10000 | 58 | 36 | -10 | -10 | -10 | 28 | -96 | 53 | -10 | -10 | -10 | -10 |
| Zr | INAA | PPM | 500 | 10000 | -500 | -500 | -500 | -500 | -500 | -500 | -2300 | -500 | -500 | -500 | -500 | -500 |
| Ir | INAA | PPB | 100 | 1000 | -100 | -100 | -100 | -100 | -100 | -100 | -360 | -100 | -100 | -100 | -100 | -100 |
| AG | ICP | PPM | 0.5 | 50 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | 27.9 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 |
| Cu | ICP | PPM | 1 | 20000 | 102 | 89 | 180 | 19 | 134 | 18 | 6 | 154 | 108 | 6 | 93 | 92 |
| Pb | ICP | PPM | 2 | 10000 | 10 | 9 | 2 | 13 | 5 | 12 | 128 | 11 | 6 | 18 | 12 | 7 |
| ZN | ICP | PPM | 2 | 20000 | 34 | 17 | 100 | 29 | 107 | 40 | 7 | 81 | 58 | 85 | 40 | 63 |
| Mo | ICP | PPM | 1 | 20000 | 6 | 2 | 3 | 2 | 7 | 7 | 6 | 4 | -1 | 3 | 6 | 4 |
| Ni | ICP | PPM | 1 | 20000 | 3 | 2 | 75 | 8 | 78 | 16 | 10 | 18 | 13 | 831 | 76 | 37 |
| Co | ICP | PPM | 1 | 20000 | -1 | 5 | 42 | 9 | 49 | 17 | 39 | 26 | 27 | 138 | 35 | 31 |
| Cd | ICP | PPM | 2 | 2000 | -2 | -2 | -2 | -2 | -2 | -2 | -2 | -2 | -2 | -2 | -2 | -2 |
| BI | ICP | PPM | 5 | 2000 | -5 | -5 | 10 | 6 | 13 | -5 | 254 | 8 | 7 | 9 | 28 | 16 |
| As | ICP | PPM | 5 | 2000 | 12 | 41 | 10 | 17 | 17 | 15 | 2000 | 29 | -5 | 35 | 440 | 76 |
| SB | ICP | PPM | 5 | 2000 | -5 | -5 | -5 | 5 | -5 | 6 | 359 | -5 | -5 | 15 | 11 | -5 |
| Fe | ICP | PCT | 0.01 | 10 | 1.29 | 0.75 | 9.89 | 1.44 | 9.92 | 1.7 | 10 | 6.69 | 4.77 | 10 | 3.92 | 6.98 |
| Mn | ICP | PPM | 5 | 20000 | 98 | 107 | 1449 | 710 | 1395 | 340 | 9 | 1138 | 903 | 1653 | 680 | 1202 |
| Te | ICP | PPM | 25 | 2000 | -25 | -25 | -25 | -25 | -25 | -25 | 34 | -25 | -25 | -25 | -25 | -25 |
| Ba | ICP | PPM | 5 | 2000 | 308 | 798 | 98 | 39 | 588 | 419 | 16 | 1776 | 210 | 26 | 56 | 128 |
| CR | ICP | PPM | 2 | 20000 | 6 | 7 | 162 | 34 | 137 | 19 | 32 | 40 | 25 | 1193 | 129 | 60 |
| V | ICP | PPM | 2 | 2000 | 10 | 10 | 299 | 38 | 313 | 54 | -2 | 219 | 225 | 31 | 147 | 461 |
| SN | ICP | PPM | 20 | 2000 | -20 | -20 | 40 | -20 | 29 | -20 | 21 | 27 | -20 | 24 | -20 | 24 |
| W | ICP | PPM | 20 | 2000 | -20 | -20 | -20 | -20 | -20 | -20 | -20 | -20 | -20 | -20 | -20 | -20 |
| LI | ICP | PPM | 2 | 2000 | 8 | 8 | 17 | 30 | 25 | 8 | 5 | 14 | 5 | 3 | -2 | -2 |
| GA | ICP | PPM | 10 | 2000 | 18 | 16 | 30 | 20 | 25 | 12 | -10 | 27 | 18 | 20 | 22 | 26 |
| LA | ICP | PPM | 5 | 2000 | 18 | 15 | -5 | 19 | -5 | 6 | -5 | 11 | -5 | -5 | -5 | -5 |
| Ta | ICP | PPM | 5 | 2000 | -100 | -100 | -100 | -100 | -100 | -100 | -100 | -100 | -100 | -100 | -100 | -100 |
| TI | ICP | PCT | 0.01 | 10 | 0.17 | 0.11 | 0.87 | 0.16 | 0.5 | 0.13 | -0.01 | 0.48 | 0.26 | 0.03 | 0.14 | 0.41 |
| Al | ICP | PCT | 0.01 | 10 | 4.5 | 3.78 | 7.66 | 2.62 | 8.68 | 3.2 | 0.06 | 4.41 | 5.64 | 0.65 | 6.81 | 7.37 |
| MG | ICP | PCT | 0.01 | 10 | 0.09 | 0.34 | 3.8 | 1.7 | 5.51 | 0.61 | 0.02 | 1.97 | 1.68 | 10 | 2.86 | 2.98 |
| CA | ICP | PCT | 0.01 | 10 | 0.07 | 0.13 | 8.28 | 10 | 5.01 | 1.83 | 0.01 | 6.56 | 10 | 0.12 | 10 | 10 |
| NA | ICP | PCT | 0.01 | 10 | 2.71 | 3.62 | 2.93 | 0.99 | 2.71 | 5.24 | 0.06 | 2.73 | 1.5 | 0.3 | 1.37 | 1.66 |
| K | ICP | PCT | 0.01 | 10 | 1.16 | 0.94 | 0.55 | 0.09 | 0.67 | 0.76 | 0.02 | 0.89 | 0.19 | 0.12 | 0.34 | 0.67 |
| Nb | ICP | PPM | 5 | 2000 | 19 | 11 | 9 | 7 | 7 | -5 | 5 | 9 | -5 | 5 | -5 | -5 |
