REPORT ON THE 2003 DIAMOND DRILL PROGRAM ON THE BRENDA PROPERTY

(TOM3, TOM4, JAN2, JAN#9, KATH1 & KATH3)

BCGSNTS: 094E.026 & 027

Latitude: 57° 16' N Longitude: 126° 52' W

OMINECA MINING DIVISION

Owner/Operator:
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EXECUTIVE SUMMARY

The 178 unit Brenda property is located 25 km northwest of Northgate's Kemess Mine and 450 km northwest of Prince George, British Columbia on BCGS NTS map sheets 094E.026 and 027. The property is owned and operated by Northgate Exploration Limited, subject to an option agreement with Canasil Resources Inc.

Geologically, the property is underlain by Upper Triassic Takla Group volcano-sedimentary stratigraphy, unconformably overlain by Lower to Middle Jurassic Hazelton Group volcanic and volcaniclastic rocks of the Toodoggone Formation. Felsic plutons, dykes and sills of Jurassic age, thought to be co-magmatic with the Toodoggone volcanic rocks, intrude the volcanic assemblages.

Several gold-silver bearing epithermal showings and the Pillar and White Pass gold-copper prospects were previously delineated on the property. Prior work on the White Pass prospect yielded significant results including 0.48 g/t Au and 0.14% Cu over 109m from drilling, apparently hosted by Toodoggone volcanic stratigraphy and associated with steeply dipping north to northwesterly trending faults.

A four hole, 1650m diamond drill program, completed by Northgate in 2002, was successful in intersecting mineralized zones anomalous in copper and gold in all holes, extending the anomalous zone in the White Pass area to a 0.8 x 1.3 km area.

In 2003 follow-up work, consisting of 1484m of diamond drilling in five holes was successful in intersecting significant copper-gold mineralization over considerable widths including 0.55 g/t Au and 0.08% Cu over 167m in BR 03-7 and 0.38 g/t Au and 0.11% Cu over 80m in BR 03-6. The mineralization is associated with anhydrite-gypsum and magnetite-silica altered Takla volcanic rocks in a setting analogous to that of the Kemess North Deposit in BR 03-7. In BR 03-6 mineralization seems more controlled by northwest trending structures through Toodoggone volcanic rocks similar to most of the previous mineralization intersected in the White Pass Zone. The results are also reported for a limited amount of soil and rock sampling that was completed over other areas of the property.

Widespread porphyry style gold-copper mineralization and associated favourable alteration occurs on the Brenda property within a porphyry setting analogous to that at the Kemess North Deposit. Significant mineralization was intersected in the 2003 drill program and a large mineralizing system is suggested by the anomalous intersections obtained over a widely spaced area in the 2002 drill program.

A 1500m-diamond drill program is proposed for 2004 to delineate the extent and outline the overall tenor of mineralization in the White Pass Zone. Mineralization is open at depth, to the north, east and south and additional porphyry gold-copper targets remain untested on the property.

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1.0 INTRODUCTION

This report documents the results of a five hole, 1484m diamond drill program completed between June 14 and July 10, 2003. The program was designed to follow-up anomalous copper and gold results from previous drill programs, hosted by Takla Group volcanic rocks beneath significant gold-copper mineralization in Toodoggone volcanic rocks at the White Pass Zone. Takla Group volcanic rocks host similar porphyry style mineralization at the Kemess North Deposit. The drill program was conducted on the Tom 4, Jan 2 and Jan #9 claims. In addition a small soil geochemical survey was completed over the Kath 1, Kath 3 and Jan #9 claims and rock samples were collected from the Tom 3 claim.

2.0 LOCATION AND ACCESS (FIGURE 1)

The Brenda property, on NTS map sheets 094E026 and 094E027, is located 25 km northwest of Northgate's Kemess Mine and 450 km northwest of Prince George, British Columbia, in the Omineca Mining Division. It is situated south of Jock Creek, north of the Finlay River at latitude 57°16' N and longitude 126°52' W. Road access exists from the Kemess Mine to the Sturdee Airstrip, 21 km west of the property, via the Omineca Resource Access Road. Access from the airstrip is via the 12 km long Shasta Mine Road, followed by a 9 km four wheel drive road to the property centre.

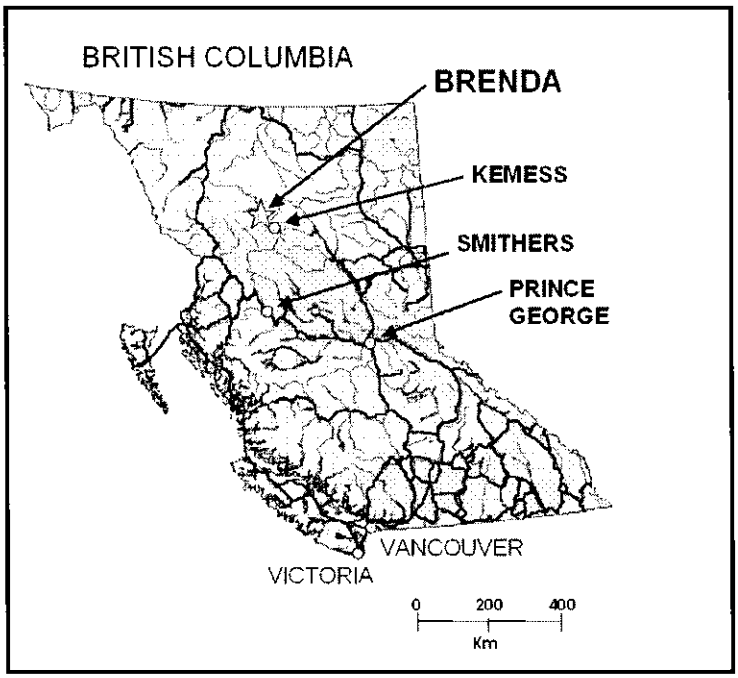

Figure 1 Brenda Property Location Map

3.0 LEGAL DESCRIPTION (FIGURE 2)

The 4400 ha Brenda property consists of thirteen modified grid and nine two post claims, totalling 178 contiguous units. The property is owned and operated by Northgate Exploration Limited, subject to option and joint venture agreements signed on July 31, 2002 with Canasil Resources Incorporated. Northgate can earn a 60% interest by completing exploration expenditures of $2,000,000 and making cash payments totalling $140,000 over a four-year period. All claims are valid to May 30, 2009. A statement of claims with expiry dates follows:

Tenure#	Claim Name	Expiry*	Units	Tag
238271	BRENDA #1	5/30/2009	1	244475M
238272	BRENDA #4	5/30/2009	1	244478M
238273	BRENDA #5	5/30/2009	1	244479M
238274	BRENDA #6	5/30/2009	1	244480M
238275	BRENDA #7	5/30/2009	1	244481M
238276	BRENDA #8	5/30/2009	1	244482M
238770	JAN 1	5/30/2009	6	95491
238771	JAN 2	5/30/2009	16	95492
238872	MAX NO. 1	5/30/2009	1	244471M
238873	MAX 2	5/30/2009	1	244472M
238874	MAX 3	5/30/2009	1	244473M
Claims: 11		Units:	31	

Tenure#	Claim Name	Expiry*	Units	Tag
239100	JAN 6	5/30/2009	4	84685
239101	JAN 7	5/30/2009	20	84686
239102	JAN 8	5/30/2009	10	84687
239522	POCK	5/30/2009	16	95493
239523	HANS	5/30/2009	6	95494
239993	TOM 4	5/30/2009	6	101882
240972	JAN #9	5/30/2009	16	29398
306720	TOM 3	5/30/2009	9	101881
306721	TOM 5	5/30/2009	20	101883
319655	KATH 1	5/30/2009	20	223696
319657	KATH 3	5/30/2009	20	223698
Claims: 11		Units:	147	

*Prior to acceptance of this statement of work.

All Claims: 22 All Units: 178

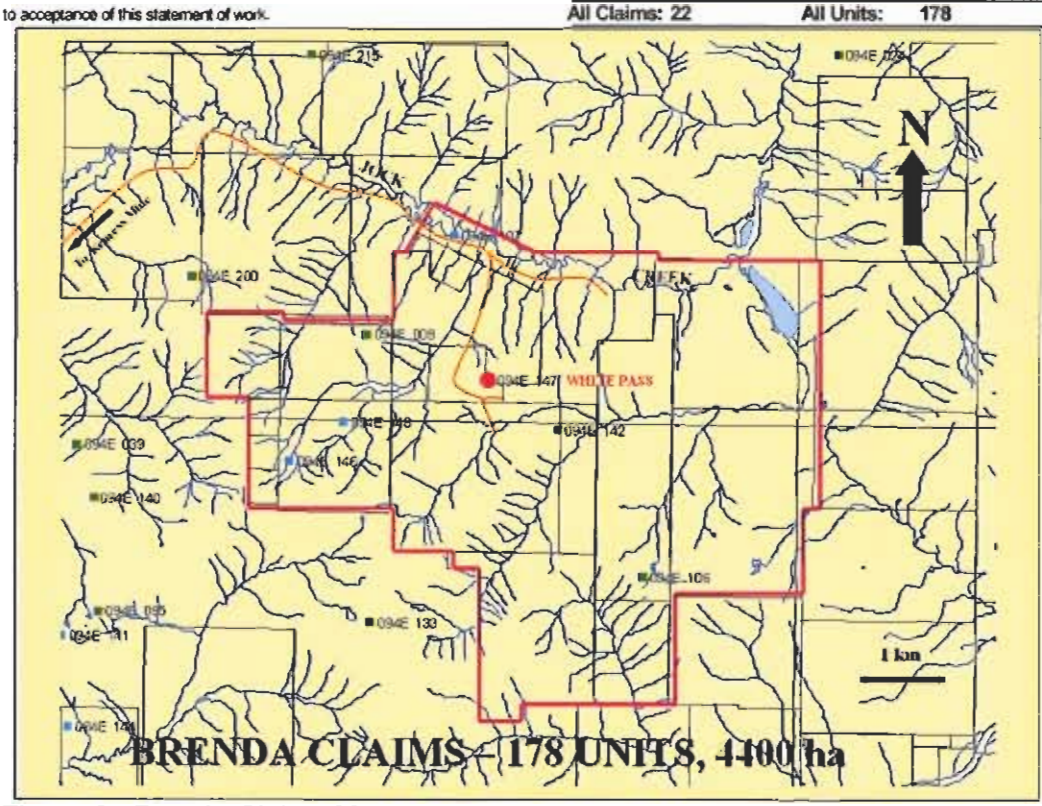

Figure 2. Brenda Claims Map

4.0 PHYSIOGRAPHY

The Brenda property lies within the Samuel Black Range of the Omineca Mountains, within the watershed of the Finlay River. Individual and isolated small ranges separated by broad deep valleys characterize the region. On the property, the topography is relatively moderate with elevations ranging from 1200m along Jock Creek to 2004m on the Tom 3 claim. Spruce, pine, balsam, scrub willow and alders forest the lower elevations, with alpine vegetation occurring generally above 1650m.

5.0 EXPLORATION HISTORY

Exploration activities date back to the 1950's at Brenda and are summarized below:

Era	Activity
1950	Discovery of gold-bearing epithermal quartz veins along Jock and Red Creeks
1980-85	Prospecting and hand trenching on veins by Canmine Development Co. Ltd
1988	Cypress Gold Canada Inc. diamond drilled 1219m in 12 holes on the epithermal veins
1989-91	Soil geochemistry and trenching by Canasil Res. Inc. with discovery of White Pass gold-copper porphyry Zone
1992	Canasil drilled 271m in 4 holes on the White Pass Zone
1993	Diamond drilling of 958m in 6 holes, IP/resistivity, magnetic and expansion of soil surveys by Romulus Res. Ltd on White Pass grid
1994-97	Soil geochemistry, hand trenching, 1919m of diamond drilling in 16 holes on White Pass and East Creek Zones by Canasil
2002	Airborne magnetic, radiometric and satellite imaging surveys followed by 1650m of diamond drilling in 4 holes by Northgate

6.0 GEOLOGY

6.1 REGIONAL GEOLOGY

The regional geology of the Brenda property is represented on the Toodoggone River (94E) Map Sheet, Diakow et. al., 1985.

The property lies within the Toodoggone-Kemess Gold Camp, which is situated within a Mesozoic volcanic arc assemblage along the eastern margin of the Intermontane Belt, a northwesterly trending belt of Paleozoic to Tertiary sedimentary, volcanic and intrusive rocks. The region is dominated by northwest and northeast trending block faults. The intrusive rocks include Jurassic alkaline and calc-alkaline batholiths, stocks, dykes and sills, some of which are associated with significant porphyry style gold-copper deposits, such as at the Kemess Mine and the Kemess North Deposit.

Mineralization at both the Kemess Mine (Kemess South Deposit) and the Kemess North Deposit is hosted by Jurassic intrusions and adjacent Triassic Takla Group volcano-sedimentary rocks. Numerous epithermal gold-silver deposits and prospects and some of the gold copper porphyry prospects within the camp are hosted by volcanic rocks of the Jurassic Toodoggone Formation, which overlie the Takla Group. The Brenda property occurs at the transition from predominantly gold-copper deposits to the south and epithermal gold silver deposits to the northwest.

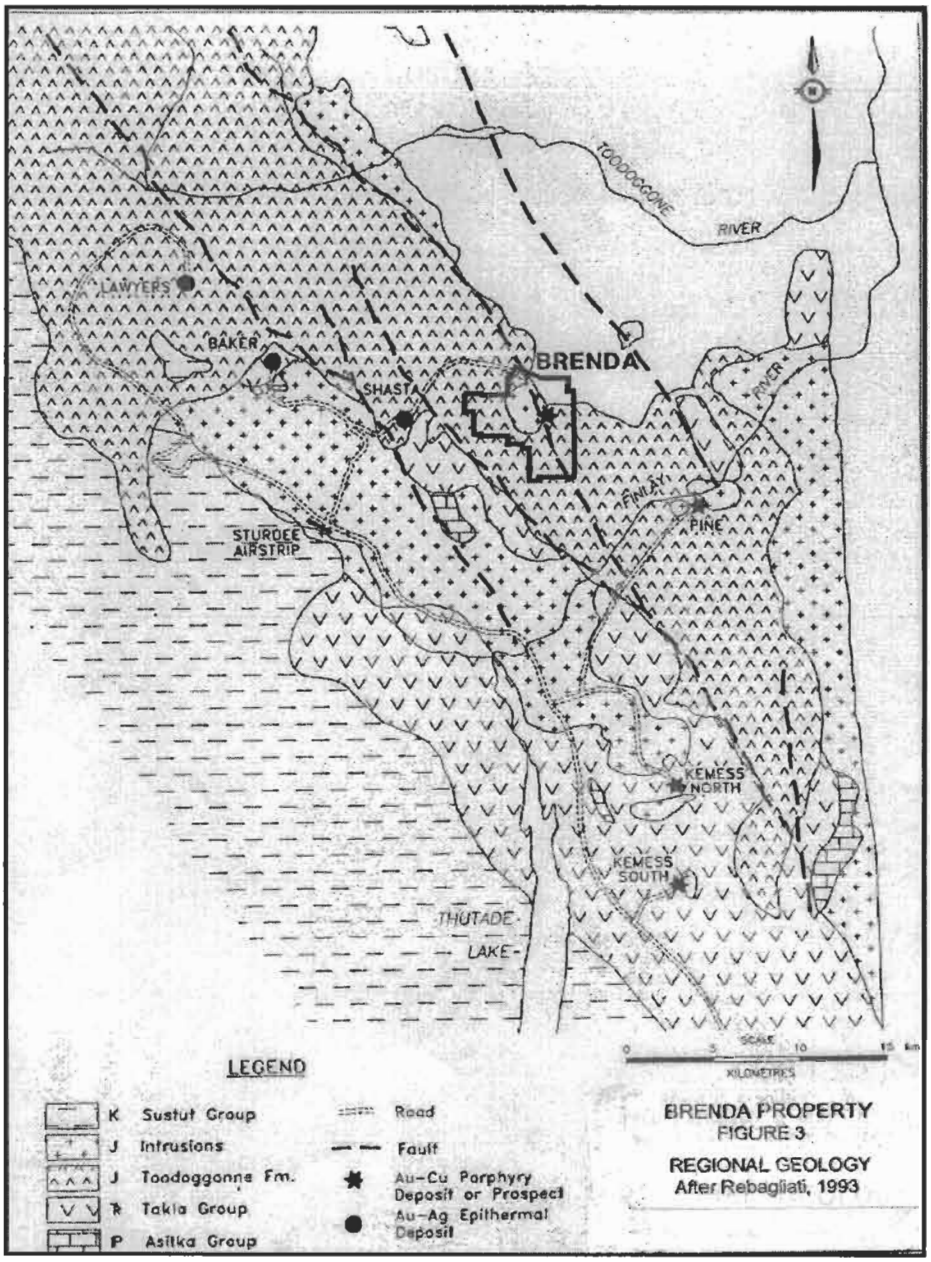

Figure 3. Regional Geology

6.2 PROPERTY GEOLOGY (FIGURE 4)

The Brenda property is underlain by Upper Triassic Takla Group volcanic rocks, unconformably overlain by Lower to Middle Jurassic Toodoggone volcanic stratigraphy of the Hazelton Group and intruded by felsic plutons, dykes and sills, thought to be co-magmatic with the Toodoggone rocks.

Takla Group stratigraphy has been mapped southwest of the White Pass Zone and includes mafic to intermediate augite and/or feldspar phyric flows with minor interbedded sedimentary rocks. Current drilling and a review of previous core suggest that the Takla Group stratigraphy extends into the White Pass area.

The overlying Toodoggone Formation is dominated by andesite quartz feldspar porphyry flows and dacitic lapilli tuffs, which are exposed at the higher elevations on the property, including in the White Pass area. The volcanic rocks of the Toodoggone Formation can partly be distinguished from those of the Takla by the presence of, often rare, quartz phenocrysts in the former.

A 1.5 km long, sub-circular monzonite intrusion of the Early Jurassic Black Lake Suite is exposed 1.5 km west of the White Pass Zone. Dykes and sills of probable related monzonite and quartz feldspar porphyry intrude both the Takla and Toodoggone stratigraphy. The monzonite is commonly feldspar porphyritic and reddish brown in colour.

Late steeply dipping calcite amygdaloidal mafic dykes of basaltic composition pink to white felsite and brown latite dykes intrude all of the above units.

6.3 MINERALIZATION (FIGURES 4-8)

The Brenda property covers seven Minfile occurrences that include several gold-silver bearing epithermal showings, the Creek Zone (Minfile 094E 107), EB (Minfile 094E 148), Takla (Minfile 094E 146), Jok (Minfile 094E 106) and Jock 3 (Minfile 094E 142) and two porphyry copper occurrences, the Pillar (Minfile 094E 008) and the White Pass gold - copper prospect (Minfile 094E 147). (Refer to Figures 2 and 4). The current work focussed on the porphyry gold-copper potential of the property, concentrating on the White Pass prospect.

Previous work on the White Pass prospect included trenching and approximately 2900m of diamond drilling in 20 holes. The drilling was restricted to a 350m x 100m area within a 900m x 400m anomalous zone with coincident soil geochemical and geophysical anomalies. The soil geochemistry is compiled in Figure 5. The total field magnetic signature and IP chargeability high anomalies are summarized in Figure 6 with the resistivity summarized in Figure 7, with highs denoted by warm colours such as red and lows by cool colours such as blue and green. The above data was utilized in directing the 2002 and 2003 drill programs.

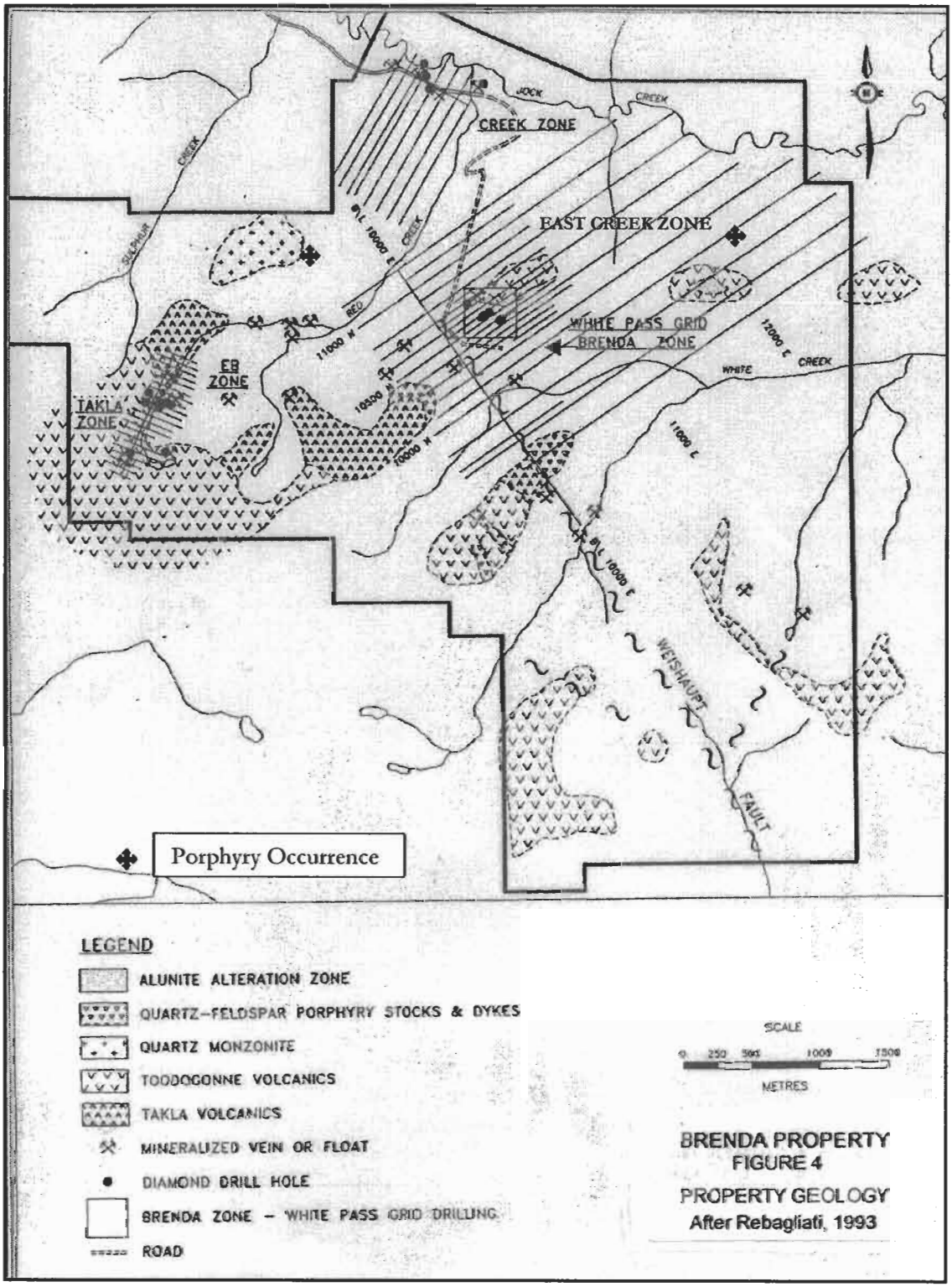

Figure 4. Brenda Property Geology Rebagliati 1993

An examination of drill core in 2002 from prior programs on the White Pass Zone confirmed the presence of mineralization in the Toodoggone volcanic rocks and indicated the presence of possible Takla Group stratigraphy. Figure 8 shows a generalized cross section through the White Pass Zone on L105+50N. Mineralization appears to be associated with steeply dipping north-northwesterly trending faults within Toodoggone volcanic rocks, which are exposed at the higher elevations on the property. Significant results were obtained from the previous drilling, including 0.48 g/t Au and 0.14% Cu over 109m from DDH 93-3, 1.1 g/t Au and 0.13% Cu over 48m in DDH 93-1 and 0.84 g/t Au and 0.14% Cu over 63m from DDH 96-7.

The four hole, 1650m diamond drill program, completed by Northgate in 2002, was successful in intersecting mineralized zones anomalous in gold and copper in all holes, extending the anomalous zone to a 0.8 x 1.3 km area. A summary of selected anomalous results from each of the 2002 drillholes follows:

Hole No.	From (m)	To (m)	Interval (m)	Au (g/t)	Cu (%)
BR-02-1:	106.8	121.0	14.2	0.43	0.08
BR-02-2:	296.1	321.8	25.7	0.42	0.03
BR-02-3:	136.9	150.4	13.5	0.11	0.10
BR-02-4:	348.8	371.0	22.2	0.22	0.12

Additional copper-gold porphyry potential exists on the property. At the Pillar showing, on the Jan 1 claim, bornite occurs within a fine grained feldspar porphyry (see Figure 4). Sparse chalcopyrite with malachite mineralization associated with northwest trending fractures was exposed in trenches within a strong copper soil anomaly (to 1050 ppm) and a magnetic high anomaly. The showing appears to be related to a 1.5 km syenite to monzonite stock of the Early Jurassic Black Lake Suite.

Two previous holes were drilled on the East Creek Zone (Figure 4) intersecting pyrite mineralization with anomalous values in copper and gold. Other porphyry targets, outlined by soil geochemical and geophysical surveys, remain unexplored (Weishaupt, 1998b).

7.0 DIAMOND DRILLING PROGRAM

7.1 PROCEDURE

A total of 1484m of diamond drilling in five holes was completed on the Brenda Project during the 2003 drill program. Drilling was carried out between June 14 and July 10, 2003 by Britton Bros. Diamond Drilling Ltd. of Smithers, British Columbia. A skid mounted JKS 2500 core drill with NQ wireline tools was utilized with the final hole being helicopter supported. HQ wireline tools were employed at the start of each hole due to poor recovery near surface.

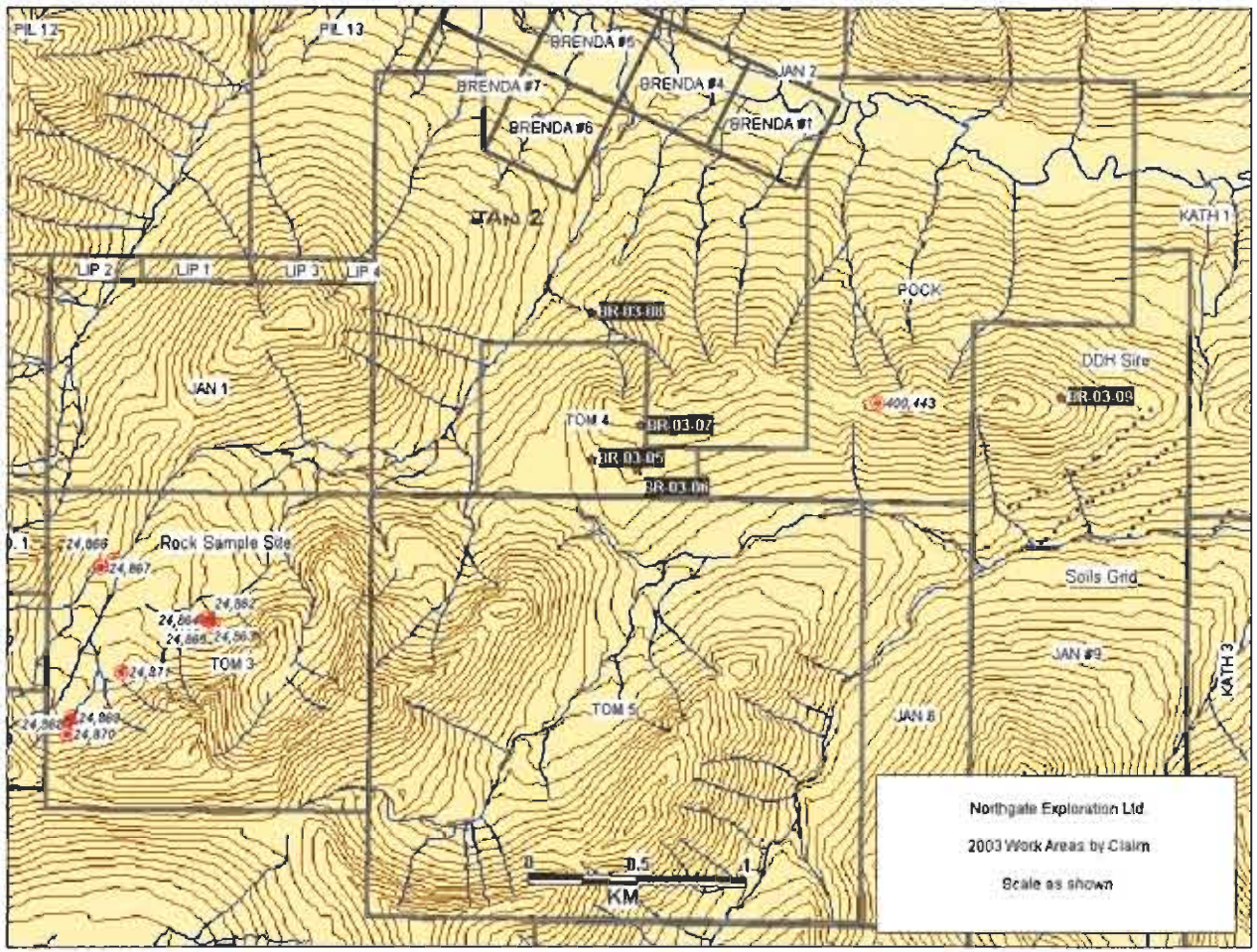

Figure 5. DDH Location Map with other work areas shown.

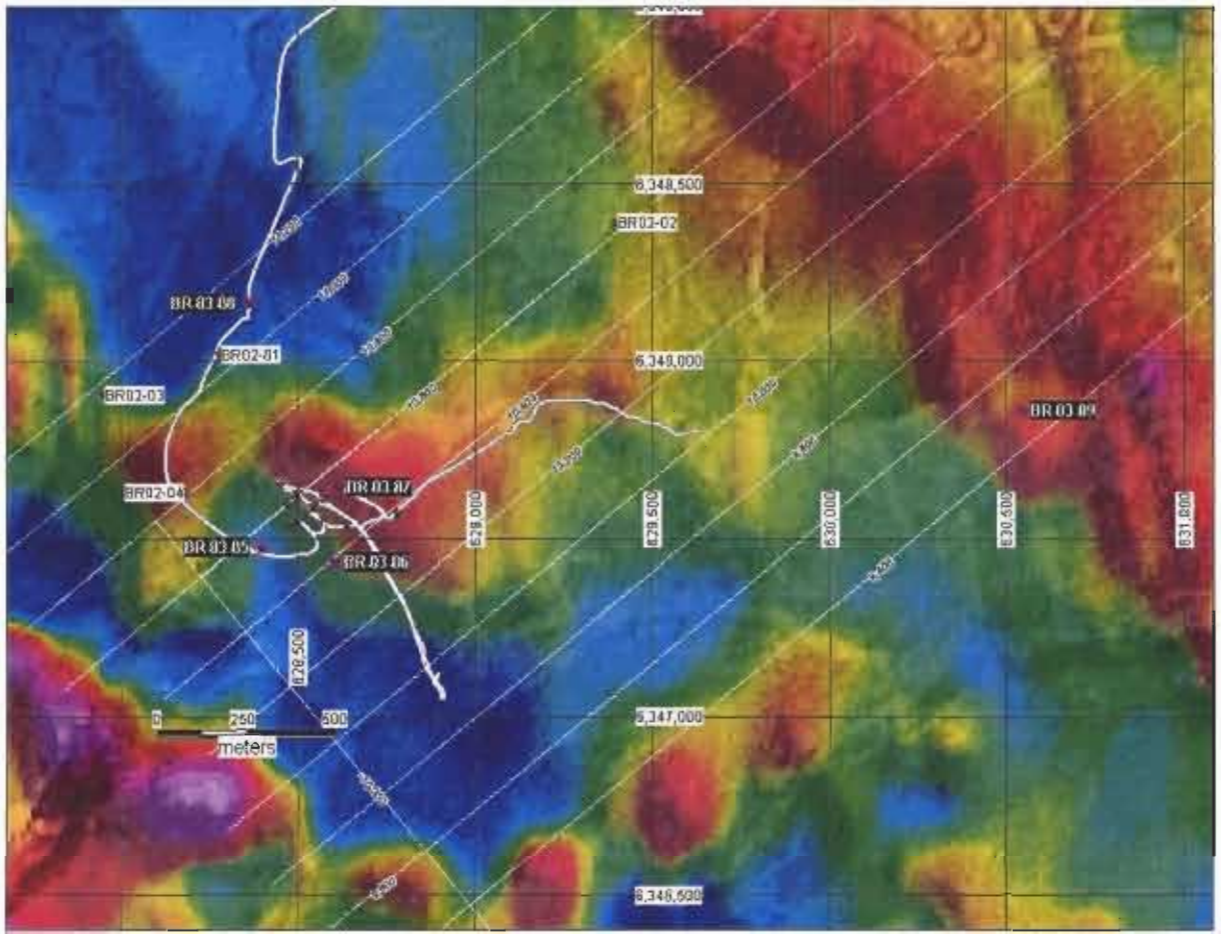

Figure 6. DDH Location and 2002 Airborne Mag

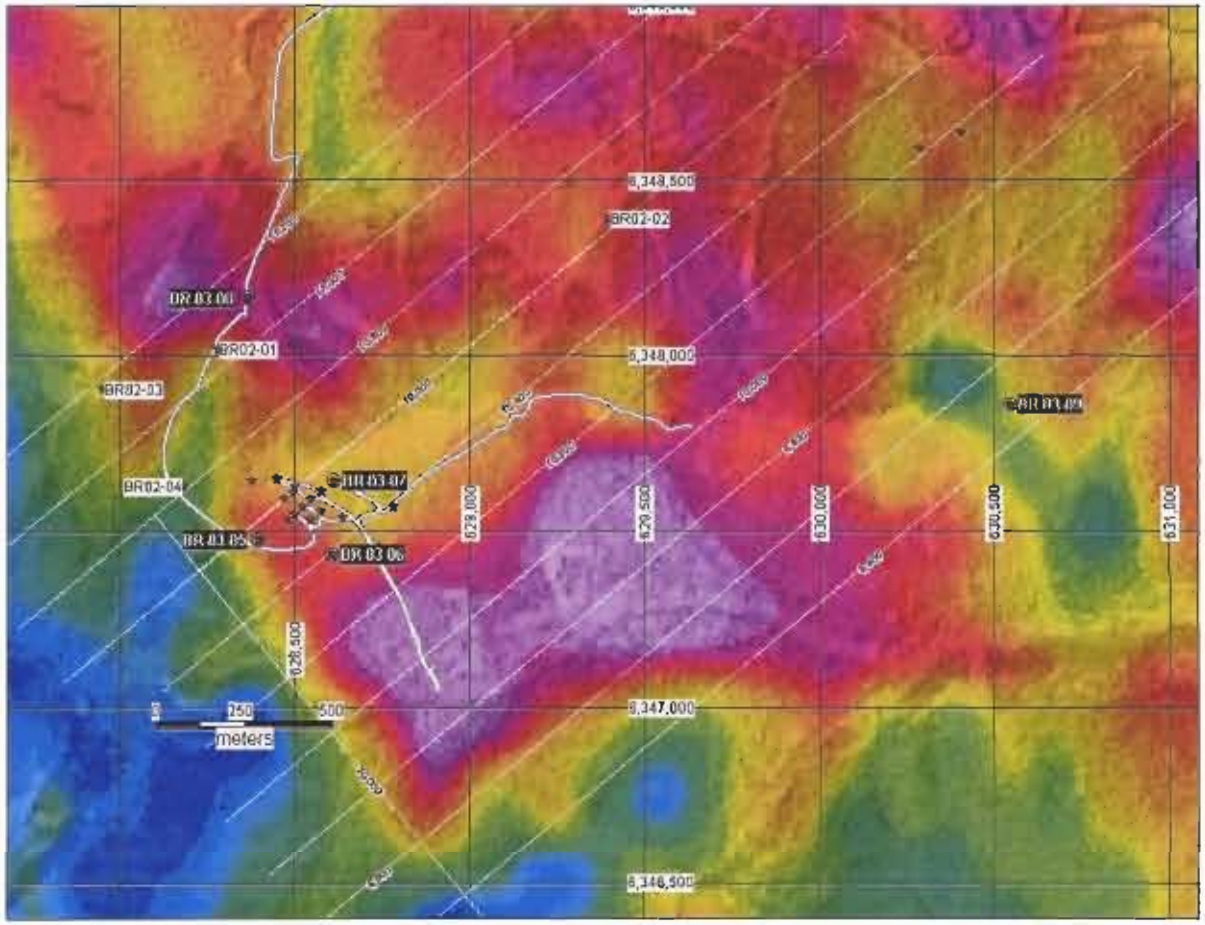

Figure 7. DDH Location and Airborne Resistivity

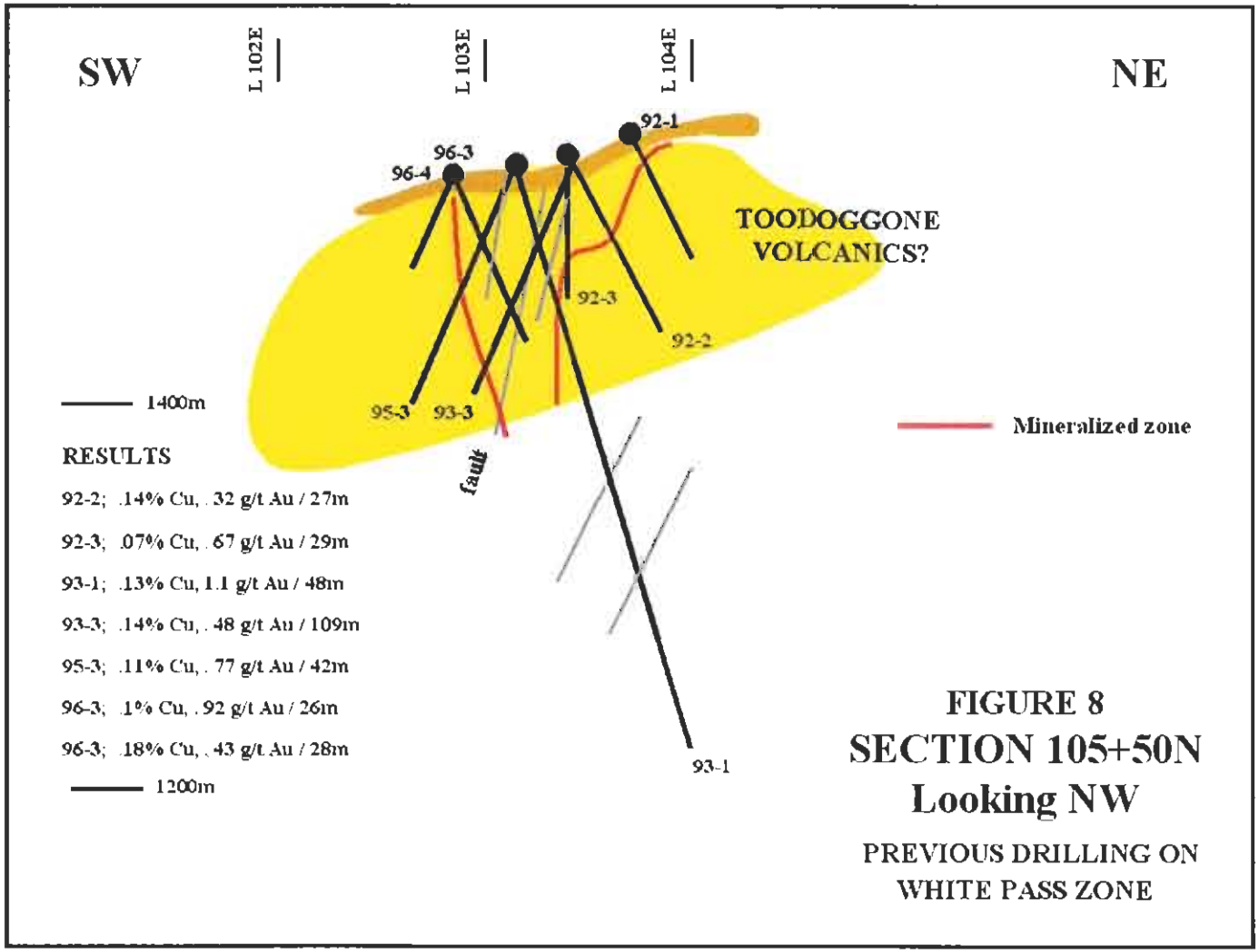

FIGURE 8
SECTION 105+50N
Looking NW

PREVIOUS DRILLING ON
WHITE PASS ZONE

A total of 678 samples of core were sawn in half at the Kemess minesite. External quality control samples were inserted in the final hole BR-03-09, while standard lab quality control samples were introduced at Chemex in the other holes. All samples were sent to ALS Chemex Labs, Vancouver, British Columbia and analyzed for Al, Sb, As, B, Ba, Be, Bi, Cd, Ca, Cr, Co, Cu, Fe, Ge, La, Pb, Mg, Mn, Hg, Mo, Na, Ni, P, Ag, Sc, Sr, S, Ti, Tl, Sn, W, U, V and Zn using a 34 element ICP package which involves a nitric-aqua regia digestion. Gold was analyzed by fire assay with an atomic absorption finish on a one assay ton equivalent analytical charge. Lab procedures and results are outlined in Appendix IV.

Drill hole specifications are summarized in Table 1 and drill hole locations are shown on Figure 9. It should be noted that cut grid coordinates are from a transformed grid and do not necessarily correspond to the prescribed field station on line. Drill logs are included in Appendix V. Cross sections with significant results are shown in Figures 10-13. The core is stored at the lower camp at the Kemess Mine site and all of the pre-Northgate core is stored near the Canasil camp on the property at GPS co-ordinates 628389E 6349428 N, Nad 83, Zone 9.

Table 1 Diamond Drill Hole Specifications

	GPS Nad 83,	Zone 9							
Hole No.	Northing	Easting	Grid N	Grid E	Elev. (m)	Azimuth	Dip	Depth (m)	Samples
BR-03-5	6347670	628290	10553	10187	1487	55°	-70°	292.6	122001-135
BR-03-6	6347630	628500	10389	10325	1510	55°	-70°	374.9	122137-307
BR-03-7	6347839	628507	10547	10462	1565	55°	-70°	2719	122307-444
BR-03-8	6348361	628258	11110	10597	1403	55°	-70°	381.0	122445-612
BR-03-9	6348055	630440	9499	12101	1625	235°	-45°	163.7	122613-684
TOTAL:								1484.1	678

7.2 DIAMOND DRILLING RESULTS

A brief description of each of the drill holes follows, including a summary of results, calculated as weighted averages:

DDH BR-03-5 (Figure 11)

BR-03-5 was drilled to test the depth potential of the highest grade gold-copper mineralization over significant lengths delineated in previous programs at the White Pass Zone with results up to 0.48 g/t Au and 0.144% Cu over 109m from DDH 93-3 and 1.10 g/t Au and 0.130% Cu over 48m from DDH 93-1 (see Figure 8). A magnetic high and resistivity low feature that underlies this area and continues through the White Pass Zone is probably related to a cover of Toodoggone volcanic rocks.

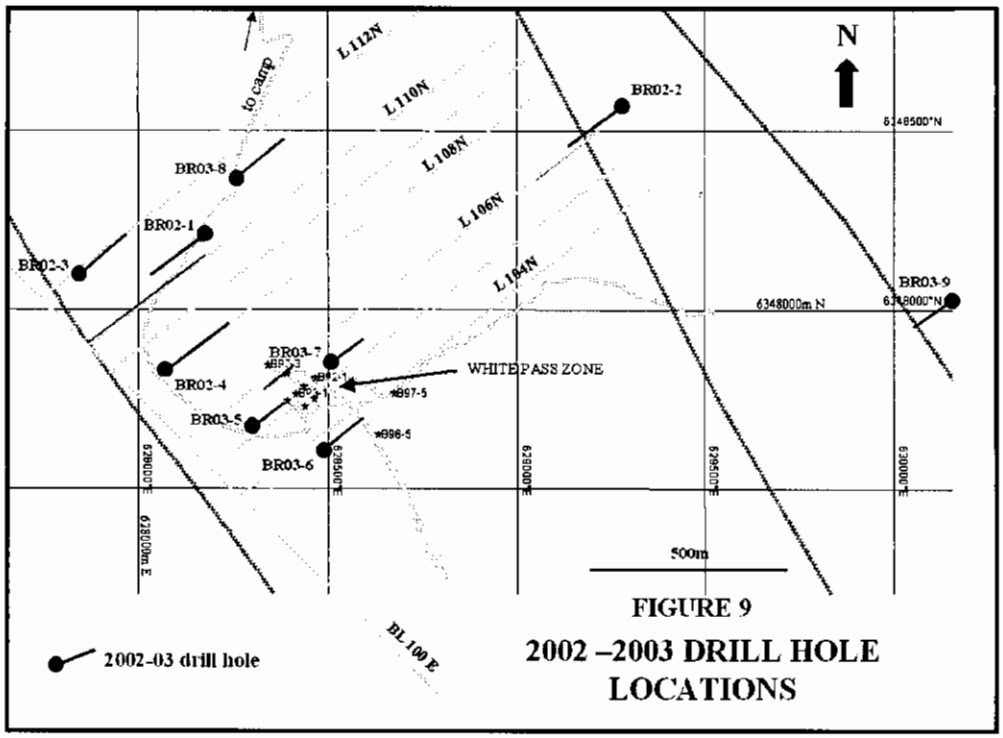

FIGURE 9

2002 –2003 DRILL HOLE LOCATIONS

The hole intersected a sequence of intermediate feldspar and lesser augite phyric crystal, polylithic tuffs with feldspar porphyritic intermediate flows and minor flow breccias down to 186.1m. Quartz eyes were identified in the flows, suggesting the stratigraphy is part of the Toodoggone Formation, which is further supported by the geophysical signature.

The remainder of the hole from 186.1 to the end of the hole at 292.6m consists of mottled looking, variably hematitic, propyllitic and magnetite-silica altered andesite, possibly of the Takla Group. The mottling appears to be due to the presence of a breccia texture as identified in thin section (Wolfson, 2002).

The lower part of the Toodoggone unit is intruded by a quartz monzonite sill between 140.7 and 153.0m. Feldspar porphyritic monzonite dykes cut the Takla Group stratigraphy, comprising about 60% of the Takla section. The monzonite was primarily intersected from 205.4 to 218.4m and 247.0 to 282.5m. All the lithologies are cut by minor generally calcite amygdaloidal dark coloured mafic and brown coloured latite dykes.

A steep, north westerly trending fault, which correlates with a fault encountered in BR-02-4 near the base of the Toodoggone stratigraphy and to a fault in the upper part of BR-02-3, was primarily encountered from 134.8 to 140.7m. A second northwesterly trending, moderately westerly dipping fault is evident from 201.2 to 203.5m and appears to correlate with a fault that appears to be related to mineralization in DDH BR-02-4 and BR-02-1.

Chalcopyrite mineralization ± sphalerite primarily occurs in the altered Takla volcanic rocks (characterized by their mottled texture) extending slightly into the adjacent monzonite sills, as noted between 195.4 and 207.4m, and intermittently to a lesser extent between 218.9

and 247.0m. A narrow chalcopyrite bearing zone, associated with calcite-sphalerite stringers related to a fault zone, was also noted from 189.0 to 191.9m and another occurs within the Toodoggone rocks at 172m, both adjacent to monzonite sills. Calcite-chlorite-pyrite-sphalerite-chalcopyrite stringers, apparently associated with a fault zone, also occur around 96m.

Significant Intersections:

Hole No.	From (m)	To (m)	Interval (m)	Au (g/t)	Cu (%)
BR-03-5:	186.5	209.4	22.9	<0.1	.033
	221.1	247.0	25.9	<0.1	.020

Low anomalous copper and lesser gold zones were encountered in BR-03-05, but mineralization within the Takla appears to be obscured by the intrusion of the monzonite sills.

DDH BR-03-6 (Figure 10)

DDH BR-03-6 targeted the southern extent of the White Pass Zone, 150m east-southeast of BR-03-5.

The hole intersected dacitic feldspar and lesser hornblende phyric flows of the Toodoggone Formation down to 146.8m followed by mottled looking, variably hematitic, propyllitic and magnetite-silica altered andesitic breccias, possibly of the Takla Group, intermittently exposed between 212.6 and 362.0m.

A quartz monzonite dyke intrudes the Toodoggone Formation in the top of the hole from 43.0 to 56.4m. This appears to correlate with a similar dyke near the base of the Toodoggone Formation in BR-03-5. Consequently, the dyke appears to trend northwest and dip steeply to the west. Feldspar porphyritic monzonite sills, which comprise about 50% of the hole, intrude the Toodoggone/Takla contact between 122.6 and 212.6m and invade 75-80% of the underlying Takla Group stratigraphy from 218.9 to 271.0m and 279.4 to 325.7m.

Minor dark coloured generally calcite amygdaloidal mafic dykes cut all lithologies and a brown coloured latite dyke was intersected in the bottom of the hole from 362m to the bottom of the hole at 374.9m.

A large steeply dipping fault zone pervades the Toodoggone Formation between 56.4 and 130.9m. This may represent the northwesterly trending structure that controls mineralization within the White Pass Zone further north.

Copper mineralization, consisting of oxides and minor chalcopyrite, is associated with a fault zone and magnetite ±minor magnetite-silica alteration, hosted by dacitic flows of the Toodoggone Formation, between 56.4 and 120.8m. The zone continues within the upper portions of an adjacent monzonite dyke, from 128 to 133.2m, peripheral to a fault at 130.5m, and is accompanied by sphalerite and galena. This style is typical of most of the mineralization intersected previously within the White Pass Zone.

The Takla Group stratigraphy is poorly exposed in BR-03-6 due to the high percentage of monzonite sills. Chalcopyrite mineralization ±sphalerite and galena occurs within magnetite-silica altered zones hosted by the Takla between 213.4 and 218.9m, 271.0 and 279.4m and between 325.7 and 358m, primarily limited by the invading sill. Mineralization is generally not present within the monzonite sills. A fragment of mineralized magnetite-silica altered Takla occurs within a monzonite sill at 230.8m, confirming that the sills are post mineralization within the Takla stratigraphy.

Significant Intersections:

Hole No.	From (m)	To (m)	Interval (m)	Au (g/t)	Cu (%)	Stratigraphy
BR-03-6:	53.3	133.2	79.9	0.375	0.111	Toodoggone
incl.	87.0	117.1	30.1	0.587	0.123	Toodoggone
	212.6	218.9	6.3	<0.1	0.032	Takla
	271.0	279.4	8.4	<0.1	0.053	Takla
	325.7	358.0	32.3	0.09	0.051	Takla

Results from DDH BR-03-6 indicate that mineralization within the Toodoggone Formation continues to the south of the White Pass Zone and although mineralization is still evident within the Takla, the percentage of post mineral monzonite intruding the Takla increases to the south (also seen in BR-02-4 and BR-03-5), diluting and almost eradicating the mineralized zone.

DDH BR 03-7 (Figure 11)

DDH BR-03-7 targeted the depth potential and northeastern extent of mineralization encountered in DDH 97-01 (L106N/10320E), which returned 1.12 g/t Au and 0.13% Cu over 24.8m from 148.0m to the bottom of the hole at 172.8m. The hole was drilled 50m off section to the northwest of DDH 97-01.

Feldspar phyric dacite flows of the Toodoggone Formation were intersected from 15.2 to 24.8m. A large section of typical Takla Group stratigraphy, consisting of augite phyric basalt flows ±brecciated, was encountered from 95.5m to 262.1m, devoid of the invading monzonite sills. Monzonite sills were intersected from the start of the hole at 7.6m to 15.2m and from 24.8 to 94.0m, the latter along the Toodoggone/Takla contact. Amygdaloidal basalt dykes intrude the above units and a latite dyke was intersected from 262.1m to the bottom of the hole at 271.9m.

Faults were encountered at 34m, 70.4 to 72.4m, and along the contact with the latite dyke at 262m. A quartz-sericite-pyrite altered fault zone was intersected from 208.1 to 212.8m. The Takla volcanic rocks are only locally magnetite-silica altered around 122m and from 163.4 to 177.1m. Mottled textures, related to brecciated textures, occur locally but are most evident from 112.2 to 124.4m and from 155.9 to 182.0m. Anhydrite-gypsum flooded zones and stringers are common throughout the Takla section.

Chalcopyrite mineralization is widespread throughout the entire intersection of Takla volcanic rocks from 97.5 to 262.1m, with only minor occurrences of sphalerite from 108.2 to 112.2 and with ± trace galena, between 183.9 to 198.1m.

Significant Intersections:

Hole No.	From (m)	To (m)	Interval (m)	Au (g/t)	Cu (%)
BR-03-7:	95.5	262.1	166.6	0.565	0.079
incl.	102.5	124.4	21.9	0.721	0.093
incl.	212.8	254.3	41.5	0.613	0.106

DDH BR 03-8 (Figure 12)

DDH BR 03-8 targeted a coincident resistivity low and magnetic low, near a dipole magnetic high, 200m north-northeast of BR-02-1 and about 600m north of the White Pass Zone. In the 2002 program, the intensity of mineralization and alteration increased easterly from BR-02-3 to BR-02-1 and the proportion of post mineral monzonite increased to the west and south of BR-02-1. Consequently, the area north and east of BR-02-1 had potential to host better mineralization.

The hole intersected a strongly oxidized intermediate feldspar phyric fragmental, with minor quartz eyes, of the Toodoggone Formation from the top of the hole at 34.7m to 52.5m. Takla Group augite phyric basalt flows were encountered between 122.3 and 365.1m. Monzonite sills comprise approximately 35% of the hole with the largest extending from 52.5 to 140.2m, along the Toodoggone/Takla contact. The monzonite sills were also intersected from 216 to 223.3m, 311.7 to 331.3m and from 365.1m to the end of the hole at 381.0m

A major fault zone was encountered in the upper half of the hole, extending from the top of the hole at 34.7m to 52.5m, from 88.2 to 103m and between 129.9 and 198.5m. Another major fault zone was encountered between 331 and 365m. The faults in BR 03-8 appear to correlate with a northwest trending, moderately southwest dipping fault encountered in BR-02-1 near the base of the main monzonite sill.

Anhydrite-gypsum stockwork breccia zones with sericite and pyrite are common within the Takla volcanic rocks in the bottom half of the hole, particularly from 263.6 to 277.5m, 307.7 to 311.7m and intermittently between 333.5 to 363.1m. The zones commonly occur within or proximal to quartz-sericite-pyrite altered zones, intersected around 192m, 211m and between 294.3 and 309.7m. The zones appear to be related to faults. Similar alteration was encountered between 352 and 369m in BR-02-04.

Chalcopyrite mineralization in BR 03-8 is sparse and patchy, sometimes as large 1-2 cm aggregates, but over narrow intervals. Chalcopyrite was noted at 102m with sphalerite in the monzonite, weak and intermittently with ±sphalerite and galena in the Takla volcanic rocks between 171.5 and 180.2m and at 215m, all associated with faults. Additional patchy chalcopyrite mineralization ± sphalerite and galena was noted within the Takla between 237.4 and 245.6m and at 277m. The most consistent zone of chalcopyrite mineralization is hosted by gypsum-flooded zones associated with the Takla basalts within a monzonite sill between 311.7 and 333.5m.

Significant Intersections:

Hole No.	From (m)	To (m)	Interval (m)	Au (g/t)	Cu (%)
BR-03-8:	100.6	111.7	11.1	<0.1	0.032
	311.7	333.5	21.8	<0.1	0.030

Gold values are consistently <0.1 g/t Au, but low anomalous copper values occur sporadically with maximum values up to 0.113% Cu. Mineralization appears to decrease to the north of DDH BR-03-1.

DDH BR 03-9 (Figure 13)

DDH BR 03-9 targeted a 400m x 400m copper and zinc soil anomaly centred at L96N/12050E and open to the southeast. The anomaly occurs within a strong magnetic high (possibly related to Toodoggone volcanic cover), northeast of a prominent northwest trending structure.

Feldspar phyric dacite crystal, generally monolithic tuffs, with minor hornblende, of the Toodoggone Formation were intersected throughout the entire hole, which is further supported by the geophysical signature, typical of the Toodoggone Formation. A porphyritic monzonite to latite porphyry dyke was intersected from 6 to 8.4m, a basalt dyke from 44.8 to 47.9m, a latite dyke at 98.6 to 100.2m and another latite dyke from 136.3 to 161.6m.

No significant or even anomalous results were obtained from DDH 03-9. The copper in soil anomaly may be related to the northwest trending, possible southwest dipping structure, further to the southwest (see Figures 6-7 and 9).

8.0 ROCK AND SOIL GEOCHEMISTRY

A limited number of rock and soil samples were collected to both characterize the outlying mineralization and to confirm an extension of the eastern base metal and gold soil anomaly. A total of 46 soil samples were collected from the B soil horizon and shipped to ALS Chemex in North Vancouver for multi-element ICP analysis. Gold content was determined by one assay ton fire assay with AA finish. Nine rock samples were collected and submitted to Eco Tech Labs in Kamloops for multi-element ICP analyses and gold determination by one assay ton fire assay.

The soil results are presented in figures 14, 15 and 16, as well as Appendix IV. The soil survey extended and confirmed the base metal anomaly present on the eastern portion of the grid. Several of the prospecting grab samples exhibit high levels of gold, copper and zinc and are from the Takla and Pillar Zones. A table of results is shown in Appendix IV.

The 2003 diamond drill program on the Brenda property was successful in intersecting significant porphyry style gold-copper mineralization as follows:

Hole No.	From (m)	To (m)	Interval (m)	Au (g/t)	Cu (%)
BR-03-6:	53.3	133.2	79.9	0.375	0.111
BR-03-7:	95.5	262.1	166.6	0.565	0.079

The gold-copper mineralization intersected in DDH BR-03-6 is hosted by Toodoggone volcanic rocks, associated with a northwesterly trending fault zone and magnetite-silica alteration. This style is typical and appears to be a continuation of most of the mineralization intersected previously within the White Pass Zone, extending the zone an additional 60m to the south. Although mineralization is still evident within the Takla, the percentage of post mineral monzonite intruding the Takla increases to the south (also seen in BR-02-4 and BR-03-6), possibly limiting the mineralized zone.

DDH BR-03-7 intersected gold-copper mineralization, associated with anhydrite-gypsum flooding and magnetite-silica altered zones throughout the entire intersection of Takla Group volcanic rocks. The style of mineralization is analogous to that of the Kemess North Deposit where mineralization is hosted by magnetite-silica altered Takla volcanic rocks and monzonitic sills beneath Toodoggone volcanic rocks. The intersection in BR-03-7 extends the mineralized zone in 97-01, which returned 1.12 g/t Au and 0.13% Cu over 24.8m in the bottom of the hole, an additional 100m to the northeast. Mineralization is still open at depth and to the east, north and partly to the south of BR-03-7.

Widespread gold-copper mineralization and associated favourable alteration occurs on the Brenda property within a porphyry setting analogous to that at the Kemess North Deposit. Significant mineralization was intersected in the 2003 drill program and a large mineralizing system is suggested by the anomalous intersections obtained over a widely spaced area (0.8 x 1.3 km) in the 2002 drill program. The excellent access, available expertise and existing infrastructure at the minesite add to the potential of the property.

A 1500m diamond drill program is proposed for 2004 to follow-up and delineate the size and tenor of mineralization in the White Pass Zone. Mineralization, similar to that at the Kemess North Deposit, is primarily open at depth and to the east, north and partly to the south of DDH BR 03-7. Mineralization more typical of the White Pass Zone is open to the south of DDH 03-6. Additional porphyry gold-copper targets, such as the Pillar showing and East Creek Zones, remain untested on the property.

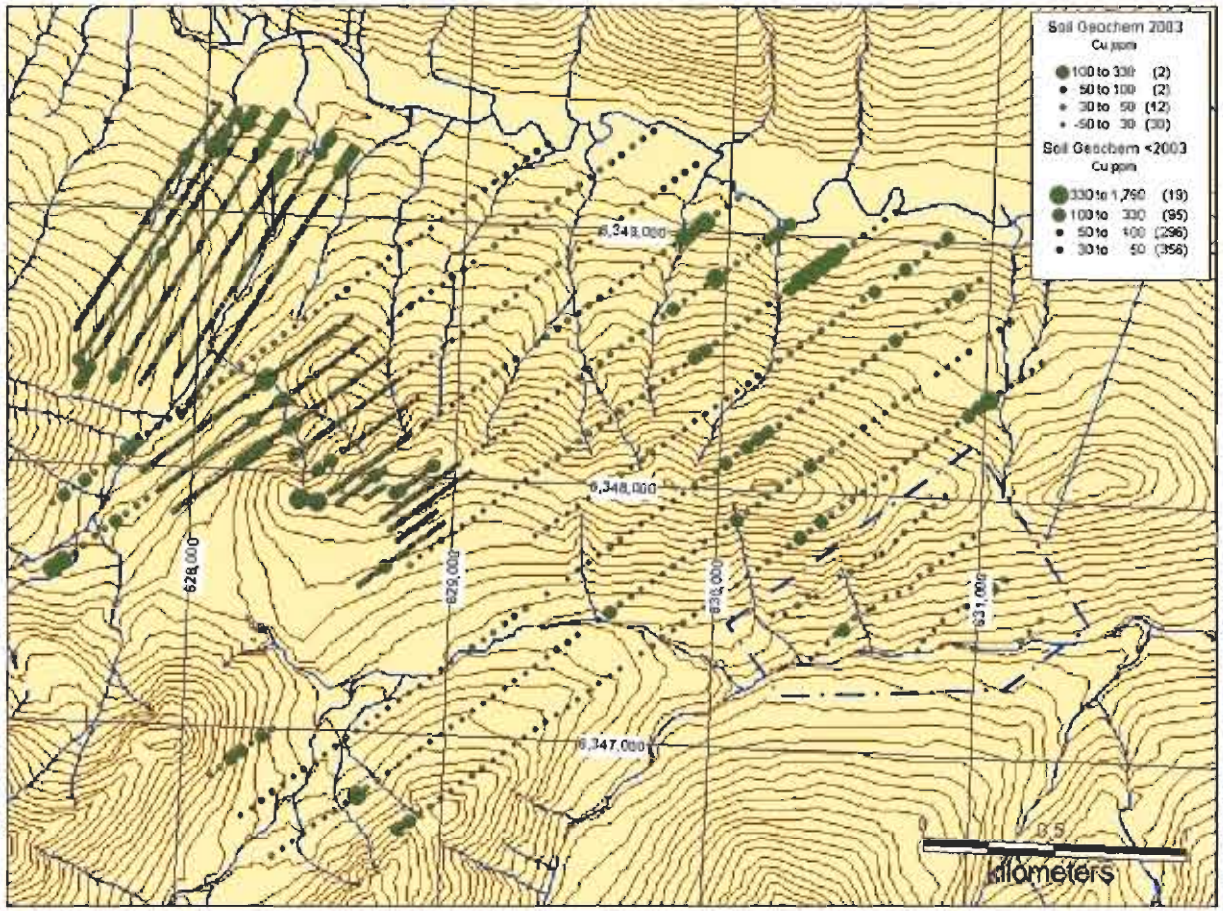

Figure 14. 1 Copper in Soils

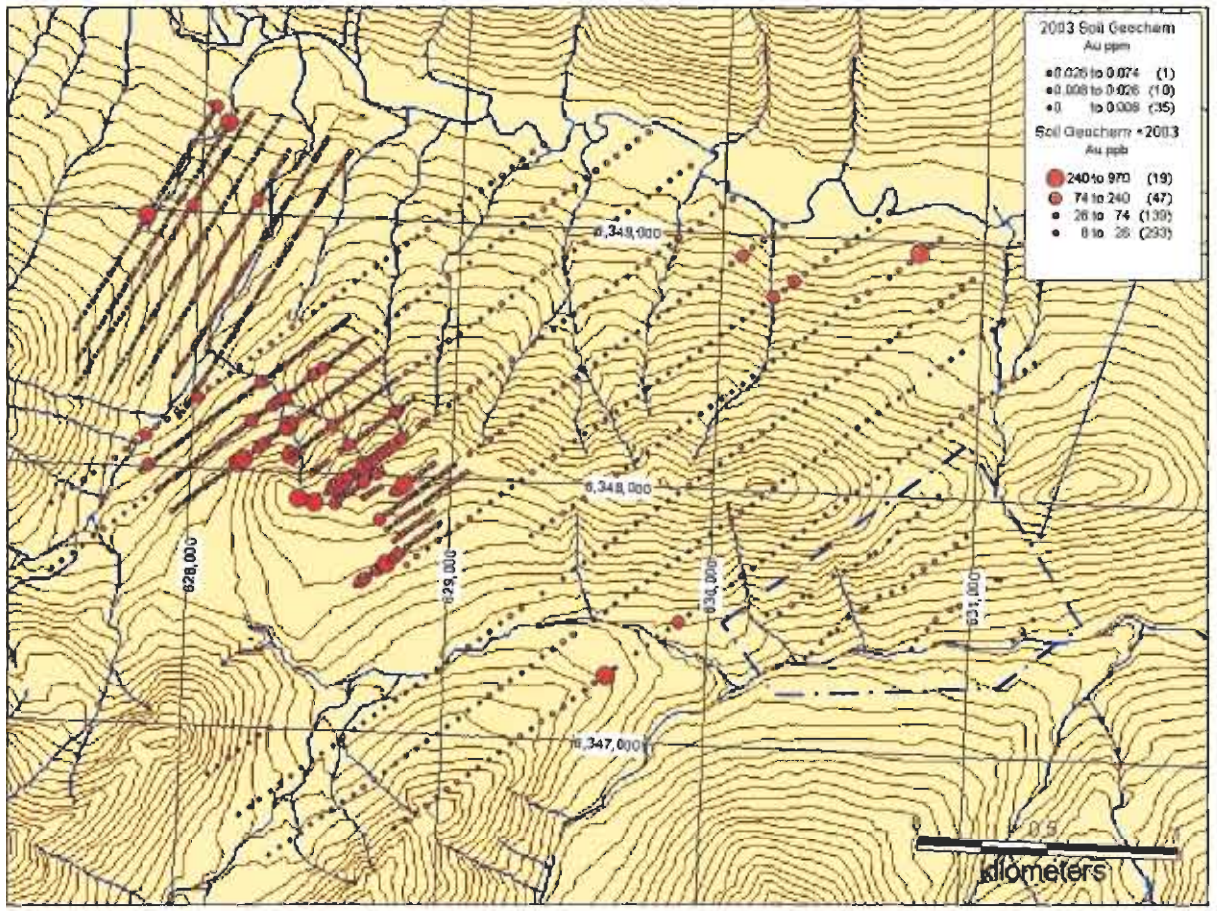

Figure 14. 2 Gold in Soils

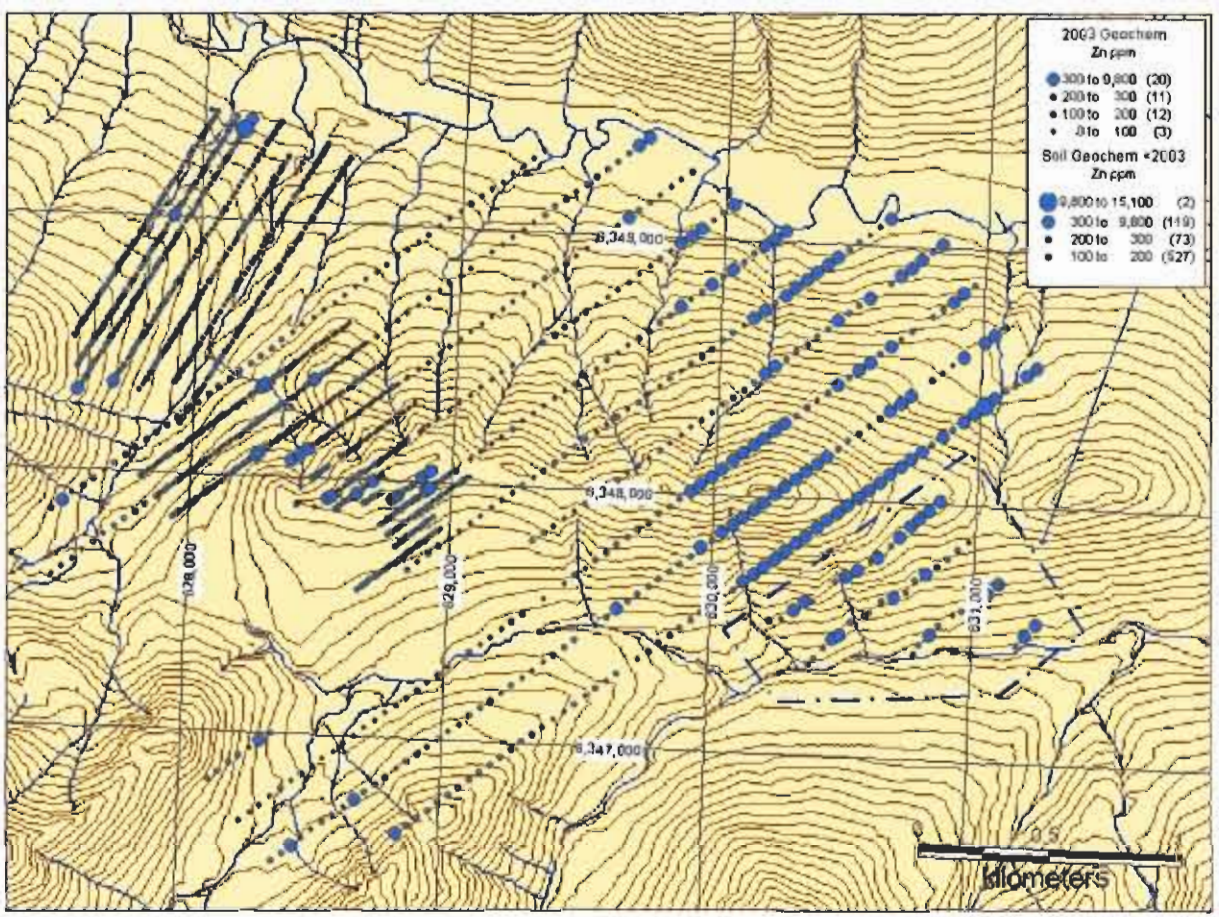

Figure 14. 3 Zinc in Soils

APPENDIX I - SELECTED REFERENCES

British Columbia Minfile, (2003): 094E; Ministry of Energy and Mines.

Diakow, L.J., Panteleyev, A. and Schroeter, T.G. 1985: Geology of the Toodoggone River area (94E); EMPR Preliminary Map 61.

Pautler, J.M., 2002: Report on the 2002 diamond drill program on the Brenda Property, in the Toodoggone-Kemess Gold Camp, British Columbia; Report for Northgate Exploration Ltd.

Rebagliati, C.M. 1993: Summary report, Phase IV Program, Brenda Property, Brenda Gold-Copper Porphyry, Toodoggone-Kemess Gold Camp, Omineca Mining Division, British Columbia; Report for Romulus Resources Limited.

Schroeter, T.G. 1986: Toodoggone River (94E); EMPR Geological Fieldwork 1980, Paper 1981-1, p. 124-132.

Weishaupt, P.J., 1998a: Summary report, Brenda Property, Brenda Gold-Copper Porphyry, Toodoggone-Kemess Gold Camp, Omineca Mining Division, British Columbia; Report for Canasil Resources Incorporated.

Weishaupt, P.J., 1998b: Drilling report, Brenda Property, Brenda Gold-Copper Porphyry Toodoggone-Kemess Gold Camp, British Columbia; Report for Canasil Resources Incorporated.

Weishaupt, P.J., 1996: Drilling report, Brenda Property, Brenda Gold-Copper Porphyry, Toodoggone-Kemess Gold Camp, British Columbia; Report for Canasil Resources Incorporated.

Weishaupt, P.J., 1992: Geological and geochemical report, Brenda Group of Mineral Claims, Toodoggone Gold Camp, Omineca Mining District, British Columbia; Report for Canasil Resources Incorporated.

Wolfson, I., 2002: Petrographic report on the Brenda Property, in the Toodoggone-Kemess Gold Camp, British Columbia; Graben Petrographics Report for Northgate Exploration Ltd.

APPENDIX II - STATEMENT OF EXPENDITURES

Canasil - Brenda joint venture (4090)

2003 Statement of Expenditure

Geological contractors	25,597.15
Drill contractor	106,973.40
Helicopter	14,874.24
Geochemistry/Analytical 678 Core Samples - $19,151.40 46 Soil Samples – $682.28 9 Rock Samples - $203.31	20,036.99
Camp costs	4,375.46
Operating supplies	2,163.04
Miscellaneous (student salaries)	2,906.39
	176,926.67

APPENDIX III

STATEMENT OF QUALIFICATION

I, Jean Marie Pautler, do hereby certify that:

I am a geologist with more than twenty years of experience.

I am a graduate of Laurentian University, Sudbury, Ontario with an Honours B.Sc. degree in geology (May, 1980).

I am a Professional Geoscientist, registered in the province of British Columbia.

I supervised and implemented the 2003 diamond drill program on the Brenda Project between June 15 and July 10, 2003.

I have no direct or indirect interest in the Brenda property, which is the subject of this report.

Jean Pautler, P. Geo.
JP Exploration Services Inc.

