GEOLOGICAL ASSESSMENT REPORT

ON THE

KUTCHO PROJECT:
NORTH CENTRAL BRITISH COLUMBIA

LIARD MINING DISTRICT
104I018, 019, 028, 029
58°12'N : 128°22'W

South Fork 1 (586848), South Fork 2 (586849),
South Fork 3 (586850), South Fork 4 (586851),
Trondhjemite 1 (586852), Trondhjemite 2 (586854), Trondhjemite 3 (586855)

May 24, 2009 to June 4, 2009

KUTCHO COPPER CORPORATION
OWNER AND OPERATOR

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EXECUTIVE SUMMARY

The Kutcho Project is situated within the Cassiar Mountains of northern British Columbia, 100 km east of the town of Dease Lake. Claim holdings total 12,048 hectares (120 km^2) and cover the thickest part of the Lower Triassic Kutcho Formation which hosts volcanogenic massive sulphide (VMS) mineralization. Three elongate VMS sulphide deposits have been delineated. These form a linear, shallowly-plunging, west-northwesterly mineralized trend that is 3.6 kilometres long.

Relogging of historic core from the southern area of the claims was carried out in the spring of 2009 in preparation for a surface prospecting and mapping program over the same ground later in the season. Drillholes 90K-05, 90K-07, 90K-09, 90K-13 and 75E-028 were selected because they intersect major felsic volcanic units, minor pyritic horizons and reported chert (exhalite) units. Together with adjacent drillholes 90K-15 and 90K-19, four of these drillholes comprise the only linear fence of drillholes across the southern limb of the main anticline in the Kutcho district. In the area of these drillholes, 7 kilometres southwest of the three Kutcho VMS deposits, the southern limb of this anticline exposes Kutcho Formation strata, part of the same favourable stratigraphy that hosts the VMS deposits on the north limb of the anticline.

The decision to re-log these and other historic drillholes on the southern limb of the anticline was based on substantial advances in the understanding of:

- volcanic rock textures
- characteristic features of VMS sulphide deposits
- local and regional alteration haloes associated with VMS deposits
- key structural controls to the localization of the Kutcho VMS deposits
- pathfinder elements and minerals in the Kutcho VMS camp

since these holes were drilled and logged 20 years ago.

Specific recommendations following from this study are:

- Relogging of the expensively acquired, carefully preserved, historic drillcore on this large property is a valuable exercise that must continue. Relogging historic drillcore is an essential first step before embarking on renewed mineral exploration work on any part of this property.
- Strata on the southern part of the Kutcho Property represent a significantly deeper stratigraphic interval than the mineralized horizons hosting the three VMS deposits, 7 kilometres to the northeast. The overall mineral potential of this southern rock package must be evaluated and prospected as a separate stratigraphic entity.
- The immediate area around DDH 90K-09 requires follow-up drilling.
- The immediate area around DDH 90K-07 requires follow-up drilling.
- A careful reassessment of the geology, showings, geophysics and geochemistry in the vicinity of the DDH 90K-05 is warranted.
- Re-log the remaining four drillholes through the thick mafic volcanic package that extends across the entire southern Kutcho Property so we can `fingerprint' the individual volcanic and exhalative units to aid detailed stratigraphic correlation.

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1.0 INTRODUCTION

Kutcho Copper Corporation (KCC) owns 100% of the Kutcho project in north central British Columbia. Exploration of the Kutcho property through the late 1970's and early 1980's defined three volcanogenic massive sulphide (VMS) deposits or lenses that form a gently plunging, east-west oriented, linear trend.

The largest of the deposits, the Main lens, is a near-surface sulphide deposit. The adjacent sulphide lens to the west is the Sumac. The Esso deposit is furthest to the west and lies at a depth of 400m to 500m below surface.

Beyond the immediate area of the known deposits, a regional exploration program was conducted in 1985, consisting of airborne and ground geophysical surveys, regional mapping and prospecting, and geochemical surveys. Targets delineated in this wide-ranging program were drilled in the 1990 field season (B.C. Ministry of Energy, Mines and Petroleum Resources Assessment Report 20,636). Since the completion of the 1990 drill program, no further exploration work has been conducted on the southern part of the property, despite some encouraging results.

