



REPORT ON GEOCHEMICAL AND ASSAY RESULTS

FOR 2006 DRILL CORE SAMPLES FROM

DDH NES-00-01

NESBITT MAHAFFY PROJECT

NESBITT & MAHAFFY TOWNSHIPS

PORCUPINE MINING DIVISION

NTS: 42-A/13 48 53" N 81 20" W CLAIM MAP #: M-0555 CLAIM MAP #: G-3024

April 19, 2006

K. M. Cunnison

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REPORT ON GEOCHEMICAL AND ASSAY RESULTS FOR 2006 DRILL CORE SAMPLES FROM DDH NES-00-01 NESBITT MAHAFFY PROJECT NESBITT & MAHAFFY TOWNSHIPS PORCUPINE MINING DIVISION

INTRODUCTION

In January 2000, a 176-metre diamond drill hole (NES-00-01) was drilled on the Nesbitt-Mahaffy Property to test an HLEM conductor (see OPAP File No OP99-326). Forty-three (43) core samples were assayed during the drilling program. All samples were analysed for copper and nickel; in addition, 23 of the samples were analysed for Zn, 3 samples for gold, and 8 samples for platinum and palladium.

On April 2, 2006 a further twenty-six (26) samples were taken for analysis from DDH NES-00-01. Twenty-one (21) samples were analysed for copper, nickel, zinc, platinum, palladium and gold. Five of the samples were submitted for whole rock analysis (WRA), rare earth element (REE) analysis, and were also analysed for an additional number of trace elements, including Cu, Ni and Zn. This report discusses geochemical results from the 26 samples of drill core analysed in 2006.

LOCATION AND ACCESS

The property is located approximately 45 kilometres north of the city of Timmins (Figure 1a) in the Porcupine Mining Division. It is accessed from bush roads off the old Abitibi Camp 40 Road; a detailed description of the access is given in Appendix A.

PROPERTY DESCRIPTION

The property consists of two contiguous claims (Table 1) which are comprised of eight 40 acre claim units - 4 units in Nesbitt Township and 4 units in Mahaffy Township (Figures 1b and 2).

CLAIM #	# OF UNITS	DESCRIPTION	TOWNSHIP
P4202895	4		Mahaffy
P1207057	4	S1/2, Lot 12, Con I	Nesbitt

Table 1: Property Description



GENERAL GEOLOGY

Little is known of the stratigraphic setting of the property due to the absence of outcrop, and to a general lack of exploration work on the claim group and surrounding area. Lithologies encountered in DDH NES-00-01, and in two diamond drill holes put down by Temco Mines Limited in 1974, indicate that the claim in Nesbitt Township is mainly underlain by pillowed, amygdaloidal mafic to intermediate volcanics, graphitic argillite, gabbro, and ultramafic intrusive rocks. Regional interpretation suggests that the rhyolites extending into the south part of the property in Mahaffy Township (Bright and Hunt, 1972) are possibly correlative with the Kidd Creek rhyolites.

PREVIOUS WORK

Other than regional geological compilation maps of the general Timmins area, the only geological maps available for the area are preliminary maps for Mahaffy Township (Bright and Hunt, 1972; Hunt and Maharaj, 1980).







Figure: 15 : Claim Map



Previous exploration work carried out on the Nesbitt-Mahaffy Property is summarized below in Table 2 and consists of the following:

In 1964, Ghislau Mining Corporation Ltd. carried out magnetic and vertical loop electromagnetic (VLEM) surveys on the Nesbitt claim, along north-south lines spaced every 300 feet. The magnetic survey was run with an Askania vertical field magnetometer and the VLEM survey utilized a Sharpe SE-200 unit. The EM survey detected a number of conductors on the flanks of an east west trending magnetic high anomaly. A horizontal loop EM survey was recommended; however, none was undertaken.

YEAR	COMPANY/INDIVIDUAL(S)	GEOPHYSICS	DRILL HOLES	ASSESSMENT FILE/ OPAP FILE No.
2000	D. LONDRY, D. PYKE		NES-00-01	OPAP file OP99-326
1999	D. LONDRY, D. PYKE	IP		
1992 -1994	D. LONDRY, D. PYKE	MAG, VLF, HLEM		Assessment file 2.15355 OPAP file OP93-361
1974	TEMCO MINES LIMITED	VLF	75-1, 75-2	Assessment file 1681
1965	CINCINNATI PORCUPINE MINES LTD	AMAG, AEM		
1964	GHISLAU MINING CORP. LTD.	MAG, VLF		Assessment file 829

Table 2: Summary of previous assessment work.

In 1965, Canadian Aero Mineral Surveys Limited flew a combined EM and magnetic survey for Cincinnati-Porcupine Mines Ltd. in the northern part of Mahaffy and southern part of Aubin Townships. Part of the survey extended into the southern part of the claims in Mahaffy Township.

In 1975, Temco Mines Limited conducted a VLF survey and drilled two 500 foot diamond drill holes (75-1 and 75-2; Figure 4) in the southeast part of claim P1207057, intersecting mainly basalt and gabbro with minor porphyry. One 5-foot section of gabbro, containing disseminated pyrrhotite with minor chalcopyrite, assayed 0.4 percent Cu. Bleaching (silicification?) is reported throughout a 60-foot section

of basalt. No conductors were intersected in either of the holes to explain airborne EM anomalies on the property.

In 1988, the Ontario Geological Survey (OGS, 1988) conducted a combined airborne magnetic and electromagnetic survey for the Timmins area, which included the Nesbitt-Mahaffy claim group. The survey was flown along north-south lines spaced approximately every 200 metres.

During December 1992 - January 1993 a grid was established on the property and magnetic, very low frequency (VLF) and horizontal loop electromagnetic (HLEM) surveys were carried out by the present claim holders (Figures 3 and 4). An east-west base line, designated 0 North, was established along the north edge of Mahaffy Township and the south edge of Nesbitt Township. North-south grid lines were cut every 100 metres and picketed every 20 metres. The base line at 0 North and tie lines at 800 North and 800 South were picketed every 25 metres. The HLEM survey outlined three bedrock conductors, none of which were intersected by the two holes drilled in 1975. Conductor 'A' is located along the north flank of an east-west trending magnetic high anomaly, which reflects an ultramafic intrusive body (Figures 3 and 4). Conductor 'B' is located immediately to the south of the magnetic high and only has a strike length of approximately 150 metres. Conductor 'C' strikes west northwest within an area of low magnetic susceptibility, which may reflect rhyolites underlying the south half of the property.

In 1994, two additional "fill-in" lines were cut to detail one of the conductors (anomaly 'B') and the added lines were surveyed with HLEM (Figure 4). The dip of the source of conductor 'B" is difficult to determine from the EM profile because the south shoulder of the anomaly is incomplete and the north shoulder is affected by the response from conductor 'A' to the north. EM profiles over conductor 'A' on Lines 0, 100 and 800 East, where they are not affected by other sources, indicate a south dip. The magnetic profile over the ultramafic also indicates a south dip (Figure 3). The fact that Hole 75-2, which was drilled by Temco in 1975, did not intersect a conductor also suggests that conductor 'B' dips to the south (Figure 4).



FIGURE 3 : Compilation of Previous Work, 1964 - 1999



The claims were subsequently dropped and re-staked in 1997. In 1999, an induced polarization survey was carried out to the west of anomaly 'B' on Lines 200, 300 and 400 East. The purpose of the survey was to map the west extension of conductor 'B' which was not detected in the EM survey. The IP survey did not detect a west extension of zone 'B'. The limited apparent strike length of conductor 'B' suggested that the zone might not represent a formational graphite conductor. IP anomaly 'D' (Figures 3 and 4) is a high chargeability, high resistivity response which strikes east southeast and is located on the south flank of the magnetic high. IP anomaly 'D' coincides with a weak EM anomaly which was not interpreted in the 1992 results; the corresponding EM anomaly is poorly defined because of interference from the stronger response of anomalies 'A' and 'B'.

In January 2000, diamond drill hole NES-00-01 was put down at 0 North on Line 550 East to test EM anomaly 'B' for potential base metal mineralization. The hole was drilled at an azimuth of 360° and an inclination of -50° , for a total depth of 176 metres (Figures 4 and 5). Summary statistics and the diamond drill log for DDH NES-00-01 are contained in Appendix B.

Conductor "B", intersected in DDH NES-00-01, is a 10-metre wide gabbro matrixed graphite breccia bearing 5-20% pyrrhotite and 2-10% disseminated pyrite with traces of chalcopyrite (Figure 5). Brecciation of the highly sulphide bearing graphite schist likely occurred during entrapment within the upper portion of a layered mafic-ultramafic intrusion, whose upper (south) contact is weakly chilled against pillowed, amygdaloidal basalts. A highly feldspathic, 5 metre wide leucoxene-bearing leucogabbro unit occurs within the upper portion of the layered intrusion, approximately 10 metres down hole from the lower graphite breccia contact. This unit has a sharp but unchilled uphole contact with the surrounding gabbro and contains 10-20% fine interstitial pyrrhotite with 1-4% pyrite and occasional fine traces of chalcopyrite. The leucogabbro is in contact downhole with a 40 metre wide interval of olivine-bearing pyroxenite/peridotite. This unit is moderately to highly sulphide-bearing, containing 5 to 20% fine-grained interstitial pyrrhotite, 2-7% pyrite and common traces of chalcopyrite. Interstitial sulphides



Figure 5 : DDH NES-00-01, SECTION LOOKING WEST

ale 1:1000

1 cm = 10 metres

Averaged Magnetic Susceptibility Readings



Meterage of Core Downhole

Average Magnetic Susceptibility Readings for DDH NES-00-01

Readings Were Taken Every 0.33 Metres and Averaged over 1 Metre Intervals

commonly exhibit a net texture. The highest percentages of sulphide within the pyroxenite/peridotite unit occur within the interval 134 - 144 metres, which is referred to as the 'main sulphide-bearing zone'. The last 10 metres of the drill hole intersected fine grained, highly serpentinized, massive peridotite-dunite with trace to locally 3% interstitial pyrrhotite and minor pyrite.

Magnetic susceptibility readings were taken every 0.33 metres throughout the entire drill hole (Figure 6). Readings, which are dimensionless and are calibrated in CGS units, were averaged every metre (i.e. three readings averaged per metre). High magnetic susceptibility readings were found to correlate well with higher percentages of pyrrhotite in the core.

43 assay samples were taken from DDH NES-00-01 during the 2000 diamond drill program; descriptions, meterages and assay results for these samples are included in Appendix C. All 43 samples were assayed for copper and nickel, and selected samples were assayed for zinc and gold. In addition, **8** of the samples were analyzed for platinum and palladium. The graphite breccia was found to contain significantly anomalous zinc (181 - 727 ppm), copper (266 - 535 ppm), nickel (157 - 606 ppm) and gold (nil to 51 ppb) over its entire width. The sulphide-bearing pyroxenite-peridotite was sampled continuously for 19 metres from its uphole contact (i.e. samples 14978 – 14993, from 125.36 – 144.4 m). The pyroxenite-peridotite assay samples returned Ni values ranging between 133 - 1210 ppm and copper values of 92 - 493 ppm over the entire interval sampled. One six-metre wide assay interval (samples 14987 – 14991; 136.0 – 142.0 m) from the 'main sulphide-bearing zone' returned nickel values ranging between 1030 - 1210 ppm, and significantly anomalous copper values (343 - 493 ppm). None of the eight samples analyzed for platinum and palladium were found to contain these elements in detectable amounts.

In 2002, an airborne MEGATEM survey was flown over a large portion of the north Timmins area, including the Nesbitt – Mahaffy Property, as part of the Discover Abitibi Project (Dumont et al, 2002).

PRESENT WORK

On April 2 2006, twenty-six (26) samples of diamond drill core were taken for analysis from DDH NES-00-01. The sampling was carried out by D. R. Pyke at Star Lake, west of the City of Timmins, where the core is stored. SGS Minerals Services – SGS CANADA INC., located in Don Mills, Ontario, carried out all analytical work. Twenty-one (21) of the samples were analysed for copper, nickel, zinc, platinum, palladium, and gold. Five additional samples were analysed for whole rock analysis (WRA) consisting of 11 major and 6 "standard" minor elements (Ba, Rb, Sr, Nb, Zr, Y). The 5 whole rock samples were also analysed for rare earth elements (REE's), and an additional number of trace elements, including Cu, Ni and Zn. Sample descriptions and intervals (meterage) for all analysed samples are included in Appendix D. The geochemical data, invoice, and Certificate of Analysis from SGS Minerals Services are contained within Appendix E. A detailed summary of sample preparation and relevant analytical methods (issued by SGS Minerals Services with the geochemical results) is included within Appendix F; therefore sample preparation and analytical methods are not reiterated here.

Whole rock major element data plots for the five lithogeochemical samples are presented in Figures 7 through 10. The two gabbro samples (NES-92 and NES-117) plot within the transition zone between calc-alkaline basalt and andesite on both the Jenson Cation Plot and the AFM diagram (Figures 7 and 8). In addition, the gabbros fall within the andesite field on a Na2O + K2O versus SiO2 plot (Figure 9), and plot within the calc-alkine field on a plot of FeOt/MgO versus SiO2 (Figure 10). The two samples from the pyroxenite-periditie unit (NES-147 and NES-158) plot, as expected, within the peridotitic komatiite field on the Jensen Cation Plot and the AFM diagram. Sample NES-175, from the unit logged as "dunite-peridotite" that was intersected in the bottom of the hole, plots close to the transition zone between basaltic and peridotitic komatiite on both diagrams. This sample contains only 19.9 wt% MgO,

FeOt+TiO2





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Figures 7 and 8. Jensen Cation Plot (top) and AFM diagram (bottom) for 2006 whole rock samples from DDH NES-00-01, Nesbitt – Mahaffy Property. (Triangles = gabbro; circles = pyroxenite/peridotite, squares = dunite/peridotite.) Jensen Plot from Jensen (1976); AFM diagram from Irvine and Baragar,(1971).



Figure 9. Plot of Na2O + K2O vs. SiO2 for gabbro samples NES-92 and NES-117, DDH NES-00-01, Nesbitt – Mahaffy Property. (Plot from Cox et al, 1979)



Figure 10. Plot of FeOt/MgO vs. SiO2 for gabbro samples NES-92 and NES-117, DDH NES-00-01, Nesbitt-Mahaffy Property. (Plot from Myashiro, 1974)



Figure 11. Chondrite normalized REE plots for samples from DDH NES-00-01, Nesbitt – Mahaffy Property. (Triangle = gabbro; circle = pyroxenite/peridotite; square = dunite/peridotite).



Figures 12a, b and c. Bivariate plots of sample depth (meterage) versus Ni, Cu and Pt for 2006 samples from DDH NES-00-01, Nesbitt- Mahaffy Property. (Triangle = gabbro, circle = pyroxenite/peridotite, square = dunite/peridotite.)



Figures 13a and b. Bivariate plots of Pt versus Ni and Pt versus Cu for 2006 samples from DDH NES-00-01, Nesbitt- Mahaffy Property. (Triangle = gabbro, circle = pyroxenite/peridotite, square = dunite/peridotite.)

compared to MgO contents of 25.4 and 25.6 wt% for the pyroxenite-peridotite samples. SiO2, Cr, Ni and Co contents are also considerabley lower in the dunite-peridotite sample, suggesting that, in fact, this unit is not nearly as olivine-rich as it was visually assessed to be.