| Sr | ICP | PPM | 1 | 2000 | 94 | 70 | 199 | 396 | 163 | 810 | 3 | 647 | 1841 | 10 | 575 | 526 |
| Y | ICP | PPM | 5 | 2000 | 15 | 11 | 18 | -5 | 19 | -5 | -5 | 8 | -5 | -5 | -5 | -5 |
| Zr | ICP | PPM | 5 | 2000 | 182 | 91 | 45 | 52 | 34 | -5 | -5 | -5 | -5 | -5 | 11 | 5 |
| Pb | AA | PPM | 2 | 10000 | 3 | 6 | 2 | 16 | 3 | 2 | 123 | 3 | -2 | 4 | -2 | -2 |
| Bi | AA | PPM | 1 | 2000 | -1 | -1 | -1 | -1 | -1 | -1 | 289 | -1 | -1 | -1 | -1 | -1 |
| S_Tot | LECO | PCT | 0.02 | 100 | -9 | -9 | -9 | -9 | -9 | -9 | | -0.02 | 0.07 | 0.05 | | |
| Zr | XRF | PPM | 1 | 20000 | | | | | | | | | | | | |
| Pt | FADCP | PPB | 5 | 10000 | -9 | -9 | -9 | -9 | -9 | -9 | -9 | -9 | 7 | 8 | 10 | 14 |
| Pd | FADCP | PPB | 1 | 10000 | -9 | -9 | -9 | -9 | -9 | -9 | -9 | -9 | 5 | 2 | 6 | 8 |
| HG | CV AA | PPM | 0.01 | 50 | | | | | | | | | | | | |
| Sn | XRF | PPM | 1 | 10000 | | | | | | | | | | | | |

Table 2. Geochemistry for land evaluation unit 14 - Goodnews Bay.

| | | | Limits | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Sample | | | 92BU20 | 92BU 27 | 92BU 29 | 92BU30 | 92BU30.5 | 92BU5 | 92BU7 | 92BU9 | 92HA11 | 92HA12 | 92HA13 | 92HA6 |
| | | Longitude, west | | | 161.459 | 161.662 | 161.683 | 161.688 | 161.688 | 161.365 | 161.544 | 161.425 | 161.709 | 161.705 | 161.701 | 161.217 |
| | | Latitude | | | 59.371 | 59.399 | 59.4 | 59.401 | 59.401 | 59.458 | 59.419 | 59.363 | 59.192 | 59.193 | 59.194 | 59.386 |
| Element | Method | Units | Lower | Upper | | | | | | | | | | | | |
| Au | INAA | PPB | 5 | 10000 | -5 | -5 | -5 | -5 | -5 | -5 | -5 | 11 | 12 | -5 | -5 | -5 |
| Ag | INAA | PPM | 5 | 300 | -5 | -5 | -5 | -5 | -5 | -5 | -5 | -5 | -5 | -5 | -5 | 5 |
| Zn | INAA | PPM | 200 | 30000 | -200 | 280 | -200 | -200 | -200 | 210 | -200 | 220 | -200 | 420 | -200 | -200 |
| Mo | INAA | PPM | 2 | 30000 | -2 | -2 | -2 | -2 | -2 | -2 | -2 | -2 | -2 | -2 | -2 | 15 |
| Ni | INAA | PPM | 20 | 30000 | 39 | -20 | -20 | -20 | -20 | 120 | 68 | -20 | 77 | 90 | -20 | -20 |
| Co | INAA | PPM | 10 | 20000 | 45 | 39 | -10 | -10 | -10 | 42 | 49 | 49 | 55 | 200 | -10 | 18 |
| Cd | INAA | PPM | 10 | 2000 | -10 | -10 | -10 | -10 | -10 | -10 | -10 | -10 | -10 | -10 | -10 | -10 |
| As | INAA | PPM | 1 | 10000 | 4 | 10 | 7 | 21 | 3 | 1 | 2 | -1 | 7 | 9 | 7 | 14 |
| Sb | INAA | PPM | 0.2 | 9999 | -0.2 | 13 | 8.5 | 0.2 | -0.2 | 0.2 | -0.2 | -0.2 | -0.2 | -0.2 | -0.2 | 0.8 |
| Fe | INAA | PCT | 0.5 | 10 | 10 | 7.8 | -0.5 | 0.6 | -0.5 | 7.1 | 5.9 | 8.9 | 10 | 10 | 3.3 | 8.2 |
| Se | INAA | PPM | 10 | 30000 | -10 | -10 | -10 | -10 | -10 | -10 | -10 | -10 | -10 | -10 | -10 | -10 |
| Te | INAA | PPM | 20 | 2000 | -20 | -20 | -20 | -20 | -20 | -20 | -20 | -20 | -20 | -20 | -20 | -20 |
| Ba | INAA | PPM | 100 | 20000 | 130 | 440 | 190 | -100 | -100 | 110 | -100 | 180 | -100 | 190 | -100 | 1400 |
| Cr | INAA | PPM | 50 | 30000 | -50 | -50 | -50 | -50 | -50 | 220 | 250 | 80 | 210 | -120 | -50 | -50 |
| Sn | INAA | PPM | 200 | 30000 | -200 | -200 | -200 | -200 | -200 | -200 | -200 | -200 | -200 | -200 | -200 | -200 |
| W | INAA | PPM | 2 | 30000 | -2 | -2 | -2 | -2 | -2 | -2 | -2 | -2 | -2 | -2 | -2 | -2 |
| Cs | INAA | PPM | 1 | 10000 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | 1 | -1 | 2 |
| La | INAA | PPM | 5 | 30000 | 8 | 17 | -5 | -5 | -5 | -5 | -5 | -5 | 5 | 11 | 9 | 14 |
| Ce | INAA | PPM | 10 | 30000 | 29 | 35 | -10 | -10 | 12 | 23 | -10 | 22 | -10 | -10 | 29 | 24 |