Renewed exploration in the southern part of the KCC Kutcho Creek property is planned for the 2009 field season. In preparation for this fieldwork campaign, it was decided to spend the early spring relogging historic drillcore from this area, with special emphasis on a fence of five drillholes that provides a cross-section through the south limb of the Imperial anticline and through the same stratigraphy that hosts the three VMS deposits on the north limb of the anticline.

The results of the drillcore relogging of four 1990 drillholes and one 1975 drillhole are the subject of this report. These five drillholes are collared within the Mother 1, South Fork 2, South Fork 3, and South Fork 4 claimblocks.

1.1 PROPERTY DESCRIPTION AND LOCATION

The Kutcho Project area is situated 100 km east of the town of Dease Lake, and 330 km north of Smithers in northern B.C. (Fig 1.1). The property lies within the NTS map sheet 104I/1. Geographic coordinates for the center of the claim area are 58°12'N and 128°22'W. The KCC claims cover an area of 12,048 hectares. Claims are shown in Figure 1.2 and are listed in Appendix 1.

Capstone, through its wholly-owned subsidiary Kutcho Copper Corporation, owns the claims through two separate purchase agreements and through claim staking. One agreement is with Barrick Gold Inc. (a subsidiary of Barrick Gold Corporation) and AMI Resources Inc., who had 80% and 20% ownership, respectively, in all of the claims except the 16 SMRB claims and the 30KC claims. Ownership of the SMRB and KC claims are covered in an agreement with Sumac Mines Inc., a subsidiary of Sumitomo Metal Mining Co. Ltd. In 2008, Capstone staked 11 additional claims.

Following notice by Capstone that it has completed a feasibility study on the Kutcho Project, Barrick will have 120 days to elect to 'back-in' for a 50% interest by spending, within two years, three times Capstone's expenditures on the property. This applies only to that portion of the property on which Barrick previously held an interest.

Pursuant to the Sumac Agreement, Sumac is entitled to a royalty of 2% of net smelter returns, on the portion of the Kutcho Project it sold to the Company, between the third anniversary and the sixth anniversary of the date of commencement of commercial production, and a royalty of 3% of net smelter returns after the sixth anniversary of the date of commencement of commercial production.

Barrick and AMI are collectively entitled to royalty of 2% of net smelter returns on the portion of the Kutcho Project they sold to the Company, which royalty is shared between Barrick and AMI on an 80/20 basis, respectively.

Kutcho Copper Corporation has formally entered the Kutcho project into the British Columbia Environmental Assessment process as a step toward obtain permitting for a mining operation. Initial consultations with all appropriate government agencies, both provincial and federal, have been held along with First Nations consultations and open houses. Water balance, weather, fish, archeological and wildlife baseline studies have been completed.