APPENDIX IV - ANALYTICAL

Brenda 2003 Certificate Key

Hole_ID	Certificate	Samples
BR-03-05	VA03026907	129
BR-03-06	VA03024108	45
BR-03-06	VA03024113	123
BR-03-07	VA03024881	25
BR-03-07	VA03026906	11
BR-03-07	VA03026908	25
BR-03-07	VA03026909	25
BR-03-07	VA03026970	25
BR-03-07	VA03026971	25
BR-03-07	VA03033777	1
BR-03-08	VA03025872	50
BR-03-08	VA03025974	24
BR-03-08	VA03026902	25
BR-03-08	VA03026903	25
BR-03-08	VA03026904	25
BR-03-08	VA03026905	19
BR-03-09	VA03026901	72
Total		674
Soils	VA03020565	46
Rocks	AK2003-405	9

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ALS Canada Ltd.
212 Brooksbank Avenue
North Vancouver BC V7J 2C1 Canada
Phone: 604 984 0221 Fax: 604 984 0218

To: **NORTHGATE EXPLORATION**
KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

Date : 25-Jul-2003
Account: NORTEX

CERTIFICATE VA03026907

Project : 4090

P.O. No:

This report is for 132 DRILL CORE samples submitted to our lab in North Vancouver, BC, Canada on 1-Jul-2003.

The following have access to data associated with this certificate:

CARL EDMUNDS	RON KONST	

SAMPLE PREPARATION

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

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Zn-AA46	Ore grade Zn - aqua regia/AA	AAS
Au-AA23	Au 30g FA-AA finish	AAS
Cu-AA49	Assay Cu - HBr Digestion	AAS
ME-ICP41	34 Element Aqua Regia ICP-AES	ICP-AES

To: **NORTHGATE EXPLORATION**
ATTN: CARL EDMUNDS
KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

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

Signature:

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SMITHERS BC V0J 2N0

Date : 25-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03026907

Sample Description	Method / Analyte / Units / LOR	WEI-21 Recvd Wt kg 0.02	Au-AA23 Au ppm 0.005	Cu-AA49 Cu % 0.001	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1
122001		1.08	<0.005	0.008	<0.2	2.16	<2	<10	80	<0.5	<2	1.18	0.8	13	95	68
122002		2.64	0.005	0.007	<0.2	5.04	<2	<10	80	1.0	<2	2.03	2.3	22	42	73
122003		1.06	0.028	0.004	0.5	1.70	4	<10	50	<0.5	<2	0.87	<0.5	9	93	29
122004		1.16	0.016	0.002	0.9	2.93	3	<10	120	<0.5	<2	0.24	1.5	13	39	17
122005		5.70	<0.005	0.002	<0.2	3.02	2	<10	170	0.6	<2	0.11	1.0	13	26	18
122006		5.28	<0.005	0.002	<0.2	3.30	<2	<10	220	0.7	<2	0.16	0.8	11	17	23
122007		6.34	<0.005	0.004	<0.2	3.38	<2	<10	130	0.5	2	0.55	1.0	12	24	28
122008		3.62	<0.005	0.003	<0.2	3.08	<2	<10	100	0.5	<2	0.42	0.9	12	21	32
122009		3.58	<0.005	0.002	<0.2	1.86	2	<10	80	0.5	<2	0.54	1.2	15	37	17
122010		3.30	0.011	0.004	<0.2	1.26	4	<10	80	0.5	<2	0.38	1.3	16	36	36
122011		2.14	0.007	0.002	<0.2	1.42	6	<10	110	<0.5	2	0.37	0.8	16	49	14
122012		2.06	0.006	0.002	<0.2	2.44	<2	<10	130	0.5	<2	0.30	0.5	17	42	12
122013		1.28	<0.005	0.002	0.3	2.64	<2	<10	120	0.6	<2	0.30	<0.5	14	46	10
122014		4.34	<0.005	0.002	<0.2	1.70	6	<10	100	<0.5	<2	0.38	0.6	14	50	8
122015		3.94	<0.005	0.002	<0.2	1.90	6	<10	80	<0.5	<2	0.68	0.6	15	52	16
122016		2.20	<0.005	0.003	0.2	2.03	6	<10	70	<0.5	<2	0.88	0.9	13	50	20
122017		10.16	<0.005	0.002	<0.2	2.79	<2	<10	330	0.5	<2	0.93	0.5	12	49	19
122018		8.50	<0.005	0.002	0.2	1.48	6	<10	40	<0.5	2	1.75	0.9	12	58	16
122019		5.06	<0.005	0.001	<0.2	2.51	<2	<10	310	0.5	2	1.16	<0.5	10	48	11
122020		6.62	<0.005	0.002	<0.2	2.13	<2	<10	110	0.6	<2	0.84	<0.5	11	59	19
122021		6.94	<0.005	0.004	0.2	1.58	3	<10	100	0.5	2	0.93	1.1	12	72	38
122022		2.52	<0.005	0.001	<0.2	2.34	<2	<10	110	0.5	<2	0.68	<0.5	10	64	7
122023		4.20	<0.005	0.001	<0.2	2.36	<2	<10	110	<0.5	<2	0.69	<0.5	10	71	6
122024		3.52	<0.005	0.002	<0.2	2.51	<2	<10	110	0.5	<2	0.72	0.5	11	68	19
122025		3.80	<0.005	0.002	<0.2	2.43	<2	<10	80	<0.5	<2	1.04	<0.5	11	64	21
122027		3.76	<0.005	0.002	<0.2	2.24	<2	<10	110	<0.5	2	1.13	<0.5	11	58	19
122028		4.06	0.007	0.008	0.6	2.01	4	<10	90	<0.5	<2	1.30	0.8	11	64	77
122029		3.00	<0.005	0.003	<0.2	1.96	<2	<10	270	<0.5	<2	1.65	1.3	10	78	25
122030		5.64	0.005	0.005	<0.2	2.05	<2	<10	280	<0.5	<2	1.50	<0.5	9	91	45
122031		2.74	0.007	0.004	0.5	2.07	3	<10	180	0.5	<2	1.67	0.7	10	53	36
122032		4.56	<0.005	0.010	0.6	1.87	3	<10	110	<0.5	2	1.67	7.2	11	69	97
122033		5.42	<0.005	0.006	<0.2	2.02	<2	<10	140	<0.5	2	1.29	1.5	10	81	53
122034		4.90	<0.005	0.004	<0.2	2.04	<2	<10	440	<0.5	3	1.50	<0.5	10	75	39
122035		5.34	<0.005	0.004	<0.2	1.96	<2	<10	390	<0.5	2	1.39	<0.5	10	75	34
122036		3.42	<0.005	0.007	<0.2	1.88	<2	<10	350	<0.5	<2	1.66	1.0	10	99	71
122037		2.72	<0.005	0.003	<0.2	1.56	<2	<10	180	<0.5	<2	1.38	0.6	9	81	28
122038		4.34	<0.005	0.010	1.0	1.37	2	<10	90	<0.5	2	1.28	10.6	9	83	85
122039		4.82	<0.005	0.008	0.2	1.57	<2	<10	180	<0.5	<2	1.74	5.1	9	81	68
122040		4.66	<0.005	0.010	<0.2	1.56	<2	<10	80	<0.5	<2	1.86	5.6	9	79	88
122041		2.14	<0.005	0.014	0.2	1.49	<2	<10	60	<0.5	2	1.40	6.0	10	77	122

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SMITHERS BC V0J 2N0

Date : 25-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03026907

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	Au-AA23 Au ppm 0.005	Cu-AA49 Cu % 0.001	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1
122042		4.72	0.007	0.023	0.8	1.50	<2	<10	90	<0.5	3	1.43	16.6	10	91	218
122043		1.60	<0.005	0.063	1.1	1.40	<2	<10	40	<0.5	3	1.85	205	10	72	571
122044		2.60	<0.005	0.022	0.3	1.70	<2	<10	150	0.6	3	2.52	20.1	10	88	189
122045		3.74	<0.005	0.003	0.3	1.94	<2	<10	210	0.5	<2	1.62	1.8	10	71	30
122046		3.94	<0.005	0.002	0.2	0.38	15	<10	50	<0.5	<2	0.48	<0.5	12	88	17
122047		5.04	0.005	0.002	<0.2	1.58	3	<10	50	<0.5	<2	2.60	<0.5	11	52	19
122048		3.72	<0.005	0.002	<0.2	1.60	<2	<10	110	<0.5	<2	1.69	0.9	11	73	17
122049		3.38	<0.005	0.002	<0.2	2.09	<2	<10	100	0.5	<2	1.56	0.9	11	77	15
122050		1.62	0.006	0.002	<0.2	2.26	3	<10	100	0.5	<2	1.52	2.6	10	95	19
122051		3.04	0.009	0.003	0.6	0.76	7	<10	30	<0.5	<2	1.23	1.8	12	99	25
122053		5.30	0.005	0.003	0.3	1.26	2	<10	90	<0.5	<2	2.26	3.2	11	71	25
122054		5.82	0.006	0.004	<0.2	1.56	<2	<10	80	<0.5	<2	1.98	4.1	10	80	37
122055		2.12	<0.005	0.003	0.3	1.51	<2	<10	60	<0.5	<2	3.33	0.9	11	56	17
122056		1.06	<0.005	0.003	<0.2	1.38	<2	<10	70	<0.5	<2	1.85	1.6	10	83	19
122057		2.76	<0.005	0.005	0.2	1.54	<2	<10	180	<0.5	<2	1.57	2.0	9	78	40
122058		3.36	<0.005	0.004	<0.2	1.66	<2	<10	250	<0.5	<2	1.86	2.9	9	96	32
122059		3.26	0.012	0.005	0.4	1.69	<2	<10	130	0.6	<2	3.59	3.7	11	74	39
122060		4.76	0.037	0.003	0.5	1.55	<2	<10	70	0.5	<2	2.47	5.3	10	70	29
122061		2.76	0.007	0.004	0.2	1.62	<2	<10	60	<0.5	<2	2.02	3.5	9	76	36
122062		3.22	<0.005	0.004	0.2	1.44	<2	<10	50	<0.5	<2	1.33	1.8	10	104	40
122063		5.84	0.009	0.008	<0.2	1.48	<2	<10	110	<0.5	<2	1.52	2.0	11	67	67
122064		7.22	0.007	0.006	<0.2	1.64	<2	<10	60	0.5	<2	2.01	1.4	11	64	54
122065		5.18	0.007	0.006	<0.2	1.40	<2	<10	80	0.5	<2	2.52	2.0	12	57	45
122066		5.36	0.007	0.005	<0.2	1.33	2	<10	70	0.5	<2	2.41	2.5	13	68	40
122067		4.36	0.006	0.004	0.4	1.10	<2	<10	110	<0.5	<2	2.55	3.8	11	73	34
122068		5.40	0.008	0.004	0.2	1.08	<2	<10	90	<0.5	<2	1.22	3.2	11	80	27
122069		3.22	<0.005	0.002	<0.2	1.96	<2	<10	210	0.8	<2	3.14	1.4	11	36	13
122070		4.18	<0.005	0.001	<0.2	3.32	<2	10	50	1.6	2	4.46	1.1	13	39	8
122071		4.56	<0.005	0.001	<0.2	3.33	2	10	120	1.6	<2	4.39	2.3	13	19	10
122072		4.62	<0.005	<0.001	<0.2	2.31	5	<10	70	1.1	<2	3.33	1.2	12	7	6
122073		4.90	<0.005	0.001	<0.2	2.28	3	<10	80	<0.5	2	1.69	1.1	10	60	13
122074		3.88	<0.005	<0.001	<0.2	4.04	<2	<10	130	1.2	<2	3.78	1.3	9	6	3
122075		5.32	<0.005	0.010	0.6	1.74	2	<10	70	<0.5	4	2.03	18.0	11	54	103
122076		6.52	0.007	0.004	<0.2	4.34	7	<10	170	0.9	<2	5.11	2.7	15	14	39
122077		2.14	<0.005	0.007	0.6	2.72	9	<10	90	0.6	3	2.98	12.3	12	26	71
122079		2.98	0.007	0.005	<0.2	1.96	5	<10	40	<0.5	3	2.52	21.9	11	41	48
122080		3.00	0.011	0.003	0.6	0.55	<2	<10	20	<0.5	5	2.36	39.7	10	211	33
122081		4.44	0.008	0.006	0.7	1.10	3	<10	40	<0.5	5	1.63	92.1	11	71	64
122082		2.68	0.005	0.009	0.4	1.27	5	<10	30	<0.5	4	1.94	138.0	10	73	99
122083		4.30	<0.005	0.009	0.5	1.66	5	<10	60	<0.5	<2	1.64	9.4	10	64	86

ALS Chemex

EXCELLENCE IN ANALYTICAL CHEMISTRY

ALS Canada Ltd.
212 Brooksbank Avenue
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Phone: 604 984 0221 Fax: 604 984 0218

To: **NORTHGATE EXPLORATION**
KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

Date : 25-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03026907

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	Au-AA23 Au ppm 0.005	Cu-AA49 Cu % 0.001	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1
122084		4.38	0.007	0.033	1.3	1.86	5	<10	30	<0.5	<2	2.50	99.5	10	72	329
122085		4.78	<0.005	0.007	0.2	2.16	<2	<10	230	<0.5	<2	2.92	2.7	11	106	78
122086 A		3.18	<0.005	0.007	<0.2	3.86	4	<10	160	1.1	<2	3.39	<0.5	28	44	73
122086 B		1.06	<0.005	0.007	<0.2	3.53	4	<10	220	1.0	<2	2.95	<0.5	29	39	74
122087		6.10	<0.005	0.007	1.8	1.45	7	<10	50	0.6	4	2.22	12.8	9	74	74
122088		5.84	0.016	0.019	3.6	1.50	2	<10	40	<0.5	8	1.96	45.3	11	72	188
122089		5.76	0.011	0.003	2.0	0.90	<2	<10	20	<0.5	7	1.08	27.5	12	80	33
122090		5.44	0.013	0.004	3.1	0.80	4	<10	20	<0.5	6	1.42	31.5	12	79	39
122091		3.74	0.011	0.005	1.4	1.78	9	<10	30	0.6	<2	2.27	4.6	14	56	50
122092		1.08	0.040	0.023	<0.2	2.64	10	<10	100	0.5	<2	2.10	0.9	19	69	232
122093		6.38	0.020	0.016	0.8	1.48	13	<10	80	<0.5	<2	1.93	10.4	13	119	164
122094		5.16	0.032	0.100	2.8	1.24	11	<10	30	<0.5	<2	1.67	47.3	16	132	980
122095		0.92	0.021	0.052	11.6	1.62	4	<10	60	<0.5	15	2.61	143.0	8	95	554
122096		4.84	0.005	0.003	<0.2	1.54	<2	<10	490	<0.5	<2	1.73	4.2	4	162	35
122097		4.78	0.037	0.017	0.9	1.48	10	<10	90	<0.5	<2	1.11	1.9	13	184	172
122098		4.84	0.018	0.048	0.5	1.86	4	<10	100	<0.5	<2	1.34	1.1	12	172	465
122099		3.68	0.022	0.041	1.4	1.76	5	<10	120	<0.5	<2	1.19	1.5	12	158	420
122100		4.28	0.019	0.025	1.8	1.47	6	<10	110	<0.5	<2	1.16	4.0	10	163	243
122101		5.92	0.166	0.032	2.2	1.30	16	<10	50	<0.5	<2	0.61	3.1	15	192	316
122102		5.42	0.043	0.016	0.7	1.38	9	<10	70	<0.5	<2	1.05	1.0	15	182	150
122103		4.34	<0.005	0.084	1.6	1.46	<2	<10	90	<0.5	2	1.76	3.7	5	139	828
122104		4.18	<0.005	<0.001	0.2	1.56	<2	<10	150	<0.5	<2	1.49	1.1	6	184	11
122105		5.76	<0.005	0.001	0.3	1.64	2	<10	170	<0.5	<2	1.93	0.5	5	147	12
122106		4.52	<0.005	0.004	<0.2	1.52	<2	<10	430	<0.5	<2	1.93	0.5	5	162	37
122107		4.72	0.007	0.002	<0.2	1.49	2	<10	300	<0.5	<2	1.88	<0.5	6	138	18
122108		6.16	0.031	0.022	0.7	1.52	7	<10	80	<0.5	<2	1.59	12.3	9	163	226
122109		4.74	0.154	0.017	4.2	1.14	35	<10	40	<0.5	<2	0.79	9.4	14	188	172
122110		2.66	0.020	0.029	0.4	1.61	4	<10	140	<0.5	<2	1.10	3.4	8	156	306
122111		4.66	0.061	0.020	0.6	1.41	14	<10	70	<0.5	<2	0.83	6.9	12	164	200
122112		4.14	0.042	0.021	0.8	1.49	7	<10	40	<0.5	<2	0.94	2.8	15	168	212
122113		4.60	0.079	0.025	1.1	1.66	7	<10	40	<0.5	<2	0.99	3.2	18	148	276
122114		4.40	0.078	0.019	0.6	1.56	4	<10	70	<0.5	<2	0.90	0.9	16	142	212
122115		3.24	0.043	0.022	0.4	1.49	2	<10	30	<0.5	<2	1.00	<0.5	14	136	255
122116		4.56	0.032	0.017	0.2	1.74	3	<10	60	<0.5	<2	1.97	<0.5	14	113	177
122117		3.36	<0.005	0.006	<0.2	3.93	5	<10	80	0.5	<2	5.59	1.0	23	30	58
122118		3.22	0.037	0.014	<0.2	1.06	11	<10	30	<0.5	<2	2.42	3.1	12	153	132
122119		3.06	0.033	0.018	0.2	1.14	5	<10	60	<0.5	<2	2.01	0.5	11	122	174
122120		5.08	0.043	0.022	0.2	1.19	4	<10	60	<0.5	<2	1.97	<0.5	11	98	217
122121		4.76	0.026	0.016	0.5	2.04	6	<10	60	<0.5	<2	1.42	2.3	14	89	162
122122		4.24	0.041	0.021	0.4	1.85	7	<10	50	<0.5	<2	1.54	13.7	16	116	220

ALS Chemex
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KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

Date : 25-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03026907

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	Au-AA23 Au ppm 0.005	Cu-AA49 Cu % 0.001	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1
122123		0.74	0.008	0.009	<0.2	2.70	4	<10	60	<0.5	<2	1.94	3.2	12	88	98
122124		4.62	<0.005	0.003	<0.2	1.62	<2	<10	540	<0.5	<2	1.70	3.2	9	97	37
122126		4.20	<0.005	0.001	<0.2	1.76	2	<10	100	<0.5	<2	1.70	<0.5	10	106	16
122127		4.90	<0.005	0.002	<0.2	1.73	<2	<10	180	<0.5	<2	1.92	0.9	9	84	21
122128		4.66	<0.005	0.002	<0.2	1.64	<2	<10	280	<0.5	<2	1.79	3.2	8	98	26
122129		2.98	0.013	0.014	0.3	1.80	<2	<10	30	<0.5	<2	1.17	0.9	12	114	152
122131		4.14	<0.005	0.014	<0.2	1.62	<2	<10	100	<0.5	<2	1.48	1.5	6	104	139
122132		3.52	<0.005	0.003	<0.2	1.97	2	<10	130	<0.5	<2	1.71	2.4	5	97	42
122133		4.12	<0.005	0.003	<0.2	1.67	<2	<10	160	<0.5	<2	1.49	1.1	4	99	31
122134		5.08	<0.005	0.004	<0.2	1.66	<2	<10	120	<0.5	<2	1.61	2.6	3	91	49
122135		3.02	0.005	0.023	<0.2	2.11	<2	<10	170	<0.5	<2	1.76	<0.5	7	112	260

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CERTIFICATE OF ANALYSIS VA03026907

Sample Description	Method Analyte Units LOR	ME-ICP41 Fe % 0.01	ME-ICP41 Ga ppm 10	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1
122001		3.60	10	<1	0.13	<10	1.42	564	2	0.14	23	810	2	0.05	<2	5
122002		5.99	10	<1	0.28	10	2.35	1705	<1	0.03	17	1550	11	1.60	<2	19
122003		2.82	10	<1	0.20	10	0.73	1040	4	0.05	3	580	28	1.94	<2	4
122004		4.52	10	<1	0.53	<10	2.04	1180	2	0.01	3	1050	16	2.95	<2	3
122005		4.11	10	<1	0.65	10	2.41	1790	2	0.02	2	860	10	1.92	<2	4
122006		4.14	10	1	0.58	10	2.58	2140	1	0.03	1	1000	7	0.36	<2	5
122007		3.89	10	<1	0.38	10	2.24	2300	1	0.05	2	1130	11	0.77	<2	4
122008		3.99	10	<1	0.35	10	2.19	2560	1	0.07	1	1130	7	0.79	<2	5
122009		4.58	<10	<1	0.35	10	1.20	1360	3	0.03	4	1040	17	3.75	<2	3
122010		5.26	<10	<1	0.54	10	0.58	596	4	0.01	2	1220	20	4.85	<2	2
122011		5.11	<10	<1	0.46	10	0.86	975	5	0.03	3	1080	25	4.10	<2	2
122012		4.94	10	<1	0.36	10	2.14	2230	7	0.04	2	1060	7	2.27	<2	4
122013		4.49	<10	<1	0.36	10	2.28	2150	7	0.04	4	1050	8	1.94	<2	4
122014		4.42	10	<1	0.41	10	1.28	1385	1	0.05	2	1040	8	3.17	<2	3
122015		4.55	10	<1	0.32	10	1.59	1675	5	0.04	4	1050	21	3.47	<2	4
122016		4.26	10	<1	0.34	10	1.92	1990	1	0.06	2	980	12	2.90	<2	4
122017		4.05	10	<1	0.39	10	2.30	2410	1	0.06	2	1030	4	0.78	<2	4
122018		4.64	<10	<1	0.37	10	0.64	799	1	0.02	2	1040	13	4.46	<2	2
122019		3.91	10	<1	0.34	10	1.91	2170	3	0.05	2	960	3	1.15	<2	4
122020		4.27	10	<1	0.30	10	1.93	2220	1	0.06	2	1000	10	2.44	<2	5
122021		4.20	10	<1	0.31	10	1.46	2220	4	0.05	3	1070	33	3.41	<2	3
122022		3.87	10	<1	0.34	10	2.04	2370	3	0.08	2	980	5	0.48	<2	6
122023		4.07	10	<1	0.37	10	2.00	2210	1	0.08	3	920	4	0.38	<2	7
122024		4.15	10	<1	0.33	10	2.21	2610	2	0.08	2	1080	7	1.05	<2	7
122025		4.21	10	<1	0.18	10	2.26	3010	2	0.07	2	1070	8	0.44	<2	8
122027		4.18	10	<1	0.17	10	2.06	3200	<1	0.09	2	980	<2	0.10	<2	8
122028		3.81	10	<1	0.16	10	1.69	2570	3	0.09	3	990	20	1.40	<2	7
122029		3.26	10	<1	0.21	10	1.50	2470	1	0.06	3	960	26	1.12	<2	4
122030		3.33	10	<1	0.23	20	1.60	2390	3	0.06	3	1030	12	0.88	<2	4
122031		3.60	10	<1	0.27	10	1.71	2420	1	0.05	3	1010	7	1.64	<2	4
122032		3.95	10	<1	0.31	10	1.53	2850	3	0.03	3	1000	102	2.84	<2	3
122033		3.71	10	1	0.28	10	1.67	2720	<1	0.07	2	1000	33	1.94	<2	4
122034		3.45	10	<1	0.17	10	1.77	2230	2	0.06	3	1010	10	0.75	<2	4
122035		3.44	10	<1	0.20	10	1.54	1935	1	0.07	4	1000	15	0.89	<2	4
122036		3.24	10	<1	0.17	10	1.42	1820	3	0.08	4	1050	27	0.48	<2	4
122037		3.03	10	<1	0.18	10	1.20	1785	1	0.05	3	950	17	1.23	<2	3
122038		3.38	10	<1	0.24	10	1.10	1935	5	0.04	4	950	166	2.51	<2	3
122039		3.17	10	<1	0.27	10	1.20	2320	1	0.04	2	940	47	1.91	<2	3
122040		3.13	10	<1	0.21	10	1.24	2540	3	0.04	2	1000	38	1.77	<2	4
122041		3.44	10	<1	0.25	10	1.29	2170	1	0.04	2	960	49	2.45	<2	4

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CERTIFICATE OF ANALYSIS VA03026907

Sample Description	Method	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
	Analyte	Fe	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc
	Units	%	ppm	ppm	%	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm
	LOR	0.01	10	1	0.01	10	0.01	5	1	0.01	1	10	2	0.01	2	1
122042		3.56	10	<1	0.16	10	1.40	2220	3	0.05	3	1010	62	2.29	<2	4
122043		3.83	10	<1	0.22	10	1.21	2120	<1	0.03	2	940	54	3.85	<2	3
122044		3.49	10	1	0.24	10	1.25	2260	3	0.03	3	1000	48	2.28	<2	4
122045		3.45	10	<1	0.31	10	1.47	2120	1	0.05	2	1000	22	1.86	<2	4
122046		3.91	<10	<1	0.25	10	0.04	146	5	0.01	3	890	8	3.75	<2	1
122047		3.77	<10	<1	0.32	10	1.07	1810	2	0.03	2	950	20	2.70	<2	3
122048		3.80	<10	<1	0.25	10	1.28	1890	2	0.04	3	1020	30	2.82	<2	3
122049		3.94	10	<1	0.26	20	1.63	2270	3	0.04	3	1060	9	2.70	<2	4
122050		3.97	10	<1	0.43	10	1.71	2260	1	0.03	1	1040	16	2.57	<2	3
122051		3.77	<10	<1	0.38	10	0.23	643	7	0.01	4	1020	25	3.85	<2	1
122053		3.79	<10	<1	0.26	10	0.79	1865	3	0.04	3	980	108	3.30	<2	3
122054		3.47	10	<1	0.22	10	1.16	2600	5	0.04	2	970	80	2.31	<2	4
122055		3.69	<10	<1	0.22	10	0.91	2530	1	0.03	2	1040	27	2.29	<2	4
122056		3.23	<10	<1	0.20	10	1.02	1890	10	0.05	2	910	42	2.19	<2	4
122057		3.11	10	<1	0.14	10	1.22	2540	1	0.07	1	950	68	1.64	<2	5
122058		3.04	10	<1	0.16	10	1.25	2430	4	0.05	2	960	12	1.03	<2	5
122059		3.94	<10	1	0.45	10	0.67	2060	2	0.04	2	1160	67	2.60	<2	4
122060		3.45	<10	<1	0.32	10	1.05	2330	5	0.02	3	1030	81	2.52	<2	3
122061		3.55	<10	<1	0.35	10	1.23	2340	5	0.03	3	990	64	2.77	<2	3
122062		3.76	<10	<1	0.40	10	0.93	1735	5	0.04	2	980	57	3.09	<2	3
122063		3.77	<10	<1	0.35	10	0.86	1465	4	0.04	3	950	52	2.42	<2	3
122064		3.93	<10	<1	0.37	10	0.96	1705	6	0.04	2	1010	44	2.56	<2	3
122065		4.00	<10	<1	0.39	20	0.73	1555	3	0.03	3	1060	64	2.94	<2	3
122066		4.39	<10	<1	0.52	20	0.54	1230	5	0.04	3	1290	85	4.05	<2	3
122067		3.67	<10	<1	0.38	20	0.48	1040	2	0.04	2	990	95	3.10	<2	2
122068		3.92	<10	<1	0.39	10	0.40	552	5	0.03	3	1030	67	3.43	<2	2
122069		4.64	10	<1	0.18	20	1.44	1725	<1	0.08	<1	2260	2	0.05	<2	9
122070		5.19	10	<1	0.13	10	1.53	1765	1	0.08	<1	1970	3	0.03	<2	12
122071		5.24	20	<1	0.10	20	1.57	1720	<1	0.08	<1	2100	5	0.03	<2	12
122072		4.85	10	1	0.11	20	1.62	1935	<1	0.07	<1	2260	2	0.12	<2	10
122073		3.96	10	<1	0.14	10	1.41	1290	1	0.04	2	970	16	3.42	<2	4
122074		4.53	20	1	0.06	20	1.60	2160	<1	0.04	<1	2330	5	0.14	<2	7
122075		3.98	10	<1	0.14	10	1.10	1185	3	0.04	3	1080	37	3.86	<2	4
122076		4.92	20	<1	0.11	10	1.60	2430	1	0.09	1	1590	17	0.99	<2	10
122077		4.16	10	<1	0.25	10	1.15	1520	3	0.06	<1	1220	174	3.48	<2	7
122079		4.09	10	<1	0.20	10	0.86	1005	4	0.04	2	1010	38	5.09	<2	3
122080		7.02	<10	<1	0.24	<10	0.11	227	24	0.02	4	700	50	9.38	<2	1
122081		4.52	<10	1	0.29	10	0.68	809	13	0.02	2	980	85	5.48	<2	2
122082		3.86	<10	<1	0.23	10	0.81	1060	6	0.03	2	1010	42	4.68	<2	2
122083		3.47	10	<1	0.22	10	1.26	1995	3	0.06	3	1030	163	3.19	<2	3

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To: **NORTHGATE EXPLORATION**
KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

Date : 25-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03026907

Sample Description	Method Analyte Units LOR	ME-ICP41 Fe % 0.01	ME-ICP41 Ga ppm 10	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1
122084		4.02	10	<1	0.17	10	0.78	1075	2	0.03	3	1000	182	5.48	<2	3
122085		3.13	10	<1	0.12	10	1.20	1835	5	0.05	6	690	168	1.13	2	6
122086 A		6.94	20	<1	0.14	10	3.13	3410	<1	0.06	26	1210	<2	0.20	<2	24
122086 B		7.13	20	1	0.17	10	2.97	3430	<1	0.06	26	1340	32	0.16	<2	22
122087		3.65	<10	<1	0.26	10	0.79	1350	4	0.02	3	1030	163	3.76	<2	3
122088		4.21	10	<1	0.30	10	1.20	1545	7	0.03	3	1060	40	4.38	<2	2
122089		4.51	<10	<1	0.30	10	0.58	857	12	0.02	3	1060	48	4.77	<2	2
122090		5.90	<10	1	0.31	10	0.43	687	18	0.02	2	1050	86	6.69	<2	2
122091		4.40	<10	<1	0.38	10	0.75	878	6	0.02	6	1010	59	4.16	<2	6
122092		5.38	10	<1	0.19	10	1.78	2180	5	0.05	15	990	28	1.16	2	14
122093		4.75	10	<1	0.22	10	0.75	1610	17	0.05	4	720	43	2.89	<2	3
122094		5.25	10	<1	0.19	<10	0.68	1510	14	0.05	5	620	1935	3.57	<2	3
122095		3.70	10	<1	0.27	10	0.68	1640	11	0.04	3	750	5470	2.58	2	2
122096		2.17	10	<1	0.19	10	0.71	1270	8	0.04	5	760	44	0.35	<2	2
122097		5.01	10	1	0.18	<10	0.66	1385	19	0.04	5	720	53	2.95	<2	2
122098		4.79	10	<1	0.12	<10	0.94	1855	15	0.04	6	700	10	1.78	<2	2
122099		5.07	10	<1	0.17	<10	0.87	1725	15	0.04	5	670	268	1.90	<2	2
122100		4.87	10	<1	0.19	<10	0.65	1380	16	0.04	4	690	349	1.68	<2	2
122101		5.85	10	<1	0.33	10	0.63	1060	11	0.01	5	850	36	5.13	<2	2
122102		4.91	10	<1	0.27	<10	0.66	1380	18	0.03	6	820	16	3.81	<2	2
122103		2.07	10	<1	0.23	10	0.70	1235	1	0.04	3	720	620	0.42	<2	2
122104		1.76	10	<1	0.18	10	0.74	1165	8	0.04	5	810	20	0.12	<2	2
122105		2.02	10	<1	0.27	10	0.75	1045	2	0.04	4	790	24	0.15	<2	3
122106		1.86	<10	<1	0.26	10	0.63	943	7	0.04	5	720	18	0.26	<2	2
122107		2.21	10	<1	0.25	10	0.69	1030	3	0.05	3	690	86	0.46	<2	2
122108		4.59	10	<1	0.19	10	0.77	1580	12	0.05	5	880	197	1.90	<2	3
122109		6.20	<10	<1	0.36	<10	0.48	957	8	0.03	5	850	301	5.55	<2	2
122110		5.21	10	<1	0.14	<10	0.91	1800	12	0.04	6	750	16	1.31	<2	3
122111		5.08	10	<1	0.23	<10	0.67	1275	8	0.04	5	800	18	3.04	<2	3
122112		5.82	10	<1	0.19	<10	0.79	1360	12	0.05	6	720	26	3.91	<2	4
122113		5.18	10	<1	0.13	<10	1.10	1800	10	0.05	5	820	24	2.39	<2	4
122114		6.62	10	<1	0.21	<10	0.95	1375	6	0.07	4	840	9	3.58	<2	5
122115		5.60	<10	<1	0.17	<10	0.86	1140	10	0.05	4	790	10	3.41	<2	4
122116		5.67	10	<1	0.15	<10	1.00	1335	5	0.06	5	870	6	3.82	<2	4
122117		6.43	10	<1	0.18	10	1.67	1770	1	0.27	4	1110	<2	0.34	<2	17
122118		5.86	10	<1	0.25	<10	0.52	927	6	0.04	3	830	16	6.56	<2	2
122119		5.29	<10	<1	0.18	<10	0.60	942	8	0.04	4	920	5	3.46	<2	3
122120		5.17	10	<1	0.16	<10	0.46	841	5	0.04	2	960	4	4.14	<2	2
122121		5.05	10	<1	0.13	<10	0.90	1540	25	0.05	5	840	83	3.13	<2	4
122122		5.04	10	1	0.20	<10	0.92	1535	9	0.04	3	810	44	3.23	<2	4

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Date : 25-Jul-2003
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CERTIFICATE OF ANALYSIS VA03026907

Sample Description	Method Analyte Units LOR	ME-ICP41 Fe % 0.01	ME-ICP41 Ga ppm 10	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1
122123		3.49	10	1	0.09	<10	1.19	1625	5	0.05	2	1010	64	0.74	<2	4
122124		2.58	<10	<1	0.10	10	0.92	1420	2	0.05	4	830	197	0.08	<2	4
122126		2.78	10	<1	0.11	10	1.04	1155	4	0.05	5	920	45	0.07	<2	4
122127		2.51	10	<1	0.17	10	0.92	1285	1	0.04	3	840	90	0.06	<2	4
122128		2.73	10	<1	0.18	10	1.00	1375	5	0.05	3	890	143	0.09	2	4
122129		4.15	10	<1	0.14	<10	1.17	1460	15	0.06	3	820	9	1.79	<2	5
122131		2.34	10	<1	0.15	10	0.84	1265	7	0.04	3	970	52	0.09	<2	2
122132		2.19	10	<1	0.15	10	0.84	1305	4	0.05	2	1030	17	0.09	<2	2
122133		2.19	10	<1	0.14	10	0.86	1250	4	0.04	3	940	67	0.11	<2	2
122134		2.01	10	<1	0.15	10	0.76	1225	2	0.04	2	970	15	0.16	<2	2
122135		2.13	10	1	0.10	<10	0.86	1045	10	0.05	3	330	4	0.84	<2	3

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CERTIFICATE OF ANALYSIS VA03026907

Sample Description	Method / Analyte / Units / LOR	ME-ICP41 Sr ppm 1	ME-ICP41 Ti % 0.01	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2	Zn-AA46 Zn % 0.01
122001		65	0.29	<10	<10	115	<10	73	
122002		110	0.44	<10	<10	210	<10	202	
122003		43	0.16	<10	<10	46	<10	67	
122004		11	0.04	<10	<10	47	<10	146	
122005		11	0.07	<10	<10	61	<10	120	
122006		11	0.09	<10	<10	79	<10	122	
122007		38	0.14	<10	<10	68	<10	142	
122008		22	0.15	<10	<10	79	<10	144	
122009		24	0.06	<10	<10	43	<10	164	
122010		7	0.02	<10	10	18	<10	174	
122011		8	0.02	<10	<10	26	<10	124	
122012		10	0.03	<10	<10	59	<10	209	
122013		11	0.03	<10	<10	59	<10	224	
122014		15	0.02	<10	<10	41	<10	146	
122015		17	0.03	<10	<10	56	<10	140	
122016		16	0.02	<10	<10	58	<10	154	
122017		21	0.03	<10	<10	61	<10	112	
122018		33	0.03	<10	<10	26	<10	116	
122019		28	0.03	<10	<10	52	<10	93	
122020		19	0.02	<10	<10	58	<10	87	
122021		19	0.03	<10	<10	47	<10	137	
122022		26	0.25	<10	<10	82	<10	102	
122023		31	0.26	<10	<10	88	<10	95	
122024		32	0.26	<10	<10	82	<10	125	
122025		29	0.28	<10	<10	99	<10	149	
122027		36	0.28	<10	<10	102	<10	141	
122028		45	0.24	<10	<10	81	<10	174	
122029		48	0.03	<10	<10	49	<10	230	
122030		55	0.02	<10	<10	47	<10	173	
122031		32	0.01	<10	<10	45	<10	170	
122032		37	0.01	<10	<10	42	<10	752	
122033		49	0.01	<10	<10	50	<10	237	
122034		77	0.02	<10	<10	50	<10	172	
122035		93	0.02	<10	<10	49	<10	152	
122036		102	0.02	<10	<10	51	<10	156	
122037		63	0.02	<10	<10	42	<10	115	
122038		43	0.01	<10	<10	41	<10	807	
122039		45	0.01	<10	<10	37	<10	477	
122040		53	0.01	<10	<10	40	<10	501	
122041		35	0.01	<10	<10	45	<10	573	

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CERTIFICATE OF ANALYSIS VA03026907

Sample Description	Method Analyte Units LOR	ME-ICP41 Sr ppm 1	ME-ICP41 Ti % 0.01	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2	Zn-AA46 Zn % 0.01
122042		61	0.02	<10	<10	45	<10	1340	
122043		43	0.01	<10	<10	33	<10	>10000	1.71
122044		53	<0.01	<10	<10	38	<10	1520	
122045		57	0.02	<10	<10	41	<10	206	
122046		17	<0.01	<10	<10	6	<10	15	
122047		92	<0.01	<10	<10	34	<10	94	
122048		44	<0.01	<10	<10	37	<10	120	
122049		47	<0.01	<10	<10	46	<10	142	
122050		37	0.01	<10	<10	38	<10	486	
122051		47	<0.01	<10	<10	9	<10	199	
122053		45	<0.01	<10	<10	31	<10	312	
122054		59	<0.01	<10	<10	39	<10	485	
122055		80	<0.01	<10	<10	37	<10	165	
122056		75	0.05	<10	<10	41	<10	178	
122057		72	0.16	<10	<10	53	<10	261	
122058		86	0.12	<10	<10	49	<10	335	
122059		69	<0.01	<10	<10	33	<10	258	
122060		61	<0.01	<10	<10	28	<10	389	
122061		66	<0.01	<10	<10	32	<10	295	
122062		51	0.01	<10	<10	31	<10	157	
122063		31	0.02	<10	<10	34	<10	246	
122064		51	0.01	<10	<10	33	<10	182	
122065		52	<0.01	<10	<10	21	<10	193	
122066		38	<0.01	<10	<10	20	<10	162	
122067		33	0.02	<10	<10	20	<10	357	
122068		22	0.02	<10	<10	17	<10	266	
122069		44	0.43	<10	<10	85	<10	151	-
122070		41	0.45	<10	<10	128	<10	114	
122071		48	0.50	<10	<10	129	<10	107	
122072		40	0.45	<10	<10	104	<10	116	
122073		74	0.13	<10	<10	59	<10	158	
122074		134	0.39	<10	<10	86	<10	164	
122075		56	0.15	<10	<10	48	<10	1430	
122076		233	0.37	<10	<10	136	<10	345	
122077		160	0.23	<10	<10	72	<10	1120	
122079		250	0.15	<10	<10	42	<10	1825	
122080		83	0.06	<10	<10	12	<10	3010	
122081		110	0.07	<10	<10	23	<10	7460	
122082		167	0.08	<10	<10	25	<10	>10000	1.09
122083		82	0.11	<10	<10	47	<10	848	

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122084		122	0.14	<10	<10	35	<10	8380	
122085		172	0.16	<10	<10	75	<10	269	
122086 A		112	0.57	<10	<10	279	<10	108	
122086 B		98	0.59	<10	<10	276	<10	159	
122087		100	0.10	<10	<10	31	<10	1100	
122088		63	0.08	<10	<10	34	<10	3560	
122089		92	0.02	<10	<10	20	<10	2210	
122090		70	0.04	<10	<10	16	<10	2470	
122091		134	0.16	<10	<10	54	<10	381	
122092		372	0.32	<10	<10	120	<10	189	
122093		78	0.07	<10	<10	34	<10	1260	
122094		44	0.06	<10	<10	31	<10	6090	
122095		82	0.09	<10	<10	33	<10	>10000	1.68
122096		110	0.10	<10	<10	30	<10	549	
122097		75	0.08	<10	<10	34	<10	278	
122098		98	0.11	<10	<10	38	<10	209	
122099		89	0.10	<10	<10	39	<10	268	
122100		79	0.07	<10	<10	39	<10	496	
122101		43	0.05	<10	<10	22	<10	310	
122102		87	0.07	<10	<10	26	<10	143	
122103		86	0.10	<10	<10	27	<10	535	
122104		88	0.12	<10	<10	28	<10	197	
122105		104	0.10	<10	<10	32	<10	111	
122106		128	0.08	<10	<10	26	<10	120	
122107		86	0.05	<10	<10	29	<10	85	
122108		69	0.06	<10	<10	43	<10	1265	
122109		36	0.02	<10	<10	27	<10	913	
122110		64	0.09	<10	<10	55	<10	479	
122111		57	0.09	<10	<10	43	<10	815	
122112		69	0.10	<10	<10	50	<10	353	
122113		51	0.10	<10	<10	47	<10	453	
122114		48	0.13	<10	<10	63	<10	146	
122115		50	0.10	<10	<10	52	<10	114	
122116		128	0.07	<10	<10	56	<10	126	
122117		600	0.10	<10	<10	207	<10	96	
122118		155	0.04	<10	<10	32	<10	202	
122119		124	0.10	<10	<10	55	<10	92	
122120		119	0.09	<10	<10	44	<10	72	
122121		105	0.13	<10	<10	62	<10	300	
122122		146	0.11	<10	<10	48	<10	1405	

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122123		164	0.15	<10	<10	52	<10	484	
122124		179	0.18	<10	<10	55	<10	432	
122126		122	0.18	<10	<10	59	<10	118	
122127		135	0.17	<10	<10	50	<10	201	
122128		118	0.16	<10	<10	53	<10	394	
122129		78	0.15	<10	<10	43	<10	154	
122131		124	0.16	<10	<10	35	<10	249	
122132		146	0.18	<10	<10	36	<10	300	
122133		122	0.17	<10	<10	36	<10	204	
122134		146	0.16	<10	<10	32	<10	351	
122135		116	0.10	<10	<10	38	<10	94	

ALS Chemex
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ALS Canada Ltd.
212 Brooksbank Avenue
North Vancouver BC V7J 2C1 Canada
Phone: 604 984 0221 Fax: 604 984 0218

To: **NORTHGATE EXPLORATION**
KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

Date : 15-Jul-2003
Account: NORTEX

CERTIFICATE VA03024108

Project : 4090

P.O. No:

This report is for 45 DRILL CORE samples submitted to our lab in North Vancouver, BC, Canada on 7-Jul-2003.

The following have access to data associated with this certificate:

CARL EDMUNDS

SAMPLE PREPARATION

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

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Au-AA23	Au 30g FA-AA finish	AAS
Cu-AA49	Assay Cu - HBr Digestion	AAS
ME-ICP41	34 Element Aqua Regia ICP-AES	ICP-AES

To: **NORTHGATE EXPLORATION**
ATTN: CARL EDMUNDS
KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

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

Signature:

ALS Chemex

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CERTIFICATE OF ANALYSIS VA03024108

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	Au-AA23 Au ppm 0.005	Cu-AA49 Cu % 0.001	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1
122263		4.06	0.037	0.003	0.2	1.65	2	<10	50	<0.5	<2	1.87	<0.5	9	37	22
122264		4.06	<0.005	0.003	0.2	1.49	2	<10	60	<0.5	<2	1.60	<0.5	9	22	27
122265		4.20	<0.005	0.002	0.2	1.79	2	<10	80	<0.5	<2	1.85	<0.5	10	24	23
122266		2.08	<0.005	0.002	0.4	1.86	2	<10	220	<0.5	<2	1.82	<0.5	9	22	14
122267		4.10	<0.005	0.003	0.2	1.63	2	<10	60	<0.5	<2	2.10	<0.5	9	22	22
122268		3.64	0.005	0.002	<0.2	1.74	<2	<10	70	<0.5	<2	2.00	<0.5	9	20	16
122269		5.28	0.005	0.002	<0.2	1.59	<2	<10	100	<0.5	<2	1.86	<0.5	9	22	15
122270		3.48	<0.005	0.001	0.2	1.86	<2	<10	60	<0.5	<2	1.67	<0.5	9	20	12
122271		3.98	<0.005	0.001	0.2	1.39	<2	<10	40	<0.5	<2	1.39	0.6	9	28	20
122272		4.36	<0.005	0.001	<0.2	1.36	<2	<10	80	<0.5	<2	1.61	<0.5	8	25	7
122273		1.52	0.007	0.006	<0.2	1.94	<2	<10	60	<0.5	<2	1.48	2.9	11	19	60
122274		5.34	<0.005	0.002	0.4	1.97	3	<10	210	<0.5	<2	2.07	3.6	7	20	16
122275		3.80	<0.005	0.006	0.4	1.53	<2	<10	400	<0.5	<2	2.17	3.8	8	24	58
122276		1.74	<0.005	0.038	0.9	1.20	<2	<10	360	<0.5	<2	2.84	12.6	6	26	379
122277		4.12	<0.005	0.007	0.4	1.46	<2	<10	140	<0.5	<2	1.60	2.6	7	22	68
122278		4.10	0.059	0.026	1.1	1.19	11	<10	60	<0.5	<2	0.81	1.0	14	27	257
122279		2.12	0.060	0.032	1.0	1.31	15	<10	100	<0.5	<2	1.16	0.8	12	27	319
122280		3.10	0.113	0.053	2.0	1.20	39	<10	80	<0.5	<2	1.66	1.4	10	38	537
122281		5.00	0.120	0.051	2.6	0.88	47	<10	70	<0.5	<2	1.56	1.4	12	41	513
122282		3.94	0.074	0.091	3.2	0.56	8	<10	70	<0.5	<2	1.08	1.7	15	78	922
122283		3.98	0.050	0.035	1.2	1.12	15	<10	70	<0.5	<2	1.24	0.6	12	44	355
122284		3.72	0.026	0.029	0.9	1.18	7	<10	100	<0.5	<2	1.30	<0.5	10	41	292
122285		3.94	0.032	0.045	1.9	1.51	6	<10	90	<0.5	<2	1.12	<0.5	13	31	439
122286		4.16	0.051	0.042	2.1	1.21	10	<10	80	<0.5	<2	0.96	<0.5	11	36	419
122287		4.54	0.065	0.032	1.4	1.23	8	<10	80	<0.5	<2	1.38	0.6	11	27	322
122288		2.64	0.655	0.026	4.9	0.52	17	<10	50	<0.5	<2	2.90	7.0	12	39	260
122289		2.92	0.164	0.032	2.5	1.11	13	<10	70	<0.5	<2	1.62	1.2	12	43	330
122290		3.22	0.056	0.023	2.2	0.89	10	<10	50	<0.5	<2	1.80	5.8	13	43	226
122291		3.32	0.155	0.032	4.0	1.29	16	<10	60	<0.5	2	2.32	6.5	11	37	327
122292		3.18	0.175	0.021	3.5	1.34	34	<10	60	<0.5	3	2.42	24.6	12	31	220
122293		4.38	0.043	0.023	1.0	1.41	27	<10	80	<0.5	<2	1.52	6.6	9	43	228
122294		3.96	0.012	0.029	1.0	1.52	14	<10	80	<0.5	<2	1.56	8.2	9	38	290
122295		4.26	0.024	0.028	1.1	1.70	8	<10	90	<0.5	<2	1.66	1.0	10	33	283
122296		3.50	0.030	0.019	1.0	1.48	6	<10	80	<0.5	<2	1.34	0.9	16	37	196
122297		3.90	0.038	0.007	1.0	1.30	11	<10	50	<0.5	<2	1.28	4.8	14	36	71
122298		4.02	0.024	0.012	0.7	1.48	8	<10	120	<0.5	<2	1.80	2.1	13	39	117
122299		3.78	<0.005	0.003	<0.2	1.11	2	<10	140	<0.5	<2	2.31	2.6	7	50	31
122300		3.74	<0.005	0.003	0.2	1.14	2	<10	150	<0.5	<2	2.70	1.0	9	35	27
122301		4.34	<0.005	0.005	0.5	1.38	<2	<10	40	<0.5	<2	1.14	<0.5	6	44	46
122302		1.78	<0.005	0.003	0.3	1.83	4	<10	80	0.5	<2	2.40	0.8	8	28	33

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KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

Date : 15-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03024108

Sample Description	Method / Analyte / Units / LOR	WEI-21 Recvd Wt kg 0.02	Au-AA23 Au ppm 0.005	Cu-AA49 Cu % 0.001	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1
122303		1.36	<0.005	0.002	<0.2	1.24	<2	<10	320	0.5	<2	2.68	<0.5	9	33	20
122304		4.46	<0.005	0.003	0.9	1.06	3	<10	110	<0.5	2	2.52	4.4	9	35	29
122305		4.60	<0.005	0.002	<0.2	1.09	2	<10	150	<0.5	<2	2.20	2.7	9	36	23
122306		3.82	<0.005	0.002	0.2	1.06	2	<10	80	<0.5	<2	2.16	<0.5	9	33	23
122307		4.24	<0.005	0.002	<0.2	1.28	2	<10	100	<0.5	<2	2.00	<0.5	10	33	22

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CERTIFICATE OF ANALYSIS VA03024108

Sample Description	Method Analyte Units LOR	ME-ICP41 Fe % 0.01	ME-ICP41 Ga ppm 10	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1
122263		2.65	10	<1	0.12	10	1.11	1755	1	0.04	3	900	4	0.12	<2	4
122264		2.78	10	<1	0.13	10	1.11	1590	1	0.05	3	910	3	0.07	<2	4
122265		2.66	10	<1	0.10	10	1.16	2160	1	0.04	3	930	4	0.10	<2	4
122266		2.56	10	<1	0.09	10	1.07	2110	1	0.05	3	900	2	0.14	<2	4
122267		2.73	10	<1	0.11	10	1.04	1770	1	0.05	3	890	2	0.05	<2	5
122268		2.62	10	<1	0.11	10	1.04	1725	1	0.06	1	910	4	0.07	<2	4
122269		2.65	10	1	0.10	10	1.04	1730	1	0.05	3	940	3	0.06	<2	4
122270		2.46	10	<1	0.09	10	1.15	1630	<1	0.06	2	900	4	0.17	<2	4
122271		2.33	10	1	0.09	10	1.02	1235	2	0.06	2	790	6	0.03	<2	3
122272		2.44	10	<1	0.12	10	0.96	1450	1	0.06	2	800	2	0.04	<2	4
122273		3.21	10	1	0.09	10	1.39	2080	<1	0.06	2	1030	190	0.32	<2	4
122274		2.37	10	<1	0.19	10	0.96	1910	<1	0.05	1	800	220	0.65	<2	3
122275		2.57	10	<1	0.21	10	0.95	2240	1	0.05	2	860	100	0.51	<2	3
122276		2.39	<10	<1	0.29	10	0.76	2130	<1	0.03	3	770	1190	0.65	<2	3
122277		2.74	10	1	0.15	10	0.95	2280	1	0.05	1	900	282	0.21	<2	3
122278		6.48	10	<1	0.18	<10	0.73	2060	7	0.05	3	700	72	2.54	<2	2
122279		6.14	10	<1	0.19	<10	0.76	2490	7	0.06	2	630	34	2.41	<2	2
122280		5.70	10	<1	0.36	<10	0.42	1650	14	0.03	2	650	207	5.45	<2	1
122281		5.93	10	<1	0.21	<10	0.48	1490	9	0.04	3	540	43	3.50	<2	1
122282		5.77	<10	<1	0.13	<10	0.26	843	5	0.03	2	280	32	2.92	<2	1
122283		6.13	10	<1	0.18	<10	0.61	1875	8	0.06	3	640	70	1.72	<2	2
122284		6.10	10	<1	0.19	<10	0.58	1770	7	0.06	3	660	9	1.41	<2	2
122285		5.13	10	<1	0.21	<10	0.89	2560	8	0.05	3	780	9	3.25	<2	2
122286		5.10	10	<1	0.17	<10	0.80	2080	9	0.05	3	720	14	2.98	<2	2
122287		4.59	10	<1	0.20	<10	0.84	2080	10	0.05	2	800	12	2.78	<2	2
122288		5.44	<10	<1	0.24	<10	0.22	685	11	0.01	3	630	20	7.70	<2	1
122289		4.95	10	<1	0.21	<10	0.75	2030	11	0.03	2	710	14	4.21	<2	1
122290		5.38	<10	<1	0.27	<10	0.49	1110	10	0.02	3	720	31	5.81	<2	1
122291		4.91	10	<1	0.23	<10	0.88	1975	10	0.03	2	700	31	4.24	2	2
122292		5.52	10	1	0.23	<10	0.93	2630	14	0.02	2	710	24	5.13	<2	2
122293		3.70	10	<1	0.12	<10	0.94	2530	8	0.06	3	800	13	2.12	<2	2
122294		3.63	10	<1	0.08	10	0.97	2780	8	0.06	3	860	18	1.17	<2	2
122295		4.35	10	<1	0.15	<10	1.10	2600	7	0.07	3	800	18	2.25	<2	2
122296		4.43	10	<1	0.16	<10	0.90	2160	11	0.05	3	800	17	3.24	<2	2
122297		6.07	10	<1	0.24	10	0.89	2080	9	0.04	3	780	70	4.30	<2	2
122298		5.24	10	1	0.22	10	0.96	2960	9	0.02	3	690	24	2.02	<2	2
122299		2.15	10	<1	0.25	20	0.60	1665	2	0.03	3	420	39	0.22	<2	2
122300		2.71	10	<1	0.20	10	0.78	1465	3	0.03	4	590	17	0.04	<2	3
122301		1.97	10	<1	0.14	10	0.83	1600	1	0.04	3	750	18	0.18	<2	2
122302		2.74	10	<1	0.23	10	0.93	2360	4	0.03	3	880	100	0.80	<2	3

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Project : 4090

CERTIFICATE OF ANALYSIS VA03024108

Sample Description	Method Analyte Units LOR	ME-ICP41 Fe % 0.01	ME-ICP41 Ga ppm 10	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1
122303		2.49	10	<1	0.35	10	0.73	1365	2	0.02	3	580	24	0.03	<2	2
122304		2.40	<10	<1	0.20	10	0.76	1465	1	0.03	3	500	25	0.05	<2	3
122305		2.59	10	<1	0.20	10	0.83	1395	1	0.03	4	520	34	0.09	<2	4
122306		2.67	10	<1	0.15	10	0.82	1300	2	0.03	4	560	23	0.04	<2	4
122307		2.87	10	<1	0.13	10	0.98	1140	1	0.04	3	620	2	0.02	<2	6

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CERTIFICATE OF ANALYSIS VA03024108

Sample Description	Method Analyte Units LOR	ME-ICP41 Sr ppm 1	ME-ICP41 Ti % 0.01	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2
122263		172	0.10	<10	<10	54	<10	125
122264		115	0.09	<10	<10	56	<10	126
122265		155	0.08	<10	<10	51	<10	117
122266		167	0.08	<10	<10	48	<10	99
122267		125	0.11	<10	<10	57	<10	91
122268		159	0.11	<10	<10	54	<10	92
122269		144	0.12	<10	<10	55	<10	92
122270		148	0.12	<10	<10	47	<10	121
122271		126	0.12	<10	<10	49	<10	151
122272		113	0.12	<10	<10	55	<10	92
122273		117	0.12	<10	<10	56	<10	449
122274		154	0.12	<10	<10	34	<10	509
122275		117	0.09	<10	<10	36	<10	559
122276		124	0.04	<10	<10	31	<10	1820
122277		95	0.12	<10	<10	43	<10	439
122278		52	0.07	<10	<10	48	<10	218
122279		88	0.08	<10	<10	48	<10	164
122280		112	0.06	<10	<10	25	<10	212
122281		89	0.06	<10	<10	38	<10	174
122282		76	0.05	<10	<10	34	<10	138
122283		76	0.08	<10	<10	49	<10	146
122284		99	0.08	<10	<10	47	<10	90
122285		86	0.09	<10	<10	35	<10	106
122286		65	0.08	<10	<10	38	<10	122
122287		101	0.07	<10	<10	40	<10	140
122288		240	0.02	<10	<10	9	<10	706
122289		123	0.05	<10	<10	29	<10	174
122290		99	0.04	<10	<10	20	<10	680
122291		183	0.05	<10	<10	32	<10	672
122292		119	0.05	<10	<10	29	<10	2660
122293		97	0.08	<10	<10	37	<10	886
122294		106	0.09	<10	<10	40	<10	1090
122295		94	0.08	<10	<10	42	<10	206
122296		108	0.05	<10	<10	32	<10	160
122297		56	0.01	<10	<10	33	<10	647
122298		58	0.02	<10	<10	34	<10	328
122299		48	0.01	<10	<10	40	<10	286
122300		43	0.01	<10	<10	60	<10	217
122301		103	0.05	<10	<10	30	<10	107
122302		282	0.12	<10	<10	35	<10	220

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CERTIFICATE OF ANALYSIS VA03024108

Sample Description	Method / Analyte / Units / LOR	ME-ICP41 Sr ppm 1	ME-ICP41 Ti % 0.01	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2
122303		68	<0.01	<10	<10	48	<10	176
122304		42	0.01	<10	<10	48	<10	351
122305		43	0.01	<10	<10	57	<10	324
122306		40	0.01	<10	<10	63	<10	105
122307		63	0.08	<10	<10	79	<10	64

ALS Chemex
EXCELLENCE IN ANALYTICAL CHEMISTRY
ALS Canada Ltd.
212 Brooksbank Avenue
North Vancouver BC V7J 2C1 Canada
Phone: 604 984 0221 Fax: 604 984 0218

To: **NORTHGATE EXPLORATION**
KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

Date : 18-Jul-2003
Account: NORTEX

CERTIFICATE VA03024113

Project : 4090

P.O. No:

This report is for 123 DRILL CORE samples submitted to our lab in North Vancouver, BC, Canada on 7-Jul-2003.

The following have access to data associated with this certificate:

CARL EDMUNDS

SAMPLE PREPARATION

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

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Au-AA23	Au 30g FA-AA finish	AAS
Cu-AA49	Assay Cu - HBr Digestion	AAS
ME-ICP41	34 Element Aqua Regia ICP-AES	ICP-AES

To: **NORTHGATE EXPLORATION**
ATTN: CARL EDMUNDS
KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

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

Signature:

ALS Chemex

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CERTIFICATE OF ANALYSIS VA03024113

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	Au-AA23 Au ppm 0.005	Cu-AA49 Cu % 0.001	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1
11141		4.78	<0.005	0.002	<0.2	1.48	3	<10	40	<0.5	2	1.35	0.8	7	44	20
122137		3.44	0.019	0.009	0.3	1.34	5	<10	80	<0.5	<2	0.35	0.5	6	53	106
122138		2.02	0.008	0.021	0.2	1.26	6	<10	170	<0.5	2	0.46	1.9	7	47	215
122139		3.64	0.022	0.015	0.5	1.01	11	<10	70	<0.5	2	0.19	1.8	6	48	172
122140		6.16	0.008	0.012	0.3	1.09	7	<10	80	<0.5	<2	0.32	2.2	5	61	138
122141		1.86	0.011	0.038	0.6	0.87	8	<10	60	<0.5	<2	0.22	6.8	7	54	416
122142		2.46	0.032	0.085	1.4	1.54	20	<10	30	<0.5	2	0.44	8.5	9	35	929
122143		3.32	0.010	0.058	<0.2	4.97	8	<10	60	<0.5	<2	2.06	5.8	19	7	684
122144		4.14	0.205	0.144	1.7	1.33	13	<10	60	<0.5	<2	0.34	1.2	7	73	1600
122145		0.62	0.264	0.120	4.5	1.18	15	<10	20	<0.5	<2	0.16	3.0	15	39	1355
122146		3.20	0.329	0.137	1.7	1.33	4	<10	230	<0.5	3	0.28	3.2	4	45	1450
122147		2.46	0.409	0.122	1.7	1.34	4	<10	80	<0.5	<2	0.18	3.7	5	91	1285
122148		2.24	0.257	0.134	2.3	1.38	3	<10	130	<0.5	<2	0.25	1.3	8	93	1420
122149		2.70	0.276	0.203	4.2	0.71	6	<10	110	<0.5	<2	0.17	1.0	8	90	2140
122150		2.86	0.461	0.153	2.9	1.40	12	<10	110	<0.5	<2	0.31	1.8	10	162	1630
122151		3.40	0.284	0.086	2.1	1.34	9	<10	90	<0.5	<2	0.30	3.9	9	116	908
122152		1.90	0.338	0.193	4.2	1.36	9	<10	90	<0.5	3	0.20	13.9	8	94	2090
122153		1.94	1.470	0.235	3.2	0.62	3	<10	100	<0.5	<2	0.21	11.1	8	118	2430
122154		1.94	0.811	0.206	5.8	0.53	9	<10	40	<0.5	<2	0.12	33.6	11	84	2230
122155		1.86	0.892	0.198	4.2	1.30	3	<10	100	<0.5	<2	0.31	10.7	10	92	2090
122157		3.46	0.276	0.124	3.5	0.47	5	<10	20	<0.5	<2	0.12	19.3	9	116	1370
122158		3.68	0.102	0.069	3.2	0.48	6	<10	30	<0.5	<2	0.13	13.4	9	86	759
122159		1.36	0.049	0.019	0.4	5.19	<2	<10	50	0.8	<2	2.29	8.2	28	73	215
122160		3.82	0.415	0.129	4.8	0.79	21	<10	40	<0.5	2	0.07	65.6	12	138	1430
122161		4.32	1.100	0.223	6.6	0.98	9	<10	60	<0.5	<2	0.17	34.8	9	120	2400
122162		3.74	0.924	0.140	4.0	1.12	15	<10	60	<0.5	<2	0.27	21.8	8	144	1500
122163		3.50	0.506	0.063	1.9	0.99	21	<10	50	<0.5	<2	0.19	14.3	10	155	686
122164		4.30	0.516	0.101	2.4	0.87	14	<10	50	<0.5	<2	0.19	6.7	10	118	1025
122165		6.08	0.524	0.080	1.7	1.00	10	<10	60	<0.5	2	0.25	4.2	8	154	835
122166		2.82	0.367	0.099	2.0	0.83	14	<10	70	<0.5	<2	0.22	7.3	11	147	963
122167		2.94	0.599	0.099	2.1	0.79	7	<10	60	<0.5	<2	0.15	51.5	12	186	1010
122168		2.08	0.433	0.123	2.1	1.11	5	<10	50	<0.5	<2	0.34	12.1	10	136	1255
122169		2.70	0.029	0.048	1.4	1.36	2	<10	50	<0.5	<2	0.84	4.8	10	135	449
122170		2.90	0.377	0.117	2.2	1.16	29	<10	60	<0.5	2	0.33	9.4	12	124	1155
122171		2.18	0.084	0.049	1.8	1.25	10	<10	50	<0.5	<2	0.68	3.8	10	174	471
122172		3.22	<0.005	0.003	0.3	1.38	<2	<10	60	<0.5	<2	1.04	0.8	10	102	28
122173		4.08	<0.005	0.003	<0.2	1.36	3	<10	30	<0.5	<2	1.01	0.9	9	107	24
122174		3.92	0.005	0.003	0.3	1.37	<2	<10	30	<0.5	<2	0.97	1.4	10	83	33
122175		1.42	0.067	0.034	1.5	1.36	<2	<10	40	<0.5	<2	0.74	6.7	11	104	418
122176		3.42	0.628	0.138	3.3	0.78	4	<10	50	<0.5	<2	0.41	9.9	11	153	1350

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KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

Date : 18-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03024113

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	Au-AA23 Au ppm 0.005	Cu-AA49 Cu % 0.001	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1
122177		0.72	0.741	0.169	4.6	2.01	24	<10	80	<0.5	2	1.14	11.8	17	128	1820
122178		1.60	0.212	0.026	1.2	2.72	19	<10	60	0.8	<2	1.50	3.9	15	35	259
122179		2.04	0.602	0.109	2.4	2.30	9	<10	60	0.6	<2	1.46	7.9	12	114	1060
122180		4.14	<0.005	0.003	<0.2	4.63	7	10	90	0.9	<2	3.46	2.3	17	13	32
122181		3.68	0.015	0.003	<0.2	4.84	5	10	50	0.9	<2	3.34	1.9	18	20	33
122183		4.72	<0.005	0.003	<0.2	4.41	9	<10	80	0.9	<2	3.22	1.7	20	10	28
122184		3.72	<0.005	0.005	0.3	1.65	3	<10	40	<0.5	<2	1.17	0.8	8	104	47
122185		3.36	<0.005	0.013	0.5	1.52	2	<10	50	<0.5	<2	1.05	1.9	8	74	139
122186		1.90	<0.005	0.003	<0.2	3.61	7	<10	50	0.7	<2	3.11	0.9	22	18	32
122187		4.24	<0.005	0.005	<0.2	3.60	2	<10	40	0.7	<2	3.35	1.3	25	39	53
122188		3.66	<0.005	0.005	<0.2	3.39	3	<10	30	0.7	<2	4.05	<0.5	19	28	43
122189		2.62	0.016	0.009	0.4	2.88	12	<10	30	0.6	<2	2.93	1.0	22	55	90
122190		4.50	<0.005	0.006	0.2	3.11	3	<10	20	0.6	<2	3.29	0.6	21	32	53
122191		2.00	0.040	0.029	0.5	2.58	4	<10	30	0.5	<2	2.90	1.0	10	114	296
122192		3.56	<0.005	0.003	<0.2	1.37	2	<10	30	<0.5	<2	1.87	<0.5	9	92	27
122193		1.36	<0.005	0.008	<0.2	1.24	2	<10	60	<0.5	<2	1.55	2.1	9	116	52
122194		4.14	<0.005	0.003	0.2	1.18	<2	<10	50	<0.5	<2	1.44	0.7	9	96	17
122195		4.28	<0.005	0.003	0.4	1.35	<2	<10	50	<0.5	<2	1.31	2.3	12	92	19
122196		4.22	<0.005	0.003	<0.2	1.28	2	<10	70	<0.5	<2	1.43	<0.5	9	104	21
122197		2.50	<0.005	0.064	1.0	1.30	<2	<10	90	<0.5	<2	1.19	9.2	8	100	704
122198		4.60	<0.005	0.010	0.5	1.32	<2	<10	50	<0.5	<2	1.19	4.3	8	115	89
122199		4.06	<0.005	0.004	<0.2	1.34	<2	<10	40	<0.5	<2	1.39	0.7	9	93	36
122200		4.46	<0.005	0.004	0.3	1.36	<2	<10	50	<0.5	<2	1.46	0.6	9	102	36
122201		4.54	<0.005	0.004	0.3	1.28	2	<10	70	<0.5	<2	1.40	<0.5	8	84	39
122202		4.12	0.014	0.002	0.4	1.14	20	<10	60	<0.5	<2	1.13	<0.5	9	115	19
122203		4.50	<0.005	0.002	<0.2	1.16	2	<10	50	<0.5	<2	1.44	<0.5	9	96	13
122204		4.30	<0.005	0.001	<0.2	1.26	3	<10	50	<0.5	<2	1.27	<0.5	8	90	7
122205		3.90	<0.005	0.001	<0.2	1.19	2	<10	40	<0.5	<2	1.56	<0.5	8	67	6
122206		3.18	0.013	0.004	0.4	1.52	12	<10	100	<0.5	<2	1.28	<0.5	9	118	33
122207		4.40	0.006	0.012	0.3	1.39	7	<10	40	<0.5	<2	1.80	2.3	9	78	98
122209		4.02	<0.005	0.004	0.4	1.43	3	<10	40	<0.5	<2	1.96	1.4	9	131	36
122210		3.46	<0.005	0.006	0.2	2.72	2	<10	30	0.6	<2	3.97	1.2	22	42	53
122211		4.06	0.005	0.006	0.3	1.67	2	<10	100	<0.5	<2	1.77	6.2	10	134	57
122212		4.42	0.023	0.005	0.3	1.40	15	<10	70	<0.5	<2	1.58	2.7	8	83	39
122213		3.72	0.008	0.005	0.4	1.37	11	<10	120	<0.5	<2	1.34	2.5	9	164	41
122214		3.44	<0.005	0.004	0.2	1.36	3	<10	40	<0.5	<2	1.16	2.2	9	89	37
122215		4.94	<0.005	0.025	0.4	1.52	<2	<10	80	<0.5	<2	1.25	2.0	9	162	270
122216		4.16	<0.005	0.042	0.5	1.54	<2	<10	80	<0.5	<2	1.39	4.3	9	110	408
122217		4.94	<0.005	0.005	0.4	1.53	2	<10	100	<0.5	<2	1.68	7.3	8	151	47
122218		4.52	<0.005	0.001	0.2	1.43	2	<10	50	<0.5	<2	2.13	1.5	6	120	10

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Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	Au-AA23 Au ppm 0.005	Cu-AA49 Cu % 0.001	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1
122219		4.20	<0.005	0.001	<0.2	1.53	3	<10	40	<0.5	<2	1.68	1.8	7	138	10
122220		4.82	<0.005	0.006	<0.2	1.50	3	<10	80	<0.5	<2	1.48	3.9	8	110	55
122221		1.66	<0.005	0.005	0.2	2.54	3	<10	180	0.7	<2	3.14	1.0	19	40	47
122222		4.78	<0.005	0.005	0.3	1.56	<2	<10	70	<0.5	<2	1.37	1.5	7	96	48
122223		3.20	<0.005	0.001	0.4	1.73	3	<10	50	<0.5	<2	1.56	2.1	6	140	11
122224		2.16	0.027	0.022	1.4	1.36	7	<10	30	<0.5	<2	1.12	<0.5	12	89	223
122225		5.36	0.039	0.034	1.7	1.13	12	<10	30	<0.5	<2	1.01	0.6	13	130	333
122226		4.20	0.036	0.036	2.0	1.39	8	<10	40	<0.5	<2	0.94	1.0	14	113	364
122227		3.10	0.033	0.031	1.0	2.14	21	<10	50	<0.5	<2	1.52	0.9	12	113	312
122228		3.72	<0.005	0.002	0.3	2.82	<2	<10	280	0.6	<2	2.65	1.1	6	69	25
122229		4.40	<0.005	0.001	0.3	2.62	<2	<10	230	0.5	<2	2.62	0.8	7	96	15
122230		4.20	<0.005	0.002	0.2	1.67	<2	<10	110	<0.5	<2	1.37	1.6	9	76	26
122231		4.74	<0.005	0.004	0.2	1.69	<2	<10	100	<0.5	<2	1.25	3.6	9	103	36
122232		4.42	<0.005	0.004	0.3	1.24	2	<10	50	<0.5	<2	1.03	4.0	7	61	44
122233		4.16	<0.005	0.003	0.2	1.29	<2	<10	70	<0.5	<2	1.08	1.2	7	94	27
122234		4.22	<0.005	0.005	0.4	1.49	<2	<10	40	<0.5	<2	1.11	4.6	8	81	46
122235		4.34	<0.005	0.005	0.7	1.58	<2	<10	110	<0.5	<2	1.10	6.3	8	100	50
122236		4.62	<0.005	0.001	0.3	1.46	2	<10	40	<0.5	<2	1.12	2.2	7	77	15
122237		4.42	<0.005	0.001	0.2	1.44	<2	<10	40	<0.5	<2	1.16	1.0	8	105	5
122238		2.06	<0.005	0.001	0.2	1.22	<2	<10	50	<0.5	<2	1.29	0.7	7	58	5
122239		4.90	<0.005	0.001	<0.2	1.58	<2	<10	30	<0.5	<2	1.62	<0.5	8	75	6
122240		5.60	<0.005	0.012	0.7	1.43	2	<10	60	<0.5	<2	1.30	3.9	8	69	120
122241		3.74	<0.005	0.014	1.1	1.76	<2	<10	90	<0.5	<2	1.38	2.1	7	93	148
122242		5.42	<0.005	0.001	0.2	1.38	2	<10	170	<0.5	<2	1.12	<0.5	7	64	9
122243		4.72	<0.005	0.002	0.3	1.44	<2	<10	60	<0.5	<2	1.29	0.8	7	99	15
122244		4.48	<0.005	0.001	<0.2	1.54	<2	<10	50	<0.5	<2	1.53	0.5	7	65	8
122245		4.54	<0.005	0.002	0.2	1.25	<2	<10	70	<0.5	<2	1.09	2.2	5	100	19
122246		4.30	<0.005	0.002	0.2	1.33	<2	<10	50	<0.5	<2	1.02	<0.5	5	68	18
122247		4.78	0.047	0.048	2.3	1.39	5	<10	50	<0.5	<2	0.76	0.7	13	102	493
122248		3.50	0.042	0.040	2.4	1.36	4	<10	40	<0.5	<2	0.80	0.8	14	84	427
122249		3.62	0.065	0.052	2.2	1.29	6	<10	30	<0.5	<2	0.87	1.6	13	107	518
122250		2.26	0.099	0.119	4.8	1.35	3	<10	30	<0.5	<2	0.81	11.9	14	94	1175
122251		4.68	0.031	0.035	1.2	1.35	2	<10	20	<0.5	<2	0.95	2.1	11	99	350
122252		3.72	<0.005	0.004	0.2	1.65	<2	<10	30	<0.5	<2	1.38	1.0	7	76	40
122253		4.74	<0.005	0.002	<0.2	1.68	2	<10	50	<0.5	<2	1.51	0.8	6	106	21
122255		4.46	<0.005	0.003	0.3	1.62	<2	<10	50	<0.5	<2	1.36	1.7	8	77	37
122256		3.84	<0.005	0.002	0.2	1.65	<2	<10	150	<0.5	<2	1.67	1.8	8	99	27
122257		4.22	<0.005	0.022	0.5	1.79	<2	<10	210	<0.5	<2	1.89	9.9	8	89	238
122258		3.12	<0.005	0.006	0.3	1.59	<2	<10	60	<0.5	<2	2.12	3.0	9	92	73
122259		2.26	<0.005	0.003	0.4	3.07	7	<10	30	0.8	<2	3.09	0.9	22	94	36