Figure 11 presents chondrite normalized REE plots for the five lithogeochemical samples. The two samples from the pyroxenite-peridotite unit (NES-147 and NES-158) have low REE values and flat profiles, except for a slightly pronounced negative Eu anomaly, suggesting that plagioclase fractionation has been involved as a process. Sample NES-175 has a flat REE profile and exhibits slightly higher REE contents than the two pyroxenite-peridotite samples.

Figures 12 a, b, and c show the variation of nickel, copper and platinum with depth down the drill hole between 90 and 180 metres. The pyroxenite-peridotite samples generally have the highest contents for all three elements, particularly copper and platinum, where values range up to 295 ppm and 30 ppb, respectively. Gabbro sample NES-19 contains 80 ppb Pt, which is quite anomalous, and also contains 224 ppm copper. Platinum shows a weak positive correlation with both nickel and copper (Figures 13a and b).

CONCLUSIONS AND RECOMMENDATIONS

The limited amount of geochemical data available indicates that the unit logged as "dunite-peridotite" in the bottom of DDH NES-00-01 is much less olivine-rich than visually assessed to be; several thin sections from this should be cut and examined to better define the mineralogy.

Samples from the central pyroxenite-peridotite unit generally have higher contents of nickel, copper and platinum than observed within either the uphole gabbro or the downhole "dunite-peridotite" units. Samples from the pyroxenite unit have anomalous Cu and Pt contents ranging up to 295 ppm and 30 ppb, respectively.

It is recommended that further diamond drilling be undertaken to test HLEM conductors "A" and "B" for potential Cu-Ni-PGE mineralization along and/or within the ultramafic gabbroic complex.

An MMI (mobile metal ion) geochemical survey should be considered to better evaluate formational conductor "C" in the southwest portion of the property, with respect to possible base metal or gold potential.

April 20, 2006 Date

Kimberly Cunnison

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ONTARIO GEOLOGICAL SURVEY

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- 1988: Airborne Electromagnetic and Total Intensity Survey, Timmins Area, *Nesbitt Township*, Districts of Cochrane and Timiskaming Ontario; by Geoterrex Limited, for Ontario Geological Survey. Geophysical/Geochemical Series *Map* 81038. Scale 1:20,000. Survey and compilation from March 1987 to October 1987.

Appendix A

Property Access

Access to Mahaffy/Nesbitt Property

mileage

- 0. Country Style Donut Shop at junction of Highways 655 & 101 head north along Highway 655.
- 22.0 Km Junction of Kidd Creek Minesite road and Highway 655 turn right and continue north along 655.
- 40.4 Km Hydro Dam road turn left heading west.
- 43.3 Km Old Abitibi Camp 40 Road stay to right heading north.

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- 44.3 Km Site of the old Camp 40.
- 45.4 Km Turnoff to Hydro Dam keep going north on Camp 40 Road. In the winter snowmobile must be used beyond this point.
- 45.7 Km 'Y' in the Camp 40 road keep to the left heading west. In summer a 4-wheel drive vehicle is recommended beyond this point.
- 51.0 Km Junction with smaller logging road turn right onto this road heading north.
- 53.0 Km As far as you can drive in the summer, at 200 South, 200 West on established grid. East west bush roads at approximately 200 and 400 North allow access to the east side of the property in the winter by snowmobile.

Appendix B

Summary Statistics and Drill Log for DDH NES-00-01

Summary Statistics

Diamond Drill Hole NES-00-01

Location	Nesbitt Township, Porcupine Mining Division
Mining claim	P 1207057 (South half of Lot 12, Concession 1)
N.T.S.	42A/NW
Contractor	Bradley Bros. Limited
Co-ordinates	L 5+50E, 0+00N
Started	January 12, 2000
Stopped	January 15, 2000
Collar Azimuth	360 degrees
Collar Dip	-50 degrees
Core Size	BQ
Length of Hole	176 metres
Casing Depth	49 metres
Logged by	K. Cunnison
Core stored at	Keefer Township, Big Star Lake

Down Hole Data (Acid Test)

Test depth: 50 m Angle etched on tube: 58 degrees Corrected angle of inclination: 49 degrees

Test depth: 125 m Angle etched on tube: 60 degrees Corrected angle of inclination: 51 degrees

Drill Hole Summary: The hole was drilled to test Conductor B for potential base metal mineralization. The conductor is a 10 metre wide gabbro matrixed graphite breccia bearing 5-20% pyrrhotite and 2-10% disseminated pyrite with traces of chalcopyrite. Brecciation of the highly sulphide bearing graphite schist occurred during entrapment within the upper portion of a layered mafic-ultramafic intrusion, whose upper (south) contact is weakly chilled against

pillowed, amygdaloidal basalts. A highly feldspathic, 5 metre wide leucoxene-bearing leucogabbro unit occurs within the upper portion of the layered intrusion, approximately 10 metres downhole from the lower graphite breccia contact. This unit has a sharp but unchilled uphole contact with the surrounding gabbro and contains 10-20% fine interstitial pyrrhotite with 1-4% pyrite and occasional fine traces of chalcopyrite. The leucogabbro is in contact downhole with a 40 metre wide interval of olivine-bearing pyroxenite/peridotite. This unit is moderately to highly sulphide-bearing, containing 5 to 20% fine-grained interstitial pyrrhotite, 2-7% pyrite and common traces of chalcopyrite. Interstitial sulphides commonly exhibit a net texture. The last 10 metres of the drill hole intersected fine grained, highly serpentinized, massive dunite/peridotite with trace to locally 3% interstitial pyrrhotite and minor pyrite.

Magnetic susceptibility readings were taken every 0.33 metres throughout the entire drill hole. Readings, which are dimensionless and are calibrated in CGS units, were averaged every metre (i.e. three readings averaged per metre). High magnetic susceptibility readings were found to correlate well with higher percentages of pyrrhotite in the core (see Figure 6).

Nesbitt Township Property

Diamond Drilling Log for DDH NES-00-01

0.0	-	49.0 m	Casing in Overburder	n
		1210 111		

49.0 - 53.0 m Likely Boulders Drilled at Bedrock Interface- very large

At the beginning of the first box of drill core, there are two core meterage blocks labeled NW49 and NQ 49. The 50 metre block is 0.3 metres downhole from the NW and NQ 49 metre blocks. The 53-metre block is 2.0 metres downhole from the 50-metre block.

The core is moderately blocky from 49 metres until approximately 54 metres. From 53.0 - 53.15 metres, the rock is very soft, green and crumbly.

2.52 metres of measured core between the 56 and 59 metre blocks.

<u>From 49.0 - 53.0 m</u> - interval is fine grained, pale greenish buff in colour, quite hard, mafic to intermediate volcanics (?). Moderately banded, with moderate to strong pervasive and fracture filling bleaching/zoisite alteration. 10-15%, 0.5-3.0 cm wide creamy buff zoisite veins, often pitted with minor seams of pyrite, generally trending at 50-85 degrees to the core axis.

<u>From 50.5 - 53.0 m</u> - moderately bleached and banded; 15% pitted zoisite veins; zone contains 5% to locally 50%, 0.5 -2.0 mm sized anhedral disseminated "clots" of a very dark green to black, hard mineral (amphibole?). The heterogeneous distribution of amphibole clots forms vague dark "clotted bands" from 1 to 5 cms in width, which are generally diffuse and trend at 50 -60 degrees to the core axis.

53.0 - 92.04 m Amygdaloidal and Pillowed Mafic Volcanics

Amygdaloidal, pillowed mafic volcanics. Fine grained, medium greygreen in colour, weakly foliated, and commonly containing 2-3% very fine, white disseminated leucoxene. Pillow selvages are generally thin (<1 cm), filled with zoisite + calcite + chlorite and, increasing down hole, containing significant pyrrhotite. The rock within 1 to 2 cms of zoisite-altered selvages is weakly pervasively bleached. Minor thin zoisite filled fractures throughout. Amygdules are not abundant (< 5%), are moderately elongate, 2-6 mm in length, and are filled with zoisite + minor calcite +/- pyrrhotite. Weak pervasive calcite alteration throughout, with minor granular grey-white calcite-quartz veinlets from 0.5-3.0 cm in width, trending at 30 – 45 degrees to the core axis. Trace to 1% fine disseminated pyrrhotite in veins near vein margins.

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<u>From 54.95 - 57.90 m</u> - darker green, non-bleached, more massive interval with 5 % fine disseminated leucoxene - possible mafic dyke (?) - contacts broken.

<u>From 64.0 - 84.0 metres</u> - Carbonaceous in situ fracture brecciated zone with moderate to strong pyrrhotite alteration of pillow selvages and amygdules.

<u>From 65.0 - 84.0 m</u> - Weak to moderate grey zone alteration with pyrrhotite mineralization developed in pillowed, amygdaloidal basalt.

At 65.0 m - core becomes greyer in colour (medium grey-buff), with a weak to moderate intensity of thin, irregular, in-situ brecciation fractures. Fractures are 0.5 to 5 mm in width and are filled with fine grained, dark grey, hard, carbonaceous- siliceous material, and contain 1 to 10% fine grained, magnetic pyrrhotite. Pillow selvages in this interval are commonly pyrrhotite bearing. 0.5 to 3.0 cm wide bands of massive to semi-massive, fine-grained pyrrhotite fill moderately zoisite and calcite altered pillow selvages trending at 55 - 70 degrees to the core axis. Traces of chalcopyrite are commonly observed associated with pyrrhotite in this zone. Chalcopyrite occurs as fine grained to patchy irregular blebs, seams and stringers (from 0.2 - 7 mm in length) at the margins of pyrrhotite altered pillow selvages and fractures, and as fine intergrown patches within the pyrrhotite. 2-5 cm wide margins to pyrrhotite-bearing pillow selvages are commonly highly bleached (zoisitic). Fine, planar cooling cracks within pillows commonly contain pale yellow-grey zoisite(?) + quartz. The zone is cut by minor zoisite fractures and veinlets and minor pale grey, planar, granular textured calcite-quartz veinlets.

<u>From 65.96 - 66.0 m</u> - 4 cm wide band containing 70% fine bands to locally massive pyrrhotite in pillow selvage. 7 mm long fine fracture filled with chalcopyrite cuts the downhole margin of the pyrrhotite band.

<u>From 67.5 - 67.8 m, 73.05 - 73.55 m</u> - 10-15% black, siliceous, carbonaceous in situ brecciation fractures contain 5-10% pyrrhotite and traces of chalcopyrite.

<u>At 69.3 m</u> - 2 cm wide band of semi-massive pyrrhotite in pillow selvage trends at 65 degrees to the core axis. A 2 mm wide and 1 cm long seam of chalcopyrite borders the uphole margin of the pyrrhotite

<u>From 69.66 - 69.72 m</u> - 4.5 cm wide band of layered, massive to semimassive pyrrhotite in pillow selvage trending at 70 degrees to the core axis. Traces of chalcopyrite in the margins of the pyrrhotite band.

<u>From 71.26 - 71.33 m</u> - 7 cm wide pillow selvage contains a 3 cm wide very siliceous, pale creamy white alteration band trending at 80 degrees to the core axis. The siliceous alteration band is cut by several, 0.7 - 1.5

cm wide bands of massive pyrrhotite. Several 2-4 mm long fractures filled with chalcopyrite occur in and bordering the pyrrhotite at 71.28 m.

At 74.06 m, 74.95 m, 77.25 m, 78.0 m, 78.13 m, 80.10 m, 80.90 m, 81.40 m, 81.50 m, 82.35 m - 0.5 to 2 cm wide pillow selvages or in situ brecciation fractures containing semi-massive to massive pyrrhotite. All have traces of chalcopyrite as fine patchy to streaky intergrowths in pyrrhotite or as fine seams in the margin of the pyrrhotite bands. Pyrrhotite bands trend at 50-85 degrees, averaging 60-65 degrees to the core axis.

81.35 - 81.55 m - 4-5 mm clot of coarser chalcopyrite within semimassive pyrrhotite in pillow selvage.

At 84.0 m - the pillowed volcanic rapidly (over 1 meter) becomes greener in colour and loses the dark grey to black in situ brecciation fracturing. Fine cooling cracks and amygdules are more pronounced, and are pale creamy yellow in colour and very hard. The volcanic appears to be more highly amygdaloidal (5+% amygdules common). The amygdules are weakly elongate, 1-6 mm in length (averaging 2-4 mm) and are cored with greyish-white calcite and minor pyrrhotite, and rimmed by pale creamy yellow zoisite. Pillow selvages generally no longer contain pyrrhotite after approximately 84 metres, although 1-5% pyrrhotite is occasionally observed in localized in situ brecciation fractures. The intensity of in situ brecciation fractures drops off to very low. Trace chalcopyrite is common in pyrrhotite-bearing fractures, where they do occur. The intensity of granular grey-white calcite stringers and veins to 1 cm wide increases slightly, but is less than 5-7%. Calcite veins trend at 25 degrees to sub-parallel to the core axis, and are occasionally oxidized, pitted and vuggy.

<u>84.0 - 95.5 m</u> - Trace to locally 4-5% pyrrhotite as fine fracture fillings and diffuse disseminated clots. Higher pyrite percentages generally occur within restricted, brecciated intervals from 10-25 cm in width.

<u>84.3 - 84.7 m</u> - Moderately to strongly bleached zone - highly zoisite altered. The alteration occurs along numerous fine, irregular fractures generally trending at 40-50 degrees to the core axis. Several 0.5 cm wide pyrrhotite bands within this interval are offset along the bleached fractures.

90.0 - 92.04 m - The rock is a fine grained, amygdaloidal basalt with 5% amygdules up to 1 cm in size. At 92.04 is an intrusive contact (?) although no well developed chilled margin is observed.

92.04 - 95.50 m

Gabbro, Medium to Coarse Grained, Massive

Chilled (?) contact into massive, medium-grained gabbro. The rock is mottled, medium grey-green in colour and displays a well developed gabbroic texture. The rock contains 50-60% subhedral plagioclase

feldspar (colour index is 40-50), 40-45% mafic minerals, now altered to actinolite and lesser chlorite, and 1-2% pale blue to mauve anhedral quartz grains from 1-2 mm in size. The gabbro exhibits weak pervasive calcite alteration. The quartz grains are commonly observed coring feldspar aggregates. The gabbro gradationally becomes coarser grained downhole. Trace to very locally 3-4% anhedral, 0.2 - 1.3 cm wide clots of diffuse interstitial pyrrhotite.

<u>At 92.04 m</u> - Poorly developed 1.5 cm wide chilled contact trends at 30 degrees to the core axis. The gabbro rapidly becomes coarser grained away from the contact.

At 92.54 m - Thin seam of fracture filling pyrrhotite trends at 55 degrees to the core axis. Trace fine chalcopyrite in pyrrhotite.

<u>94.45 - 95.50 m</u> - coarsest grained interval (still medium grained) with several 1-3 cm size angular to subrounded inclusions of finer grained basalt. From <u>95.0 - 95.5 m</u> - 2-3% interstitial pyrrhotite as anhedral, diffuse clots from 0.2 - 2.0 cm in size and as finer disseminations. The sulphide distribution is quite variable. <u>At 95.02 m</u> - 3% pyrrhotite containing traces of chalcopyrite.

<u>At 95.50 m</u> - The downhole contact is occupied by a 4 cm wide quartzepidote-calcite vein trending at 35-45 degrees to the core axis. The vein is vuggy and fractured. 0.5% blebs of pyrrhotite + pyrite in fine vein fractures and vein margin.