| Sm | INAA | PPM | 0.2 | 2000 | 6.7 | 5.8 | -0.2 | 0.5 | 0.7 | 4.6 | 0.7 | 2.5 | 3.3 | 19 | 2.5 | 3.9 |
| Eu | INAA | PPM | 2 | 30000 | 2 | -2 | -2 | -2 | -2 | 3 | -2 | -2 | -2 | 7 | -2 | -2 |
| Tb | INAA | PPM | 1 | 30000 | 1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | 8 | -1 | -1 |
| Yb | INAA | PPM | 5 | 2000 | 7 | -5 | -5 | -5 | -5 | 5 | -5 | -5 | -5 | 8 | -5 | -5 |
| Lu | INAA | PPM | 0.5 | 2000 | 1.1 | -0.5 | -0.5 | -0.5 | -0.5 | 0.6 | -0.5 | -0.5 | 0.8 | 1 | -0.5 | -0.5 |
| Sc | INAA | PPM | 0.5 | 2000 | 47 | 30 | 0.8 | 0.9 | 1.9 | 38 | 47 | 38 | 45 | 3.2 | 1.6 | 24 |
| Hf | INAA | PPM | 2 | 30000 | 5 | 5 | -2 | -2 | -2 | 3 | -2 | -2 | 3 | -2 | 5 | 4 |
| Ta | INAA | PPM | 1 | 2000 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 |
| Th | INAA | PPM | 0.5 | 3000 | -0.5 | -0.5 | -0.5 | 0.7 | 1.1 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | 1.8 | 2.3 |
| U | INAA | PPM | 0.5 | 2000 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | 1.3 | -0.5 | 1.7 |
| Na | INAA | PCT | 0.05 | 10 | 3.3 | 3 | 1 | -0.05 | 0.16 | 3 | 0.84 | 2 | 1.4 | 0.06 | 0.38 | 2.4 |
| Br | INAA | PPM | 1 | 30000 | -1 | -1 | 1 | -1 | -1 | -1 | -1 | -1 | -1 | 1 | -1 | -1 |
| Rb | INAA | PPM | 10 | 10000 | -10 | 60 | -10 | -10 | 19 | -10 | -10 | -10 | -10 | -27 | -10 | 54 |
| Zr | INAA | PPM | 500 | 10000 | -500 | -500 | -500 | -500 | -500 | -500 | -500 | -500 | 660 | -500 | -500 | -500 |
| Ir | INAA | PPB | 100 | 1000 | -100 | -100 | -100 | -100 | -100 | -100 | -100 | -100 | -100 | -100 | -100 | -100 |
| AG | ICP | PPM | 0.5 | 50 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 |
| Cu | ICP | PPM | 1 | 20000 | 50 | 37 | 23 | -1 | 3 | 52 | 92 | 220 | 153 | 4 | 6 | 111 |
| Pb | ICP | PPM | 2 | 10000 | 15 | 10 | -2 | -2 | -2 | 2 | -2 | 15 | 13 | 19 | 9 | 12 |
| ZN | ICP | PPM | 2 | 20000 | 115 | 115 | 15 | 7 | 4 | 135 | 60 | 94 | 97 | 438 | 12 | 87 |
| Mo | ICP | PPM | 1 | 20000 | 4 | 6 | -1 | 1 | 2 | 6 | 4 | 12 | 5 | 8 | 1 | 15 |
| Ni | ICP | PPM | 1 | 20000 | 28 | 25 | 3 | 3 | 5 | 89 | 59 | 43 | 67 | 81 | 3 | 21 |
| Co | ICP | PPM | 1 | 20000 | 39 | 30 | 2 | 2 | 2 | 33 | 37 | 37 | 34 | 127 | -1 | 11 |
| Cd | ICP | PPM | 2 | 2000 | -2 | -2 | -2 | -2 | -2 | -2 | -2 | -2 | -2 | -2 | -2 | -2 |
| Bi | ICP | PPM | 5 | 2000 | -5 | 26 | -5 | -5 | -5 | 28 | 18 | 37 | 38 | 17 | -5 | 11 |
| As | ICP | PPM | 5 | 2000 | 376 | 63 | 30 | 25 | -5 | 18 | 21 | 80 | 58 | -5 | 25 | 35 |
| SB | ICP | PPM | 5 | 2000 | -5 | 21 | 8 | -5 | 10 | -5 | 7 | 18 | 15 | -5 | -5 | 9 |
| Fe | ICP | PCT | 0.01 | 10 | 10 | 7.08 | 0.55 | 0.58 | 0.33 | 6.14 | 5.74 | 7.98 | 8.24 | 10 | 3.25 | 5.01 |
| Mn | ICP | PPM | 5 | 20000 | 1639 | 1146 | 66 | 81 | 141 | 1267 | 1077 | 1601 | 1229 | 901 | 15 | 1168 |
| Te | ICP | PPM | 25 | 2000 | -25 | -25 | -25 | -25 | -25 | -25 | -25 | -25 | -25 | -25 | -25 | -25 |
| Ba | ICP | PPM | 5 | 2000 | 112 | 346 | 148 | 20 | 49 | 102 | 65 | 130 | 70 | 111 | 67 | 1159 |
| CR | ICP | PPM | 2 | 20000 | 34 | 47 | 7 | 14 | 16 | 157 | 115 | 89 | 148 | 57 | 13 | 42 |
| V | ICP | PPM | 2 | 2000 | 343 | 234 | 12 | 7 | 11 | 248 | 174 | 345 | 317 | 18 | 8 | 159 |
| SN | ICP | PPM | 20 | 2000 | 31 | 23 | -20 | -20 | -20 | -20 | -20 | 38 | 38 | 54 | -20 | 24 |
| W | ICP | PPM | 20 | 2000 | -20 | -20 | -20 | -20 | -20 | -20 | -20 | -20 | -20 | -20 | -20 | -20 |