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KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

Date : 18-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03024113

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	Au-AA23 Au ppm 0.005	Cu-AA49 Cu % 0.001	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1
122260		4.44	<0.005	0.002	0.3	1.75	2	<10	70	<0.5	<2	1.73	2.3	9	115	29
122261		1.44	<0.005	0.007	0.3	1.73	<2	<10	20	<0.5	<2	1.56	6.0	11	82	88
122262		3.68	<0.005	<0.001	0.2	1.64	2	<10	40	<0.5	<2	2.08	<0.5	9	94	18

ALS Chemex

EXCELLENCE IN ANALYTICAL CHEMISTRY

ALS Canada Ltd.
212 Brooksbank Avenue
North Vancouver BC V7J 2C1 Canada
Phone: 604 984 0221 Fax: 604 984 0218

To: **NORTHGATE EXPLORATION**
KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

Date : 18-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03024113

Sample Description	Method Analyte Units LOR	ME-ICP41 Fe % 0.01	ME-ICP41 Ga ppm 10	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1
11141		2.75	10	<1	0.11	10	0.88	1715	2	0.04	2	890	11	0.05	<2	4
122137		2.60	10	<1	0.21	10	0.83	1205	3	0.03	3	680	13	1.01	<2	2
122138		2.51	10	<1	0.18	10	0.80	1130	3	0.03	2	610	14	1.15	<2	2
122139		2.70	10	<1	0.24	10	0.62	644	4	0.03	2	530	30	1.98	<2	2
122140		2.67	10	<1	0.20	10	0.70	784	4	0.04	2	780	23	1.70	<2	2
122141		2.88	<10	<1	0.23	10	0.56	554	5	0.03	2	590	54	2.55	<2	1
122142		3.51	10	<1	0.27	10	0.57	725	11	0.02	2	1200	189	2.21	<2	4
122143		6.11	20	<1	0.14	10	1.78	1980	3	0.03	4	2700	21	0.14	<2	16
122144		3.55	10	<1	0.27	<10	0.43	650	15	0.02	4	1340	14	1.78	<2	1
122145		4.78	<10	<1	0.27	<10	0.25	357	11	0.02	3	690	264	4.48	<2	1
122146		2.59	10	<1	0.28	10	0.62	1090	4	0.04	3	610	22	0.59	<2	1
122147		2.92	10	<1	0.26	10	0.70	1110	4	0.04	4	460	21	0.51	<2	1
122148		3.48	10	<1	0.21	10	0.78	1350	7	0.04	5	420	12	0.79	<2	2
122149		3.60	<10	<1	0.28	<10	0.17	657	9	0.02	4	320	11	1.50	<2	<1
122150		3.93	10	<1	0.26	<10	0.71	1425	7	0.05	6	350	17	1.62	<2	1
122151		3.69	10	<1	0.20	10	0.79	1660	7	0.05	5	520	23	1.89	<2	1
122152		4.06	10	<1	0.27	10	0.74	1700	11	0.02	5	600	35	2.10	<2	1
122153		4.50	<10	<1	0.30	10	0.14	330	12	0.03	4	690	22	1.18	<2	1
122154		3.52	<10	<1	0.33	10	0.05	147	12	0.01	4	440	139	2.69	<2	<1
122155		4.34	10	<1	0.24	<10	0.73	1350	11	0.03	4	760	11	1.10	<2	1
122157		3.83	<10	<1	0.34	<10	0.02	91	11	0.01	4	440	18	3.41	<2	<1
122158		3.96	<10	<1	0.30	<10	0.02	52	10	0.01	3	370	44	3.98	<2	<1
122159		6.75	20	<1	0.12	10	2.60	1600	5	0.03	25	1250	12	0.70	<2	26
122160		4.60	<10	<1	0.26	<10	0.28	447	9	0.02	5	130	144	4.05	<2	1
122161		4.74	10	<1	0.27	<10	0.39	914	12	0.03	5	390	36	2.13	<2	1
122162		4.38	10	<1	0.24	<10	0.51	984	11	0.04	5	520	12	1.98	<2	1
122163		4.28	10	<1	0.24	<10	0.52	797	8	0.04	5	450	13	3.04	<2	1
122164		4.11	10	<1	0.23	<10	0.47	682	8	0.04	4	460	16	2.94	<2	1
122165		4.38	10	<1	0.22	<10	0.51	834	8	0.04	6	510	13	1.80	<2	1
122166		4.02	<10	<1	0.26	<10	0.37	637	9	0.03	6	520	13	2.50	<2	1
122167		3.69	<10	<1	0.34	10	0.18	194	13	0.01	7	540	6	2.96	<2	1
122168		5.61	<10	<1	0.21	10	0.64	1030	12	0.04	5	700	6	0.98	<2	2
122169		3.06	10	<1	0.13	10	0.95	1100	4	0.04	6	810	5	0.11	<2	4
122170		4.30	<10	1	0.31	10	0.48	882	21	0.03	5	710	7	1.67	<2	1
122171		3.42	10	<1	0.16	10	0.80	1280	10	0.04	6	670	19	0.93	<2	3
122172		2.55	10	<1	0.09	10	1.05	971	2	0.04	5	710	14	0.13	<2	4
122173		2.57	10	<1	0.08	10	1.05	1055	2	0.04	5	710	10	0.03	<2	4
122174		2.62	10	<1	0.08	10	1.07	1055	2	0.04	4	750	12	0.06	<2	4
122175		3.14	10	<1	0.09	10	1.05	1100	5	0.04	5	710	47	0.41	<2	3
122176		5.72	<10	<1	0.17	<10	0.39	793	14	0.04	6	750	8	1.27	<2	1

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SMITHERS BC V0J 2N0

Date : 18-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03024113

Sample Description	Method Analyte Units LOR	ME-ICP41 Fe % 0.01	ME-ICP41 Ga ppm 10	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1
122177		6.82	10	<1	0.23	<10	0.37	749	11	0.02	5	610	19	2.24	<2	1
122178		5.71	10	<1	0.11	10	1.40	1545	2	0.06	3	1680	9	0.22	<2	9
122179		4.95	10	<1	0.11	10	0.91	1185	10	0.05	5	920	7	0.35	<2	4
122180		5.22	20	<1	0.19	10	1.29	1395	1	0.09	2	1790	7	0.01	<2	8
122181		5.56	20	1	0.20	10	1.39	1430	<1	0.13	4	1770	5	0.01	<2	8
122183		5.50	10	<1	0.18	10	1.33	1770	<1	0.06	3	1650	6	0.02	<2	8
122184		2.99	10	<1	0.09	10	1.05	1445	1	0.05	3	1040	12	0.11	<2	3
122185		2.82	10	<1	0.14	10	0.94	1390	2	0.04	3	1010	27	0.20	<2	2
122186		5.97	10	<1	0.14	10	1.66	1705	<1	0.06	4	1690	5	0.02	<2	10
122187		5.61	10	<1	0.09	10	2.28	1335	<1	0.16	38	1570	4	0.01	<2	13
122188		5.31	10	1	0.09	10	1.98	1165	<1	0.07	17	1550	6	0.04	<2	13
122189		5.72	10	<1	0.10	10	2.05	1075	6	0.08	26	1200	6	1.52	<2	12
122190		5.17	10	1	0.05	10	2.42	1130	1	0.06	32	1350	2	0.02	<2	13
122191		3.76	10	1	0.12	10	0.88	913	4	0.04	6	750	15	0.14	<2	4
122192		2.68	10	1	0.14	10	1.03	917	1	0.04	4	850	5	0.02	<2	4
122193		2.52	10	1	0.14	10	0.92	1260	1	0.04	4	680	184	0.38	<2	3
122194		2.73	<10	<1	0.10	10	0.94	795	2	0.05	3	680	57	0.05	<2	4
122195		2.62	10	1	0.11	10	0.98	1050	2	0.04	4	690	685	0.16	<2	4
122196		2.63	10	<1	0.11	10	0.98	729	3	0.05	5	690	15	0.02	<2	4
122197		2.50	10	1	0.11	10	0.94	985	4	0.04	4	690	398	0.26	<2	3
122198		2.46	10	<1	0.12	10	0.98	1100	2	0.04	4	700	420	0.29	<2	3
122199		2.47	10	<1	0.10	10	1.00	1090	2	0.04	4	710	118	0.13	<2	3
122200		2.60	<10	<1	0.13	10	1.00	1195	2	0.04	4	730	77	0.04	<2	4
122201		2.48	10	<1	0.12	10	0.95	794	3	0.04	3	690	25	0.05	<2	4
122202		2.52	<10	<1	0.13	10	0.80	851	4	0.03	4	780	35	0.63	<2	3
122203		2.65	10	<1	0.10	10	0.91	640	2	0.05	4	680	13	0.02	<2	5
122204		2.54	10	<1	0.09	10	0.96	750	1	0.04	4	670	11	0.04	<2	4
122205		2.75	<10	<1	0.08	10	0.98	832	1	0.05	3	760	14	0.02	<2	5
122206		2.62	10	<1	0.10	10	1.07	1300	3	0.04	4	790	31	0.54	<2	3
122207		2.45	10	<1	0.11	10	0.98	1400	3	0.03	3	740	37	0.92	<2	3
122209		2.56	<10	<1	0.16	10	1.01	1275	4	0.03	4	720	75	0.87	<2	3
122210		5.61	10	1	0.16	10	2.25	1365	<1	0.04	16	1470	2	0.12	<2	19
122211		2.91	10	<1	0.18	10	0.99	1480	8	0.03	4	800	39	0.77	<2	2
122212		2.54	<10	<1	0.16	10	1.01	1415	6	0.02	4	740	38	0.68	<2	3
122213		2.47	<10	<1	0.15	10	0.96	1320	5	0.03	5	700	97	0.51	<2	2
122214		2.54	<10	<1	0.13	10	1.01	1360	2	0.03	3	730	81	0.28	<2	3
122215		2.58	10	<1	0.14	10	1.03	1480	3	0.03	6	720	34	0.26	<2	3
122216		2.36	<10	<1	0.18	10	1.02	1680	3	0.02	4	730	29	0.27	<2	3
122217		2.16	<10	<1	0.23	10	0.94	1665	3	0.02	5	680	21	0.31	<2	2
122218		1.63	<10	<1	0.27	10	0.86	1685	1	0.01	4	640	50	0.41	<2	2

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CERTIFICATE OF ANALYSIS VA03024113

Sample Description	Method Analyte Units LOR	ME-ICP41 Fe % 0.01	ME-ICP41 Ga ppm 10	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1
122219		2.04	<10	<1	0.21	10	0.90	1565	2	0.03	4	650	19	0.23	<2	2
122220		2.24	10	<1	0.13	10	0.96	1455	2	0.03	4	630	87	0.32	<2	2
122221		5.94	10	1	0.08	10	2.03	2020	<1	0.05	9	1710	7	0.27	<2	18
122222		2.18	<10	<1	0.11	10	0.95	1420	1	0.03	3	650	87	0.26	<2	2
122223		1.85	<10	1	0.19	10	0.83	1725	3	0.02	5	750	176	0.25	<2	2
122224		3.75	10	<1	0.11	<10	0.84	1625	15	0.03	2	730	10	2.16	<2	2
122225		4.49	10	<1	0.15	<10	0.81	1405	12	0.03	3	700	15	3.23	<2	2
122226		4.94	10	<1	0.14	<10	0.82	1460	11	0.03	3	770	27	2.65	<2	2
122227		4.52	10	1	0.13	<10	0.74	1385	9	0.04	3	810	32	2.20	<2	2
122228		2.11	10	1	0.10	10	0.80	1270	1	0.04	2	710	33	0.18	<2	2
122229		2.33	10	<1	0.11	10	0.89	1505	1	0.04	4	760	19	0.12	<2	3
122230		2.39	10	<1	0.09	10	1.05	1480	1	0.03	3	820	82	0.17	<2	3
122231		2.59	10	<1	0.10	10	1.10	1705	1	0.03	4	810	63	0.19	<2	3
122232		2.23	<10	<1	0.10	10	0.84	1355	1	0.03	3	700	65	0.08	<2	2
122233		2.28	10	<1	0.09	10	0.84	1400	1	0.04	3	680	125	0.09	<2	2
122234		2.52	10	<1	0.11	10	1.00	1895	2	0.03	3	760	140	0.21	<2	3
122235		2.25	<10	<1	0.12	10	0.98	1800	1	0.03	4	710	768	0.23	<2	2
122236		2.06	<10	1	0.10	10	0.93	1575	3	0.03	4	660	64	0.10	<2	3
122237		2.33	<10	<1	0.08	10	0.95	1995	2	0.04	4	660	48	0.02	<2	3
122238		2.92	10	<1	0.11	10	0.83	1225	2	0.06	3	780	37	0.09	<2	5
122239		2.93	10	<1	0.08	10	1.06	1210	<1	0.05	3	900	6	0.04	<2	5
122240		2.73	10	1	0.09	10	1.01	1605	2	0.04	4	760	72	0.17	<2	4
122241		2.55	10	<1	0.13	10	0.99	1915	2	0.04	4	780	17	0.70	<2	3
122242		2.32	10	<1	0.08	10	0.93	1200	<1	0.05	3	770	8	0.08	<2	3
122243		2.57	10	<1	0.09	10	0.97	1365	1	0.05	3	790	23	0.14	<2	3
122244		2.67	10	<1	0.09	10	0.89	1165	2	0.05	2	760	9	0.05	<2	3
122245		2.27	<10	<1	0.10	10	0.82	1015	2	0.05	3	710	8	0.06	<2	2
122246		1.99	<10	<1	0.10	10	0.79	1095	2	0.04	3	680	17	0.13	<2	2
122247		5.29	10	1	0.10	<10	0.93	1910	11	0.04	4	760	33	2.55	<2	3
122248		4.96	10	<1	0.09	<10	1.00	1885	12	0.04	3	780	24	2.46	<2	2
122249		5.48	10	<1	0.09	10	0.91	1640	9	0.05	3	860	15	1.84	<2	4
122250		6.96	10	<1	0.07	<10	0.96	2020	10	0.04	3	710	110	1.98	<2	3
122251		5.21	10	<1	0.08	10	0.96	1685	8	0.05	3	820	9	0.93	<2	3
122252		2.91	10	<1	0.09	10	1.02	1770	2	0.04	3	940	12	0.10	<2	4
122253		2.54	10	1	0.11	10	1.00	1955	1	0.04	3	870	17	0.10	<2	3
122255		2.73	10	1	0.12	10	1.07	1745	<1	0.04	2	830	7	0.24	<2	4
122256		2.89	10	1	0.17	10	1.05	1735	1	0.04	2	830	8	0.25	<2	4
122257		2.50	<10	1	0.20	10	1.07	2030	1	0.02	4	800	41	0.41	<2	3
122258		2.38	10	<1	0.12	10	1.04	1710	2	0.03	4	780	63	0.17	<2	4
122259		5.27	10	<1	0.10	10	2.95	3120	1	0.04	42	1200	10	0.38	<2	18

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Sample Description	Method Analyte Units LOR	ME-ICP41 Fe % 0.01	ME-ICP41 Ga ppm 10	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1
122260		2.67	10	<1	0.13	10	1.15	1795	1	0.03	5	820	7	0.17	<2	4
122261		3.02	10	<1	0.11	10	1.16	1590	2	0.03	4	910	28	0.09	<2	4
122262		2.67	10	1	0.11	10	1.10	1705	2	0.03	4	940	3	0.14	<2	4

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Sample Description	Method Analyte Units LOR	ME-ICP41 Sr ppm 1	ME-ICP41 Ti % 0.01	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2
11141		97	0.15	<10	<10	51	<10	194
122137		33	0.05	<10	<10	25	<10	144
122138		36	0.09	<10	<10	24	<10	207
122139		17	0.02	<10	<10	21	<10	128
122140		22	0.07	<10	<10	26	<10	160
122141		14	0.02	<10	<10	18	<10	434
122142		30	0.13	<10	<10	44	<10	533
122143		116	0.39	<10	<10	180	<10	348
122144		33	0.06	<10	<10	24	<10	112
122145		22	0.09	<10	<10	17	<10	194
122146		42	0.01	<10	<10	19	<10	297
122147		34	0.01	<10	<10	22	<10	437
122148		43	0.04	<10	<10	30	<10	313
122149		32	0.04	<10	<10	20	<10	186
122150		37	0.07	<10	<10	22	<10	356
122151		37	0.04	<10	<10	21	<10	379
122152		49	<0.01	<10	<10	17	<10	501
122153		61	0.01	<10	<10	27	<10	307
122154		61	<0.01	<10	<10	10	<10	657
122155		63	0.02	<10	<10	26	<10	277
122157		61	<0.01	<10	<10	8	<10	289
122158		36	<0.01	<10	<10	4	<10	258
122159		71	0.42	<10	<10	223	10	644
122160		16	0.01	<10	<10	12	<10	749
122161		36	0.03	<10	<10	23	<10	375
122162		26	0.06	<10	<10	23	<10	244
122163		13	0.04	<10	<10	18	<10	128
122164		11	0.04	<10	<10	18	<10	170
122165		15	0.08	<10	<10	25	<10	229
122166		32	0.04	<10	<10	17	<10	127
122167		69	<0.01	<10	<10	8	<10	134
122168		65	0.08	<10	<10	35	<10	148
122169		136	0.17	<10	<10	55	<10	144
122170		62	0.06	<10	<10	21	<10	169
122171		79	0.12	<10	<10	40	<10	138
122172		109	0.18	<10	<10	56	<10	102
122173		105	0.19	<10	<10	58	<10	86
122174		108	0.18	<10	<10	61	<10	86
122175		67	0.16	<10	<10	49	<10	228
122176		45	0.07	<10	<10	39	<10	117

ALS Chemex
EXCELLENCE IN ANALYTICAL CHEMISTRY
ALS Canada Ltd.
212 Brooksbank Avenue
North Vancouver BC V7J 2C1 Canada
Phone: 604 984 0221 Fax: 604 984 0218

To: **NORTHGATE EXPLORATION**
KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

Date : 18-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03024113

Sample Description	Method / Analyte / Units / LOR	ME-ICP41 Sr ppm 1	ME-ICP41 Ti % 0.01	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2
122177		113	0.08	<10	<10	42	<10	444
122178		124	0.33	<10	<10	96	<10	414
122179		100	0.15	<10	<10	54	<10	304
122180		290	0.30	<10	<10	126	<10	449
122181		366	0.31	<10	<10	138	<10	591
122183		230	0.28	<10	<10	126	<10	858
122184		128	0.20	<10	<10	47	<10	254
122185		93	0.16	<10	<10	40	<10	396
122186		118	0.29	<10	<10	140	<10	596
122187		184	0.42	<10	<10	155	<10	345
122188		120	0.36	<10	<10	150	<10	138
122189		124	0.33	<10	<10	133	<10	182
122190		98	0.39	<10	<10	153	<10	95
122191		139	0.12	<10	<10	56	<10	145
122192		156	0.15	<10	<10	54	<10	84
122193		103	0.12	<10	<10	46	<10	469
122194		83	0.16	<10	<10	64	<10	168
122195		110	0.16	<10	<10	54	<10	629
122196		87	0.16	<10	<10	59	<10	61
122197		81	0.16	<10	<10	51	<10	1260
122198		84	0.16	<10	<10	45	<10	577
122199		104	0.15	<10	<10	49	<10	182
122200		106	0.15	<10	<10	52	<10	136
122201		102	0.16	<10	<10	53	<10	79
122202		87	0.15	<10	<10	43	<10	98
122203		86	0.16	<10	<10	63	<10	48
122204		90	0.14	<10	<10	59	<10	54
122205		99	0.17	<10	<10	66	<10	60
122206		99	0.13	<10	<10	44	<10	140
122207		100	0.13	<10	<10	41	<10	369
122209		107	0.13	<10	<10	41	<10	233
122210		80	0.42	<10	<10	157	<10	150
122211		115	0.11	<10	<10	35	<10	840
122212		86	0.12	<10	<10	37	<10	410
122213		86	0.13	<10	<10	36	<10	397
122214		79	0.15	<10	<10	43	<10	361
122215		86	0.13	<10	<10	41	<10	335
122216		89	0.12	<10	<10	34	<10	669
122217		102	0.09	<10	<10	29	<10	976
122218		132	0.10	<10	<10	22	<10	273

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KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

Date : 18-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03024113

Sample Description	Method Analyte Units LOR	ME-ICP41 Sr ppm 1	ME-ICP41 Ti % 0.01	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2
122219		106	0.10	<10	<10	29	<10	297
122220		124	0.13	<10	<10	36	<10	579
122221		93	0.53	<10	<10	186	<10	157
122222		142	0.13	<10	<10	36	<10	323
122223		152	0.09	<10	<10	24	<10	423
122224		93	0.07	<10	<10	17	<10	113
122225		75	0.07	<10	<10	17	<10	117
122226		75	0.08	<10	<10	28	<10	169
122227		112	0.08	<10	<10	36	<10	167
122228		211	0.05	<10	<10	30	<10	195
122229		236	0.03	<10	<10	35	<10	164
122230		126	0.07	<10	<10	37	<10	288
122231		109	0.09	<10	<10	40	<10	555
122232		74	0.07	<10	<10	31	<10	589
122233		111	0.08	<10	<10	32	<10	269
122234		84	0.09	<10	<10	38	<10	758
122235		127	0.10	<10	<10	36	<10	1005
122236		98	0.11	<10	<10	35	<10	405
122237		88	0.08	<10	<10	41	<10	233
122238		89	0.16	<10	<10	64	<10	132
122239		152	0.13	<10	<10	62	<10	122
122240		136	0.09	<10	<10	51	<10	618
122241		174	0.06	<10	<10	32	<10	351
122242		138	0.11	<10	<10	37	<10	144
122243		124	0.11	<10	<10	41	<10	178
122244		156	0.08	<10	<10	45	<10	149
122245		96	0.08	<10	<10	34	<10	337
122246		88	0.08	<10	<10	26	<10	108
122247		70	0.08	<10	<10	44	<10	158
122248		100	0.07	<10	<10	44	<10	150
122249		77	0.09	<10	<10	61	<10	224
122250		65	0.10	<10	<10	56	<10	1890
122251		75	0.11	<10	<10	66	<10	294
122252		109	0.15	<10	<10	51	<10	189
122253		128	0.14	<10	<10	42	<10	182
122255		115	0.14	<10	<10	45	<10	277
122256		122	0.14	<10	<10	49	<10	299
122257		161	0.12	<10	<10	37	<10	1330
122258		212	0.06	<10	<10	42	<10	426
122259		114	0.20	<10	<10	126	<10	170

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To: **NORTHGATE EXPLORATION**
KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

Date : 18-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03024113

Sample Description	Method Analyte Units LOR	ME-ICP41 Sr ppm 1	ME-ICP41 Ti % 0.01	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2
122260		152	0.12	<10	<10	49	<10	366
122261		172	0.13	<10	<10	56	<10	682
122262		179	0.11	<10	<10	50	<10	145

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ALS Canada Ltd.
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Phone: 604 984 0221 Fax: 604 984 0218

To: **NORTHGATE EXPLORATION**
KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

Date : 17-Jul-2003
Account: NORTEX

CERTIFICATE VA03024881

Project : 4090

P.O. No:

This report is for 25 DRILL CORE samples submitted to our lab in North Vancouver, BC, Canada on 10-Jul-2003.

The following have access to data associated with this certificate:

CARL EDMUNDS

SAMPLE PREPARATION

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

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Au-AA23	Au 30g FA-AA finish	AAS
Cu-AA49	Assay Cu - HBr Digestion	AAS
ME-ICP41	34 Element Aqua Regia ICP-AES	ICP-AES

To: **NORTHGATE EXPLORATION**
ATTN: CARL EDMUNDS
KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

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

Signature:

ALS Chemex

EXCELLENCE IN ANALYTICAL CHEMISTRY

ALS Canada Ltd.
212 Brooksbank Avenue
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Phone: 604 984 0221 Fax: 604 984 0218

To: **NORTHGATE EXPLORATION**
KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

Date : 17-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03024881

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	Au-AA23 Au ppm 0.005	Cu-AA49 Cu % 0.001	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1
122308		3.42	0.162	0.004	0.4	1.38	2	<10	500	<0.5	<2	0.72	0.7	5	77	36
122309		3.34	<0.005	0.013	0.8	1.56	4	<10	100	<0.5	<2	0.76	5.8	7	54	129
122310		4.66	0.032	0.013	1.1	1.60	<2	<10	70	<0.5	<2	0.84	12.0	8	54	124
122311		4.62	<0.005	0.016	1.3	1.49	<2	<10	60	<0.5	<2	0.66	26.1	9	57	155
122312		8.40	0.007	0.009	1.0	1.43	<2	<10	40	<0.5	<2	1.17	16.5	12	41	85
122313		7.64	0.069	0.015	2.3	1.62	5	<10	70	<0.5	<2	1.22	25.3	10	34	149
122314		7.50	0.018	0.007	1.2	1.51	<2	<10	40	<0.5	<2	1.44	22.1	11	35	69
122315		7.44	0.032	0.008	1.0	1.40	2	<10	50	<0.5	<2	1.69	12.8	8	48	76
122316		5.12	0.067	0.016	1.3	1.58	10	<10	100	<0.5	<2	0.64	28.3	8	61	158
122317		5.10	<0.005	0.003	0.3	1.50	<2	<10	60	<0.5	<2	0.86	7.5	9	73	23
122318		4.72	<0.005	0.003	<0.2	1.54	2	<10	170	<0.5	<2	1.12	6.6	10	81	32
122319		4.22	<0.005	0.005	0.5	1.50	2	<10	60	<0.5	<2	0.88	6.7	9	81	55
122320		2.70	0.008	0.010	0.8	1.60	3	<10	140	<0.5	<2	0.87	15.9	9	72	98
122321		3.88	<0.005	0.002	<0.2	1.27	2	<10	150	<0.5	<2	1.33	1.0	7	81	14
122322		4.70	<0.005	0.004	0.4	1.45	<2	<10	200	<0.5	<2	1.64	1.8	6	72	41
122323		3.48	0.019	0.003	0.9	1.88	<2	<10	340	0.5	<2	1.64	4.5	7	77	34
122324		4.48	<0.005	0.001	0.3	1.40	<2	<10	110	<0.5	<2	1.23	1.0	7	104	11
122325		4.00	0.005	0.001	<0.2	1.24	<2	<10	60	<0.5	<2	1.03	0.6	7	91	14
122326		1.62	<0.005	0.002	0.3	2.06	<2	<10	60	<0.5	<2	1.80	1.8	11	66	18
122327		4.50	0.005	0.003	0.7	1.47	2	<10	80	<0.5	<2	1.40	2.0	9	95	29
122328		5.00	<0.005	0.002	<0.2	1.58	<2	<10	70	<0.5	<2	1.44	2.2	9	78	16
122329		3.94	0.007	0.004	0.4	1.48	<2	<10	60	<0.5	<2	1.46	3.4	9	84	42
122330		4.44	<0.005	0.002	0.2	1.58	<2	<10	110	<0.5	<2	1.52	1.2	9	68	21
122331		4.60	0.006	0.002	0.3	1.76	3	<10	120	<0.5	<2	1.50	1.4	10	75	19
122332		5.16	<0.005	0.002	0.3	1.63	3	<10	80	<0.5	<2	1.68	0.6	9	77	15

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Phone: 604 984 0221 Fax: 604 984 0218

To: **NORTHGATE EXPLORATION**
KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

Date : 17-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03024881

Sample Description	Method Analyte Units LOR	ME-ICP41 Fe % 0.01	ME-ICP41 Ga ppm 10	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1
122308		2.03	10	<1	0.18	10	0.69	1415	3	0.05	1	770	11	0.09	<2	3
122309		2.06	10	<1	0.19	10	0.82	2690	2	0.03	2	690	39	0.58	<2	3
122310		2.32	10	<1	0.16	10	0.87	2780	1	0.04	2	730	49	0.27	<2	4
122311		2.84	10	<1	0.16	10	0.85	2790	2	0.04	3	770	42	0.26	<2	4
122312		3.85	10	<1	0.23	10	0.89	3120	2	0.04	1	870	47	0.48	2	5
122313		3.70	10	<1	0.23	10	0.98	3400	3	0.03	1	1010	51	0.92	<2	5
122314		4.11	10	<1	0.21	10	1.00	3270	3	0.05	<1	1000	33	0.60	2	5
122315		3.40	10	<1	0.19	10	0.94	2330	5	0.04	<1	880	17	0.59	<2	5
122316		3.29	10	<1	0.21	10	0.92	2920	4	0.04	2	870	88	1.28	<2	4
122317		2.30	10	<1	0.17	10	0.85	2820	2	0.04	2	670	28	0.36	<2	3
122318		2.65	10	<1	0.19	10	0.91	2460	2	0.04	2	720	59	0.23	<2	4
122319		2.35	10	<1	0.15	10	0.88	2550	5	0.04	3	800	162	0.46	<2	3
122320		2.63	10	<1	0.22	10	0.85	2570	3	0.04	2	880	229	1.01	<2	3
122321		2.26	10	<1	0.17	10	0.79	1500	3	0.05	2	730	20	0.13	<2	3
122322		2.24	10	<1	0.29	10	0.79	1760	2	0.07	<1	710	16	0.46	<2	3
122323		2.19	10	<1	0.17	10	0.74	1465	3	0.04	2	770	54	0.38	<2	3
122324		2.34	10	<1	0.14	10	0.80	1375	2	0.06	2	730	9	0.20	<2	3
122325		2.20	10	<1	0.14	10	0.74	1190	3	0.05	2	680	4	0.14	<2	3
122326		3.45	10	<1	0.13	10	1.34	1755	1	0.06	1	1020	9	0.13	<2	6
122327		2.61	10	<1	0.14	10	0.89	1355	4	0.04	3	840	30	0.25	<2	4
122328		2.59	10	<1	0.12	10	0.95	1280	2	0.05	2	790	3	0.08	<2	4
122329		2.88	10	<1	0.12	10	0.94	1505	4	0.04	3	850	11	0.27	<2	5
122330		2.70	10	<1	0.12	10	0.97	1440	2	0.06	1	870	3	0.24	<2	5
122331		2.73	10	<1	0.14	10	1.09	2110	3	0.03	2	910	136	0.58	<2	5
122332		2.94	10	<1	0.13	10	1.10	1665	1	0.05	1	880	10	0.35	<2	5

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KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

Date : 17-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03024881

Sample Description	Method Analyte Units LOR	ME-ICP41 Sr ppm 1	ME-ICP41 Ti % 0.01	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2
122308		61	0.13	<10	<10	37	<10	112
122309		52	0.13	<10	<10	34	<10	555
122310		68	0.15	<10	<10	53	<10	1245
122311		48	0.14	<10	<10	66	<10	2900
122312		34	0.15	<10	<10	82	<10	2280
122313		47	0.14	<10	<10	72	<10	3000
122314		42	0.17	<10	<10	89	<10	2490
122315		40	0.16	<10	<10	79	<10	1600
122316		41	0.13	<10	<10	54	<10	3150
122317		57	0.13	<10	<10	44	<10	925
122318		71	0.17	<10	<10	63	<10	478
122319		74	0.16	<10	<10	50	<10	417
122320		66	0.14	<10	<10	40	<10	1635
122321		66	0.12	<10	<10	41	<10	240
122322		70	0.05	<10	<10	33	<10	286
122323		113	0.14	<10	<10	36	<10	508
122324		75	0.16	<10	<10	42	<10	224
122325		60	0.14	<10	<10	37	<10	213
122326		137	0.21	<10	<10	75	<10	333
122327		125	0.17	<10	<10	58	<10	381
122328		110	0.18	<10	<10	63	<10	241
122329		110	0.18	<10	<10	66	<10	293
122330		132	0.17	<10	<10	63	<10	166
122331		108	0.16	<10	<10	56	<10	365
122332		106	0.18	<10	<10	66	<10	163

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To: **NORTHGATE EXPLORATION**
KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

Date : 25-Jul-2003
Account: NORTEX

CERTIFICATE VA03026908

Project : 4090

P.O. No:

This report is for 25 DRILL CORE samples submitted to our lab in North Vancouver, BC, Canada on 11-Jul-2003.

The following have access to data associated with this certificate:

CARL EDMUNDS	RON KONST	

SAMPLE PREPARATION

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

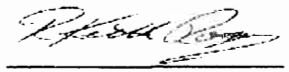
ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Au-AA23	Au 30g FA-AA finish	AAS
Cu-AA49	Assay Cu - HBr Digestion	AAS
ME-ICP41	34 Element Aqua Regia ICP-AES	ICP-AES

To: **NORTHGATE EXPLORATION**
ATTN: CARL EDMUNDS
KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

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

Signature:



ALS Chemex
EXCELLENCE IN ANALYTICAL CHEMISTRY
ALS Canada Ltd.
212 Brooksbank Avenue
North Vancouver BC V7J 2C1 Canada
Phone: 604 984 0221 Fax: 604 984 0218

To: **NORTHGATE EXPLORATION**
KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

Date : 25-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03026908

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	Au-AA23 Au ppm 0.005	Cu-AA49 Cu % 0.001	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1
122333		4.20	0.011	0.005	<0.2	1.58	3	<10	90	<0.5	<2	1.78	<0.5	9	42	30
122334		3.82	0.009	0.004	0.2	1.94	4	<10	120	<0.5	<2	1.73	1.4	9	47	31
122335		4.92	0.006	0.004	<0.2	1.65	3	<10	120	<0.5	2	1.63	<0.5	9	33	25
122336		5.32	<0.005	0.003	0.2	1.64	2	<10	60	<0.5	<2	1.49	<0.5	9	37	31
122337		5.18	<0.005	0.006	0.4	1.68	3	<10	60	<0.5	<2	1.24	4.1	9	39	41
122338		5.22	0.009	0.007	1.3	1.77	4	<10	110	<0.5	<2	1.32	5.4	9	37	67
122339		3.16	0.020	0.009	2.9	1.61	7	<10	50	<0.5	2	1.93	12.5	11	36	87
122340		6.48	0.024	0.009	2.6	1.85	15	<10	70	<0.5	<2	1.44	16.1	12	35	85
122341		4.54	0.016	0.007	<0.2	1.76	14	<10	40	<0.5	2	1.85	0.5	12	27	57
122342		3.80	0.028	0.005	0.3	1.57	9	<10	30	<0.5	2	1.87	0.5	12	26	44
122343		4.60	0.023	0.003	<0.2	1.92	3	<10	30	<0.5	2	2.18	<0.5	14	23	14
122344		5.78	0.018	0.006	0.4	1.92	<2	<10	20	<0.5	2	2.03	<0.5	14	24	55
122345		5.44	0.006	0.006	<0.2	2.07	4	<10	40	<0.5	2	2.10	<0.5	13	24	49
122346		5.36	<0.005	0.004	<0.2	1.60	<2	<10	80	<0.5	<2	1.97	<0.5	10	31	25
122347		5.66	<0.005	0.003	<0.2	1.36	2	<10	90	<0.5	2	1.99	<0.5	9	32	19
122348		5.50	<0.005	0.003	<0.2	1.39	4	<10	40	<0.5	<2	1.86	1.6	9	44	36
122349		5.08	<0.005	0.002	<0.2	1.47	3	<10	90	<0.5	<2	1.98	<0.5	9	46	28
122350		3.96	0.009	0.003	0.2	1.72	5	<10	70	<0.5	<2	2.34	2.3	8	35	33
122351		4.16	0.005	0.005	0.6	2.88	2	<10	30	<0.5	<2	3.30	<0.5	26	70	50
122352		5.08	0.120	0.048	1.5	1.31	7	<10	60	<0.5	2	4.31	4.4	8	14	548
122353		4.40	0.246	0.083	3.3	1.20	6	<10	50	<0.5	<2	3.02	9.2	10	26	931
122354		2.78	0.114	0.051	2.0	0.80	14	<10	20	<0.5	<2	8.07	9.9	9	18	634
122355		5.34	0.199	0.098	2.1	0.59	5	<10	50	<0.5	<2	3.57	1.8	10	20	1140
122356		4.80	0.366	0.114	3.5	0.76	7	<10	60	<0.5	3	4.23	5.5	10	25	1330
122357		4.10	1.080	0.083	4.1	1.85	8	<10	100	<0.5	2	2.19	3.6	7	23	956

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KEMESS MINE
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SMITHERS BC V0J 2N0

Date : 25-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03026908

Sample Description	Method Analyte Units LOR	ME-ICP41 Fe % 0.01	ME-ICP41 Ga ppm 10	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1
122333		2.87	10	<1	0.14	10	1.04	1475	2	0.04	2	940	14	0.33	<2	5
122334		2.50	10	<1	0.18	10	1.14	2020	2	0.02	3	890	100	0.62	<2	3
122335		2.58	10	<1	0.12	10	1.02	1405	2	0.04	2	920	18	0.61	<2	4
122336		2.74	10	<1	0.14	10	1.10	1670	2	0.04	3	960	39	0.39	<2	4
122337		2.41	10	<1	0.17	<10	1.12	2500	1	0.03	2	900	280	0.62	<2	3
122338		2.63	20	<1	0.16	10	1.14	2710	2	0.03	2	940	436	0.79	<2	4
122339		2.66	20	<1	0.24	<10	1.04	3470	3	0.01	2	890	873	1.34	<2	3
122340		2.98	20	<1	0.21	<10	1.14	3370	5	0.02	3	920	676	1.44	<2	3
122341		2.82	10	<1	0.10	<10	1.16	1595	<1	0.03	2	1250	27	0.92	<2	4
122342		3.01	10	<1	0.10	<10	1.10	1440	1	0.03	2	1240	29	1.34	<2	4
122343		3.70	10	<1	0.09	<10	1.52	1620	1	0.04	2	1270	7	0.39	<2	6
122344		3.64	10	<1	0.09	<10	1.48	1850	1	0.03	3	1250	36	0.85	<2	6
122345		3.72	10	<1	0.11	<10	1.62	1915	1	0.03	2	1270	18	0.45	<2	6
122346		3.32	10	<1	0.14	10	1.09	1410	2	0.05	2	950	6	0.15	<2	6
122347		3.29	10	<1	0.11	10	1.04	1220	3	0.06	2	900	3	0.09	<2	6
122348		2.72	10	<1	0.11	10	1.04	956	2	0.04	3	840	9	0.31	<2	5
122349		2.54	10	<1	0.14	10	1.04	1070	1	0.03	3	810	34	0.36	2	4
122350		2.99	10	<1	0.19	10	1.16	1350	4	0.04	4	900	136	0.98	<2	5
122351		5.89	30	<1	0.06	10	3.46	3360	1	0.04	60	1180	11	0.11	<2	21
122352		3.55	10	<1	0.18	10	0.95	1440	10	0.03	2	800	35	4.69	<2	3
122353		3.67	10	<1	0.19	10	1.01	1365	17	0.03	4	890	45	5.01	<2	3
122354		2.96	10	<1	0.28	10	0.48	868	30	0.01	1	680	174	8.17	<2	1
122355		3.75	<10	<1	0.20	10	0.36	546	7	0.03	2	790	19	5.79	<2	2
122356		3.92	10	<1	0.20	10	0.51	1100	13	0.02	2	820	37	5.54	<2	1
122357		4.75	20	<1	0.16	<10	1.63	2020	11	0.04	2	920	56	2.91	<2	5

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KEMESS MINE
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SMITHERS BC V0J 2N0

Date : 25-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03026908

Sample Description	Method Analyte Units LOR	ME-ICP41 Sr ppm 1	ME-ICP41 Ti % 0.01	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2
122333		104	0.17	<10	<10	58	<10	152
122334		107	0.15	<10	<10	43	<10	250
122335		102	0.16	<10	<10	48	<10	134
122336		92	0.17	<10	<10	54	<10	172
122337		73	0.14	<10	<10	40	<10	648
122338		78	0.17	<10	<10	46	<10	800
122339		52	0.13	<10	<10	35	<10	1740
122340		79	0.15	<10	<10	41	<10	2090
122341		164	0.19	<10	<10	50	<10	140
122342		155	0.20	<10	<10	49	<10	149
122343		156	0.22	<10	<10	73	<10	110
122344		158	0.21	<10	<10	69	<10	136
122345		154	0.20	<10	<10	73	<10	153
122346		89	0.19	<10	<10	75	<10	116
122347		80	0.19	<10	<10	78	<10	92
122348		110	0.16	<10	<10	58	<10	227
122349		148	0.13	<10	<10	51	<10	167
122350		130	0.14	<10	<10	52	<10	458
122351		70	0.48	<10	<10	188	<10	92
122352		211	0.12	<10	<10	45	<10	723
122353		162	0.04	<10	<10	32	<10	1410
122354		640	<0.01	<10	<10	19	<10	718
122355		208	0.02	<10	<10	25	<10	273
122356		233	0.02	<10	<10	36	<10	913
122357		144	0.12	<10	<10	69	<10	919

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CERTIFICATE VA03026909

Project : 4090

P.O. No:

This report is for 25 DRILL CORE samples submitted to our lab in North Vancouver, BC, Canada on 11-Jul-2003.

The following have access to data associated with this certificate:

CARL EDMUNDS	RON KONST	

SAMPLE PREPARATION

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

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Au-AA23	Au 30g FA-AA finish	AAS
Cu-AA49	Assay Cu - HBr Digestion	AAS
ME-ICP41	34 Element Aqua Regia ICP-AES	ICP-AES

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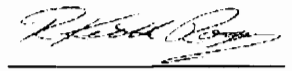
Signature: 

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CERTIFICATE OF ANALYSIS VA03026909

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	Au-AA23 Au ppm 0.005	Cu-AA49 Cu % 0.001	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1
122420		4.98	0.487	0.076	3.5	1.36	18	<10	110	<0.5	3	2.13	6.2	10	42	789
122421		6.36	0.768	0.119	5.0	1.64	15	<10	80	<0.5	4	2.23	5.4	10	45	1200
122422		4.56	0.818	0.069	3.4	1.66	9	<10	140	<0.5	2	1.56	4.0	10	47	723
122423		4.68	1.710	0.151	7.0	1.70	7	<10	100	<0.5	<2	1.68	5.0	10	41	1660
122424		5.42	1.040	0.156	6.4	1.54	4	<10	230	<0.5	<2	1.18	5.1	9	46	1550
122425		4.92	0.658	0.140	4.4	1.69	14	<10	60	0.5	<2	1.02	6.1	9	41	1435
122426		5.22	0.426	0.084	3.7	1.67	7	<10	130	<0.5	<2	1.50	5.7	8	44	920
122427		5.54	0.754	0.097	3.6	1.84	11	<10	180	0.5	<2	1.74	5.4	9	41	1035
122428		4.92	0.803	0.073	2.4	1.60	8	<10	180	0.5	2	1.80	4.3	10	39	847
122429		4.36	0.662	0.107	5.4	1.30	5	<10	130	<0.5	3	1.97	3.6	11	44	1085
122430		4.70	0.777	0.143	11.2	1.17	13	<10	50	<0.5	3	1.18	13.0	11	47	1560
122431		4.50	0.554	0.118	7.1	1.36	10	<10	100	<0.5	<2	1.72	5.1	9	45	1265
122432		2.72	0.532	0.082	5.6	1.10	14	<10	90	<0.5	<2	1.63	2.8	12	43	851
122433		4.12	0.437	0.093	5.0	1.46	11	<10	60	<0.5	<2	4.51	14.3	8	36	940
122434		4.04	0.395	0.087	3.6	1.76	2	<10	180	<0.5	<2	2.83	8.2	9	54	887
122435		3.68	0.365	0.090	3.9	1.86	6	<10	140	<0.5	<2	2.98	9.0	9	51	1025
122436		5.20	0.407	0.084	5.3	1.68	6	<10	80	<0.5	<2	3.16	6.6	9	41	917
122437		6.06	0.502	0.025	6.5	1.22	14	<10	60	<0.5	2	4.22	24.2	10	56	295
122438		4.98	0.318	0.025	4.6	1.24	4	<10	70	<0.5	<2	4.38	21.1	13	37	283
122439		4.76	0.328	0.022	2.7	1.75	11	<10	70	<0.5	2	3.50	14.5	6	39	256
122440		4.46	0.297	0.034	2.5	1.52	8	<10	80	<0.5	<2	3.66	15.3	9	38	388
122441		4.70	0.028	0.004	0.7	1.20	<2	<10	40	<0.5	<2	2.19	1.6	10	62	42
122442		5.04	<0.005	0.003	0.3	1.08	<2	<10	60	<0.5	<2	2.04	0.5	9	71	26
122443		7.26	<0.005	0.002	<0.2	1.14	<2	<10	150	<0.5	<2	1.95	0.8	9	59	19
122444		5.74	<0.005	0.002	0.3	1.12	<2	<10	40	<0.5	2	2.09	0.7	10	59	21

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Sample Description	Method Analyte Units LOR	ME-ICP41 Fe % 0.01	ME-ICP41 Ga ppm 10	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1
122420		3.26	<10	1	0.36	10	0.71	3840	8	0.03	1	950	100	2.35	<2	2
122421		4.58	10	<1	0.35	10	0.87	3880	6	0.03	1	900	106	2.80	<2	3
122422		4.78	10	<1	0.30	10	0.87	3000	7	0.03	2	980	48	2.00	<2	3
122423		5.36	10	<1	0.35	10	0.77	3000	9	0.03	1	990	47	1.77	<2	3
122424		4.58	10	<1	0.35	20	0.79	3340	11	0.03	2	1140	75	1.73	<2	2
122425		4.44	<10	<1	0.56	20	0.54	1510	10	0.02	1	1240	160	2.76	<2	2
122426		4.81	10	<1	0.37	20	0.83	2560	12	0.03	1	1170	83	1.99	<2	2
122427		4.98	10	1	0.45	10	0.80	2650	10	0.03	1	1140	98	2.07	2	3
122428		4.78	<10	<1	0.36	10	0.72	2160	15	0.03	2	1150	57	2.12	<2	3
122429		4.48	<10	<1	0.43	10	0.40	1915	10	0.02	1	1090	66	3.29	<2	2
122430		5.32	<10	<1	0.34	10	0.52	1475	12	0.02	1	960	145	4.68	<2	1
122431		4.73	<10	<1	0.46	20	0.40	1850	29	0.02	1	1160	62	3.75	<2	2
122432		5.10	<10	<1	0.35	10	0.45	1675	17	0.02	3	1130	86	4.43	<2	1
122433		4.67	<10	<1	0.30	10	0.83	2700	11	0.02	1	1000	68	4.67	<2	2
122434		4.26	10	1	0.28	10	0.99	3410	10	0.03	2	920	33	2.36	2	2
122435		4.39	10	1	0.30	10	1.01	3500	10	0.03	1	940	35	2.51	<2	3
122436		4.14	10	<1	0.27	10	1.00	4160	11	0.02	2	860	58	3.13	<2	2
122437		4.98	<10	<1	0.39	10	0.68	845	23	0.01	1	930	134	7.73	<2	1
122438		4.12	<10	<1	0.30	10	0.90	1025	44	0.01	2	900	322	6.91	<2	1
122439		4.57	<10	<1	0.34	10	1.20	1555	24	0.02	1	960	106	5.84	<2	2
122440		3.89	<10	<1	0.33	10	1.13	1110	37	0.01	2	820	201	5.79	<2	1
122441		3.01	10	1	0.19	10	0.83	1180	3	0.04	4	610	14	0.34	<2	5
122442		2.67	10	<1	0.18	10	0.74	1145	4	0.03	4	520	6	0.09	<2	4
122443		2.70	10	<1	0.18	10	0.79	1130	2	0.04	4	530	3	0.06	<2	5
122444		2.87	10	1	0.15	10	0.85	1220	3	0.03	4	570	5	0.04	<2	5

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Date : 25-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03026909

Sample Description	Method Analyte Units LOR	ME-ICP41 Sr ppm 1	ME-ICP41 Ti % 0.01	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2
122420		120	<0.01	<10	<10	29	<10	780
122421		99	0.01	<10	<10	38	<10	663
122422		45	<0.01	<10	<10	41	<10	591
122423		63	<0.01	<10	<10	45	<10	668
122424		58	<0.01	<10	<10	37	<10	726
122425		73	<0.01	<10	<10	24	<10	765
122426		42	<0.01	<10	<10	42	<10	817
122427		49	<0.01	<10	<10	42	<10	758
122428		59	<0.01	<10	<10	38	<10	641
122429		65	<0.01	<10	<10	22	<10	469
122430		88	<0.01	<10	<10	20	<10	1590
122431		51	<0.01	<10	<10	19	<10	679
122432		87	<0.01	<10	<10	19	<10	353
122433		313	0.02	<10	<10	36	<10	1680
122434		215	0.01	<10	<10	43	<10	1020
122435		228	0.01	<10	<10	44	<10	1070
122436		219	<0.01	<10	<10	37	<10	802
122437		283	<0.01	<10	<10	20	<10	2800
122438		321	<0.01	<10	<10	21	<10	2460
122439		226	<0.01	<10	<10	31	<10	1660
122440		287	<0.01	<10	<10	24	<10	1675
122441		51	0.03	<10	<10	78	<10	238
122442		45	0.01	<10	<10	66	<10	126
122443		52	0.04	<10	<10	72	<10	158
122444		43	0.02	<10	<10	77	<10	158

ALS Chemex
EXCELLENCE IN ANALYTICAL CHEMISTRY
ALS Canada Ltd.
212 Brooksbank Avenue
North Vancouver BC V7J 2C1 Canada
Phone: 604 984 0221 Fax: 604 984 0218

To: **NORTHGATE EXPLORATION**
KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

Date : 25-Jul-2003
Account: NORTEX

CERTIFICATE VA03026970

Project : 4090

P.O. No:

This report is for 25 DRILL CORE samples submitted to our lab in North Vancouver, BC, Canada on 11-Jul-2003.

The following have access to data associated with this certificate:

CARL EDMUNDS	RON KONST	

SAMPLE PREPARATION

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

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Au-AA23	Au 30g FA-AA finish	AAS
Cu-AA49	Assay Cu - HBr Digestion	AAS
ME-ICP41	34 Element Aqua Regia ICP-AES	ICP-AES

To: **NORTHGATE EXPLORATION**
ATTN: CARL EDMUNDS
KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

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

Signature:

ALS Chemex

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SMITHERS BC V0J 2N0

Date : 25-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03026970

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	Au-AA23 Au ppm 0.005	Cu-AA49 Cu % 0.001	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1
122358		5.22	0.639	0.077	3.2	1.74	10	<10	50	<0.5	3	2.14	3.0	7	46	902
122359		5.34	0.808	0.090	3.6	1.51	10	<10	50	<0.5	<2	1.73	3.3	10	46	1055
122360		4.66	0.859	0.113	4.7	1.58	5	<10	60	<0.5	4	3.64	7.0	7	47	1300
122361		5.34	0.754	0.092	3.5	1.80	5	<10	80	<0.5	<2	2.74	3.2	8	39	1065
122362		4.88	0.597	0.065	3.3	1.68	13	<10	70	<0.5	3	2.34	9.2	9	43	756
122363		4.82	0.644	0.091	3.9	1.40	7	<10	80	<0.5	3	2.84	1.2	8	48	1075
122364		6.08	0.544	0.056	0.9	1.51	10	<10	110	<0.5	2	2.45	4.0	7	47	656
122365		2.22	1.170	0.139	1.9	0.92	11	<10	70	<0.5	<2	5.36	1.7	9	39	1560
122366		3.66	0.873	0.097	2.3	1.04	2	<10	90	<0.5	<2	3.45	2.5	7	51	1095
122367		3.94	0.461	0.121	3.3	1.36	19	<10	70	<0.5	<2	2.51	0.8	9	54	1350
122368		5.28	0.398	0.070	0.9	2.14	5	<10	80	<0.5	4	2.98	<0.5	4	26	800
122369		3.86	0.656	0.036	3.0	0.57	10	<10	50	<0.5	<2	2.78	0.6	7	54	410
122370		5.26	0.878	0.077	2.6	1.49	14	<10	70	<0.5	3	2.47	<0.5	10	43	864
122371		4.28	0.504	0.058	1.4	1.34	5	<10	60	<0.5	2	2.27	3.8	8	39	656
122372		3.42	0.594	0.071	2.1	1.52	10	<10	40	<0.5	<2	2.36	4.9	9	29	801
122373		3.76	0.847	0.086	2.2	1.86	14	<10	30	<0.5	3	1.66	4.1	8	47	983
122374		2.54	0.018	0.005	<0.2	3.72	16	10	60	<0.5	2	4.76	<0.5	25	14	67
122375		5.06	0.489	0.071	3.6	1.50	29	<10	60	<0.5	<2	2.48	4.3	11	45	745
122376		5.70	0.744	0.092	2.1	1.64	4	<10	90	<0.5	<2	2.50	3.4	8	55	946
122377		5.68	0.560	0.087	4.8	1.66	15	<10	60	<0.5	2	3.00	1.3	7	36	861
122378		4.90	0.432	0.078	3.4	2.03	4	<10	120	<0.5	<2	1.89	4.6	7	50	761
122379		5.28	0.911	0.141	4.4	1.68	6	<10	80	<0.5	2	1.96	3.2	10	58	1450
122380		5.06	0.301	0.064	4.2	1.49	5	<10	70	<0.5	2	2.58	1.6	8	45	720
122381		5.26	0.309	0.098	10.5	1.08	57	<10	60	<0.5	4	3.17	26.4	8	47	1120
122400		5.24	0.537	0.061	4.9	1.34	11	<10	30	<0.5	2	2.97	3.8	10	54	686

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To: **NORTHGATE EXPLORATION**
KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

Date : 25-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03026970

Sample Description	Method / Analyte / Units / LOR	ME-ICP41 Fe % 0.01	ME-ICP41 Ga ppm 10	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1
122358		4.87	10	<1	0.13	<10	1.64	1505	15	0.04	3	1120	23	3.26	<2	4
122359		5.51	10	<1	0.18	10	1.44	1435	13	0.05	2	950	84	4.97	2	3
122360		4.30	20	<1	0.13	<10	1.35	1980	15	0.03	3	820	112	4.35	<2	3
122361		4.73	20	<1	0.12	<10	1.61	1645	17	0.04	2	1020	88	2.80	<2	5
122362		5.37	20	<1	0.15	<10	1.42	2190	15	0.03	3	990	95	3.69	<2	4
122363		5.19	10	<1	0.13	10	1.02	1365	13	0.03	2	740	9	3.07	<2	3
122364		5.39	10	<1	0.20	<10	1.11	1230	11	0.03	3	950	32	2.81	<2	3
122365		5.06	10	<1	0.17	20	0.59	787	15	0.02	2	690	17	4.95	<2	2
122366		4.84	10	<1	0.16	10	0.71	994	20	0.03	3	720	14	2.79	<2	2
122367		4.33	10	<1	0.27	10	0.84	1360	16	0.02	2	890	8	3.20	<2	2
122368		5.28	10	<1	0.29	10	1.66	1370	21	0.01	2	940	7	2.80	<2	2
122369		3.64	<10	<1	0.30	10	0.18	126	24	0.01	2	980	78	5.54	<2	<1
122370		5.10	10	<1	0.39	10	0.89	938	21	0.02	2	1070	27	4.09	<2	1
122371		4.51	10	<1	0.22	10	1.00	1165	19	0.03	2	890	29	2.07	<2	3
122372		5.21	10	<1	0.16	10	1.22	1595	34	0.04	2	1020	30	2.12	<2	4
122373		4.37	20	<1	0.18	10	1.47	1870	16	0.04	2	950	26	1.60	<2	4
122374		7.15	20	<1	0.09	10	2.39	1930	1	0.07	10	1460	2	0.19	<2	21
122375		4.54	10	<1	0.31	10	0.98	1875	10	0.02	2	950	122	4.04	<2	2
122376		4.34	10	<1	0.22	10	1.16	1925	17	0.04	2	910	25	1.93	<2	3
122377		5.43	20	<1	0.26	10	1.10	2270	11	0.02	2	890	30	4.18	<2	2
122378		4.95	20	<1	0.16	10	1.60	2740	10	0.05	2	920	73	1.56	<2	4
122379		5.45	20	<1	0.16	10	1.35	2160	15	0.04	3	970	53	2.69	<2	3
122380		4.11	20	<1	0.13	10	1.22	2620	13	0.03	3	1080	60	3.28	<2	3
122381		3.94	20	<1	0.29	10	0.61	3540	15	0.02	2	1060	1635	4.74	<2	2
122400		4.68	10	<1	0.38	10	0.78	1395	14	0.01	2	930	44	5.32	<2	1

ALS Chemex

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KEMESS MINE
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SMITHERS BC V0J 2N0

Date : 25-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03026970

Sample Description	Method / Analyte / Units / LOR	ME-ICP41 Sr ppm 1	ME-ICP41 Ti % 0.01	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2
122358		108	0.13	<10	<10	72	<10	809
122359		108	0.08	<10	<10	56	<10	635
122360		235	0.12	<10	<10	55	<10	1155
122361		158	0.17	<10	<10	74	<10	725
122362		150	0.13	<10	<10	67	<10	1290
122363		170	0.11	<10	<10	69	<10	342
122364		152	0.13	<10	<10	71	<10	1020
122365		331	0.05	<10	<10	51	<10	462
122366		234	0.03	<10	<10	63	<10	543
122367		190	<0.01	<10	<10	37	<10	250
122368		214	0.01	<10	<10	49	<10	228
122369		298	<0.01	<10	<10	8	<10	118
122370		170	<0.01	<10	<10	35	<10	184
122371		130	0.06	<10	<10	73	<10	1015
122372		130	0.13	<10	<10	79	<10	1175
122373		89	0.17	<10	<10	71	<10	1005
122374		122	0.51	<10	<10	270	10	201
122375		180	0.05	<10	<10	39	<10	963
122376		159	0.04	<10	<10	63	<10	865
122377		180	0.02	<10	<10	42	<10	344
122378		120	0.05	<10	<10	71	<10	922
122379		122	0.07	<10	<10	69	<10	665
122380		156	0.08	<10	<10	55	<10	315
122381		150	0.09	<10	<10	29	<10	3160
122400		232	0.01	<10	<10	25	<10	614

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SMITHERS BC V0J 2N0

Date : 25-Jul-2003
Account: NORTEX

CERTIFICATE VA03026971

Project : 4090

P.O. No:

This report is for 25 DRILL CORE samples submitted to our lab in North Vancouver, BC, Canada on 11-Jul-2003.

The following have access to data associated with this certificate:

CARL EDMUNDS	RON KONST	

SAMPLE PREPARATION

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

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Au-AA23	Au 30g FA-AA finish	AAS
Cu-AA49	Assay Cu - HBr Digestion	AAS
ME-ICP41	34 Element Aqua Regia ICP-AES	ICP-AES

To: **NORTHGATE EXPLORATION**
ATTN: CARL EDMUNDS
KEMESS MINE
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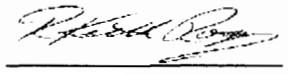
This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

Signature: 

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Date : 25-Jul-2003
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Project : 4090

CERTIFICATE OF ANALYSIS VA03026971

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	Au-AA23 Au ppm 0.005	Cu-AA49 Cu % 0.001	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1
122382		3.58	0.208	0.006	1.0	0.38	3	<10	70	<0.5	2	3.12	<0.5	2	96	77
122383		6.18	0.440	0.076	5.1	1.36	15	<10	60	<0.5	2	2.37	3.9	11	58	876
122384		4.70	0.164	0.107	5.9	1.44	12	<10	100	<0.5	<2	2.64	2.1	7	55	1225
122385		4.30	0.301	0.077	4.9	1.55	18	<10	60	<0.5	<2	2.14	2.1	10	53	906
122386		4.72	0.139	0.058	5.5	1.26	13	<10	80	<0.5	<2	2.46	12.0	8	66	684
122387		4.48	0.182	0.046	4.0	1.29	21	<10	80	<0.5	3	2.64	7.6	6	60	516
122388		5.20	0.220	0.055	5.3	1.14	8	<10	80	<0.5	3	1.94	8.1	9	92	626
122389		5.12	0.322	0.055	4.0	1.24	9	<10	70	<0.5	<2	2.26	4.0	8	68	639
122390		5.30	0.627	0.114	4.6	1.22	4	<10	80	<0.5	3	2.18	7.9	9	60	1300
122391		5.20	0.556	0.116	6.9	1.25	7	<10	90	<0.5	3	2.04	3.1	7	41	1280
122392		5.48	0.172	0.052	4.8	1.44	18	<10	80	<0.5	<2	2.09	2.8	13	60	610
122393		4.92	0.211	0.058	4.2	1.41	14	<10	100	<0.5	3	2.20	2.0	9	52	663
122394		4.62	0.155	0.041	2.5	1.62	6	<10	140	<0.5	<2	1.91	7.2	7	50	472
122395		1.90	0.245	0.049	1.0	1.92	4	<10	100	<0.5	2	2.00	1.3	7	32	536
122396		5.08	0.707	0.071	1.8	0.95	3	<10	60	<0.5	<2	3.68	3.4	8	37	812
122397		5.10	0.639	0.052	1.1	1.20	5	<10	70	<0.5	4	3.27	7.1	9	28	626
122398		5.28	0.475	0.035	2.2	1.56	8	<10	80	<0.5	4	2.65	7.1	10	36	393
122399		6.26	0.460	0.044	5.9	1.49	8	<10	50	<0.5	2	2.39	4.5	11	32	509
122401		4.86	0.847	0.080	3.6	2.26	7	<10	160	<0.5	<2	2.70	7.8	9	46	968
122402		4.90	1.245	0.085	5.4	1.94	4	<10	130	<0.5	2	2.63	6.7	7	33	977
122403		4.76	0.780	0.074	3.8	1.46	6	<10	140	<0.5	2	2.42	9.4	8	51	852
122404		5.10	1.170	0.075	2.4	1.82	2	<10	180	<0.5	<2	2.07	11.7	7	36	807
122405		5.26	1.110	0.091	3.1	1.36	3	<10	90	<0.5	3	2.51	8.4	11	55	941
122406		5.34	0.406	0.064	2.0	1.56	2	<10	100	<0.5	<2	1.68	7.1	9	37	646
122407		5.24	0.623	0.075	3.3	1.57	5	<10	150	<0.5	2	1.85	18.1	9	45	773

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Date : 25-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03026971

Sample Description	Method Analyte Units LOR	ME-ICP41 Fe % 0.01	ME-ICP41 Ga ppm 10	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1
122382		1.28	<10	<1	0.26	<10	0.03	878	17	0.01	2	600	29	3.55	<2	<1
122383		4.28	20	<1	0.41	<10	0.68	3500	10	0.02	2	890	106	4.21	<2	1
122384		4.44	20	<1	0.22	<10	0.88	3060	11	0.03	2	810	38	3.51	<2	2
122385		4.98	20	<1	0.20	<10	1.08	2790	9	0.03	2	860	32	3.47	<2	2
122386		4.12	20	<1	0.12	<10	0.84	2820	10	0.03	2	770	301	3.74	<2	2
122387		3.95	20	<1	0.14	<10	0.85	2920	12	0.04	2	830	173	3.54	<2	2
122388		4.40	20	<1	0.14	<10	0.78	2150	9	0.04	3	750	252	3.17	<2	2
122389		4.74	10	<1	0.15	<10	0.82	2040	9	0.04	3	700	41	3.21	<2	2
122390		5.21	10	<1	0.14	<10	0.83	1660	9	0.04	2	780	20	2.29	<2	2
122391		4.89	20	<1	0.14	<10	0.91	2150	9	0.03	2	830	34	2.98	<2	2
122392		5.64	20	<1	0.16	<10	0.98	2440	14	0.03	2	720	76	3.32	<2	2
122393		4.20	20	<1	0.18	<10	0.85	2320	14	0.03	2	800	45	2.95	<2	2
122394		5.91	20	<1	0.15	<10	1.06	2660	11	0.04	2	930	150	1.78	<2	3
122395		3.62	20	<1	0.13	10	1.66	2370	10	0.04	2	930	23	2.04	<2	3
122396		2.80	10	<1	0.20	10	0.61	790	21	0.03	2	850	20	3.85	<2	2
122397		3.21	10	<1	0.21	10	0.83	862	16	0.03	2	760	25	3.75	<2	3
122398		3.67	10	<1	0.25	10	1.19	1600	11	0.04	2	990	100	3.61	<2	3
122399		4.54	<10	<1	0.29	10	0.91	1550	15	0.02	1	1040	99	4.71	<2	2
122401		3.89	10	1	0.25	10	1.60	2340	19	0.04	1	900	42	2.66	<2	3
122402		3.76	10	<1	0.17	10	1.45	1970	21	0.04	1	1020	88	2.59	<2	4
122403		3.62	10	<1	0.26	10	0.97	1615	19	0.04	1	890	102	2.91	<2	3
122404		3.25	10	<1	0.21	10	1.33	1785	27	0.05	1	840	52	2.04	<2	4
122405		3.81	<10	<1	0.28	10	0.90	1165	22	0.04	1	800	84	4.20	<2	2
122406		3.29	10	<1	0.29	10	1.15	1490	12	0.04	<1	960	62	2.91	<2	3
122407		3.29	10	1	0.29	10	1.15	2010	19	0.05	1	960	190	2.53	<2	3

ALS Chemex
EXCELLENCE IN ANALYTICAL CHEMISTRY
ALS Canada Ltd.
212 Brooksbank Avenue
North Vancouver BC V7J 2C1 Canada
Phone: 604 984 0221 Fax: 604 984 0218

To: **NORTHGATE EXPLORATION**
KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

Date : 25-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03026971

Sample Description	Method Analyte Units LOR	ME-ICP41 Sr ppm 1	ME-ICP41 Ti % 0.01	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2
122382		259	0.05	<10	<10	5	<10	30
122383		160	0.08	<10	<10	26	<10	487
122384		188	0.07	<10	<10	37	<10	387
122385		151	0.06	<10	<10	40	<10	373
122386		172	0.08	<10	<10	34	<10	1520
122387		158	0.10	<10	<10	40	<10	967
122388		110	0.10	<10	<10	44	<10	1020
122389		127	0.10	<10	<10	43	<10	583
122390		128	0.11	<10	<10	53	<10	1150
122391		126	0.09	<10	<10	49	<10	513
122392		139	0.07	<10	<10	48	<10	437
122393		142	0.07	<10	<10	37	<10	328
122394		124	0.07	<10	<10	61	<10	974
122395		144	0.03	<10	<10	58	<10	358
122396		227	0.06	<10	<10	42	<10	638
122397		214	0.10	<10	<10	48	<10	1205
122398		156	0.03	<10	<10	45	<10	1465
122399		176	<0.01	<10	<10	28	<10	828
122401		230	0.01	<10	<10	54	<10	1870
122402		158	0.03	<10	<10	52	<10	1790
122403		166	0.01	<10	<10	43	<10	1315
122404		114	0.02	<10	<10	48	<10	1770
122405		201	<0.01	<10	<10	32	<10	1155
122406		102	<0.01	<10	<10	34	<10	1050
122407		122	<0.01	<10	<10	43	<10	2580

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To: **NORTHGATE EXPLORATION**
KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

Date : 24-Jul-2003
Account: NORTEX

CERTIFICATE VA03025872

Project : 4090

P.O. No:

This report is for 50 DRILL CORE samples submitted to our lab in North Vancouver, BC, Canada on 15-Jul-2003.