95.50 - 110.20 m Gabbro Matrixed Graphite Schist Breccia, Highly Pyrrhotite and Lesser Pyrite Bearing (Highly Conductive - Conductor B)

Angular breccia with 30 - 70% highly pyrrhotite bearing graphitic schist fragments, set within a fine to medium fine grained, medium greenish grey leucocratic gabbro matrix. The rock is very dark grey to black and moderately to strongly magnetic where there are a high percentage of graphitic fragments

30-70% irregular and angular fragments of very dark grey to black, highly pyrrhotite bearing and moderately magnetic graphite schist. The fragments are very "greasy", soft and highly graphite bearing. Fragments vary in size from < 1 mm to 5-6 cms. Larger fragments appear as 3 mm to 3 cm wide bands (ie very elongate fragments are longer than the core diameter). The percentage of fragments is gradationally variable, with the lowest percentage of fragments occurring near the margins of the breccia.Fragments are strongly (often very finely) foliated to schistose and occasionally exhibit a crenulated to contorted deformation fabric, indicating the graphite was highly deformed prior to brecciation. In some fragments, the foliation planes contain very thin (<0.5 mm) seams of calcite which are contorted along with the foliation in many samples. A well developed fabric in the breccia trends at 40-70 degrees to the core axis (generally at 50-60 degrees) and is defined by the orientation or imbrication of elongate fragments. In many cases, the internal schistosity of elongate fragments is parallel to the direction of fragment elongation. However, approximately 25% of the fragments exhibit highly contorted schistosities. Near its contacts, the breccia contains a higher proportion of matrix (to 70%), and the fragments are often randomly or chaotically oriented, although weak imbrication of fragments does persist.

Many of the fragments (>85%) are highly pyrrhotite bearing. Most of the pyrrhotite (>95%) is very fine grained, moderately to strongly magnetic, and occurs as fine seams and bands in the fragments, which may reflect primary sulphide layering. The bands are often planar and parallel to the schistosity, but are contorted along with the graphite bands in fragments exhibiting contorted fabrics.

The gabbroic breccia matrix is moderately hard, medium to fine-medium grained, medium greenish grey in colour and exhibits a fine "acicular gabbroic" mottled texture. The gabbroic matrix colour index is 35. The matrix consists of 70% pale grey to pale whitish green (where saussuritized), subrounded to stubby lath shaped plagioclase feldspars, from 0.5 - 2 mm in size, which form a framework. Fine grained, pale to medium green actinolite + chlorite occur interstitial to plagioclase and comprise 10-15% of the breccia matrix. A highly acicular, white to pale green mineral (7%) (actinolite?, rutile?) forms randomly oriented needles to 1.5 mm long which occur interstitial to both the feldspars and mafic minerals.

The matrix contains 2-5% pyrrhotite, occurring as intergranular, irregular, anhedral diffuse clots from 0.2 - 4 mm in size, and rare fine fractures. 10% of the pyrrhotite has been altered to pyrite. Traces of very fine chalcopyrite are observed occasionally throughout the unit, and are generally contained within pyrrhotite in both the clasts and matrix.

Within the matrix, pyrite generally occurs as 0.5 - 7 mm irregular, anhedral diffuse clots which internally have a fine granular texture and are almost always finely pitted. The clots are often weakly to moderately elongate (3:1) parallel to the main breccia fabric, as indicated by imbrication of elongate graphite clasts. Diffuse pyrite clots are confined to the matrix, but often occur at the immediate boundary of graphitic clasts. Less than 5% of the pyrite occurs as extremely fine, thread-like fracture fillings, some subparallel to the main breccia fabric and others cross-cutting the fabric at varying angles. The fractures cut both the clasts and the matrix, and are themselves not folded. Locally there are minor traces of brown, disseminated sphalerite (?), which forms anhderal clots and patches less than 4 mm in size within both clasts and matrix. <u>From 95.50 to roughly 99.0 m</u> - 30-45% fragments. The percentage of fragments in this interval increases gradationally downhole away from the uphole graphite-gabbro contact.

<u>From 95.85 - 95.90 m</u> - 4 cm wide band (fragment?) of dark grey siliceous chert with very sharp and planar but broken margins trending at approximately 60% to the core axis. A vague, 2-4 mm scale planar fabric is observed in the fragment and trends parallel to the fragment margins. The chert is cut by minor irregular, extremely fine fractures filled with the matrix material. Trace pyrrhotite and pyrite in fractures.

<u>At 96.72 m</u> - 1.5 cm wide medium to pale grey, fine grained quartz vein trending at 55 degrees to the core axis. Trace to 0.5% fine pyrite bands in the vein margins.

<u>From 99.0 - 109.7 m</u> - 50 to 75 or 80% fragments, averaging 60%. Fragments are often moderately to strongly imbricated. The interval is moderately to strongly magnetic.

<u>From 101.00 - 101.30 m</u> - 0.25 metre wide vuggy white quartz-calciteepidote vein. The uphole vein contact is sheared and planar at 50 degrees to the core axis, and the downhole contact is fractured and broken. White granular calcite occurs as 0.5 cm fracture veinlets in quartz. Vuggy epidote occurs in the vein within 0.07 metres of the uphole and downhole contacts. Trace to 0.5% disseminated pyrite, trace pyrrhotite in vein margins.

<u>At 104.03 m</u> - 1.5 cm wide dike of the medium grey-green matrix material trending at 80 degrees to the core axis. The dyke margins are sharp, but very invaginated and irregular. 2-3% combined very fine disseminated, interstitial pyrthotite and pyrite.

At 104.47 m - 0.5 to 1.2 cm wide irregular dyke of matrix material (as described above), trending at 75-80 degrees to the core axis.

<u>From 104.96 - 105.15 m</u> - 0.5% chalcopyrite as irregular, 1-2 mm granular blebs and in fine fractures also containing pyrrhotite and pyrite. 5-7% total sulphides in this interval.

<u>At 105.4 m</u> - 1.2 cm wide dyke of matrix material similar to the dyke at 104.03 m, but here is paler grey. The dyke is wavy to irregular and contains <5%, 0.2 to 1.5 mm sized angular inclusions of black graphitic material. Trace very fine disseminated pyrrhotite and pyrite.

From approximately 102.5 - 110.2 m - The graphite breccia is moderately to strongly magnetic, and contains 3 to locally 12-15% pyrrhotite, averaging greater than 5%. Also contains trace to locally 3-4% granular disseminated pyrite clots and bands.

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At 102.3 m, 103.55 m, 103.85 m, 104.96-105.15 m, 105.35 m, 105.64 m, 107.50 m, 108.30-108.43 m - Traces (very locally to 0.5 - 1%) of chalcopyrite as fine blebs and seams at the margins of pyrrhotite patches or as fine exsolutions within the pyrrhotite in both the clasts and matrix.

<u>From 108.30 - 108.43 m</u> - 0.5 to 1% chalcopyrite as fine, granular textured fracture fillings. Fractures also contain pyrrhotite and pyrite. 7% total sulphides in this interval.

From 109.7 - 110.2 m - 30-40% fragments. The percentage of gabbro matrix gradationally increases towards the downhole graphite-gabbro contact.

<u>From 109.70 - 109.9 m</u> - 5-10% total sulphides. Pyrrhotite and pyrite in roughly equal amounts. Traces of chalcopyrite. Several 1-2 mm clots of brown sphalerite(?), but may be oxidized pyrrhotite.

<u>From 109.7 - 110.2 m</u> - 7-10% coarser disseminated and fracture filling pyrite, often finely pitted. 5-6% pyrrhotite, trace chalcopyrite and trace sphalerite.

<u>From 109.9 - 110.2 m</u> - many of the clasts in this interval (30%) are very "delicate" and elongate, with length to width ratios of 4:1 to 6:1, and are up to 2 cm in length. 85% of the clasts are moderately imbricated sub-parallel to the breccia fabric (50-60 degrees to the core axis), but 15% of these elongate clasts have a very random, nonsystematic orientations.

The downhole contact is sharp, planar and trends at 62 degrees to the core axis.

110.20 - 120.37 m

Gabbro, Medium to Coarse Grained

Massive, medium grey-green, generally medium grained gabbro with finer grained gradational zones. The gabbro, with a colour index of 40, contains 50-60 % subhedral to anhedral, light grey plagioclase crystals averaging 2-4 mm in size, with rare grains/aggregates to 5+ mm. 35-40% fine grained, dark to medium green actinolite occurs interstitial to plagioclase. Possible 2-3% fine (<1 mm) black, serpentinized olivine (?) grains. Metre scale alternating finer grained and coarser (medium grained) intervals are defined by the percentage and size of plagioclase crystals in the intervals. Coarser grained intervals generally have higher percentages of plagioclase and slightly lower colour indices.

The gabbro is cut by minor (<5%) pale, fine grained, creamy white quartz-zoisite veins. Most veins are 0.2 - 1 cm wide planar fracture fills, and >85% of the veins trend at between 45 and 15 degrees to the core axis. The veins contain trace to 1%, 1-2 mm disseminated clots and bands of pyrrhotite and trace pyrite. The gabbro contains 0.5 - locally 4% weakly to moderately magnetic pyrrhotite and 0.2 - 2.0 mm diffuse

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intergranular textured clots and discontinuous fine fracture fills, often in zoisite veined and altered intervals.

<u>From 110.20 - 110.26 m</u> - 6 cm wide fine grained chill margin at the uphole gabbro contact trends at 55 degrees to the core axis. At 110.26 m, the chill grades abruptly over 1 cm into medium grained gabbro. 1-2% very fine grained disseminated pyrrhotite and 2-3%, 1-4 mm disseminated clots and discontinuous fracture fills of fine granular pyrite in chilled margin.

<u>110.26 - 112.70 m</u> - Medium grained gabbro interval. Trace to very locally 4% pyrrhotite (eg at 111.9 m), as fine grained, 0.3 - 3.0 mm disseminated intergranular clots which are weakly to moderately magnetic. The pyrrhotite content averages 1.5-2%. Very minor disseminated pyrite. 3-5%, 3 mm to 1 cm wide quartz-zoisite filled fractures with weak pervasive alteration for 1-2 cm on either side of the vein margins

<u>111.12 - 111.48 m</u> - 7 cm wide massive quartz-zoisite-minor chlorite vein trending at 25-30 degrees to the core axis. 10%, 0.2 - 0.5 cm wide cockscomb textured bands of pale cream zoisite and minor seams of chlorite occur at the vein margins and in internal vein fractures parallel to the vein margins. Trace to 1% disseminated pyrrhotite and minor fine seams of pyrrhotite at the vein margins.

<u>At 111.90 m</u> - A 2 cm irregular patch bears 10% fine intergranular pyrrhotite.

From 112,7 - 115.10 m - Fine to medium-fine grained gabbro interval. At 112.7 metres, the grain size rapid gradationally decreases downhole (over 2 cm). Feldspar crystals are up to 2 mm in size. The overall grain size increases downhole in this interval, but there are occasional 4-5 cm wide intervals of alternating finer grained and coarser grained gabbro. Alternation from finer to coarser grain size is generally rapid gradational over 1-3 cms. No well-defined crystal layering was observed. 5% zoisite veins (as described above) carry 1-3% fine pyrrhotite clots and bands. The downhole boundary of this interval is arbitrary and is not defined by discernable layering or mineralogical banding.

<u>From 115.50 - 120.37 m</u> - Medium grained gabbro interval, very massive with little veining. Within 15 cm of the downhole contact, the grain size grades from medium to fine-medium grained. No chilled downhole contact. 0.5 to locally 4-5% pyrrhotite as diffuse, intergranular clots from 1.5 - 5 mm in size.

From 118.5 - 119.3 m - Higher percentage of pyrrhotite - 4 to 5%, occurs as described above.

120.37 - 125.35 m - Leucoxene-Bearing Leucogabbro with 10-15% Interstitial Sulphides

The leucogabbro is massive, medium to pale grey-green in colour with a mottled gabbroic texture and medium to coarse grained. The colour index is 20. 70% feldspar occurs as subhedral, grey to white crystals from 1-5 mm in size, often forming clotty aggregates. 10-15% fine grained shreddy to acicular, medium green actinolite occurs as seams and grain aggregates interstitial to the framework feldspars. 3-5% leucoxene is enclosed within the mafic material and occurs as 0.2 - 1.2 mm, very pale whitish-grey anhedral grains. 3-4% very fine granular calcite occurs as pervasive alteration of interstitial mafic material and along fractures in feldspar grains. 10-13% (to very locally 15+%) granular, fine-grained pyrrhotite occurs as 2-10 mm, irregular bands and patches within the mafic material interstitial to feldspars. The highest percentages of sulphide occur in the upper two-thirds of the unit; after this the percentage gradually decreases downhole. Minor traces of very fine chalcopyrite occur throughout (e.g. at 120.80 m and 121.5 m).

The uphole contact of the leucogabbro is sharp and wavy at 20-30 degrees to the core axis, but is not chilled on either side of the contact. The leucogabbro may have been injected into the "normal" gabbro as a more fractionated crystal mush. The leucogabbro is somewhat coarser grained within 0.2 metres of the uphole contact.

<u>From 121.60 - 122.08 m</u> - two, 4-5 cm wide, fractured quartz-zoisitecalcite veins trend at 20-30 degrees to the core axis. The vein from 121.89 - 122.08 metres contains 5-7% pyrrhotite as discontinuous seams along internal vein bands/fractures. Pyrrhotite occurs along the margins of 2-4 mm wide zoisite veins, which occur as crack-seal fills within the quartz vein.

<u>From 124.00 - 124.50 m</u> - 1.5 cm wide wavy to irregular grey quartzzoisite-chlorite-minor calcite vein trends sub parallel to the core axis. Vein margins are moderately sheared and highly chloritized, and contain 4-5% coarse anhedral pyrrhotite clots and traces of fine cubic pyrite.

<u>After approximately 124.20</u> - The percentage of sulphides drops off rapidly to less than 1% to very locally 2%.

At 124.92 m - 2 cm wide interval with 2% intergranular pyrrhotite and several coarse blebs of chalcopyrite.

<u>From 124.93 - 125.05 m</u> - The core is quite rubbly, broken, therefore it is very difficult to determine the downhole contact of the leucogabbro unit.

<u>From 123.95 - 124.95 m</u> - At 123.95 metres, the rock begins to get finer grained. Approximately 50% of this interval is fine grained, dark green, with 1-3% very fine, disseminated white leucoxene. The remaining 50% of the rock in this interval is medium-coarse grained, feldspar-rich

leucogabbro, as described above. The alternating finer and coarser grained intervals define a vague layering, the contacts of which trend approximately at 45 - 50 degrees to the core axis. Transition zones between coarser and finer grained material occur at 123.75 m, 124.90 m and 124.95 m. At 124.90, there is a rapid gradational planar "contact" from finer grained to coarser grained rock. At 124.95 metres there are several very large euhedral feldspar crystals, 8-10 mm in size. After 124.95, no macroscopic feldspar crystals are observed in this unit.

<u>From 124.95 - 125.36 m</u> - The rock is fine grained, dark green with no visible feldspar crystals, but contains 2-3% fine disseminated white leucoxene. Traces of pyrrhotite. The downhole contact from 125.26 - 125.36 is very rubbly and broken.

125.36 - 165.90 m Medium Grained, Olivine-Bearing Pyroxenite/Peridotite, Highly Altered and Sulphide-Bearing

Massive, medium grained olivine-bearing pyroxenite to peridotite. The rock is very dark green-grey to black in colour, highly altered to serpentine-tremolite-lesser talc, with 10-15% white to pale grey mottling due to patchy pervasive calcite+ talc alteration. 2-20% olivine (averaging 5-10% ?) occurs as 1 - 3 mm size black, highly serpentinized, subrounded to rounded grains throughout the unit. Generally 5-10%, 3-5 cm wide planar, whitish green, soft, talc-carbonate+/quartz veins, most often trending at 35 - 40 degrees to the core axis. Occasional 0.5 - 2.0 metre wide intervals are more strongly in situ fracture brecciated and altered, containing 10 to locally 40% irregular, thin talc-carbonate-minor quartz veins.