| LI | ICP | PPM | 2 | 2000 | 6 | 5 | -2 | 4 | 8 | 15 | 2 | 3 | 10 | 4 | 34 | 23 |
| GA | ICP | PPM | 10 | 2000 | 27 | 36 | -10 | -10 | -10 | 27 | 24 | 35 | 39 | 36 | -10 | 21 |
| LA | ICP | PPM | 5 | 2000 | -5 | 8 | -5 | -5 | -5 | -5 | -5 | 5 | -5 | -5 | 8 | 6 |
| Ta | ICP | PPM | 5 | 2000 | -100 | -100 | -100 | -100 | -100 | -100 | -100 | -100 | -100 | -100 | -100 | -100 |
| TI | ICP | PCT | 0.01 | 10 | 1.05 | 0.42 | 0.05 | 0.02 | 0.04 | 0.77 | 0.15 | 0.61 | 0.74 | 0.04 | 0.11 | 0.33 |
| Al | ICP | PCT | 0.01 | 10 | 7.48 | 6.13 | 2.34 | 0.77 | 0.94 | 5.08 | 6.75 | 7.42 | 5.71 | 1.32 | 2.06 | 4.94 |
| MG | ICP | PCT | 0.01 | 10 | 3.2 | 2.52 | 0.17 | 0.5 | 0.14 | 2.92 | 4.98 | 3.26 | 2.81 | 0.11 | 0.2 | 1.69 |
| CA | ICP | PCT | 0.01 | 10 | 6.11 | 5.86 | 0.1 | 0.05 | 0.08 | 4.72 | 10 | 7 | 9.8 | 0.29 | 0.03 | 3.88 |
| NA | ICP | PCT | 0.01 | 10 | 3.11 | 3.49 | 1.14 | 0.05 | 0.14 | 3.09 | 0.96 | 2.59 | 1.68 | 0.79 | 0.49 | 2.44 |
| K | ICP | PCT | 0.01 | 10 | 0.38 | 0.93 | 0.47 | 0.18 | 0.32 | 0.57 | 0.15 | 0.56 | 0.32 | 0.51 | 0.32 | 0.94 |
| Nb | ICP | PPM | 5 | 2000 | 9 | 7 | -5 | -5 | -5 | 5 | -5 | 5 | 9 | 19 | -5 | 6 |
| Sr | ICP | PPM | 1 | 2000 | 252 | 843 | 60 | 4 | 5 | 108 | 339 | 495 | 248 | 19 | 11 | 218 |
| Y | ICP | PPM | 5 | 2000 | 28 | 12 | -5 | -5 | -5 | 16 | -5 | 13 | 15 | 72 | -5 | 14 |
| Zr | ICP | PPM | 5 | 2000 | 47 | -5 | -5 | -5 | 8 | 18 | -5 | 7 | 27 | 23 | 28 | 14 |
| Pb | AA | PPM | 2 | 10000 | 3 | -2 | -2 | -2 | -2 | 3 | -2 | -2 | 3 | 3 | 12 | 5 |
| Bi | AA | PPM | 1 | 2000 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 |
| S_Tot | LECO | PCT | 0.02 | 100 | 0.07 | | | | -9 | -9 | -0.02 | | | | | |
| Zr | XRF | PPM | 1 | 20000 | | | | | | 111 | -9 | | | | | |
| Pt | FADCP | PPB | 5 | 10000 | -9 | -9 | -9 | -9 | -9 | | | -9 | -9 | -9 | -9 | -9 |
| Pd | FADCP | PPB | 1 | 10000 | -9 | -9 | -9 | -9 | -9 | | | -9 | -9 | -9 | -9 | -9 |
| HG | CV AA | PPM | 0.01 | 50 | | | | | | | | | | | | |
| Sn | XRF | PPM | 1 | 10000 | | | | | | | | | | | | |

# Table 2. Geochemistry for land evaluation unit 14 - Goodnews Bay.

| | | Sample | | | 92KC114 | 92KC115 | 92KC116 | 92KC 119 | 92KC 120 | 92KC 125 | 92KC 126 | 92KC128 | 92KC129 | 92KC130 | 92KC132 | 92KC133 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Longitude, west | | | 161.332 | 161.331 | 161.331 | 161.199 | 161.199 | 161.705 | 161.705 | 161.675 | 161.683 | 161.683 | 161.688 | 161.688 |
| | | Latitude | | | 59.345 | 59.345 | 59.345 | 59.404 | 59.404 | 59.193 | 59.193 | 59.401 | 59.399 | 59.399 | 59.401 | 59.401 |
| | | | Limits | | | | | | | | | | | | | |
| Element | Method | Units | Lower | Upper | | | | | | | | | | | | |
| Au | INAA | PPB | 5 | 10000 | -9 | 42 | 56 | 36 | 61 | 25 | -5 | -5 | 6 | -5 | -5 | -5 |
| Ag | INAA | PPM | 5 | 300 | -9 | -5 | -5 | -5 | -5 | -5 | -5 | -5 | -5 | -5 | -5 | -5 |
| Zn | INAA | PPM | 200 | 30000 | -9 | -200 | -200 | -200 | -200 | 250 | 620 | -200 | 220 | -200 | -200 | -200 |
| Mo | INAA | PPM | 2 | 30000 | -9 | 2 | -2 | 3 | 3 | 17 | -2 | -2 | -2 | -2 | -2 | -2 |
| Ni | INAA | PPM | 20 | 30000 | -9 | 71 | -20 | 67 | -20 | -20 | 88 | 28 | 88 | -20 | -20 | -20 |
| Co | INAA | PPM | 10 | 20000 | -9 | 41 | 24 | 32 | 26 | 32 | 140 | 12 | 47 | 13 | -10 | -10 |
| Cd | INAA | PPM | 10 | 2000 | -9 | -10 | -10 | -10 | -10 | -10 | -10 | -10 | -10 | -10 | -10 | -10 |