The following have access to data associated with this certificate:

CARL EDMUNDS	RON KONST	

SAMPLE PREPARATION

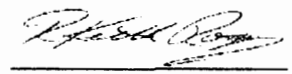
ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-22	Sample login - Rcd w/o BarCode
CRU-31	Fine crushing - 70% <2mm
SPL-21	Split sample - riffle splitter
PUL-31	Pulverize split to 85% <75 um

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Au-AA23	Au 30g FA-AA finish	AAS
Cu-AA49	Assay Cu - HBr Digestion	AAS
ME-ICP41	34 Element Aqua Regia ICP-AES	ICP-AES

To: **NORTHGATE EXPLORATION**
ATTN: CARL EDMUNDS
KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

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

Signature: 

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PO BOX 3519
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Date : 24-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03025872

Sample Description	Method / Analyte / Units / LOR	WEI-21 Recvd Wt kg 0.02	Au-AA23 Au ppm 0.005	Cu-AA49 Cu % 0.001	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1
122445		5.94	<0.005	0.002	<0.2	0.11	16	<10	460	<0.5	3	0.03	<0.5	2	12	12
122446		4.62	<0.005	0.002	<0.2	0.14	6	<10	400	<0.5	2	0.03	<0.5	1	18	13
122447		2.98	<0.005	0.005	<0.2	0.12	5	<10	70	<0.5	2	0.02	<0.5	5	21	47
122448		8.66	<0.005	0.003	<0.2	0.10	12	<10	20	<0.5	<2	0.01	2.4	8	18	34
122449		8.64	0.007	0.008	<0.2	0.07	8	<10	120	<0.5	2	0.02	9.3	10	18	71
122450		6.42	0.009	0.004	0.2	0.10	15	<10	50	<0.5	4	0.02	7.0	13	14	35
122451		4.08	0.007	0.005	<0.2	0.09	5	<10	20	<0.5	<2	0.02	5.5	8	13	41
122452		9.20	0.030	0.026	2.1	1.31	9	<10	150	<0.5	<2	0.45	4.1	9	41	247
122453		5.66	0.067	0.030	2.1	1.28	15	<10	270	<0.5	<2	0.74	5.4	7	54	284
122454		4.30	0.024	0.004	0.8	1.21	9	<10	180	<0.5	<2	1.68	1.2	8	43	35
122455		5.46	0.025	0.007	0.9	1.31	8	<10	100	<0.5	<2	1.12	1.4	7	49	60
122456		5.26	0.012	0.022	1.8	1.31	6	<10	110	<0.5	<2	1.18	7.0	8	45	198
122457		4.40	0.016	0.019	3.0	1.47	2	<10	80	<0.5	<2	1.21	12.2	8	49	184
122458		3.70	<0.005	0.004	0.5	1.38	2	<10	60	<0.5	<2	1.17	1.5	7	49	40
122459		5.30	0.005	0.009	1.0	1.42	<2	<10	60	<0.5	<2	0.80	4.8	7	46	90
122460		4.26	0.009	0.006	0.9	1.35	<2	<10	260	<0.5	<2	0.88	6.2	8	39	58
122461		3.46	0.005	0.012	1.0	1.50	2	<10	100	<0.5	<2	0.78	5.6	10	46	112
122462		2.54	<0.005	0.011	1.1	1.39	2	<10	190	<0.5	<2	0.86	9.4	10	44	102
122463		1.94	0.008	0.018	2.0	1.87	3	<10	250	<0.5	<2	0.69	24.5	7	45	174
122464		0.88	0.009	0.024	2.3	1.54	4	<10	90	<0.5	2	0.53	19.3	9	33	225
122465		1.52	0.012	0.010	0.9	1.27	17	<10	40	<0.5	10	0.06	15.3	13	11	89
122466		2.00	0.013	0.005	2.0	1.30	8	<10	40	<0.5	9	0.20	16.0	19	25	37
122467		3.32	0.013	0.005	0.5	1.59	15	<10	80	0.5	3	0.16	1.9	13	27	43
122468		1.24	0.026	0.003	0.5	0.92	17	<10	50	<0.5	4	0.16	<0.5	14	26	24
122475		2.12	0.009	0.028	2.2	1.79	4	<10	140	<0.5	<2	0.66	20.1	9	43	275
122588		4.24	0.022	0.001	0.7	1.23	<2	<10	70	<0.5	<2	2.61	0.7	13	27	7
122589		4.06	0.012	0.001	0.7	1.36	3	<10	80	<0.5	<2	3.56	0.9	8	27	5
122590		4.00	0.014	0.002	0.8	1.26	3	<10	80	<0.5	2	2.88	0.8	12	25	10
122591		3.76	0.015	0.002	1.4	1.40	3	<10	60	<0.5	<2	2.44	1.0	13	27	12
122592		3.72	0.018	0.001	1.5	1.24	3	<10	80	<0.5	2	2.89	0.7	13	21	4
122593		4.14	0.015	0.002	1.6	1.20	2	<10	80	<0.5	3	2.60	0.8	15	10	5
122594		3.82	0.015	0.003	1.4	1.43	4	<10	60	<0.5	3	2.28	0.8	18	23	17
122595		4.42	0.011	0.007	1.5	0.84	4	<10	70	<0.5	2	4.59	0.8	10	34	61
122596		4.10	0.011	0.001	1.6	1.32	7	<10	70	<0.5	3	3.56	0.6	14	23	8
122597		2.52	0.008	0.001	0.3	0.46	12	<10	60	<0.5	<2	4.40	0.8	10	42	5
122598		2.70	0.008	0.003	0.2	2.17	6	<10	80	<0.5	2	1.79	1.1	12	23	13
122599		3.26	0.010	0.001	0.3	0.58	15	<10	60	<0.5	2	3.50	0.6	10	19	13
122600		3.52	0.014	0.001	0.3	0.71	9	<10	60	<0.5	<2	3.85	1.1	14	31	10
122601		3.20	0.009	0.002	1.2	1.51	13	<10	80	<0.5	2	2.44	0.8	15	20	12
122602		3.72	0.007	0.001	1.0	1.49	8	<10	90	<0.5	4	1.70	0.5	12	24	8

ALS Chemex
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To: **NORTHGATE EXPLORATION**
KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

Date : 24-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03025872

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	Au-AA23 Au ppm 0.005	Cu-AA49 Cu % 0.001	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1
122603		3.76	0.014	0.001	1.0	1.34	10	<10	80	<0.5	3	2.52	1.3	13	31	8
122604		3.30	0.016	0.005	1.5	1.43	13	<10	90	<0.5	3	1.02	5.4	13	32	45
122605		3.64	0.006	0.004	1.1	1.65	2	<10	230	<0.5	<2	1.32	0.5	8	45	48
122606		3.60	0.008	0.004	0.7	1.40	<2	<10	220	<0.5	<2	1.14	<0.5	8	45	27
122607		3.74	<0.005	0.005	0.7	1.60	<2	<10	200	<0.5	<2	1.06	<0.5	9	47	55
122608		3.82	0.010	0.003	0.7	1.65	5	<10	370	<0.5	<2	1.75	0.6	8	54	42
122609		3.46	0.014	0.002	0.8	1.34	9	<10	140	<0.5	<2	1.52	<0.5	10	45	17
122610		4.92	<0.005	0.005	0.5	1.63	5	<10	180	<0.5	<2	1.23	<0.5	8	49	48
122611		3.62	0.014	0.002	1.0	1.57	6	<10	200	<0.5	<2	2.09	0.6	8	40	17
122612		4.46	0.025	0.003	1.4	1.66	16	<10	200	<0.5	2	1.32	0.6	11	46	25

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Date : 24-Jul-2003
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Project : 4090

CERTIFICATE OF ANALYSIS VA03025872

Sample Description	Method Analyte Units LOR	ME-ICP41 Fe % 0.01	ME-ICP41 Ga ppm 10	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1
122445		1.82	<10	<1	0.12	<10	<0.01	9	4	0.01	2	430	15	0.25	<2	<1
122446		0.83	<10	<1	0.04	<10	<0.01	6	2	0.01	1	230	10	0.20	<2	<1
122447		1.77	<10	<1	0.03	<10	<0.01	<5	1	0.01	2	140	16	1.58	<2	1
122448		2.84	<10	<1	<0.01	<10	<0.01	<5	1	<0.01	1	40	8	2.73	<2	<1
122449		3.13	<10	<1	<0.01	<10	<0.01	<5	2	<0.01	<1	40	4	3.03	<2	1
122450		3.63	<10	<1	<0.01	<10	<0.01	<5	4	<0.01	<1	50	9	3.56	<2	1
122451		1.62	<10	<1	0.01	<10	<0.01	<5	5	<0.01	1	50	9	1.52	<2	<1
122452		2.53	10	<1	0.23	10	0.80	1390	4	0.03	4	750	418	1.21	<2	3
122453		2.21	<10	<1	0.24	10	0.70	1390	3	0.04	4	640	479	0.79	<2	2
122454		2.33	<10	<1	0.25	10	0.83	2040	5	0.02	3	640	95	0.72	<2	2
122455		2.15	<10	<1	0.21	10	0.85	2140	5	0.04	4	650	166	0.59	<2	3
122456		2.11	<10	<1	0.18	10	0.83	3020	3	0.03	3	640	590	0.73	<2	3
122457		2.17	<10	<1	0.27	10	0.84	4200	1	0.04	4	650	1325	0.99	<2	3
122458		2.06	<10	<1	0.15	10	0.86	2470	1	0.04	3	660	80	0.35	<2	3
122459		2.23	<10	<1	0.16	10	0.87	2000	1	0.05	4	690	203	0.33	<2	3
122460		2.26	<10	<1	0.15	10	0.88	2050	2	0.04	4	700	233	0.41	<2	3
122461		2.50	<10	<1	0.23	10	0.89	2810	3	0.04	4	740	195	0.45	<2	3
122462		2.55	<10	<1	0.23	10	0.83	3130	2	0.02	3	730	216	0.62	<2	3
122463		2.44	<10	<1	0.26	10	0.94	2540	1	0.06	4	1000	192	1.01	<2	3
122464		2.90	<10	<1	0.19	10	1.13	2710	1	0.03	3	740	112	1.63	<2	3
122465		5.37	<10	<1	0.20	<10	1.24	1700	2	0.01	4	290	30	5.04	<2	2
122466		7.01	<10	<1	0.30	<10	0.87	1545	5	0.01	3	490	64	6.62	<2	2
122467		4.71	<10	<1	0.28	10	1.29	1065	1	0.01	4	520	63	4.47	<2	3
122468		5.15	<10	<1	0.24	10	0.34	537	2	0.01	3	550	32	5.06	<2	3
122475		2.80	10	<1	0.23	10	1.06	2850	3	0.04	3	870	91	1.00	<2	4
122588		4.25	<10	<1	0.32	10	0.90	723	1	0.01	4	1110	10	6.10	<2	1
122589		3.35	<10	<1	0.34	10	1.01	969	4	0.01	2	1040	8	6.02	<2	1
122590		3.89	<10	<1	0.33	10	0.90	857	42	0.01	3	1040	13	5.83	<2	1
122591		4.03	<10	<1	0.33	<10	0.99	1275	3	0.03	3	1060	26	5.13	<2	2
122592		3.60	<10	<1	0.33	<10	0.77	1350	4	0.02	3	1040	22	5.16	<2	2
122593		4.37	<10	<1	0.22	10	0.91	1615	3	0.02	2	1150	29	5.35	<2	1
122594		4.68	<10	<1	0.37	10	0.88	1485	4	0.03	4	1080	18	5.52	<2	2
122595		2.80	<10	<1	0.35	10	0.37	454	11	0.01	3	1050	5	6.50	<2	1
122596		4.04	<10	<1	0.38	10	0.78	949	11	0.01	3	1000	12	6.46	<2	1
122597		3.07	<10	<1	0.27	<10	0.05	68	5	0.01	3	940	4	7.16	<2	1
122598		3.96	<10	<1	0.33	10	1.89	1135	1	0.01	3	1060	3	4.49	<2	2
122599		2.83	<10	<1	0.19	10	0.36	321	3	0.01	8	1110	16	5.56	<2	1
122600		4.01	<10	<1	0.33	10	0.18	237	2	0.01	3	1060	3	7.38	<2	1
122601		4.18	<10	<1	0.25	<10	1.13	2240	3	0.03	3	1070	30	4.80	<2	2
122602		3.59	<10	<1	0.26	<10	1.14	2150	2	0.04	3	1050	15	3.50	<2	2

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ALS Canada Ltd.
212 Brooksbank Avenue
North Vancouver BC V7J 2C1 Canada
Phone: 604 984 0221 Fax: 604 984 0218

To: **NORTHGATE EXPLORATION**
KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

Date : 24-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03025872

Sample Description	Method Analyte Units LOR	ME-ICP41 Fe % 0.01	ME-ICP41 Ga ppm 10	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1
122603		3.60	<10	<1	0.34	<10	0.86	1655	8	0.03	4	1080	34	4.65	<2	2
122604		3.75	<10	<1	0.36	<10	0.88	2020	6	0.04	3	990	82	3.15	<2	2
122605		2.56	<10	<1	0.28	10	0.92	2300	5	0.04	3	780	64	0.93	<2	2
122606		2.17	<10	<1	0.20	10	0.86	2030	2	0.03	3	770	49	0.68	<2	2
122607		2.47	<10	<1	0.29	10	0.86	2310	3	0.04	4	780	38	0.78	<2	2
122608		2.35	<10	<1	0.30	10	0.81	2040	7	0.05	3	740	38	0.89	<2	2
122609		2.87	<10	<1	0.23	10	0.87	1950	2	0.03	3	810	28	1.96	<2	2
122610		2.44	<10	<1	0.24	10	0.93	2080	2	0.05	3	790	14	0.68	<2	2
122611		2.37	<10	<1	0.31	10	0.84	1995	9	0.03	3	780	54	1.45	<2	2
122612		3.06	<10	1	0.42	10	0.77	1855	22	0.03	2	760	55	1.87	<2	2

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Date : 24-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03025872

Sample Description	Method / Analyte / Units / LOR	ME-ICP41 Sr ppm 1	ME-ICP41 Ti % 0.01	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2
122445		112	<0.01	<10	<10	9	<10	15
122446		83	<0.01	<10	<10	7	<10	18
122447		88	<0.01	<10	<10	4	<10	16
122448		25	<0.01	<10	<10	3	<10	24
122449		22	<0.01	<10	<10	2	<10	40
122450		34	<0.01	<10	<10	4	<10	43
122451		42	<0.01	<10	<10	3	<10	46
122452		186	0.05	<10	<10	34	<10	270
122453		119	0.03	<10	<10	29	<10	368
122454		46	0.01	<10	<10	30	<10	200
122455		49	0.08	<10	<10	33	<10	242
122456		53	0.09	<10	<10	32	<10	943
122457		47	0.09	<10	<10	30	<10	1580
122458		58	0.10	<10	<10	36	<10	257
122459		62	0.10	<10	<10	41	<10	590
122460		73	0.09	<10	<10	38	<10	669
122461		62	0.06	<10	<10	36	<10	785
122462		58	0.06	<10	<10	31	<10	1140
122463		112	0.11	<10	<10	39	<10	2050
122464		43	0.10	<10	<10	40	<10	1185
122465		14	0.01	<10	<10	25	<10	591
122466		25	0.03	<10	<10	27	<10	520
122467		76	0.02	<10	<10	33	<10	123
122468		37	0.01	<10	<10	18	<10	60
122475		62	0.13	<10	<10	49	<10	2140
122588		144	<0.01	<10	<10	15	<10	50
122589		210	<0.01	<10	<10	18	<10	87
122590		170	<0.01	<10	<10	15	<10	83
122591		132	0.07	<10	<10	25	<10	118
122592		142	0.08	<10	<10	19	<10	71
122593		129	0.01	<10	<10	16	<10	92
122594		124	0.01	<10	<10	21	<10	86
122595		265	<0.01	<10	<10	10	<10	29
122596		211	<0.01	<10	<10	15	<10	66
122597		267	<0.01	<10	<10	5	<10	6
122598		102	<0.01	<10	<10	29	<10	160
122599		210	<0.01	<10	<10	9	<10	63
122600		222	<0.01	<10	<10	9	<10	16
122601		137	0.04	<10	<10	25	<10	150
122602		92	0.08	<10	<10	35	<10	120

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KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

Date : 24-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03025872

Sample Description	Method Analyte Units LOR	ME-ICP41 Sr ppm 1	ME-ICP41 Ti % 0.01	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2
122603		126	0.06	<10	<10	29	<10	205
122604		58	0.09	<10	<10	28	<10	708
122605		93	0.11	<10	<10	30	<10	151
122606		88	0.10	<10	<10	24	<10	133
122607		73	0.11	<10	<10	27	<10	126
122608		178	0.11	<10	<10	29	<10	124
122609		99	0.10	<10	<10	25	<10	96
122610		87	0.14	<10	<10	34	<10	104
122611		134	0.10	<10	<10	27	<10	157
122612		103	0.08	<10	<10	25	<10	142

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To: **NORTHGATE EXPLORATION**
KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

Date : 23-Jul-2003
Account: NORTEX

CERTIFICATE VA03025974

Project : 4090

P.O. No:

This report is for 24 DRILL CORE samples submitted to our lab in North Vancouver, BC, Canada on 15-Jul-2003.

The following have access to data associated with this certificate:

CARL EDMUNDS	RON KONST	

SAMPLE PREPARATION

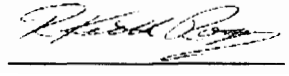
ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
CRU-31	Fine crushing - 70% <2mm
LOG-22	Sample login - Rcd w/o BarCode
PUL-31	Pulverize split to 85% <75 um
SPL-21	Split sample - riffle splitter

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Zn-AA46	Ore grade Zn - aqua regia/AA	AAS
Au-AA23	Au 30g FA-AA finish	AAS
Cu-AA49	Assay Cu - HBr Digestion	AAS
ME-ICP41	34 Element Aqua Regia ICP-AES	ICP-AES

To: **NORTHGATE EXPLORATION**
ATTN: CARL EDMUNDS
KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

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

Signature: 

ALS Chemex

EXCELLENCE IN ANALYTICAL CHEMISTRY

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KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

Date : 23-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03025974

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	Au-AA23 Au ppm 0.005	Cu-AA49 Cu % 0.001	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1
122469		1.62	0.037	0.004	1.2	2.28	27	<10	90	<0.5	2	0.11	<0.5	12	36	27
122470		2.28	0.055	0.073	12.3	1.17	11	<10	80	<0.5	8	0.05	160.5	12	45	666
122471		1.96	0.028	0.022	1.6	1.21	17	<10	140	<0.5	<2	0.09	18.8	9	70	197
122472		1.00	0.040	0.024	1.3	1.02	20	<10	330	<0.5	<2	0.09	4.3	7	68	220
122473		3.50	0.027	0.011	0.4	1.13	20	<10	470	<0.5	<2	0.61	4.7	11	74	102
122474		2.64	0.016	0.004	0.2	1.08	10	<10	200	<0.5	<2	1.37	1.0	8	65	41
122476		1.64	0.038	0.006	0.6	0.95	41	<10	320	<0.5	<2	1.66	<0.5	7	82	58
122477		3.60	0.073	0.004	<0.2	0.98	6	<10	300	<0.5	<2	2.09	<0.5	7	59	40
122478		3.80	0.013	0.005	<0.2	1.16	2	<10	480	<0.5	<2	1.77	0.9	8	73	53
122479		4.00	0.009	0.003	<0.2	1.13	<2	<10	320	<0.5	<2	2.47	0.7	8	62	30
122480		3.06	0.018	0.002	<0.2	1.08	2	<10	320	<0.5	<2	2.23	<0.5	7	71	22
122481		2.96	0.031	0.001	2.1	0.93	22	<10	60	<0.5	2	1.74	3.7	12	42	12
122482		3.52	0.014	0.001	0.7	1.30	6	<10	100	0.5	<2	1.52	3.0	13	80	15
122483		3.60	0.022	0.001	0.5	1.19	26	<10	80	<0.5	<2	1.44	0.8	10	77	9
122484		2.80	0.014	0.020	1.8	1.23	3	<10	50	0.5	3	0.86	21.9	11	76	187
122485		3.20	0.007	0.015	1.0	1.40	<2	<10	90	<0.5	2	1.52	9.1	10	74	152
122486		2.88	0.008	0.008	1.0	1.36	<2	<10	60	<0.5	2	1.05	21.5	11	81	82
122487		2.56	0.027	0.010	2.7	1.11	<2	<10	40	<0.5	4	1.10	76.4	12	92	102
122488		3.26	0.012	0.003	0.5	1.56	14	<10	130	<0.5	<2	1.11	3.8	11	75	25
122489		1.26	0.008	0.003	0.5	1.64	4	<10	190	<0.5	<2	1.37	2.1	10	52	28
122490		4.40	0.012	0.002	0.3	1.46	15	<10	80	<0.5	<2	1.74	1.8	10	40	21
122491		3.98	0.008	0.002	<0.2	1.40	9	<10	100	<0.5	<2	2.10	1.5	11	55	26
122492		4.88	0.017	0.001	0.9	1.31	10	<10	100	<0.5	<2	2.24	0.6	10	42	16
122493		4.16	0.026	0.001	1.3	1.05	16	<10	70	<0.5	2	2.78	1.7	10	52	11

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KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

Date : 23-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03025974

Sample Description	Method Analyte Units LOR	ME-ICP41 Fe % 0.01	ME-ICP41 Ga ppm 10	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1
122469		4.47	10	<1	0.32	10	1.90	1620	2	0.01	1	410	58	3.75	<2	3
122470		3.97	<10	<1	0.31	<10	0.73	1045	4	0.01	3	350	6350	4.32	<2	2
122471		2.83	<10	<1	0.31	<10	0.64	1930	6	0.01	2	420	156	1.80	<2	2
122472		2.16	<10	<1	0.28	<10	0.55	1055	3	0.02	3	420	554	0.95	<2	2
122473		2.76	<10	<1	0.27	10	0.65	1985	2	0.02	4	640	271	0.75	<2	2
122474		2.42	<10	<1	0.23	10	0.68	1630	1	0.03	3	590	85	0.54	<2	3
122476		2.36	<10	<1	0.27	10	0.50	1330	2	0.02	3	580	61	0.77	<2	3
122477		2.38	<10	<1	0.28	10	0.49	1510	1	0.02	2	580	29	0.85	<2	2
122478		2.57	<10	<1	0.28	10	0.63	1705	1	0.03	4	650	62	0.65	<2	3
122479		2.51	<10	<1	0.25	10	0.77	1850	1	0.03	2	630	62	0.43	<2	3
122480		2.49	<10	<1	0.27	10	0.66	1680	1	0.03	3	610	21	0.54	<2	2
122481		3.99	<10	<1	0.41	10	0.31	1370	8	0.01	3	1000	163	3.80	<2	2
122482		3.57	<10	<1	0.31	20	0.77	2710	4	0.02	3	770	42	2.37	2	2
122483		3.03	<10	<1	0.24	10	0.85	2400	2	0.04	4	700	33	2.25	<2	3
122484		3.94	<10	<1	0.36	10	0.73	2010	4	0.02	4	780	477	3.37	2	2
122485		3.08	<10	<1	0.29	10	0.89	3000	3	0.02	3	720	192	1.82	<2	3
122486		3.31	<10	1	0.32	10	0.85	2460	3	0.02	3	680	332	2.40	<2	3
122487		3.68	<10	<1	0.32	10	0.66	2120	6	0.01	4	730	439	3.37	<2	2
122488		3.67	10	<1	0.26	10	1.22	2800	2	0.04	3	980	222	2.60	<2	4
122489		3.50	10	1	0.25	10	1.18	2140	3	0.03	1	950	144	1.95	<2	3
122490		3.67	<10	<1	0.26	10	1.12	1755	3	0.04	2	950	130	3.49	<2	3
122491		3.46	<10	<1	0.26	10	0.97	1895	2	0.04	2	960	71	3.56	<2	3
122492		3.59	<10	<1	0.33	10	0.97	1330	2	0.03	1	950	39	4.02	<2	2
122493		3.56	<10	<1	0.34	10	0.72	1020	21	0.02	3	980	83	5.18	<2	2

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Date : 23-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03025974

Sample Description	Method Analyte Units LOR	ME-ICP41 Sr ppm 1	ME-ICP41 Ti % 0.01	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2	Zn-AA46 Zn % 0.01
122469		36	0.01	<10	<10	41	<10	166	
122470		26	<0.01	<10	<10	21	10	>10000	1.45
122471		35	<0.01	<10	<10	28	<10	2080	
122472		66	0.01	<10	<10	29	<10	735	
122473		55	0.01	<10	<10	33	<10	1325	
122474		40	0.01	<10	<10	39	<10	335	
122476		52	0.01	<10	<10	34	<10	188	
122477		51	0.01	<10	<10	27	<10	138	
122478		76	0.01	<10	<10	37	<10	180	
122479		64	0.01	<10	<10	40	<10	146	
122480		55	0.01	<10	<10	35	<10	93	
122481		35	<0.01	<10	<10	16	<10	500	
122482		37	<0.01	<10	<10	31	<10	620	
122483		51	0.01	<10	<10	36	<10	168	
122484		29	<0.01	<10	<10	30	<10	3200	
122485		51	0.01	<10	<10	32	<10	1330	
122486		41	0.02	<10	<10	31	<10	3000	
122487		36	0.01	<10	<10	27	<10	9970	
122488		59	0.07	<10	<10	46	<10	643	
122489		87	0.03	<10	<10	45	<10	421	
122490		112	0.07	<10	<10	44	<10	332	
122491		128	0.09	<10	<10	47	<10	229	
122492		140	<0.01	<10	<10	33	<10	139	
122493		154	0.01	<10	<10	25	<10	273	

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To: **NORTHGATE EXPLORATION**
KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

Date : 28-Jul-2003
Account: NORTEX

CERTIFICATE VA03026902

Project : 4090

P.O. No:

This report is for 25 DRILL CORE samples submitted to our lab in North Vancouver, BC, Canada on 17-Jul-2003.

The following have access to data associated with this certificate:

CARL EDMUNDS	RON KONST	

SAMPLE PREPARATION

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

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Au-AA23	Au 30g FA-AA finish	AAS
Cu-AA49	Assay Cu - HBr Digestion	AAS
ME-ICP41	34 Element Aqua Regia ICP-AES	ICP-AES

To: **NORTHGATE EXPLORATION**
ATTN: CARL EDMUNDS
KEMESS MINE
PO BOX 3519
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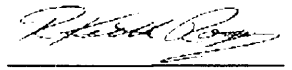
This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

Signature: 

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Date : 28-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03026902

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	Au-AA23 Au ppm 0.005	Au-AA23 Au Check ppm 0.005	Au-AA23 Au Check ppm 0.005	Cu-AA49 Cu % 0.001	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1
122494		4.72	0.021			0.003	1.4	1.14	17	<10	40	<0.5	3	2.90	<0.5	8
122495		4.00	0.023			0.001	1.7	1.34	20	<10	30	<0.5	3	1.86	0.9	8
122496		4.26	0.034			0.002	2.6	1.10	14	<10	20	<0.5	3	2.65	6.5	10
122497		4.30	0.020			0.012	2.6	1.07	6	<10	20	<0.5	5	3.10	38.8	8
122498		4.76	0.028			0.005	3.0	1.12	14	<10	20	<0.5	4	2.32	7.0	9
122499		3.48	0.012			0.003	1.7	1.58	14	<10	40	<0.5	2	2.03	3.2	10
122500		4.62	0.012			0.006	0.9	1.76	14	<10	90	<0.5	<2	1.94	9.7	9
122501		4.50	0.027			0.003	1.6	1.04	19	<10	40	<0.5	<2	2.57	1.5	10
122502		4.44	0.018			0.002	0.7	0.68	26	<10	50	<0.5	3	3.35	0.7	10
122503		3.52	0.038			0.032	6.6	1.75	29	<10	20	<0.5	4	2.30	33.4	8
122504		4.10	0.038		0.040	0.017	3.7	1.68	33	<10	90	<0.5	2	1.08	27.5	8
122505		3.74	0.053	0.050	0.045	0.002	1.6	0.36	33	<10	40	<0.5	<2	3.75	1.4	10
122506		3.16	0.069		0.061	0.009	3.0	1.14	39	<10	40	0.5	<2	0.78	9.3	9
122507		4.64	0.054			0.027	4.5	1.70	35	<10	90	<0.5	3	1.02	37.5	8
122508		2.30	0.037			0.009	3.4	1.32	32	<10	70	<0.5	2	1.22	18.7	9
122509		3.88	0.068			0.006	2.0	1.64	54	<10	90	<0.5	2	1.20	5.8	8
122510		3.88	0.025			0.013	2.6	1.30	31	<10	60	<0.5	2	1.15	14.2	9
122511		4.92	0.010			0.001	1.1	0.81	19	<10	50	<0.5	2	2.79	2.9	9
122512		3.98	0.019			0.010	1.9	1.50	23	<10	80	<0.5	<2	1.89	11.8	9
122513		3.62	0.010			0.006	2.0	1.53	14	<10	60	<0.5	2	1.48	21.1	9
122514		2.58	0.030			0.001	6.0	0.97	29	<10	60	<0.5	11	2.60	0.8	8
122515		4.38	0.011			0.009	2.4	1.48	18	<10	70	<0.5	5	1.94	16.8	10
122516		3.82	0.025			0.002	5.5	1.61	20	<10	70	<0.5	16	1.57	1.8	9
122517		5.04	0.015			0.002	0.6	0.55	22	<10	60	<0.5	7	2.78	<0.5	9
122518		4.22	0.048			0.003	1.9	1.15	40	<10	50	<0.5	3	1.94	6.6	10

ALS Chemex
EXCELLENCE IN ANALYTICAL CHEMISTRY
ALS Canada Ltd.
212 Brooksbank Avenue
North Vancouver BC V7J 2C1 Canada
Phone: 604 984 0221 Fax: 604 984 0218

To: **NORTHGATE EXPLORATION**
KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

Date : 28-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03026902

Sample Description	Method Analyte Units LOR	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1	ME-ICP41 Fe % 0.01	ME-ICP41 Ga ppm 10	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01
122494		24	31	3.64	10	<1	0.30	10	0.85	1160	4	0.02	3	980	21	5.50
122495		26	10	3.91	<10	<1	0.29	10	1.06	1955	22	0.03	3	990	153	4.59
122496		20	23	3.81	<10	<1	0.32	10	0.78	1475	9	0.02	1	1030	572	5.45
122497		30	114	3.83	10	<1	0.32	10	0.60	1485	13	0.02	3	910	468	5.99
122498		27	44	3.92	10	1	0.29	20	0.70	1600	8	0.02	4	1000	445	4.94
122499		26	24	3.70	10	<1	0.29	10	0.94	1995	3	0.04	1	1010	294	4.22
122500		35	56	3.43	10	<1	0.16	10	1.16	2980	3	0.04	2	1030	401	3.20
122501		31	22	4.13	10	<1	0.32	10	0.58	1040	5	0.02	3	1070	134	6.27
122502		39	14	3.99	<10	<1	0.33	10	0.19	409	4	0.01	3	1070	110	7.24
122503		28	340	3.54	10	<1	0.27	10	1.01	2990	3	0.03	2	980	3820	4.59
122504		41	177	3.36	10	<1	0.27	10	1.18	4070	5	0.03	2	1040	2030	3.12
122505		1	25	4.25	<10	<1	0.10	10	0.16	254	7	0.01	2	1000	160	8.11
122506		44	88	4.52	<10	<1	0.38	10	0.67	1170	5	0.02	3	1120	479	5.38
122507		36	278	3.05	10	<1	0.23	10	1.29	3670	3	0.03	3	1000	1820	2.65
122508		48	89	3.60	10	<1	0.30	10	0.91	2380	4	0.03	4	990	2030	4.23
122509		32	63	3.46	10	<1	0.22	10	1.29	3700	4	0.03	2	1030	675	3.22
122510		44	129	3.70	10	<1	0.28	10	1.02	2420	7	0.03	2	1010	1305	4.31
122511		23	12	4.19	<10	<1	0.32	10	0.41	644	4	0.01	3	990	205	7.15
122512		41	99	3.56	10	<1	0.24	10	1.14	2720	3	0.03	4	1070	669	4.15
122513		29	62	3.53	10	<1	0.25	10	1.23	2520	8	0.03	2	1010	200	4.06
122514		34	12	4.21	<10	<1	0.33	10	0.44	600	2	0.02	3	1060	44	6.85
122515		24	90	3.71	10	<1	0.22	10	1.06	1865	5	0.04	3	1020	78	4.29
122516		31	15	3.60	10	<1	0.31	10	1.26	1695	4	0.02	1	1010	95	3.97
122517		29	15	3.63	<10	<1	0.27	10	0.11	95	3	0.01	1	1030	19	6.64
122518		41	27	3.71	<10	<1	0.30	10	0.78	1525	4	0.02	2	1050	157	5.17

ALS Chemex
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To: **NORTHGATE EXPLORATION**
KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

Date : 28-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03026902

Sample Description	Method Analyte Units LOR	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1	ME-ICP41 Sr ppm 1	ME-ICP41 Ti % 0.01	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2
122494		2	2	206	<0.01	<10	<10	25	<10	76
122495		2	3	114	0.02	<10	<10	36	<10	261
122496		<2	2	162	<0.01	<10	<10	23	<10	1005
122497		2	2	170	0.01	<10	<10	22	<10	6150
122498		<2	3	188	<0.01	<10	<10	26	<10	1135
122499		<2	3	112	0.03	<10	<10	40	<10	595
122500		<2	4	104	0.09	<10	<10	48	<10	1675
122501		<2	2	236	0.01	<10	<10	21	<10	302
122502		<2	1	217	<0.01	<10	<10	11	<10	144
122503		<2	3	230	0.05	<10	<10	33	<10	4690
122504		2	3	67	0.12	<10	<10	39	<10	4040
122505		<2	1	259	0.01	<10	<10	6	<10	249
122506		<2	2	49	0.03	<10	<10	27	<10	1370
122507		2	3	54	0.14	<10	<10	41	<10	5260
122508		2	2	58	0.13	<10	<10	39	<10	2770
122509		2	3	76	0.13	<10	<10	42	<10	961
122510		2	3	67	0.13	<10	<10	40	<10	2340
122511		<2	2	162	0.01	<10	<10	16	<10	502
122512		<2	3	109	0.15	<10	<10	46	<10	2030
122513		<2	2	100	0.10	<10	<10	36	<10	3490
122514		<2	2	150	0.01	<10	<10	16	<10	135
122515		<2	2	121	0.13	<10	<10	42	<10	2890
122516		<2	2	84	0.09	<10	<10	34	<10	442
122517		<2	1	203	<0.01	<10	<10	8	<10	49
122518		<2	2	111	0.07	<10	<10	24	<10	1115

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Phone: 604 984 0221 Fax: 604 984 0218

To: **NORTHGATE EXPLORATION**
KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

Date : 30-Jul-2003
Account: NORTEX

CERTIFICATE VA03026903

Project : 4090

P.O. No:

This report is for 25 DRILL CORE samples submitted to our lab in North Vancouver, BC, Canada on 17-Jul-2003.

The following have access to data associated with this certificate:

CARL EDMUNDS	RON KONST	

SAMPLE PREPARATION

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

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Au-AA23	Au 30g FA-AA finish	AAS
Cu-AA49	Assay Cu - HBr Digestion	AAS
ME-ICP41	34 Element Aqua Regia ICP-AES	ICP-AES

To: **NORTHGATE EXPLORATION**
ATTN: CARL EDMUNDS
KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

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

Signature:

ALS Chemex

EXCELLENCE IN ANALYTICAL CHEMISTRY

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212 Brooksbank Avenue
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Date : 30-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03026903

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	Au-AA23 Au ppm 0.005	Cu-AA49 Cu % 0.001	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1
122519		4.14	0.012	0.013	2.5	1.19	22	<10	60	<0.5	7	1.41	25.3	10	14	136
122520		3.26	0.008	0.001	0.8	1.07	9	<10	60	<0.5	2	2.59	3.6	9	24	16
122521		4.24	0.016	0.004	1.7	1.42	20	<10	50	<0.5	3	1.82	3.4	10	18	45
122522		4.54	0.013	0.002	1.3	1.54	15	<10	50	<0.5	<2	2.19	2.2	8	48	26
122523		4.32	0.010	0.003	0.9	1.35	8	<10	30	<0.5	2	1.88	4.4	9	19	33
122524		4.62	0.011	0.003	1.1	1.40	11	<10	50	<0.5	<2	2.49	2.0	8	49	31
122525		3.94	0.007	0.008	1.4	1.28	9	<10	40	<0.5	<2	1.96	3.2	8	19	73
122526		4.34	0.077	0.036	5.5	1.12	22	<10	60	<0.5	3	2.56	7.4	7	41	386
122527		3.12	<0.005	0.002	<0.2	1.02	5	<10	40	<0.5	<2	1.94	<0.5	6	32	17
122528		3.62	<0.005	0.002	<0.2	1.22	2	<10	40	<0.5	<2	1.74	<0.5	8	60	19
122529		3.82	<0.005	0.001	<0.2	0.92	5	<10	50	<0.5	<2	1.72	<0.5	6	27	4
122530		3.06	<0.005	0.002	0.2	0.97	3	<10	50	<0.5	2	1.02	<0.5	5	94	18
122531		3.74	0.022	0.003	1.6	1.10	21	<10	40	<0.5	3	1.89	5.4	8	18	23
122532		4.22	0.036	0.007	2.5	1.10	25	<10	30	<0.5	4	1.64	6.0	9	14	68
122533		4.42	0.011	0.006	1.2	1.28	17	<10	50	<0.5	3	1.52	2.4	9	15	62
122534		5.54	0.029	0.014	1.3	1.42	27	<10	50	<0.5	3	1.20	2.7	9	38	136
122535		3.74	0.010	0.013	1.3	1.39	9	<10	40	<0.5	3	0.90	3.1	11	18	131
122536		4.50	0.032	0.006	0.6	1.46	45	<10	40	<0.5	2	0.76	0.9	8	42	61
122537		4.50	0.008	0.006	0.9	1.34	9	<10	30	<0.5	2	0.98	2.0	10	14	64
122538		4.60	0.024	0.023	2.4	1.24	34	<10	50	<0.5	3	1.04	2.3	10	44	221
122539		4.54	0.016	0.088	2.8	1.12	24	<10	40	<0.5	5	1.46	1.2	13	12	963
122540		3.56	0.019	0.006	1.3	1.30	37	<10	60	<0.5	3	1.64	1.1	9	28	59
122541		3.54	0.034	0.003	2.2	1.06	55	<10	40	<0.5	<2	1.43	1.6	8	11	27
122542		2.64	0.029	0.019	2.9	1.22	29	<10	50	<0.5	4	2.05	0.8	9	34	191
122543		4.96	<0.005	0.004	1.8	1.44	14	<10	30	<0.5	4	1.34	0.6	8	13	43

Comments: DRILL CORE

ALS Chemex
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To: **NORTHGATE EXPLORATION**
KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

Date : 30-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03026903

Sample Description	Method Analyte Units LOR	ME-ICP41 Fe % 0.01	ME-ICP41 Ga ppm 10	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1
122519		3.75	10	<1	0.17	10	0.94	2160	4	0.02	3	1050	97	4.54	<2	2
122520		3.66	10	<1	0.24	10	0.92	1230	3	0.03	3	980	120	5.88	<2	2
122521		4.11	10	<1	0.16	10	1.27	2310	1	0.02	<1	1110	48	4.92	<2	2
122522		3.40	10	<1	0.16	10	1.28	1740	2	0.05	3	1100	107	3.72	2	3
122523		3.40	10	<1	0.12	10	1.22	2200	2	0.03	2	1120	118	3.81	2	2
122524		3.39	10	<1	0.23	10	1.06	3220	1	0.04	3	1050	182	4.72	<2	3
122525		3.41	10	<1	0.16	10	1.11	1900	2	0.03	1	1020	80	4.52	<2	2
122526		3.96	<10	<1	0.34	10	0.69	1675	13	0.01	3	1020	134	6.27	<2	2
122527		2.00	10	<1	0.11	10	0.74	959	1	0.03	4	540	8	0.82	2	3
122528		2.54	10	<1	0.16	10	0.84	878	<1	0.05	4	610	3	0.11	<2	4
122529		1.99	<10	<1	0.10	10	0.57	703	1	0.03	4	510	3	0.26	2	3
122530		1.50	<10	<1	0.15	10	0.43	923	2	0.03	4	370	20	0.18	2	3
122531		3.47	<10	<1	0.16	<10	0.92	1805	14	0.01	3	870	170	4.07	2	2
122532		3.83	<10	<1	0.15	<10	1.05	2170	3	0.02	5	1050	295	4.47	2	2
122533		3.94	<10	<1	0.19	<10	1.04	2190	5	0.02	3	1040	71	4.13	2	2
122534		3.60	<10	<1	0.16	<10	1.14	2470	4	0.02	4	1010	39	3.04	<2	3
122535		3.57	<10	<1	0.11	<10	1.18	2910	7	0.02	4	1000	90	2.63	<2	2
122536		3.47	<10	<1	0.18	<10	1.18	2860	18	0.02	6	980	25	2.45	<2	3
122537		3.50	<10	<1	0.10	<10	1.20	2920	4	0.02	4	990	81	2.68	<2	2
122538		3.70	<10	<1	0.18	<10	1.04	2500	11	0.02	4	990	106	3.30	<2	3
122539		4.35	<10	<1	0.16	<10	0.90	2280	14	0.02	4	950	184	4.67	<2	2
122540		3.50	<10	<1	0.22	<10	1.05	2550	6	0.02	6	970	84	3.71	<2	2
122541		3.94	<10	<1	0.20	<10	0.85	1850	2	0.02	3	1090	42	4.43	<2	2
122542		3.92	<10	<1	0.25	<10	0.97	1565	19	0.02	5	1000	51	4.88	<2	2
122543		3.56	<10	<1	0.15	<10	1.20	2420	6	0.03	5	1030	38	3.23	<2	2

Comments: DRILL CORE

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PO BOX 3519
SMITHERS BC V0J 2N0

Date : 30-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03026903

Sample Description	Method Analyte Units LOR	ME-ICP41 Sr ppm 1	ME-ICP41 Ti % 0.01	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2
122519		77	0.12	<10	<10	31	<10	3760
122520		122	0.11	<10	<10	35	<10	599
122521		91	0.12	<10	<10	38	<10	605
122522		118	0.17	<10	<10	58	<10	368
122523		90	0.14	<10	<10	46	<10	720
122524		129	0.15	<10	<10	45	<10	431
122525		102	0.12	<10	<10	39	<10	643
122526		148	0.08	<10	<10	24	<10	1130
122527		55	0.09	<10	<10	45	<10	46
122528		38	0.12	<10	<10	68	<10	48
122529		51	0.09	<10	<10	45	<10	35
122530		56	0.05	<10	<10	25	<10	61
122531		71	0.08	<10	<10	26	<10	993
122532		73	0.07	<10	<10	32	<10	866
122533		80	0.09	<10	<10	34	<10	437
122534		64	0.12	<10	<10	40	<10	537
122535		46	0.13	<10	<10	40	<10	620
122536		37	0.12	<10	<10	40	<10	272
122537		45	0.12	<10	<10	45	<10	432
122538		61	0.14	<10	<10	42	<10	436
122539		91	0.11	<10	<10	34	<10	273
122540		107	0.12	<10	<10	36	<10	283
122541		77	0.08	<10	<10	28	<10	291
122542		118	0.06	<10	<10	28	<10	193
122543		69	0.11	<10	<10	39	<10	209

Comments: DRILL CORE

ALS Chemex
EXCELLENCE IN ANALYTICAL CHEMISTRY
ALS Canada Ltd.
212 Brooksbank Avenue
North Vancouver BC V7J 2C1 Canada
Phone: 604 984 0221 Fax: 604 984 0218

To: **NORTHGATE EXPLORATION**
KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

Date : 28-Jul-2003
Account: NORTEX

CERTIFICATE VA03026905

Project : 4090

P.O. No:

This report is for 19 DRILL CORE samples submitted to our lab in North Vancouver, BC, Canada on 17-Jul-2003.

The following have access to data associated with this certificate:

CARL EDMUNDS	RON KONST	

SAMPLE PREPARATION

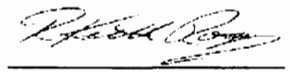
ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
CRU-31	Fine crushing - 70% <2mm
LOG-22	Sample login - Rcd w/o BarCode
PUL-31	Pulverize split to 85% <75 um
SPL-21	Split sample - riffle splitter

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Au-AA23	Au 30g FA-AA finish	AAS
Cu-AA49	Assay Cu - HBr Digestion	AAS
ME-ICP41	34 Element Aqua Regia ICP-AES	ICP-AES

To: **NORTHGATE EXPLORATION**
ATTN: CARL EDMUNDS
KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

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

Signature: 

ALS Chemex
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To: **NORTHGATE EXPLORATION**
KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

Date : 28-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03026905

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	Au-AA23 Au ppm 0.005	Cu-AA49 Cu % 0.001	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1
122569		2.20	0.016	0.001	2.9	0.64	21	<10	50	<0.5	2	3.63	<0.5	15	102	6
122570		4.96	0.008	0.001	1.2	1.88	18	<10	100	<0.5	<2	1.96	<0.5	12	65	9
122571		4.32	0.008	0.002	0.7	1.98	14	<10	100	<0.5	<2	1.68	<0.5	12	84	14
122572		2.82	0.017	<0.001	0.9	0.39	19	<10	40	<0.5	2	4.26	<0.5	11	52	5
122573		4.42	0.006	0.001	0.9	0.77	9	<10	50	<0.5	<2	5.59	<0.5	10	64	10
122574		3.78	0.007	0.002	1.9	1.20	7	<10	50	<0.5	<2	3.87	0.8	10	69	17
122575		4.18	0.005	<0.001	0.7	0.35	<2	<10	50	<0.5	<2	5.58	<0.5	10	85	5
122576		4.44	<0.005	0.001	0.7	0.31	3	<10	40	<0.5	<2	5.82	<0.5	9	65	5
122577		4.02	0.014	0.013	1.4	1.52	3	<10	150	<0.5	<2	1.38	<0.5	10	105	116
122578		4.22	0.008	0.011	1.0	1.47	4	<10	220	<0.5	<2	1.02	<0.5	11	91	100
122579		5.70	0.011	0.017	1.4	1.58	2	<10	210	<0.5	<2	1.36	<0.5	10	104	156
122580		2.40	0.024	0.113	2.8	0.81	8	<10	50	<0.5	3	2.47	0.5	12	56	1075
122581		3.38	0.015	0.007	1.8	1.46	<2	<10	270	<0.5	<2	1.61	<0.5	8	85	60
122582		3.84	0.016	0.004	1.6	1.32	3	<10	140	<0.5	<2	2.68	0.5	7	76	39
122583		4.02	0.030	0.028	2.1	1.36	20	<10	170	<0.5	<2	1.50	1.7	10	98	256
122584		4.56	0.028	0.011	1.7	1.40	17	<10	260	<0.5	<2	1.78	0.7	9	80	96
122585		4.38	0.041	0.018	1.9	1.42	26	<10	130	<0.5	<2	1.64	1.2	9	71	160
122586		3.96	0.037	0.024	2.8	1.58	10	<10	130	<0.5	2	1.75	0.6	10	68	230
122587		4.50	0.015	0.106	1.1	0.41	5	<10	50	<0.5	<2	4.55	<0.5	9	56	1005

ALS Chemex
EXCELLENCE IN ANALYTICAL CHEMISTRY
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212 Brooksbank Avenue
North Vancouver BC V7J 2C1 Canada
Phone: 604 984 0221 Fax: 604 984 0218

To: **NORTHGATE EXPLORATION**
KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

Date : 28-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03026905

Sample Description	Method	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41
	Analyte	Fe	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc
	Units	%	ppm	ppm	%	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm
	LOR	0.01	10	1	0.01	10	0.01	5	1	0.01	1	10	2	0.01	2	1
122569		4.11	<10	1	0.26	<10	0.21	273	10	0.01	3	1120	26	7.52	<2	1
122570		3.77	<10	<1	0.21	10	1.31	1680	2	0.02	2	1080	10	3.49	<2	2
122571		4.13	10	1	0.22	10	1.35	2010	4	0.02	6	1080	10	3.45	<2	3
122572		3.68	<10	<1	0.21	<10	0.03	47	4	0.01	2	1040	6	8.01	<2	1
122573		3.17	<10	1	0.18	<10	0.46	140	6	0.01	2	860	10	8.68	<2	1
122574		3.85	<10	1	0.23	<10	0.82	387	2	0.01	1	1040	25	7.56	<2	1
122575		3.70	<10	<1	0.20	<10	0.01	26	3	0.01	3	930	4	9.22	<2	1
122576		2.97	<10	<1	0.15	<10	0.04	51	1	0.01	2	690	5	8.57	<2	1
122577		2.69	<10	<1	0.16	10	0.85	2570	8	0.02	4	810	14	1.60	<2	2
122578		2.57	<10	<1	0.14	10	0.87	2460	5	0.02	1	830	16	0.98	<2	2
122579		2.84	10	1	0.18	10	0.87	2630	5	0.02	2	830	26	1.40	<2	2
122580		4.30	<10	<1	0.25	10	0.37	969	6	0.01	1	1070	16	6.51	<2	1
122581		2.40	10	1	0.15	10	0.90	2430	5	0.03	3	890	33	1.01	<2	2
122582		2.79	<10	<1	0.29	10	0.79	2690	3	0.03	2	900	97	1.25	<2	2
122583		2.80	<10	1	0.22	10	0.84	2630	6	0.03	5	950	86	1.41	<2	3
122584		2.68	<10	<1	0.22	10	0.83	2740	2	0.02	2	950	65	1.14	<2	2
122585		2.64	<10	1	0.22	10	0.83	2740	2	0.02	1	900	59	1.18	<2	3
122586		3.03	10	1	0.21	10	0.96	2940	4	0.03	3	1050	53	1.74	<2	3
122587		4.04	<10	<1	0.24	10	0.01	36	2	0.01	<1	1020	8	8.68	<2	1

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To: **NORTHGATE EXPLORATION**
KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

Date : 28-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03026905

Sample Description	Method Analyte Units LOR	ME-ICP41 Sr ppm 1	ME-ICP41 Ti % 0.01	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2
122569		206	0.02	<10	<10	13	<10	24
122570		119	0.08	<10	<10	36	<10	136
122571		116	0.09	<10	<10	38	<10	126
122572		339	<0.01	<10	<10	5	<10	3
122573		410	<0.01	<10	<10	6	<10	17
122574		289	<0.01	<10	<10	9	<10	121
122575		399	<0.01	<10	<10	5	<10	3
122576		414	<0.01	<10	<10	3	<10	5
122577		100	0.11	<10	<10	33	<10	128
122578		74	0.12	<10	<10	32	<10	114
122579		95	0.10	<10	<10	33	<10	146
122580		126	0.03	<10	<10	11	<10	40
122581		99	0.08	<10	<10	32	<10	110
122582		117	0.02	<10	<10	31	<10	150
122583		61	0.02	<10	<10	32	<10	302
122584		70	0.03	<10	<10	32	<10	176
122585		120	0.03	<10	<10	33	<10	223
122586		82	0.04	<10	<10	34	<10	176
122587		292	<0.01	<10	<10	6	<10	3

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To: **NORTHGATE EXPLORATION**
KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

Date : 28-Jul-2003
Account: NORTEX

CERTIFICATE VA03026904

Project : 4090

P.O. No:

This report is for 25 DRILL CORE samples submitted to our lab in North Vancouver, BC, Canada on 22-Jul-2003.

The following have access to data associated with this certificate:

CARL EDMUNDS	RON KONST	

SAMPLE PREPARATION

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

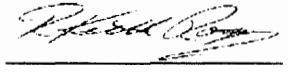
ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Au-AA23	Au 30g FA-AA finish	AAS
Cu-AA49	Assay Cu - HBr Digestion	AAS
ME-ICP41	34 Element Aqua Regia ICP-AES	ICP-AES

To: **NORTHGATE EXPLORATION**
ATTN: CARL EDMUNDS
KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

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

Signature:



ALS Chemex
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212 Brooksbank Avenue
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To: **NORTHGATE EXPLORATION**
KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

Date : 28-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03026904

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	Au-AA23 Au ppm 0.005	Cu-AA49 Cu % 0.001	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1
122544		5.72	0.009	0.004	1.2	1.68	11	<10	70	<0.5	4	1.42	<0.5	9	54	41
122545		5.96	0.079	0.020	4.5	1.16	12	<10	60	<0.5	3	1.24	2.9	12	40	196
122546		5.38	0.043	0.003	4.0	0.52	27	<10	40	<0.5	6	2.71	1.4	10	51	32
122547		4.78	0.012	0.005	1.3	1.53	18	<10	50	<0.5	2	1.28	2.1	9	52	57
122548		4.24	0.007	0.026	3.5	1.60	25	<10	50	<0.5	7	1.20	27.0	9	57	265
122549		4.34	0.008	0.003	1.0	0.82	16	<10	40	<0.5	4	3.40	3.1	10	24	36
122550		4.12	0.009	0.017	1.5	1.24	15	<10	60	<0.5	2	1.70	2.0	9	45	173
122551		3.20	<0.005	0.001	0.7	1.38	10	<10	40	<0.5	<2	1.73	<0.5	9	45	14
122552		4.70	0.005	0.001	1.1	1.24	17	<10	50	<0.5	2	1.69	1.2	10	47	13
122553		4.94	0.015	0.002	1.9	1.18	6	<10	60	<0.5	2	1.87	3.3	9	53	20
122554		5.28	0.019	0.001	1.2	1.27	12	<10	40	<0.5	<2	1.63	0.7	8	65	10
122555		4.74	0.020	0.001	1.3	1.14	18	<10	50	<0.5	3	2.03	<0.5	8	31	10
122556		5.24	0.034	0.002	1.7	1.06	15	<10	60	<0.5	3	2.73	1.0	9	64	23
122557		4.06	0.022	0.009	1.5	1.21	12	<10	60	<0.5	4	1.88	3.4	8	37	89
122558		3.32	0.016	0.006	1.5	1.20	10	<10	40	<0.5	4	2.03	1.6	8	88	62
122559		2.78	0.006	0.031	1.5	1.70	4	<10	80	<0.5	3	1.48	5.2	8	72	308
122560		3.94	0.006	0.019	2.2	1.24	6	<10	60	<0.5	4	1.96	7.7	8	68	202
122561		3.94	0.011	0.001	1.8	1.23	6	<10	40	<0.5	3	1.70	0.8	9	40	14
122562		4.02	<0.005	0.004	0.9	1.50	4	<10	40	<0.5	2	1.31	4.0	8	53	37
122563		3.96	<0.005	0.001	1.0	1.39	12	<10	60	<0.5	<2	1.98	0.8	8	46	14
122564		3.60	0.008	0.001	1.0	1.48	15	<10	70	<0.5	3	1.73	1.5	10	67	13
122565		4.94	<0.005	0.002	1.0	1.76	7	<10	120	<0.5	<2	2.05	2.8	11	39	21
122566		3.82	0.006	0.002	0.6	1.70	12	<10	50	<0.5	<2	1.52	1.1	11	80	16
122567		3.56	<0.005	0.002	0.3	1.94	11	<10	100	<0.5	<2	1.26	0.5	10	45	20
122568		4.04	0.007	0.002	2.1	1.52	18	<10	30	<0.5	3	2.39	2.4	11	61	16

ALS Chemex
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To: **NORTHGATE EXPLORATION**
KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

Date : 28-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03026904

Sample Description	Method Analyte Units LOR	ME-ICP41 Fe % 0.01	ME-ICP41 Ga ppm 10	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1
122544		3.44	<10	<1	0.23	<10	1.14	2160	9	0.04	4	990	50	2.85	<2	3
122545		3.88	<10	<1	0.20	<10	0.88	1705	12	0.03	4	970	248	3.84	<2	2
122546		4.03	<10	<1	0.28	<10	0.11	321	104	0.01	3	850	146	6.50	<2	1
122547		3.33	<10	<1	0.15	<10	1.14	3290	7	0.03	5	1030	47	2.51	<2	3
122548		3.81	<10	<1	0.21	<10	1.21	3470	2	0.03	6	1080	828	3.38	2	2
122549		3.83	<10	<1	0.20	<10	0.64	1235	7	0.01	5	970	43	6.49	<2	1
122550		3.70	<10	<1	0.21	<10	0.97	1570	3	0.04	3	1050	36	4.17	<2	3
122551		3.50	<10	<1	0.16	<10	1.14	1510	2	0.04	4	1060	18	3.61	<2	3
122552		3.63	<10	<1	0.18	<10	1.06	1465	4	0.04	4	1000	63	4.07	<2	3
122553		3.98	<10	<1	0.27	<10	0.96	1315	6	0.04	3	1010	67	5.05	<2	2
122554		3.53	<10	<1	0.19	<10	1.09	1070	2	0.04	3	1060	17	4.07	<2	2
122555		3.36	<10	<1	0.19	<10	0.93	928	2	0.03	3	1010	17	4.19	<2	2
122556		3.67	<10	<1	0.32	<10	0.67	725	4	0.04	4	970	37	5.68	<2	2
122557		3.46	<10	<1	0.25	<10	0.93	1715	5	0.03	2	1050	76	4.40	<2	2
122558		3.69	<10	<1	0.34	<10	0.79	1570	9	0.03	4	1050	66	5.08	<2	2
122559		2.92	<10	<1	0.17	10	1.22	3000	2	0.03	4	1030	53	2.23	<2	2
122560		3.81	<10	<1	0.22	<10	0.87	1725	4	0.04	4	1020	139	4.44	<2	3
122561		3.67	<10	<1	0.21	<10	0.95	1540	7	0.03	4	1040	81	4.23	<2	2
122562		3.24	<10	<1	0.16	<10	1.18	2240	2	0.04	4	1030	111	2.69	<2	3
122563		3.44	<10	<1	0.18	<10	1.02	1435	2	0.04	6	1040	25	3.53	<2	3
122564		3.41	<10	<1	0.19	<10	1.09	1550	3	0.04	5	1030	38	3.29	<2	3
122565		3.13	10	1	0.11	10	1.24	1945	8	0.03	<1	1090	58	2.21	<2	3
122566		3.50	10	<1	0.10	10	1.19	1635	4	0.05	1	1090	46	2.15	<2	4
122567		3.36	10	1	0.06	10	1.37	1795	1	0.04	<1	1140	21	0.93	<2	4
122568		4.09	<10	<1	0.29	<10	1.03	1100	3	0.03	2	1110	86	5.43	<2	3

ALS Chemex
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To: **NORTHGATE EXPLORATION**
KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

Date : 28-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03026904

Sample Description	Method Analyte Units LOR	ME-ICP41 Sr ppm 1	ME-ICP41 Ti % 0.01	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2
122544		79	0.13	<10	<10	40	<10	184
122545		80	0.11	<10	<10	34	<10	564
122546		160	0.03	<10	<10	10	<10	198
122547		71	0.13	<10	<10	41	<10	451
122548		65	0.13	<10	<10	39	<10	3570
122549		166	0.05	<10	<10	18	<10	457
122550		111	0.10	<10	<10	38	<10	371
122551		82	0.12	<10	<10	45	<10	128
122552		93	0.12	<10	<10	42	<10	228
122553		104	0.08	<10	<10	37	<10	501
122554		94	0.08	<10	<10	40	<10	206
122555		118	0.09	<10	<10	36	<10	147
122556		163	0.05	<10	<10	24	<10	178
122557		122	0.07	<10	<10	28	<10	565
122558		144	0.06	<10	<10	26	<10	307
122559		84	0.11	<10	<10	35	<10	821
122560		106	0.12	<10	<10	37	<10	1070
122561		94	0.09	<10	<10	33	<10	206
122562		72	0.14	<10	<10	44	<10	623
122563		128	0.12	<10	<10	41	<10	211
122564		112	0.12	<10	<10	44	<10	298
122565		123	0.17	<10	<10	55	<10	445
122566		92	0.19	<10	<10	70	<10	246
122567		91	0.20	<10	<10	69	<10	194
122568		162	0.11	<10	<10	39	<10	327

ALS Chemex
EXCELLENCE IN ANALYTICAL CHEMISTRY
ALS Canada Ltd.
212 Brooksbank Avenue
North Vancouver BC V7J 2C1 Canada
Phone: 604 984 0221 Fax: 604 984 0218

To: **NORTHGATE EXPLORATION**
KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

Date : 31-Jul-2003
Account: NORTEX

CERTIFICATE VA03026901

Project : 4090

P.O. No:

This report is for 72 samples submitted to our lab in North Vancouver, BC, Canada on 21-Jul-2003.

The following have access to data associated with this certificate:

CARL EDMUNDS	RON KONST	

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-22	Sample login - Rcd w/o BarCode
PUL-31	Pulverize split to 85% <75 um

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Au-AA23	Au 30g FA-AA finish	AAS
Cu-AA49	Assay Cu - HBr Digestion	AAS
ME-ICP41	34 Element Aqua Regia ICP-AES	ICP-AES

To: **NORTHGATE EXPLORATION**
ATTN: CARL EDMUNDS
KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

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

Signature:

ALS Chemex

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Date : 31-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03026901

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	Au-AA23 Au ppm 0.005	Cu-AA49 Cu % 0.001	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1
122613		0.24	<0.005	0.007	0.2	1.95	<2	<10	40	<0.5	<2	0.78	5.2	9	32	67
122614		0.28	<0.005	0.007	<0.2	1.42	<2	<10	140	<0.5	<2	0.66	28.9	10	48	72
122615		0.26	<0.005	0.007	0.2	2.03	9	<10	50	<0.5	3	0.94	21.1	12	31	63
122616		0.24	<0.005	0.003	0.5	1.96	<2	<10	40	<0.5	4	0.89	12.7	11	32	29
122617		0.26	<0.005	0.005	<0.2	1.57	2	<10	70	<0.5	2	0.60	28.8	9	30	47
122618		0.24	<0.005	0.014	0.7	1.48	19	<10	110	0.9	<2	0.26	17.7	7	31	147
122619		0.26	0.010	0.008	2.2	1.88	130	<10	70	1.2	4	0.25	44.4	2	29	86
122620		0.24	0.017	0.010	1.1	1.52	40	<10	270	1.1	<2	0.18	8.6	6	33	101
122621		0.24	0.006	0.007	0.6	0.71	<2	<10	50	<0.5	2	0.09	6.3	6	38	77
122622		0.24	<0.005	0.008	0.3	1.46	11	<10	50	<0.5	2	0.25	3.9	6	41	82
122623		0.26	<0.005	0.008	<0.2	1.86	11	<10	180	<0.5	2	0.44	4.6	12	31	80
122624		0.26	<0.005	0.008	<0.2	1.84	10	<10	190	<0.5	2	0.51	8.2	11	42	85
122625		0.24	<0.005	0.004	<0.2	1.82	9	<10	50	<0.5	3	0.88	20.6	11	35	33
122626		0.24	<0.005	0.001	<0.2	1.41	17	<10	90	<0.5	<2	0.75	9.0	8	46	16
122627		0.26	<0.005	0.002	<0.2	1.50	17	<10	70	<0.5	<2	0.70	6.9	7	43	17
122628		0.24	<0.005	0.005	<0.2	1.73	<2	<10	60	<0.5	<2	0.64	5.7	7	53	42
122629		0.26	<0.005	0.001	0.4	1.69	<2	<10	430	<0.5	2	0.65	8.7	6	50	14
122630		0.26	0.006	0.001	<0.2	1.38	3	<10	170	0.7	<2	1.43	9.2	6	42	13
122631		0.26	<0.005	0.012	<0.2	1.58	6	<10	140	0.5	<2	2.08	40.4	14	18	124
122632		0.26	<0.005	0.001	<0.2	1.74	<2	<10	70	<0.5	<2	1.32	4.3	7	73	3
122633		0.24	<0.005	<0.001	<0.2	1.42	2	<10	60	<0.5	<2	1.23	5.2	6	52	6
122634		0.26	<0.005	0.001	<0.2	1.58	<2	<10	30	<0.5	<2	1.78	1.9	7	53	2
122635		0.26	<0.005	0.001	<0.2	1.47	<2	<10	30	<0.5	<2	1.63	3.1	7	61	2
122636		0.24	<0.005	<0.001	<0.2	1.56	<2	<10	30	<0.5	<2	1.38	4.1	7	71	3
122637		0.24	<0.005	0.002	<0.2	1.59	<2	<10	40	<0.5	<2	1.34	6.7	8	61	6
122638		0.24	<0.005	<0.001	<0.2	1.33	<2	<10	30	<0.5	<2	1.21	4.7	7	26	3
122639		0.26	<0.005	0.001	<0.2	1.25	<2	<10	40	<0.5	<2	0.86	3.1	8	28	5
122640		0.26	<0.005	0.001	<0.2	1.48	<2	<10	50	<0.5	<2	1.13	4.1	7	22	5
122641		0.26	<0.005	<0.001	<0.2	1.24	<2	<10	40	<0.5	<2	1.12	1.7	7	18	4
122642		0.26	<0.005	0.006	0.5	1.36	<2	<10	120	<0.5	3	1.33	4.7	8	21	63
122643		0.26	<0.005	0.001	<0.2	1.42	<2	<10	70	<0.5	<2	1.46	3.3	8	15	10
122644		0.26	<0.005	0.002	<0.2	1.67	2	<10	90	<0.5	<2	1.54	1.6	10	22	15
122645		0.26	<0.005	0.002	<0.2	1.04	2	<10	130	<0.5	<2	1.00	0.7	9	17	8
122646		0.26	<0.005	0.001	<0.2	1.21	2	<10	100	<0.5	<2	1.16	1.2	8	19	1
122647		0.28	<0.005	0.002	<0.2	1.30	<2	<10	130	<0.5	2	1.04	9.8	7	19	10
122648		0.26	<0.005	<0.001	<0.2	1.40	<2	<10	40	<0.5	<2	1.24	2.3	7	21	2
122649		0.24	<0.005	<0.001	<0.2	1.33	<2	<10	40	<0.5	<2	1.15	2.3	8	26	3
122650		0.26	<0.005	0.001	<0.2	1.56	<2	<10	140	<0.5	<2	1.63	12.4	8	23	6
122651		0.24	<0.005	0.001	<0.2	1.64	<2	<10	200	<0.5	2	1.94	12.3	7	18	11
122652		0.28	<0.005	0.001	<0.2	1.38	<2	<10	110	<0.5	<2	1.94	9.2	7	24	3

ALS Chemex

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KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

Date : 31-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03026901

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	Au-AA23 Au ppm 0.005	Cu-AA49 Cu % 0.001	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1
122653		0.26	0.010	0.008	1.0	1.78	<2	<10	40	0.5	2	0.24	57.1	8	20	81
122654		0.24	<0.005	0.007	0.7	1.64	<2	<10	40	<0.5	3	0.63	7.1	9	22	68
122655		0.24	<0.005	0.006	<0.2	1.36	<2	<10	10	<0.5	<2	1.20	3.3	7	24	2
122656		0.26	<0.005	<0.001	<0.2	1.57	<2	<10	20	<0.5	<2	1.44	3.3	7	34	2
122657		0.24	<0.005	0.010	0.7	1.88	6	<10	70	<0.5	3	0.93	26.2	9	16	101
122658		0.26	<0.005	0.019	0.8	2.09	21	<10	90	<0.5	5	0.94	26.5	9	17	191
122659		0.24	<0.005	0.006	<0.2	1.84	16	<10	60	<0.5	2	1.31	5.5	9	17	56
122660		0.28	<0.005	0.004	<0.2	1.67	15	<10	90	<0.5	<2	1.72	4.5	8	18	34
122661		0.26	<0.005	0.001	<0.2	1.42	<2	<10	50	<0.5	<2	1.17	3.1	8	11	3
122662		0.24	<0.005	<0.001	<0.2	1.69	<2	<10	60	<0.5	<2	1.52	<0.5	9	16	1
122663		0.28	<0.005	0.001	<0.2	1.48	12	<10	70	<0.5	<2	2.60	1.4	9	49	5
122664		0.26	<0.005	<0.001	0.2	1.26	14	<10	150	<0.5	<2	2.38	2.0	8	59	2
122665		0.26	<0.005	<0.001	<0.2	1.42	2	<10	130	<0.5	<2	1.21	<0.5	9	50	1
122666		0.26	<0.005	<0.001	0.2	1.66	<2	<10	770	<0.5	<2	2.19	<0.5	9	46	1
122667		0.28	<0.005	0.002	0.2	1.70	<2	<10	250	<0.5	<2	1.66	6.2	9	45	14
122668		0.26	0.005	0.004	0.7	1.94	4	<10	40	<0.5	<2	1.58	10.7	9	36	38
122669		0.26	<0.005	0.008	0.9	1.82	<2	<10	250	<0.5	2	1.40	17.3	9	55	73
122670		0.26	<0.005	0.002	0.5	1.81	3	<10	130	<0.5	<2	1.60	4.5	9	62	16
122671		0.26	<0.005	0.001	0.3	1.36	4	<10	50	<0.5	<2	2.32	5.8	6	51	11
122672		0.26	<0.005	<0.001	0.5	1.33	5	<10	30	<0.5	<2	1.96	0.9	7	61	2
122673		0.24	<0.005	<0.001	0.3	1.56	3	<10	40	<0.5	<2	2.17	3.3	8	44	6
122674		0.26	<0.005	0.002	0.3	1.46	3	<10	130	<0.5	<2	2.36	10.7	7	52	18
122675		0.30	<0.005	0.002	<0.2	1.23	6	<10	50	<0.5	<2	2.36	4.9	7	45	9
122676		0.24	<0.005	0.002	<0.2	1.17	4	<10	120	0.5	<2	4.59	2.7	8	70	19
122677		0.26	<0.005	<0.001	<0.2	0.56	<2	<10	280	<0.5	<2	2.78	1.5	4	68	9
122678		0.28	0.022	0.003	<0.2	0.88	4	<10	220	<0.5	<2	1.72	2.2	7	54	23
122679		0.42	<0.005	0.004	<0.2	0.85	2	<10	260	<0.5	<2	1.77	2.2	9	58	32
122680		0.26	<0.005	0.004	<0.2	0.86	4	<10	190	<0.5	<2	1.49	2.0	9	51	36
122681		0.24	<0.005	0.003	<0.2	0.89	2	<10	310	<0.5	<2	1.82	1.1	9	64	30
122682		0.24	<0.005	0.003	0.2	0.89	<2	<10	190	<0.5	<2	1.58	4.9	9	55	29
122683		0.26	<0.005	0.002	<0.2	0.75	2	<10	150	<0.5	<2	1.71	4.3	7	56	17
122684		0.24	0.012	0.003	0.5	1.38	7	<10	70	0.6	<2	1.33	4.0	8	54	22

ALS Chemex

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SMITHERS BC V0J 2N0

Date : 31-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03026901

Sample Description	Method Analyte Units LOR	ME-ICP41 Fe % 0.01	ME-ICP41 Ga ppm 10	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1
122613		3.17	10	1	0.08	10	1.16	3380	<1	0.05	1	1170	8	<0.01	<2	4
122614		3.15	10	1	0.11	10	1.11	2540	1	0.04	8	840	21	<0.01	<2	6
122615		3.49	10	<1	0.06	10	1.14	3840	<1	0.05	<1	1350	5	<0.01	<2	5
122616		3.31	10	1	0.06	10	1.17	3240	<1	0.05	<1	1230	6	<0.01	<2	4
122617		3.04	10	1	0.14	10	0.91	2430	<1	0.04	<1	1050	5	0.04	<2	4
122618		3.89	10	<1	0.19	10	0.84	2280	1	0.04	2	1040	8	0.03	<2	4
122619		3.59	10	1	0.17	20	1.05	2370	1	0.04	<1	960	39	0.11	<2	5
122620		4.03	10	1	0.19	10	0.82	2240	1	0.04	1	950	16	0.05	<2	4
122621		4.03	<10	1	0.48	10	0.21	445	<1	0.05	1	550	34	1.94	<2	2
122622		3.08	10	<1	0.09	10	0.83	2640	1	0.05	2	730	19	0.11	<2	4
122623		3.36	10	1	0.12	10	1.04	3670	<1	0.05	<1	1030	15	0.01	<2	4
122624		3.22	10	1	0.09	10	1.12	3820	1	0.04	2	960	8	0.01	<2	4
122625		2.83	10	1	0.08	10	1.08	4040	<1	0.05	2	980	15	0.01	<2	4
122626		2.43	10	1	0.08	10	0.99	2760	1	0.04	3	920	37	<0.01	<2	3
122627		2.48	10	<1	0.09	10	0.98	3350	<1	0.04	2	910	9	<0.01	2	3
122628		2.70	10	1	0.10	10	1.09	3860	1	0.03	1	890	12	<0.01	<2	3
122629		2.64	10	1	0.13	10	1.00	3380	<1	0.03	1	900	10	0.01	<2	3
122630		2.97	10	<1	0.16	10	0.79	2300	1	0.03	2	860	4	<0.01	<2	3
122631		5.26	10	<1	0.10	10	1.54	3200	<1	0.04	7	1100	6	<0.01	<2	15
122632		2.89	10	<1	0.08	10	1.10	2370	2	0.05	4	1010	3	<0.01	<2	4
122633		2.56	10	1	0.11	10	0.92	1960	<1	0.06	2	850	5	<0.01	<2	4
122634		2.72	10	1	0.09	20	1.08	2100	1	0.06	2	960	3	<0.01	<2	4
122635		2.60	10	1	0.07	10	1.00	1925	<1	0.07	3	920	4	<0.01	<2	4
122636		2.62	10	1	0.05	10	1.02	2040	2	0.06	4	900	3	<0.01	<2	4
122637		2.63	10	1	0.08	10	1.05	2100	<1	0.07	2	900	3	<0.01	<2	4
122638		2.42	<10	<1	0.06	10	0.97	1740	<1	0.05	<1	910	4	<0.01	<2	4
122639		2.35	10	<1	0.05	10	1.04	1945	<1	0.02	1	960	2	<0.01	<2	3
122640		2.87	10	<1	0.08	10	1.06	2570	<1	0.04	<1	980	5	<0.01	<2	4
122641		2.40	10	<1	0.05	10	0.96	1955	<1	0.02	1	950	4	<0.01	<2	3
122642		2.82	<10	<1	0.10	10	0.94	2270	<1	0.03	<1	950	72	<0.01	<2	4
122643		2.83	10	<1	0.07	10	1.12	2110	<1	0.02	1	1050	56	<0.01	<2	4
122644		3.05	10	<1	0.09	10	1.24	1890	<1	0.06	1	1160	65	<0.01	<2	4
122645		2.24	10	1	0.05	10	0.88	1230	<1	0.03	1	880	78	<0.01	<2	3
122646		2.09	10	<1	0.04	10	0.86	1100	<1	0.06	2	850	3	<0.01	<2	4
122647		2.57	10	1	0.04	10	0.93	2410	<1	0.03	1	950	10	0.02	<2	3
122648		2.37	10	<1	0.04	10	0.96	2220	<1	0.06	3	900	5	<0.01	<2	4
122649		2.45	10	<1	0.04	10	1.00	2070	<1	0.04	2	950	6	<0.01	<2	3
122650		2.60	10	<1	0.09	10	0.99	2170	<1	0.06	1	920	5	<0.01	<2	4
122651		3.02	<10	1	0.11	20	0.94	2960	<1	0.03	2	930	12	0.01	<2	4
122652		2.74	10	1	0.13	20	0.85	2230	<1	0.05	1	850	12	<0.01	<2	4

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Project : 4090

CERTIFICATE OF ANALYSIS VA03026901

Sample Description	Method Analyte Units LOR	ME-ICP41 Fe % 0.01	ME-ICP41 Ga ppm 10	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1
122653		4.61	10	<1	0.25	10	0.98	3530	<1	0.01	<1	920	9	0.33	<2	2
122654		3.43	10	<1	0.22	20	1.08	3110	<1	0.05	1	970	7	0.06	<2	4
122655		2.68	<10	<1	0.04	10	1.01	2330	1	0.04	3	870	8	<0.01	<2	3
122656		2.57	10	1	0.03	10	1.00	2200	<1	0.08	<1	930	6	<0.01	<2	4
122657		2.88	10	1	0.09	10	1.22	3450	<1	0.02	1	1020	8	<0.01	<2	3
122658		3.13	10	1	0.10	10	1.24	3450	<1	0.05	<1	1140	20	<0.01	<2	4
122659		3.23	10	<1	0.03	10	1.20	3370	<1	0.03	<1	1150	8	<0.01	<2	4
122660		2.94	10	<1	0.09	10	1.06	2640	<1	0.05	2	1100	14	<0.01	<2	4
122661		2.80	10	1	0.13	10	1.06	1740	<1	0.02	2	1190	31	<0.01	<2	3
122662		3.37	10	<1	0.16	20	1.07	1690	<1	0.05	1	1000	10	<0.01	<2	5
122663		3.13	10	<1	0.12	10	0.99	2310	1	0.05	2	1060	16	<0.01	<2	5
122664		2.99	10	<1	0.11	10	0.80	1915	<1	0.05	2	940	12	0.01	<2	4
122665		2.96	10	<1	0.14	10	1.02	1340	2	0.05	3	1000	5	<0.01	<2	3
122666		3.13	10	<1	0.11	10	1.12	2080	<1	0.06	2	980	6	0.02	<2	4
122667		3.37	10	<1	0.10	10	1.14	2610	1	0.06	2	1000	133	0.03	<2	4
122668		3.52	10	<1	0.12	10	1.16	3380	<1	0.07	2	980	17	0.05	<2	4
122669		3.42	10	<1	0.08	10	1.12	3390	2	0.06	2	970	16	0.08	<2	4
122670		3.12	10	<1	0.08	10	1.11	2900	1	0.06	4	930	13	0.02	<2	4
122671		2.57	10	<1	0.12	20	0.80	2690	1	0.04	3	820	9	0.03	<2	4
122672		2.35	10	<1	0.09	10	0.82	2210	1	0.06	2	790	6	<0.01	<2	4
122673		2.76	10	<1	0.13	20	0.99	2560	1	0.05	2	920	7	0.01	<2	4
122674		2.91	10	<1	0.17	20	0.96	2760	<1	0.05	2	840	12	0.04	<2	4
122675		2.87	10	<1	0.14	10	0.67	2070	1	0.05	3	820	15	0.01	<2	5
122676		3.44	10	<1	0.16	20	0.60	2980	<1	0.03	1	940	38	<0.01	2	4
122677		1.69	<10	<1	0.19	10	0.13	800	2	0.02	2	370	4	<0.01	<2	2
122678		2.42	10	<1	0.20	10	0.66	840	<1	0.05	2	510	<2	0.01	<2	4
122679		2.66	10	<1	0.18	10	0.78	1105	2	0.05	2	560	<2	<0.01	<2	5
122680		2.85	10	<1	0.20	10	0.90	1165	<1	0.06	1	600	8	<0.01	<2	7
122681		2.84	10	<1	0.20	10	0.87	1075	2	0.05	1	580	2	0.01	<2	5
122682		2.71	10	<1	0.21	10	0.77	1080	<1	0.06	2	560	<2	<0.01	<2	4
122683		2.20	10	<1	0.20	10	0.50	974	<1	0.04	2	450	<2	<0.01	<2	4
122684		2.86	10	<1	0.22	20	0.78	1995	2	0.04	4	830	7	<0.01	<2	4

ALS Chemex
EXCELLENCE IN ANALYTICAL CHEMISTRY
ALS Canada Ltd.
212 Brooksbank Avenue
North Vancouver BC V7J 2C1 Canada
Phone: 604 984 0221 Fax: 604 984 0218

To: **NORTHGATE EXPLORATION**
KEMESS MINE
PO BOX 3519
SMITHERS BC V0J 2N0

Date : 31-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03026901

Sample Description	Method Analyte Units LOR	ME-ICP41 Sr ppm 1	ME-ICP41 Ti % 0.01	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2
122613		70	0.07	<10	<10	61	<10	1555
122614		24	0.06	<10	<10	78	<10	4060
122615		77	0.07	<10	<10	67	<10	4100
122616		80	0.09	<10	<10	65	<10	3410
122617		55	0.04	<10	<10	60	<10	5470
122618		13	0.04	<10	<10	78	<10	3290
122619		22	0.02	<10	<10	52	<10	2070
122620		11	0.04	<10	<10	52	<10	1665
122621		13	0.04	<10	<10	24	<10	594
122622		25	0.04	<10	<10	54	<10	1175
122623		35	0.04	<10	<10	52	<10	1690
122624		39	0.04	<10	<10	47	<10	1955
122625		58	0.08	<10	<10	57	<10	3100
122626		54	0.11	<10	<10	42	<10	1710
122627		53	0.11	<10	<10	43	<10	1260
122628		49	0.09	<10	<10	82	<10	1695
122629		57	0.07	<10	<10	64	<10	1410
122630		40	0.10	<10	<10	46	<10	881
122631		21	0.27	<10	<10	184	<10	4420
122632		83	0.04	<10	<10	49	<10	424
122633		67	0.03	<10	<10	51	<10	468
122634		81	0.03	<10	<10	55	<10	270
122635		80	0.04	<10	<10	54	<10	377
122636		86	0.05	<10	<10	51	<10	672
122637		82	0.05	<10	<10	52	<10	833
122638		72	0.05	<10	<10	51	<10	423
122639		47	0.05	<10	<10	45	<10	444
122640		53	0.07	<10	<10	56	<10	554
122641		54	0.07	<10	<10	46	<10	266
122642		54	0.07	<10	<10	60	<10	1005
122643		55	0.06	<10	<10	57	<10	373
122644		90	0.14	<10	<10	73	<10	284
122645		51	0.10	<10	<10	55	<10	158
122646		85	0.12	<10	<10	54	<10	181
122647		57	0.08	<10	<10	49	<10	1080
122648		78	0.08	<10	<10	49	<10	399
122649		68	0.05	<10	<10	49	<10	432
122650		82	0.03	<10	<10	52	<10	867
122651		59	0.01	<10	<10	52	<10	1135
122652		57	0.01	<10	<10	51	<10	1105

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SMITHERS BC V0J 2N0

Date : 31-Jul-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03026901

Sample Description	Method / Analyte / Units / LOR	ME-ICP41 Sr ppm 1	ME-ICP41 Ti % 0.01	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2
122653		17	0.01	<10	<10	53	<10	675
122654		23	0.02	<10	<10	65	<10	1280
122655		68	0.02	<10	<10	57	<10	442
122656		108	0.04	<10	<10	65	<10	413
122657		56	0.04	<10	<10	65	<10	3170
122658		80	0.07	<10	<10	52	<10	4990
122659		69	0.06	<10	<10	60	<10	1115
122660		77	0.08	<10	<10	59	<10	569
122661		37	0.03	<10	<10	66	<10	360
122662		63	0.04	<10	<10	66	<10	193
122663		91	0.03	<10	<10	72	10	248
122664		73	0.04	<10	<10	58	<10	229
122665		54	0.05	<10	<10	66	<10	157
122666		83	0.06	<10	<10	62	<10	201
122667		68	0.05	<10	<10	65	<10	692
122668		66	0.07	<10	<10	64	<10	1470
122669		67	0.08	<10	<10	62	<10	2100
122670		80	0.08	<10	<10	60	<10	760
122671		61	0.02	<10	<10	50	<10	818
122672		64	0.02	<10	<10	49	<10	203
122673		59	0.02	<10	<10	55	<10	451
122674		47	0.01	<10	<10	56	<10	1155
122675		47	0.01	<10	<10	61	<10	634
122676		38	0.01	<10	<10	60	<10	444
122677		20	0.01	<10	<10	28	<10	216
122678		26	0.05	<10	<10	64	<10	229
122679		29	0.12	<10	<10	85	<10	186
122680		23	0.21	<10	<10	100	<10	208
122681		24	0.08	<10	<10	91	<10	114
122682		18	0.08	<10	<10	86	<10	643
122683		24	0.05	<10	<10	61	<10	457
122684		29	0.02	<10	<10	45	<10	444

Brenda 2003 Soils Location

Sample #	E	N	E Nad83	N Nad83
400751	11700	9200	630226	6347525
400752	11750	9200	630272	6347530
400753	11800	9200	630316	6347567
400754	11850	9200	630357	6347603
400755	11900	9200	630389	6347605
400756	12000	9200	630475	6347683
400757	12050	9200	630517	6347706
400758	12100	9200	630555	6347732
400759	12150	9200	630605	6347772
400760	12200	9200	630630	6347782
400761	12250	9200	630679	6347828
400762	12300	9200	630714	6347867
400763	12350	9200	630752	6347910
400764	12400	9200	630786	6347943
400765	12450	9200	630819	6347972
400766	12500	9200	630860	6348010
400767	11700	9000	630379	6347360
400768	11750	9000	630402	6347382
400769	11800	9000	630437	6347421
400770	11850	9000	630467	6347460
400771	11900	9000	630498	6347479
400772	11950	9000	630538	6347527
400773	12000	9000	630586	6347561
400774	12050	9000	630606	6347568
400775	12100	9000	630650	6347614
400776	12150	9000	630698	6347630
400777	12200	9000	630743	6347654
400778	12250	9000	630774	6347701
400779	12300	9000	630817	6347730
400780	12350	9000	630858	6347761
400781	12400	9000	630898	6347790
400782	12450	9000	630936	6347828
400783	12500	9000	630976	6347857
400784	12050	8800	630782	6347414
400785	12100	8800	630801	6347454
400786	12150	8800	630840	6347493
400787	12200	8800	630870	6347531
400788	12250	8800	630927	6347576
400789	12300	8800	630957	6347589
400790	12350	8800	631005	6347627
400791	12400	8800	631053	6347661
400792	12450	8800	631096	6347702
400793	12500	8800	631112	6347700
400794	12400	8600	631169	6347463
400795	12450	8600	631205	6347502
400796	12500	8600	631241	6347550

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212 Brooksbank Avenue
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To: **NORTHGATE EXPLORATION**
KEMESS MINE
P.O. BOX 3519
SMITHERS BC V0J 2N0

Date : 20-Jun-2003
Account: NORTEX

CERTIFICATE VA03020565

Project : 4090

P.O. No:

This report is for 46 SOIL samples submitted to our lab in North Vancouver, BC, Canada on 14-Jun-2003.