The pyroxenite/peridotite contains from 3 - locally 20% fine grained, moderately to strongly magnetic, granular textured interstitial pyrrhotite, occurring between highly altered pyroxene and olivine grains and grain aggregates. The sulphides often exhibit moderately well developed net textures (e.g. from 134 - 135 m). The percentage of pyrrhotite is highly variable within the unit, but probably averages 5-10%. The pyroxenite itself is very weakly magnetic, and therefore magnetic susceptibility readings taken across this unit are very useful for estimating the percentage of interstitial pyrrhotite. Intervals with higher magnetic susceptibility readings contain higher percentages of pyrrhotite, which is corroborated by visual estimates. Trace to 3% pyrite, as fine to medium grained clots and patches replacing pyrrhotite occurs throughout, with higher percentages in more highly veined and brecciated intervals. Fine flecks and minor seams of chalcopyrite are commonly observed within pyrrhotite throughout the pyroxenite/peridotite, although the percentage is low (nil to < 0.5% very locally).

<u>From 125.36 - 126.50 m</u> - The interval is finer grained, medium greygreen in colour. From 126.50 through 127.0 metres there is a very gradational increase in grain size downhole, and the core becomes darker grey-green to black in colour. 1-3% very fine grained, patchy, interstitial pyrrhotite containing very minor flecks of fine chalcopyrite.

From 134.0 - 144.0 m - Main sulphide-bearing zone.

4% to locally 15-20% interstitial pyrrhotite, averaging 5-10%. Trace to 3% pyrite and very minor blebs and seams of chalcopyrite. Moderate to high magnetic susceptibility readings of 0.14 to 3.3

<u>From 135.5 - 142.2 m</u> - Interval contains 10-20% pyrrhotite, averaging 13 - 15%. Trace to 3% pyrite, trace to very locally 0.5% fine chalcopyrite in pyrrhotite.

<u>At approximately 144.5 m</u> - the percentage of sulphides decreases to an average of <1-2%, although occasional 1-5 cm intervals contain up to 5% sulphides (e.g. at 146.5 m, 146.65 m)

<u>From 145.60 - 146.70 m</u> - moderately to strongly fractured, with 15-20% irregular, pale greenish white veins of talc+tremolite+carbonate.

<u>From 158.0 - 158.40 m</u> - 4-5% interstitial fine pyrrhotite, < 0.5% pyrite in pyrrhotite and trace chalcopyrite(?) - not assayed.

165.90 - 176.0 m

m Fine to Medium Grained Massive Peridotite-Dunite

The peridotite-dunite is very massive, weakly magnetic, fine to medium grained, medium to dark greyish green in colour and highly altered to serpentine + tremolite. The rock has a very felty texture on core ends, and contains 50+%, 0.5 - 2.5 mm, black, subrounded to rounded, highly serpentinized olivine grains. The percentage of olivine is difficult to estimate due to the strong serpentine-tremolite alteration. The unit is cut by very minor talc-carbonate slips and fractures generally trending at 40-45 degrees to the core axis. Trace to locally 2% very fine disseminated pyrrhotite and traces of fine pyrite.

<u>At 165.0 m</u> - very rapid gradation (over 2 cm) downhole into the finer grained peridotite-dunite unit.

From 166.3 - 166.7 m - Core is very rubbly and broken, with several 0.5 cm wide seams of fine, white fault gouge material.

176.0 m End of Hole. The casing was pulled.

Appendix C

Sample Descriptions and Assay Results for Samples Taken in 2000

DDH NES-00-01

JANUARY 2000 - ASSAY SAMPLE DESCRIPTIONS

<u>14951</u> (93.40 - 94.40 m)

Medium grained massive gabbro sill with trace to very locally 3% interstitial pyrite, averaging less than 1%. Trace pyrite and very minor traces of chalcopyrite in pyrrhotite.

<u>14952</u> (94.4 - 95.4 m)

Medium grained gabbro. 2-3% interstitial granular pyrrhotite clots from 95.0 - 95.5 metres, with trace chalcopyrite.

<u>14953</u> (95.40 - 96.40 m)

Gabbro matrixed graphite breccia; includes pitted quartz-calcite-epidote vein at uphole breccia unit contact. 2-3% pyrrhotite, 2% disseminated pyrite. Trace chalcopyrite associated with pyrrhotite.

14954 (96.4 - 97.4 m)

Gabbro matrixed graphite breccia. 2% pyrrhotite, 2-3% disseminated and fine fracture filling pyrite. Trace chalcopyrite associated with pyrrhotite.

14955 (97.4 - 98.4 m)

Gabbro matrixed graphite breccia. 3-5% pyrrhotite, 2-3% disseminated and fine fracture filling pyrite. Traces of chalcopyrite associated with pyrrhotite.

14956 (98.40 - 99.90 m)

Gabbro matrixed graphite breccia. 3-5% pyrrhotite, 1-4% disseminated and fine fracture filling pyrite, averaging 2.5%. Trace chalcopyrite associated with pyrrhotite.

14957 (99.90 - 101.00 m)

Gabbro matrixed graphite breccia, 4-5% pyrrhotite, 3% disseminated and fine fracture filling pyrite. Trace chalcopyrite within pyrrhotite.

14958 (101.0 - 101.4 m)

Gabbro matrixed graphite breccia. Interval includes a 0.25 metre wide vuggy white quartz-calcite-epidote vein (as described in the drill log). Trace to 0.5% disseminated pyrite, trace pyrrhotite in vein margins.

<u>14959</u> (101.4 - 102.9 m)

Gabbro matrixed graphite breccia. 2-5% pyrrhotite, 1-2% disseminated pyrite (as previously described).

DDH NES-00-01 JANUARY 2000, ASSAY SAMPLE DESCRIPTIONS (cont..)

All assay samples from 14960 to 14966 are of gabbro matrixed graphite schist breccia with variable percentages of pyrrhotite, 1-7% pyrite and traces of chalcopyrite and medium brown sphalerite. Refer to diamond drill log for detailed description of mineralized intervals.

 $\frac{14960}{14961} (102.9 - 103.9 m) - graphite schist breccia$ $<math display="block">\frac{14961}{14962} (103.9 - 104.9 m) - graphite schist breccia$ $<math display="block">\frac{14962}{14963} (105.9 - 107.2 m) - graphite schist breccia$ $<math display="block">\frac{14964}{14965} (107.2 - 108.2 m) - graphite schist breccia$ $<math display="block">\frac{14965}{14966} (108.2 - 109.2 m) - graphite schist breccia$

<u>14967</u> (110.2 - 111.12 m)

Medium grained gabbro; trace to very locally 4% fine disseminated intergranular pyrrhotite, averaging 1-1.5% with trace disseminated pyrite. 2-3% pyrite and 1-2% disseminated pyrhotite in uphole 6 cm margin from 110.20 - 110.26 m

<u>14968 (</u>111.48 - 112.7)

Medium grained gabbro; trace to very locally 4% fine disseminated intergranular pyrrhotite, average 1-1.5%. Trace disseminated pyrite clots and discontinuous fine fractures.

14969 (112.7 - 113.7 m)

Fine to medium grained massive gabbro. Minor quartz-zoisite veining. 0.5 to locally 4% pyrrhotite as 0.2-2 mm disseminated clots and discontinuous fine fracture fillings and in zoisite veins.

<u>14970</u> (113.7 - 114.7 m) Same as 11969

<u>14971</u> (118.4 - 119.4)

Medium grained massive gabbro. 4-5% pyrrhotite as diffuse, irregular intergranular clots from 1.5-5 mm in size.

14972 (119.4 - 120.37)

Medium grained massive gabbro. 0.5 - locally 3% irregular disseminated clots of intergranular pyrrhotite. Trace fine disseminated pyrite.

14973 (120.37 - 121.4)

Leucoxene-bearing leuocratic gabbro. 10-13% granular pyrrhotite, occuring as 2-10 mm irregular intergranular patches, aggregates interstitial to framework feldspars. Trace chalcopyrite in pyrrhotite at 120.8 m.

DDH NES-00-01 JANUARY 2000, ASSAY SAMPLE DESCRIPTIONS (cont..)

14974 (121.4 - 122.4)

Leucoxene-bearing leucocratic gabbro. 10-13% granular, interstitial pyrrhotite (as in 14973). Interval contains two, 4-5 cm wide quartz-zoisite-calcite veins (as described in drill log). 5-7% pyrrhotite as discontinuous seams within vein. Trace chalcopyrite in pyrrhotite at 121.5 m.

14975 (122.4 - 123.4 m)

Same as 14973. 10% pyrrhotite, trace chalcopyrite at 123.6 m

14976 (123.4 - 124.4 m)

As described in 14973, but 7-10% pyrrhotite. Pyrrhotite content decreases gradually downhole in sample. Sample includes a 1.5 cm irregular grey quartz-zoisite-chlorite-calcite vein (124.0-124.5 m) sub parallel to core axis. 4-5% coarse anhedral pyrrhotite clots and traces of pyrite in chloritized vein margins.

14977 (124.4 - 125.36 m)

Downhole 1.0 m of leucocratic gabbro (see diamond drill hole for description). 1-3% fine disseminated pyrrhotite. Several small flecks of chalcopyrite in margin of 3 mm pyrrhotite clot at 124.92 m.

<u>14978</u> (125.36 - 126.4 m)

Fine grained, medium grey green pyroxenite. 1-3% fine grained, interstitial pyrrhotite and trace pyrrhotite.

All samples from 14979 to 14993 are of the medium grained, highly serpentinized and sulphide-bearing olivine-bearing pyroxenite/peridotite, with 5-20% subrounded to rounded olivine grains and from 3 to locally 20% fine intergranular sulphides (pyrrhotite, 1-4% disseminated pyrite and traces of chalcolpyrite and very locally traces of medium brown sphalerite).

14979 (126.4 - 127.6 m) - Olivine pyroxenite/peridotite. 1-7% interstitial sulphides.

14980 (127.6 - 128.8 m) - Olivine pyroxenite/peridotite. 1-5% interstitial sulphides.

14981 (128.8 - 130.0 m) - Olivine pyroxenite/peridotite. 1-5% interstitial sulphides.

14982 (130.0 - 131.2 m) - Olivine pyroxenite/peridotite. 1-7% interstitial sulphides.

14983 (131.2 - 132.4 m) - Olivine pyroxenite/peridotite. 1-5% interstitial sulphides.

14984 (132.4 - 133.6 m) - Olivine pyroxenite/peridotite. 4-7% interstitial sulphides.

DDH NES-00-01 JANUARY 2000, ASSAY SAMPLE DESCRIPTIONS (cont..)

<u>Main Sulphide-Bearing Zone in the Olivine Pyroxenite/Peridotite from 134 - 144</u> metres

14985 (133.6 - 134.8 m) - Olivine pyroxenite/peridotite. 5-8% interstitial sulphides.

14986 (134.8 - 136.0 m) - Olivine pyroxenite/peridotite. 15-20% interstitial sulphides.

14987 (136.0 - 137.2 m) - Olivine pyroxenite/peridotite. 20% interstitial sulphides.

14988 (137.2 - 138.4 m) - Olivine pyroxenite/peridotite. 10-15% interstitial sulphides.

14989 (138.4 - 139.6 m) - Olivine pyroxenite/peridotite. 12-16% interstitital sulphides.

14990 (139.6 - 140.8 m) - Olivine pyroxenite/peridotite. 10% interstitial sulphides.

14991 (140.8 - 142.0 m) - Olivine pyroxenite/peridotite. 10-12% interstitial sulphides.

14992 (142.0 - 143.2 m) - Olivine pyroxenite/peridotite. 7-10% interstitial sulphides.

14993 (143.2 - 144.4 m) - Olivine pyroxenite/peridotite. 3-7% interstitial sulphides

10.1000420000



Swastika Laboratories Ltd

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Page 1 of 2

0W-0221-RG1

-

Geochemical Analysis Certificate

Date: JAN-26-00

Company: D. PYKE Project: Attn: D. Pyke

We hereby certify the following Geochemical Analysis of 43 Core samples submitted JAN-24-00 by .

Sample	Au PPB	Au Check PPB	Cu PPM	Ni PRM	Zn PPM	Pt PPB	PB
			28	54	-	-	-
14931	-	•	35	65	-	-	-
14952	Nil	-	266	303	429	-	-
14953	14	-	295	317	453	-	-
14954	48	34	378	426	481	-	
14955				194	529	-	_
14956	7	-	547	449	624	-	-
14957	10	-	333 11 5	157	181	-	.
14958	3		113	401	697	-	-
14959	3	.	229 472	487	727	-	-
14960	14		463			·	
_14961	21	27	359	470	044	-	-
4962	14		337	441	647	-	-
14963	7	-	350	412	030	-	-
14964	24	-	- 368	596	570	~s	-5
14965	Ni I	-	449	606			
14046	51	48	306	446	700	-	-
14900	-	· –	30	73	-	-	-
14707		. =	25	33	-	-	-
14700		. -	30	64	-	-	- '
14070			35	80	-	-	
147/4			26	48		<5	<
14971		-	ž	37	-	•	- '
14972			34	11	56	<5	ও
14973		-	50	10	96	<5	<
14974	NI	· ·	92	12	43	<5	<5
14975	NI] -			· · · · · · · · · · · · · · · · · · ·		<5
14976	' Ni	- 1	53	11	34		5
14977	Ni	1 -	36	133	80		~
14978	•		92	394	*	-	_
14979			178	543	-		-
14980			213	761			
17700							

One assay ton portion used.

Certified by

1 Cameron Ave., P.O. Box 10, Swastika, Ontario POK 170 Telephone (705) 642-3244 Fax (705) 642-3300



10.1000420000



Swastika Laboratories Ltd

Assaying - Consulting - Representation

Page 2 of 2

0W-0221-RG1

Geochemical Analysis Certificate

Date: JAN-26-00

Company: **D. PYKE** Project: Attn: **D. Pyke**

We hereby certify the following Geochemical Analysis of 43 Core samples submitted JAN-24-00 by .

Sample Number	Au PPB	Au Check PPB	Cu PPM	Ni PPM	Zn PIM	Pt PPB	Pd PPB
			170	749	-	-	-
14981	-	-	157	722	-	-	-
14982	-	-	247	803	-	-	-
14983	-	-	125	774	-	-	-
14984	-	-	155	771	-	· _	-
14985	-		100				
14086	-	· -	230	751	-		~5
14087	5	•	395	1030	-	0	2
14098	-	-	451	1040	-	-	-
14900	-	<u> </u>	343	1090	-	-	•
14989	-	-	493	1210	-	-	
			391	1080	-		-
	-	_	220	974	-	-	-
14993	-	-	142	762	-	-	

One assay ton portion used.

Certified by

1 Cameron Ave., P.O. Box 10, Swastika, Ontario P0K 110 Telephone (705) 642-3244 Fax (705) 642-3300 Appendix D

Sample Descriptions, 2006 Sampling Program, Drill Core Samples from DDH NES-00-01

.