| As | INAA | PPM | 1 | 10000 | -9 | 162 | 137 | 44 | 17 | 27 | 14 | 11 | 20 | 5 | 6 | 3 |
| Sb | INAA | PPM | 0.2 | 9999 | -9 | 153 | 29.7 | 31.7 | 7.6 | 5.2 | 3.2 | 3.2 | 4.9 | 3.3 | 2.8 | 1.5 |
| Fe | INAA | PCT | 0.5 | 10 | -9 | 9 | 7.2 | 10 | 10 | 10 | 10 | 3.6 | 6.4 | 3.8 | 0.6 | 1.3 |
| Se | INAA | PPM | 10 | 30000 | -9 | -10 | -10 | -10 | -10 | -10 | -10 | -10 | -10 | -10 | -10 | -10 |
| Te | INAA | PPM | 20 | 2000 | -9 | -20 | -20 | -20 | -20 | -20 | -20 | -20 | -20 | -20 | -20 | -20 |
| Ba | INAA | PPM | 100 | 20000 | -9 | 1300 | 1400 | -100 | 1800 | -100 | 490 | 1300 | 1400 | 1200 | -100 | -100 |
| Cr | INAA | PPM | 50 | 30000 | -9 | 250 | -50 | 290 | 180 | -50 | -50 | 66 | 70 | -50 | -50 | -50 |
| Sn | INAA | PPM | 200 | 30000 | -9 | -200 | -200 | -200 | -200 | -200 | -200 | -200 | -200 | -200 | -200 | -200 |
| W | INAA | PPM | 2 | 30000 | -9 | -2 | -2 | -2 | -2 | -2 | -2 | -2 | -2 | -2 | -2 | -2 |
| Cs | INAA | PPM | 1 | 10000 | -9 | -1 | 3 | 2 | 2 | -1 | -1 | 1 | 2 | 1 | -1 | -1 |
| La | INAA | PPM | 5 | 30000 | -9 | 18 | 22 | 7 | 44 | 39 | 9 | 26 | 19 | 24 | -5 | 10 |
| Ce | INAA | PPM | 10 | 30000 | -9 | 28 | 55 | -10 | 120 | 110 | 27 | 55 | 53 | 54 | -10 | 23 |
| Sm | INAA | PPM | 0.2 | 2000 | -9 | 6 | 6 | 6.1 | 14 | 10 | 14 | 4.1 | 5.7 | 4.6 | 0.9 | 2.1 |
| Eu | INAA | PPM | 2 | 30000 | -9 | -2 | 2 | -2 | 2 | 2 | 6 | -2 | 2 | -2 | -2 | -2 |
| Tb | INAA | PPM | 1 | 30000 | -9 | -1 | -1 | -1 | 1 | -1 | 4 | -1 | -1 | -1 | -1 | -1 |
| Yb | INAA | PPM | 5 | 2000 | -9 | 7 | -5 | 7 | 6 | -5 | 7 | -5 | -5 | -5 | -5 | -5 |
| Lu | INAA | PPM | 0.5 | 2000 | -9 | 0.8 | -0.5 | 0.7 | 0.7 | -0.5 | 0.8 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 |
| Sc | INAA | PPM | 0.5 | 2000 | -9 | 32 | 20 | 38 | 41 | 6.5 | 6.3 | 8.3 | 27 | 12 | 0.8 | 3 |
| Hf | INAA | PPM | 2 | 30000 | -9 | -2 | -2 | 4 | 9 | 6 | -2 | 4 | 4 | 4 | 3 | 3 |
| Ta | INAA | PPM | 1 | 2000 | -9 | -1 | -1 | -1 | 1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 |
| Th | INAA | PPM | 0.5 | 3000 | -9 | 1.6 | 2.3 | 0.5 | 11 | 7 | 1.9 | 5.5 | 2.9 | 6.3 | 1.4 | 2.5 |
| U | INAA | PPM | 0.5 | 2000 | -9 | 0.9 | 1.4 | 1 | 7.3 | 1.2 | 0.9 | 1.9 | 0.7 | 2.3 | 0.7 | 0.6 |
| Na | INAA | PCT | 0.05 | 10 | -9 | 2.6 | 3.2 | 3.7 | 2.9 | 1.1 | -0.05 | 3.4 | 2.9 | 3.6 | 0.32 | 0.07 |
| Br | INAA | PPM | 1 | 30000 | -9 | 3 | 2 | 1 | -1 | -1 | 2 | -1 | -1 | -1 | -1 | -1 |
| Rb | INAA | PPM | 10 | 10000 | -9 | 26 | 47 | -10 | 44 | -10 | -10 | 61 | 46 | 56 | 36 | 27 |
| Zr | INAA | PPM | 500 | 10000 | -9 | -500 | -500 | -500 | 530 | -500 | -500 | -500 | -500 | -500 | -500 | -500 |
| Ir | INAA | PPB | 100 | 1000 | -9 | -100 | -100 | -100 | -100 | -100 | -100 | -100 | -100 | -100 | -100 | -100 |
| AG | ICP | PPM | 0.5 | 60 | 26.9 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 |
| Cu | ICP | PPM | 1 | 20000 | 102 | 56 | 158 | 176 | 42 | 27 | 34 | 16 | 67 | 9 | 4 | 4 |
| Pb | ICP | PPM | 2 | 10000 | 140 | 19 | 10 | 8 | 11 | 117 | 9 | 20 | 32 | 13 | -2 | 6 |
| ZN | ICP | PPM | 2 | 20000 | 45 | 106 | 71 | 89 | 112 | 173 | 457 | 117 | 193 | 75 | 8 | 13 |
| Mo | ICP | PPM | 1 | 20000 | 2 | 8 | 7 | 9 | 5 | 12 | 9 | 3 | 6 | 4 | -1 | 4 |
| NI | ICP | PPM | 1 | 20000 | -1 | 49 | 58 | 62 | 33 | 15 | 65 | 31 | 82 | 11 | 3 | 8 |