The following have access to data associated with this certificate:

CARL EDMUNDS

SAMPLE PREPARATION

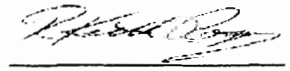
ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-22	Sample login - Rod w/o BarCode
SCR-41	Screen to -180um and save both

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
Au-AA23	Au 30g FA-AA finish	AAS
ME-ICP41	34 Element Aqua Regia ICP-AES	ICP-AES

To: **NORTHGATE EXPLORATION**
ATTN: CARL EDMUNDS
KEMESS MINE
P.O. BOX 3519
SMITHERS BC V0J 2N0

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

Signature: 

ALS Chemex

EXCELLENCE IN ANALYTICAL CHEMISTRY

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Date : 20-Jun-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03020565

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	Au-AA23 Au ppm 0.005	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1	ME-ICP41 Fe % 0.01
400751		0.18	<0.005	0.6	1.00	<2	<10	140	<0.5	<2	0.11	1.1	5	10	19	2.60
400752		0.16	<0.005	0.7	1.02	4	<10	200	<0.5	<2	0.08	0.6	5	7	14	2.73
400753		0.18	0.008	0.6	1.14	5	<10	200	<0.5	2	0.19	2.9	8	7	37	3.22
400754		0.12	<0.005	0.4	1.18	10	<10	340	<0.5	2	0.17	3.1	8	9	39	4.42
400755		0.08	<0.005	0.5	0.87	5	<10	100	<0.5	<2	0.15	0.6	5	7	27	2.64
400756		0.20	<0.005	0.4	1.07	3	<10	140	<0.5	2	0.15	2.1	6	10	20	3.34
400757		0.08	NSS	0.7	0.91	<2	<10	640	<0.5	<2	0.72	25.8	18	5	62	2.51
400758		0.18	<0.005	<0.2	1.56	7	<10	220	<0.5	<2	0.22	1.2	8	11	27	3.28
400759		0.16	<0.005	0.2	1.32	5	<10	200	<0.5	<2	0.21	2.5	8	14	22	3.57
400760		0.22	<0.005	0.2	1.50	5	<10	200	0.5	<2	0.16	3.5	8	12	16	3.51
400761		0.14	<0.005	0.2	1.65	6	<10	110	<0.5	<2	0.12	1.3	8	13	25	3.96
400762		0.22	<0.005	0.5	2.25	5	<10	100	<0.5	<2	0.10	1.3	9	17	32	3.73
400763		0.16	<0.005	1.1	2.06	5	<10	200	0.7	2	0.11	2.5	8	15	24	4.02
400764		0.20	<0.005	0.6	2.07	7	<10	90	0.5	<2	0.18	1.4	9	13	43	3.51
400765		0.24	<0.005	0.7	2.43	5	<10	160	0.8	<2	0.15	1.4	16	8	33	5.27
400766		0.18	<0.005	0.4	1.98	2	<10	150	0.7	<2	0.25	4.0	18	7	18	4.26
400767		0.26	<0.005	0.3	1.49	5	<10	90	<0.5	<2	0.23	0.6	9	12	23	3.16
400768		0.24	<0.005	0.4	1.51	6	<10	130	0.6	<2	0.19	0.9	8	14	23	3.17
400769		0.26	<0.005	0.5	1.99	4	<10	80	0.5	<2	0.43	1.8	12	15	24	3.06
400770		0.12	<0.005	0.6	0.61	3	<10	410	0.8	2	1.96	20.4	3	5	88	0.77
400771		0.16	<0.005	0.4	1.68	3	<10	650	2.0	<2	1.49	33.5	15	10	288	1.94
400772		0.16	0.005	0.3	0.80	3	<10	220	<0.5	3	0.16	4.6	4	5	30	1.86
400773		0.24	0.008	0.5	1.35	2	<10	100	<0.5	<2	0.14	1.4	4	14	17	3.82
400774		0.20	0.007	0.3	0.83	4	<10	130	<0.5	<2	0.25	2.2	3	9	17	2.54
400775		0.20	<0.005	<0.2	1.30	3	<10	170	<0.5	<2	0.15	1.6	3	9	14	3.08
400776		0.22	<0.005	0.2	1.38	7	<10	250	<0.5	<2	0.28	2.6	6	12	28	3.39
400777		0.34	<0.005	0.5	1.56	5	<10	170	<0.5	<2	0.22	1.9	6	9	24	3.67
400778		0.36	<0.005	0.3	0.89	6	<10	150	<0.5	<2	0.13	1.6	3	8	25	3.16
400779		0.34	0.022	0.2	1.75	5	<10	150	<0.5	<2	0.11	1.4	5	14	30	4.07
400780		0.28	0.008	0.9	1.31	4	<10	150	<0.5	<2	0.12	1.2	4	12	18	3.33
400781		0.26	<0.005	1.2	1.94	8	<10	180	0.5	<2	0.11	0.6	5	13	27	4.39
400782		0.24	0.008	0.7	1.44	8	<10	200	<0.5	<2	0.09	0.5	4	13	20	3.90
400783		0.18	<0.005	0.8	1.16	2	<10	100	<0.5	2	0.06	<0.5	2	10	9	2.69
400784		0.10	<0.005	<0.2	1.90	5	<10	110	0.6	<2	0.71	3.7	7	15	26	2.34
400785		0.20	<0.005	0.3	1.52	3	<10	280	<0.5	<2	0.70	7.9	8	15	30	2.48
400786		0.30	<0.005	0.2	1.78	7	<10	160	<0.5	<2	0.32	2.5	6	15	29	3.35
400787		0.32	0.008	0.9	2.49	6	<10	80	0.6	<2	0.44	1.2	9	23	27	3.61
400788		0.18	0.010	0.2	0.42	<2	<10	40	<0.5	<2	0.10	0.5	1	5	7	1.41
400789		0.28	0.010	0.4	1.32	6	<10	210	<0.5	<2	0.47	2.2	4	12	37	3.36
400790		0.30	0.012	0.5	2.02	7	<10	130	0.5	<2	0.14	1.5	6	15	24	4.50

Comments: NSS is non-sufficient sample.

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Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03020565

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt kg 0.02	Au-AA23 Au ppm 0.005	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1	ME-ICP41 Fe % 0.01
400791		0.30	0.024	2.0	3.34	10	<10	190	0.7	<2	0.08	0.7	7	16	124	4.25
400792		0.32	<0.005	0.8	1.87	7	<10	230	0.5	<2	0.16	1.7	5	13	37	3.91
400793		0.30	<0.005	0.6	1.32	5	<10	230	<0.5	<2	0.15	3.7	6	12	23	3.19
400794		0.24	<0.005	<0.2	2.05	5	<10	190	0.7	<2	0.41	2.0	6	16	32	2.64
400795		0.24	0.040	<0.2	1.18	3	<10	170	<0.5	<2	0.52	18.6	5	14	19	2.29
400796		0.24	NSS	0.4	2.34	7	<10	220	0.9	<2	0.75	15.9	18	16	37	3.30

Comments: NSS is non-sufficient sample.

ALS Chemex
EXCELLENCE IN ANALYTICAL CHEMISTRY
ALS Canada Ltd.
212 Brooksbank Avenue
North Vancouver BC V7J 2C1 Canada
Phone: 604 984 0221 Fax: 604 984 0218

To: **NORTHGATE EXPLORATION**
KEMESS MINE
P.O. BOX 3519
SMITHERS BC V0J 2N0

Date : 20-Jun-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03020565

Sample Description	Method / Analyte / Units / LOR	ME-ICP41 Ga ppm 10	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1	ME-ICP41 Sr ppm 1
400751		10	<1	0.05	10	0.19	300	2	0.01	4	600	56	0.06	<2	1	25
400752		10	1	0.06	10	0.12	437	2	0.01	3	900	61	0.09	<2	<1	23
400753		10	1	0.06	10	0.21	1775	6	0.01	4	1150	133	0.08	<2	<1	23
400754		10	1	0.12	10	0.25	1015	32	0.01	4	1160	148	0.15	<2	1	32
400755		10	<1	0.05	10	0.22	505	4	0.01	4	680	178	0.05	<2	1	22
400756		10	<1	0.09	10	0.30	530	2	0.01	5	1210	48	0.05	<2	1	18
400757		<10	<1	0.10	10	0.20	7740	3	0.01	6	2030	160	0.08	<2	1	31
400758		10	<1	0.07	10	0.54	675	2	0.01	8	510	64	0.05	<2	1	24
400759		10	<1	0.06	10	0.43	704	2	0.01	9	1230	60	0.05	<2	1	22
400760		10	<1	0.05	10	0.36	713	1	0.01	7	1230	54	0.03	<2	1	20
400761		10	<1	0.05	10	0.45	598	2	0.01	8	1390	49	0.04	<2	2	18
400762		10	<1	0.04	10	0.55	684	1	0.01	13	1220	62	0.04	<2	3	18
400763		10	<1	0.05	10	0.40	685	1	0.01	10	1450	49	0.04	<2	2	18
400764		10	<1	0.04	10	0.55	1030	2	0.01	10	1340	93	0.04	<2	2	20
400765		10	<1	0.05	10	0.75	1050	2	0.01	8	940	31	0.07	<2	2	25
400766		10	<1	0.07	10	0.60	2510	1	0.01	6	1730	46	0.09	<2	1	28
400767		10	<1	0.05	10	0.53	636	2	0.01	7	850	55	0.06	<2	1	37
400768		10	<1	0.04	10	0.43	450	1	0.01	8	700	25	0.04	<2	1	27
400769		10	<1	0.05	10	0.45	727	2	0.01	9	840	36	0.04	<2	1	38
400770		<10	<1	0.06	10	0.09	850	3	0.01	6	1270	33	0.10	<2	1	85
400771		10	<1	0.06	30	0.29	2810	8	0.01	10	1390	51	0.08	<2	<1	94
400772		10	<1	0.05	10	0.06	735	2	0.01	3	1180	89	0.07	<2	<1	19
400773		10	<1	0.04	10	0.30	357	2	0.01	5	660	38	0.05	<2	1	21
400774		10	<1	0.05	<10	0.13	402	4	0.01	3	490	37	0.03	<2	1	23
400775		10	1	0.06	10	0.23	426	2	0.01	4	580	38	0.03	<2	1	21
400776		10	<1	0.07	10	0.43	736	3	0.01	5	540	49	0.04	<2	1	20
400777		10	<1	0.05	10	0.55	1085	2	0.01	4	910	34	0.03	<2	1	30
400778		10	<1	0.07	10	0.17	304	4	0.01	3	590	43	0.04	<2	1	20
400779		10	1	0.05	10	0.47	559	3	0.01	8	770	88	0.05	<2	2	26
400780		10	<1	0.05	10	0.34	425	2	0.01	6	830	67	0.05	<2	1	26
400781		10	<1	0.06	10	0.52	560	3	0.01	8	910	81	0.09	<2	2	28
400782		10	<1	0.08	10	0.45	471	2	0.01	8	1000	79	0.10	<2	1	30
400783		10	<1	0.04	10	0.11	146	<1	0.01	3	490	38	0.03	<2	1	14
400784		<10	<1	0.06	10	0.66	484	3	0.01	9	810	48	0.06	<2	2	71
400785		10	<1	0.07	10	0.57	567	2	0.01	9	530	33	0.04	<2	2	63
400786		10	<1	0.05	10	0.56	549	4	0.01	7	520	48	0.03	2	1	43
400787		<10	<1	0.05	<10	0.79	531	2	0.01	12	940	37	0.04	<2	2	47
400788		<10	<1	0.04	<10	0.03	98	<1	0.01	1	280	52	0.01	<2	<1	12
400789		10	1	0.07	10	0.31	533	5	0.01	5	810	421	0.05	<2	2	44
400790		10	<1	0.04	10	0.51	632	2	0.01	9	720	105	0.03	<2	2	24

Comments: NSS is non-sufficient sample.

ALS Chemex
EXCELLENCE IN ANALYTICAL CHEMISTRY
ALS Canada Ltd.
212 Brooksbank Avenue
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Phone: 604 984 0221 Fax: 604 984 0218

To: **NORTHGATE EXPLORATION**
KEMESS MINE
P.O. BOX 3519
SMITHERS BC V0J 2N0

Date : 20-Jun-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03020565

Sample Description	Method Analyte Units LOR	ME-ICP41 Ga ppm 10	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1	ME-ICP41 Sr ppm 1
400791		10	<1	0.08	10	0.54	597	3	0.01	13	1630	124	0.09	<2	1	25
400792		10	<1	0.08	10	0.43	581	2	0.01	8	910	82	0.08	<2	1	33
400793		10	<1	0.06	10	0.38	829	2	0.01	7	830	68	0.06	<2	1	25
400794		10	<1	0.06	10	0.58	516	1	0.01	10	590	36	0.03	<2	1	47
400795		10	<1	0.06	<10	0.39	387	<1	0.01	5	760	25	0.04	<2	<1	57
400796		10	<1	0.08	10	0.77	1380	1	0.01	9	1060	53	0.06	<2	2	73

Comments: NSS is non-sufficient sample.

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Date : 20-Jun-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03020565

Sample Description	Method Analyte Units LOR	ME-ICP41 Ti % 0.01	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2
400751		0.04	<10	<10	56	<10	102
400752		0.01	<10	<10	52	<10	87
400753		0.02	<10	<10	57	<10	308
400754		0.04	<10	<10	62	<10	300
400755		0.05	<10	<10	58	<10	166
400756		0.05	<10	<10	62	<10	263
400757		0.01	<10	<10	43	<10	363
400758		0.03	<10	<10	61	<10	377
400759		0.04	<10	<10	64	<10	283
400760		0.05	<10	<10	59	<10	306
400761		0.04	<10	<10	64	<10	277
400762		0.07	<10	<10	63	<10	381
400763		0.06	<10	<10	55	<10	536
400764		0.05	<10	<10	48	<10	594
400765		0.03	<10	<10	72	<10	360
400766		0.03	<10	<10	65	<10	333
400767		0.05	<10	<10	53	<10	126
400768		0.03	<10	<10	56	<10	147
400769		0.06	<10	<10	54	<10	177
400770		0.01	<10	<10	14	<10	602
400771		0.01	<10	<10	32	<10	980
400772		<0.01	<10	<10	43	<10	158
400773		0.07	<10	<10	87	<10	169
400774		0.06	<10	<10	68	<10	137
400775		0.05	<10	<10	69	<10	209
400776		0.03	<10	<10	72	<10	376
400777		0.05	<10	<10	58	<10	234
400778		0.03	<10	<10	62	<10	151
400779		0.04	<10	<10	77	<10	519
400780		0.04	<10	<10	71	<10	167
400781		0.05	<10	<10	67	<10	201
400782		0.05	<10	<10	75	<10	125
400783		0.05	<10	<10	72	<10	45
400784		0.05	<10	<10	45	<10	261
400785		0.05	<10	<10	53	<10	217
400786		0.03	<10	<10	66	<10	327
400787		0.06	<10	<10	58	<10	148
400788		0.01	<10	<10	41	<10	29
400789		0.06	<10	<10	77	<10	295
400790		0.08	<10	<10	77	<10	351

Comments: NSS is non-sufficient sample.

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To: **NORTHGATE EXPLORATION**
KEMESS MINE
P.O. BOX 3519
SMITHERS BC V0J 2N0

Date : 20-Jun-2003
Account: NORTEX

Project : 4090

CERTIFICATE OF ANALYSIS VA03020565

Sample Description	Method Analyte Units LOR	ME-ICP41 Ti % 0.01	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2
400791		0.02	<10	<10	60	<10	389
400792		0.03	<10	<10	68	<10	308
400793		0.03	<10	<10	64	<10	227
400794		0.03	<10	<10	54	<10	258
400795		0.02	<10	<10	51	<10	422
400796		0.05	<10	<10	61	<10	756

Comments: NSS is non-sufficient sample.

Brenda 2003 Prospecting Samples

Area:	Sample No.	Grid	Northing	Easting	Sampled by	Rock Type	Min	Alt	Remarks
Brenda	400443	WGS 84	6347988	629601	Brian Kay				Noted in field book as BK 03-04
Brenda	24862	NAD 83	6346836	626541	Ted Archibald	Qtz			O/C 'brecciated' qtz, no apparent min'n, +/- 30cms wide See field book for notes concerning 24862-24872
Brenda	24863	NAD 83	6346834	626538	Ted Archibald	Qtz	Py		O/C More qtz but with minor pyrite
Brenda	24864	NAD 83	6346834	626538	Ted Archibald	Volc	Py		O/C Some of volc. That hosts vein, at contact with qtz, up to 10% pyrite
Brenda	24865	NAD 83	6346820	626570	Ted Archibald	?	Py		Flyrock beside drillholes. Boulder of strongly (f.d.) pyritic grey quartz or fine-grained monz. Very limonitic, slightly vuggy
Brenda	24866	NAD 83	6347101	626103	Ted Archibald	Ferricrete			O/C Ferricrete exposed along creek bank
Brenda	24867	NAD 83	6347062	626043	Ted Archibald	Monz?		Clay	Felsemer Clay altered grungy intrusive
Brenda	24868	NAD 83	6346321	625931	Ted Archibald	Volc		Ser	Subcrop Sericitically altered Takla volcs says Ron
Brenda	24869	NAD 83	6346350	625937	Ted Archibald	Skarn	Cpy,Hem		Talus Fairly massive specular hematite with blebs of chalco and malachite staining
Brenda	24870	NAD 83	6346265	625916	Ted Archibald	Skarn	Hem		Talus Locallly common Sjkarny, various degrees of specularite, sometimes bit pryite or calcareous, occasionally epidote
Brenda	24871	NAD 83	6346570	626156	Ted Archibald	Qtz			Felsemer Somewhat brecciated quartz, unmineralized
Brenda	24872	NAD 83	6346626	626208	Ted Archibald	Monz	Py		Very quartzy, moderatley limonitic monz with a few specks of pyrite

2-Oct-03

ECO TECH LABORATORY LTD.
10041 Dallas Drive
KAMLOOPS, B.C.
V2C 6T4

Phone: 250-573-5700
Fax : 250-573-4557

ICP CERTIFICATE OF ANALYSIS AK 2003-405

KEMESS - NORTHGATE EXPLORATIONS
Box 3519
Smithers, BC
V0J 2N0

ATTENTION: Carl Edmunds

No. of samples received: 11
Sample type: Rock
Project #:4090
Shipment #: ET-009
Samples submitted by: E. Hougen

Values in ppm unless otherwise reported

Et #.	Tag #	Au(ppb)	Ag	Al %	As	Ba	Bi	Ca %	Cd	Co	Cr	Cu	Fe %	La	Mg %	Mn	Mo	Na %	Ni	P	Pb	Sb	Sn	Sr	Tl %	U	V	W	Y	Zn
1	24862	125	1.9	0.74	40	5	<5	0.32	<1	6	187	13	1.58	<10	0.49	181	8	<0.01	20	230	10	5	<20	8	0.08	<10	32	<10	3	20
2	24863	545	9.3	0.95	245	20	<5	0.68	<1	17	164	44	2.93	<10	0.73	431	29	<0.01	38	200	48	10	<20	5	0.05	<10	35	<10	3	67
3	24864	325	7.5	3.51	85	5	<5	1.01	<1	42	361	254	6.34	10	3.46	1095	2	0.06	106	640	66	5	<20	51	0.09	<10	141	<10	6	178
4	24865	315	7.6	0.81	230	20	5	0.04	<1	14	177	22	3.37	<10	0.97	449	10	<0.01	28	290	48	5	<20	<1	0.04	<10	41	<10	2	41
5	24866	35	2.7	2.80	5	35	15	0.36	<1	12	69	63	9.97	20	2.09	1350	4	0.02	6	1220	34	<5	<20	53	0.19	<10	132	<10	10	158
6	24867	15	0.3	4.20	5	65	<5	2.70	<1	3	25	63	2.51	<10	0.70	800	2	0.01	11	580	32	<5	<20	116	0.05	<10	27	<10	4	95
7	24868	<5	<0.2	2.57	5	115	<5	2.90	<1	1	10	5	0.28	<10	0.11	101	<1	0.02	9	180	18	<5	<20	137	0.01	<10	2	<10	<1	32
8	24869	15	15.8	1.70	15	<5	<5	9.41	>1000	83	47	5145	5.54	10	1.71	4795	<1	<0.01	11	490	150	<5	<20	20	0.04	<10	26	<10	4	>10000
9	24870	25	9.4	1.89	20	30	<5	>10	666	49	38	2033	6.27	20	1.00	8041	<1	<0.01	23	550	224	<5	<20	<1	0.05	<10	26	<10	16	>10000
10	24871	295	8.4	0.45	<5	15	<5	1.42	4	3	128	30	0.62	<10	0.18	448	5	<0.01	6	150	56	5	<20	15	0.03	<10	3	<10	3	434
11	24872	40	0.7	0.78	10	265	5	0.36	<1	5	95	10	1.66	<10	0.34	433	5	0.02	4	600	12	<5	<20	203	0.09	<10	2	<10	6	79
QC DATA:																														
Repeat:																														
1	24862	125	1.9	0.74	35	<5	5	0.34	<1	6	196	14	1.67	<10	0.49	190	8	<0.01	21	250	14	<5	<20	6	0.08	<10	30	<10	3	20
10	24871	-	8.8	0.44	<5	15	<5	1.41	3	3	129	29	0.61	<10	0.18	441	5	<0.01	8	150	58	<5	<20	15	0.03	<10	2	<10	3	419
Standard:																														
GEO '03		135	1.6	1.75	60	135	5	1.73	<1	21	64	84	3.80	<10	0.98	640	<1	0.03	31	760	22	<5	<20	41	0.12	<10	68	<10	12	73

ECO TECH LABORATORY LTD.
Jutta Jealouse
B.C. Certified Assayer

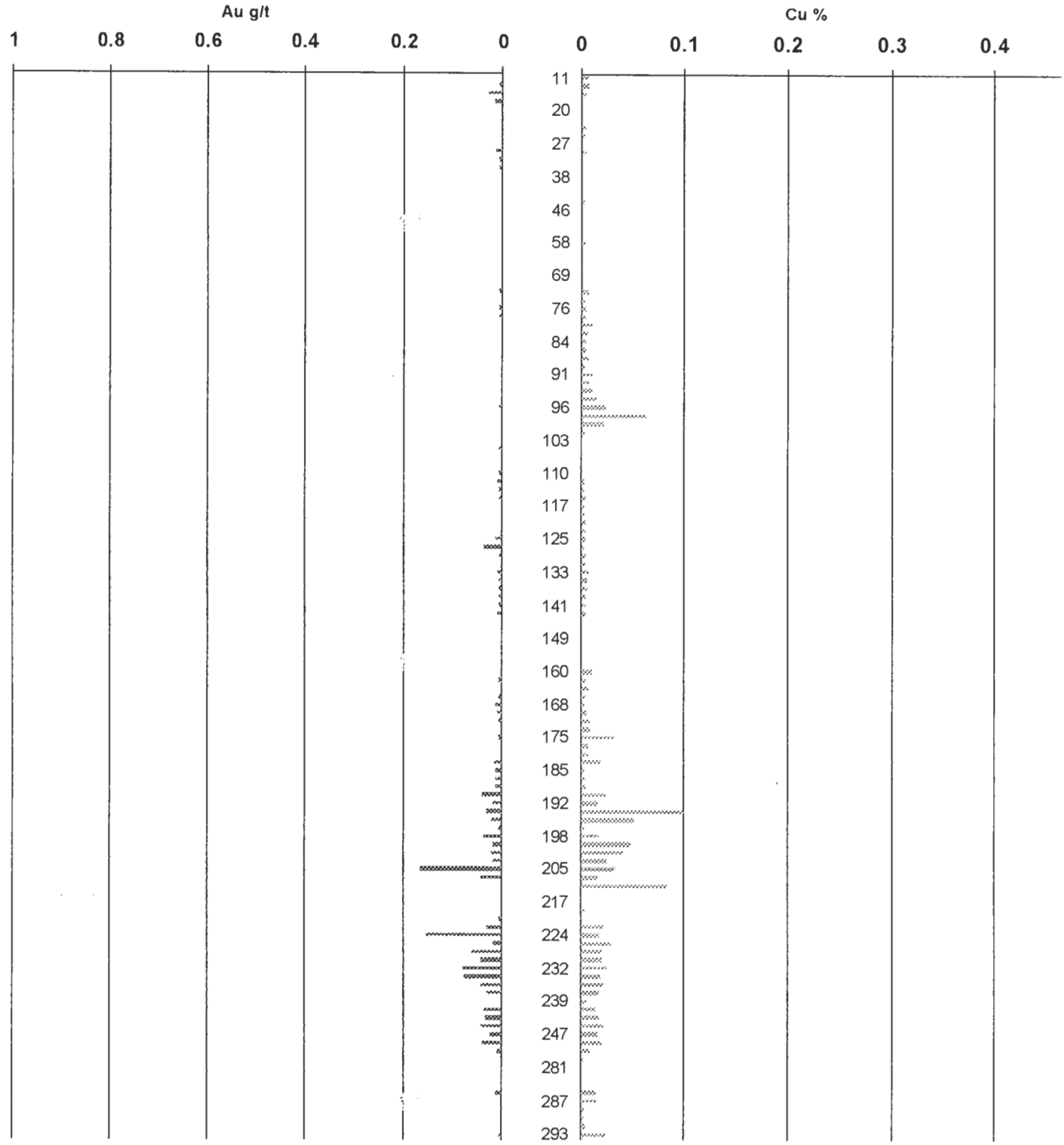
JJ/lh
df/405
XLS/03

APPENDIX V – DDH LOGS

Brenda Property 2003

Northgate Exploration Ltd

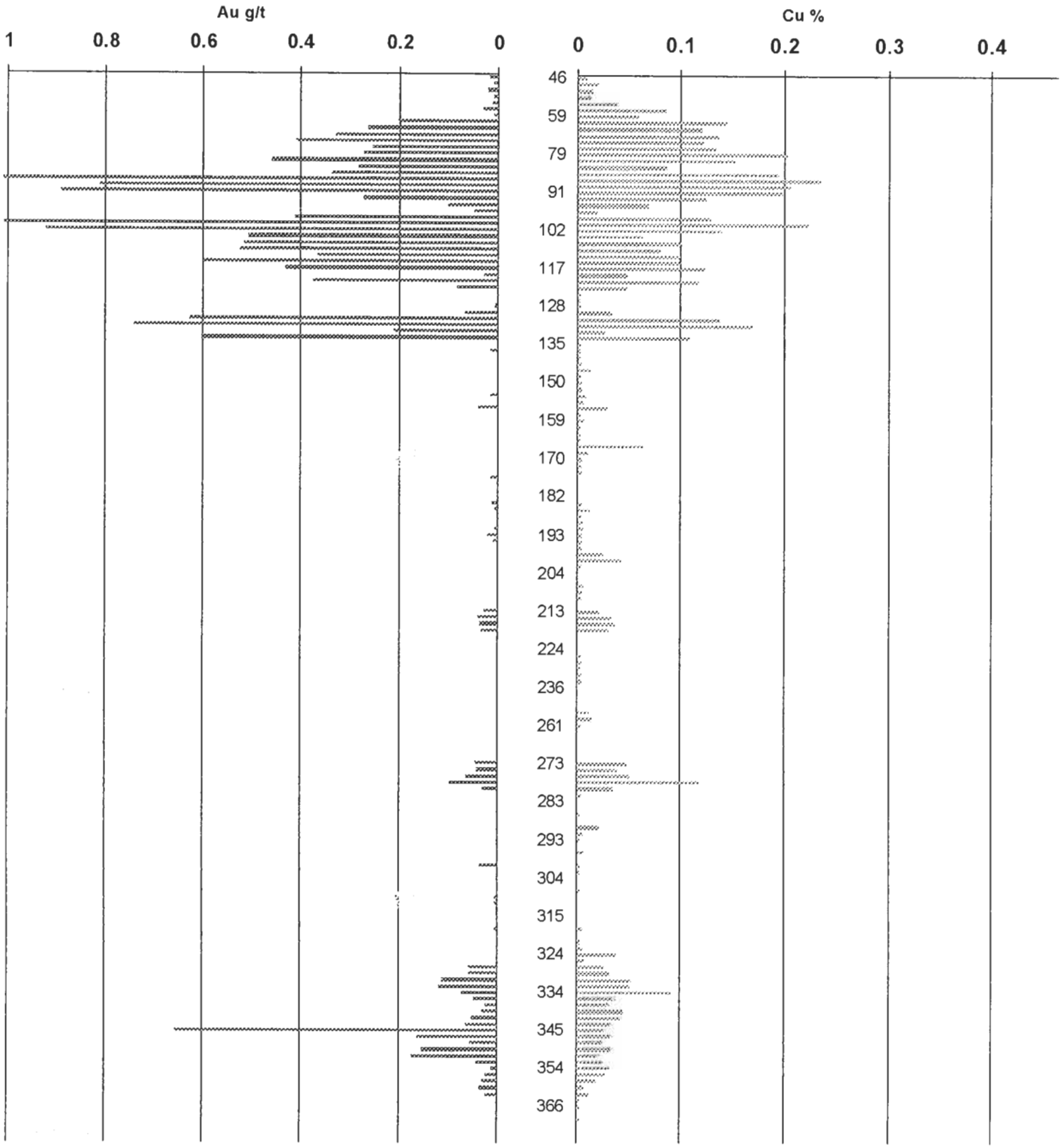
'ole Number: ***BR-03-05***



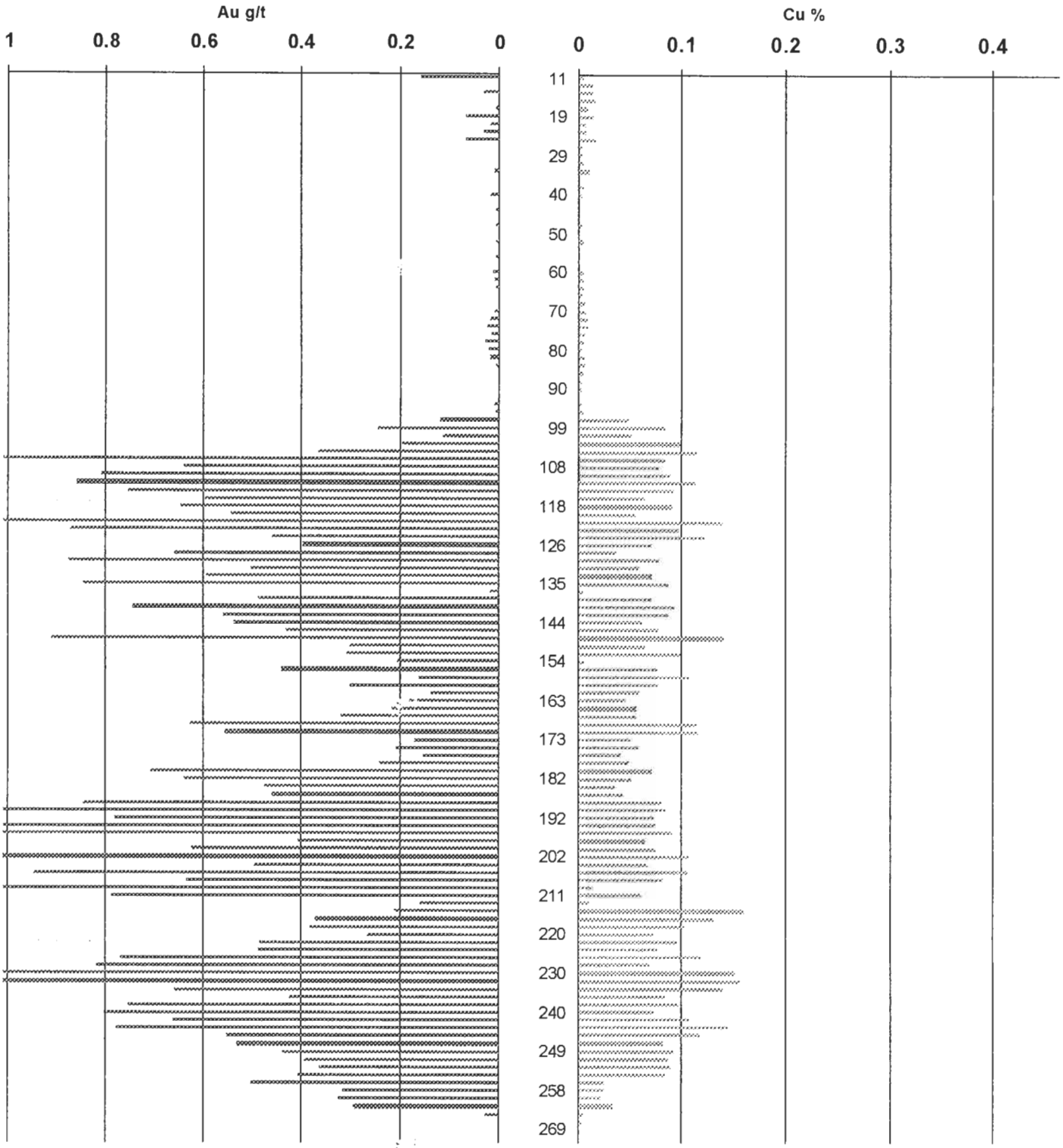
Brenda Property 2003

Northgate Exploration Ltd

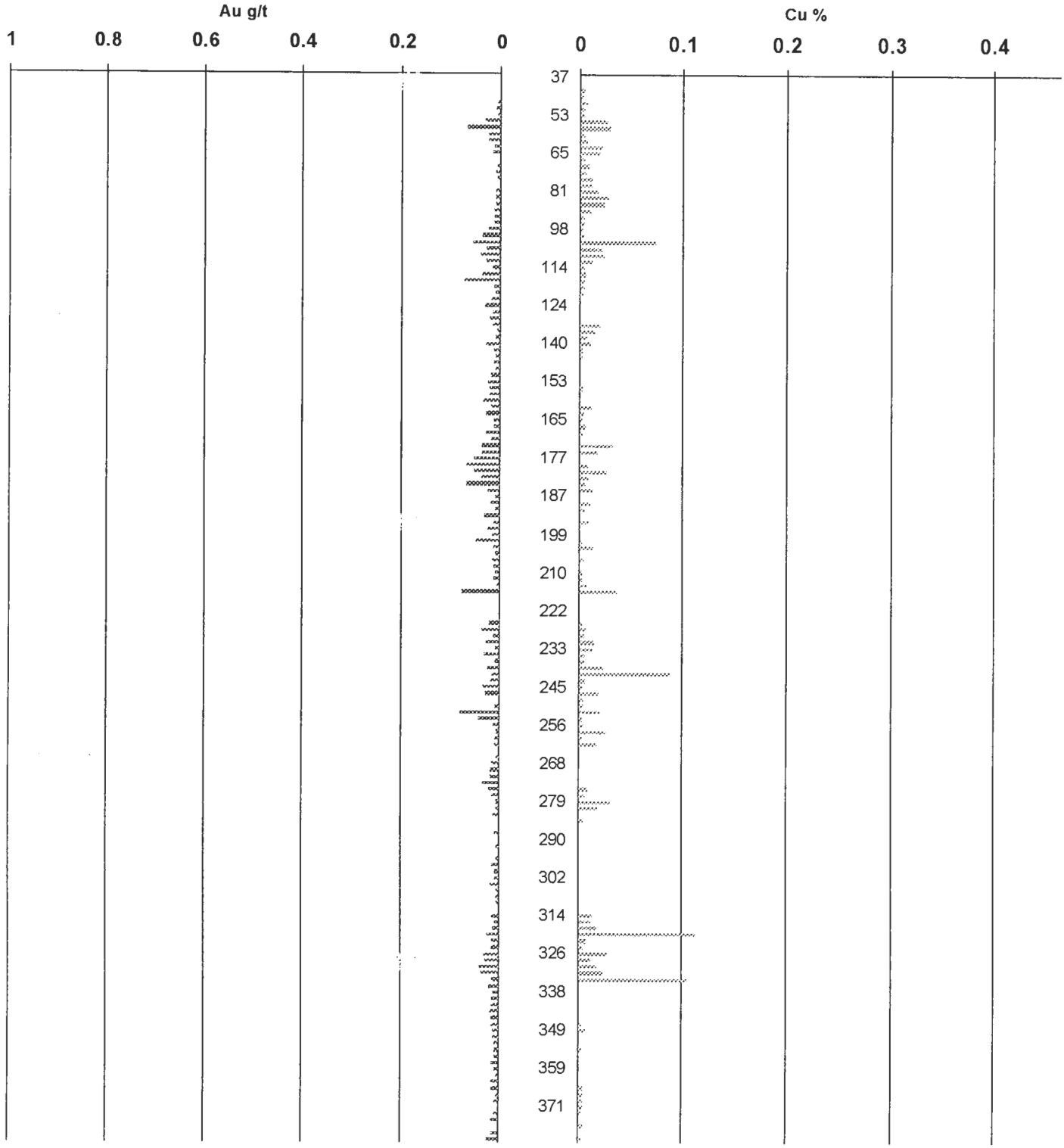
Hole Number: ***BR-03-06***



Hole Number: ***BR-03-07***



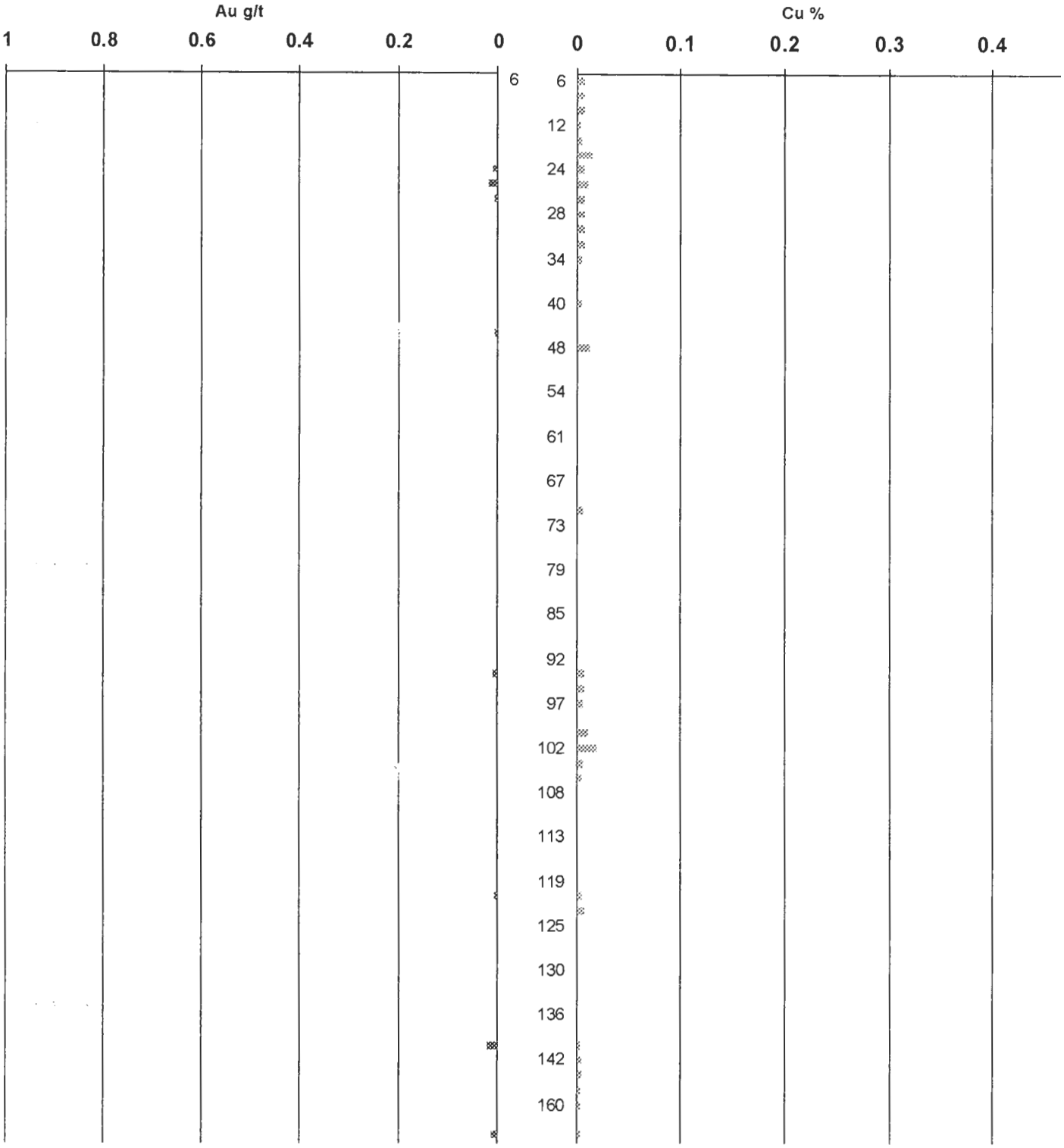
Hole Number: ***BR-03-08***



Brenda Property 2003

Northgate Exploration Ltd

Hole Number: ***BR-03-09***



Brenda Property 2003 Diamond Drill Log

Northgate Exploration Ltd

Hole Number: ***BR-03-05***

Nad83_N:	6347670	**Total Depth:**	292.6 **m**
Nad83_E:	628290	**Azimuth:**	55 °
Elevation:	1487	**Dip:**	-70 °

Geologist: Jean Pautler

Drilled: 6/19/2003

Survey Depth	Azimuth	Dip
63.7 m	53 °	-70 °
66.8 m	52 °	-70 °
69.8 m	51 °	-70 °
72.8 m	52 °	-70 °
75.9 m	52 °	-70 °
78.9 m	52 °	-70 °
82.0 m	53 °	-70 °
85.0 m	53 °	-70 °
88.1 m	53 °	-70 °

Survey Depth	Azimuth	Dip
91.1 m	53 °	-70 °
94.2 m	53 °	-70 °
97.2 m	53 °	-70 °
100.3 m	53 °	-70 °
103.3 m	53 °	-70 °
106.4 m	53 °	-70 °
109.4 m	52 °	-70 °
112.5 m	53 °	-70 °
115.5 m	53 °	-70 °

Survey Depth	Azimuth	Dip
118.6 m	53 °	-70 °
121.6 m	53 °	-70 °
124.7 m	53 °	-70 °
127.7 m	53 °	-70 °
130.8 m	53 °	-70 °
133.8 m	53 °	-70 °
136.9 m	53 °	-70 °
139.9 m	53 °	-70 °
143.0 m	55 °	-70 °

Brenda Property 2003 Diamond Drill Log

Northgate Exploration Ltd

Hole Number: ***BR-03-05***

Nad83_N:	6347670	**Total Depth:**	292.6 m
Nad83_E:	628290	**Azimuth:**	55 °
Elevation:	1487	**Dip:**	-70 °

Geologist: Jean Pautler

Drilled: 6/19/2003

Survey Depth	Azimuth	Dip
146.0 m	57 °	-70 °
149.0 m	50 °	-70 °
152.1 m	54 °	-70 °
155.1 m	51 °	-70 °
158.2 m	55 °	-70 °
161.2 m	54 °	-70 °
164.3 m	52 °	-70 °
167.3 m	53 °	-70 °
170.4 m	52 °	-70 °

Survey Depth	Azimuth	Dip
173.4 m	52 °	-70 °
176.5 m	54 °	-70 °
179.5 m	53 °	-70 °
182.6 m	53 °	-70 °
185.6 m	52 °	-70 °
188.7 m	53 °	-71 °
191.7 m	55 °	-70 °
194.8 m	56 °	-70 °
197.8 m	56 °	-70 °

Survey Depth	Azimuth	Dip
203.9 m	55 °	-71 °
207.0 m	56 °	-71 °
210.0 m	56 °	-71 °
213.1 m	56 °	-71 °
216.1 m	55 °	-71 °
219.2 m	54 °	-71 °
222.2 m	55 °	-71 °
225.2 m	53 °	-71 °
228.3 m	57 °	-71 °

Brenda Property 2003 Diamond Drill Log

Northgate Exploration Ltd

Hole Number: ***BR-03-05***

Nad83_N:	6347670	**Total Depth:**	292.6 **m**
Nad83_E:	628290	**Azimuth:**	55 °
Elevation:	1487	**Dip:**	-70 °

Geologist: Jean Pautler

Drilled: 6/19/2003

Survey Depth	Azimuth	Dip
231.3 m	57 °	-71 °
234.4 m	55 °	-71 °
237.4 m	55 °	-71 °
240.5 m	56 °	-71 °
243.5 m	53 °	-71 °
246.6 m	54 °	-71 °
249.6 m	55 °	-71 °
252.7 m	55 °	-71 °
261.8 m	54 °	-71 °

Survey Depth	Azimuth	Dip
264.9 m	53 °	-71 °
267.9 m	55 °	-71 °
271.0 m	55 °	-71 °
274.0 m	58 °	-71 °
277.1 m	58 °	-71 °
280.1 m	56 °	-71 °
283.2 m	56 °	-71 °
286.2 m	60 °	-71 °
289.3 m	58 °	-71 °

Survey Depth	Azimuth	Dip

Brenda Property 2003 Diamond Drill Log

Northgate Exploration Ltd

Hole Number: *BR-03-05*

From (m)	To (m)	Rock Type	Comments
0.0	6.1	CASING	
6.1	7.6	OVERBURDEN	Mixed rubble; 30% monzonite, 705 andesite fragmental
7.6	35.0	CRYSTAL-LITHIC UNDIFFERENTIATED TUFF	Andesite fragmental with chloritized lithic fragments, generally a few mm's to 2 cms; feldspar and occasional augite phenocryst, minor chlorite-anhydrite stringers and fracture fillings.
35.0	41.1	PORPHYRITIC ANDESITE FLOW	Grading into more feldspar porphyritic sections with up to 20% feldspars; calcite in stringers and olive zeolite.
41.1	43.6	CRYSTAL-LITHIC UNDIFFERENTIATED TUFF	Less altered dominantly chloritic, some light greenish minerals in stringers - dissolves in HCl - soft. Contact at 40° to core axis.
43.6	51.9	FLOW BRECCIATED ANDESITE FLOW	Altered Zone; abundant calcite zeolite stringers; intermediate feldspar porphyritic flow
51.9	54.9	LOST CORE	
54.9	70.6	PORPHYRITIC ANDESITE FLOW	Andesitic latite felspar porphyry flow with 15% feldspar commonly altered to propyllitic assemblages. Occasional chloritic xenoliths. Calcite-zeolite stringers.
70.6	72.3	PORPHYRITIC DACITE FAULT ZONE	Fault gouge - 30% of section - sericitic
72.3	76.1	PORPHYRITIC DACITE FLOW	Pyritic=clay gouge alng fractures at 20° to core axis - epidote-chlorite-sericite along fractures at 85 and 40 deg; pyrite associated with gouge.
76.1	77.7	PORPHYRITIC DACITE FAULT ZONE	Gouge = 30% of interval; sericite-pyrite altered with chlorite-sericite along fracture planes. 77.0m calcite stockwork at 30° to core axis.
77.7	99.5	PORPHYRITIC DACITE FLOW	78.7-79.7; Gouge zone with weak hematite alteration; some epidote alteration of feldspars. In stringers and clots.
99.5	101.3	PORPHYRITIC DACITE FAULT ZONE	Gouge over 40% of interval. Patchy fine grained silicification.
101.3	108.3	PORPHYRITIC DACITE FLOW	Calcite stringers (<1cm) running down core axis.
108.3	109.7	FRACTURED DACITE FAULT ZONE	10% of zone is gouge

Brenda Property 2003 Diamond Drill Log

Northgate Exploration Ltd

Hole Number: *BR-03-05*

From (m)	To (m)	Rock Type	Comments
109.7	116.1	PORPHYRITIC DACITE FLOW	
116.1	117.0	FRACTURED DACITE FAULT ZONE	60% of zone is gouge or shattered rock.
117.0	124.5	PORPHYRITIC DACITE FLOW	Minor cherty stringers at 117.2m; 20° to core axis. 20 cm wide fracture one at 30° to core axis. at 118.6m
124.5	125.8	BRECCIATED DACITE FAULT ZONE	Faults at 10-30° to core axis at 124.7-125.4m
125.8	134.8	PORPHYRITIC DACITE FLOW	
134.8	136.7	FRACTURED DACITE FAULT ZONE	Gouge zones very sericitic
136.7	138.7	FRACTURED DACITE FLOW	Fractures at 60, 35, 50 to core axis.
138.7	140.7	FRACTURED DACITE FAULT ZONE	10cm grey quartz vein at 138.7m at 60° to core axis; minor calcite -zeolite.
140.7	148.9	EQUIGRANULAR QUARTZ MONZONITE DYKE	Chilled margin of hematite altered dyke/sill. Calcite zeolite on fracture surfaces. Coarser grained in centre of unit.
148.9	150.8	PORPHYRITIC DACITE FLOW	Abundant fine calcite-zeolite fracture fillings; 20% less phenocrysts. Rubbly upper contact with dyke
150.8	153.0	EQUIGRANULAR QUARTZ MONZONITE DYKE	Chilled margin - minor quartz filled amygdales. 1% pyrite on fracture surfaces.
153.0	158.0	PORPHYRITIC DACITE FLOW	Minor epidote alteration of feldspars, 15m - 10cm of 15% pyrite at 30° to core axis; sphalerite on margins.
158.0	162.3	MASSIVE MAFIC DYKE	Calcareous mafic dyke with calcite amygdales with calcite-zeolite stringers.
162.3	164.2	PORPHYRITIC DACITE FLOW	Sphalerite in 5° to core axis fractures with calcite-zeolite stringers - due to fault.
164.2	165.6	PORPHYRITIC DACITE FAULT ZONE	Core axis parallel fault zone; quartz-cc stringers and silicification
165.6	172.9	PORPHYRITIC DACITE FLOW	Calcite stringers with sphalerite ± molybdenite(?) in low angle structures; well fractured.
172.9	175.1	EQUIGRANULAR MONZONITE DYKE	

Brenda Property 2003 Diamond Drill Log

Northgate Exploration Ltd

Hole Number: *BR-03-05*

From (m)	To (m)	Rock Type	Comments
175.1	176.9	MASSIVE MAFIC DYKE	Calcite-zeolite veinlets
176.9	178.8	FRACTURED ANDESITE FAULT ZONE	Sericitic fragments plus silicified clasts related to fault zone.
178.8	184.7	FRACTURED ANDESITE FLOW	Calcite stringers with associated sphalerite(blackjack)
184.7	186.1	BRECCIATED ANDESITE FAULT ZONE	Highly fractured gouge zones comprise 80% of interval. Highly pyritic to 185.1m; barren mafic dyke at 185.1 (20cms) at 35° to core axis. 25cms of black graphitic gouge at base of interval.
186.1	191.9	MOTTLED ANDESITE BRECCIA	Mottled unit due to original fragmental texture with pink hematite patches and dark green chlorite patches, with minor epidote area. 10cm mafic dyke at base of section with contacts at 40 and 60 to core axis.
191.9	193.7	PORPHYRITIC MONZONITE DYKE	Latite dyke(?); pervasive hematite alteration
193.7	205.4	MOTTLED ANDESITE BRECCIA	Well fractured and brecciated ; fragments and stringers and patches of quartz, epidote icreses from 194.7 to 195.7m Mottled clasts in grey quartz-sericite-pyrite altered matrix.
201.2	203.5	BRECCIATED ANDESITE	Anhydrite-quartz pyritic fault zone with broken quartz veinlets. Minor 10cm monzonite at 202.1m 35-65° to core axis. 15cms of propyllitic and hematitic alteration at base of interval.
205.4	218.9	PORPHYRITIC MONZONITE DYKE	Increased epidote clots, calcite-zeolite stringers and trace fine black sphalerite at 205.7m. 207.2 trace fine chalcopyrite-molybdenite with calcite-pyrite stringer.
218.9	235.9	MOTTLED ANDESITE BRECCIA	Minor quartz-magnetite stringers
235.9	237.6	MASSIVE MAFIC DYKE	Calcite amygdales; fine calcite-zeolite fracture fillings at 45-75 to core axis.
237.6	246.6	MOTTLED ANDESITE BRECCIA	Trace chalcopyrite in quartz stringer at 238.6m trending 5° to core axis. Pyrite gypsum stringers.
246.6	247.0	PORPHYRITIC ANDESITE FLOW	Xenolith with pyrite in margin with remnant feldspar phenocrysts.
247.0	251.0	PORPHYRITIC MONZONITE DYKE	
251.0	252.1	MASSIVE MAFIC DYKE	Mafic dyke with lower chilled margin. (Missing 122125 tag)

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Hole Number: *BR-03-05*

From (m)	To (m)	Rock Type	Comments
252.1	252.9	PORPHYRITIC MONZONITE DYKE	Pervasively hematitic monzonite showing propyllitic(epidote) alteration. Feldspar and epidote stringers at lower contact
252.9	253.6	MASSIVE MAFIC DYKE	Calcite amygdales. Gradational lower contact
253.6	259.5	PORPHYRITIC MONZONITE DYKE	
259.5	260.5	MASSIVE MAFIC DYKE	
260.5	282.5	PORPHYRITIC MONZONITE DYKE	Coarsely porphyritic monzonite with epidote-sericite fracture fillings; epidote-sericite and chlorite-magnetite altered phenocrysts with the occasional mafic xenolith at 261.7m.
282.5	283.9	PORPHYRITIC ANDESITE BRECCIA	Magnetite-silica zone with weakly mottled/brecciated texture.
283.9	291.1	PORPHYRITIC ANDESITE FLOW	Pervasive silicification with magnetite alteration; porphyritic hematite altered latite or andesite porphyry flow.
291.1	292.1	PORPHYRITIC ANDESITE BRECCIA	Quartz-magnetite stringers over lower 0.5m; background silicification
292.1	292.6	PORPHYRITIC MONZONITE DYKE	Gradational contact with Monzonite. End of Hole 292.6m

Brenda Property 2003 Diamond Drill Log

Northgate Exploration Ltd

Hole Number: BR-03-05

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins (CA-%)		Comments	Sample#	Cu %	Au ppm
0	6.1	**CASING**								
0.00	6.10									
6.1	7.6	**OVERBURDEN**								
6.10	7.60	Fine grained light grey					Mixed rubble; 30% monzonite, 70% andesite fragmental			
7.6	35	**CRYSTAL-LITHIC UNDIFFERENTIATED TUFF**								
7.60	10.70	Fine grained green grey weakly clay alterred	2.0	0 STR	55	3	Andesite fragmental with chloritized lithic fragments, generally a few mm's to 2 cms; feldspar and occasional augite phenocryst, minor chlorite-anhydrite stringers and fracture fillings.	122001	0.008	0
10.70	13.70	Fine grained light grey strongly propyllitic	4.0	0 STK	40	10	Increased stringer stockwork of zeolite anhydrite with minor quartz, clay and chlorite as fracture fillings. Alteration is quartz-chlorite-clay; generally bleached due to anhydrite/clay; some stringers at 75° to core axis.	122002	0.007	0.005
13.70	16.80	Fine grained light grey moderately argillic	7.0	1 STR	40	2	Disseminated pyrite replacing chlorite fragments; bleached as above; no quartz.	122003	0.004	0.028
16.80	18.30	Fine grained grey green weakly argillic	2.0	0 FRC		5	Up to 20% more feldspars - in centre of unit.	122004	0.002	0.016
18.30	20.00		2.0	0 FRC	30	5	Clay-chlorite on fracture fillings - 20-35° to core axis.	122005	0.002	0
20.00	22.00	Fine grained grey green weakly propyllitic	2.0	0 FRC	15	5	Gradationally more epidote as fracture fillings (20.5-22m)	122006	0.002	0
22.00	23.80		2.0	3 STR	60	5	More anhydrite as stringers at 60 and 35° to core axis and as fracture fillings.	122007	0.004	0
23.80	25.90	Fine grained light grey strongly argillic	7.0	0 STR	30	7	Weak anhydrite stringers ± olive zeolite(?). Clay as fracture filling; bleached with silicification.	122008	0.003	0
25.90	27.40	Fine grained light grey moderately propyllitic	7.0	1 FRC	30	2	Less fractures and fracture fillings at 15-30° to core axis; bleached.	122009	0.002	0
27.40	28.95	Fine grained light grey moderately argillic	7.0	0 FRC	15	10	Structural breccia; from 27.4-28 with clay as fracture fillings, some olive zeolite in interval outside of breccia; platey looking and bleached.	122010	0.004	0.011
28.95	32.00	Fine grained grey green weakly propyllitic	2.0	0 FRC	10	5	Same as 12001, but very little anhydrite minor clay as fracture fillings.	122011	0.002	0.007

Hole Number: BR-03-05

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)	Comments	Sample#	Cu %	Au ppm
32.00	35.00	Fine grained grey green weakly propyllitic	2.0	0	FRC	2		122012	0.002	0.006
35	41.1	**PORPHYRITIC ANDESITE FLOW**								
35.00	37.50	Fine grained grey green weakly propyllitic	2.0	0	STR	30 2	Grading into more feldspar porphyritic sections with up to 20% feldspars; calcite in stringers and olive zeolite.	122013	0.002	0
37.50	39.60	Fine grained grey green moderately propyllitic	5.0	0	STR	35 7	More stringers and less porphyritic.	122014	0.002	0
39.60	41.10	Fine grained light grey strongly propyllitic	7.0	0	STR	30 2	Calcite zeolite stringers	122015	0.002	0
41.1	43.6	**CRYSTAL-LITHIC UNDIFFERENTIATED TUFF**								
41.10	43.60	Medium to coarse grained green grey weakly propyllitic	3.0	0	STR	45 2	Less altered dominantly chloritic, some light greenish minerals in stringers - dissolves in HCl - soft. Contact at 40° to core axis.	122016	0.003	0
43.6	51.9	**FLOW BRECCIATED ANDESITE FLOW**								
43.60	45.90	Fine grained light grey strongly argillic	5.0	0	STR	45 10	Altered Zone; abundant calcite zeolite stringers; intermediate feldspar porphyritic flow	122017	0.002	0
45.90	47.40	Fine grained green moderately propyllitic	2.0	0	FRC	5 3	Possible fow top; crackle brecciated with calcite-zeolite infilling and stringers.	122018	0.002	0
47.40	49.60	Fine grained light grey strongly argillic	5.0	0	FRC	50 1	Andesite-latite crackle brecciated flow with calcite anhydrite infilling; calcite stringers grade into more feldspar porphyritic sections down hole. Similar to BR-02-4.	122019	0.001	0
49.60	51.90	Fine grained light grey intensely argillic	10.0	0	FRC	50 2	Brecciated texture towards base of section due to fault-quartz phenocrysts noted - Hazelton strat call. Possible contact with Takla at base of section.	122020	0.002	0
51.9	54.9	**LOST CORE**								
51.90	54.90									
54.9	70.6	**PORPHYRITIC ANDESITE FLOW**								
54.90	58.00	Fine grained green moderately propyllitic	1.0	0	FRC	80 3	Andesitic latite felspar porphyry flow with 15% feldspar commonly altered to propyllitic assemblages. Occasional chloritic xenoliths. Calcite-zeolite stringers.	122021	0.004	0

Hole Number: BR-03-05

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
58.00	61.00	Fine grained green moderately propyllitic	1.0	0	FRC	5	4		122022	0.001	0
61.00	64.00		1.0	6	FRC	15	3		122023	0.001	0
64.00	67.00	Fine grained green red weakly propyllitic	1.0	2	FRC	15	3	Hematite alteration increasing within feldspars.	122024	0.002	0
67.00	69.00		1.0	4	FRC	55	4	67.2m - 1 cm calite-quartz-galena stringer at 40 to core axis.	122025	0.002	0
69.00	70.60	Fine grained green red moderately hematitic	2.0	0	FRC	5	3	Epidote altered feldspars in stringers and clots - pervasive hematite alteration. Fracture surfaces calcite-zeolite.	122027	0.002	0
70.6	72.3	**PORPHYRITIC DACITE FAULT ZONE**									
70.60	72.30	Fine grained grey green strongly propyllitic	3.0	1	FLT	32	30	Fault gouge - 30% of section - sericitic	122028	0.008	0.007
72.3	76.1	**PORPHYRITIC DACITE FLOW**									
72.30	74.80	Fine grained grey green strongly propyllitic	2.0	0	FRC	20	5	Pyritic=clay gouge alng fractures at 20° to core axis - epidote-chlorite-sericite along fractures at 85 and 40 deg; pyrite associated with gouge.	122029	0.003	0
74.80	76.10	Fine grained grey green moderately propyllitic	2.0	0	FRC	5	2	Well fractured grading to more sericitic towards fault zone; chlorite-sericite along fractures.	122030	0.005	0.005
76.1	77.7	**PORPHYRITIC DACITE FAULT ZONE**									
76.10	77.70	Fine grained light grey green weakly propyllitic	5.0	0	FLT	45	30	Gouge = 30% of interval; sericite-pyrite altered with chlorite-sericite along fracture planes. 77.0m calcite stockwork at 30° to core axis.	122031	0.004	0.007
77.7	99.5	**PORPHYRITIC DACITE FLOW**									
77.70	79.70	Fine grained grey green weakly propyllitic	3.0	0	FLT	60	5	78.7-79.7; Gouge zone with weak hematite alteration; some epidote alteration of feldspars. In stringers and clots.	122032	0.01	0
79.70	81.70	Fine grained red grey weakly propyllitic	1.0	2	FRC	25	1	Epidote-hematite altered felspars; epi on fracture fillings.	122033	0.006	0
81.70	83.70	Fine grained red grey moderately propyllitic	1.0	0	FRC	30	2	Epidote clots and stringers.	122034	0.004	0
83.70	85.30	Fine grained red grey weakly hematitic	2.0	1	FRC	30	2	Pervasive weak hematite altered; at 85m quartz-calcite stringers with possible chalcopyrite and molybdenite 2cm wide at 30° to core axis.	122035	0.004	0

Hole Number: BR-03-05

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)	Comments	Sample#	Cu %	Au ppm
85.30	86.50	Fine grained red grey moderately propyllitic	4.0	5	SHR	5 2	Xenoliths of silicified andesite; alteration grades to more silicification at base of interval.	122036	0.007	0
86.50	88.50	Fine grained grey moderately propyllitic	7.0	0	FRC	2 3	Silicification overprints propyllitic alteration. Fault gouge at 88.3m 30° to core axis. Trace molybdenite or graphite on fractures at 30° to core axis.	122037	0.003	0
88.50	90.50	Fine grained grey weakly propyllitic	4.0	0	FRC	5 2	Calcite-chlorite-sericite-epidote fracture fillings: weak hematite and shear faulting.	122038	0.01	0
90.50	92.50		4.0	0	FRC	5 2	90.7; 1 cm quartz-calcite stringer with chlorite pyrite epidote along margins.	122039	0.008	0
92.50	93.70		10.0	0	FRC	5 5	Weak silicification; increasing calcite as stringers.	122040	0.01	0
93.70	95.60		3.0	0	FRC	10 1		122041	0.014	0
95.60	96.30		5.0 **0.1**	0	STR	10 2	Trace chalcopyrite in calcite-chlorite-pyrite-sphalerite stringers <1 cm; conjugate set of stringers at low core axis angles at 96.2m.	122042	0.023	0.007
96.30	97.50		3.0	0	FRC	5 3		122043	0.063	0
97.50	99.50	Fine grained grey green weakly propyllitic	3.0	0	FRC	5 3	Increasing chloritic at expense of hematite.	122044	0.022	0
99.5	101.3	**PORPHYRITIC DACITE FAULT ZONE**								
99.50	101.30	Fine grained light grey strongly argillic	13.0	0	FLT	30 40	Gouge over 40% of interval. Patchy fine grained silicification.	122045	0.003	0
101.3	108.3	**PORPHYRITIC DACITE FLOW**								
101.30	103.30	Fine grained grey weakly propyllitic	5.0	0	STR	3 2	Calcite stringers (<1cm) running down core axis.	122046	0.002	0
103.30	105.30		5.0	0	FRC	15 4	Calcite-chlorite-sericite fracture fillings causing a shattered zone at 104m	122047	0.002	0.005
105.30	107.40		5.0	0	FRC	45 5	Becoming more propyllitic; minor gouge at 45° to core axis	122048	0.002	0
107.40	108.30	Fine grained grey weakly argillic	5.0	0	FRC			122049	0.002	0
108.3	109.7	**FRACTURED DACITE FAULT ZONE**								
108.30	109.70	Fine grained light grey moderately argillic	10.0	0	FLT	45 10	10% of zone is gouge	122050	0.002	0.006