SAMPLE	ASSAY INTERVAL (m)	ANALYZED FOR	LITHOLOGY	DESCRIPTION
NES-1	147.0 - 147.5	Cu, Ni, Zn, Au,Pt, Pd	Olivine-rich pyroxenite/peridotite	Fine grained (0.5-1 mm), very dark bluish grey to black, largely altered to serpentine, weak spotty carbonate- talc alteration, weakly magnetic, trace fine pyrrhotite.
NES-2	147.5 - 148.0	Cu, Ni, Zn, Au,Pt, Pd	Olivine-rich pyroxenite/peridotite	Similar to NES-1. Minor relict olivine grains to 2 mm in size, 1% fine disseminated pyrrhotite.
NES-3	148.0 - 148.5	Cu, Ni, Zn, Au,Pt, Pd	Olivine-rich pyroxenite/peridotite	Similar to NES-1. Very weakly magnetic, trace spotty pyrrhotite.
NES-4	148.5 - 149.0	Cu, Ni, Zn, Au,Pt, Pd	Olivine-rich pyroxenite/peridotite	Similar to NES-1. Moderately magnetic, 1-1.5% very fine disseminated pyrrhotite.
NES-5	149.0 - 149.5	Cu, Ni, Zn, Au,Pt, Pd	Olivine-rich pyroxenite/peridotite	Similar to NES-1. 1.5-2% very fine disseminated pyrrhotite.
NES-6	149.5 - 150.0	Cu, Ni, Zn, Au,Pt, Pd	Olivine-rich pyroxenite/peridotite	Similar to NES-1. Locally weakly magnetic, trace to 0.5% very fine dessiminated pyrrhotite.
NES-7	150.0 - 150.5	Cu, Ni, Zn, Au,Pt, Pd	Olivine-rich pyroxenite/peridotite	Similar to NES-1. Weakly magnetic, trace fine pyrrhotite.
NES-8	150.5 - 151.0	Cu, Ni, Zn, Au,Pt, Pd	Olivine-rich pyroxenite/peridotite	Similar to NES-1, but coarser grained and more highly carbonate altered. Olivine grains often carbonate-serpentine altered, to 3-5 mm in size.
NES-9	151.0 - 151.5	Cu, Ní, Zn, Au,Pt, Pd	Olivine-rich pyroxenite/peridotite	Fine to medium grained (1-2 mm), serpeninized with moderate spotty carbonate alteration, weakly magnetic, trace very fine diseminated pyrrhotite.
NES-10	151.5 - 152.0	Cu, Ni, Zn, Au,Pt, Pd	Olivine-rich pyroxenite/peridotite	Fine to medium grained (1-2 mm), serpeninized with moderate spotty carbonate alteration, weakly magnetic, trace very fine diseminated pyrrhotite.

APPENDIX D SAMPLE DESCRIPTIONS 2006 SAMPLING PROGRAM DRILL CORE SAMPLES FROM DDH NES-00-01



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SAMPLE	ASSAY INTERVAL (m)	ANALYZED FOR	LITHOLOGY	DESCRIPTION
NES-11	158.0 - 158.5	Cu, Ni, Zn, Au,Pt, Pd	Olivine-rich pyroxenite/peridotite	Fine to medium grained (1-2 mm), serpeninized with moderate spotty carbonate alteration, moderately magnetic, 2-3% fine diseminated pyrrhotite.
NES-12	163.3 - 163.7	Cu, Ni, Zn, Au,Pt, Pd	Olivine-rich pyroxenite/peridotite	Fine to medium grained (1-2 mm), serpeninized with moderate spotty carbonate alteration, weakly to moderately magnetic, 1% fine diseminated pyrrhotite.
NES-13	165.9 - 166.5	Cu, Ni, Zn, Au,Pt, Pd	Peridotite/dunite	Massive, fine to medium grained, medium to dark greyish green, highly altered to serpentine + talc, non magnetic. Some olivine grains to 3-4 mm. Trace very fine disseminated po + py.
NES-14	166.5 - 167.0	Cu, Ni, Zn, Au,Pt, Pd	Peridotite/dunite	Massive, fine to medium grained, medium to dark greyish green, highly altered to serpentine + talc, weakly magnetic. Trace very fine disseminated po + py.
NES-15	169.5 - 170.0	Cu, Ni, Zn, Au,Pt, Pd	Peridotite/dunite	Massive, fine to medium grained, medium to dark greyish green, highly altered to serpentine + talc, weakly magnetic. Trace very fine disseminated po + py.
NES-16	175.0 - 175.5	Cu, Ni, Zn, Au,Pt, Pd	Peridotite/dunite	Massive, fine to medium grained, medium to dark greyish green, highly altered to serpentine + talc, non magnetic. No visible sulphide.
NES-17	92.15 - 92.54	Cu, Ni, Zn, Au,Pt, Pd	Gabbro	Very fine grained, lite medium grey, minor seams/blebs of pyrrhotite to 2 mm in size, trace very fine cpy associated with po.
NES-18	92.69 - 92.97	Cu, Ni, Zn, Au,Pt, Pd	Gabbro	Fine grained, lite medium grey, 1-1.5% very fine disseminated pyrrhotite associated with traces of cpy.

APPENDIX D SAMPLE DESCRIPTIONS 2006 SAMPLING PROGRAM DRILL CORE SAMPLES FROM DDH NES-00-01





SAMPLE	ASSAY INTERVAL (m)	ANALYZED FOR	LITHOLOGY	DESCRIPTION
NES-19	93.00 - 93.40	Cu, Ni, Zn, Au,Pt, Pd	Gabbro	Massive, medium grained (to 2 mm size), medium grey, CI = 35%. 2% pyrrhotite as 1-10 mm disseminated blebs, some of which contain minor concentrations of cpy.
NES-20	117.0 - 117.46	Cu, Ni, Zn, Au,Pt, Pd	Gabbro	Massive, medium grained (to 2 mm size), medium grey, CI = 35%. Trace fine disseminated pyrrhotite, non magnetic.
NES-21	117.46 - 117.93	Cu, Ni, Zn, Au,Pt, Pd	Gabbro	Massive, medium grained (to 2 mm size), medium grey, non magnetic, no visible sulphide.
NES-92	Taken at 92.3 m - sample length 13 cm		Gabbro	Very fine grained, light medium grey, minor seams/blebs of pyrrhotite to 2 mm in size, trace very fine cpy associated with po.
NES-117	Taken at 117.4 m - sample length 13 cm		Gabbro	Massive, medium grained (to 2 mm size), medium grey, CI = 35%. Trace fine disseminated pyrrhotite, non magnetic.
NES-147	Taken at 147.5 m - sample length is 17 cm		Olivine-rich pyroxenite/peridotite	Fine grained (0.5-1 mm), very dark bluish grey to black, largely altered to serpentine, weak spotty carbonate- talc alteration, weakly magnetic, trace to 0.5% fine pyrrhotite. Minor relict olivine grains to 2 mm in size.
NES-158	Taken at 158.5 m - sample length is 12 cm		Olivine-rich pyroxenite/peridotite	Fine to medium grained (1-2 mm), serpeninized with moderate spotty carbonate alteration, moderately magnetic, 2-3% fine diseminated pyrrhotite.
NES-175	Taken at 175.0 m - sample length is 17 cm		Dunite	Massive, fine to medium grained, medium to dark greyish green, highly altered to serpentine + talc, non magnetic. No visible sulphide.

APPENDIX D SAMPLE DESCRIPTIONS 2006 SAMPLING PROGRAM DRILL CORE SAMPLES FROM DDH NES-00-01 Appendix E

2006 samples - Geochemical Data, Invoice and Certificate of Analysis

From

SGS Minerals Services (Work Order 088402)



COPY INVOICE

Involce Number Data . Page

: 10129623 :19-APR-06 :1/1

DR PYKE AND ASSOCIATES 31 Delair Crescent THORNHILL ON L3T 2M3 Canada

Customer Number Currency Payment Torm

SGS Order No.

271573 CAD Net Due in 30 Days

94045

Alln: Dale Pyke Customer Rolerence Order source reference number: 0000004124

Item	Description	Quantity	UoM	Unit Price No	1 Amount	Ainount
37351	Sample Proparation	21	En	7,35	154.35	165.15
37 3 5 0	PRP68 Dry, crush to 75%, spill to 250g and pulverize to 85% Precious Metals Anniysis	- 21	Ea .	17.00	357.00	381.99
37339	FA 313 Gold, platinum and palladium by fire astay lead collection Geochemical Package by ICPDES	21	EA	8.55	179.65	192.12
37352	(CP12B 32 Elements by Aqua Regla Digostion/ICP-OES Finish Whole Rock Analysis	5	Ea	42.00	210.00	224.70
37660	XRF76V includes 11 majors and LOI plus 6 add on traces Geochemical Package by ICPOES and ICPMS	5	(Fa	29.00	145.00	155,15
	ICM90A 54 Elements by Sodium Peroxide Fusion/ICP-OES and ICP-MS				, .	
•			• •	· .	GST	73,21
				Net Amour Sum of Ta	nt CAD	1,045. 90 73.21
				Total Amount	CAD	1,119.11

LEE, MA LYRA 418-445-5756 ext 235 Ma,LyraLee@sgs.com Contact Name: Direct line: E-mail:

Pleaso Remii To: SGS Canada Inc PO Box 4580, Depl 5 Postal Station A Turonio M5W 4W2 Cenada

SGS Minerals Services SGS Canada Inc 1805 Lealie Street M3B 2M3 Don Mills Canada 416-445-5755

SGS Tax ID GST/HST/TPS#R105082572 QST/TVO#R1010505000

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PHONE NO. : 905 731 1913

Apr 19, 2006

Date:



Certificate of Analysis

Work Order: 088402

To: D.R. Pyke and Associates 31 Delair Crescent THORNHILL ONTARIO L3T 2M3 L3T 2M3

P.O. No.	
Project No.	DEFAULT
No. Of Samples	26
Date Submitted	Apr. 05, 2006
Report Comprises	Pages 1 to 9
	(Inclusive of Cover Sheet)

Distribution of unused material:

26 Cores

Certified By

uart Lam 9 perations Manager

ISO 9002 REGISTERED ISO 17025 Accredited for Specific Tests, SCC No. 456

÷	Report Fooler:	L.N.R n.a.	. = Listed not receive = Not applicable	ed	1.8.	= Insufficient S = No result	ample	nnan man an a	-
		*INF Maf Meth	= Composition of the ter a result denotes produce of the marked with an as	nis sample makes detection b to ppm conversion, % de sterisk (e.g. *NAA08V) were	i impossible notes ppm subcontrat	by this method to % conversion cted			
÷			i .	Subject to SGS Generation	l Terms and	d Conditions			
	The data reported on part, is prohibited w	on this certif	icate of analysis repres written approval.	sents the sample submittee	l lo SGS Mi	nerals Services. I	Reproduction of	this analytical report	l, in full or in
	F a a a a a a a a a a	SGS Ça	nada Inc. Mineral	Services 1885 Lesile Stre	et Toronio	ON M3B 2M3	(418) 445-5755	f(418) 445-4152	WWW,505.CA
	•		inter an and a second s	an Charles . And a graph of the second of the first and the second of the second of the second of the second of		Merri	her of the SOS Gr	oup (Subiélé Général	e de Surveitlance)



Final: 088402 Order:

Eloment	Au	Pť	Cu	N	Zn	SiO2	AI203	CaO	Man	No20
Method	FAI313	FAI313	ICP12B	ICP12B	ICP12B	XRF76V	XRF76V	XRF76V	XRF76V	XRF76V
Det.Lim.	1	10	0,6į	1	0.5	0.01	0,01	0.01	0.03	0 02
Units	PPB	PPB	PPM	PPM	PPM	%	%	%	%	%
NES-1	8	20	68.0	504	38.5	N.A.	N.A.I	N.A.	N.A	NΔ
NES-2	1	30,	157	883	29.2	N.A.	N.A	NA	N A	NA
NES-3	7	20 ₁	110	613	26.8	N.A.	NA	ΝA	ΝA	
NES-4	9	20	178	741	31.4	N.A.}	NA	N A	NA	N A I
NES- 5	<1	10	140	821	34.6	N.A.	N.A	N A	N A	
NES-6	1	10/	100	616	35.3	NA	NA	NA	ΝΔ.	N A
NES-7	2	<10	90.7	684	30.9	N.A	NΔ	NA		
NES-8	<1	<10	181	849	36.1	NA	NΔ	N A		N, / N,
NES-9	<1	10	52.7	567	33.9	NA	ΝΔ	N A		
NES-10	<1	<10	34.6	561	34.4	ΝA	N A	NA.	N/A.{	N.A.
NES-11	<1	<10	295	1670	59.4	NA	N A			N,A.
NES-12	<1	<10	45.1	647	49.2	ΝΔ	NA		N.A.)	N,A.I
NES-13	<1	<10	32.5	530	44 3	NA	NA		N.A.	N.A.(
NES-14	<1	<10	16.0	422	37.4	N A	NA		N.A.(N.A.
NES-15	<1	<10/	65.6	430	45.0	N A	N A	N.A.	N.A.}	N,A,
NES-16	<1	<10	45.0	406	40 7	. NAL	N N I		N.A.	N.A.
NES-17	3	<10	40.5	76	87 0	N A	NA	N.A.	N.A.}	N.A.
NES-18	1	<10	41.2	61	80.08	ΝΔ	NA	N.A.	N.A.I	N,A.
NES-19	12	80	224	310	56 0	N A	N A	N.A.)	N.A.	N.A.
NES-20	<1	<10	17.6	25	76.0	ΝΔ	N A	NA	N,A,	N,A.)
NES-21	7	<10	21.2	27	83.3	NA	NA	N A	N:A.	N.A.
NES-92	NA.	N.A.	NA	NAT	NA	67 A	16 7			N,A.
NES-117	N.A.	N.A.	N.A.	NA	ΝĂ	80.0	16 0	6 02	4.34	3.25
NES-147	N.A.	NA	NA	NA	NAT	41 0	13.01 6 No	0.02	3.80	3.4/
NES-158	N.A.	NA	NA	NA	NA	41 0	7 97	3.01	20.0	<0.02
NES-175	N.A.	N.A.	N.A.	NA	NA	45 7	0 14	3, 1 4 }	20.4	0,02
Dup NES- 1	7	20	67.2	523	38 7	NA	N A 1	7,03	.19.9	U,4/
Dup NES-13	1	<10	31.8	530	45 2	NA	N.A.	N.A.	N.A.	N,A,
Dup NES-158	I NA	NA	NA	N.A	NA	10.0	N.A.j	. N.A.)	N.A.	N.A.
••••••••••••••••••••••••••••••••••••••				14/1-1	1.74, VI	40.8	7.68	3./2	25.3	0,02

The data reported on this certificate of analysis represents the sample submitted to SGS Minerals Services. Reproduction of this analytical report, in full or in art, is prohibited without prior written approval.