| Co | ICP | PPM | 1 | 20000 | 3 | 35 | 24 | 29 | 22 | 24 | 95 | 12 | 38 | 14 | 2 | 6 |
| Cd | ICP | PPM | 2 | 2000 | 3.7 | -2 | -2 | -2 | -2 | -2 | -2 | -2 | -2 | -2 | -2 | -2 |
| BI | ICP | PPM | 5 | 2000 | 113 | 6 | -5 | 15 | 7 | -5 | -5 | 11 | 10 | -5 | -5 | 8 |
| As | ICP | PPM | 5 | 2000 | 2000 | 204 | 144 | 38 | 30 | -5 | 31 | 22 | 61 | 23 | 7 | -5 |
| SB | ICP | PPM | 5 | 2000 | 2000 | 145 | 26 | 38 | 6 | -5 | -5 | -5 | 7 | 13 | 20 | 8 |
| Fe | ICP | PCT | 0.01 | 10 | 7.62 | 7.92 | 6.92 | 8.11 | 9.48 | 8.58 | 10 | 3.14 | 7.41 | 3.12 | 0.47 | 1.11 |
| Mn | ICP | PPM | 5 | 20000 | 37 | 1360 | 1044 | 1234 | 1479 | 919 | 691 | 753 | 1803 | 642 | 46 | 143 |
| Te | ICP | PPM | 25 | 2000 | -25 | -25 | -25 | -25 | -25 | -25 | 44 | -25 | -25 | -25 | -25 | -25 |
| Ba | ICP | PPM | 5 | 2000 | 59 | 1022 | 1053 | 49 | 1243 | 54 | 399 | 1015 | 1083 | 869 | 177 | 51 |
| CR | ICP | PPM | 2 | 20000 | 15 | 114 | 31 | 159 | 97 | 21 | 14 | 45 | 50 | 20 | 9 | 18 |
| V | ICP | PPM | 2 | 2000 | -2 | 222 | 217 | 206 | 269 | 23 | 17 | 62 | 165 | 91 | 4 | 15 |
| SN | ICP | PPM | 20 | 2000 | -20 | 31 | -20 | 30 | 35 | -20 | 33 | -20 | 22 | -20 | -20 | -20 |
| W | ICP | PPM | 20 | 2000 | -20 | -20 | -20 | -20 | -20 | -20 | -20 | -20 | -20 | -20 | -20 | -20 |
| LI | ICP | PPM | 2 | 2000 | 94 | 14 | 11 | 12 | 11 | 35 | 7 | 11 | 18 | 23 | 7 | 9 |
| GA | ICP | PPM | 10 | 2000 | -10 | 26 | 23 | 26 | 21 | -10 | 13 | 19 | 25 | 21 | -10 | -10 |
| LA | ICP | PPM | 5 | 2000 | -5 | 13 | 11 | 7 | 40 | 26 | -5 | 18 | 15 | 16 | -5 | 8 |
| Ta | ICP | PPM | 5 | 2000 | -100 | -100 | -100 | -100 | -100 | -100 | -100 | -100 | -100 | -100 | -100 | -100 |
| TI | ICP | PCT | 0.01 | 10 | 0.01 | 0.54 | 0.5 | 0.72 | 0.65 | 0.14 | 0.04 | 0.21 | 0.58 | 0.27 | 0.03 | 0.06 |
| Al | ICP | PCT | 0.01 | 10 | 0.43 | 8.84 | 8.24 | 7.21 | 6.81 | 2.71 | 1.56 | 8.09 | 8.82 | 7.16 | 1.63 | 1.9 |
| MG | ICP | PCT | 0.01 | 10 | 0.06 | 4.11 | 1.9 | 3.79 | 3.87 | 1.78 | 0.07 | 1.07 | 3.27 | 0.81 | 0.07 | 0.76 |
| CA | ICP | PCT | 0.01 | 10 | 0.04 | 7.51 | 6.68 | 7.42 | 4.94 | 6.82 | 0.14 | 2.14 | 3.95 | 1.88 | 0.04 | 0.37 |
| NA | ICP | PCT | 0.01 | 10 | 0.04 | 2.58 | 3.02 | 3.59 | 2.93 | 0.85 | 0.68 | 3.09 | 2.76 | 3.31 | 0.28 | 0.11 |
| K | ICP | PCT | 0.01 | 10 | 0.12 | 0.82 | 0.89 | 0.31 | 1.35 | 0.21 | 0.48 | 1.51 | 1.35 | 1.57 | 0.72 | 0.77 |
| Nb | ICP | PPM | 5 | 2000 | -5 | 9 | 9 | 10 | 14 | 9 | 41 | 9 | 11 | 8 | -5 | -5 |
| Sr | ICP | PPM | 1 | 2000 | 11 | 798 | 1070 | 147 | 315 | 70 | 21 | 391 | 572 | 485 | 17 | 7 |
| Y | ICP | PPM | 5 | 2000 | -5 | 12 | 8 | 21 | 32 | 10 | 47 | 7 | 12 | 8 | -5 | -5 |
| Zr | ICP | PPM | 5 | 2000 | -5 | 21 | -5 | 14 | 12 | 53 | 20 | 46 | 7 | 81 | 7 | 10 |
| Pb | AA | PPM | 2 | 10000 | 143 | 3 | 3 | 3 | 5 | 144 | 6 | 8 | 8 | 9 | -2 | 9 |
| Bi | AA | PPM | 1 | 2000 | 140 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 |
| S_Tot | LECO | PCT | 0.02 | 100 | | | | | | | | | | | | |
| Zr | XRF | PPM | 1 | 20000 | | | | | | | | | | | | |
| Pt | FADCP | PPB | 5 | 10000 | | | | | | | | | | | | |
| Pd | FADCP | PPB | 1 | 10000 | | | | | | | | | | | | |
| HG | CV AA | PPM | 0.01 | 50 | 18.75 | 0.108 | 0.581 | 0.025 | 0.012 | -9 | -9 | -9 | -9 | -9 | -9 | -9 |
| Sn | XRF | PPM | 1 | 10000 | -9 | -5 | 8 | 16 | 13 | -9 | -9 | -9 | -9 | -9 | -9 | -9 |

Table 2. Geochemistry for land evaluation unit 14 - Goodnews Bay.