Brenda Property 2003 Diamond Drill Log

Northgate Exploration Ltd

Hole Number: BR-03-05

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
109.7	116.1	**PORPHYRITIC DACITE FLOW**									
109.70	112.20	Fine grained grey weakly argillic	5.0	0	FRC				122051	0.003	0.009
112.20	115.00	Fine grained grey moderately propyllitic	5.0	0	FRC	50	2	Feldspar phenocrysts at 20%; most altered to epidote-ser	122053	0.003	0.005
115.00	116.10	Fine grained grey weakly propyllitic	2.0	0	FRC	30	2	Hematite overprints propyllitic alteration assemblage.	122054	0.004	0.006
116.1	117	**FRACTURED DACITE FAULT ZONE**									
116.10	117.00	Fine grained grey weakly propyllitic	5.0	0	FLT	30	60	60% of zone is gouge or shattered rock.	122055	0.003	0
117	124.5	**PORPHYRITIC DACITE FLOW**									
117.00	118.90	Fine grained grey moderately propyllitic	2.0	0	FRC	60	1	Minor cherty stringers at 117.2m; 20° to core axis. 20 cm wide fracture one at 30° to core axis. at 118.6m	122056	0.003	0
118.90	120.70	Fine grained green grey moderately propyllitic	2.0	0	STR	40	5		122057	0.005	0
120.70	122.30	Fine grained grey red weakly propyllitic	2.0	0	FLT	25	7	Minor gouge and fracturing at low angles to core axis.	122058	0.004	0
122.30	124.50	Fine grained grey moderately propyllitic	4.0	0	FRC	6	10	Core axis parallel fracture zone.	122059	0.005	0.012
124.5	125.8	**BRECCIATED DACITE FAULT ZONE**									
124.50	125.80	Fine grained grey moderately argillic	10.0	0	FLT	25	20	Faults at 10-30° to core axis at 124.7-125.4m	122060	0.003	0.037
125.8	134.8	**PORPHYRITIC DACITE FLOW**									
125.80	127.80	Fine grained grey weakly argillic	6.0	0	FRC	35	5		122061	0.004	0.007
127.80	130.20	Fine grained grey moderately argillic	5.0	0	FRK	20	7	Porphyritic texture surviving alteration	122062	0.004	0
130.20	132.70	Fine grained grey strongly argillic	7.0	0	FLT	40	10	Main fault zone at 132.4m	122063	0.008	0.009
132.70	134.80	Fine grained grey moderately argillic	5.0	0	FLT		35	Less altered fragments in sericitic matrix.	122064	0.006	0.007
134.8	136.7	**FRACTURED DACITE FAULT ZONE**									
134.80	136.70	Fine grained grey green intensely argillic	7.0	0	FLT	35	30	Gouge zones very sericitic	122065	0.006	0.007
136.7	138.7	**FRACTURED DACITE FLOW**									
136.70	138.70	Fine grained grey strongly argillic	4.0	0	FRC	5	10	Fractures at 60, 35, 50 to core axis.	122066	0.005	0.007

Hole Number: BR-03-05

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins (CA-%)	Comments	Sample#	Cu %	Au ppm
138.7	140.7	**FRACTURED DACITE FAULT ZONE**							
138.70	140.70	Fine grained grey intensely argillic	0.5	*0* FLT	60 15	10cm grey quartz vein at 138.7m at 60° to core axis; minor calcite -zeolite.	122067	0.004	0.006
140.7	148.9	**EQUIGRANULAR QUARTZ MONZONITE DYKE**							
140 70	142.90	Fine grained brown strongly hematitic	0.5	*1* CTC	60	Chilled margin of hematite altered dyke/sill. Calcite zeolite on fracture surfaces. Coarser grained in centre of unit.	122068	0.004	0.008
142.90	144.70	Fine to medium grained brown moderately hematitic	0.5	*28* FRC	35 1		122069	0.002	0
144.70	146.30		0.5	*34* FRC	5 1		122070	0.001	0
146.30	148.90	Very fine grained brown strongly hematitic	0.5	*22* FRC	20 1	Chilled edge of dyke, but less hematitic from 148.3m. Similar to "latite dyke" of earlier holes.	122071	0.001	0
148.9	150.8	**PORPHYRITIC DACITE FLOW**							
148.90	150.80	Fine grained grey strongly	4.0	*0* CTC	50	Abundant fine calcite-zeolite fracture fillings; 20% less phenocrysts. Rubbly upper contact with dyke	122072	0	0
150.8	153	**EQUIGRANULAR QUARTZ MONZONITE DYKE**							
150.80	153.00	Very fine grained brown strongly hematitic	4.0	*1* FRC	5 0	Chilled margin - minor quartz filled amygdales. 1% pyrite on fracture surfaces.	122073	0.001	0
153	158	**PORPHYRITIC DACITE FLOW**							
153.00	158.00	Fine grained grey green strongly propyllitic	6.0	*27* CTC	30	Minor epidote alteration of feldspars, 15m - 10cm of 15% pyrite at 30° to core axis; sphalerite on margins.	122074	0	0
158	162.3	**MASSIVE MAFIC DYKE**							
158.00	159.60	Very fine grained dark green weakly		*48* CTC	80	Calcareous mafic dyke with calcite amygdales with calcite-zeolite stringers.	122075	0.01	0
159.60	161.30			*6*					
161.30	162.30	Fine grained grey green weakly	2.0	*0* CTC	5	Up to 1cm massive chlorite on contact.	122076	0.004	0.007
162.3	164.2	**PORPHYRITIC DACITE FLOW**							
162.30	164.20	Fine grained grey green moderately	2.0	FRC	5 7	Sphalerite in 5° to core axis fractures with calcite-zeolite stringers - due to fault.	122077	0.007	0

Hole Number: BR-03-05

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins (CA-%)	Comments	Sample#	Cu %	Au ppm
164.2	165.6	**PORPHYRITIC DACITE FAULT ZONE**							
164.20	165.60	Fine grained grey intensely argillic	15.0	0	FLT 10 80	Core axis parallel fault zone; quartz-cc stringers and silicification	122079	0.005	0.007
165.6	172.9	**PORPHYRITIC DACITE FLOW**							
165.60	167.60	Fine grained grey green moderately	5.0	0	FRC 5 5	Calcite stringers with sphalerite ± molybdenite(?) in low angle structures; well fractured.	122080	0.003	0.011
167.60	168.90		4.0	0	FRC 30 5	More sphalerite in 30° to core axis structures, brecciated over lower 30cms.	122081	0.006	0.008
168.90	170.90	Fine grained grey green moderately propyllitic	6.0	0	FRC 30 2	Minor epidote, minor sphalerite and some brecciation.	122082	0.009	0.005
170.90	172.90	Fine grained grey green strongly	10.0	0	FLT 20 20	Calcite-sphalerite stringers parallel to fault. 20° to core axis pyrite-sphalerite zones	122083	0.009	0
172.9	175.1	**EQUIGRANULAR MONZONITE DYKE**							
172.90	175.10	Medium grained red brown weakly hematitic	1.0	1			122084	0.033	0.007
175.1	176.9	**MASSIVE MAFIC DYKE**							
175.10	176.90	Very fine grained dark green weakly		0	FRC 5 3	Calcite-zeolite veinlets	122085	0.007	0
176.9	178.8	**FRACTURED ANDESITE FAULT ZONE**							
176.90	178.80	Fine grained grey green moderately argillic	4.0	6	FLT 5 50	Sericitic fragments plus silicified clasts related to fault zone.	122086	0.007	0
178.8	184.7	**FRACTURED ANDESITE FLOW**							
178.80	180.80	Fine grained grey green moderately	5.0	0	STR 25 3	Calcite stringers with associated sphalerite(blackjack)	122087	0.007	0
180.80	182.80	Fine grained grey green	4.0	0	STR 42 5	Sphalerite-cc-pyrite stringers.	122088	0.019	0.016
182.80	184.70		10.0	0	STR 42 80	Pyrite-cc-sphalerite stringers.	122089	0.003	0.011
184.7	186.1	**BRECCIATED ANDESITE FAULT ZONE**							

Hole Number: BR-03-05

From	To	Rock Type	Py-Cpy-Mt		Ms	Veins (CA-%)		Comments	Sample#	Cu %	Au ppm
184.70	186.10	Fine grained blue grey argillic	5.0		0	FLT	35	Highly fractured gouge zones comprise 80% of interval. Highly pyritic to 185.1m; barren mafic dyke at 185.1 (20cms) at 35° to core axis. 25cms of black graphitic gouge at base of interval.	122090	0.004	0.013
186.1	191.9	**MOTTLED ANDESITE BRECCIA**									
186.10	186.50	Fine grained green red moderately propyllitic	2.0		0	CTC	35	Mottled unit due to original fragmental texture with pink hematite patches and dark green chlorite patches, with minor epidote area. 10cm mafic dyke at base of section with contacts at 40 and 60 to core axis.	122091	0.005	0.011
186.50	189.00	Fine grained green red strongly propyllitic	7.0		1	STR	45	Brecciated ottled unit with quartz-magnetite stringers and calcite-sphalerite stringers with pyrite-sphalerite zones thatare calcareous.	122092	0.023	0.04
189.00	191.50	Fine grained green red propyllitic	7.0		0	FRK	25	Calcareous-pyrite-sphalerite mineralziation at 25° to core axis.	122093	0.016	0.02
191.50	191.90	Fine grained green red weakly propyllitic			0	FOL	50 50	Contact Zone: between mottled unit and monzonite dyke.	122094	0.1	0.032
191.9	193.7	**PORPHYRITIC MONZONITE DYKE**									
191.90	193.70	Very fine grained red brown weakly propyllitic	0.1		0	FRC	35 0	Latite dyke(?); pervasive hematite alteration	122095	0.052	0.021
193.7	205.4	**MOTTLED ANDESITE BRECCIA**									
193.70	195.40	Fine grained red brown moderately argillic	5.0		1	1	FLT 15 30	Well fractured and brecciated ; fragments and stringers and patches of quartz, epidote icreses from 194.7 to 195.7m Mottled clasts in grey quartz-sericite-pyrite altered matrix.	122096	0.003	0.005
195.40	197.70	Fine grained red brown strongly propyllitic	4.0	**0.1**	3	2	STR 65 5	Magnetite as desseminations and aggregates; weak silicification, quartz stringers at 10,20, and 65 to core axis. Minor chalcopyrite at junction of 65 and 20° to core axis stringers.	122097	0.017	0.037
197.70	199.20	Fine grained red brown				0			122098	0.048	0.018
199.20	201.20		6.0	**0.1**	3	7	STR 5	Trace chalcopyrite-molybdenite at 199.7m in calcite stringer, also associated with pyrite.	122099	0.041	0.022

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)	Comments	Sample#	Cu %	Au ppm
201.20	203.50	Fine grained red brown	13.0	*1*	FLT	45 50	Anhydrite-quartz pyritic fault zone with broken quartz veinlets. Minor 10cm monzonite at 202.1m 35-65° to core axis. 15cms of propyllitic and hematitic alteration at base of interval.	122100	0.025	0.019
203.50	205.40	Fine grained red brown strongly propyllitic	10.0	*0*	FLT	50 30	Hematite yeilding to propyllitic alteration, with quartz ztringers and fragments.	122101	0.032	0.166
201.20	203.50	Fine grained red brown	13.0	*1*	FLT	45 50	Anhydrite-quartz pyritic fault zone with broken quartz veinlets. Minor 10cm monzonite at 202.1m 35-65° to core axis. 15cms of propyllitic and hematitic alteration at base of interval.	122100	0.025	0.019
205.4	218.9	**PORPHYRITIC MONZONITE DYKE**								
205.40	207.40	Very fine grained red brown weakly propyllitic	1.0 **0.1**	*0*	STR	5 2	Increased epidote clots, calcite-zeolite stringers and trace fine black sphalerite at 205.7m. 207.2 trace fine chalcopyrite-molybdenite with calcite-pyrite stringer.	122102	0.016	0.043
207.40	209.40		0.1	*0*	FRC	55 0	Pink zeolite calcite stringers.	122103	0.084	0
209.40	211.40		0.1		FRC	65 0	Not sampled; epidote along fractures, some calcite and 1-3mm epidote clots after feldspar.			
211.40	212.90		0.1		FRC	5 0				
212.90	214.90		0.1	*0*	STR	30 1	Some minor with calcite stringers; occasonal 5-7mm wide chloritic zone at 65 to core axis.; possible clast of andesite flow.	122104	0	0
214.90	216.90		0.1	*0*	STR	10 2	Chlorite-epidote-sericite altered andesite xenolith(10cms); trace sphalerite mineralization.	122105	0.001	0
216.90	218.90		0.1	*0*	STR	10 2	Increase in calcite stringers; possible xenolith od Andesite 5% of interval.	122106	0.004	0
218.9	235.9	**MOTTLED ANDESITE BRECCIA**								
218.90	221.10	Fine grained green red strongly propyllitic		*0*	STR	20 3	Minor quartz-magnetite stringers	122107	0.002	0.007
221.10	223.10			*0*	FLT	5	Minor gouge, sphalerite-calcite stringers and silicification; 2% of interval	122108	0.022	0.031

Hole Number: BR-03-05

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins (CA-%)	Comments	Sample#	Cu %	Au ppm
223.10	224.20	Fine grained green red strongly propyllitic	**0.1**	*45* STR	5	Trace chalcopyrite near fracture intersections, quartz-magnetite stringers 35 and 55 to core axis; NB brecciated stringers; offset fragments and stringers along 55° to core axis structures.	122109	0.017	0.154
224.20	225.90	Fine grained red green strongly propyllitic	7.0	*1* FLT	32 30	Fault breccia and gouge; silicfied with some quartz-magnetite stringers	122110	0.029	0.02
225.90	227.90		7.0 **0.1**	*0* STR	30 3	Brecciated andesite/dacite porphyry with mottled red (hematite) and green (epidote-chlorite). Silica-magnetite overprint on earlier propylitic assemblage; possible trace chalcopyrite; fine grained pyrite as stringers - possible hybridized porphyry.	122111	0.02	0.061
227.90	229.90		3.0	*0* STR	15	Quartz stringers ± magnetite at 15, 10, 75 30° to core axis	122112	0.021	0.042
229.90	231.90		5.0	*1* FRC	10 2	Less hematitic with pyrite seams up to 1 cm wide. Offset appears along 10° to core axis structures.	122113	0.025	0.079
231.90	233.90		4.0	*18* STR	10	Quartz-magnetite stringers, pyrite seams at low core axis angles.	122114	0.019	0.078
233.90	235.90		5.0	*4* STR	60 1		122115	0.022	0.043
235.9	237.6	**MASSIVE MAFIC DYKE**							
235.90	237.60	Fine grained dark green weakly	0.1	*28* CTC	55	Calcite amygdales; fine calcite-zeolite fracture fillings at 45-75 to core axis.	122116	0.017	0.032
237.6	246.6	**MOTTLED ANDESITE BRECCIA**							
237.60	239.10	Fine grained red green strongly propyllitic	5.0 **0.1**	1 *2* STR	5 3	Trace chalcopyrite in quartz stringer at 238.6m trending 5° to core axis. Pyrite gypsum stringers.	122117	0.006	0
239.10	240.60		3.0	1 *29* STR	70 2	Quartz-magnetite stringers.	122118	0.014	0.037
240.60	242.60		4.0	1 *40* STR	35 2		122119	0.018	0.033
242.60	244.60		5.0	3 *8* STR	30 2	Darker appearance due to magnetite content. 244.1m 1cm graphiic stringer at 70° to core axis associated with 4cm quartz-magnetite zone with propyllitic selvage.	122120	0.022	0.043
244.60	246.60	Fine grained red green strongly silicified (non-K)	15.0 **0.1**	5 *0* STR	25 4	Trace chalcopyrite in quartz stringers at 20 and 50° to core axis; accessory epidote-pyrite-magnetite and moly.	122121	0.016	0.026

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
246.6	247	**PORPHYRITIC ANDESITE FLOW**									
246.60	247.00	Fine grained dark green weakly propyllitic	1.0	0	1 STR	5	1	Xenolith with pyrite in margin with remnant feldspar phenocrysts.	122122	0.021	0.041
247	251	**PORPHYRITIC MONZONITE DYKE**									
247.00	249.00	Very fine grained pink weakly hematitic	1.0	2	6 FRC	15	1		122123	0.009	0.008
249.00	251.00		1.0	2	17 FRC	40	1	Fracture filling epidote/sericite.	122124	0.003	0
251	252.1	**MASSIVE MAFIC DYKE**									
251.00	252.10	Very fine grained red brown hematitic			9 CTC	90		Mafic dyke with lower chilled margin. (Missing 122125 tag)	122125		
252.1	252.9	**PORPHYRITIC MONZONITE DYKE**									
252.10	252.90	Very fine grained red brown weakly hematitic	0.1		CTC	45		Pervasively hematitic monzonite showing propyllitic(epidote) alteration. Feldspar and epidote stringers at lower contact			
252.9	253.6	**MASSIVE MAFIC DYKE**									
252.90	253.60	Very fine grained red brown weakly hematitic			STR	35	2	Calcite amygdales. Gradational lower contact			
253.6	259.5	**PORPHYRITIC MONZONITE DYKE**									
253.60	255.60	Very fine grained red brown weakly hematitic	0.5	1							
255.60	257.60		0.5	1				Similar dyke, 10% augite phenocrysts, 10% biotite, 10% feldspar phenocrysts with calcite-zeolite stringers throughout.			
257.60	259.50		0.5		FRC	25	1				
259.5	260.5	**MASSIVE MAFIC DYKE**									
259.50	260.50	Very fine grained black green weakly	0.5	1	FRC	65	1				
260.5	282.5	**PORPHYRITIC MONZONITE DYKE**									
260.50	262.50	Very fine grained pink hematitic	0.1	2	FRC	15		Coarsely porphyritic monzonite with epidote-sericite fracture fillings; epidote-sericite and chlorite-magnetite altered phenocrysts with the occasional mafic xenolith at 261.7m.			

Hole Number: BR-03-05

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
262.50	264.50	Very fine grained pink weakly hematitic		2	FRC	15	1				
264.50	266.50	Very fine grained pink hematitic		2	FRC	15	1				
266.50	268.50			1	FRC	15	1				
268.50	270.50			1	FRC	25	1				
270.50	272.50			1	FRC	25	1				
272.50	274.50		0.1	1	FRC	35	1				
274.50	276.50		0.1	1	FRC	45	2	Propyllitic zone at 275.2m over 10-15cms.			
276.50	278.50		0.1	1	FRC	50	2				
278.50	280.50		0.1	2	8 FRC	20	2		122126	0.001	0
280.50	282.50		0.5	2	8 FRC	75	2	Minor pyrite with epidote-magnetite replacing felspars; magnetic silicified zone.	122127	0.002	0
282.5	283.9	**PORPHYRITIC ANDESITE BRECCIA**									
282.50	283.90	Fine grained green red weakly propyllitic	3.0	1	7 STR	35	2	Magnetite-silica zone with weakly mottled/brecciated texture.	122128	0.002	0
283.9	291.1	**PORPHYRITIC ANDESITE FLOW**									
283.90	285.40	Very fine grained red brown weakly propyllitic	1.0		3 FRC	5	2	Pervasive silicification with magnetite alteration; porphyritic hematite altered latite or andesite porphyry flow.	122129	0.014	0.013
285.40	287.10		1.0		2				122131	0.014	0
287.10	289.10		1.0		4 FRC	35	2		122132	0.003	0
289.10	291.10		1.0		0 FRC	5	2		122133	0.003	0
291.1	292.1	**PORPHYRITIC ANDESITE BRECCIA**									
291.10	292.10	Very fine grained red brown weakly propyllitic	3.0	2	0 STR	35	2	Quartz-magnetite stringers over lower 0.5m; background silicification	122134	0.004	0
292.1	292.6	**PORPHYRITIC MONZONITE DYKE**									
292.10	292.60	Very fine grained pink green moderately hematitic	0.5	1	3 FRC	35	5	Gradational contact with Monzonite. End of Hole 292.6m	122135	0.023	0.005

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Hole Number: BR-03-05

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins (CA-%)	Comments	Sample#	Cu %	Au ppm
	292.6 EOH								

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Hole Number: ***BR-03-06***

Nad83_N:	6347630	**Total Depth:**	374.9 **m**
Nad83_E:	628500	**Azimuth:**	55 °
Elevation:	1510	**Dip:**	-70 °

Geologist: Jean Pautler

Drilled: 6/24/2003

Survey Depth	Azimuth	Dip
267.9 m	55 °	-70 °

Survey Depth	Azimuth	Dip

Survey Depth	Azimuth	Dip

Brenda Property 2003 Diamond Drill Log

Northgate Exploration Ltd

Hole Number: *BR-03-06*

From (m)	To (m)	Rock Type	Comments
0.0	8.8	CASING	Casing
8.8	43.0	OVERBURDEN	overburden. Soil and assorted boulders of monzonite, magnetic bladed and feldspar porphyry(takla) GD, with 1 % pyrite, epidote altered and feldspar porphyry (toodoggone), basalt augite porphyritic flow (takla)
43.0	56.4	PORPHYRITIC QUARTZ MONZONITE DYKE	30-40 10% feldspar phenocrysts. 10% hornblende phenocrysts some quartz. Very weak hematite, coarsely porphyritic. Minor epidote replacing feldspars and chlorite relacing hornblende, weak limonite, generally along fractures
56.4	58.0	BRECCIATED QUARTZ MONZONITE	Sericitic-clay alteration overprint. well fractured and clay-sericite gouge. Not limonitic. (contact 25)
58.0	58.9	PORPHYRITIC MAFIC DYKE	weakly augite(?) (replaced by chlorite) and feldspar pophyrite some epidote replacing feldspars. contact 45
58.9	88.0	CRACKLE BRECCIATED DACITE FLOW	Propylitic-sericitic alteration overprint. sericite-pyrite overprint due to fault. Appears to be finally porphyritic protolith with hornblende or augite phenocrysts. Chlorite and fine feldspars, epidote, sericite.
88.0	94.7	FRACTURED DACITE FAULT ZONE	Propylitic-magnetite-silica alteration overprint. highly broken some chlorite-clay-sericite seems especially towards end of interval
94.7	95.4	MASSIVE MAFIC DYKE	Propylitic-magnetite-silica alteration overprint. dark green to black, weakly calcite amygdaloidal. Mafic dyke with some fault gouge. Brecciation near lower contact? (contact 40)
95.4	97.4	BRECCIATED DACITE FAULT ZONE	dominantly dacite porphyry with some broken and brecciated hematitic dacitic material from 95.4-96.1m mixed in. Brecciated to well fractured zone
97.4	101.6	PORPHYRITIC DACITE FLOW	variably hematite and porphyry altered dacite flow. Some <1cm of quartz stringers
101.6	103.6	FRACTURED DACITE FAULT ZONE	some quartz ±magnetite as fracture filler. Late sericite along fractures due to fault after orginal propylitic (epidote-sericite-chlorite) alteration in some epidote stringers at 40° to core axis
103.6	106.7	PORPHYRITIC DACITE FLOW	Propylitic-sericitic alteration overprint. fracture filings of epidote and minor quartz magnetite stringes
106.7	109.2	PORPHYRITIC DACITE FAULT ZONE	generally more hematitic with some quartz magnetite stringers and magnetite clots
109.2	112.8	PORPHYRITIC DACITE FLOW	some quartz stringers at 05 and quartz magnetite stringers at 75 and 55° to core axis

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Northgate Exploration Ltd

Hole Number: *BR-03-06*

From (m)	To (m)	Rock Type	Comments
112.8	115.8	BRECCIATED DACITE FAULT ZONE	Hematitic alteration overprint. sericitic gouge and brecciated dacite with 20 cm of more choritic rubble at bottom of interval.
115.8	117.1	PORPHYRITIC DACITE FLOW	magnetite-silica alteration after 116.5m as pervasive silicified (non-K) in and magnetite as aggregates; pyrite decreases after 116.5
117.1	118.7	PORPHYRITIC MONZONITE DYKE	Sericitic-propylitic alteration overprint. MONOZONITE dyke with 25% feldspar phenocrysts. 10% hornblende. Altered to chlorite, epidote, 2-5% augite phenocrysts, chlo, epidote, sericite. Epidote replacing mafics and a fracture fillings. Magnetite as clots and replacing mafic phenocrysts.
118.7	120.8	PORPHYRITIC DACITE FLOW	Propylitic-magnetite-silica alteration overprint. some hematite along fractures as well as epidote and chl
120.8	122.6	PORPHYRITIC DACITE FAULT ZONE	Hematitic-propylitic alteration overprint. rubbly fault zone at contact between Dacite flow and Monzonite dyke, epidote-hematite-chlorite along fractures
122.6	130.0	PORPHYRITIC MONZONITE DYKE	Propylitic-hematitic alteration overprint. 25% feldspar. Hematite altered with 10% epidote chlorite-sericite±magnetite altered hornblende phenocrysts and <5% epidote-chlorite augites epidote-sericite along fractures, magnetite clots and replacing mafics at 45, 60, 05-10° to core axis
130.0	130.9	PORPHYRITIC MONZONITE FAULT ZONE	Propylitic-sericitic alteration overprint. Hematitic alteration overprint. 20cm of gouge recovered followed by hematite altered monzonite
130.9	132.0	MASSIVE MAFIC DYKE	very fine (10%) feldspars in dark aphanictic matrix (dyke running along core axis) magnetic
132.0	133.2	PORPHYRITIC MONZONITE DYKE	Magnetite-silica-hematitic alteration overprint. magnetite-silica altered zone as in 176 with trace chalcopyrite associated with magnetite ±epidote in quartz stringers. Some mafic dyke at 5* to core axis (contact 05)
133.2	143.3	MASSIVE MAFIC DYKE	Hematitic-serictitic alteration overprint. mafic dyke as in 178 but grades lighter coloured after 133.7 more red brown. Possible due to hematite alterations and some sericite patehod, minor magnetite aggregates
143.3	144.9	PORPHYRITIC DACITE DYKE	Hematitic-propylitic alteration overprint. looks like the monzonite dyke but more finely porphyritic and no obvious hornblend. Possible hematite altered dacite flow
144.9	146.8	PORPHYRITIC DACITE FLOW	Hematitic-propylitic alteration overprint. minor fine chalcopyrite associated with magnetite grains (replacing magnetite?) (contact 55)

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Hole Number: *BR-03-06*

From (m)	To (m)	Rock Type	Comments
146.8	155.9	MASSIVE MAFIC DYKE	Hematitic-serictitic alteration overprint. lighter coloured hematite altered and possible weak sericitic mafic dyke (contact 40)
155.9	187.4	FRACTURED MONZONITE DYKE	Hematitic-propylitic alteration overprint. Magnetite-silica alteration. Upper 20 cm brecciated contact with quartz-magnetite stringers
187.4	189.3	MASSIVE MAFIC DYKE	Chloritic alteration overprint. typical dark mafic dyke with fine calcite anmygdules and calcified stringers (contact 25)
189.3	208.3	PORPHYRITIC MONZONITE DYKE	Hematitic-propylitic-sericitic alteration overprint. fractured for 50cm at upper contact . More sericitec than typical more calcite-zeolite. Anhydrite and calcite in fractures
208.3	209.0	MASSIVE MAFIC DYKE	Chloritic alteration overprint. dark green-black typical mafic dyke with small calcite amygdules and calcite-zeolite stringers. Shape contacts (contact 30)
209.0	212.6	PORPHYRITIC MONZONITE DYKE	Hematitic-propylitic alteration overprint. minor fractures with sphaleritesericite +calcite-zeolite. Alteration contact (contact 45)
212.6	213.4	XENOLITHIC ANDESITE VOLCANIC BRECCIA	Hematitic-propylitic alteration overprint. start to get quartz stringers with epidote margins. NB lack of anhydrite in mottled zone
213.4	218.9	MOTTLED ANDESITE BRECCIA	Hematitic-propylitic magnetite-silica alteration overprint. quartz-magnetite stringers with weak pervasive silification. Possible andesitic protolith. Xenolith in monzonite, moderately mottled texture. Should be trace chalcopyrite
218.9	271.0	PORPHYRITIC MONZONITE DYKE	Hematitic-propylitic-sericitic alteration overprint. fractured weakly with magnetite-epidote-si stringer at 220.2m at 70* to core axis also epidote-sericite along some fractures
271.0	279.4	PORPHYRITIC ANDESITE BRECCIA	Hematitic-propylitic magnetite-silica alteration overprint. 25 cm wide contact zone with band parallel contact. No pervasive sil. Trace chalcopyrite in contact core and in quartz-magnetite stringers. quartz-magnetite-pyrite stringers at 25-45 dominantly, 35* stringers offset by 25* fractures
279.4	292.2	PORPHYRITIC MONZONITE DYKE	Hematitic-propylitic alteration overprint. finely porphyritic monzonite
292.2	293.2	MASSIVE MAFIC DYKE	Chloritic alteration overprint. typical mafic dyke with minor calcited amygdiliac. 30 cm of monzonite ± pyrite nea top of interval from 292.35m with 45* to core axis at 10 cm contact
293.2	316.6	PORPHYRITIC MONZONITE DYKE	Hematitic-propylitic alteration overprint. as in 122262 (contact 65)

Brenda Property 2003 Diamond Drill Log

Northgate Exploration Ltd

Hole Number: *BR-03-06*

From (m)	To (m)	Rock Type	Comments
316.6	317.4	MASSIVE MAFIC DYKE	Chloritic alteration overprint. mononite grades more epidote altered with epidote spots to 1 cm at 316.7m, followed by mafic dyke from 317.1-317.4 (contact 45)
317.4	319.9	PORPHYRITIC MONZONITE DYKE	Hematitic-propylitic alteration overprint. more propylitic altered monzonite and sericitic overprint
319.9	320.8	MOTTLED ANDESITE BRECCIA	Hematitic-propylitic alteration overprint. tag out of sequence. Weakly brecciated zone with mettled texture
320.8	325.7	PORPHYRITIC MONZONITE DYKE	Hematitic-propylitic alteration overprint. 30 cm contact zone more breciated, some graphite, monzonite dyke. Well fractured with epidote-calcite-zeolite±hematite along fractures (contact 45)
325.7	362.0	MOTTLED ANDESITE BRECCIA	Hematitic-propylitic magnetite-silica alteration overprint. Very hemetitic with epidote-magnetite-chlorite clots (after phenocrysts) and fractures and quartz-magnetite stringers, anhydrite stringers some pyrite stringers (fractures) at 20° to core axis
362.0	365.9	MASSIVE LATITE DYKE	Hematitic-propylitic alteration overprint. (contact 20) chilled margin to 362.6m - weakly porphyratic with mafics (augite + hornblende.) altered to chlorite, very minor epidote, calcite-zeolite. Fracture fillings throughout
365.9	366.5	BRECCIATED ANDESITE VOLCANIC BRECCIA	Chloritic-hematitic alteration overprint. (contact 20) 20*FRK forms with more fractured zone with anderitic xenolith, contains fragments of latite ? dyke; minor gouge at 60*
366.5	374.9	BRECCIATED LATITE DYKE	Hematitic alteration overprint. (contact 60) grades more porphyritic? - 10-15*10 hematitic feldspars and 5% chloritized mafics (augite, minor hornblende) andesite xenoliths to 1 cm

Brenda Property 2003 Diamond Drill Log

Northgate Exploration Ltd

Hole Number: BR-03-06

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins (CA-%)		Comments	Sample#	Cu %	Au ppm
0	8.8	**CASING**								
0.00	8.80						Casing			
8.8	43	**OVERBURDEN**								
8.80	43.00						overburden. Soil and assorted boulders of monzonite, magnetic bladed and feldspar porphyry(takla) GD, with 1 % pyrite, epidote altered and feldspar porphyry (toodoggone), basalt augite porphyritic flow (takla)			
43	56.4	**PORPHYRITIC QUARTZ MONZONITE DYKE**								
43.00	46.30	Fine grained grey pink weakly clay alterred	1.0		*0*		30-40 10% feldspar phenocrysts. 10% hornblende phenocrysts some quartz. Very weak hematite, coarsely porphyritic. Minor epidote replacing feldspars and chlorite relacing hornblende, weak limonite, generally along fractures	122137	0.009	0.019
46.30	47.20	Fine grained pink weakly clay alterred	1.0		*0*		Hematitc-clay-propylitic alteration overprint. less limonite	122138	0.021	0.008
47.20	50.30		2.0		*0*		Hematitc-clay-propylitic alteration overprint. weak limonite	122139	0.015	0.022
50.30	53.30		2.0		*0*		Hematitc-clay-propylitic alteration overprint.	122140	0.012	0.008
53.30	56.40		1.0		*1*		Hematitc-clay-propylitic alteration overprint. less lim	122141	0.038	0.011
56.4	58	**BRECCIATED QUARTZ MONZONITE**								
56.40	58.00	Fine grained grey moderately clay alterred	3.0		*1* FLT	35 50	Sericitic-clay alteration overprint. well fractured and clay-sericite gouge. Not limonitic. (contact 25)	122142	0.085	0.032
58	58.9	**PORPHYRITIC MAFIC DYKE**								
58.00	58.90	Fine grained dark green weakly propyllitic	1.0	5	*9*	45	weakly augite(?) (replaced by chlorite) and feldspar pophyrite some epidote replacing feldspars. contact 45	122143	0.058	0.01
58.9	88	**CRACKLE BRECCIATED DACITE FLOW**								
58.90	62.50	Fine grained yellow green yellow yellow gr weakly propyllitic	3.0		*4* FLT	45	Propylitic-sericitic alteration overprint. sericite-pyrite overprint due to fault. Appears to be finally porphyritic protolith with hornblende or augite phenocrysts. Chlorite and fine feldspars, epidote, sericite.	122144	0.144	0.205

Hole Number: BR-03-06

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)	Comments	Sample#	Cu %	Au ppm
62.50	65.50	Fine grained grey green weakly propyllitic	5.0		0 FLT	10 80	Propylitic-sericitic-clay alteration overprint. possible 80% gouge but very poor recovery	122145	0.12	0.264
65.50	70.10	Fine grained grey green moderately propyllitic	1.5		0		Propylitic-clay alteration overprint. NB not as stongly porphyritic. Smaller phenocrysts. But appear to be related	122146	0.137	0.329
70.10	73.20		1.5		4		Propylitic-clay alteration overprint. HQ to 73.2m	122147	0.122	0.409
73.20	77.20		3.0		4		Propylitic-clay alteration overprint.	122148	0.134	0.257
77.20	79.20	Very fine grained red brown moderately propyllitic	2.0	2	1		Hematitic-propylitic alteration overprint. Possible hematitc monzonite dyke with epidote alteration of feldspars OR less propylitic altered. Dacite flow with hematite alteration.	122149	0.203	0.276
79.20	82.30	Fine grained grey green weakly propyllitic	1.0		1 STR	20 1	Propylitic-magnetite-silica alteration overprint. chlorite-epidote-sericite altered with minor quartz stingers. Some minor magnetite, generally magnetic augite? Or hornblende. Altered to chorol	122150	0.153	0.461
82.30	85.30	Fine grained grey green moderately propyllitic	2.0		1 FRC	3	slightly more pyrite along fractures	122151	0.086	0.284
85.30	87.00	Fine grained grey weakly	2.0		0 FLT	10 30	some gouge and breccia. Well fractured (contact 45?)	122152	0.193	0.338
87.00	88.00	Very fine grained brown brown brown b brown weakly hematitic	0.5	2	0		Hematitic alteration overprint. Propylitic alteration overprint. magnetic and hematite altered zone. Monzonite dyke similar to 122149 or less propylitic. Altered dacite flow	122153	0.235	1.47
88	94.7	**FRACTURED DACITE FAULT ZONE**								
88.00	89.80	Very fine grained grey weakly propyllitic	2.0		32 FLT	15 30	Propylitic-magnetite-silica alteration overprint. highly broken some chlorite-clay-sericite seems especially towards end of interval	122154	0.206	0.811
89.80	91.40	Fine grained dark green black weakly propyllitic	3.0	5	0		Hematitic alteration overprint. highly magnetic, darker coloured interval within the dacite porphry	122155	0.198	0.892
91.40	92.90	Fine grained grey red weakly hematitic	2.0		35 STR	25 2	possible monzonite dyke, but probable hematite altered dacite flow with minor atc-carbonate stringers, and some epidote stringers, pervasibely hematitic. Sericitic clay gouge near lower part of interval for 15 cm fault 25 30%	122157	0.124	0.276
92.90	94.70	Very fine grained grey moderately phyllic	1.0		0 FLT	20 30	variable patchy silicification and sericite and fractures and in gouge, clay-sericite-pyrite alteration (contact 30)	122158	0.069	0.102

Hole Number: BR-03-06

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins (CA-%)	Comments	Sample#	Cu %	Au ppm
94.7	95.4	**MASSIVE MAFIC DYKE**							
94.70	95.40	Fine grained dark green weakly propyllitic	0.0	*10*		Propylitic-magnetite-silica alteration overprint. dark green to black, weakly calcite amygdaloidal. Mafic dyke with some fault gouge. Brecciation near lower contact? (contact 40)	122159	0.019	0.049
95.4	97.4	**BRECCIATED DACITE FAULT ZONE**							
95.40	97.40	Fine grained grey weakly propyllitic	4.0	*0* FLT	35 20	dominantly dacite porphyry with some broken and brecciated hematitic dacitic material from 95.4-96.1m mixed in. Brecciated to well fractured zone	122160	0.129	0.415
97.4	101.6	**PORPHYRITIC DACITE FLOW**							
97.40	99.40	Fine grained grey red weakly hematitic	2.0	1 *0* STR	40 2	variably hematite and porphyry altered dacite flow. Some <1cm of quartz stringers	122161	0.223	1.1
99.40	101.60	Fine grained grey red weakly propyllitic	2.0	1 *5* STR	40 4	as above but rare quartz sringers evident	122162	0.14	0.924
101.6	103.6	**FRACTURED DACITE FAULT ZONE**							
101.60	103.60	Fine grained grey weakly propyllitic	2.0	1 *0* FRC	5 2	some quartz ±magnetite as fracture filler. Late sericite along fractures due to fault after orginal propylitic (epidote-sericite-chlorite) alteration in some epidote stringers at 40° to core axis	122163	0.063	0.506
103.6	106.7	**PORPHYRITIC DACITE FLOW**							
103.60	106.70	Fine grained grey weakly propyllitic	3.0	1 *0* FRC	40 2	Propylitic-sericitic alteration overprint. fracture filings of epidote and minor quartz magnetite stringes	122164	0.101	0.516
106.7	109.2	**PORPHYRITIC DACITE FAULT ZONE**							
106.70	109.20	Fine grained grey weakly propyllitic	2.0	*21* STR	5 2	generally more hematitic with some quartz magnetite stringers and magnetite clots	122165	0.08	0.524
109.2	112.8	**PORPHYRITIC DACITE FLOW**							
109.20	112.80	Fine grained grey weakly propyllitic	2.0	*0* STR	55 2	some quartz stringers at 05 and quartz magnetite stringers at 75 and 55° to core axis	122166	0.099	0.367
112.8	115.8	**BRECCIATED DACITE FAULT ZONE**							

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins (CA-%)	Comments	Sample#	Cu %	Au ppm
112.80	115.80	Fine grained light grey weakly propyllitic	2.0	*8*	FLT 25100	Hematitic alteration overprint. sericitic gouge and brecciated dacite with 20 cm of more choritic rubble at bottom of interval.	122167	0.099	0.599
115.8	117.1	**PORPHYRITIC DACITE FLOW**							
115.80	117.10	Fine grained grey green weakly propyllitic	2.0	2 *30*		magnetite-silica alteration after 116.5m as pervasive silicified (non-K) in and magnetite as aggregates; pyrite decreases after 116.5	122168	0.123	0.433
117.1	118.7	**PORPHYRITIC MONZONITE DYKE**							
117.10	118.70	Very fine grained pink moderately hematitic	0.5 **0.1**	2	*2* FRC 20 2	Sericitic-propylitic alteration overprint. MONOZONITE dyke with 25% feldspar phenocrysts. 10% hornblende. Altered to chlorite, epidote, 2-5% augite phenocrysts, chlo, epidote, sericite. Epidote replacing mafics and a fracture fillings. Magnetite as clots and replacing mafic phenocrysts.	122169	0.048	0.029
118.7	120.8	**PORPHYRITIC DACITE FLOW**							
118.70	120.80	Fine grained grey green weakly propyllitic	3.0	2	*6* FRC 5 5	Propylitic-magnetite-silica alteration overprint. some hematite along fractures as well as epidote and chl	122170	0.117	0.377
120.8	122.6	**PORPHYRITIC DACITE FAULT ZONE**							
120.80	122.60	Fine grained grey weakly propyllitic	2.0	2	*6* FRC 10 10	Hematitic-propylitic alteration overprint. rubbly fault zone at contact between Dacite flow and Monzonite dyke, epidote-hematite-chlorite along fractures	122171	0.049	0.084
122.6	130	**PORPHYRITIC MONZONITE DYKE**							
122.60	124.20	Very fine grained pink weakly propyllitic	0.0	2	*9* FRC 45 1	Propylitic-hematitic alteration overprint. 25% feldspar. Hematite altered with 10% epidote chlorite-sericite±magnetite altered hornblende phenocrysts and <5% epidote-chlorite augites epidote-sericite along fractures, magnetite clots and replacing mafics at 45, 60, 05-10° to core axis	122172	0.003	0
124.20	126.00		0.0	2	*11* FRC 5 1	Propylitic-hematitic alteration overprint. as above	122173	0.003	0
126.00	128.00		0.0	2	*5* FRC 5 1	Hematitic-propylitic alteration overprint. as above	122174	0.003	0.005

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins (CA-%)	Comments	Sample#	Cu %	Au ppm
128.00	128.70	Very fine grained pink weakly hematitic	0.0	2	*8* STR 5 2	Hematitic-propylitic alteration overprint. 1 cm stringers with chlorite-sil-magnetite-sericite about 05* to core axis, possible trace galena or molybdenite.	122175	0.034	0.067
128.70	130.00	Fine grained green weakly propyllitic	2.0 **0.1**	3	*24* STR 10 3	Propylitic-magnetite-silica alteration overprint. evasive silica altered with few num quartz stringers ± magnetite, trace xp in quartz-magnetite stringers	122176	0.138	0.628
130	130.9	**PORPHYRITIC MONZONITE FAULT ZONE**							
130.00	130.90	Very fine grained grey weakly propyllitic	2.0	2	*36* FLT 10 50	Propylitic-sericitic alteration overprint. Hematitic alteration overprint. 20cm of gouge recovered followed by hematite altered monzonite	122177	0.169	0.741
130.9	132	**MASSIVE MAFIC DYKE**							
130.90	132.00	Very fine grained weakly propyllitic	0.0		*29*	very fine (10%) feldspars in dark aphanictic matrix (dyke running along core axis) magnetic	122178	0.026	0.212
132	133.2	**PORPHYRITIC MONZONITE DYKE**							
132.00	133.20	Very fine grained red brown weakly propyllitic	0.5 **0.1**		*15* STR 5 1	Magnetite-silica-hematitic alteration overprint. magnetite-silica altered zone as in 176 with trace chalcopyrite associated with magnetite ±epidote in quartz stringers. Some mafic dyke at 5* to core axis (contact 05)	122179	0.109	0.602
133.2	143.3	**MASSIVE MAFIC DYKE**							
133.20	135.20	Very fine grained red weakly hematitic	0.0		*19* FRC 10 1	Hematitic-serictitic alteration overprint. mafic dyke as in 178 but grades lighter coloured after 133.7 more red brown. Possible due to hematite alterations and some sericite patehod, minor magnetite aggregates	122180	0.003	0
135.20	137.20	Very fine grained red weakly propyllitic	0.0		*40* FRC 10 1	Hematitic-serictitic alteration overprint. more fractured zone for 30 cm in center. zeolite? As fracture fillings. Some fragment of red brown dyke?	122181	0.003	0.015
137.20	139.20		0.0		FRC	as above by not fractured, no sample			
139.20	141.30		0.0		*50* FRC 5 1	as above. No sample, some olive zeolite in vugs within zeolite stringers			
141.30	143.30		0.0		*36* FRC 55 1	as above, lower 40cm chilled margin (contact 40)	122183	0.003	0

Hole Number: BR-03-06

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins (CA-%)		Comments	Sample#	Cu %	Au ppm
143.3	144.9	**PORPHYRITIC DACITE DYKE**								
143.30	144.90	Very fine grained red brown weakly propyllitic	0.0	*10*			Hematitic-propylitic alteration overprint. looks like the monzonite dyke but more finely porphyritic and no obvious hornblend. Possible hematite altered dacite flow	122184	0.005	0
144.9	146.8	**PORPHYRITIC DACITE FLOW**								
144.90	146.80	Very fine grained red brown weakly propyllitic	0.0 **0.1**	*50*			Hematitic-propylitic alteration overprint. minor fine chalcopyrite associated with magnetite grains (replacing magnetite?) (contact 55)	122185	0.013	0
146.8	155.9	**MASSIVE MAFIC DYKE**								
146.80	148.10	Very fine grained red weakly propyllitic	0.0	*44*			Hematitic-serictitic alteration overprint. lighter coloured hematite altered and possible weak sericitic mafic dyke (contact 40)	122186	0.003	0
148.10	150.30	Very fine grained dark green weakly propyllitic	0.0	*32* CNT	40		Chloritic alteration overprint. bottom 30cm felded sphernlitic txture	122187	0.005	0
150.30	152.30	Very fine to fine grained dark green weakly propyllitic	0.0	*18*			top 40cm felted sphernlitic texture	122188	0.005	0
152.30	153.60	Very fine to fine grained dark green weakly hematitic	1.0	1 *9* STR	5	1	Hematitic-magnetite-silica-chlorititic alteration overprint. amygdaloidal mafic dyke with intervals of pyrite (3%) dacite porphyry flow as in 122184 from start to 152.5 and end from 153.5-.6. some quartz ±magnetite stringers. Same banding of spherules at 27* to core axis	122189	0.009	0.016
153.60	155.90	Very fine grained dark weakly propyllitic	0.0	1 *8*			Chloritic alteration overprint. generally grades more fine grained towards contact. Calcite amygdules throughout . Sharp ect. (contact40)	122190	0.006	0
155.9	187.4	**FRACTURED MONZONITE DYKE**								
155.90	157.00	Very fine grained red brown weakly hematitic	0.5	1 *8* STR	25	2	Hematitic-propylitic alteration overprint. Magnetite-silica alteration. Upper 20 cm brecciated contact with quartz-magnetite stringers	122191	0.029	0.04
157.00	158.60		1.0	1 *11* FRC	40	1	Hematitic-propylitic alteration overprint. appears to be finers drilled margin, hornblende phenocrysts evident, some calcite-zeolite as stringers	122192	0.003	0

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins (CA-%)	Comments	Sample#	Cu %	Au ppm
158.60	159.20	Very fine grained red weakly hematitic	1.0 **0.1**	1	*7* FRC 45 1	Hematitic-propylitic alteration overprint. trace chalcopyrite in quartz ± calcite stringers, also with sphalerite and galena. More fractured with epidote-sericite, calcite-zeolite	122193	0.008	0
159.20	161.20		1.0	1	*4* FRC 35 1	Hematitic-propylitic alteration overprint. minor calcite-zeolite fracture fillings	122194	0.003	0
161.20	163.20		1.0	1	*16* STR 50 1	Hematitic-propylitic alteration overprint. calcite-zeolite and epidote-sericite fractures. Galena and sphalerite in 50* quartz calcite-epidote stringers	122195	0.003	0
163.20	165.10		1.0	1	*10*	Hematitic-propylitic alteration overprint.	122196	0.003	0
165.10	166.10	Very fine grained red weakly propyllitic	1.0 **0.1**	1	*9* STR 45 1	Hematitic-propylitic alteration overprint. more fractured in first 30 cm with higher concentration of quartz stringers but fine stringers thougout section with chalcopyrite, sphalerite, galena at 45, 35,05* to core axis	122197	0.064	0
166.10	168.10		1.0	2	*1* FRC 5 1	Hematitic-propylitic alteration overprint. magnetite, sphalerite and galena in 05* trending stringers or fractures with minor quartz	122198	0.01	0
168.10	170.10		1.0	1	*11* FRC 5 1	Hematitic-propylitic alteration overprint. occasional quartz stringers more epidote-sericite as fractures	122199	0.004	0
170.10	172.10		1.0	1	*10* FRC 45 1	Hematitic-propylitic alteration overprint. epidote-sericite-pyrite fractures	122200	0.004	0
172.10	174.10		1.0	1	*7* FRC 5 1	Hematitic-propylitic alteration overprint. some xenoliths of more chloritic (mafic) composition	122201	0.004	0
174.10	176.10		1.0	1	*10* FRC 5 1	Hematitic-propylitic alteration overprint. bit more fractured	122202	0.002	0.014
176.10	178.10		1.0	1	*16* FRC 25 1	Hematitic-propylitic alteration overprint.	122203	0.002	0
178.10	180.10		1.0	1	*15* FRC 10 1	Hematitic-propylitic alteration overprint. more fractured especially to 179.0m	122204	0.001	0
180.10	182.10		1.0	1	*13* FRC	Hematitic-propylitic alteration overprint. hematitic xenolith 5 cm diameter. Grades bit more red-brown colour last 30cm	122205	0.001	0
182.10	183.50	Very fine grained red brown weakly hematitic	2.0	1	*1* FRC 10 1	Hematitic-propylitic alteration overprint. much more broken and rubbly and uniformly red brown colour with more fractures with epidote-sericite-chlorite	122206	0.004	0.013

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins (CA-%)		Comments	Sample#	Cu %	Au ppm
183.50	185.40	Very fine grained red weakly hematitic	0.5	1	2 STR	35 1	Hematitic-propylitic alteration overprint. some gypsum in stringers up to 1 cm at 184.6	122207	0.012	0.006
185.40	187.40	Very fine grained red weakly propyllitic	0.5	1	0 FRC	45 1	Hematitic-propylitic alteration overprint. 20cm fractured lower contact (contact 50)	122209	0.004	0
187.4	189.3	**MASSIVE MAFIC DYKE**								
187.40	189.30	Very fine grained dark green black weakly propyllitic	.0		13		Chloritic alteration overprint typical dark mafic dyke with fine calcite anmygdules and calcified stringers (contact 25)	122210	0.006	0
189.3	208.3	**PORPHYRITIC MONZONITE DYKE**								
189.30	190.90	Very fine grained red green weakly hematitic	2.0	1	4 FRC	25 3	Hematitic-propylitic-sericitic alteration overprint. fractured for 50cm at upper contact . More sericitec than typical more calcite-zeolite. Anhydrite and calcite in fractures	122211	0.006	0.005
190.90	192.90	Very fine grained red weakly hematitic	0.5	1	0 FRC	50 1	Hematitic-propylitic alteration overprint. more typical porphyritic monzonite with magnetite as clots replacing mafic phenocrysts and epidote-sericite, reddish feldspars and overall colour	122212	0.005	0.023
192.90	194.50		1.0	1	0		Hematitic-propylitic alteration overprint. quartz-calcite stringers though zone at 10-15* to core axis	122213	0.005	0.008
194.50	196.10		0.5	1	2		Hematitic-propylitic alteration overprint.	122214	0.004	0
196.10	198.10		0.5	1	5 FRC	50 0	Hematitic-propylitic alteration overprint. fracture zone at 196.8m - 10 cm	122215	0.025	0
198.10	200.10		1.0	1	2		Hematitic-propylitic alteration overprint.	122216	0.042	0
200.10	202.10		1.0	1	0 FRC	0 1	Hematitic-propylitic alteration overprint. fractured margins but typical weakly sphalerite spotted, red monzonite in center	122217	0.005	0
202.10	204.20		1.0	1	0 FRC	50 2	Hematitic-propylitic alteration overprint. more sericite altered zone due to more fractures. Epidote-sericite fractures and sericitization	122218	0.001	0
204.20	206.20	Very fine grained green green green g green weakly hematitic	1.0	1	0 FRC		Hematitic-propylitic alteration overprint. less sericite with calcite zeolite fractures at 05*^Ca	122219	0.001	0
206.20	208.30		1.0	1	10 FRC	5 2	Hematitic-propylitic alteration overprint. pical monzonite with sericitized andesite xenolith near (contact 45)	122220	0.006	0

Hole Number: BR-03-06

From	To	Rock Type	Py-Cpy-Mt		Ms	Veins (CA-%)		Comments	Sample#	Cu %	Au ppm
208.3	209	**MASSIVE MAFIC DYKE**									
208.30	209.00	Very fine grained black weakly hematitic	0.0		2	FRC 5	1	Chloritic alteration overprint. dark green-black typical mafic dyke with small calcite amygdules and calcite-zeolite stringers. Shape contacts (contact 30)	122221	0.005	0
209	212.6	**PORPHYRITIC MONZONITE DYKE**									
209.00	211.00	Very fine grained red weakly hematitic	0.5	1	1	FRC 25	1	Hematitic-propylitic alteration overprint. minor fractures with sphaleriteserícite +calcite-zeolite. Alteration contact (contact 45)	122222	0.005	0
211.00	212.60		1.0	1	0	FRC 10	5	Hematitic-propylitic-sericitic alteration overprint. more sericitic, fractured 0-15* to core axis. Banding a contact. Possible andesitic xeneith (contact 50)	122223	0.001	0
212.6	213.4	**XENOLITHIC ANDESITE VOLCANIC BRECCIA**									
212.60	213.40	Very fine grained red weakly hematitic	1.0	1	0	STR 45	1	Hematitic-propylitic alteration overprint. start to get quartz stringers with epidote margins. NB lack of anhydrite in mottled zone	122224	0.022	0.027
213.4	218.9	**MOTTLED ANDESITE BRECCIA**									
213.40	215.40	Fine grained red moderately hematitic	1.0	**0.1**	2	1 STR 60	5	Hematitic-propylitic magnetite-silica alteration overprint. quartz-magnetite stringers with weak pervasive silification. Possible andesitic protolith. Xenolith in monzonite, moderately mottled texture. Should be trace chalcopyrite	122225	0.034	0.039
215.40	217.40		1.0	**0.1**	3	1 STR 55		quartz-magnetite stringers. 55 * to core axis stringers cut by 15* fractures, epidote-sericite also along 15*	122226	0.036	0.036
217.40	218.90		1.0	**0.1**	3	5		218m 1 cm quartz stringer with 40% magnetite at 45° to core axis cut by 10° to core axis fracture	122227	0.031	0.033
218.9	271	**PORPHYRITIC MONZONITE DYKE**									
218.90	220.90	Fine grained light red weakly hematitic	1.0		1	2 FRK 35	2	Hematitic-propylitic-sericitic alteration overprint. fractured weakly with magnetite-epidote-si stringer at 220.2m at 70* to core axis also epidote-sericite along some fractures	122228	0.002	0
220.90	222.40	Fine grained red brown weakly hematitic	1.0		1	0 FRC 35	1	generally grades less pup overally more greenish colour downwards (and upwards) from mottled zone.	122229	0.001	0

Hole Number: BR-03-06

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins (CA-%)	Comments	Sample#	Cu %	Au ppm
222.40	224.40	Fine grained red weakly hematitic	0.5	1 *17* FRC	50	Hematitic-propylitic alteration overprint. epidote-ser. Grades less sericitic overprint calcite-zeolite	122230	0.002	0
224.40	226.40		1.0 **0.1**	1 *12* STR	55 0	Hematitic-propylitic alteration overprint. 3 cm quartz stringer with xp, sphalerite and galena at 226.2m. 55* to core axis. Some weakly more prpylitic altered zones and epidote-sericite-chlorite along 35* FRK	122231	0.004	0
226.40	228.40	Very fine grained red weakly hematitic	0.5	1 *7* FRC	60 1	Hematitic-propylitic alteration overprint. grades more fresh red colour less red-brownish and less local greenish zones due to propylitic alteration along fractures	122232	0.004	0
228.40	230.40		0.5	2 *1*		Hematitic-propylitic alteration overprint. fairly fresh-pervasive hematite and local propylitic altered along fractures and altering phenocrysts	122233	0.003	0
230.40	232.40		0.5 **0.1**	3 *6* FRC	35 1	230.8m-10cm mottled magnetite-silica altered fragments with pyrite alnog inner margins- very angular. Monzonite dyke is post minteral	122234	0.005	0
232.40	234.40		0.5	2 *0* FRC	50 1	Hematitic-propylitic alteration overprint. molybdenite or galena along few non-quartz stringer surrounded by epidote, shl-wer alterations about 7 cm wide otherwise fairly fresh at 75* to core axis	122235	0.005	0
234.40	236.40		0.5	3 *4* FRC	20 1	Hematitic-propylitic alteration overprint. coersely porphyritic, fairly fresh	122236	0.001	0
236.40	238.10		0.5	1 *2*		Hematitic-propylitic alteration overprint. no sample, less epidote, as above			
238.10	240.10		0.5	1 *14*		Hematitic-propylitic alteration overprint. as above	122237	0.001	0
240.10	241.20	Very fine grained dun brown weakly hematitic	0.5	1 *13* FRC	50 1	Hematitic-propylitic-sericitic alteration overprint. less porphyritic only 10-15%faps. 5% aofics?? Patchy sericite alterations. More epidote. Overall darker brownish colour with dunn coloured patches. Due to sericite?? Less chlorite-epidote more sericite	122238	0.001	0

Hole Number: BR-03-06

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins (CA-%)		Comments	Sample#	Cu %	Au ppm
241.20	243.20	Very fine grained dun red weakly hematitic	0.5	1	*8*		les porphyritic as above but more uniform. No patchy alterations. Pervasively dun red colour still some epidote fractures and altering feldspars chlorite-magnetite altered mafic uniform	122239	0.001	0
243.20	255.00	Very fine grained red weakly hematitic	0.5	2	*0* FRC	25 1	No sample as above. Grades more reddish colour and more coarsely porphrytic with 25-30% feldspars, 5-10% mafics. Hornblemdand?? Lesser augite			
255.00	257.00		0.5	1	*0* FRC	45 1	Hematitic-propylitic alteration overprint. epidote-chlorite-sericite along fractures	122240	0.012	0
257.00	258.80		1.0	2	*12* FRC	35	Hematitic-propylitic-sericitic alteration overprint. more propylitic altered and late pathey sericite?? Some local fracture zones more highly sericitized that appear to have benn zenoliths	122241	0.014	0
258.80	260.70	Very fine grained red green weakly hematitic	0.5	1	*15* FRC	45	Hematitic-propylitic alteration overprint. tag out of sequence. More type calcite ?? Monzonite, finely porphyritic with more propylitic altered and semcitixed below 260.1 alteration contact 55* to core axis	122301	0.005	0
260.70	263.00	Very fine grained red brown weakly hematitic	0.5	2	*10* FRC	35 1	Hematitic-propylitic alteration overprint. more typical red monzonite with fractures of epidote-sericite + calcite-zeolite	122242	0.001	0
263.00	265.00		0.0	2	*5* FRC	45 1	Hematitic-propylitic alteration overprint. some more propyditically altered andesite zenoliths up to 7 cm. Generally 1 cm grading more coarsely porphyrite	122243	0.002	0
265.00	267.00		0.0	2	*0*		Hematitic-propylitic alteration overprint. coarsely porphytic	122244	0.001	0
267.00	269.00		0.0	1	*8*		Hematitic-propylitic alteration overprint. as above	122245	0.002	0
269.00	271.00		1.0	1	*12*		Hematitic-propylitic-sericitic alteration overprint. grades mow propylitic and sericitized towares bottom; occasional andesite xenolith to 5 cm (contact 25)	122246	0.002	0

271	279.4	**PORPHYRITIC ANDESITE BRECCIA**

Hole Number: BR-03-06

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins (CA-%)	Comments	Sample#	Cu %	Au ppm
271.00	273.00	Fine grained red moderately hematitic	2.0 **0.1**	4 *29* STR	45 3	Hematitic-propylitic magnetite-silica alteration overprint. 25 cm wide contact zone with band parallel contact. No pervasive sil. Trace chalcopyrite in contact core and in quartz-magnetite stringers. quartz-magnetite-pyrite stringers at 25-45 dominantly, 35* stringers offset by 25* fractures	122247	0.048	0.047
273.00	274.70		3.0 **0.1**	3 *79* STR	15 2	10 calcite more silicified zones; more pyrite in fractures at 15* to core axis, still quartz-stringers but with less magnetite	122248	0.04	0.042
274.70	276.60		2.0 **0.1**	4 *19* STR	30 5	quartz-magnetite stringers with chalcopyrite at 15-30* to core axis	122249	0.052	0.065
276.60	277.60		7.0 **0.1**	6 *4* STR	20 4	quartz-magnetite stringers with more magnetite at 20-40* to core axis ± chalcopyrite, galena with quartz, magnetite and epidote especially near bottom of 70cm interval	122250	0.119	0.099
277.60	279.40	Fine grained dark green moderately hematitic	2.0 **0.1**	4 *15* STR	35 3	quartz-magnetite stringers but generally less magnetite at 30-40° to core axis. No visible copper but probable very minor concentration of magnetite in contact zone of monzonite dyke. Sections includes 20 cm of contact with monzonite	122251	0.035	0.031
279.4	292.2	**PORPHYRITIC MONZONITE DYKE**							
279.40	281.70	Very fine grained red brown weakly hematitic	0.5	1 *16*		Hematitic-propylitic alteration overprint. finely porphyritic monzonite	122252	0.004	0
281.70	283.40		0.5	1 *3* FRC	515 1	Hematitic-propylitic alteration overprint. as above	122253	0.002	0
283.40	285.40		0.5	1 *0* FRC	35 1		11141	0.002	0
285.40	287.40		0.5	1 *0*			122255	0.003	0
287.40	289.10		0.5	1 *6*		Hematitic-propylitic alteration overprint. includes andesitic (takla) xenoliths to 5-7 cm	122256	0.002	0
289.10	290.80	Very fine grained green weakly hematitic	1.0	1 *3* FRC	30	Hematitic-propylitic alteration overprint. still some altered anesitic (talka) xenoliths. More fractured internally	122257	0.022	0
290.80	292.20	Very fine grained red brown weakly hematitic	0.5	1 *0* FRC	35	Hematitic-propylitic alteration overprint. some anhydrite fractures (contact 50)	122258	0.006	0
292.2	293.2	**MASSIVE MAFIC DYKE**							

Hole Number: BR-03-06

From	To	Rock Type	Py-Cpy-Mt		Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
292.20	293.20	Very fine grained dark green black weakly propyllitic	0.5		*4*				Chloritic alteration overprint. typical mafic dyke with minor calcited amygdiliac. 30 cm of monzonite ± pyrite nea top of interval from 292.35m with 45* to core axis at 10 cm contact	122259	0.003	0
293.2	316.6	**PORPHYRITIC MONZONITE DYKE**										
293.20	295.20	Very fine grained red weakly hematitic	0.5		1				Hematitic-propylitic alteration overprint. as in 122262 (contact 65)	122260	0.002	0
295.20	295.70		0.5	**0.1**	2	STR	35	0	Hematitic-propylitic alteration overprint. chalcopyrite in one 2 cm quartz-magnetite stringer at 35* to core axis	122261	0.007	0
295.70	297.80		0.5		1				Hematitic-propylitic alteration overprint. more coarsely porphyritic monzonite	122262	0	0
297.80	299.70	Very fine grained red brown weakly hematitic	0.5		1	FRC	50	1	Hematitic-propylitic alteration overprint. epidote sericite-chlorite as late fracture fillings and rel. mafics. More epidote-sericite-chlorite fratures between 299.1-299.3m (fractures 10,30)	122263	0.003	0.037
299.70	301.50		0.5		1	FRC	20	1	Hematitic-propylitic alteration overprint.	122264	0.003	0
301.50	303.50		0.5		1	FRC	30	1	Hematitic-propylitic alteration overprint. more fracture fillings of epidote-sericite-chlorite. Generally btw 301.5-301.7	122265	0.002	0
303.50	304.50		0.5		2	FRC	25	1	Hematitic-propylitic alteration overprint. 25* to core axis magnetite fracture filling with chlorite-epidote also calcite-zeol fracture fillings	122266	0.002	0
304.50	306.50		0.5		1	FRC			Hematitic-propylitic alteration overprint. most calcite-zeolite fractures at 05* to core axis	122267	0.003	0
306.50	308.30		0.5		1	FRC	20	1	Hematitic-propylitic alteration overprint.	122268	0.002	0.005
308.30	310.30		0.5		1	STR	45	1	Hematitic-propylitic alteration overprint. calcite-zeolite-epidote-chlorite stringers	122269	0.002	0.005
310.30	312.60		1.0		1	FRC	45		Hematitic-propylitic alteration overprint. also hematite as fracture fillings ± in epidote-quartz-chlorite-hematite-calcite (stringers 45)	122270	0.001	0
312.60	314.60	Very fine grained red weakly hematitic	0.5		1	FRC	20		Hematitic-propylitic alteration overprint. some intermediate volcanic xenoliths up to 5 cm (fractures 45)	122271	0.001	0

Hole Number: BR-03-06

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins (CA-%)	Comments	Sample#	Cu %	Au ppm
314.60	316.60	Very fine grained red weakly hematitic	0.5	1		Hematitic-propylitic alteration overprint. fairly fresh looking	122272	0.001	0
316.6	317.4	**MASSIVE MAFIC DYKE**							
316.60	317.40	Very fine grained dark green weakly propyllitic	1.0 **0.1**	1		Chloritic alteration overprint. mononite grades more epidote altered with epidote spots to 1 cm at 316.7m, followed by mafic dyke from 317.1-317.4 (contact 45)	122273	0.006	0.007
317.4	319.9	**PORPHYRITIC MONZONITE DYKE**							
317.40	319.90	Very fine grained green weakly hematitic	1.0			Hematitic-propylitic alteration overprint. more propylitic altered monzonite and sericitic overprint	122274	0.002	0
319.9	320.8	**MOTTLED ANDESITE BRECCIA**							
319.90	320.80	Fine grained red moderately hematitic	1.0	1		Hematitic-propylitic alteration overprint. tag out of sequence. Weakly brecciated zone with mettled texture	122302	0.003	0
320.8	325.7	**PORPHYRITIC MONZONITE DYKE**							
320.80	322.80	Very fine grained red brown weakly hematitic	1.0	3	FRC 5 5	Hematitic-propylitic alteration overprint. 30 cm contact zone more breciated, some graphite, monzonite dyke. Well fractured with epidote-calcite-zeolite±hematite along fractures (contact 45)	122275	0.006	0
322.80	323.70	Very fine grained red weakly hematitic	3.0	4	FRC 20 5	Hematitic-propylitic alteration overprint. moderatly fractured near upper margin and darker red colour, more hematitic abundant calite ±zeolite and calcite-epidote fractures fillings and clots with trace chalcopyrite, ±some galena molybdenite at 20-40° to core axis	122276	0.038	0
323.70	325.70	Very fine grained dark brown weakly hematitic	1.0		FRC 5 2	Hematitic-propylitic alteration overprint. some pyrite in fracture 05° to core axis	122277	0.007	0
325.7	362	**MOTTLED ANDESITE BRECCIA**							
325.70	327.70	Fine grained dark red moderately hematitic	3.0 **0.1**	7	STR 10 5	Hematitic-propylitic magnetite-silica alteration overprint. Very hemetitic with epidote-magnetite-chlorite clots (after phenocrysts) and fractures and quartz-magnetite stringers, anhydrite stringers some pyrite stringers (fractures) at 20° to core axis	122278	0.026	0.059

Hole Number: BR-03-06

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins (CA-%)	Comments	Sample#	Cu %	Au ppm
327.70	328.90	Fine grained dark red moderately hematitic	5.0 **0.1**	7	STR 45 5	less anyhydrite but still quartz-magnetite stringers at 45, 05, 55-60° to core axis, minor cholritic gouge at 60° to core axis chalcopyrite in 35* fracture near contact? (contact 70)	122279	0.032	0.06
328.90	330.40	Fine grained red moderately hematitic	7.0	2	FRC 40 3	Hematitic-propylitic-sericitic magnetite-silica alteration overprint. more anhydrite as fracture filling at 05* mostly, and more pyrite. Pyrite along fractures and in zone at end of interval with quartz-pyrite-sphalerite vein 2 cm wide at 45-50* to core axis. Late sericite-pyrite-gypsum overpunt. Overall lighter coloured, still quartz stringers at 5 and 35-45* but less magnetite.	122280	0.053	0.113
330.40	332.30	Fine grained red weakly hematitic	10.0	5	STR 25 6	Hematitic-propylitic magnetite-silica alteration overprint. chalcopyrite in quartz-magnetite stringers associated with magnetite at intersection of 05 and 7-*. Gypsum-quartz-pyrite-anhydrite vein at 331.9m at 25 and 5* to core axis 5 cm wide	122281	0.051	0.12
332.30	334.00	Fine grained red moderately hematitic	10.0	7	STR 15 25	high % quartz-magnetite stringers 05-15* to core axis but also 45-50. 8 cm + vein at 323.3m-.8m at 05-10° to core axis cross-cut by 65* minifaults. No visible copper but should be, fine anhydrite stringers thoughout	122282	0.091	0.074
334.00	336.00		5.0 **0.1**	5	STR 20 3	less quartz-magnetite stringers but main stringers at 1-3cm 20* to core axis and <1cm stringers at 35* to core axis . Also pyrite-epidote fractures at 20* to core axis, magnetite in stringers and as aggregates with chlorite up to 2 cm; fine anhydrite stringers and pyrite-epidote at 20° to core axis	122283	0.035	0.05
336.00	337.80		4.0 **0.1**	4	STR 30 4	chalcopyrite in 40° to core axis quartz-magnetite stringers. Just within quartz stringer cut by 30° pyrite-epidote stringers, anhydrite stringers at 35-45* to core axis	122284	0.029	0.026
337.80	339.50	Fine grained green strongly hematitic	5.0	4	STR 35 3	more epidote as late stringers still quartz magnetite stringers at 35-45° to core axis; minor anhydrite stringers at 25° to core axis with epidote.	122285	0.045	0.032
339.50	341.40	Fine grained red strongly hematitic	3.0	3	STR 35 5	still epdote rich. Generally at 35-45* to core axis also quartz-magnetite stringers at same angle and orthogonal	122286	0.042	0.051

Hole Number: BR-03-06

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins (CA-%)	Comments	Sample#	Cu %	Au ppm
341.40	343.40	Fine grained dark green moderately hematitic	4.0 **0.1**	5	STR 3	less epidote, more magnetite-chlorite, less quartz-magnetite stringers and all <1cm, sphalerite in pyrite-epidote fracture fillings at 15-25* and 65-85* to core axis. Gypsum in 1 cm stringer at 15° to core axis at 342.7m minor anhydrite stringers at 25° to core axis	122287	0.032	0.065
343.40	344.50	Fine grained grey weakly hematitic	15.0	1	STR 15 50	Hematitic-propylitic-sericitic alteration overprint. sericite-pyrite ateration overprint in 15-20° to core axis stringers and zone commonly with pyrite bands paraell to stringer oreintation; sphalerite in gypsum straight veinlets (contact 85)	122288	0.026	0.655
344.50	345.80	Fine grained dark green weakly hematitic	**0.1**	3		Hematitic-propylitic magnetite-silica alteration overprint. chalcopyrite generally with magnetite	122289	0.032	0.164
345.80	347.30	Fine grained grey weakly hematitic	10.0	2	STR 22 30	Hematitic-propylitic-sericitic alteration overprint. quartz-sericite-pyrite-gypsum veins at 15-25* to core axis with minor SP. Fine anhydrite stringers	122290	0.023	0.056
347.30	349.20	Fine grained green weakly hematitic	5.0 **0.1**	3	STR 25 3	Hematitic-propylitic magnetite-silica alteration overprint. quartz-magnetite grading to more quartz-pyrite lower in section. Not much epidote, more chlorite; some gypsum and anhydrite stringers	122291	0.032	0.155
349.20	350.40		10.0	1	STR 45 10	higher pyritic zone from 349.4-.65 and 350.2-.3m with a gypsum, anyhydrite, sericite minor remnent quartz stringer	122292	0.021	0.175
350.40	352.40	Fine grained red strongly hematitic	3.0 **0.1**	3	STR 30 3	more epidote are stringers and patches; chalcopyrite in quartz-magnetite stringers generally <.5cm	122293	0.023	0.043
352.40	354.40		3.0 **0.2**	4	STR 35 4	fine anhydrite stringers present, few more quartz-magnetite stringers to 1 cm	122294	0.029	0.012
354.40	356.40		3.0 **0.1**	6	STR 25 5	30 cm epidote-chlorite-gyp. Fractured zone at start. More quartz-magnetite stringers with chalcopyrite, minor trace galena? In quartz-magnetite stringer. More magnetite rich patches anhydrtie, minor gypsum in stringer.	122295	0.028	0.024
356.40	358.00	Fine grained red moderately hematitic	4.0	3	STR 5 3	less quartz-magnetite-pyrite stringer generally 05-15* to core axis. Still some anhydrite, more pyrite in some stz stringers	122296	0.019	0.03

Hole Number: BR-03-06

From	To	Rock Type	Py-Cpy-Mt		Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
358.00	360.00	Fine grained red moderately hematitic	3.0		5	STR	40	3	grading more chloritic with magnetite-chlorite patches and pervasive sil	122297	0.007	0.038
360.00	362.00	Fine grained red strongly hematitic	3.0	**0.1**	4	STR	75	3	start to get more ep; quartz-magnetite stingers with ep; chalcopyrite in quartz and magnetite ?? at stringer intersections.	122298	0.012	0.024
362	365.9	**MASSIVE LATITE DYKE**										
362.00	364.00	Very fine grained red brown unaltered hematitic	1.0		1	FRC	60	1	Hematitic-propylitic alteration overprint. (contact 20) chilled margin to 362.6m - weakly porphyratic with mafics (augite + hornblende.) altered to chlorite, very minor epidote, calcite-zeolite. Fracture fillings throughout	122299	0.003	0
364.00	365.90	Very fine grained red brown weakly hematitic	0.5		1	FRC	25	1	Hematitic-propylitic alteration overprint. some andesitic xenoliths to 4 cm, most fractures at 60, but some 20-30	122300	0.003	0
365.9	366.5	**BRECCIATED ANDESITE VOLCANIC BRECCIA**										
365.90	366.50	Very fine grained green weakly hematitic	0.5		2	FRC	60	1	Chloritic-hematitic alteration overprint. (contact 20) 20*FRK forms with more fractured zone with anderitic xenolith, contains fragments of latite ? dyke; *minor gouge at 60**	122303	0.002	0
366.5	374.9	**BRECCIATED LATITE DYKE**										
366.50	368.50	Fine grained red brown weakly hematitic	0.5		2	FRC	60	1	Hematitic alteration overprint. (contact 60) grades more porphyritic? - 10-15*10 hematitic feldspars and 5% chloritized mafics (augite, minor hornblende) andesite xenoliths to 1 cm	122304	0.003	0
368.50	370.60	Very fine grained red brown weakly hematitic	0.5		2	FRC	60	1	as above	122305	0.002	0
370.60	372.70		0.5		2				grades even more porphyritic with 20-25% feldspar and 7% mafics. Very weak chlorization	122306	0.002	0
372.70	374.90		0.5		2				as above. End of Hole	122307	0.002	0
374.9 EOH												

Brenda Property 2003 Diamond Drill Log

Northgate Exploration Ltd

Hole Number: ***BR-03-07***

Nad83_N:	6347839	**Total Depth:**	271.9 **m**
Nad83_E:	628507	**Azimuth:**	55 °
Elevation:	1595	**Dip:**	-70 °

Geologist: Jean Pautler

Drilled: 6/27/2003

Survey Depth	Azimuth	Dip
237.7 m	57 °	-72 °

Survey Depth	Azimuth	Dip

Survey Depth	Azimuth	Dip

Brenda Property 2003 Diamond Drill Log

Northgate Exploration Ltd

Hole Number: *BR-03-07*

From (m)	To (m)	Rock Type	Comments
0.0	7.6	CASING	casing
7.6	15.2	PORPHYRITIC MONZONITE DYKE	monzonite porphyry with epidote-chlorite-sericite replaces 15-20% feldspar phenocrysts and ± magnetite chlorite repidotel mafics (5%) ± epidote, limonitic fracture surfaces.
15.2	24.8	PORPHYRITIC DACITE FLOW	~10% feldspar and 3% mafics as phenocrysts, minor calcite-zeolite along fractures and very fractuced chalcopyrite with sphalerite, mn and limonite fractures coatings; possible minor chalcocite along fracture native coppper???
24.8	31.4	PORPHYRITIC MONZONITE DYKE	red brown aphanitic metrix with 15-20% feldspar, phenocrysts and 5-10% mafic phenocrysts-altered to hematite and epidote-sericite-chlorite ; some volcanic xenolith more epidote then above
31.4	33.7	PORPHYRITIC MONZONITE FAULT ZONE	Possible fault zone more rubbly, weak limonite on fractured, very more gorye
33.7	70.4	PORPHYRITIC MONZONITE DYKE	
70.4	72.4	FRACTURED MONZONITE FAULT ZONE	lower faults contacts more chlorite-sericite in fault, less epidote
72.4	94.0	PORPHYRITIC MONZONITE DYKE	epidote as spots (averaging 0.5 cm) and stringers to 3cm, also chlorite-epidote-calcite-zeolite fractures and epidote-sericite-calcite and sphalerite in stringers at 40° to core axis . Some late calcite and zeolite stringers at 05° minor gouge and brieccia at 74.4-.5
94.0	95.5	MASSIVE MAFIC DYKE	typical mafic dye with more calcite near lower calcite and zeolite fracture fillings
95.5	99.4	MOTTLED BASALT BRECCIA	Weakly mottled - brecciated andesite basalt, porphying flow?. With angite phenocrysts 20% gypsum stringers, at 60° and 15 ° to core axis minor calcite-zeolite fratures fillings anhydrite stringers
99.4	102.5	FRACTURED BASALT FLOW	fault zone continues with basalt fragments in gypsum matrix for 30 cm at 30° to core axis smaller gypsum matrix stringers through the rest of infencial 35-45° to core axis
102.5	104.2	MOTTLED BASALT BRECCIA	moffled textured basaltic any proph flow with gypsum- andy stringers pyrite at start for 30 cm then chalcopyrite replacing magnetite as aggreates ; epidote also as fracture fallings
104.2	112.2	FRACTURED BASALT FLOW	gypsum stringers pyrite but very little stringers and rare henatitic patches, magnetite as aggregates ; epidote also as fraction fallings

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From (m)	To (m)	Rock Type	Comments
112.2	124.4	MOTTLED BASALT BRECCIA	waek mattled texture, magnetite clots, chlorite pyrite clots replacing clasts?, gypsum stringers and epidote ; epidote in 15° atending gypsum stringers also at 35 and 75° to core axis
124.4	126.4	PORPHYRITIC BASALT FLOW	very minor epidote, gypsum stringers at 30-45, minor hematite patches, magnetite clots ; minor gypsum-sericite fragments rear bottom of section, moderatley fractured, VW brieccia texture
126.4	127.9	BRECCIATED GYPSUM VEIN	gypsum-sericite vein through entire section
127.9	134.5	PORPHYRITIC BASALT FLOW	chalcopyrite in gypsum of anhydrite stringers + with magnetite in the stringers at 15° and 40° to core axis. Gypsum-sericite on alteration at 28.8 -129. And 129.6-.7m- chalcopyrite in anhydrate 10° to core axis
134.5	135.6	MASSIVE MAFIC DYKE	calcium-zeolite stringers some calcite
135.6	146.0	PORPHYRITIC BASALT FLOW	136.7-137.6- gypsum brecciated zone with sphalerite and galena or moly, possible trace of chalcopyrite
146.0	150.0	MOTTLED BASALT BRECCIA	chalcopyrite in anhydrite stringers 15, 75, 35° to core axis chalcopyrite In 05% calcite fracture with magnetite minor quartz stringers at 55° to core axis
150.0	153.5	BRECCIATED GYPSUM VEIN	sericite-gypsum-anhydrite zone - due to fault?- some intemal bondirs at 60° to core axis and stringers with up to 1-2cm quartz magnetite stringers at 05°, gypsum magnetite stringers to lem at 35-40° to core axis and 15-20 stringers with magnetite clots chalcopyrite surounded by epidote and K-spar altea from over 10 cm at the bottom of section
153.5	155.9	BRECCIATED BASALT FLOW	gypsum stringers with sericitic selvages magnetite and pyrite, some epidote from 155.1-.8 sericite gypsum-quartz flooded zone matti epidoteisodic stock work breccia zone lower contact of view
155.9	182.0	MOTTLED BASALT BRECCIA	quartz note gypsum epidote stringers minor at 20, 40, 70° to core axis
182.0	208.1	PORPHYRITIC BASALT FLOW	some more hematitic patches, augite phenocrysts 15% altered to chlorite and magnetite, some gypsum anhydrite stringers
208.1	212.8	BRECCIATED BASALT FAULT ZONE	chloritic gouge for 30 cm w/sericite-pyrite-minor quartz-clay followed by quartz-sericite-pyrite alteration. No visible copper mineralization.