SGS Canada Inc. Mineral Services 1885 Lealle Street Toronto ON M3B 2M3 t(418) 445-5755 f(416) 445-4152 www.sgs.ca

MARSHE MARSHE STREET

17. 100



Page 3 of 9

FIREL DODGER T	Y KAGE K			TINZ	P205	Cr2O3	Rb	Sr[Y	Zf
Element	K2O	YDF7AV	XRF76V	XRF76V	XRF76V	XRF76V	XRF76V	XRF76V	XRF76V	XRF76V
Method		0.01	0.01	0.01	0,01	0.01	2	2	DPM	PPM
Det.Lim	%	%	%	%	%	%	PPW:	PPIVI)	1 1 1 1 1 	
	N.A.	N.A.	N.A.]	N.A.	N.A.	N.A.	N.A.		N.A.	
	NA	N.A.	N.A.	N.A.]	N.A.	N.A.	N.A.	N.A.}	N.A.	N.A.
	N.A.	NAT	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	N.A.	NA	N.A.	N.A.	NA.	N:A.	N.A.	N.A.	N.A.	N.A.
NED- J	N.A.	N.A.	N:A.	N.A.	N.A.	N.A.	N.A.	· N.A.	N.A.	N.A.
	NAL	N.A.	N.A.	N.A.						
NES- 1	N.A.	NA	N.A.	N.A.	N,A.	N.A.	N.A.	N.A.	N.A.	N.A.
SIEC-D	NA.	N.A.	N.A.	N.A.	N,A	N.A.	N.A.	N.A.	N.A.	N.A.
NEO- 9	NA	NAL	N.A.	N.A.	N.A.	N,A.	N.A.	N.A.	N.A.	N.A.
NEC 11	NA	N.A.	N.A	N.A.						
	NA	N.A.	N.A	N.A.						
NEC-12	NA	N.A.	N.A	N.A.	N.A.	N.A.	N.A.	N.A.	N.A	N.A.
	N.A.	N.A.	N.A.	N.A.	N.A.	N.A,	N.A	N.A.	N.A	N.A.
NIES. 16	N.A.	N.A.	N.A	N.A.	N.A.	N.A.	N.A	N.A.	N.A	N.A.
NES-16	N.A.	N.A.	N.A	N.A.	. N.A.	N.A.	N.A	N.A.	N.A	N.A.
NES-17	N.A.	N.A.	N.A	N.A.	N.A	N.A.	N.A	N.A.	N.A	N.A.
NES-18	N.A.	N.A.	N.A	. NA	N.A	N.A	N.A	J. N.A.	N,A	N.A.
NFS-19	N.A.	N.A.	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A.
NES-20	N.A.	N.A.	N.A	N.A	N.A	N.A	N.A	I N.A	N.A	N.A.
AJF 5.21	N.A.	N.A.	N.A	N.A	N.A	Ν.Λ	N.A	N.A	N.A	N.A.
NFS.92	0.80	7.52	0.1	0,8	0.14	4 0.03	3	21 227	1	9 111
NFS-117	1.08	7.00	0.1	2 0.7	0.14	4 0.0	y 3.	2] 30(X 1	9) 126
NES-147	0.02	13.0	0.1	7 0.3	Ø.0	2 0.4	5	B 32	2	5 27
NES-158	0.02	13.0	0.1	0,44	0,0	4 0.5	1	6 18	3 1	1 25
NES-176	0.04	12.1	0.1	8, 0.5	4 0.0	4 0.3	4	31 11	1	3.
Duo NES-1	N.A	N.A	. N.A		N.A	N.A	N.A	NA NA	N.A	N.A
TOUN NES-13	N.A	N.A	.) N.A	N.A	N.A	N.A	N.A	N.A	N./	N.A
Dun NES-158	0.02	13.0	0.1	6 0.4	3 0.0	4 0.5	1	51 1	9	9 2

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Final: 088402 Or	der		· · ·		• •		•		i Pa	ige 4 of 9
Element Method	Nb XRF76V	Ba XRF76V	LOI XRF76V	Sum XRF76V		Ba ICM90A	Be ICM90A	Ca ICM90A	Cr ICM90A	Cu ICM9DA
Det.Lin. Units	5 PPM	20 PPM;	0,01 %	0.01	0.D1 %	0.5 PPM	5 PPM	0.01	10 PPM	5 PPM
NES-1	N.A.	NA	N.A.	N.A.	N.A.	N.A.!	N.A.	N.A.	N.A.	N.A.
NES-2	N.A.	N.A.	N.A.	N,A,	N.A.	N.A.	N.A.	N.A.	N.A.,	N.A.
NES-3	N.A.	N.A.	N.A.]	N,A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-4	••••••••••••••••••••••••••••••••••••••	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	NA
NES-5	N.A.)	N.A.	NA]	N.A.	N.A.(N.A.	N.A.	N.A.	N.A.	NA
NES-6	N.A.	N.A.	N.A.	NA)	N.A.	N.A.	N.A;	N.A.	N.A.	N.A.
NES- 7	N.A.	N.A.	N.A.]	N.A.(N.A.	N.A.{	N.A.[N.A.	N.A.	N.A
NES-8	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.{	N.A.[N.A.	N.A.	N.A.
NES- 9	N.A.	N.A.	N.A.	N.A.	NA.	N.A	N.A.	N.A.	N.A.	N.A.
NES-10	NA.	NA	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-11	1 N.A	N.A.[N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	NA	NA
NES-12	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-13	NA	N.A.	NA	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-14	N.A.	N.A.	N.A.	N,A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-15	Ν.Λ.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.]	N.A.	N.A.
NES-16	N.A.	Ň.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-17	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.)	N.A.
NES-18	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.)	N.A.	N.A.	N.A.	N.A.
NES-19	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	NA	N,A.	N.A.
NES-20	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	NA
NES-21	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	.N.A.	N.A.	N.A.	N.A.
NES-92	10	180	2.15	100.1	8.71	169	<5	4.90	180	38
NES-117	9	290	1.70	100.9,	8.38	247	<5	4.19	160	20
NES-147	<5	30;	9.80	100.2	3.26	5.2	<5	2.53	2440	BC
NES-158	55	<20	7,35	99,6	4.10	6.0	<5	2.43	2860	106
NES-175	<5,	<20	3.85	9 9.8 }	5.09	8.6	<5	5,35	2090	69
Dup NES- 1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.,	N.A.	N.A.	N.A.
Dup NES-13	N.A.	N.A.	N.A.	N.A.	N.A.F	N.A.	N.A.	N.A,Į	N.A.	N.A.
Dup NES-158	. <5	<20	7 30	99.3	4 25	7.3	<5	2 82	3000	116

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Element	Fe/	K	LK	Mg	Mn	N	Pi	Sc	Sn	T
Method	ICM90A	ICM90A	ICM90A	ICM90A	ICMODA	ICM90A	ICM90A	ICMDOA	ICM90A	ICM90A
Det.Lim.	0.01	0.01	10	0.01	10	5	0.01	5	D,1	0.01
Units	. %	%;	PPM	%	PPM	PPM)	%	PPM	PPM	%
NES- 1	N.A.	N.A.	N.A.[N.A.]	N.A.	N.A.	N.A.	N.A.	N.A.	N,A,
NES- 2	N.A.	N,A.	N.A.]	N,A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-3	N.A.	N.A.]	N.A.	• N.A.	N.A.}	N.A.	N,A.	N.A.	N.A.	N.A.
NES-4	N.A.	N.A.	N.A.[N.A .	N.A.	N.A.}	N.A.	N,A.}	N,A.{	N.A.
NES-5	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N,A.{	N,A.	N.A.
NES- 6	N.A.}	N.A.	N.A.]	N.A.	N.A.]	N.A.[NA.	N.A.[N.A.	N.A.
NES-7	N.A.	N.A.	N.A.[N.A.	N.A.	N,A.	N.A.	N.A.]	N.A.	NA.
NES-8	N.A.	N.A.	N.A.[N.A.	N.A.[N.A.	N.A.	N.A.}	N,A.].	N.A.
NES-9	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.[N.A.	N.A.	N.A.
NES-10	N.A.{	N.A.	N.A.]	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-11	N.A.	N.A.	N.A.	N.A.	N.A.[N.A.	N.A.	N.A.	N.A.	N.A.
NES-12	N.A.	· N.A.	N.A.	N.A.	N.A.T	N.A.	N.A.	N.A.	N.A.	N.A.
NES-13	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-14	N.A.	N.A.)	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-15	N.A.	N.A.	N.A.	N.A.	N.A	. N.A.	N.A.	N.A.	N.A.I	N.A,
NES-16	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-17	N.A.	N.A.	N.A.[N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-18	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-19	N.A.	N.A.	N.A.	N.A.	N.A.	N:A.	N.A.	N.A.}	N,A,	N.A.
NES-20	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.(N.A.	N.A.
NES-21	N.A.	N.A.	N.A.]	N.A.	N.A.[N.A.	N.A.	N.A.	N.A.	N.A.
NES-92	5.57	0.69	<10	2.39	920	76	0.08	18	237	0.51
NES-117	4.94	0.93	<10	2.07	880	19	0,07	. 17	295	0.46
NES-147	9.17	0.03	<10	15.1	1210	834	0.02	18	26.6	0.18
NES-158	9.15	0.02	<10	14.6	1110	949	0.03	23	15.6	0.22
NES-175	9.02	0.05	20	12.2	1430	763	0,03	31	14.8	0.33
Dup NES- 1	N.A.	N.A.	N.A.	N.A.	NA.	N.A.	N.A.	NA	N.A.	N.A.
Dup NES-13	N.A.	N.A.	N.A.	N.A.	NA	N.A.	N.A.	N.A.	N.A.	N.A.
TDup NES-158	9.35	0.05	<10	15.0	1150	1000	0.03	23	18.8	0,24

0,24

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Flement	V'	Zna	Ζn	. Ag.	A6	BI	Ca	Ce		LON TOD AL
Element	ICM90A	ICM90A	ICM90A	ICM90A	ICMOON	ICMOOA	ICM90A	ICMBOA	ICM90A	ICIM90A
Det I lin	5	5	0.5	1	30	0,1	0,2		0.5	Q.1
Units	PPM	PPM	PPM	PPM	PPM	PPM(PPN	·····		
NES-1	NA	N.A.	N.A.	N.A.{	N,A.	N.A.	N.A.	N.A.]	N.A.;	N.A.!
NES-2	N.A.}	N.A.	N.A.	N.A.	N.A.)	N.A.	N.A.	N.A.]	N.A.(N.A.
NFS-3	N.A.)	N,A.	N.A.	N,A.	N.A.	N.A.	N.A.	N.A.	N.A.;	N.A.
NES-4	N.A.[N.A.[N.A.	N.A.	N.A.	N.A.	N.A.	N.A.{	N.A.	N.A.
NES- 5	N.A.]	N.A.{	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NFS-6	N.A.	N.A.}	N.A.	N.A.						
NES-7	Ν.Λ.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-8	N.A.	N,A.	N.A.	N.A.						
NES-9	N.A.	N.A.	N.A.	N.A.						
NES-10	N.A.	N.A.	N.A.	N,A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NFS-11	Ν.Λ.	NA.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A .
NES-12	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N,A.	N.A.	N.A.	N.A.
NES-13	N.A.	N.A.	N.A.	N.A.						
NES-14	N.A.	N.A.	N.A.] N.A.						
NES-15	N.A.	N.A.	N.A.	N.A.	N.A	N.A.	Ν.Λ.	N.A.	N.A.	N.A.
NES-16	N.A.	N.A.	N.A:	N.A.	N.A	N.A.	N.A.	N.A.	N.A.	N.A.
NES-17	N.A.	N.A.	N.A.	N.A.	N.A	N.A.	N.A.	N.A.	N.A.	N.A.
NES-18	N.A.	N.A.	N.A.	N.A.	N.A	N:A	N.A.	N.A.	N.A.	.N.A.
-19	N.A.	N:A	N.A.	N.A.	N.A	. N.A.	N.A.	[N.A.	. N.A.	N.A.
	N.A.	N.A.	N.A.	N.A.	N.A	N.A.	N.A.	N.A.	N.A.	ļ NA
NES-21	N.A.	N.A.	N.A.	N.A.	N.A	N.A	N.A.	N.A.	N.A	<u>N.A</u>
NES-92	138	149	122	<1	60	× 5.1	0.3	26.5	28.8	Ŋ 0.6
NES-117	125	108	128	. <1	<30) 1.2	<0.2	<u>1</u> 28,0	18.7	0 ,7
NES-147	124	83	į 15.9	<1	<30) 0.6	0.3	3.4	100	0,4
NES-158	154	81	22.1	<1	<30	0.7	i <u></u> <0.2	2 4,0	106	.0,8
NES-175	202	83	32.6	4 <1	4	0.2	<0.2	5,3	91.4	U. 0.6
Dup NES-1	N.A.	N.A	N.A	N.A	N.A	N.A	, N.A	. <u>/</u> N.A	N.A	
Dup NES-13	N.A.	NA	N.A	N.A	. N.A	J N.A	,) N.A	N.A	<u>N</u> .A	. N.A
Dup NES-158	·/ 159	84	25.6	S <1	<3	0 0.6	× <0.2	2; 4.{	100	<u>0.7</u>

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14.58

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Final: Weedow where	bel Made We was sur . Mellite Bag af me			Gal	Gdi	Ge	HR	Ho	In	La
Element	DY		ICM90A	ICM90A	ICM9DA	ICMODA	ICMODA	ICM90A	ICM90A	ICM90A
Method	0.05	0.05	0.05	1	0.05	1		0.05	DPM	PPM
Det.Lim.	PPM	PPM	PPM	PPM	PPM	PPM		······································		ΝA
	N.A.	N.A.	N.A.	N.A.	N.A.(N.A.	N.A.	N.A.]	ΝΔ	NA
	N.A.	N.A.,	N.A.	N.A.	N.A.	N.A.{	N.A.I	Ν.Λ.) Ν.Λ.) Ν.Δ.)	NA	N.A.
NES- 2	N.A.	N.A.	N.A.	N.A.}	N.A.	N.A.	N.A.			NA
	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.)	N.A.)		N A	NAL
	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.M.(NA	N.A.
NES- 3	N.A.}	N.A.	N.A.	N.A.j	N.A.	N.A.	N.A.I		ΝΔ	NA
NES-D	N.A.	N.A.	N.A.	N.A.}	N.A.	N.A.			ΝΔ	N.A.
NED- (N.A.}	N.A.	N.A.	N.A.	N.A.	N.A.			NAL	NA
	N.A.	N.A.	N.A.	Ν.Λ.	N.A.	N.A.	N.A.		N A I	N.A.
NES- 9	N.A.	N.A.	N,A.	N.A.	N.A.	N.A.	N.A.	NA)	NA	N.A.
	N.A.	N.A.	N.A.	N.A.	N.A.	N.A	N.A.	NA	NΔ	N.A.
NEC 12	N.A.	N.A.	N.A.	N.A.	N.A.	: N,A.	N.A.		NA	NA
	N.A.	N.A.	N.A.	N.A.	N.A.	'N,A,	N.A.	N A	NA	N.A.
	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	NA	N A	NA
NEC-15	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		ΝA	N A.	N.A.
AIES-16	N.A.	N.A.	N.A.	N.A.	N.A	N,A		ΝÅ	NA	N Å.
NES-17	N.A.	N.A.	N.A.	N.A.	N.A	N.A		ΝΔ	NA	NA
ALG-18	N.A.	N.A.	N.A	N.A.	N.A	N.A	11.A	NA NA	NA	NA
NES-19	N.A.	N.A.	N.A	N.A	N.A	N.A	i) IN.M	NA	NA	N.A.
AIES.70	. N.A.	N.A.	N.A	N.A	N.A	N.A		ΝΔ	NA	NA
NES-21	N.A.	N.A.	N.A	N:A	N.A	N.A		Δ. Δ. Δ. Ζ.	<0.2	12.2
NES-92	3.23	2.06	1.02	2] 19	3.3	2		0.67	<0.2	12.9
	3.32	1.93	1.00	18	3.4	5		1 0.29	<0.2	14
-147	1,26	0.83	0.2	57	1.0	9. 9.		1 0 39	<0.2	1.7
NFS-158	1.63	1.05	0.2	3	1.3		1	1 0.49	<d.< td=""><td>2 2.2</td></d.<>	2 2.2
NFS-175	2.25	1.37	0.4	7[1	1./	9	N A	NA	N.A	N.A
Pour NES-1	N.A	N.A	N.A	N.A	N.A		NI A	NA	N.A	N.A
FOUD NES-13	. N.A	N.A	N.A	<u> </u>	N./	4.] N./		1 0 3	<0.	2 2.5
Duo NES-158	1.63	3 1.03	3 0.2	7	9 14					