| | | Sample | | | 92KC136 | 92KC137 | 92KC 138 | 92KC 139 |
|---|---|---|---|---|---|---|---|---|
| | | Longitude, west | | | 161.695 | 161.713 | 161.713 | 161.713 |
| | | Latitude | | | 59.406 | 59.41 | 59.41 | 59.41 |
| | | | Limits | | | | | |
| Element | Method | Units | Lower | Upper | | | | |
| Au | INAA | PPB | 5 | 10000 | -5 | -5 | -5 | -5 |
| Ag | INAA | PPM | 5 | 300 | -5 | -5 | -5 | -5 |
| Zn | INAA | PPM | 200 | 30000 | -200 | -200 | -200 | -200 |
| Mo | INAA | PPM | 2 | 30000 | -2 | -2 | -2 | -2 |
| Ni | INAA | PPM | 20 | 30000 | -20 | -20 | -20 | 84 |
| Co | INAA | PPM | 10 | 20000 | -10 | -10 | -10 | 45 |
| Cd | INAA | PPM | 10 | 2000 | -10 | -10 | -10 | -10 |
| As | INAA | PPM | 1 | 10000 | 3 | 3 | 3 | 6 |
| Sb | INAA | PPM | 0.2 | 9999 | 1 | 1.2 | 0.9 | 0.7 |
| Fe | INAA | PCT | 0.5 | 10 | 1.7 | 4.5 | 0.9 | 8.6 |
| Se | INAA | PPM | 10 | 30000 | -10 | -10 | -10 | -10 |
| Te | INAA | PPM | 20 | 2000 | -20 | -20 | -20 | -20 |
| Ba | INAA | PPM | 100 | 20000 | 180 | -100 | 120 | -100 |
| Cr | INAA | PPM | 50 | 30000 | -50 | -50 | -50 | 160 |
| Sn | INAA | PPM | 200 | 30000 | -200 | -200 | -200 | -200 |
| W | INAA | PPM | 2 | 30000 | -2 | -2 | -2 | -2 |
| Cs | INAA | PPM | 1 | 10000 | -1 | -1 | -1 | 3 |
| La | INAA | PPM | 5 | 30000 | 21 | 8 | -5 | 6 |
| Ce | INAA | PPM | 10 | 30000 | 81 | 25 | -10 | 17 |
| Sm | INAA | PPM | 0.2 | 2000 | 14 | 2.1 | 0.9 | 3.7 |
| Eu | INAA | PPM | 2 | 30000 | 2 | -2 | -2 | -2 |
| Tb | INAA | PPM | 1 | 30000 | 2 | -1 | -1 | -1 |
| Yb | INAA | PPM | 5 | 2000 | 8 | -5 | -5 | -5 |
| Lu | INAA | PPM | 0.5 | 2000 | 1.3 | -0.5 | -0.5 | 0.5 |
| Sc | INAA | PPM | 0.5 | 2000 | 3.9 | 2.9 | 0.7 | 44 |
| Hf | INAA | PPM | 2 | 30000 | 11 | 6 | -2 | 3 |
| Ta | INAA | PPM | 1 | 2000 | 1 | -1 | -1 | -1 |
| Th | INAA | PPM | 0.5 | 3000 | 10 | 2.5 | 0.7 | -0.5 |
| U | INAA | PPM | 0.5 | 2000 | 2.3 | 0.6 | -0.5 | -0.5 |
| Na | INAA | PCT | 0.05 | 10 | 0.07 | 0.08 | 0.16 | 2.2 |
| Br | INAA | PPM | 1 | 30000 | -1 | -1 | -1 | -1 |
| Rb | INAA | PPM | 10 | 10000 | 88 | 13 | -10 | 31 |
| Zr | INAA | PPM | 500 | 10000 | -500 | -500 | -500 | -500 |
| Ir | INAA | PPB | 100 | 1000 | -100 | -100 | -100 | -100 |
| AG | ICP | PPM | 0.5 | 60 | -0.5 | -0.5 | -0.5 | -0.5 |
| Cu | ICP | PPM | 1 | 20000 | 3 | 2 | 2 | 43 |
| Pb | ICP | PPM | 2 | 10000 | 6 | -2 | 4 | 5 |
| ZN | ICP | PPM | 2 | 20000 | 36 | 17 | 16 | 93 |
| Mo | ICP | PPM | 1 | 20000 | 2 | -1 | -1 | 3 |
| NI | ICP | PPM | 1 | 20000 | 4 | 3 | 2 | 54 |
| Co | ICP | PPM | 1 | 20000 | 1 | 7 | 7 | 36 |
| Cd | ICP | PPM | 2 | 2000 | -2 | -2 | -2 | -2 |
| BI | ICP | PPM | 5 | 2000 | -5 | -5 | 17 | -5 |
| As | ICP | PPM | 5 | 2000 | 11 | -5 | -5 | 34 |
| SB | ICP | PPM | 5 | 2000 | 13 | 12 | -5 | -5 |
| Fe | ICP | PCT | 0.01 | 10 | 1.21 | 3.53 | 0.55 | 7.56 |
| Mn | ICP | PPM | 5 | 20000 | 180 | 52 | 720 | 769 |
| Te | ICP | PPM | 25 | 2000 | -25 | -25 | -25 | -25 |
| Ba | ICP | PPM | 5 | 2000 | 111 | 36 | 79 | 53 |
| CR | ICP | PPM | 2 | 20000 | 4 | 13 | 5 | 89 |
| V | ICP | PPM | 2 | 2000 | 2 | 9 | 16 | 216 |
| SN | ICP | PPM | 20 | 2000 | -20 | -20 | 22 | -20 |