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From (m)	To (m)	Rock Type	Comments
212.8	214.7	BRECCIATED BASALT	chalcopyrite along fractures in chloritic fractured basalt augile porphyry flow. More chloritic, especially of augite phenocrysts. 70 com Breccia zone with sericite matrix quartz clasts ±chalcopyrite,±sphalerite,±galena, pyrite, silicified some banding and contacts at 52* to core axis breccia veins. chalc vein. 3cm nearhete. 45* to core axis with possible trace moly. some quartz, pyrite vein at 30* to core axis. 1-2 cm
214.7	216.7	FRACTURED BASALT FLOW	more chloritic and hemitite altered with quartz-pyrite stringersinger ±chalcopyrite at 15-30° to core axis, banded generally with pyrite in center. Offset by 20* fractures, some with just pyrite
216.7	218.7	MOTTLED BASALT BRECCIA	more hematitic patches surrounding gypsum magnetite stringers at 25, 50 and perpendicular 30° to core axis. Cross cutting earns some epidote ±pyrite and pyrite stringers, and epidote repidotel. Magic phenocrysts probable + raa chalcopyrite
218.7	220.3	FRACTURED BASALT FLOW	more chlorytic and epidote rich some quartz-pyrite and hy stringers and quartz-magnetite ±chalcopyrite and magnetite-anhydrite stringers at 10,25,35* to core axis. magnetite-quartz-pyrite at contact with cross cutting faults at 30*
220.3	222.3	BRECCIATED BASALT	more sericitic breccia zone with gypsum, some later quartz ±pyrite stringers and gypsum stringers and anhydrite. Some cross-cutting 5-10* to core axis fractures
222.3	226.3	PORPHYRITIC BASALT BRECCIA	Minor gypsum stringers ±quartz 60-75, 05
226.3	242.3	PORPHYRITIC BASALT FLOW	chlorite-sericite, no chalcopyrite; chalcopyrite in quartz-pyrite-hemitite to 2cm banded stringers and minor chalcopyrite in fine quartz-magnetite ±pyrite stringers. NB 10* stringers cut by 45-50* stringers
242.3	244.0	BRECCIATED BASALT FAULT ZONE	highly sericite-pyrite altered fault zone with some gypsum and quartz stringers.
244.0	245.7	BRECCIATED BASALT	sericite-pyrite matrix with chloritic basalt flow clasts; chalcopyrite along 5-10° to core axis structures (fractures). Some hemitite-calcium-quartz-magnetite stringers ±chalcopyrite. 65-70* stringersctures; sericitic zone at 65* to core axis
245.7	246.9	FRACTURED BASALT BRECCIA	chalcopyrite along 5-10° structure with quartz-gypsum veins surrounded by sericite-pyrite envelopes also quartz-calcium 35-40° to core axis
246.9	254.3	FRACTURED BASALT FLOW	as above with chalcopyrite along gypsum-pyrite ±magnetite stringers at 05-20° to core axis-surrounded by 5 com sericite pyrite alteration in envelope; also chalcopyrite in 45-50* quartz-magnetite ±calcite stringers

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From (m)	To (m)	Rock Type	Comments
254.3	262.1	BRECCIATED BASALT FAULT ZONE	fault at contact. Sericite-pyrite matrix with chlorite-pyrite altered fragments. Gypsum ±sphalerite stringers at 45° to core axis. Some pyrite stringers. Some at 15-20° to core axis
262.1	271.9	PORPHYRITIC LATITE DYKE	with chlorite±zeolite+calcium. Some mafic volcanic xenolithic to 2 cm. Chlorite-magnitite clots (replacing mafic phenocrysts). Hematitic feldspars; drilled margin for 40 com at lip.

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Hole Number: BR-03-07

From	To	Rock Type	Py-Cpy-Mt		Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
0	7.6	**CASING**										
0.00	7.60								casing			
7.6	15.2	**PORPHYRITIC MONZONITE DYKE**										
7.60	10.70	Very fine grained red brown weakly hematitic	0.5						monzonite porphyry with epidote-chlorite-sericite replaces 15-20% feldspar phenocrysts and ± magnetite chlorite repidotel mafics (5%) ± epidote, limonitic fracture surfaces.	122308	0.004	0.162
10.70	12.40		0.5						clay altered feldspars and along fractures, possible minor fault zone, some limonite.	122309	0.013	0
12.40	13.70	Very fine grained red brown moderately hematitic	0.5		1	FRC	45		more limonitic and competent; minor limonite along fractures	122310	0.013	0.032
13.70	15.20		1.0		1				as above but bit more pyrite	122311	0.016	0
15.2	24.8	**PORPHYRITIC DACITE FLOW**										
15.20	17.30	Fine grained grey brown weakly hematitic	1.0	**0.1**	1	FRC	35	1	~10% feldspar and 3% mafics as phenocrysts, minor calcite-zeolite along fractures and very fractuced chalcopyrite with sphalerite, mn and limonite fractures coatings; possible minor chalcocite along fracture native coppper???	122312	0.009	0.007
17.30	19.30		2.0	**0.1**	2			1	minor aggregates of black jack sphalerite ?? Honey sphalerite. With minor very trace chalcopyrite generally in or near sphalerite; weakly calcareous and bleached appearance, minor epidote-sericite-chlorite along	122313	0.015	0.069
19.30	21.30		1.0	**0.1**	2	FRC	5	1	minor chalcopyrite with magnetite replacing mafic phenocrysts minor pervasive carbonate alteration, weak calciumcareous and bleached	122314	0.007	0.018
21.30	23.30		1.0	**0.1**	2				as above	122315	0.008	0.032
23.30	24.80		1.0		2	FRC	5		as above but possible minor monzonite from 23.7-24.1 ; mopre broken after 24.1 with some chlorite gouge at 20° to core axis, minor quartz stringers in last 10cm ≈15° to core axis	122316	0.016	0.067
24.8	31.4	**PORPHYRITIC MONZONITE DYKE**										

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
24.80	26.80	Very fine grained red brown weakly hematitic	0.5	1	FRC	45	4	red brown aphanitic metrix with 15-20% feldspar, phenocrysts and 5-10% mafic phenocrysts- altered to hematite and epidote-sericite-chlorite ; some volcanic xenolith more epidote then above	122317	0.003	0
26.80	29.10		0.5	2	FRC	25	4	as above rare epidote as stringers	122318	0.003	0
29.10	31.40		1.0	2	FRC	15	4	rare epidote stringers, more broken	122319	0.005	0
31.4	33.7	**PORPHYRITIC MONZONITE FAULT ZONE**									
31.40	33.70	Very fine grained red brown weakly hematitic	2.0	1	FRC	5	4	Possible fault zone more rubbly, weak limonite on fractured, very more gorye	122320	0.01	0.008
33.7	70.4	**PORPHYRITIC MONZONITE DYKE**									
33.70	35.70	Very fine grained red brown weakly hematitic	0.5	1					122321	0.002	0
35.70	37.70		0.5	1	FRC	10	1	Some calcite stringers at 5° to core axis	122322	0.004	0
37.70	39.60		1.0	1	FRC	5	4	weak sericitc overprint	122323	0.003	0.019
39.60	42.00		0.5	1	FRC	85	1	as in 317, less magnetite	122324	0.001	0
42.00	43.80		1.0	1	FRC	45	4	more epidote sen on fractures	122325	0.001	0.005
43.80	46.10	Very fine grained weakly hematitic	0.5	1	FRC	75	1	more rubbly to broken and not hematite	122326	0.002	0
46.10	48.10	Very fine grained red brown weakly hematitic	0.5	1	FRC	45		minor epidote-sericite in fraehues NB can see augite and hornblondr mafic phenocrysts (5-7%)	122327	0.003	0.005
48.10	50.10		0.5	1	FRC	20	4	epidote-sericite on fractures,	122328	0.002	0
50.10	52.10		0.5	1	FRC	5	4	more sericite-epidote on fractuers in center	122329	0.004	0.007
52.10	54.40		0.5	1					122330	0.002	0
54.40	56.40		2.0	1	FLT	60	15	fault guge from 55.2-.5 with about 3% pyrite, day, serusite, chlorite, ground rock exidote	122331	0.002	0.006
56.40	58.40		0.5	1	FRC	35		some calcite stringers epidote-sericite fractures, occasional clay	122332	0.002	0
58.40	60.40		0.5	1	FRC	55	4	epidote-sericite fractures	122333	0.005	0.011

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)	Comments	Sample#	Cu %	Au ppm
60.40	62.40	Very fine grained red brown weakly hematitic	0.5	1	FRC	60 15	more fractured and brecciated minor gouge from 50.0 - .4 with more clay senticite chlorite, calcite, more selicitic	122334	0.004	0.009
62.40	64.40		0.5	1	FRC	35 4		122335	0.004	0.006
64.40	66.40		0.5	1	FRC	60 4	some intermediate volcanic xenoliths grades more epidote towards end of section	122336	0.003	0
66.40	68.40		0.5	1			more epidote asp as spots	122337	0.006	0
68.40	70.40		1.0	1	FRC	5 4	as above	122338	0.007	0.009
70.4	72.4	**FRACTURED MONZONITE FAULT ZONE**								
70.40	72.40	Very fine grained grey weakly hematitic	2.0		FLT	25 40	lower faults contacts more chlorite-sericite in fault, less epidote	122339	0.009	0.02
72.4	94	**PORPHYRITIC MONZONITE DYKE**								
72.40	74.60	Very fine grained red brown weakly hematitic	3.0		FRC	5 2	epidote as spots (averaging 0.5 cm) and stringers to 3cm, also chlorite-epidote-calcite-zeolite fractures and epidote-sericite-calcite and sphalerite in stringers at 40° to core axis . Some late calcite and zeolite stringers at 05° minor gouge and brieccia at 74.4-.5	122340	0.009	0.024
74.60	76.20	Very fine grained green green green g green moderately hematitic	3.0		FRC	25 3	more epidote altered and stringers and clots (alter phenocrysts)	122341	0.007	0.016
76.20	77.70	Very fine grained light green orange weakly propyllitic	3.0		FRC	75 4	minor calcite stingers 75° to core axis , some at 45° to core axis hematitie and epidote rich patches	122342	0.005	0.028
77.70	79.50	Very fine grained red weakly propyllitic	2.0		FRC	25 4	less epidote altered, still epidote - less clots or spots (altered plagioclase phenocrysts)	122343	0.003	0.023
79.50	81.50		1.0	2	FRC	75 3	start to get more epidoteiotized around fragments with the chloritized mafics hematitic monzonite with magnetite and epidote, alter mafics	122344	0.006	0.018
81.50	83.50	Very fine grained red brown weakly propyllitic	1.0	2	FRC	75 2	lots of epidotized clasts - some here in clasts. Very fine grained chilled zone? For 15 cm	122345	0.006	0.006
83.50	86.20		1.0	2	FRC	75 1	more hevntitc and less cass prepidote some epidote and sericite	122346	0.004	0

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)	Comments	Sample#	Cu %	Au ppm
86.20	88.30	Very fine grained red brown weakly propyllitic	1.0	2	FRC	75 1	Some fragments at 15-25.45 with the calcite-zeolite and epidote-sericite	122347	0.003	0
88.30	90.20	Very fine grained red brown propyllitic	1.0	2			as above occational more mafic xenoith to 2 cm as above	122348	0.003	0
90.20	92.20				FRC	35 4	as above	122349	0.002	0
92.20	94.00	Very fine grained green grey weakly hematitic	3.0		FRC	35 4	92.2-92.5 large xenoith of more mafic(probable and basalt volcanic) is one quartz-calcite str..igersained contact with the mafic dye	122350	0.003	0.009
94	95.5	**MASSIVE MAFIC DYKE**								
94.00	95.50	Very fine grained dark green black weakly propyllitic	1.0		FRC	10 1	typical mafic dye with more calcite near lower calcite and zeolite fracture fillings	122351	0.005	0.005
95.5	99.4	**MOTTLED BASALT BRECCIA**								
95.50	97.50	Fine grained green red weakly propyllitic	4.0		STR	60 5	Weakly mottled - brecciated andesite basalt, porphying flow?. With angite phenocrysts 20% gypsum stringers, at 60° and 15 ° to core axis minor calcite-zeolite fratures fillings anhydrite stringers	122352	0.048	0.12
97.50	99.40		3.0		STR	45 1	as above but less gypsum, minor anhydrite zone at bottom with chlorite-graphite -5% pyriteas disseminated .	122353	0.083	0.246
99.4	102.5	**FRACTURED BASALT FLOW**								
99.40	100.50	Fine grained green grey weakly propyllitic	2.0		STR	45 10	fault zone continues with basalt fragments in gypsum matrix for 30 cm at 30° to core axis smaller gypsum matrix stringers through the rest of infencial 35-45° to core axis	122354	0.051	0.114
100.50	102.50	Fine grained pink green weakly propyllitic	3.0		STR	45 1	augite phenocrysts to 20%, some alteration to epidote-sericite. K-spar alteration anhydrite-gypsum -stringers and pyrite	122355	0.098	0.199
102.5	104.2	**MOTTLED BASALT BRECCIA**								
102.50	104.20	Fine grained red moderately hematitic	2.0 **0.1**	4	STR	10 1	moffled textured basaltic any proph flow with gypsum- andy stringers pyrite at start for 30 cm then chalcopyrite replacing magnetite as aggreates ; epidote also as fracture fallings	122356	0.114	0.366
104.2	112.2	**FRACTURED BASALT FLOW**								

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins (CA-%)	Comments	Sample#	Cu %	Au ppm
104.20	106.20	Fine grained grey weakly hematitic	1.0	3	STR 45 1	gypsum stringers pyrite but very little stringers and rare henatitic patches, magnetite as aggregates ; epidote also as fraction fallings	122357	0.083	1.08
106.20	108.20	Fine grained grey green weakly hematitic	2.0	1	STR 0 1	gypsum stringers pyrite epidote sericite stringers	122358	0.077	0.639
108.20	110.20	Very fine grained grey green weakly hematitic	5.0	2	STR 5 1	plus or minus pyriteritized clast with sphalerite near margins some magnetite-epidote-chlorite clots, gypsum stringers at 05° and 30° to core axis.	122359	0.09	0.808
110.20	112.20	Fine grained green grey moderately propyllitic	2.0 **0.1**	3	STR 60 1	basaltic any porphyry flow I fractures and brecciated with the epidote-chlorite and pyrite replacing clasts magnetite clots. More mettled hemititeatic zone from 110.5 - 110.7 with the magnetite clots and stringers at 65 chalcopyrite . gypsum stringers, epidote stringers throughout ; ns sphalerite generally along 40° fractures	122360	0.113	0.859
112.2	124.4	**MOTTLED BASALT BRECCIA**							
112.20	114.20	Fine grained green grey weakly hematitic	2.0 **0.1**	3	STR 15 1	waek mattled texture, magnetite clots, chlorite pyrite clots replacing clasts?, gypsum stringers and epidote ; epidote in 15° atending gypsum stringers also at 35 and 75° to core axis	122361	0.092	0.754
114.20	116.00	Fine grained green weakly hematitic	3.0 **0.1**	2	STR 60 1	less hematite, less merrled, some magnetite clots gypsum stringers, epidote stringers and minor quartz-pyrite stringers at 50° to core axis; minor chalcopyrite with sphalerite in 60 epidote-gypsum and epidote-gypsum-chlorite-quartz stringers	122362	0.065	0.597
116.00	118.00	Fine grained red moderately hematitic	3.0 **0.1**	3	STR 5 2	more mattled texture magnetite clots and chalcopyrite ; gypsum stringers ; chalcopyrite associated weak 30? structures many gypsum quartz stringers at 30 chalcopyrite magnetite 05 structures fault 30 structures, some 50 fractures	122363	0.091	0.644
118.00	120.00		3.0 **0.1**	4	STR 30 1	chalcopyrite in gypsum clots and in 30 gypsum stringers also along 05-10 gypsum stringers hear intense chlorite with 30 stringers, especailly with the sphalerite	122364	0.056	0.544

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins (CA-%)	Comments	Sample#	Cu %	Au ppm
120.00	121.10	Fine grained red moderately hematitic	3.0 **0.1**	2		gypsum-rich zone from 120.4-120.7 with the gypsum stringers and veins at 15, 30, 45° to core axis chalcopyrite+ pyrite+ magnetite espeacilly along mayins and	122365	0.139	1.17
121.10	122.60	Fine grained red strongly hematitic	3.0 **0.1**	4	STR 40 1	More mattled with very-meter quartz-magnetite stringers 30-40° to core axis also gypsum + magnetite and gypsum-magnetite	122366	0.097	0.873
122.60	124.40	Fine grained green grey moderately propyllitic	4.0 **0.1**	1	STR 20 60	less mattled and hematite at 123.7-124.4 gypsum-sericite vein zone at 15-20° to core axis, some basalt porphyry fragments, hematite contact, grades less epidote with more chlorite	122367	0.121	0.461
124.4	126.4	**PORPHYRITIC BASALT FLOW**							
124.40	126.40	Fine grained green grey strongly propyllitic	2.0	3	STR 40 1	very minor epidote, gypsum stringers at 30-45, minor hematite patches, magnetite clots ; minor gypsum-sericite fragments rear bottom of section, moderatley fractured, VW brieccia texture	122368	0.07	0.398
126.4	127.9	**BRECCIATED GYPSUM VEIN**							
126.40	127.90	Coarse grained light green orange strongly phyllic	7.0	1	CTC 35	gypsum-sericite vein through entire section	122369	0.036	0.656
127.9	134.5	**PORPHYRITIC BASALT FLOW**							
127.90	129.90	Fine grained green moderately propyllitic	3.0 **0.1**	2	CTC 20 10	chalcopyrite in gypsum of anhydrite stringers + with magnetite in the stringers at 15° and 40° to core axis. Gypsum-sericite on alteration at 28.8 -129. And 129.6-.7m-chalcopyrite in anhydrate 10° to core axis	122370	0.077	0.878
129.90	131.70	Fine grained green weakly hematitic	2.0 **0.1**	1	STR 25 1	minor quartz-magnetite stringers with chalcopyrite at 25° to core axis, gypsum stringers at 35, 60, 25° to core axis, start to get more epidote	122371	0.058	0.504
131.70	133.10	Fine grained red moderately hematitic	1.0 **0.1**	3		some quartz-magnetite gypsum stringers with the chalcopyrite at 05-25° to core axis	122372	0.071	0.594
133.10	134.50	Coarse grained green moderately propyllitic	1.0 **4.0**	1	STR 15 1	magnetite clots, gypsum stain, epidote stringers quartz-pyrite - trace magnetite stringers at 15° to core axis, trace chalcopyrite??	122373	0.086	0.847

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)	Comments	Sample#	Cu %	Au ppm
134.5	135.6	**MASSIVE MAFIC DYKE**								
134.50	135.60	Very fine grained dark green black weakly potassic - chlorite	1.0 **4.0**	1	CTC	40 1	calcium-zeolite stringers some calcite	122374	0.005	0.018
135.6	146	**PORPHYRITIC BASALT FLOW**								
135.60	137.60	Fine grained green grey moderately propyllitic	2.0	3	CTC	5 30	136.7-137.6- gypsum brecciated zone with sphalerite and galena or moly, possible trace of chalcopyrite	122375	0.071	0.489
137.60	139.80		1.0 **0.1**	3	STR	15 1	quartz stringers at 15° to core axis with gypsum with epidote in gypsum	122376	0.092	0.744
139.80	142.00		3.0	2	STR	30 10	sericitic zone with brecciated and offset gypsum stringers from 140.2-104.7 gypsum, ch 50° offset by 30 gypsum fractures falling also at 10-15° to core axis	122377	0.087	0.56
142.00	144.00		5.0	2	STR	20 5	sericitic zone, gypsum stringers associated with gouge zone	122400	0.061	0.537
144.00	146.00		2.0	2	STR	15 4	gypsum anly stringers 15degrees, 75, 35° to core axis	122378	0.078	0.432
146	150	**MOTTLED BASALT BRECCIA**								
146.00	148.00	Fine grained green moderately propyllitic	2.0 **1.0**	4	STR	15 4	chalcopyrite in anhydrite stringers 15, 75, 35° to core axis chalcopyrite In 05% calcite fracture with magnetite minor quartz stringers at 55° to core axis	122379	0.141	0.911
148.00	150.00		2.0 **1.0**	3	STR	35 4	chalcopyrite in anhydrite-gypsum stringers with magnetite at 35° to core axis	122380	0.064	0.301
150	153.5	**BRECCIATED GYPSUM VEIN**								
150.00	151.90	Fine grained light green grey intensely phyllic	3.0 **0.1**	5	STR	60 10	sericite-gypsum-anhydrite zone - due to fault?- some internal bondirs at 60° to core axis and stringers with up to 1-2cm quartz magnetite stringers at 05°, gypsum magnetite stringers to lem at 35-40° to core axis and 15-20 stringers with magnetite clots chalcopyrite surounded by epidote and K-spar altea from over 10 cm at the bottom of section	122381	0.098	0.309
151.90	153.50		6.0		STR	10100	intense gypsum-senicite-quartz zone breccia fragments of less altered basaltic flow	122382	0.006	0.208
153.5	155.9	**BRECCIATED BASALT FLOW**								

Hole Number: BR-03-07

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins (CA-%)	Comments	Sample#	Cu %	Au ppm
153.50	155.90	Fine grained green grey moderately propyllitic	4.0 **0.1**		STR 50 4	gypsum stringers with sericitic selvages magnetite and pyrite, some epidote from 155.1-.8 sericite gypsum-quartz flooded zone matti epidoteisodic stock work breccia zone lower contact of view	122383	0.076	0.44
155.9	182	**MOTTLED BASALT BRECCIA**							
155.90	157.70	Fine grained red strongly propyllitic	3.0 **0.1**	3	STR 20 1	quartz note gypsum epidote stringers minor at 20, 40, 70° to core axis	122384	0.107	0.164
157.70	159.40	Fine grained green moderately propyllitic	2.0 **0.1**	2	STR 45 4	few quartz magnetite stringers chalcopyrite	122385	0.077	0.301
159.40	161.40	Fine grained green green green g green moderately propyllitic	3.0 **0.1**	1	STR 25 4	more henatitic quartz stringers but very little magnetite probable take chalcopyrite	122386	0.058	0.139
161.40	163.40		3.0 **0.1**	2	STR 15 4	as above with the chalcopyrite in gypsum-magnetite - stringers at above 10-15° to core axis some gypsum stringers to 2 cm	122387	0.046	0.182
163.40	165.40	Fine grained red moderately hematitic	3.0 **0.1**	5	STR 15 1	weakly mottled textures with quartz, magnetite, chalcopyrite stringers and anhydrite stringers some quartz pyrite stringers asp at start of see from . None epidote at stringers intersections	122388	0.055	0.22
165.40	167.40	Fine grained red strongly hematitic	3.0 **0.1**	7	STR 45 2	more stringers generally 30 -45 some 10-15	122389	0.055	0.322
167.40	169.40		1.0 **0.1**	4	STR 20 1	2 sets stringers at 20-30% 20-30° to core axis, chalcopyrite in quartz magnetite and magnetite stringers and along fractuers 20-30, 05, 40-45° to core axis	122390	0.114	0.627
169.40	171.40		3.0 **0.1**	4	STR 45 2	start to set more epidote as stringers and altered phenocrysts quartz-magnetite stringers at 14,50,60,25,05° to core axis	122391	0.116	0.556
171.40	173.40	Fine grained red moderately hematitic	3.0 **0.1**	3	STR 60 1	quartz magnetitestringers and chalcopyrite anhydrite stringers epidote more stringersand altered phenocrysts	122392	0.052	0.172
173.40	175.40	Fine grained red weakly hematitic	3.0 **0.1**	3	STR 25 1	as above with stringers at 25-30 and 60° to core axis	122393	0.058	0.211
175.40	177.10	Fine grained red moderately hematitic	4.0 **0.1**	3	STR 45 1	as above with quartz magnetite stringers at 45,60,35° to core axis	122394	0.041	0.155
177.10	177.90		2.0	1	STR 20 4	less epidote and quartz magnetite, some quartz pyrite	122395	0.049	0.245

Hole Number: BR-03-07

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)	Comments	Sample#	Cu %	Au ppm
177.90	179.90	Fine grained red moderately hematitic	2.0 **0.1**	1	STR	5 4	very minor quartz magnetite chalcopyrite stingers at 05° to core axis	122396	0.071	0.707
179.90	182.00	Fine grained red moderately propyllitic	3.0	2	STR		180.4-10 cm gypsum anhydrite-sericite zone with 45 + 80° to core axis contacts; much less epidote other smaller gypsum-sericite stringers, never magnetite, more chlorite magnetite altered phenocrysts S96:S97	122397	0.052	0.639
182	208.1	**PORPHYRITIC BASALT FLOW**								
182.00	183.90	Fine grained green moderately potassic - chlorite		1	STR	50 1	some more hematitic patches, augite phenocrysts 15% altered to chlorite and magnetite, some gypsum anhydrite stringers	122398	0.035	0.475
183.90	186.20		2.0	1	FLT	65 5	as abovesome sericite and pyrite gypsum trace sphalerite fault at 186. domisantly sercitic zone from 142.4-143.9 with frys of basalt within it, gypsum stringers esp and 142.9 at 20° to core axis 3 cm wide calciumcite assoultion with gouge zone breccia fragments	122399	0.044	0.46
186.20	188.10	Fine grained green moderately propyllitic	3.0 **0.1**	1	STR	45 4	sercite gypsum minor quartz at start with more and as fragments in chlorite basalt proph flow trace sphalerite in minor quartz stringers	122401	0.08	0.847
188.10	190.10		2.0 **0.1**	1	STR	45 4	start to get epidote, chalcopyrite in gypsum stringers (km) with pyrite and sphalerite	122402	0.085	1.245
190.10	192.10		4.0 **0.1**	2	STR	45 4	more epidote chalcopyrite as drssen and in gypsum stringers with quartz sphalerite ; some home patches surrounded magnetite clots	122403	0.074	0.78
192.10	194.10		2.0 **0.1**	2	STR	50 4	chalcopyrite as or with maying epidote and in quartz stringers with magnetite	122404	0.075	1.17
194.10	196.10	Fine grained green moderately phyllic	5.0 **0.1**	1	STR	20 4	minor quartz calcium pyrite sphalerite chalcopyritestringers at intersection of 20/45 fractions sericite quartz flooding throughmost of section	122405	0.091	1.11
196.10	198.10		7.0 **0.1**	1	STR	30 4	local zones of gypsum sericite pyrite flooding 40° to core axis calcium sphalerite galena stringers	122406	0.064	0.406
198.10	200.10	Fine grained green moderately potassic - chlorite	5.0 **0.1**	1	STR	30 4	chalcopyrite in magnetite stringers at 30-35° to core axis of stringers along 60	122407	0.075	0.623

Hole Number: BR-03-07

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)	Comments	Sample#	Cu %	Au ppm
200.10	202.10	Fine grained green moderately potassic - chlorite	10.0 **0.1**	1	STR	40 4	increasing hematite,;quartz-magnetite stringers; anhydrite	122408	0.107	1.02
202.10	204.10	Fine grained green moderately propyllitic	4.0 **0.1**	3	STR	25 4	chalcopyrite-quartz-calciumcite-magnetite stringers	122409	0.068	0.496
204.10	206.10		3.0 **0.1**	5	STR	5 4	chalcopyrite-quartz-calciumcite-magnetite ± gypsum ±anhydrite stringers; some epidote	122410	0.105	0.948
206.10	208.10		4.0 **0.1**	3	STR	45 4	minor hematite patches; augite phenocrysts altered to chlorite+magnetite (~15%); some gypsum; anhydrite stringers	122411	0.082	0.633
208.1	212.8	**BRECCIATED BASALT FAULT ZONE**								
208.10	209.80	Fine grained light grey intensely argillic	10.0		FLT	50 80	chloritic gouge for 30 cm w/sericite-pyrite-minor quartz-clay followed by quartz-sericite-pyrite alteration. No visible copper mineralization.	122412	0.014	1.105
209.80	210.80		15.0 **0.2**		FLT	50 90	ASP altered fault zone. Mostly sericite-quartz pyrite. clay gouge at 210.4. 7cm fragment of massive pyrite with chalcopyrite along margins associated with 10* fracture with minor gouge. Gouge 45,50,60° to core axis, late structure 5-10° to core axis.	122413	0.06	0.786
210.80	212.80		10.0		FLT	30 30	Also 05-10° to core axis structure. Should have chalcopyrite along it but no visible copper mineralization. (poor light) Alteration contact	122414	0.01	0.16
212.8	214.7	**BRECCIATED BASALT**								
212.80	214.70	Fine grained green grey strongly potassic - chlorite	5.0 **0.2**		FRK	20 4	chalcopyrite along fractures in chloritic fractured basalt augile porphyry flow. More chloritic, especially of augite phenocrysts. 70 com Breccia zone with sericite matrix quartz clasts ±chalcopyrite,±sphalerite,±galena, pyrite, silicified some banding and contacts at 52* to core axis breccia veins. chalc vein. 3cm nearhete. 45* to core axis with possible trace moly. some quartz, pyrite vein at 30* to core axis. 1-2 cm	122415	0.16	0.214
214.7	216.7	**FRACTURED BASALT FLOW**								

Hole Number: BR-03-07

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)	Comments	Sample#	Cu %	Au ppm
214.70	216.70	Fine grained green grey strongly potassic - chlorite	3.0 **0.1**	3	STR	30 3	more chloritic and hemitite altered with quartz-pyrite stringersinger ±chalcopyrite at 15-30° to core axis, banded generally with pyrite in center. Offset by 20* fractures, some with just pyrite	122416	0.13	0.372
216.7	218.7	**MOTTLED BASALT BRECCIA**								
216.70	218.70	Fine grained green green green g moderately hematitic	2.0 **0.1**	4		2	more hematitic patches surrounding gypsum magnetite stringers at 25, 50 and perpendicular 30° to core axis. Cross cutting earns some epidote ±pyrite and pyrite stringers, and epidote repidotel. Magic phenocrysts probable + raa chalcopyrite	122417	0.102	0.384
218.7	220.3	**FRACTURED BASALT FLOW**								
218.70	220.30	Fine grained green weakly hematitic	2.0 **0.1**	4		1	more chlorytic and epidote rich some quartz-pyrite and hy stringers and quartz-magnetite ±chalcopyrite and magnetite-anhydrite stringers at 10,25,35* to core axis. magnetite-quartz-pyrite at contact with cross cutting faults at 30*	122418	0.074	0.267
220.3	222.3	**BRECCIATED BASALT**								
220.30	222.30	Fine grained light green strongly phyllic	8.0	1	STR	25 1	more sericitic breccia zone with gypsum, some later quartz ±pyrite stringers and gypsum stringers and anhydrite. Some cross-cutting 5-10* to core axis fractures	122419	0.095	0.485
222.30	224.30	Fine grained green weakly hematitic	2.0	1	STR	70 4	Minor gypsum stringers ±quartz 60-75, 05	122420	0.076	0.487
224.30	226.30	Fine grained green moderately propyllitic	3.0 **0.1**	2	STR	40 1	Some quartz- magnetite ±hemitite ±chalcopyrite stringers ±quartz-pyrite stringers and 55° to core axis fracture zones minor anhydrite. 30-40* to core axis not much chalcopyrite	122421	0.119	0.768
226.3	242.3	**PORPHYRITIC BASALT FLOW**								
226.30	228.30	Fine grained green intensely potassic - chlorite	0.1 **2.0**		STR	10 3	chlorite-sericite, no chalcopyrite; chalcopyrite in quartz-pyrite-hemitite to 2cm banded stringers and minor chalcopyrite in fine quartz-magnetite ±pyrite stringers. NB 10* stringers cut by 45-50* stringers	122422	0.069	0.818
228.30	230.30		0.1 **3.0**		STR	35 2	quartz-pyrite ±hemitite ±magnetite ±calcium in stringers 55 and at 35. chalcopyrite in fine anhydrite stringers and above stringersinger	122423	0.151	1.71

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
230.30	232.30	Fine grained green intensely potassic - chlorite	0.1 **4.0**		STR	20	2	some more sericitic patches, banded quartz-pyrite-hemitite-magnetite±chalcopyrite stringers up to 1 com at 20° to core axis	122424	0.156	1.04
232.30	234.30	Fine grained green intensely phyllic	0.1 **3.0**		STR	35	2	chalcopyrite in quartz-magnetite±hemitite stringers at 35° to core axis and in calcite-quartz-hemitite stringers at 35° to core axis and in calcium-quartz-hemitite stringers. Gome auge at 15* to core axis. Some quartz pyrite banded stringers, some more seriticic zone generally around quartz-pyrite veins	122425	0.14	0.658
234.30	236.30		0.1 **3.0**		STR	20	2	chalcopyrite in quartz pyrite banded stringers to 2 cm and quartz-magnetite±calcium stringers	122426	0.084	0.426
236.30	238.30		0.1 **3.0**		STR	65	1	some sericitic zones with more pyrite. Fine quartz-magnetite stringers ±hemitite ±calcite	122427	0.097	0.754
238.30	240.30	Fine grained green strongly phyllic	0.1 **2.0**		STR	65	4	as above; very fine quartz-magnetite ±hemitite ±calcite stringers at 45,40	122428	0.073	0.803
240.30	242.30	Fine grained green intensely potassic - chlorite	0.1 **2.0**		STR	10	1	more sericitic zones especially surrounding quartz-pyrite ±calcium banded veins ±chalcopyrite,±trace magnetite, nos+at 10-15° to core axis	122429	0.107	0.662
242.3	244	**BRECCIATED BASALT FAULT ZONE**									
242.30	244.00	Fine grained light green grey intensely phyllic	**1.0**		FLT	10	20	highly sericite-pyrite altered fault zone with some gypsum and quartz stringers.	122430	0.143	0.777
244	245.7	**BRECCIATED BASALT**									
244.00	245.70	Fine grained green intensely phyllic	0.1 **1.0**		FLT	65	80	sericite-pyrite matrix with chloritic basalt flow clasts; chalcopyrite along 5-10° to core axis structures (fractures). Some hemitite-calcium-quartz-magnetite stringers ±chalcopyrite. 65-70* stringersctures; sericitic zone at 65* to core axis	122431	0.118	0.554
245.70	246.90		0.1 **1.0**		STR	5	10	chalcopyrite along 5-10° structure with quartz-gypsum veins surrounded by sericite-pyrite envelopes also quartz-calcium 35-40° to core axis	122432	0.082	0.532
246.9	254.3	**FRACTURED BASALT FLOW**									

Hole Number: BR-03-07

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
246.90	248.70	Fine grained green intensely phyllic	0.1 **2.0**		STR	20	5	as above with chalcopyrite along gypsum-pyrite ±magnetite stringers at 05-20° to core axis- surrounded by 5 com sericite pyrite alteration in envelope; also chalcopyrite in 45-50* quartz-magnetite ±calcite stringers	122433	0.093	0.437
248.70	250.30	Fine grained green moderately propyllitic	0.2 **2.0**		STR	45	1	start to get eqidote again and some pervasiv hemitite with quartz-magnetite stringers^= 45* to core axis. Surrounded by 5 cm sericite pyrite alteration in envelope; also chalcopyrite in 45-50* quartz-magnetite +gypsum stringers epidote-pyrite stringers chalcopyrite in fine quartz-magnetite and epidote-magnetite-anhydrite-gypsum stringers. 10-15* to core axis sericite-pyrite zone for 40cm at bottom with chalcopyrite in sphilots associated with 65* epidote-magnetite gypsum. veins with chll argins and 30* gypsum sphalerite stringers and clots	122434	0.087	0.395
250.30	251.90		0.1 **2.0**		STR	45	2	banded quartz-pyrite stringers to 2cm ±magnetite +epidote ±gypsum stringers	122435	0.09	0.365
251.90	254.30	Fine grained green weakly propyllitic	1.0 **1.0**		FLT	55	2	more fractured with fault gouge at 50+60* to core axis, more chalcopyrite exp as stringers	122436	0.084	0.407
254.3	262.1	**BRECCIATED BASALT FAULT ZONE**									
254.30	256.10	Fine grained light green intensely phyllic	10.0		STR	45	2	fault at contact. Sericite-pyrite matrix with chlorite-pyrite altered fragments. Gypsum ±sphalerite stringers at 45° to core axis. Some pyrite stringers. Some at 15-20° to core axis	122437	0.025	0.502
256.10	258.10	Fine grained light green strongly phyllic	5.0 **0.1**		STR	65	2	chalcopyrite in gypsum stringers ±minor sphalerite; bit more chloritic	122438	0.025	0.318
258.10	260.10		5.0		STR	75	2		122439	0.022	0.328
260.10	262.10	Fine grained light green intensely phyllic	7.0		FRK	15	1	More sericite; gouge at bottom for 15cm at 75° to core axis	122440	0.034	0.297
262.1	271.9	**PORPHYRITIC LATITE DYKE**									

Brenda Property 2003 Diamond Drill Log

Northgate Exploration Ltd

Hole Number: BR-03-07

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
262.10	264.10	Very fine grained red brown strongly hematitic	**2.0**		FRC	5	1	with chlorite±zeolite+calcium. Some mafic volcanic xenolithic to 2 cm. Chlorite-magnitite clots (replacing mafic phenocrysts). Hematitic feldspars; drilled margin for 40 com at lip.	122441	0.004	0.028
264.10	266.40							grades more porphyitic	122442	0.003	0
266.40	269.10				FRC	50	4	grades ever more porphyritic with 20-25% feldspars, 5% mafic including hornblende. Some augite. Calcium-zeolite fracture fillings	122443	0.002	0
269.10	271.90				FRC	55	4	chloritic fracture fillings some mafic volcanic xenoliths to 2 cm. Some chalcopyrite replacing feldspar. Some bright orange ± calciu fracture fittings along 10-15* to core axis fractures. End of Hole	122444	0.002	0

271.9 EOH

Brenda Property 2003 Diamond Drill Log

Northgate Exploration Ltd

Hole Number: ***BR-03-08***

Nad83_N:	6348361	**Total Depth:**	381 **m**
Nad83_E:	628258	**Azimuth:**	55 °
Elevation:	1403	**Dip:**	-70 °

Geologist: Jean Pautler

Drilled: 7/1/2003

Survey Depth	Azimuth	Dip
277.1 m	58 °	-70 °

Survey Depth	Azimuth	Dip

Survey Depth	Azimuth	Dip

Brenda Property 2003 Diamond Drill Log

Northgate Exploration Ltd

Hole Number: *BR-03-08*

From (m)	To (m)	Rock Type	Comments
0.0	3.0	CASING	casing
3.0	34.7	OVERBURDEN	mixed cobblest pebbled of andesite-basalt are porp, some bys bladed feldspar porph, monzonite porph, equigranular granodiorite-quartz monzonite ±limomitic no sample
34.7	52.5	SHEARED INTERMEDIATE FAULT ZONE	Clay-sericitic-limonitic alteration overprint. Mylonite; strongly foliated at 45° to core axis with remenant porphyritic texture. Feldspar and quartz?. Some creamy colouted veins at 40* to core axis,H^$.*o 3 cm at 36.4m, fine pyrite; limomitic fractures. Quartz eyes?. Anhydrite? Alumite? Oxidized
52.5	85.3	PORPHYRITIC MONZONITE DYKE	Hematitic alteration overprint. hematitic monzonite porphyry with 20-25% feldspar, some altered to epidote, also chlorite/epidote altered mafic phenocrysts (hornblende + some augite, some chlorite and occasional jarosite? On fractures and sericite; 5 cm wide. Bleached upper contact, minor clay gouge. Grades less fractured downhole, occational intermed xenolith
85.3	103.0	PORPHYRITIC MONZONITE FAULT ZONE	quartz-sericite-pyrite latered fault zone, clay altered feldspar phenocrysts
103.0	122.3	PORPHYRITIC MONZONITE DYKE	Hematitic-serictitic alteration overprint. alteration contact 45* to core axis with monzonite porphyry. Fractures with chlorite-pyrite ±hematite at 70* to core axis and minor gouge
122.3	124.1	PORPHYRITIC BASALT FLOW	Sericitic alteration overprint. minor sphalerite in fine gypsum-anhydrite stringers at 45° to core axis (contact 60)
124.1	129.9	PORPHYRITIC MONZONITE DYKE	Hematitic alteration overprint. well fractured some brecciation especially at 124.9m. Some epidote-chlorite altered clasts minor calcite-chlorite stringers at 35-45° to core axis. Minor grey-green zones (mafic clasts?)
129.9	134.0	PORPHYRITIC MONZONITE FAULT ZONE	white clay altered feldspars in grey coloured matrix due to pyrite-sericite-clay alteration. Some chlorite some brecciation . Fault zone; minor sphalerite in fault breccia within 50* stringers with pyrite (contact 55) lower alteration conact?. More pyritic, brecciated and sphalerite just above contact.
134.0	135.5	PORPHYRITIC MONZONITE DYKE	Hematitic alteration overprint. pyrite stringers ±anhydrite at 60° to core axis; calcite-zoel at 5° to core axis
135.5	137.5	PORPHYRITIC MONZONITE FAULT ZONE	Hematitic alteration overprint. grey, more pyritic zones at 70* to core axis; mixed matitic and grey rubble with some grey clay gouge

Brenda Property 2003 Diamond Drill Log

Northgate Exploration Ltd

Hole Number: *BR-03-08*

From (m)	To (m)	Rock Type	Comments
137.5	143.2	FRACTURED BASALT FAULT ZONE	sericititized fault and zone with minor spalerite through matrix generally associated with vague 25-30*^ fractures
143.2	151.2	PORPHYRITIC BASALT FLOW	some gypsum stringers
151.2	155.2	BRECCIATED BASALT FAULT ZONE	Sericitic-chloritic alteration overprint. some brecciation and clay gouge at 20, some at 70* to core axis. Gypsum stringers and flooding
155.2	157.2	PORPHYRITIC BASALT FLOW	Sericitic alteration overprint. some gouge and brecciation; gypsum stringers at 10-15* to core axis and 50* to core axis
157.2	163.2	BRECCIATED BASALT FAULT ZONE	Sericitic alteration overprint. epidote, chlorite altered phenocrysts chlotitic matrix, some gouge at 70*C, some brecciation . Possible minor sphalerite in quartz-gypsum-pyrite stringers at 50* to core axis at 157.2 m
163.2	165.3	PORPHYRITIC BASALT FLOW	Sericitic alteration overprint. moderately fractured, some zeolite stringers 20-30° to core axis grades less sericitic away from fault
165.3	167.3	MOTTLED BASALT BRECCIA	Sericitic alteration overprint. epidote-anhydrite and anhydrite stringers. Sphalerite in barely visible 30-45* fractures and as disseminations --> fault contact (contact 70)
167.3	171.5	BRECCIATED BASALT FAULT ZONE	Sericitic alteration overprint. gypsum-sericite rich zone at 30* to core axis, gypsum patches, srong sericite, some gouge especially in upper part of section,fold at 30* to core axis
171.5	175.1	MOTTLED BASALT BRECCIA	Sericitic alteration overprint. grey white green (epidote-chlorite) altered breccia fragments, calcite stringers, some quartz; clay fault gouge at 45* to core axis, contact at 70. Sphalerite and galena in 30-65*. cross-cutting fractures
175.1	178.2	BRECCIATED BASALT FAULT ZONE	Sericitic alteration overprint. fault contact at 55° to core axis, come gypsum
178.2	180.2	MOTTLED BASALT BRECCIA	epidote-chlorite ±sphalerite and trace chalcopyrite altered clasts in propylitic altered (dominantly chlorite-sericite-less epidote) matrix, also tringers of quartz-sphalerite ±chalcopyrite±galena at 75-85* to core axis up to .7mm wide
180.2	182.2	BRECCIATED BASALT FAULT ZONE	Propylitic-sericitic-clay alteration overprint. sericite-clay alteration overrinting phopylitic ateration, some sphalerite along fractures at 25° to core axis
182.2	185.2	MOTTLED BASALT BRECCIA	as in 122507 but with visible base metals, some fault gouge at 50-70

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From (m)	To (m)	Rock Type	Comments
185.2	187.4	BRECCIATED BASALT FAULT ZONE	phyllitic altered basalt porphery flow with gypsum veins up to 10 cm at 60° to core axis; fault gouge at 60 and 30° to core axis; fine pyritic stringers
187.4	191.1	MOTTLED BASALT BRECCIA	as in 122507 with clasts --> epidote-chlorite altered; sphalerite ± trace chalcopyrite +pyrite in fine gypsum/anhydrite stringers at 60, 80,45* to core axis
191.1	192.2	BRECCIATED BASALT FAULT ZONE	CLAY clasts of above in quartz-sericite-pyritic matrix. Fault gouge 2 50° to core axis with clay, graphite, gypsum
192.2	194.2	PORPHYRITIC BASALT FLOW	Phyllic alteration overprint. less brecciated texture with feldspar and cloritized mafic phenocrysts, altered to epidote/sericite at 193.5m-3cm quartz -pyrite-sphaleritechalcopyrite stringers at 40* to core axis within 30 cm more quartz-sericite-pyrite altered zone
194.2	196.2	MOTTLED BASALT BRECCIA	as in 122503, epidote-chlorite altered clasts in propylitic altered matris; sphalerite and epidote in quartz vein 40/80° to core axis contacts at 194.3m, other fine quartz stringers at 40+60° to core axis
196.2	198.5	BRECCIATED BASALT FAULT ZONE	Sericitic-silica-clay alteration overprint. sericite-gypsum-anhydrite-pyrite fault zone ±sil.
198.5	213.8	MOTTLED BASALT BRECCIA	Silicification as in 122516, but grades more phyllic altered . Fine quartz stringers and gypsum stringers with sphalerite, pyrite chalcopyrite, galena at 30,60,55* to core axis
213.8	216.0	BRECCIATED BASALT FAULT ZONE	some of up center to 4 cm at 60° to core axis. Some sphalerite±galena±chalcopyrite in fract; chalcopyrite at intersection of 20+50° to core axis fractures also at 80° to core axis, 20° fractures offset others, LHD. Lower 50 cm fault with gouge at 60° to core axis, fractures at 30° to core axis, rubbly contact chalcopyrite in lower brecciated zone in fault
216.0	223.3	PORPHYRITIC MONZONITE DYKE	Hematitic-serictitic alteration overprint. contact with monzonite porphyry dyke. Fractures with calcite/sericite/chlorite at 5-10* to core axis + gypsum, some mafic zenlith
223.3	229.3	MOTTLED BASALT BRECCIA	gypsum±quartz±pyrite stringers at 50cm, quartz+chlorite stringers to 4 cm, minor sphalerite along 30° to core axis offset and along 50* to core axis
229.3	239.4	PORPHYRITIC BASALT FLOW	less brecciated with fine quartz stringers minor quartz stringes with pyrite and trace sphalerite, epidote at 60° to core axis, phenocryst more pronounced than clasts
239.4	245.6	MOTTLED BASALT BRECCIA	as in 122537, with gypsum ±quartz±pyrite ±chalcopyrite in stringers at 70* to core axis up to 1 cm wide. Gypsum vein zone 20cm wide at 241cm at 40° to core axis. Vein surrounded by anhydrite, pyrite, gypsum-sericite altered host

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From (m)	To (m)	Rock Type	Comments
245.6	252.0	PORPHYRITIC BASALT FLOW	generally less mottled, brecciated texture with more phenocrysts visible, all altered to epidote/sericite/chlorite/gypsum and quartz stringers
252.0	260.0	BRECCIATED BASALT	Sericitic alteration overprint. sericite-anhydrite-gypsum pyrite flooded cone with well fractured so brecciated with gypsum and pyrite stringers and ver minor quartz and trace sphalerite as in 122503 with quartz and gypsum stringers; epidote-chlorite-sericite-pyrite altered clasts; eak pervasive sericite overprint. Possible minor sphalerite
254.0	258.0	MOTTLED BASALT BRECCIA	Sericitic alteration overprint. grades weakly sericite downhole with increase in gypsum stringers and quartz, pyrite chalcopyrite, sphalerite, galena (2 cm stringers at2) in 45-50° to core axis stringers with 60* cross-cutting fractures. Chalcopyrite in 60*
260.0	262.0	PORPHYRITIC BASALT FLOW	chalcopyrite in sphalerite in fine gypsum quartz stingers at 60* and 25* stringers/ 122550
262.0	263.5	PORPHYRITIC BASALT VOLCANIC BRECCIA	chalcopyrite in 4 cm 20* to core axis gypsum stringer at 260.3m other fine gypsum and quartz sringers/122551 minor quartz gypsum stringers
263.5	267.6	BRECCIATED BASALT ALTERED ZONE	anhydrite silica sericite flooded zone with fine pyrite stringers at 20-40° to core axis. Minor fine gypsum anhydrite quartz stringer sphalerite at 60° to core axis
267.6	271.7	PORPHYRITIC BASALT FLOW	minor gypsum-pyrite stringers at 20-40° to core axis
271.7	273.7	FRACTURED BASALT ALTERED ZONE	Sericitic alteration overprint. anhydrite gypsum flooding from 272.4 at 35° to core axis, minor chalcopyrite in 05° to core axis structures
273.7	275.7	PORPHYRITIC BASALT FLOW	minor sphalerite and chalcopyrite in anhydrite pyrite stringer at 85° to core axis srtiner offset by 15° to core axis stringer some 30+55° to core axis anhydrite pyrite stringer; minor gypsum anhydrite flooding from 275.1-.5
275.7	277.5	STOCKWORKED BASALT ALTERED ZONE	gypsum vein stockwork zone with gypsum vein at 276.0-.3 anhydrite, pyrite, cherty silica; with some gypsum anhydrite silica flooding
277.5	278.5	MOTTLED BASALT BRECCIA	Chalcopyrite in 55° to core axis trending quartz stringer
278.5	303.7	PORPHYRITIC BASALT FLOW	Phyllic alteration overprint. chalcopyrite in 70° to core axis trending cherty silica stringer and in quartz-gypsum sphalerite stringer at 60*; atchy qap alteration

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From (m)	To (m)	Rock Type	Comments
303.7	311.7	STOCKWORKED BASALT ALTERED ZONE	Chloritic alteration overprint. stockworked to brecciated quartz-sericite-pyrite altered zone minor gouge at 85° to core axis. More brecciated down with pyritization of fragments
311.7	318.3	PORPHYRITIC MONZONITE DYKE	Hematitic alteration overprint. sharp contact with monzonite dyke, more propylitic alteration for first 50cm followed by hematitic matrix with propylitic phenocrysts; fine quartz stringers and gypsum stringers pyrite epidote margins chalcopyrite
318.3	319.3	BRECCIATED BASALT DYKE	Propylitic alteration overprint. as in 122573 (contact 80°) sharp contact)
319.3	331.3	PORPHYRITIC MONZONITE DYKE	Hematitic alteration overprint. monzonite dyke with epidote chlorite altered phenocrysts, some epidote sericite stringers and very minor fine quartz stringers and gypsum
331.3	333.5	BRECCIATED BASALT ALTERED ZONE	chalcopyrite gypsum stringer 1 cm at 60° to core axis at 331.7m with phyllic and gypsum flooded zone
333.5	347.3	BRECCIATED BASALT FLOW	Chloritic alteration overprint. see brecciated texture with pyrite replacing clasts. Foliation defined by abridgement of clasts; fine quartz and gypsum stringers and chl; not gypsum flooded as above
347.3	349.3	BRECCIATED BASALT FAULT ZONE	Chloritic-sericitic-silica alteration overprint. Fault zone with Basaltic fagments in chloritic patchy gypsum flooded matrix and patchy cil 05-15° fractures
349.3	351.1	BRECCIATED BASALT ALTERED ZONE	Chloritic-sericitic alteration overprint. gypsum sericite chlorite weak silica flooded. Grades to chlorite down hole (contact 50)
351.1	352.5	BRECCIATED BASALT FAULT ZONE	Quartz-sericite-pyrite altered, some gypsum stringers at 65° to core axis, minor gouge at 50° to core axis
352.5	355.3	BRECCIATED BASALT ALTERED ZONE	Chloritic-sericitic-weak silica alteration overprint. fault breccia with chlorite pyrite altered fragments in more sericite with silicified matrix with minor pyrite minor gypsum stringers at 35° to core axis
355.3	359.0	BRECCIATED BASALT FLOW	Quartz-sericite-pyrite altered breccia zone with pyritized chlorite clast overprinted with quartz-sericite-pyrite; less altered Bax por clast at bottom (contact 50)
359.0	361.1	PORPHYRITIC BASALT FAULT ZONE	Sericitic alteration overprint. still some brecciation; start to get epidote (epidote replacing phenocrysts) with chlorite sericite quartz chlorite stringers at 35° to core axis. Grades less brecciated (contact40) sharp ect

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From (m)	To (m)	Rock Type	Comments
361.1	363.1	BRECCIATED BASALT	Sericitic alteration overprint. grades more brecciated with increase in phy to sericite gypsum overprint. 20 cm more gypsum rich zone with 20% gypsum stringer; some gypsum pyrite stringer at 362.1m. Sharp but iffegular contact with more chlorite with epidote less sericitic and gupsum ric core with more pyrite (10); less brecciated from 362.5m
363.1	365.1	MOTTLED BASALT DYKE	same as after 3625; mottled texture with chlorite epidote altered clats in chlorite sericite matrix. at 363.9 - contact with more brecciated zone with more sericite chlorite pyrite . at 50* to core axis for 50 cm at bottom grading weakly hematitic
365.1	381.0	PORPHYRITIC MONZONITE DYKE	Hematitic alteration overprint. Monzonite porphyry dyke with epidote sericite chlorite altered phenocrysts up to 30% in very fine grained matrix with epidote sericite stringers and occasional clast at 366.2m parallel 20 cm propylitic altered. Possible basalt porphyry fragments

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins (CA-%)	Comments	Sample#	Cu %	Au ppm
0	3	**CASING**							
0.00	3.00					casing			
3	34.7	**OVERBURDEN**							
3.00	24.40					mixed cobblest pebbled of andesite-basalt are porp, some bys bladed feldspar porph, monzonite porph, equigranular granodiorite-quartz monzonite ±limomitic no sample			
24.40	27.00	moderately propyllitic	3.0			dominantly larger boulders of feldspar augite porphyry basaltic fragmental with quartz eyes . Propyllitically altered, limonitic fractures; epidote stringers and sltered clasts			
27.00	30.50	intensely limonitic				assorted cobbles and pebbles of all above in limonite cement.			
30.50	34.70	strongly limonitic				yellow clay rich soil with assorted rock chips as fragments >70% of underlying lithology but some monzonite. No sample			
34.7	52.5	**SHEARED INTERMEDIATE FAULT ZONE**							
34.70	36.60	Fine grained orange white moderately	2.0	*0* FOL	45 90	Clay-sericitic-limonitic alteration overprint. Mylonite; strongly foliated at 45° to core axis with remenant porphyritic texture. Feldspar and quartz?. Some creamy colouted veins at 40* to core axis,H^$ to 3 cm at 36.4m, fine pyrite; limomitic fractures. Quartz eyes? Anhydrite? Alumite? Oxidized	122445	0.002	0
36.60	37.80	Fine grained yellow white intensely	2.0	*0*	2	Sericitic alteration overprint. yellow janosite? On fracture surfaces and anhydrite?. Strong clay gouge beige colour for top 20cm fine pyrite and dark grey mineral? <1% oxidized; polo anomin AS AG ±AU??	122446	0.002	0
37.80	41.10	Fine grained light grey white strongly	4.0	*0* FRC	10	Sericitic-silica alteration overprint. clay sericite pyrite sltered, possible patchy sil. Pyertized fragments possibly after chloritized mafic fragments. Ghost feldspar pheos --> altered to clay quartz eyes. Originally probably intmed. Fragments of toodoggone. White, soft grasy coating on 10* to core axis fractures. less pronounced folin?	122447	0.005	0
41.10	43.10		4.0	*0*		as above, with grey clay aouge fro 5 cm at top	122448	0.003	0

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins (CA-%)	Comments	Sample#	Cu %	Au ppm
43.10	45.10	Fine grained light grey white intensely		0 FOL	55	as above, but more clay, less possible sil, clay along fractures and replacing feldspar. Foliation changes to 35° at bottom of section	122449	0.008	0.007
45.10	47.20		3.0	0 FOL	35	as above	122450	0.004	0.009
47.20	52.50		3.0	0	25	as above, pea gravel at end of section	122451	0.005	0.007
52.5	85.3	**PORPHYRITIC MONZONITE DYKE**							
52.50	54.90	Very fine grained red brown moderately propyllitic	2.0	0 FRC	2 3	Hematitic alteration overprint. hematitic monzonite porphyry with 20-25% feldspar, some altered to epidote, also chlorite/epidote altered mafic phenocrysts (hornblende + some augite, some chlorite and occasional jarosite? On fractures and sericite; 5 cm wide. Bleached upper contact, minor clay gouge. Grades less fractured downhole, occational intermed xenolith	122452	0.026	0.03
54.90	56.80	Very fine grained red brown moderately hematitic	1.0	0 STR	10 5	Hematitic alteration overprint. drusy white quartz stringers and stringer stock work at 5-30* to core axis, sepecially between 55.6-56.8m ±jarosite, some chlorite on 5* fractures	122453	0.03	0.067
56.80	58.80	Very fine grained red brown weakly hematitic	1.0	0 FRC	40	Hematitic alteration overprint. more hematitic with chlorite ±epidote altered phenocrysts and/or clasts. Some calcite stringers at 05-15* to core axis and some 75* to core axis calcite epidote fracture fillings	122454	0.004	0.024
58.80	61.00		1.0	0 FRC	40	Hematitic alteration overprint. more epidote spots .5cm; minor clay-pyrite gouge on 40* to core axis fractures	122455	0.007	0.025
61.00	63.00	Very fine grained red brown moderately hematitic	1.0	0 FRC	15	Hematitic alteration overprint. epidote-chlorite-calcite seams at 70* to core axis; some more mafic xenoliths to 5 cm, commonly atlered to epidote, chlorite.	122456	0.022	0.012
63.00	65.00		1.0	0 FRC	5	Hematitic alteration overprint. some more bkn zones with clay-pyrite seams at 15-20* to core axis	122457	0.019	0.016
65.00	67.10		1.0	0 FRC	5	typical hematitic monzonite porphyry with epidote spots .5 mm up to 1 cm.	122458	0.004	0
67.10	70.10		1.0	0 FRC	5	as above (bit more broken.)	122459	0.009	0.005
70.10	73.20		1.0	1 FRC	5		122460	0.006	0.009

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
73.20	76.20	Very fine grained red brown moderately hematitic	1.0	0	FRC	5		as above (bit more broken.)	122461	0.012	0.005
76.20	79.20		1.0	0	FLT	40	5	as above with well fractured, minor gouge zone at 77m for 15 cm at 40° to core axis	122462	0.011	0
79.20	81.00		15.0	0	FRC	75	1	zeolite stringers(?)	122463	0.018	0.008
81.00	82.30	Very fine grained red moderately propyllitic	2.0	0	FRC	15		Hematitic-sericitic alteration overprint. grades more sericitic and less hematitic, fractures at 05-20* to core axis some clay. TAG out of order	122475	0.028	0.009
82.30	85.30	Very fine grained green moderately hematitic	2.0	0				Hematitic-serictitic alteration overprint. VERY BROKEN, GRADING INTO FALUT ZONE	122464	0.024	0.009
85.3	103	**PORPHYRITIC MONZONITE FAULT ZONE**									
85.30	88.20	Very fine grained grey strongly phyllic	10.0	0	FRK	10	10	quartz-sericite-pyrite latered fault zone, clay altered feldspar phenocrysts	122465	0.01	0.012
88.20	91.40	Very fine grained grey intensely phyllic	15.0	0	STR	50	3	Propylitic alteration overprint. Cross-cutting .5mm quartz-pyrite stringers at 50+60* to core axis ±sphalerite-honey with black jack rims, some remnent breccia fragments. Bit chloritic- grades less altered down. Some epidote and chlorite altered phenocrysts. Grading to intermed argillic alterations mear bottom	122466	0.005	0.013
91.40	94.50	Very fine grained grey strongly argillic	5.0	0	FRC	35	5	less altered more clay, less silicon, some chlorite some gouge at 35° to core axis	122467	0.005	0.013
94.50	97.50	Very fine grained grey strongly clay alterred	10.0	0	FLT	20	80	most gouge, less chlorite, more clay	122468	0.003	0.026
97.50	100.60		5.0	0	FLT	5	2	more chlorite again	122469	0.004	0.037
100.60	103.00		10.0	0	FLT	40	5	less sil, more sericite-chlorite-clay, some sphalerite at 45-52* to core axis and 25* in bottom 40 cm + minor trace chalcopyrite	122470	0.073	0.055
103	122.3	**PORPHYRITIC MONZONITE DYKE**									
103.00	106.90	Very fine grained red brown weakly propyllitic	3.0	0	FRC	70		Hematitic-serictitic alteration overprint. alteration contact 45* to core axis with monzonite porphyry. Fractures with chlorite-pyrite ±hematite at 70* to core axis and minor gouge	122471	0.022	0.028

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins (CA-%)		Comments	Sample#	Cu %	Au ppm
106.90	109.70	Very fine grained red brown moderately propyllitic	2.0		0 STR	35 1	Hematitic alteration overprint. fresher with chalcopyrite spots, minor quartz and calcite stringers ± pyrite and ± grey colouration, not magnetite	122472	0.024	0.04
109.70	111.70	Very fine grained red brown moderately hematitic	2.0		2 STR	40 2	Hematitic alteration overprint. quartz ±pyrite ±calcite stringers and gray colour alteration at 30, 45 and 10* to core axis	122473	0.011	0.027
111.70	113.50		2.0		2 STR	30 2	Hematitic alteration overprint. as above ±drusy stringers	122474	0.004	0.016
113.50	114.30	Very fine grained red brown weakly hematitic	2.0	1	1 STR	40 2	Hematitic alteration overprint. calcite-chlorite ±minor quartz ± pyrite minor possilbe sphalerite? Some gypsum + anhydrite stringers? Minor grains of magnetite., only minor ep	122476	0.006	0.038
114.30	116.30		2.0		1 STR	50 3	as above	122477	0.004	0.073
116.30	118.30		2.0		2 STR	35 3	as above. Calcite-chlorite stringers at 35-50* to core axis. Grades less fractured, less sringers, sme mafic xenoliths	122478	0.005	0.013
118.30	120.30		1.0	1	3 STR	60	Hematitic alteration overprint. occasional quartz-zeolite-calcite stringers +calcite-chlorite stringers more mafic xenoliths	122479	0.003	0.009
120.30	122.30		1.0		3 STR	55 1	Hematitic alteration overprint. minor concentration of calcite-chlorite stringer, minor quartz at 121.7-.9m at 50-60* to core axis (contact 50) sharp contacts	122480	0.002	0.018
122.3	124.1	**PORPHYRITIC BASALT FLOW**								
122.30	124.10	Fine grained green grey moderately phyllic	3.0		0 STR	45	Sericitic alteration overprint. minor sphalerite in fine gypsum-anhydrite stringers at 45° to core axis (contact 60)	122481	0.001	0.031
124.1	129.9	**PORPHYRITIC MONZONITE DYKE**								
124.10	126.10	Fine grained red brown moderately propyllitic	2.0		0 STR	40	Hematitic alteration overprint. well fractured some brecciation especially at 124.9m. Some epidote-chlorite altered clasts minor calcite-chlorite stringers at 35-45° to core axis. Minor grey-green zones (mafic clasts?)	122482	0.001	0.014

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)	Comments	Sample#	Cu %	Au ppm
126.10	129.90	Fine grained red brown moderately propyllitic	3.0	0	STR	45	Hematitic alteration overprint. more broken, some grey-green zones due to mafic xenoliths? Minor pyrite stringers. Rubbly contact but more brecciation and sphalerite near upper cte	122483	0.001	0.022
129.9	134	**PORPHYRITIC MONZONITE FAULT ZONE**								
129.90	134.00	Fine grained grey moderately argillic	7.0	0	STR	50	white clay altered feldspars in grey coloured matrix due to pyrite-sericite-clay alteration. Some chlorite some brecciation . Fault zone; minor sphalerite in fault breccia within 50* stringers with pyrite (contact 55) lower alteration conact?. More pyritic, brecciated and sphalerite just above contact.	122484	0.02	0.014
134	135.5	**PORPHYRITIC MONZONITE DYKE**								
134.00	135.50	Very fine grained red brown moderately propyllitic	3.0	0	STR	60	Hematitic alteration overprint. pyrite stringers ±anhydrite at 60° to core axis; calcite-zoel at 5° to core axis	122485	0.015	0.007
135.5	137.5	**PORPHYRITIC MONZONITE FAULT ZONE**								
135.50	137.50	Very fine grained red moderately propyllitic		0			Hematitic alteration overprint. grey, more pyritic zones at 70* to core axis; mixed matitic and grey rubble with some grey clay gouge	122486	0.008	0.008
137.5	143.2	**FRACTURED BASALT FAULT ZONE**								
137.50	140.20	Fine grained grey weakly propyllitic	5.0	0	FRK	25	sericititized fault and zone with minor spalerite through matrix generally associated with vague 25-30*^ fractures	122487	0.01	0.027
140.20	143.20	Fine grained grey green weakly propyllitic	3.0	0	STR	5	CLAY fine calcite stringers. Minor gouge at 45* to core axis	122488	0.003	0.012
143.2	151.2	**PORPHYRITIC BASALT FLOW**								
143.20	145.20	Fine grained grey green weakly propyllitic	3.0	0	STR	30	some gypsum stringers	122489	0.003	0.008
145.20	147.20		4.0	1	STR	30	Phyllic alteration overprint. some gypsum stringers and minor quartz	122490	0.002	0.012

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)	Comments	Sample#	Cu %	Au ppm
147.20	149.20	Fine grained grey green moderately phyllic	4.0	1	STR	40 2	Propylitic alteration overprint. cherty quartz-pyrite ±gypsum stringers to 1-2cm wide at 40° to core axis at 1482-149. Some minor breccia texture	122491	0.002	0.008
149.20	151.20	Fine grained grey moderately phyllic	4.0	0	FTK	15 4	Sericitic-hematitic-chloritic alteration overprint. gouge at 45 and 60* to core axis-clay-chl	122492	0.001	0.017
151.2	155.2	**BRECCIATED BASALT FAULT ZONE**								
151.20	153.20	Fine grained grey weakly	4.0	1	FLT	20 30	Sericitic-chloritic alteration overprint. some brecciation and clay gouge at 20, some at 70* to core axis. Gypsum stringers and flooding	122493	0.001	0.026
153.20	155.20		5.0	0	FRK	20 10	Sericitic-chloritic alteration overprint. abundent gypsum stringers and gypsum-anhydrite? Flooding; fault zone as above. Grades more chloritic especially in bottom 60 cm	122494	0.003	0.021
155.2	157.2	**PORPHYRITIC BASALT FLOW**								
155.20	157.20	Fine grained green grey weakly propyllitic	3.0	0	FLT	70 5	Sericitic alteration overprint. some gouge and brecciation; gypsum stringers at 10-15* to core axis and 50* to core axis	122495	0.001	0.023
157.2	163.2	**BRECCIATED BASALT FAULT ZONE**								
157.20	159.20	Fine grained green grey weakly propyllitic	5.0	0	FLT	40 5	Sericitic alteration overprint. epidote, chlorite altered phenocrysts chlotitic matrix, some gouge at 70*C, some brecciation . Possible minor sphalerite in quartz-gypsum-pyrite stringers at 50* to core axis at 157.2 m	122496	0.002	0.034
159.20	161.20	Fine grained grey green moderately propyllitic	5.0	0	FLT	50 10	Sericitic alteration overprint. gypsum stringers to 4 com at 45-65* to core axis. Some fault gouge at 50*. Grades more propylitic down hole. Quartz stringers with sphalerite and others with galena/moly. Most sphalerite and stringers in last 70 cm at 45-65* to core axis	122497	0.012	0.02
161.20	163.20	Fine grained grey strongly	3.0	0	FLT	30 60	Sericitic alteration overprint. fault gouge at 30° to core axis, 50° to core axis	122498	0.005	0.028
163.2	165.3	**PORPHYRITIC BASALT FLOW**								
163.20	165.30	Fine grained grey green moderately propyllitic	2.0	0	FTR	20	Sericitic alteration overprint. moderately fractured, some zeolite stringers 20-30° to core axis grades less sericitic away from fault	122499	0.003	0.012