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	Turner and the second	Mo	Nb	Nd	Pb	Pr	Rb	Sm	Sn	Taj
Element	ICM90A	ICM90A	ICM90A	ICM90A	ICM90A	ICM90A	ICM90A	ICM90A		ICINI9UAU
Mailod	0.05	2	1	0.1	5	0.05	0.2	0,1	Maa	PPM
	PPM	PPM	PPM	PPM	PPM	PPM	۳ ۲Ν Ι? •••••••••	anten mantiningerikerikerikerikerikerikerikerikerikerik		
MES. 1	i N.A.{	N.A.	N.A.	N.A.	N.A.	.N.A.	N,A.	N.A.].	N.A.J	
	N.A.I.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
INCO- 4	N.A.	N.A.	N.A.	N.A.	N.A.	. N.A.	N,A.	N.A.	N.A.)	N.A.
	N.A.	N.A.[N.A.	N.A.	N.A.	N.A.[N.A.[N.A.(N.A.{	N.A.[
ALCO D	N.A.	N.A.	N.A.	N.A.	N.A.]	N.A.	N.A.	N.A.	N.A.	N.A.{
	N.A.	N.A.	N.A.]	N.A.J	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	NA	N.A.	N.A.	N.A.	N.A.]	N.A.	N.A.	N.A.	N.A.I	N.A.
	NA	NAJ	N.A.	N.A.	N.A,	N.A.	N.A.	N.A.	N.A.	N.A.
NES-8	International of the second se	N A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES 9	ΝA	NA	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-10	NA	NA	NA	N.A.	N:A	N.A.	N.A.	N.A.	N.A.	N.A.
NES-11	NA	ΝΔ	NA	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-12		N.O.S	ΝA	NA	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-13	N.A.		N A	NA	N.A.	N,A.	N.A.	N.A.	N.A.	N.A.
NES-14	N.A.		NA	ΝA	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-15	N.A.	N.A.	N A	ΝA	NĂ	N.A.	N.A.	N.A.	N.A.	N.A.
NES-16	N.A.		N A	N A	NĂ	NA	N.A.	N.A.	N.A.	N,A.
NES 17	N.A.	N, A.	N.M.	N A	ΝA	NA	N.A.	N.A.	N.A.	N.A.
NES-18	N.A.	N.A.	N.A.	N A	ΝA	NA	N.A.	N.A.	N.A.	N.A.
NES-19	N.A.	N.A.	N.A.			NA	NA	N.A.	N.A.	N.A.
NES-20	N.A.	N.A.	N.P.			NA	N.A.	NA.	N.A.	N.A.
ES-21	N.A.	N.A.	N.A	N.A.		2 48	31.6	3.0	4	<0.5
NES-92	0.34	5		15,0)) 	3.40	SAR	31	2	<0.5
NES-117	0.36	<2		14.		5,00 5 5,00	10	0.4	<1	<0.5
NES-147	0.13	<2	. <	Z.		1.04 1.04	1 7		<1	<0.5
NES-158	0.18	<2		2.5	<pre></pre>	0.02	1.1		21	<0.5
NES-175	0.27	<2		3.9		0.03	U.C	NA	N N	NA
Dup NES- 1	N.A	N.A	N.A	N.A	N.A	NA	N.A	N.A		NA
Dup NES-13	N.A	. N.A	N.A	. N.A	N.A	N.A	<u>j</u>			<0 5
DA NEO 168	0.19	3 <2	21.	1 3.	2 <	bj 0,70	<u>д</u> 2.1	· · · · · · · · · · · · · · · · · · ·	1	Lanner

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ANALYTE	Au	Pt	Cu	Ni	Zn	SiO2	AI2O3	CaO	MgO	Na2O	K2O	Fe2O3
METHOD	FAI313	FAI314	ICP12B	ICP12B	ICP12B	XRF76V						
DETECTION	10	10	0.5	1	0.5	0.01	0.01	0.01	0.03	0.02	0.01	0.01
UNITS	PPB	PPB	PPM	PPM	PPM	%	%	%	%	%	%	%
NES-1	8	20	66	504	38.5	N.A.						
NES-2	1	30	157	883	29.2	N.A.						
NES-3	7	20	110	613	26.8	N.A.						
NES-4	9	20	178	741	31.4	N.A.						
NES-5	<1	10	140	821	34.6	N.A.						
NES-6	1	10	100	616	35.3	N.A.						
NES-7	2	<10	90.7	684	36.9	N.A.						
NES-8	<1	<10	181	849	36.1	N.A.						
NES-9	<1	10	52.7	557	33.9	N.A.						
NES-10	<1	<10	34.6	561	34.4	N.A.						
NES-11	<1	<10	295	1670	59.4	N.A.						
NES-12	<1	<10	45.1	647	49.2	N.A.						
NES-13	<1	<10	32.5	530	44.3	N.A.						
NES-14	<1	<10	16	422	37.4	N.A.						
NES-15	<1	<10	65.6	439	45	N.A.						
NES-16	<1	<10	45	406	40.7	N.A.						
NES-17	3	<10	40.5	76	87	N.A.						
NES-18	1	<10	41.2	61	60.9	N.A.						
NES-19	12	80	224	310	56	N.A.						
NES-20	<1	<10	17.6	25	76	N.A.						
NES-21	7	<10	21.2	27	83.3	N.A.						
NES-92	N.A.	N.A.	N.A.	N.A.	N.A.	57.6	15.7	7.54	4.34	3.25	0.8	7.52
NES-117	N.A.	N.A.	N.A.	N.A.	N.A.	60	15.8	6.82	3.96	3.47	1.08	7
NES-147	N.A.	N.A.	N.A.	N.A.	N.A.	41	6.02	3.87	25.6	<0.02	0.02	13
NES-158	N.A.	N.A.	N.A.	N.A.	N.A.	41	7.87	3.72	25.4	0.02	0.02	13
NES-175	N.A.	N.A.	N.A.	N.A.	N.A.	45.7	9.14	7.63	19.9	0.47	0.04	12.1
DUP-NES-1	7	20	67.2	523	38.7	N.A.						
DUP-NES-13	1	<10	31.6	539	45.3	N.A.						
DUP-NES-158	N.A.	N.A.	N.A.	N.A.	N.A.	40.9	7.88	3.72	25.3	0.02	0.02	13



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ANALYTE	MnO	TiO2	P2O5	Cr2O3	Rb	Sr	Y	Zr	Nb	Ba	LOI	Sum
METHOD	XRF76V	XRF76V.	XRF76V	XRF76V	XRF76V	XRF76V						
DETECTION	0.01	0.01	0.01	0.01	2	2	2	2	5	20	0.01	0.01
UNITS	%	%	%	%	PPM	PPM	PPM	PPM	PPM	PPM	%	%
NES-1	N.A.	N.A.	N.A.	N.A.	N.A.							
NES- 2	N.A.	N.A.	N.A.	N.A.	N.A.							
NES- 3	N.A.	N.A.	N.A.	N.A.	N.A.							
NES-4	N.A.	N.A.	N.A.	N.A.	N.A.							
NES-5	N.A.	N.A.	N.A.	N.A.	N.A.							
NES-6	N.A.	N.A.	N.A.	N.A.	N.A.							
NES-7	N.A.	N.A.	N.A.	N.A.	N.A.							
NES-8	N.A.	N.A.	N.A.	N.A.	N.A.							
NES- 9	N.A.	N.A.	N.A.	N.A.	N.A.							
NES-10	N.A.	N.A.	N.A.	N.A.	N.A.							
NES-11	N.A.	N.A.	N.A.	N.A.	N.A.							
NES-12	N.A.	N.A.	N.A.	N.A.	N.A.							
NE\$-13	N.A.	N.A.	N.A.	N.A.	N.A.							
NES-14	N,A.	N.A.	N.A.	N.A.	N.A.	N.A.						
NES-15	N.A.	N.A.	N.A.	N.A.	N.A.							
NES-16	N.A.	N.A.	N.A.	N.A.	N.A.							
NES-17	N.A.	N.A.	N.A.	N.A.	N.A.							
NES-18	N.A.	N.A.	N.A.	N.A.	N.A.							
NES-19	N.A.	N.A.	N.A.	N.A.	N.A.							
NES-20	N.A.	N.A.	N.A .	N.A.	N.A.							
NES-21	N.A.	N.A.	N.A.	N.A.	N.A.							
NES-92	0.12	0.83	0.14	0.03	32	227	19	111	10	180	2.15	100.1
NES-117	0.12	0.78	0.14	0.03	32	300	19	126	9	290	1.7	100.9
NES-147	0.17	0.34	0.02	0.45	8	32	5	27	<5	30	9.8	100.2
NES-158	0.16	0.44	0.04	0.51	6	18	11	25	<5	<20	7.35	99.6
NES-175	0.18	0.54	0.04	0.34	3	10	10	33	<5	<20	3.85	99.8
DUP-NES- 1	N.A.	N.A.	N.A.	N.A.	N.A.							
DUP-NES-13	N.A.	N.A.	N.A.	N.A.	N.A.							
DUP-NES-158	0.16	0.43	0.04	0.51	5	19	10	25	<5	<20	7.3	99.3



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ANALYTE	AI	Ba	Be	Ca	Cr	Cu	Fe	ĸ	Li	Mg	Mn	NI
METHOD	1C90A	1C90A	1C90A	IC90A	IC90A	IC90A	IC90A	IC90A	IC90A	IC90A	IC90A	IC90A
DETECTION	0.01	0.5	5	0.01	10	5	0.01	0.01	10	0.01	10	5
UNITS	%	РРМ	PPM	%	PPM	PPM	%	%	PPM	%	PPM	PPM
NES-1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A .	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-2	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES- 3	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N . A .	N.A.	N.A.	N.A.	N.A.
NES-4	N.A.	N.A.	N.A .	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-5	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-6	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-7	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-8	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-9	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-10	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-11	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-12	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A .	N.A.
NES-13	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A
NES-14	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A .
NES-15	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-16	N.A.	N.A.	N.A.	N .A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-17	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-18	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A .	N.A.	N.A.
NES-19	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-20	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-21	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-92	8.71	169	<5	4.9	180	38	5.57	0.69	<10	2.39	920	76
NES-117	8.38	247	<5	4.19	160	20	4.94	0.93	<10	2.07	880	19
NES-147	3.26	5.2	<5	2.53	2440	86	9.17	0.03	<10	15.1	1210	834
NES-158	4.1	6	<5	2.43	2860	106	9.15	0.02	<10	14.6	1110	949
NES-175	5.09	8.6	<5	5.35	2090	69	9.02	0.05	20	12.2	1430	763
DUP-NES-1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
DUP-NES-13	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
DUP-NES-158	4.25	7.3	<5	2.62	3000	116	9.35	0.05	<10	15	1150	1000



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ANALYTE	Р	Sc	Sr	Ti	V	Zn	Zr	Ag	As	Bi	Cd	Се
METHOD	IC90A	1C90A	IC90A	IC90A	IC90A	IC90A	IC90A	IC90M	IC90M	IC90M	IC90M	IC90M
DETECTION	0.01	5	0.1	0.01	5	5	0.5	1	30	0.1	0.2	0.1
UNITS	%	PPM	PPM	%	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
NES-1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-2	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-3	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-4	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-5	N.A.	N.A .	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-6	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-7	N.A.	N.A.	N.A.	N.A.	N.A	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-8	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES- 9	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-10	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-11	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A .	N.A.	N.A.	N.A.
NES-12	N.A.	N.A.	N.A.	N.A.	NI.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-13	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-14	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-15	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-16	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-17	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-18	N.A.	N.A.	N.A.	N.A.	N.A.	N.A .	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-19	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-20	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-21	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-92	0.08	18	237	0.51	138	149	122	<1	60	5.1	0.3	26.5
NES-117	0.07	17	295	0.46	125	108	128	<1	<30	1.2	<0.2	28
NES-147	0.02	18	26.6	0.18	124	83	15.9	<1	<30	0.6	0.3	3.4
NES-158	0.03	23	15. 6	0.22	154	81	22.1	<1	<30	0.7	<0.2	4
NES-175	0.03	31	14.8	0.33	202	83	32.6	<1	40	0.2	<0.2	5.3
DUP-NES- 1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N,A.
DUP-NES-13	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
DUP-NES-158	0.03	23	18.8	0.24	159	84	25.6	<1	<30	0.6	<0.2	4.5



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ANALYTE	Co	Cs	Dy	Er	Eu	Ga	Gd	Ge	Hf	Но	In	La
METHOD	IC90M	1C90M	1C90M	IC90M	IC90M	IC90M	IC90M	IC90M	1C90M	1C90M	IC90M	IC90M
DETECTION	0.5	0.1	0.05	0.05	0.05	1	0.05	1	1	0.05	0.2	0.1
UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
NES-1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-2	N.A.	N.A .	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES- 3	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A,
NES-4	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-5	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-6	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-7	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-8	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES- 9	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-10	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-11	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-12	N.A.	N.A .	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-13	N.A.	N.A.	N.A,	N.A.	N.A.	N.A.	N.A.	N.A.	N,A.	N.A.	N.A.	N.A.
NES-14	N.A.	N.A.	N.A.	N.A .	N.A.							
NES-15	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-16	N.A.	N.A.	N.A.	N.A .	N.A.							
NES-17	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-18	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-19	N.A.	N.A.	N.A.	N.A .	N.A.							
NES-20	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-21	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A .
NES-92	28.8	0.6	3.23	2.06	1.02	19	3.32	1	3	0.7	<0.2	12.2
NES-117	18.7	0.7	3.32	1.93	1	18	3.49	1	3	0.67	<0.2	12.9
NES-147	100	0.4	1.26	0.83	0.25	7	1.09	<1	<1	0.29	<0.2	1.4
NES-158	106	0.8	1.63	1.05	0.23	9	1.36	1	<1	0.38	<0.2	1.7
NES-175	91.4	0.5	2.25	1.37	0.47	11	1.79	1	<1	0.49	<0.2	2.2
DUP-NES-1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
DUP-NES-13	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
DUP-NES-158	106	0.7	1.63	1.03	0.27	9	1.46	<1	<1	0.36	<0.2	2



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ANALYTE	Lu	Мо	Nb	Nd	Pb	Pr	Rb	Sm	Sn	Ta	Tb	Th
METHOD	1C90M	IC90M	IC90M	IC90M	IC90M	IC90M	IC90M	1C90M	1C90M	IC90M	IC90M	IC90M
DETECTION	0.05	2	1	0.1	5	0.05	0.2	0.1	1	0.5	0.05	0.1
UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
NES-1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-2	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES- 3	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-4	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A,	N.A.	N.A.	N.A.	N.A.
NES-5	N.A.	N.A.	N.A.	N.A .	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-6	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A .	N.A .	N.A.	N.A.
NES-7	N.A.	N.A .	N.A .	N.A.	N.A.	N.A .	N.A .	N.A.	N.A.	N.A.	N <i>.</i> A.	N.A.
NES-8	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-9	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A .	N.A.	N.A.	N.A.	N.A.
NES-10	N.A.	N.A.	N.A.	N.A .	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-11	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N .A.	N .A.	N.A.	N.A.	N.A.
NES-12	N.A.	N.A.	N.A .	N.A.	N.A.	N.A.	N.A.	N.A.	N.A .	N.A.	N.A.	N.A.
NES-13	N.A.	N.A.	N.A.	N.A.	N.A.	N.A .	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-14	N.A.	N.A.	N.A.	N.A.	N.A.	N.A .	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-15	N.A.	N.A.	N.A .	N.A.	N.A.	N.A.	N.A.	N.A .	N.A.	N.A.	N.A.	N.A.
NES-16	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A .	N.A.	N.A.
NES-17	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A .	N.A.	N.A.	N.A.	N.A.	N.A.
NES-18	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A .	N.A.	N.A.	N.A.	N.A.	N.A.
NES-19	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A .	N.A.	N.A.	N.A.	N.A.	N.A.
NES-20	N.A.	N.A.	N.A.	N.A.	N.A.	N.A .	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-21	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-92	0.34	5	6	13.8	15	3.48	31.6	3	4	<0.5	0.55	2
NES-117	0.36	<2	6	14.1	6	3.58	34.8	3.1	2	<0.5	0.6	1.8
NES-147	0.13	<2	<1	2.5	<5	0.54	1	0.8	<1	<0.5	0.2	0.3
NES-158	0.18	<2	1	2.9	<5	0.62	1.7	0.9	<1	<0.5	0.25	0.3
NES-175	0.27	<2	1	3.9	<5	0.83	0.8	1.2	<1	<0.5	0.34	0.2
DUP-NES-1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
DUP-NES-13	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A .	N.A.	N.A.	N.A.	N.A.
DUP-NES-158	0.19	<2	1	3.2	<5	0.7	2	1.1	1	<0.5	0.26	0.3