| W | ICP | PPM | 20 | 2000 | -20 | -20 | -20 | -20 |
| LI | ICP | PPM | 2 | 2000 | 6 | 7 | 4 | 39 |
| GA | ICP | PPM | 10 | 2000 | 17 | -10 | -10 | 23 |
| LA | ICP | PPM | 5 | 2000 | 18 | 6 | -5 | -5 |
| Ta | ICP | PPM | 5 | 2000 | -100 | -100 | -100 | -100 |
| TI | ICP | PCT | 0.01 | 10 | 0.08 | 0.03 | -0.01 | 0.35 |
| AI | ICP | PCT | 0.01 | 10 | 5.04 | 0.67 | 0.39 | 7.41 |
| MG | ICP | PCT | 0.01 | 10 | 1.11 | 0.19 | 10 | 3.94 |
| CA | ICP | PCT | 0.01 | 10 | 1.45 | 0.09 | 10 | 6.32 |
| NA | ICP | PCT | 0.01 | 10 | 0.23 | 0.07 | 0.14 | 2.05 |
| K | ICP | PCT | 0.01 | 10 | 1.73 | 0.2 | 0.2 | 0.86 |
| Nb | ICP | PPM | 5 | 2000 | 17 | -5 | -5 | -5 |
| Sr | ICP | PPM | 1 | 2000 | 13 | 3 | 43 | 74 |
| Y | ICP | PPM | 5 | 2000 | 28 | -5 | -5 | 12 |
| Zr | ICP | PPM | 5 | 2000 | 93 | -5 | -5 | -5 |
| Pb | AA | PPM | 2 | 10000 | 7 | -2 | 6 | 5 |
| Bi | AA | PPM | 1 | 2000 | -1 | -1 | -1 | -1 |
| S_Tot | LECO | PCT | 0.02 | 100 | | | | |
| Zr | XRF | PPM | 1 | 20000 | | | | |
| Pt | FADCP | PPB | 5 | 10000 | | | | |
| Pd | FADCP | PPB | 1 | 10000 | | | | |
| HG | CV AA | PPM | 0.01 | 50 | -9 | -9 | -9 | -9 |
| Sn | XRF | PPM | 1 | 10000 | -9 | -9 | -9 | -9 |

TABLE 3: SAMPLE LOCATIONS

| GEOCHEM SAMPLE NUMBER | MAJOR OXIDE SAMPLE NUMBER | LONGITUDE WEST | LATITUDE NORTH |
|---|---|---|---|
| | 92BU2 | 161.450 | 59.500 |
| 92BT1 | | 161.445 | 59.497 |
| 92BT32 | | 161.439 | 59.466 |
| 92KC137 | | 161.713 | 59.410 |
| 92BT18 | | 161.712 | 59.399 |
| 91BT19 | | 161.718 | 59.397 |
| 92BT20 | | 161.726 | 59.393 |
| | 92BT17 | 161.703 | 59.397 |
| 92BT16 | | 161.696 | 59.394 |
| 92KC136 | | 161.695 | 59.406 |
| 92BU30 | | 161.688 | 59.401 |
| 92BU30.5 | | 161.688 | 59.401 |
| 92KC132 | | 161.688 | 59.401 |
| 92KC133 | | 161.688 | 59.401 |
| 92BU29 | | 161.683 | 59.400 |
| 92KC129 | | 161.683 | 59.399 |
| 92KC130 | | 161.683 | 59.399 |
| 92KC128 | | 161.675 | 59.401 |
| | 92BU27 | 161.662 | 59.399 |
| 92BU7 | | 161.544 | 59.419 |
| 92BT32 | | 161.438 | 59.466 |
| 92BU5 | | 161.365 | 59.458 |
| | 92KC118 | 161.199 | 59.404 |
| | 92KC117 | 161.199 | 59.404 |
| 92HA6 | | 161.217 | 59.386 |
| | 92BU17 | 161.472 | 59.366 |
| | 92BU18 | 161.472 | 59.366 |
| 92BU20 | | 161.459 | 59.371 |
| 92BU9 | | 161.425 | 59.363 |
| | 92BU8 | 161.419 | 59.367 |
| 92BU14 | | 161.409 | 59.372 |
| 92BU12 | | 161.399 | 59.378 |
| | 92BU10 | 161.331 | 59.345 |
| | 92BU11 | 161.331 | 59.345 |
| 92KC114 | | 161.332 | 59.345 |
| 92KC115 | | 161.331 | 59.345 |
| 92KC116 | | 161.331 | 59.345 |
| | 92BT12 | 161.334 | 59.349 |
| | 92BT11 | 161.334 | 59.349 |
| | 92JK8 | 161.334 | 59.349 |
| | 92JK9 | 161.334 | 59.349 |
| | 92JK10 | 161.334 | 59.349 |
| 92BT14B | | 161.496 | 59.262 |
| 92BT14D | | 161.495 | 59.262 |
| | 92BT13 | 161.506 | 59.258 |
| | 92BT29 | 161.506 | 59.258 |
| 92BT28 | | 161.658 | 59.221 |
| | 92BT27 | 161.652 | 59.216 |

TABLE 3, CONT: SAMPLE LOCATIONS

| GEOCHEM SAMPLE NUMBER | MAJOR OXIDE SAMPLE NUMBER | LONGITUDE WEST | LATITUDE NORTH |
|---|---|---|---|
| 92BT25 | | 161.658 | 59.208 |
| 92HA11 | | 161.709 | 59.192 |
| 92HA12 | | 161.705 | 59.193 |
| 92HA13 | | 161.701 | 59.194 |