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins (CA-%)	Comments	Sample#	Cu %	Au ppm
165.3	167.3	**MOTTLED BASALT BRECCIA**							
165.30	167.30	Fine grained grey green moderately propyllitic	2.0	*0* FRC	50	Sericitic alteration overprint. epidote-anhydrite and anhydrite stringers. Sphalerite in barely visible 30-45* fractures and as disseminations --> fault contact (contact 70)	122500	0.006	0.012
167.3	171.5	**BRECCIATED BASALT FAULT ZONE**							
167.30	169.40	Fine grained grey weakly propyllitic	5.0	*0* FLT	30 40	Sericitic alteration overprint. gypsum-sericite rich zone at 30* to core axis, gypsum patches, srong sericite, some gouge especially in upper part of section,fold at 30* to core axis	122501	0.003	0.027
169.40	171.50		7.0	*1* FLT	50	Sericitic alteration overprint. sericite overprints propylitic. See some remnant chlorite. Fine pyrite	122502	0.002	0.018
171.5	175.1	**MOTTLED BASALT BRECCIA**							
171.50	173.10	Fine grained green grey strongly propyllitic	4.0	*0* STR	35 5	Sericitic alteration overprint. grey white green (epidote-chlorite) altered breccia fragments, calcite stringers, some quartz; clay fault gouge at 45* to core axis, contact at 70. Sphalerite and galena in 30-65*. cross-cutting fractures	122503	0.032	0.038
173.10	175.10	Fine grained green grey intensely propyllitic	2.0	*0* STR	45	some clay gouge at 45° to core axis at sart, minor quartz stringers at 45° to core axis	122504	0.017	0.038
175.1	178.2	**BRECCIATED BASALT FAULT ZONE**							
175.10	176.60	Fine grained grey strongly	12.0	*0* FLT	5 80	Sericitic alteration overprint. fault contact at 55° to core axis, come gypsum	122505	0.002	0.053
176.60	178.20	Fine grained grey strongly phyllic	9.0	*0* FTK	55 15	Sericitic-silica alteration overprint. possible phylilic alteration sericite-pyrite-silica fractures with ouge at 50 + 60° to core axis some gypsum trace chalcopyrite and minor sphalerite in quartz stringers at 25 +70° to core axis	122506	0.009	0.069
178.2	180.2	**MOTTLED BASALT BRECCIA**							
178.20	180.20	Fine grained green grey strongly propyllitic	4.0 **0.1**	*0* STR	85	epidote-chlorite ±sphalerite and trace chalcopyrite altered clasts in propylitic altered (dominantly chlorite-sericite-less epidote) matrix, also tringers of quartz-sphalerite ±chalcopyrite±galena at 75-85* to core axis up to .7mm wide	122507	0.027	0.054

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins (CA-%)	Comments	Sample#	Cu %	Au ppm
180.2	182.2	**BRECCIATED BASALT FAULT ZONE**							
180.20	182.20	Fine grained grey strongly propyllitic		0 FLT	45 50	Propylitic-sericitic-clay alteration overprint. sericite-clay alteration overrinting phopylitic ateration, some sphalerite along fractures at 25° to core axis	122508	0.009	0.037
182.2	185.2	**MOTTLED BASALT BRECCIA**							
182.20	183.20	Fine grained grey grey strongly propyllitic	4.0	0 FLT	50 10	as in 122507 but with visible base metals, some fault gouge at 50-70	122509	0.006	0.068
183.20	185.20	Fine grained grey grey moderately phyllic	4.0	0 STR	85	Propylitic alteration overprint. patenly phylltic overprint of propylitically altered bar porphery flow. Minor quartz stringes and patches with sphalerite ± trace chalcopyrite ± trace galena or moly. At 184m 10 cm breccia zone with disseminated sphalerite, chalcopyrite, galena.	122510	0.013	0.025
185.2	187.4	**BRECCIATED BASALT FAULT ZONE**							
185.20	187.40	Fine grained grey grey strongly phyllic	10.0	0 FLT	60 40	phyllitic altered basalt porphery flow with gypsum veins up to 10 cm at 60° to core axis; fault gouge at 60 and 30° to core axis; fine pyritic stringers	122511	0.001	0.01
187.4	191.1	**MOTTLED BASALT BRECCIA**							
187.40	189.40	Fine grained grey grey strongly propyllitic	3.0	0 STR	60 4	as in 122507 with clasts --> epidote-chlorite altered; sphalerite ± trace chalcopyrite +pyrite in fine gypsum/anhydrite stringers at 60, 80,45* to core axis	122512	0.01	0.019
189.40	191.10		5.0	0 STR	60	as avove with quartz-sphal-pyrite stringers ±trace chalcopyrite stringers at 60, 80° to core axis, minor fault gouge at 65° to core axis	122513	0.006	0.01
191.1	192.2	**BRECCIATED BASALT FAULT ZONE**							
191.10	192.20	Fine grained grey grey strongly phyllic	10.0	0 FLT	50 80	CLAY clasts of above in quartz-sericite-pyritic matrix. Fault gouge 2 50° to core axis with clay, graphite, gypsum	122514	0.001	0.03
192.2	194.2	**PORPHYRITIC BASALT FLOW**							

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins (CA-%)	Comments	Sample#	Cu %	Au ppm
192.20	194.20	Fine grained grey grey strongly propyllitic	3.0	0 STR	40	Phyllic alteration overprint. less brecciated texture with feldspar and cloritized mafic phenocrysts, altered to epidote/sericite at 193.5m-3cm quartz -pyrite-sphaleritechalcopyrite stringers at 40* to core axis within 30 cm more quartz-sericite-pyrite altered zone	122515	0.009	0.011
194.2	196.2	**MOTTLED BASALT BRECCIA**							
194.20	196.20	Fine grained grey grey strongly propyllitic	5.0	0 STR	45 2	as in 122503, epidote-chlorite altered clasts in propylitic altered matris; sphalerite and epidote in quartz vein 40/80° to core axis contacts at 194.3m, other fine quartz stringers at 40+60° to core axis	122516	0.002	0.025
196.2	198.5	**BRECCIATED BASALT FAULT ZONE**							
196.20	198.50	Fine grained grey strongly phyllic	10.0	1 FLT	30 10	Sericitic-silica-clay alteration overprint. sericite-gypsum-anhydrite-pyrite fault zone ±sil.	122517	0.002	0.015
198.5	213.8	**MOTTLED BASALT BRECCIA**							
198.50	200.50	Fine grained grey green moderately propyllitic	7.0	0 STR	60 2	Silicification as in 122516, but grades more phyllic altered . Fine quartz stringers and gypsum stringers with sphalerite, pyrite chalcopyrite, galena at 30,60,55* to core axis	122518	0.003	0.048
200.50	202.30	Fine grained grey green strongly propyllitic	6.0 **0.1**	0 STR	70 1	Silicification as in 122516, with quartz and gypsum stringers with sphalerite at 70* to core axis +55	122519	0.013	0.012
202.30	203.70	Fine grained grey moderately phyllic	3.0	0 STR	60 1	PORP remnant breccia texture with spce alterations overprinting ealier propylitic alterations, gypsum stingers to 2 cm and pyrite stingers. Quartz-pyrite-sh ± minor calcite at 40* to core axis	122520	0.001	0.008
203.70	205.70	Fine grained green grey strongly propyllitic	3.0	0 STR	70	gypsum ±pyrite stringers, pyrite-quartz strngers	122521	0.004	0.016
205.70	207.70		3.0	0 STR	40 2	gypsum stringers to 1 cm at 35-45* to core axis as in 122511)	122522	0.002	0.013
207.70	209.70	Fine grained green grey intensely propyllitic	2.0	0 STR	15	very monor gypsum and pyrite stringers and quartz stinges with trace moly? at 15° to core axis. Minor pyrite stringersat 40* to core axis	122523	0.003	0.01

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)	Comments	Sample#	Cu %	Au ppm
209.70	211.70	Fine grained green grey strongly propyllitic	5.0	1	STR	10	as above with gypsum±pyrite±sphalerite. Bottom 70 cm quartz-sericite-pyrite altered with gypsum stringers to 2 cm at 10+60* to core axis and 7% pyrite. contact between zons a 70* to core axis	122524	0.003	0.011
211.70	213.80	Fine grained green grey moderately propyllitic	3.0	0	STR	10	Phyllic alteration overprint. gypsum stringers at 30, 10° to core axis. Latter with trace chalcopyrite minor at 50° to core axis with pyrite surrouned by 5 cm bleached zone ?gypsum-andhydrite?	122525	0.008	0.007
213.8	216	**BRECCIATED BASALT FAULT ZONE**								
213.80	216.00	Fine grained green grey moderately propyllitic	4.0 **0.1**	0	STR	20	some of up center to 4 cm at 60° to core axis. Some sphalerite±galena±chalcopyrite in fract; chalcopyrite at intersection of 20+50° to core axis fractures also at 80° to core axis, 20° fractures offset others, LHD. Lower 50 cm fault with gouge at 60° to core axis, fractures at 30° to core axis, rubbly contact chalcopyrite in lower brecciated zone in fault	122526	0.036	0.077
216	223.3	**PORPHYRITIC MONZONITE DYKE**								
216.00	217.90	Very fine grained red brown weakly propyllitic	2.0	2	FRC	5	Hematitic-serictitic alteration overprint. contact with monzonite porphyry dyke. Fractures with calcite/sericite/chlorite at 5-10* to core axis + gypsum, some mafic zenlith	122527	0.002	0
217.90	219.90		1.0	12	FRC	10	Hematitic alteration overprint. more coarsely porphyritic with 30% feldspars 5-7% mafics generally altered to chlorite, sericite, epidote some gypsum/chlorite/sericite fractures.	122528	0.002	0
219.90	221.90	Very fine grained red weakly propyllitic	1.0	2			Hematitic alteration overprint. as above but grades less porphyritic and chill for last	122529	0.001	0
221.90	223.30	Very fine grained green grey moderately propyllitic	1.0	0			Hematitic alteration overprint. more chilled and more red brown grey colour due to higher propylitic underprint. 50cm very chilled lower marging with banding for 15cm parallel contact (contact 50)	122530	0.002	0
223.3	229.3	**MOTTLED BASALT BRECCIA**								

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins (CA-%)		Comments	Sample#	Cu %	Au ppm
223.30	225.30	Very fine grained green grey strongly propyllitic	2.0	*1* STR	50		gypsum±quartz±pyrite stringers at 50cm, quartz+chlorite stringers to 4 cm, minor sphalerite along 30° to core axis offset and along 50* to core axis	122531	0.003	0.022
225.30	227.30		5.0 **0.1**	*0* STR	70		Phyllic alteration overprint. minor gypsum +chlorite stringers; sphalerite ±chalcopyrite-molybdenite along 60° to core axis fresh cut by 70° to core axis gypsum stringers	122532	0.007	0.036
227.30	229.30		3.0	*0* STR	50		as in 122503 with minor fault fouge at 50° to core axis. Some gypsum-anhydrite stringers	122533	0.006	0.011
229.3	239.4	**PORPHYRITIC BASALT FLOW**								
229.30	231.30	Very fine grained green grey strongly propyllitic	3.0	*1* STR	70		less brecciated with fine quartz stringers minor quartz stringes with pyrite and trace sphalerite, epidote at 60° to core axis, phenocryst more pronounced than clasts	122534	0.014	0.029
231.30	233.30		3.0	*0* STR	65		as above No visible copper mineralization, minor gouge at 35° to core axis	122535	0.013	0.01
233.30	235.30		3.0	*0* STR	70		as above minor quartz ± pyrite stringers. Few ?? Minor fault gouge on fracture at 45° to core axis	122536	0.006	0.032
235.30	237.40	Fine grained green grey strongly propyllitic	3.0	*0* STR	70		as above, no gouge	122537	0.006	0.008
237.40	239.40		3.0 **0.1**	*0* STR	70	1	K as above with patchy nore biotite ateration? With gypsum ± pyrite stringers +quartz±pyrite±chalcopyrite stringers at 70* to core axis-few mm maz 1 cm	122538	0.023	0.024
239.4	245.6	**MOTTLED BASALT BRECCIA**								
239.40	241.40	Fine grained green grey strongly propyllitic	4.0 **0.2**	*0* STR	70	1	as in 122537, with gypsum ±quartz±pyrite ±chalcopyrite in stringers at 70* to core axis up to 1 cm wide. Gypsum vein zone 20cm wide at 241cm at 40° to core axis. Vein surrounded by anhydrite, pyrite, gypsum-sericite altered host	122539	0.088	0.016
241.40	243.20		3.0	*0* STR	40	1	as in 122537 with quartz-gypsum-pyrite, possible fluorite, vein zones up to 20 cm as in 122539	122540	0.006	0.019
243.20	244.60			*1* STR	70		monor quartz gypsum, pyrite, very trace of chalcopyrite in fine stringers	122541	0.003	0.034

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins (CA-%)	Comments	Sample#	Cu %	Au ppm
244.60	245.60	Fine grained green grey strongly propyllitic	2.0 **0.3**	*0* STR	60 6	Sericitic alteration overprint. Gypsum-anhydrite-quartz-chalcopyrite-pyrite vein, 10cm wide at 245m; other smaller similar stringers, 1cm ±chalcopyrite, 30 cm more sericitic, gypsum? Flooded halo to larger vein	122542	0.019	0.029
245.6	252	**PORPHYRITIC BASALT FLOW**							
245.60	247.60	Fine grained green grey strongly propyllitic	4.0	*0* STR	85	generally less mottled, brecciated texture with more phenocrysts visible, all altered to epidote/sericite/chlorite/gypsum and quartz stringers	122543	0.004	0
247.60	249.80		3.0	*0* STR	60	fine gypsum quartz pyrite chalcopyrite stringer at 60° to core axis minor gouge at 75° to core axis fine pyrite along 45° to core axis fracture. Pyrite occurs as dissem, along fracture and replacing phenocrysts with ep	122544	0.004	0.009
249.80	252.00		5.0	*0* STR	25	249.9-1cm gypsum-pyrite-quartz-chalcopyrite-sphaleritegalena veinlet at 25° to core axis also chalcopyrite in finer quartz, gypsum, pyrite stringers at 40° to core axis especially at intersection with 10*fractures	122545	0.02	0.079
252	260	**BRECCIATED BASALT**							
252.00	254.00	Fine grained grey weakly propyllitic	10.0	*0* STR	45 1	Sericitic alteration overprint. sericite-anhydrite-gypsum pyrite flooded cone with well fractured so brecciated with gypsum and pyrite stringers and ver minor quartz and trace sphalerite as in 122503 with quartz and gypsum stringers; epidote-chlorite-sericite-pyrite altered clasts; eak pervasive sericite overprint. Possible minor sphalerite	122546	0.003	0.043
254.00	256.00	Fine grained green grey moderately propyllitic	3.0	*0* STR	70	Sericitic alteration overprint. grades weakly sericite downhole with increase in gypsum stringers and quartz, pyrite chalcopyrite, sphalerite, galena (2 cm stringers at2) in 45-50° to core axis stringers with 60* cross-cutting fractures. Chalcopyrite in 60*	122547	0.005	0.012
256.00	258.00	Fine grained green grey strongly propyllitic	3.0	*0* STR	45 1	Sericitic alteration overprint. Chalcopyrite in 60*	122548	0.026	0.007

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins (CA-%)	Comments	Sample#	Cu %	Au ppm
258.00	260.00	Fine grained grey strongly propyllitic	5.0	0 STR	25 3	Sericitic alteration overprint. chalcopyrite in 60-65* quartz gypsum pyrite stringers. Gypsum anhydrite sericite pyrite flooding	122549	0.003	0.008
254.00	256.00	Fine grained green grey moderately propyllitic	3.0	0 STR	70	Sericitic alteration overprint. grades weakly sericite downhole with increase in gypsum stringers and quartz, pyrite chalcopyrite, sphalerite, galena (2 cm stringers at2) in 45-50° to core axis stringers w:th 60* cross-cutting fractures. Chalcopyrite in 60*	122547	0.005	0.012
256.00	258.00	Fine grained green grey strongly propyllitic	3.0	0 STR	45 1	Sericitic alteration overprint. Chalcopyrite in 60*	122548	0.026	0.007
260	262	**PORPHYRITIC BASALT FLOW**							
260.00	262.00	Fine grained green grey moderately propyllitic	3.0	0 STR	60 1	chalcopyrite in sphalerite in fine gypsum quartz stingers at 60* and 25* stringers/ 122550	122550	0.017	0.009
262	263.5	**PORPHYRITIC BASALT VOLCANIC BRECCIA**							
262.00	263.50	Fine grained green grey strongly propyllitic	3.0	0 STR	55	chalcopyrite in 4 cm 20* to core axis gypsum stringer at 260.3m other fine gypsum and quartz sringers/122551 minor quartz gypsum stringers	122551	0.001	0
263.5	267.6	**BRECCIATED BASALT ALTERED ZONE**							
263.50	265.60	Fine grained grey moderately phyllic	4.0	1 STR	60	anhydrite silica sericite flooded zone with fine pyrite stringers at 20-40° to core axis. Minor fine gypsum anhydrite quartz stringer sphalerite at 60° to core axis	122552	0.001	0.005
265.60	267.60		3.0	0 STR	35 1	minor sphalerite in 60 and 35° to core axis, gypsum pyrite quartz stringers at 35 and 60° to core axis	122553	0.002	0.015
267.6	271.7	**PORPHYRITIC BASALT FLOW**							
267.60	269.60	Fine grained green grey moderately propyllitic	4.0	0 STR	20	minor gypsum-pyrite stringers at 20-40° to core axis	122554	0.001	0.019
269.60	271.70		5.0	0 STR	45 2	Sericitic alteration overprint. grades greyer colour. Sericite and minor anhydrite floodings. Gypsum epidote py	122555	0.001	0.02
271.7	273.7	**FRACTURED BASALT ALTERED ZONE**							

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins (CA-%)	Comments	Sample#	Cu %	Au ppm
271.70	273.70	Fine grained grey weakly propyllitic	4.0	0 STR	35 35	Sericitic alteration overprint. anhydrite gypsum flooding from 272.4 at 35° to core axis, minor chalcopyrite in 05° to core axis structures	122556	0.002	0.034
273.7	275.7	**PORPHYRITIC BASALT FLOW**							
273.70	275.70	Fine grained green grey moderately propyllitic	6.0	0 STR	85	minor sphalerite and chalcopyrite in anhydrite pyrite stringer at 85° to core axis srtiner offset by 15° to core axis stringer some 30+55° to core axis anhydrite pyrite stringer; minor gypsum anhydrite flooding from 275.1-.5	122557	0.009	0.022
275.7	277.5	**STOCKWORKED BASALT ALTERED ZONE**							
275.70	277.50	Fine grained green grey moderately propyllitic	3.0	0 STR	50 10	gypsum vein stockwork zone with gypsum vein at 276.0-.3 anhydrite, pyrite, cherty silica; with some gypsum anhydrite silica flooding	122558	0.006	0.016
277.5	278.5	**MOTTLED BASALT BRECCIA**							
277.50	278.50	Fine grained green grey strongly propyllitic	7.0	0 STR	55	Chalcopyrite in 55° to core axis trending quartz stringer	122559	0.031	0.006
278.5	303.7	**PORPHYRITIC BASALT FLOW**							
278.50	280.70	Fine grained green grey moderately propyllitic	4.0	0 STR	70	Phyllic alteration overprint. chalcopyrite in 70° to core axis trending cherty silica stringer and in quartz-gypsum sphalerite stringer at 60*; atchy qap alteration	122560	0.019	0.006
280.70	282.50	Fine grained green grey strongly propyllitic	2.0	0 STR	60	Sericitic alteration overprint. minor cherty stringers and gypsum at 60° to core axis some 45 minor pervasive sericite?	122561	0.001	0.011
282.50	283.50		2.0	0 STR	60	minor chalcopyrite and sphalerite; in quartz stringer	122562	0.004	0
283.50	284.70		3.0	0 STR	50	few mafic xenolits to 1 cm some minor gy stringers and purple fluorite	122563	0.001	0
284.70	288.30		3.0	1 STR	25	stringers: pyrite; chalcopyrite sphalerite in gypsum pyrite strigner at 50° to core axis	122564	0.001	0.008
288.30	290.30			1 STR	75	more gypsum and fluorilte stringers to 2 cm and minor quartz stringers at 60° to core axis and pyrite. Some patchy gypsum aterations	122565	0.002	0

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)	Comments	Sample#	Cu %	Au ppm
290.30	292.30	Fine grained green grey strongly propyllitic		4	STR	60	minor quartz-pyrite and pyrite stringers and epidote	122566	0.002	0.006
292.30	294.30			1	STR			122567	0.002	0
294.30	296.40	Fine grained green grey moderately propyllitic	5.0	0	STR	45 5	sericite pyrite alteration obscuring and overqrinting earlier propylitic alterations. Occurs outwards from 45° trending stringers and fractures with quartz gypsum pyrite > 50% of section with quartz-sericite-pyrite alterations; minor chert stringers at 70* to core axis; pyrite stringers up to 1 cm at 60° to core axis; minor fluorite in quartz-gypsum-pyrite stringers	122568	0.002	0.007
296.40	297.40	Fine grained green grey strongly propyllitic	10.0	0	STR	60 3	possible flow bording at 40° to core axis; pyrite stringers up to 1 cm at 60° to core axis; minor fluorite in quartz-gypsum-pyrite stringers	122569	0.001	0.016
297.40	299.90		2.0	1	STR	30 1	as in 122567; minor quartz-sericite-pyrite alterations for 5 cm aouwards from 30, 50° to core axis fractures	122570	0.001	0.008
299.90	302.40	Fine grained grey moderately propyllitic	2.0	0	STR	45	as above with less epidote and more chlorite	122571	0.002	0.008
302.40	303.70	Fine grained grey strongly phyllic	10.0	0	STR	50 1	Quartz-sericite-pyrite altered after propylitic alteration, even overprints gypsum; remnant phenocrysts; start to get alterations of phenocrysts	122572	0	0.017
303.7	311.7	**STOCKWORKED BASALT ALTERED ZONE**								
303.70	305.70	Fine grained grey intensely phyllic	12.0	0	STR	50 10	Chloritic alteration overprint. stockworked to brecciated quartz-sericite-pyrite altered zone minor gouge at 85° to core axis. More brecciated down with pyritization of fragments	122573	0.001	0.006
305.70	307.70		12.0	0	FOL	35 1	more brecciated with larger clasts to 10 cm and pyritiation of clasts; alignment and stretching out of fragments at 30-50* to core axis	122574	0.002	0.007
307.70	309.70		15.0	0	STR	45 3	gypsum replacing clasts and as stringers within quartz-sericite-pyrite altered zone with breccia fragments of altered Basalt porphyry flow. Silicification appears to be later since gypsum stringers---> silicified	122575	0	0.005

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins (CA-%)		Comments	Sample#	Cu %	Au ppm
309.70	311.70	Fine grained grey strongly phyllic	10.0		0 STR	50 5	grading less sil, more gypsum down; gypsum stringers to 5 cm (contact 60)	122576	0.001	0
311.7	318.3	**PORPHYRITIC MONZONITE DYKE**								
311.70	313.70	Very fine grained red brown moderately propyllitic	3.0	1	0 STR	37	Hematitic alteration overprint. sharp contact with monzonite dyke, more propylitic alteration for first 50cm followed by hematitic matrix with propylitic phenocrysts; fine quartz stringers and gypsum stringers pyrite epidote margins chalcopyrite	122577	0.013	0.014
313.70	315.00	Very fine grained red brown weakly propyllitic	3.0	1	0 STR	45	Hematitic alteration overprint. as above with chalcopyrite in fine quartz gypsum stringers at 45° to core axis with dark grey pyrite-sericite silica altered zones that trend perpendicular to stringers	122578	0.011	0.008
315.00	318.30		3.0		1 STR		Hematitic alteration overprint. as above No visible copper mineralization (contact 55°) sharp contact	122579	0.017	0.011
318.3	319.3	**BRECCIATED BASALT DYKE**								
318.30	319.30	Fine grained grey intensely phyllic	12.0		0 STR		Propylitic alteration overprint. as in 122573 (contact 80°) sharp contact)	122580	0.113	0.024
319.3	331.3	**PORPHYRITIC MONZONITE DYKE**								
319.30	321.10	Very fine grained red brown weakly propyllitic	2.0	1	0 STR	70	Hematitic alteration overprint. monzonite dyke with epidote chlorite altered phenocrysts, some epidote sericite stringers and very minor fine quartz stringers and gypsum	122581	0.007	0.015
321.10	323.10		2.0	1	0 STR	40 4	Hematitic alteration overprint. as above with more gypsum calcite ftingers 30-50* and hematite altered phenocrysts in center, minor fine quartz pyrite stringer at 60° to core axis	122582	0.004	0.016
323.10	326.10		2.0	1	0 STR	70	Hematitic alteration overprint. as above with fine quartz pyrite stringer at 70-80° to core axis	122583	0.028	0.03
326.10	327.30		2.0	1	1 STR	45 1	Hematitic alteration overprint. quartz stringer and atches, calcite patches, hematite stringer	122584	0.011	0.028
327.30	329.30		2.0	1	0 STR	50 1	Hematitic alteration overprint. as above with quartz 50 45 >0° to core axis calcite stringers and fratures at 5° to core axis with calcite	122585	0.018	0.041

Hole Number: BR-03-08

From	To	Rock Type	Py-Cpy-Mt		Ms	Veins (CA-%)		Comments	Sample#	Cu %	Au ppm
329.30	331.30	Very fine grained red brown moderately propyllitic	2.0		1	0 STR	60	Hematitic alteration overprint. grades more brown red in colour, fewer quartz stringers more epidote as stringers (contact 55) sharp contact	122586	0.024	0.037
331.3	333.5	**BRECCIATED BASALT ALTERED ZONE**									
331.30	333.50	Fine grained light grey intensely phyllic	12.0	**0.2**		0 STR	60	chalcopyrite gypsum stringer 1 cm at 60° to core axis at 331.7m with phyllic and gypsum flooded zone	122587	0.106	0.015
333.5	347.3	**BRECCIATED BASALT FLOW**									
333.50	335.50	Fine grained grey green moderately phyllic	7.0			0 FOL	45	Chloritic alteration overprint. see brecciated texture with pyrite replacing clasts. Foliation defined by abridgement of clasts; fine quartz and gypsum stringers and chl; not gypsum flooded as above	122588	0.001	0.022
335.50	337.50		10.0			0 FOL	40	Chloritic alteration overprint. as above with largers clasts to 12 cm	122589	0.001	0.012
337.50	339.50		7.0			0 STR	60	Chloritic alteration overprint. most frages of basalt porphyry flow but occasional clast of granodiorite to 3 cm. Minor gypsum stringers at 60*	122590	0.002	0.014
339.50	341.50	Fine grained grey green weakly phyllic	6.0			0 STR	70	Chloritic alteration overprint. occasional quartz calcite gypsum chlorite stringerscut by 70° stringers. Still some breccia fragments but mostly porphyritic textures	122591	0.002	0.015
341.50	343.50					0 STR	85	Chloritic alteration overprint. 5* structure for 50 cm at top with chlorite quartz minor gypsum, other minor quartz gypsum stringer at 70-85° to core axis grades brecciated towards bottom	122592	0.001	0.018
343.50	345.50	Fine grained grey green moderately phyllic	8.0			0 STR	40 10	Chloritic-sericitic alteration overprint. some brecciation; gypsum- quartz sericite chlorite vein at 345.m for 20 cm	122593	0.002	0.015
345.50	347.30		10.0			0 STR	50	Chloritic-sericitic alteration overprint. as above with some brecciation and gypsum quartz pyrite flooded zones; pyritization of phenocrysts, fragments and dissem; some chlorite pyrite gypsum stringers at 50° to core axis. Some calcite patches	122594	0.003	0.015
347.3	349.3	**BRECCIATED BASALT FAULT ZONE**									

Hole Number: BR-03-08

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
347.30	349.30	Fine grained grey green moderately phyllic	12.0	0	FRK	40		Chloritic-sericitic-silica alteration overprint. Fault zone with Basaltic fagments in chloritic patchy gypsum flooded matrix and patchy cil 05-15* fractures	122595	0.007	0.011
349.3	351.1	**BRECCIATED BASALT ALTERED ZONE**									
349.30	351.10	Fine grained light grey green strongly phyllic	4.0	0	FRK	40		Chloritic-sericitic alteration overprint. gypsum sericite chlorite weak silica flooded. Grades to chlorite down hole (contact 50)	122596	0.001	0.011
351.1	352.5	**BRECCIATED BASALT FAULT ZONE**									
351.10	352.50	Fine grained light grey green strongly phyllic	6.0	0	FOL	35		Quartz-sericite-pyrite altered, some gypsum stringers at 65° to core axis, minor gouge at 50° to core axis	122597	0.001	0.008
352.5	355.3	**BRECCIATED BASALT ALTERED ZONE**									
352.50	353.80	Fine grained grey green moderately phyllic	7.0	0	STR	35		Chloritic-sericitic-weak silica alteration overprint. fault breccia with chlorite pyrite altered fragments in more sericite with silicified matrix with minor pyrite minor gypsum stringers at 35° to core axis	122598	0.003	0.008
353.80	355.30	Fine grained light grey moderately phyllic		0	STR	15	2	Serecitic-chloritic-silica alteration overprint. gypsum sericite with silica-pyrite flooded breccia zone (contact 55) more chloritic at bottom for 30 cm with 55*contact - sharp	122599	0.001	0.01
355.3	359	**BRECCIATED BASALT FLOW**									
355.30	357.10	Fine grained light grey strongly phyllic	8.0	0	STR	51	1	Quartz-sericite-pyrite altered breccia zone with pyritized chlorite clast overprinted with quartz-sericite-pyrite; less altered Bax por clast at bottom (contact 50)	122600	0.001	0.014
357.10	359.00	Fine grained green grey moderately phyllic	7.0	0	FRC	65	1	Chloritic-sericitic alteration overprint. more chlotitic less breciated dominantly porphyritic basalt flow. Minor discont quartz pyrite stringer cut by 65* chloritic fractures	122601	0.002	0.009
359	361.1	**PORPHYRITIC BASALT FAULT ZONE**									
359.00	361.10	Fine grained green grey moderately propyllitic	5.0	0	STR	35		Sericitic alteration overprint. still some brecciation; start to get epidote (epidote replacing phenocrysts) with chlorite sericite quartz chlorite stringers at 35° to core axis. Grades less brecciated (contact40) sharp ect	122602	0.001	0.007

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From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
361.1	363.1	**BRECCIATED BASALT**									
361.10	363.10	Fine grained grey moderately phyllic	6.0	0	STR	20		Sericitic alteration overprint. grades more brecciated with increase in phy to sericite gypsum overprint. 20 cm more gypsum rich zone with 20% gypsum stringer; some gypsum pyrite stringer at 362.1m. Sharp but iffegular contact with more chlorite with epidote less sericitic and gupsum ric core with more pyrite (10); less brecciated from 362.5m	122603	0.001	0.014
363.1	365.1	**MOTTLED BASALT DYKE**									
363.10	365.10	Fine grained grey moderately propyllitic		0	STR			same as after 3625; mottled texture with chlorite epidote altered clats in chlorite sericite matrix. at 363.9 - contact with more brecciated zone with more sericite chlorite pyrite . at 50* to core axis for 50 cm at bottom grading weakly hematitic	122604	0.005	0.016
365.1	381	**PORPHYRITIC MONZONITE DYKE**									
365.10	367.10	Very fine grained red brown moderately propyllitic	2.0	0	FRC	50	2	Hematitic alteration overprint. Monzonite porphyry dyke with epidote sericite chlorite altered phenocrysts up to 30% in very fine grained matrix with epidote sericite stringers and occasional clast at 366.2m parallel 20 cm propylitic altered. Possible basalt porphyry fragments	122605	0.004	0.006
367.10	369.10		2.0	0	FRC	60	3	Hematitic alteration overprint. as above with possible 10 cm basalt porphyry fragment at 369m. Epidote sericite calcite minor gypsum fine stingers (fracture fillings)	122606	0.004	0.008
369.10	371.10		2.0	0	FRC	50		Hematitic alteration overprint. definited minor basalt porphyry clasts to 5 cm, possibly 10 cm; minor epidote-sericite and pyrite chlorite stringers at 50° to core axis with right-hand displacement by 45* fractures	122607	0.005	0
371.10	373.10		2.0	0	FRC	50		Hematitic alteration overprint. minor 15 cm propylitic altered basalt porphyry clast? at 372.7m	122608	0.003	0.01
373.10	375.10		2.0	0	FRC	45		pyrite and zeolite stringers, some propylitic alteration, pyritic mafic xenoliths, minor gypsum, quartz stringers	122609	0.002	0.014
375.10	377.10		2.0	1	FRC	45		as above	122610	0.005	0

Hole Number: BR-03-08

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)	Comments	Sample#	Cu %	Au ppm
377.10	379.00	Very fine grained red brown moderately propyllitic	2.0	0	STR	55	Hematitic alteration overprint. .0m propylitic altered basalt porphyry? At start; followed by monzonite byke as above with minor purple grey quartz stringers and epidote sericite stringers ±pyrite	122611	0.002	0.014
379.00	381.00	Very fine grained red brown strongly propyllitic	4.0	0	STR	55	Hematitic alteration overprint. some pyrite-quartz stingers-cut by epidote stringers and 30% of zone more propylitic chlorite altered partly digested basalt porphyry. Xenoliths with 7% pyrite; minor calcite zeolite stingers at 35* . End of Hole	122612	0.003	0.025
381 EOH										

Brenda Property 2003 Diamond Drill Log

Northgate Exploration Ltd

Hole Number: ***BR-03-09***

Nad83_N:	6348055	**Total Depth:**	163.7 **m**
Nad83_E:	630440	**Azimuth:**	235 °
Elevation:	1625	**Dip:**	-45 °

Geologist: Jean Pautler

Drilled: 7/4/2003

Survey Depth	Azimuth	Dip
94.2 m	237 °	-45 °

Survey Depth	Azimuth	Dip

Survey Depth	Azimuth	Dip

Brenda Property 2003 Diamond Drill Log

Northgate Exploration Ltd

Hole Number: *BR-03-09*

From (m)	To (m)	Rock Type	Comments
0.0	1.5	CASING	Casing
1.5	6.0	CRYSTAL-LITHIC UNDIFFERENTIATED TUFF	Propylitic-hematitic alteration overprint. Dacitic composition to quz latite with 20% hematitc feldspars,, <5*10 chlorite altered mafics; epidote altered phenocrysts; 15% cholitized fragments of some sacitic feldspar pophry about 1 cm size and other smaller fragments; manganese along fractures
6.0	8.4	PORPHYRITIC MONZONITE DYKE	Hematitic alteration overprint. magnetic, strongly hematitic monzonitic porphyry dyke with 20% feldspar phenocrysts and very minor calcite mixed with rubble of above
8.4	25.6	CRYSTAL-LITHIC UNDIFFERENTIATED TUFF	Hematitic alteration overprint. as in 122613
25.6	26.6	CRYSTAL-LITHIC UNDIFFERENTIATED	clay-sericite-pyrite-chlorite-jarosite altered fault core from 26m top 40cm grades into fault wire?, increase in jarosite, ect.
26.6	44.8	CRYSTAL-LITHIC UNDIFFERENTIATED TUFF	Hematitic alteration overprint. grades more hematitic downhole
44.8	47.9	MASSIVE MAFIC DYKE	Chloritic alteration overprint. calcite stringer <5% feldspar phenocrysts
47.9	91.7	CRYSTAL-LITHIC UNDIFFERENTIATED TUFF	Hematitic alteration overprint. coarsely porphyritic and fragmental; hematitic altered clasts and feldspars, chloritic matrix, minor epidote.
91.7	93.1	CRYSTAL-LITHIC UNDIFFERENTIATED BRECCIA	Hematitic alteration overprint. highly cholritic fault fouge with clay
93.1	98.6	CRYSTAL-LITHIC UNDIFFERENTIATED TUFF	Hematitic alteration overprint. coarsely porphyritic with up to 20 cm more chloritic zones heading outwards from fault at 94.3m at 35° to core axis
98.6	100.2	MASSIVE MAFIC DYKE	Hematitic alteration overprint. minor trace? Spec along fractures. 30cm+ dyke includes chilled margin and contact zone with volcanic minor feldspar phenocrysts (contact 25)
100.2	136.3	CRYSTAL-LITHIC UNDIFFERENTIATED TUFF	Hematitic-serictitic alteration overprint. as in 122645 above; weak perversive sericitization + manganese especially near dyke
136.3	161.6	MASSIVE MAFIC DYKE	Brown massive aphanitic dyke with fine calcite anygdules and fine about 5% feldspar phenocrysts (Plagioclase), some calcite sringers. As fracture coatings; 5% mafic phenocrysts

Brenda Property 2003 Diamond Drill Log

Northgate Exploration Ltd

Hole Number: *BR-03-09*

From (m)	To (m)	Rock Type	Comments
161.6	163.7	CRYSTAL-LITHIC UNDIFFERENTIATED TUFF	10 cm clay gouge, tan colour at start follwed by fragmental flow with more propylitic matrix and hematite altered phenocrysts. 10 cal more hematitic zones

Brenda Property 2003 Diamond Drill Log

Northgate Exploration Ltd

Hole Number: BR-03-09

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins (CA-%)	Comments	Sample#	Cu %	Au ppm
0	1.5	**CASING**							
0.00	1.50					Casing			
1.5	6	**CRYSTAL-LITHIC UNDIFFERENTIATED TUFF**							
1.50	6.00	Fine grained red moderately propyllitic	1.0	1	*48* FRC 5 10	Propylitic-hematitic alteration overprint. Dacitic composition to quz latite with 20% hematitc feldspars,, <5*10 chlorite altered mafics; epidote altered phenocrysts; 15% cholitized fragments of some sacitic feldspar pophry about 1 cm size and other smaller fragments; manganese along fractures	122613	0.007	0
6	8.4	**PORPHYRITIC MONZONITE DYKE**							
6.00	8.40	Fine grained red brown strongly oxidized		3	*1* FRC	Hematitic alteration overprint. magnetic, strongly hematitic monzonitic porphyry dyke with 20% feldspar phenocrysts and very minor calcite mixed with rubble of above	122614	0.007	0
8.4	25.6	**CRYSTAL-LITHIC UNDIFFERENTIATED TUFF**							
8.40	10.40	Fine grained red moderately propyllitic	1.0	1	*1* FRC 5 1	Hematitic alteration overprint. as in 122613	122615	0.007	0
10.40	12.40		1.0	1	*2* FRC 15 1	Hematitic alteration overprint. as above; epidote, mn, chlorite along fractures. NB reduced to NZ at 12.3 m	122616	0.003	0
12.40	14.60		1.0	1	*0* FRC 15 1	Hematitic alteration overprint. as above with epidote, mn, chlorite ±calcite along fractures	122617	0.005	0
14.60	19.80	Fine grained black weakly propyllitic		1	*2* FRK 5 2	Chloritic-hematitic-magnetite alteration overprint. stronly magnetic and rubbly crystal-lithic tuff. Same composition as above but strongly magnetic. Possible top of fragment flow, probably related to fault in 622. Magnetici in stringer stock work	122618	0.014	0
19.80	23.90	Fine grained green weakly potassic - chlorite		1	*1* FRC 45 2	Chloritic-hematitic alteration overprint. same units, chloritic matrix, menatitic feldspars. Manganese and minor limonitic gouge on fractures	122619	0.008	0.01
23.90	25.60	Fine grained black weakly potassic - chlorite		1	*0* FRC 15 2	Chloritic-hematitic alteration overprint. as in 618	122620	0.01	0.017
25.6	26.6	**CRYSTAL-LITHIC UNDIFFERENTIATED**							

Hole Number: BR-03-09

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
25.60	26.60	Fine grained	3.0	12	FLT	30	50	clay-sericite-pyrite-chlorite-jarosite altered fault core from 26m top 40cm grades into fault wire?, increase in jarosite, ect.	122621	0.007	0.006
26.6	44.8	**CRYSTAL-LITHIC UNDIFFERENTIATED TUFF**									
26.60	27.90	Fine grained brown red brown red brown red moderately propyllitic	3.0	3	2			Hematitic alteration overprint. grades more hematitic downhole	122622	0.008	0
27.90	29.70	Fine grained red weakly propyllitic	3.0	1	0	FRC	35 1	Hematitic alteration overprint. chlorite, mn along fractures	122623	0.008	0
29.70	31.70	Fine grained red brown weakly propyllitic		1	0			Hematitic alteration overprint. some larger fragments of same to 4 cm	122624	0.008	0
31.70	33.70			1	0	FRC	50 2	Hematitic alteration overprint. grades bit more up downhole	122625	0.004	0
33.70	35.70	Fine grained light red brown moderately propyllitic		2	1	FRC	35 1	Sericitic-hematitic-carbonate alteration overprint. pervasively sericitized with chloritized and epidote altered fragments of some unit with hematite altered feldspars and matrix; minor discontinued quartz stringers, patches at start for 10 cm; minor calcite in groundmass	122626	0.001	0
35.70	37.80	Fine grained light red brown weakly propyllitic		2	0	FRC	75 1	Sericitic-hematitic alteration overprint. as above, no quartz or carb	122627	0.002	0
37.80	39.90	Fine grained light red brown propyllitic		2	1	FRC	50 1	as above	122628	0.005	0
39.90	41.90			2	0	FRC	10 1	as above, limonitic ±manganese fracures for last meter. Possible oxidized fragmental from top (contact 60) vauge contact - ateration limonite-->hematite	122629	0.001	0
41.90	44.80	Fine grained red brown propyllitic		2	10			Sericitic-hematitic alteration overprint. grades magnetic downhole and darker due to magn. Mafic dyke	122630	0.001	0.006
44.8	47.9	**MASSIVE MAFIC DYKE**									
44.80	47.90	Very fine grained black weakly potassic - chlorite		5	16	FRK	75 1	Chloritic alteration overprint. calcite stringer <5% feldspar phenocrysts	122631	0.012	0
47.9	91.7	**CRYSTAL-LITHIC UNDIFFERENTIATED TUFF**									
47.90	49.70	Fine grained red brown weakly propyllitic		2	2	FRK	35 1	Hematitic alteration overprint. coarsely porphyritic and fragmental; hematitic altered clasts and feldspars, chloritic matrix, minor epidote.	122632	0.001	0

Hole Number: BR-03-09

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
49.70	51.90	Fine grained red brown weakly propyllitic	1	4	FRK	75	1	as above	122633	0	0
51.90	53.90		2	3	FRK	25	1	Hematitic alteration overprint. more hematitic as matrix and replacing clasts also propylitic altered clasts ±calcite rims, stringers. Some fragments to 3 cm	122634	0.001	0
53.90	56.60	Fine grained red brown propyllitic	2	2	FRK	35	1	Hematitic alteration overprint. some calcite. Stringers and patches, epidote stringers	122635	0.001	0
56.60	58.60		2	3	FRK	75	1	as above	122636	0	0
58.60	60.60		2	4				as above possible interflow etc at 57.5m. 15cm more porphyritic zone up direction up hole	122637	0.002	0
60.60	62.70	Fine grained red brown weakly potassic - sericite	2	4	FRK	65	1	Hematitic-serictitic alteration overprint. as above and weak perversive sericite	122638	0	0
62.70	64.80	Fine grained red brown moderately propyllitic	2	2	FRK	5	1	as above grades less sericite down and more aoarsely fragments and more ep	122639	0.001	0
64.80	66.80		1	0	FRK	75	1	Hematitic alteration overprint. as above average siz of fragments 1-2 cm some 4 cm	122640	0.001	0
66.80	68.80	Fine grained red brown propyllitic	1	0	FRK	35	1	as above average size class 4-5 cm	122641	0	0
68.80	70.80		1	0	FRC	40	1	Hematitic alteration overprint. average sized clasts 4-5 cm . Some calcite stringers and patches	122642	0.006	0
70.80	72.80		1	2	FRK	5	1	Hematitic alteration overprint. average size clasts 4-5 cm	122643	0.001	0
72.80	74.80	Fine grained light red brown potassic - sericite	2	1	FRK	45	1	Hematitic-serictitic alteration overprint. average size clasts 4-5 cm	122644	0.002	0
74.80	76.80	Fine grained light red brown weakly potassic - sericite	2	6	FRK	75	1	Hematitic alteration overprint. Average size clasts 4-5 cm. Gnerally grades less coarsely framents and smaller size 1-2 cm average.	122645	0.002	0
76.80	78.80		2	6	FRK	5	1	Hematitic-serictitic alteration overprint. average size clasts 4-5 cm. 15% larger clasts	122646	0.001	0
78.80	80.80	Fine grained red brown moderately propyllitic	2	3	FRK	85	1		122647	0.002	0

Hole Number: BR-03-09

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins (CA-%)	Comments	Sample#	Cu %	Au ppm
80.80	82.80	Fine grained red brown weakly propyllitic		2	4 FRC 50 1	Hematitic alteration overprint. genreally less up grade more sericitc, some calcite stringers and patches. Less fragments more porphyritic testure but still fragmented. Less coarse and smaller frages ave .5-1cm.	122648	0	0
82.80	84.80	Fine grained red brown weakly potassic - chlorite		2	2 FRC 50 1	as above, grades more fractured down hole	122649	0	0
84.80	86.80			2	2	Hematitic alteration overprint. monor calcite stringers	122650	0.001	0
86.80	89.10	Fine grained red brown potassic - chlorite		1	3	Hematitic alteration overprint. minor calcite rtringers moderately fractured weathered. Manganese on fractures	122651	0.001	0
89.10	91.70			1	2 FRC 15 1	Hematitic alteration overprint. as in 122650; calcite as fractuer fillings	122652	0.001	0
91.7	93.1	**CRYSTAL-LITHIC UNDIFFERENTIATED BRECCIA**							
91.70	93.10	Fine grained green black strongly potassic - chlorite	2.0	5	7 FLT 40 35	Hematitic alteration overprint. highly cholritic fault fouge with clay	122653	0.008	0.01
93.1	98.6	**CRYSTAL-LITHIC UNDIFFERENTIATED TUFF**							
93.10	94.90	Fine grained red brown weakly potassic - chlorite	2.0	5	11 FRC 5 1	Hematitic alteration overprint. coarsely porphyritic with up to 20 cm more chloritic zones heading outwards from fault at 94.3m at 35° to core axis	122654	0.007	0
94.90	96.60	Fine grained red brown weakly propyllitic		1	2 FRK 40 1	Hematitic-serictitic alteration overprint. as in 122645, weak perv. Sericitization	122655	0.006	0
96.60	98.60			1	2 5 1	as above	122656	0	0
98.6	100.2	**MASSIVE MAFIC DYKE**							
98.60	100.20	Very fine grained brown moderately oxidized		1	0 1	Hematitic alteration overprint. minor trace? Spec along fractures. 30cm+ dyke includes chilled margin and contact zone with volcanic minor feldspar phenocrysts (contact 25)	122657	0.01	0
100.2	136.3	**CRYSTAL-LITHIC UNDIFFERENTIATED TUFF**							
100.20	102.20	Fine grained light red brown weakly propyllitic	0.5	1	1 FRK 40 1	Hematitic-serictitic alteration overprint. as in 122645 above; weak perversive sericitization + manganese especially near dyke	122658	0.019	0

Hole Number: BR-03-09

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins (CA-%)		Comments	Sample#	Cu %	Au ppm
102.20	104.20	Fine grained light red brown weakly propyllitic		1	1 FRK	5 1	Hematitic-serictitic alteration overprint. increase in larger 3-5 cm chloritized fragments of same intermediate within more hematitic groundmass; occasionally up to 10 cm. Increase in fractures towards end of section	122659	0.006	0
104.20	106.90	Fine grained red brown weakly propyllitic		1	0 FRC	5 1	Hematitic alteration overprint. smaller fragments up to 3 cm. Some calcite stringers (contact 55)	122660	0.004	0
106.90	107.90	Fine grained red brown weakly potassic - chlorite		1	0		Hematitic alteration overprint. 55° to core axis gouge at start of sectioin, more weathered due to possible top of fragmental flow, some minor gouge at 80° to core axis. Generally less coarsely fragmental and pophyritic, smaller fragments (max 1 cm)	122661	0.001	0
107.90	109.60			1	0		Hematitic alteration overprint. as above. Part of same flow	122662	0	0
109.60	111.60	Fine grained red brown weakly propyllitic		1	0 FRC	60 1	Hematitic alteration overprint. start to see spidote again but minor coarse fragmental (fragments to 10 cm) hematitic fratures at 60° to core axis with calcite -zeolite stringers ; larger fragments have 15-20% feldspars with finer bladed feldspars in chlorite matrix	122663	0.001	0
111.60	113.40			1	0 FRC	60 1	as above	122664	0	0
113.40	115.30	Fine grained red brown weakly potassic - chlorite	0.5	1	1 FRK	65 1	Hematitic alteration overprint. same as 122662. finely porphic with smaller fragments, some calcite stringers (contact 70) possible contact tw ftagments flows	122665	0	0
115.30	116.90	Fine grained red brown moderately propyllitic	0.5		3 FRC	75 1	Hematitic alteration overprint. contact with more propylitic as opposed to hemic matrix in fragmental flow. Larger clats towrds bottom of section; flow ending at 50° to core axis (contact 50)	122666	0	0
116.90	119.10	Fine grained red brown weakly potassic - chlorite	0.5		1		Hematitic alteration overprint. as in 122665	122667	0.002	0
119.10	120.70		0.5		3 FLT	75 5	Hematitic alteration overprint. 10 cm of gouge at contact; some gouge 2 25° to core axis not much epidote, more chlorite, more fractured	122668	0.004	0.005

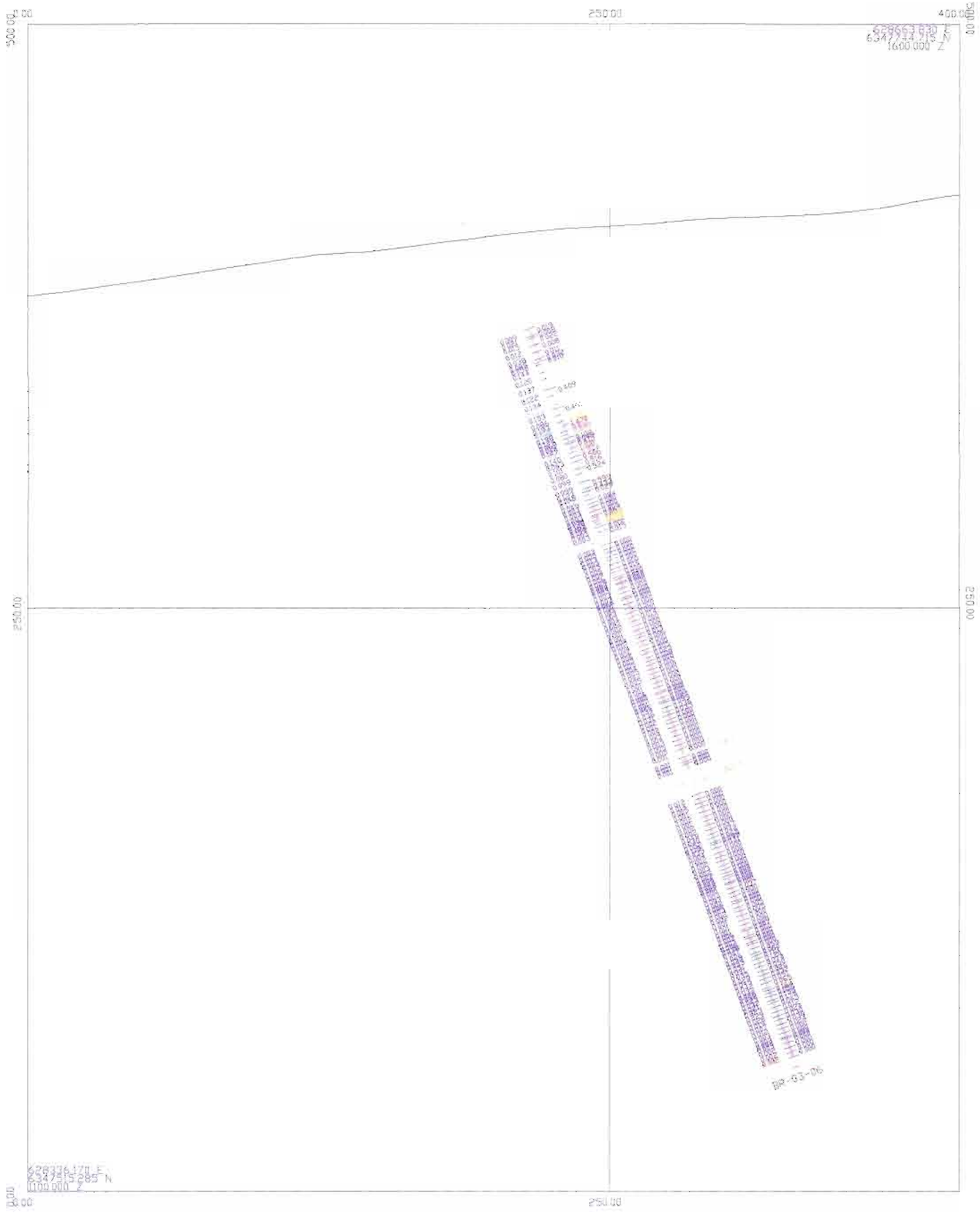
Hole Number: BR-03-09

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
120.70	122.70	Fine grained red brown weakly propyllitic	0.5	2	FRC	80	1	Hematitic alteration overprint. slightely more epidote with chlorite, sericite and less hematite calcite in stringers at 80*, some fractures at 5	122669	0.008	0
122.70	124.60		0.5	0	FRC	80	1	Hematitic alteration overprint. as above. Lower part of fragmental flow	122670	0.002	0
124.60	126.20	Very fine grained dark red brown weakly propyllitic	1.0	0	STK	40	50	Hematitic alteration overprint. quartz-carbonate stock work to 125.4m with primary veining at 40° to core axis. Appears to occur in flow top. NB upper contact appears chilled fro 10-15cm, probable top of flow	122671	0.001	0
126.20	128.30	Fine grained dark red moderately propyllitic	1.0	0	STR	75	1	Hematitic alteration overprint. weathered looking fragmental, darker than fine stringers and quartz-calcite stringers, some epidote stringers manganese along fractures	122672	0	0
128.30	130.30		1.0	1	STR	45	1	as above quartz stringers and quartz calcite stringers. Less than above (about .5)	122673	0	0
130.30	132.30	Fine grained dark red moderately oxidized	1.0	1	STR	55	1	as above quartz stringers at 55° to core axis, some hematite along fractures more epidote, calcite stringers 15-25° to core axis	122674	0.002	0
132.30	134.30	Fine grained dark red strongly oxidized	1.0	0	FRC	15	3	more manganese	122675	0.002	0
134.30	136.30		1.0	0	FRC	45	5	minor gouge at 45° to core axis at start; very minor quartz stringers at 35° to core axis, calcite stringers and infillings	122676	0.002	0
136.3	161.6	**MASSIVE MAFIC DYKE**									
136.30	138.30	Very fine grained brown strongly oxidized	1.0	1	5	FRC	30 1	Brown massive aphanitic dyke with fine calcite anygdules and fine about 5% feldspar phenocrysts (Plagioclase), some calcite sringers. As fracture coatings; 5% mafic phenocrysts	122677	0	0
138.30	140.30	Fine grained brown strongly oxidized	1.0	3	15	FRC	15 1		122678	0.003	0.022
140.30	142.30		1.0	3	18	FRC	55 1	grades more mafic phenocrysts (to 10%). Most hornblende some augite	122679	0.004	0
142.30	144.30	Fine grained dark brown strongly oxidized	1.0	3	16	FRK	10 1	slightly darker brown, occasional autolith	122680	0.004	0

Hole Number: BR-03-09

From	To	Rock Type	Py-Cpy-Mt	Ms	Veins	(CA-%)		Comments	Sample#	Cu %	Au ppm
144.30	154.60	Fine grained brown strongly oxidized	1.0	3	*16*	STR	25 1	No sample typical brown magnetic dyke. Probably related to mafic dykes with calcite stringers, infillings appear to be post monzenite			
154.60	157.60		1.0	3	*16*	STR	25 1		122681	0.003	0
157.60	159.60		1.0	3	*12*		1	minor clay gouge at 158 m	122682	0.003	0
159.60	161.60		1.0	1	*3*	FRC	30 1	fractures and fracture fillings at 30° to core axis ±manganese	122683	0.002	0
161.6	163.7	**CRYSTAL-LITHIC UNDIFFERENTIATED TUFF**									
161.60	163.70	Fine grained dark red moderately propyllitic	1.0		*0*	FCL	30 1	10 cm clay gouge, tan colour at start follwed by fragmental flow with more propylitic matrix and hematite altered phenocrysts. 10 cal more hematitic zones	122684	0.003	0.012

163.7 EOH



LEGEND

MNZ

D/PROJECT/V_PROJECTS/BRENDA/BR_TOPO.DGT

Vertical Scale
1 cm = 200 m

Horizontal Scale
1 cm = 200 m

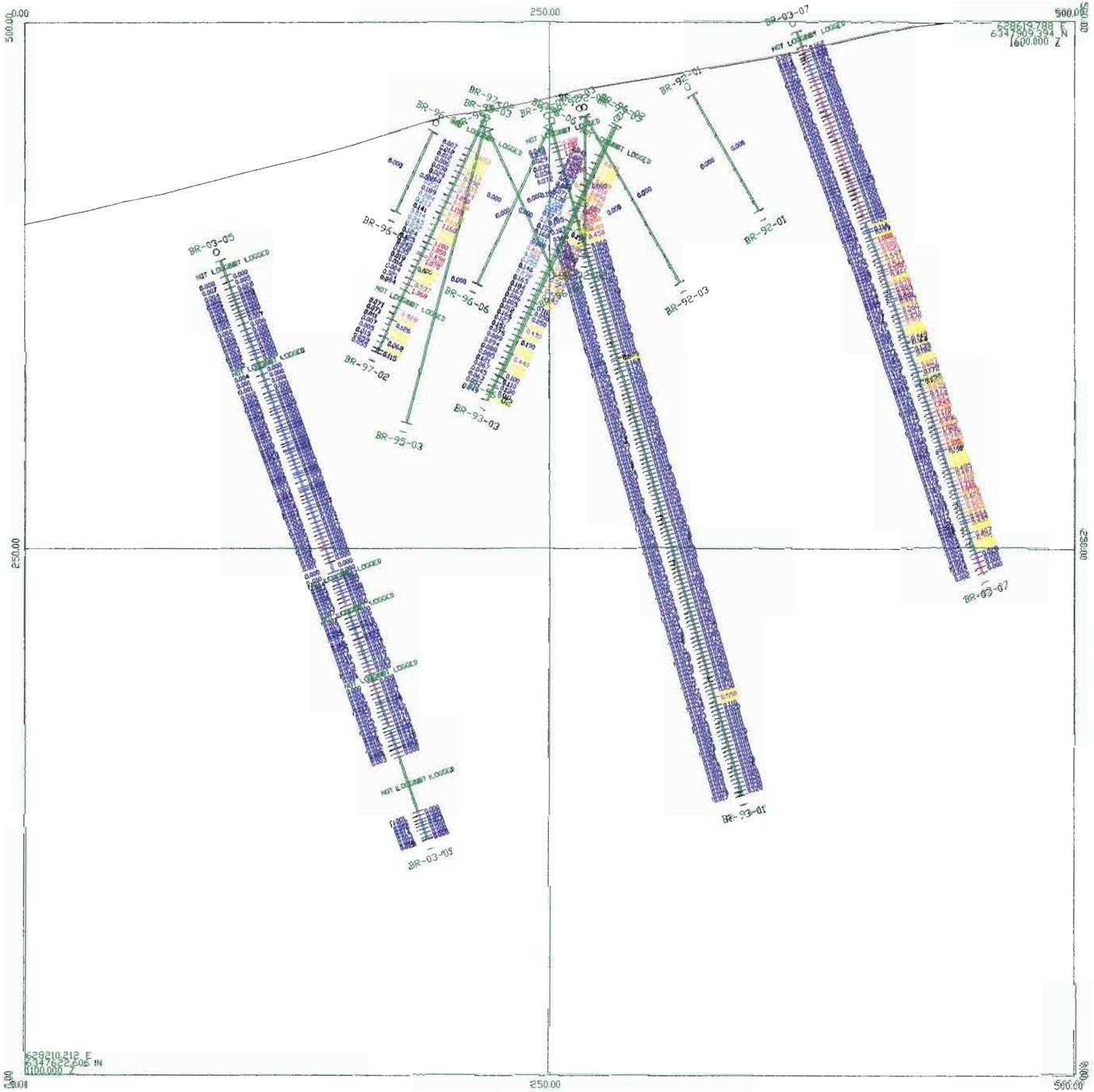
Northgate Exploration Ltd

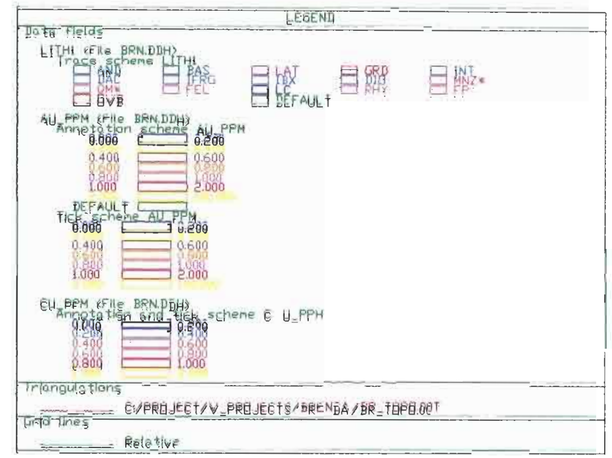
Brenda Project

BR-03-06

Figure 10

Scale	1:2000
Date	27-Apr-2004
Project	BRN
Drawn By	
Checked	
Approved	
Drawing No	Figure 10





Horizontal Scale
25 0 METRE 25
1 cm = 20.00 m

Vertical Scale
1 cm = 20.00 m

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Brenda Project

BR-03-05 and 07

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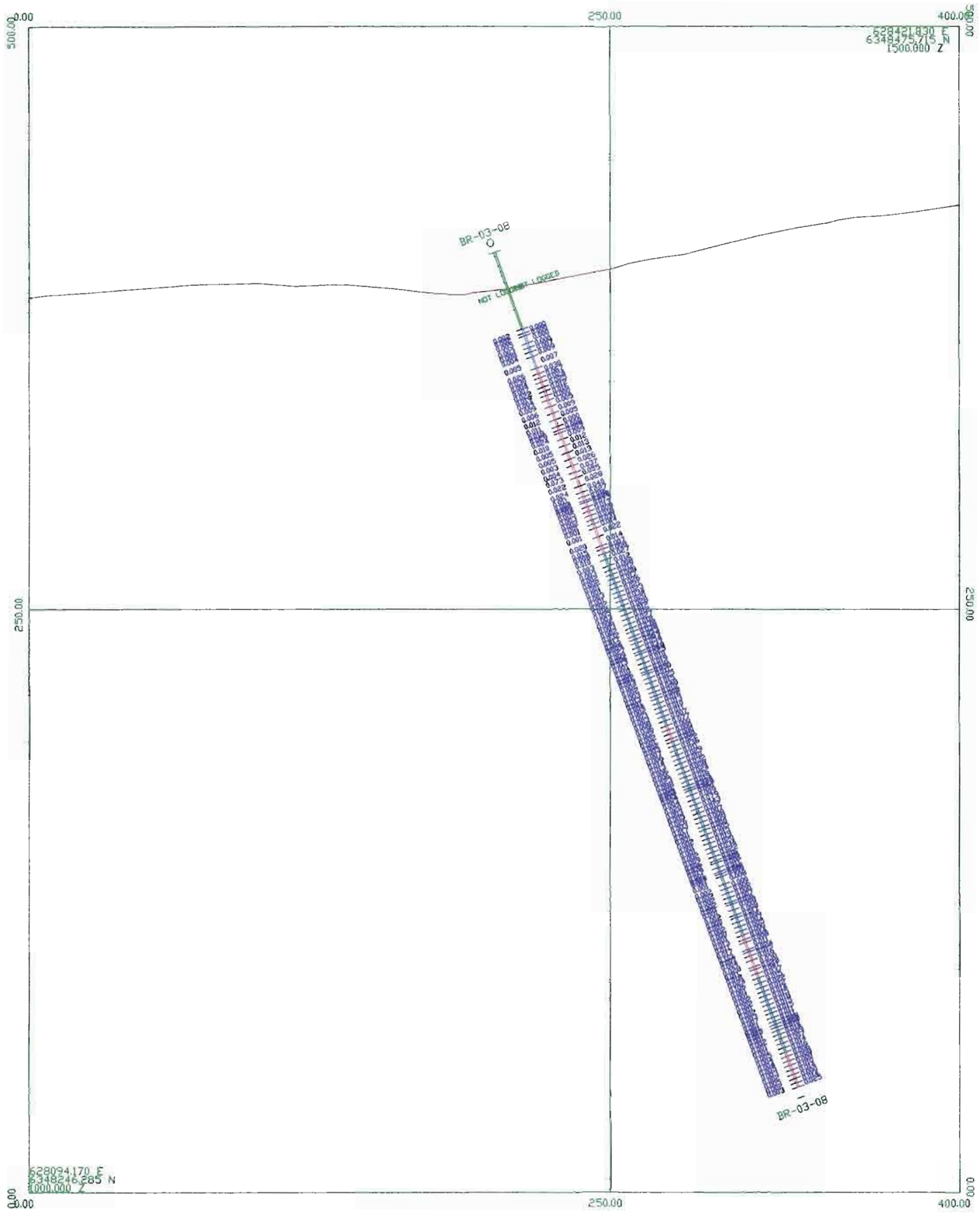
Date:	27-Apr-2004
Project:	BRN
Drawn By:	
Checked:	
Approved:	
Drawing No.	
	Figure 11



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Data fields

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AND, BAS, LAT, GRD, INT, DAC, FRG, TEX, BIO, MNZ*, QM*, FEL, LC, RHY, FP, DVB, DEFAULT

AU_PPM (File BRN.DDH)
Annotation scheme AU_PPM
0.000, 0.200, 0.400, 0.600, 0.800, 1.000, 1.400, 2.000
DEFAULT
Tick scheme AU_PPM
0.000, 0.200, 0.400, 0.600, 0.800, 1.000, 2.000

CU_PPM (File BRN.DDH)
Annotation and tick scheme C U_PPH
0.000, 0.200, 0.400, 0.600, 0.800, 1.000

Triangulations

C:/PROJECT/V_PROJECTS/BRENDA/BR_TOPO.00T

Grid lines

Relative

Vertical Scale
25 0 25 METRE
1 cm = 20.00 m

Horizontal Scale
25 0 25 METRE
1 cm = 20.00 m

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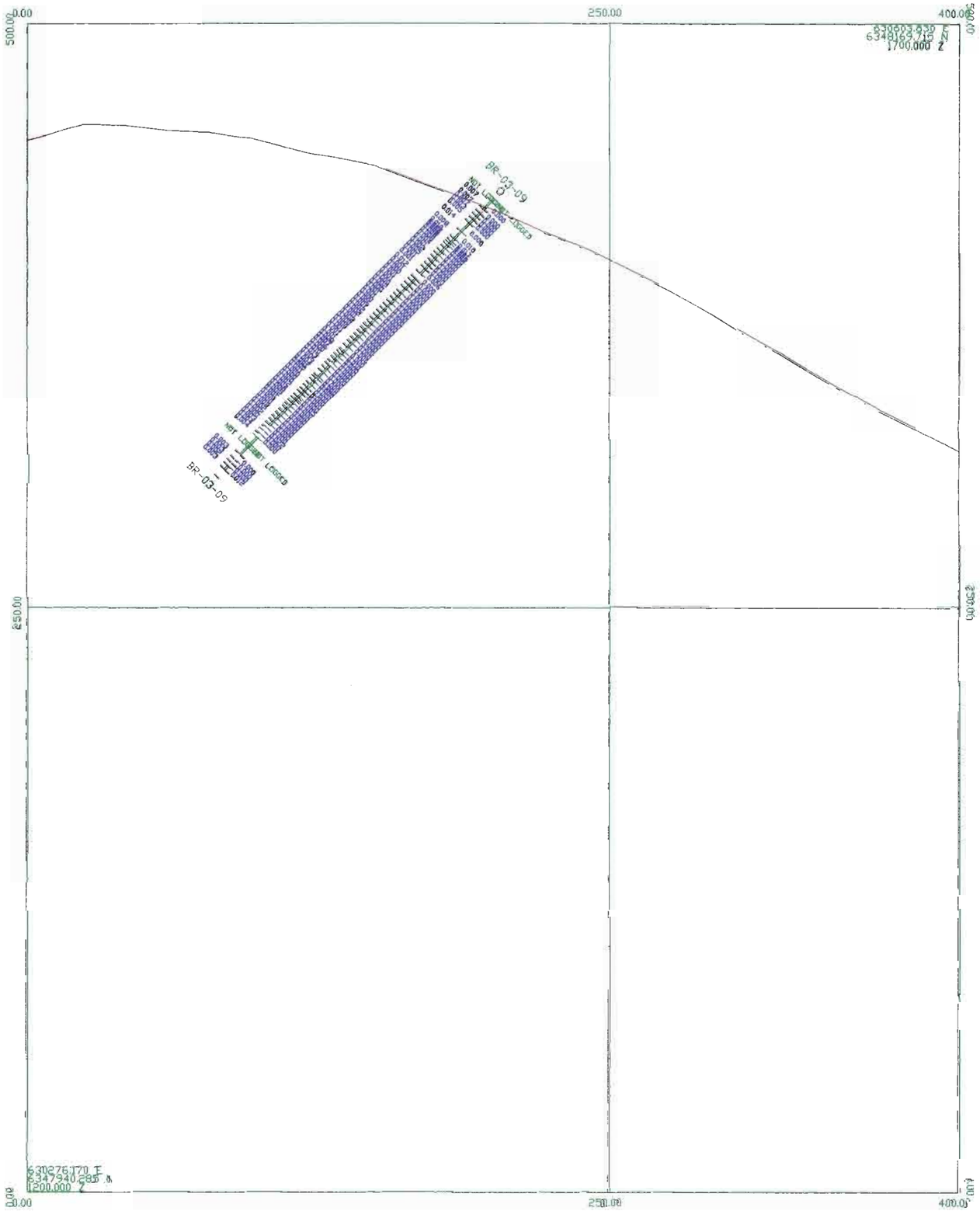
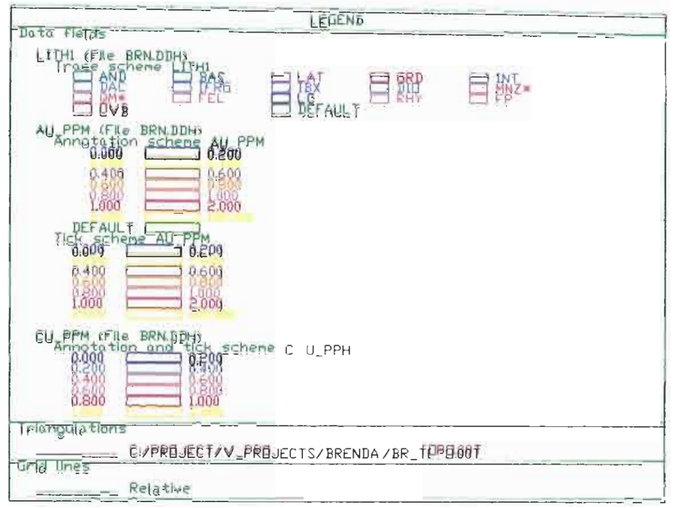
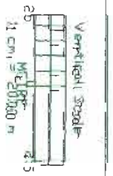
Brenda Project

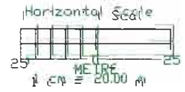
BR-03-08

Scale: 1:2000
Date: 27-Apr-2004
Project: BRN
Drawn By:
Checked:
Approved:
Drawing No. Figure 12









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Brenda Project

BR-03-09

Scale:	1:2000
Date:	27-Apr-2004
Project:	BRN
Drawn By:	
Checked:	
Approved:	
Drawing No.	Figure 13