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ANALYTE	TI	Tm	U	W	Y	Yb
METHOD	1C90M	1C90M	IC90M	IC90M	IC90M	IC90M
DETECTION	0.5	0.05	0.05	1	0.5	0.1
UNITS	PPM	PPM	PPM	PPM	РРМ	РРМ
NES-1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-2	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-3	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-4	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-5	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-6	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-7	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-8	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-9	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-10	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-11	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-12	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-13	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-14	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-15	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-16	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-17	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-18	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-19	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-20	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-21	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NES-92	<0.5	0.31	0.67	14	19.2	2
NES-117	<0.5	0.3	0.5	2	18.9	2
NES-147	<0.5	0.13	0.08	<1	7.4	0.8
NES-158	<0.5	0.16	0.0 9	<1	9.6	1.1
NES-175	<0.5	0.2	0.08	2	12.3	1.5
DUP-NES-1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
DUP-NES-13	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
DUP-NES-158	<0.5	0.16	0.12	1	9.8	1.1

Appendix F

Summary of Sample Preparation and Analytical Methods for 2006 Samples

SGS Minerals Services (Work Order 088402)



- 1. Parameter(s) measured, unit(s): All
- 2. Typical sample size: < 250 g

SG

3. Type of sample applicable (media):

Geological and metallurgical samples (ores, concentrates, rocks, soils and metallurgical process products)

4. Sample preparation technique used:

Samples require various preparation procedures to ensure sample homogeneity, representative subsamples and prevent cross contamination. The stepwise procedure may involve all steps or some of the steps depending upon the state of the sample as received. The sample is dried at $70 + /-10^{\circ}$ C for 24 hours, if received wet or client specified. The next step involves crushing to reduce the sample size to 2mm 10 mesh (9 mesh Tyler). The sample is then split via a riffle splitter continuously in order to divide the sample into a 250g sub-sample for analysis and the remainder is stored as a reject. Pulverizing is done using pots made either hardened chrome steel or mild steel material. Crushed material is transferred into a clean pot and the pot is placed into a vibratory mill. Samples are pulverized to 85% passing 75 micron 200 mesh or otherwise specified by the client.

5. Method of analysis used:

This may involve various analyses depending upon the analytes requested and sample type.

6. Data reduction by:

Computer, on line, data fed to Laboratory Information Management System with secure audit trail.

Crushing/ Pulverizing Parameters	Frequency	Quality Control Requirement		
Cru. Prep. Blank	At the start of batch	75% passing 9 mesh (2mm) (Tyler)		
Cru. Prep. Replicates	every 50 samples	75% passing 9 mesh (2mm) (Tyler)		
Cru. % Passing Checks	Every 50 samples	75% passing 9 mesh (2mm) (Tyler)		
Pul. Prep. Blank	At the start of batch	85% passing 200 mesh (75 um)		
Pul. Prep. Replicates	every 50 samples	85% passing 200 mesh (75 um)		
Pul. % Passing Checks	Every 50 samples	85% passing 200 mesh (75 um)		

7. Figures of Merit: Quality Control





XRF76V: The Determination of Major Oxides, LOI and 6 trace elements using Fused Glass Discs and X-Ray Fluorescence Spectrometry

1. Parameter(s) measured, unit(s):

Aluminum oxide (Al₂O₃); Calcium oxide (CaO); Chromium oxide (Cr₂O₃); Iron oxide (Fe₂O₃); Magnesium oxide (MgO); Manganese oxide (MnO); Phosphorus oxide (P₂O₅); Potassium oxide (K₂O); Sodium oxide (Na₂O); Titanium oxide (TiO₂), Barium (Ba); Niobium (Nb); Rubidium (Rb); Strontium (Sr); Yttrium (Y); Zirconium (Zr)and LOI: %

2. Typical sample size: 2.00 g

2.00 g

3. Type of sample applicable (media):

Crushed and pulverized rock samples are pre-dried at a range between $75^{\circ}C - 90^{\circ}C$ and then ignited at $950^{\circ}C+/-50^{\circ}C$ and then fused with 50% Lithium metaborate (LiBO₂) and 50% Lithium tetraborate (Li₂B₄O₇) in a fluxer to produce a glass disc.

4. Sample preparation technique used:

Crushed and pulverized rock samples are dried and then fused by 50% Lithium metaborate (LiBO₂) and 50% Lithium tetraborate (Li₂B₄O₇) in a fluxer to produce a glass disc.

5. Method of analysis used:

The glass disc is analyzed on the sequential x-ray fluorescence spectrometer. The fused glass discs are irradiated with x-rays from the x-ray tube creating in response secondary x-rays emitted from the sample that are counted and used to determine the concentrations of the elements. Quantitative determination is made possible through previously prepared calibration standards.

6. Data reduction by:

The results are exported via computer, on line, data fed to the Laboratory Information Management System (LIMS CCLAS EL) with secure audit trail. The system computer performs all necessary calculations automatically to calculate the % oxide for each element and the %Total major content of the sample. The LOI is included in the total.

Element	Limit of Quantification (LOQ) %	Element	(LOQ) %	Element	Reporting Limit ppm
Al ₂ O ₃	0.026 %	MnO	0.02%	Ba	40
CaO	0.049%	Na ₂ O	0.040%	Nb	5
Cr ₂ O ₃	0.01%	P ₂ O ₅	0.01%	Rb	5
Fe ₂ O ₃	0.05%	SiO ₂	0.035%	Sr	5
K ₂ O	0.02%	TiO ₂	0.02%	Y	5
MgO	0.11%	LOI	0.01%	Zr	5

7. Figures of Merit:

8. Quality control:

A blank is analyzed with every new batch of flux. An in-house reference material is analyzed every 55 samples, one duplicate every 12 samples.

All QC samples are verified using LIMS. The acceptance criteria are statistically controlled and control charts are used to monitor accuracy and precision. Data that falls outside the control limits is investigated and repeated as necessary.

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ICM90A : The Determination of 54 Elements using Sodium peroxide fusion followed by ICP-OES and ICP-MS.

1. Parameter(s) measured, unit(s):

Silver (Ag); Aluminum (Al); Arsenic (As); Boron (B); Barium (Ba); Beryllium (Be); Bismuth (Bi); Calcium (Ca); Cadmium (Cd); Cerium (Ce); Chromium (Cr); Cobalt (Co); Cesium (Cs); Copper (Cu); Dysprosium (Dy); Erbium (Er); Europium (Eu); Iron (Fe); Gallium (Ga); Gadolinium (Gd); Germanium (Ge); Hafnium (Hf); Holmium (Ho); Indium (In); Potassium (K); Lanthanum (La); Lithium (Li); Lutetium (Lu); Magnesium (Mg); Manganese (Mn); Molybdenum (Mo); Niobium (Nb); Neodymium (Nd); Nickel (Ni); Phosphorus (P); Lead (Pb); Praseodymium (Pr); Rubidium (Rb); Scandium (Sc); Samarium (Sm); Tin(Sn); Strontium (Sr); Tantalum (Ta); Terbium (Tb); Thallium (Tl); Thorium (Th); Titanium (Ti); Thulium (Tm); Uranium (U);Vanadium(V);Tungsten(W);Yttrium (Y); Ytterbium (Yb); Zinc (Zn); Zirconium (Zr) : ppm and %

2. Typical sample size:

0.10 g

3. Type of sample applicable (media):

Crushed and Pulverized rocks, soils and sediments

4. Sample preparation technique used:

Crushed and pulverized rock, soil and /or sediment samples are fused by Sodium peroxide in graphite crucibles and dissolved using dilute HNO₃.

During digestion the sample is split into 2 and half is given to ICP-OES and the other half is given to ICP-MS.

Method of analysis used:

The digested sample solution is aspirated into the inductively coupled plasma Mass Spectrometer (ICP-MS) where the ions are measured and quantified according to their unique mass and the other half aspirated into the inductively coupled plasma Optical Emission Spectrometer (ICP-OES) where the atoms in the plasma emit light (photons) with characteristic wavelengths for each element. This light is recorded by optical spectrometers and when calibrated against standards the technique provides a quantitative analysis of the original sample.

6. Data reduction by:

The results are exported via computer, on line, data fed to the Laboratory Information Management System (LIMS CCLAS EL) with secure audit trail.

7. Figures of Merit:

Element	Limit of Quantification (LOQ) ppm	Element	LOQ ppm	Element	(LOQ) ppm	Element	(LOO) ppm
Ag	0.0	Er	0.0	Mn	3.17	Tb	0.0
Al	0.023%	Eu	0.0	Мо	2.30	Th	0.10
As	4.30	Fe	0.083%	Nb	0.70	Ti	0.003%
Ba	3.440	Ga	0.30	Nd	0.70	TI	0.10
Be	0.477	Gd	0.0	Ni	6.463	Tm	0.0
Bi	0.20	Ge	0.03	Р	0.00%	U	0.1
Ca	0.153%	Hf	0.30	Pb	17.7	v	2.70
Cd	0.10	Но	0.0	Pr	0.0	W	0.60
Ce	0.30	In	0.0	Rb	0.40	Y	0.20
Co	0.30	K	0.06%	Sc	0.453	Yb	0.0
Cr	26.60	La	0.10	Sm	0.10	Zn	10.547
Cs	0.10	Li	8.71	Sn	2.30	Zr	17.313
Cu	18.216	Lu	0.20	Sr	9.76		
Dy	0.0	Mg	0.013%	Ta	0.30		

8. Quality control:

The ICP-OES and ICP-MS are calibrated with each work order. An instrument blank and calibration check is analyzed with each run. One preparation blank and reference material is analyzed every 46 samples, one duplicate every 12 samples.

All QC samples are verified using LIMS. The acceptance criteria are statistically controlled and control charts are used to monitor accuracy and precision. Data that falls outside the control limits is investigated and repeated as necessary.

ICP12B: The Determination of 32 Elements by Aqua Regia and ICP-OES.

1. Parameter(s) measured, unit(s):

Silver (Ag); Aluminum (Al); Arsenic (As); Barium (Ba); Bismuth (Bi); Calcium (Ca); Cadmium (Cd); Chromium (Cr); Cobalt (Co); Copper (Cu); Iron (Fe); Potassium (K); Lanthanum (La); Lithium (Li); Magnesium (Mg); Manganese (Mn); Molybdenum (Mo); Sodium (Na); Nickel (Ni); Phosphorus (P); Lead (Pb); Antimony (Sb); Scandium (Sc); Tin (Sn); Strontium (Sr); Titanium (Ti); Vanadium (V); Tungsten (W); Yttrium (Y); Zinc (Zn); Zirconium (Zr); (Sulphur (S) and Mercury (Hg) can be added on) : ppm and %

2. Typical sample size:

0.25 g

3. Type of sample applicable (media):

Crushed and Pulverized rocks, soils and sediments

4. Sample preparation technique used:

Crushed and pulverized rock, soil and /or sediment samples are digested using HNO3 and HCl.

5. Method of analysis used:

The digested sample solution is aspirated into the inductively coupled plasma Optical Emission Spectrometer (ICP-OES) where the atoms in the plasma emit light (photons) with characteristic wavelengths for each element. This light is recorded by optical spectrometers and when calibrated against standards the technique provides a quantitative analysis of the original sample.

6. Data reduction by:

The results are exported via computer, on line, data fed to the Laboratory Information Management System (LIMS CCLAS EL) with secure audit trail.

Element	Limit of Quantification (LOQ) ppm	Element	(LOQ) ppm	Element	(LOQ) ppm	Element	(LOQ) ppm
Ag	0.50	Cu	2.70	Р	0.00042(%)	Zn	1.79
Al	0.011 (%)	Fe	0.001(%)	Pb	1.5	Zr	0.23
As	2.9	K	0.0047(%)	Sb	0.9	*S	0.0015(%)
Ba	4.2	La	0.17	Sc	0.05	*Hg	1.0
Be	0.17	Li	2.4	Sn	1.4		
Bi	4.5	Mg	0.0016(%)	Sr	0.35		
Ca	0.0034 (%)	Mn	0.37	Ti	0.00011(%)		
Cd	0.10	Mo	0.52	V	0.30		
Cr	0.34	Na	0.016(%)	W	1.7		
Co	0.21	Ni	1.8	Y	0.09		

7. Figures of Merit:

(*Sulphur and Mercury can be added on)



8. Quality control:

SG:

The ICP-OES is calibrated with each work order. An instrument blank and calibration check is analyzed with each run. One preparation blank and reference material is analyzed every 46 samples, one duplicate every 12 samples.

All QC samples are verified using LIMS. The acceptance criteria are statistically controlled and control charts are used to monitor accuracy and precision. Data that falls outside the control limits is investigated and repeated as necessary.

9. Accreditation:

The Standards Council of Canada has accredited this test in conformance with the requirements of ISO/IEC 17025. See <u>www.scc.ca</u> for scope of accreditation



FAI313 : The Determination of Gold, Platinum and Palladium by Fire Assay and ICP-OES.

- 1. Parameter(s) measured, unit(s): Gold (Au); Platinum (Pt); Palladium (Pd) : ppb
- **2.** Typical sample size: 30.0 g

SG

3. Type of sample applicable (media): Crushed and pulverized rocks.

4. Sample preparation technique used:

Crushed and pulverized rock sample are weighed and mixed with flux and fused using lead oxide at 1100° C, followed by cupellation of the resulting lead button (Dore bead). The bead is digested using 1:1 HNO₃ and HCl and the resulting solution is submitted for analysis.

5. Method of analysis used:

The digested sample solution is aspirated into the inductively coupled plasma Optical Emission Spectrometer (ICP-OES) where the atoms in the plasma emit light (photons) with characteristic wavelengths for each element. This light is recorded by optical spectrometers and when calibrated against standards the technique provides a quantitative analysis of the original sample.

6. Data reduction by:

The results are exported via computer, on line, data fed to the Laboratory Information Management System (LIMS CCLAS EL) with secure audit trail.

7. Figures of Merit:

Element	Reporting of Quantification (LOQ) ppb
Au	2.87
Pt	5.60
Pd	3.12

8. Quality control:

The ICP-OES is calibrated with each work order. An instrument blank and calibration check is analyzed with each run. One preparation blank and reference material is analyzed every 46 samples, one duplicate every 12 samples.

All QC samples are verified using LIMS. The acceptance criteria are statistically controlled and control charts are used to monitor accuracy and precision. Data that falls outside the control limits is investigated and repeated as necessary.