Figure 1.1 Property Location Plan

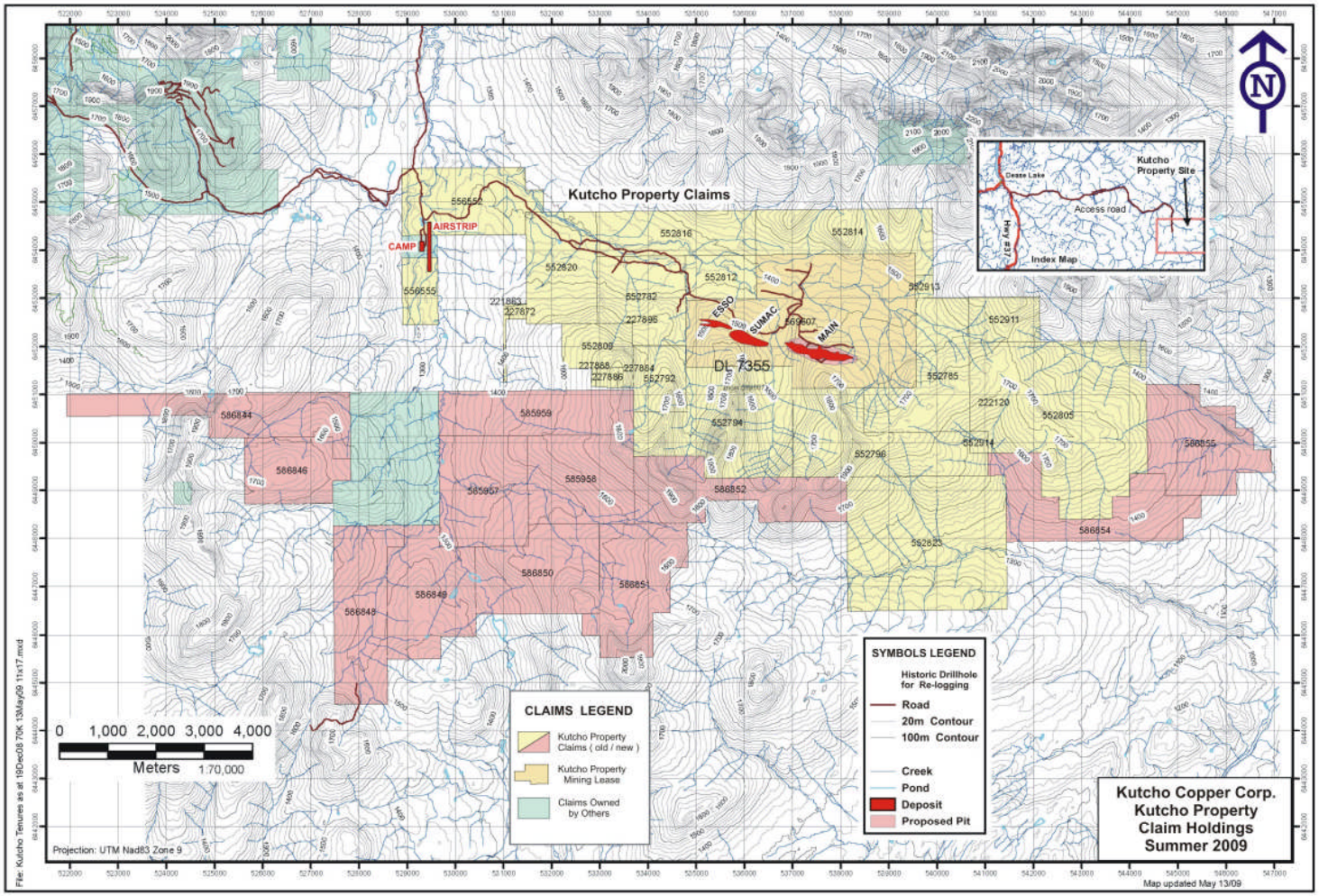

Figure 1.2 Kutcho Creek Claim Map

1.2 ACCESS, PHYSIOGRAPHY AND CLIMATE

Access to the property is by fixed-wing aircraft and helicopter from Smithers or Dease Lake to the 900 metre long gravel airstrip located at the junction of Kutcho and Andrea Creeks. The deposit area of the property is connected to the airstrip by an 8 km road; currently this road has had culverts removed and is only passable to four wheel drive vehicles with good clearance. Land access via the 125 km tote road to Dease Lake is available to four wheel drive vehicles during late summer and early fall but passage is somewhat dependant upon weather due to extensive muddy sections.

The property is located within the Cassiar Mountains, just to the north of the continental divide between the Arctic and Pacific watersheds. The area is moderately rugged with elevations ranging from 1,400 to 2,200 metres. Most of the area is alpine with treeline at approximately 1,500 metres. Structural fabric and two periods of glaciation have produced an intersecting pattern of east-west and north-south ridges and valleys. The major valleys are commonly filled with a deep layer of glacial till and outwash gravels.

Winters are cold and dry, while the summers are cool and moist. Average annual temperature is -1^{o}C with average annual precipitation of 50 cm, approximately half of which occurs as snow. Snow cover can persist for nine months of the year, particularly on north-facing, shaded slopes.

1.3 EXPLORATION HISTORY

Mineralization was first discovered on the Kutcho property in 1968 by an exploration joint venture operated by Imperial Oil Ltd. The discovery was made by prospecting follow-up of stream sediment geochemistry anomalies from samples collected during a regional drainage survey. Twenty claims were staked by W. Melnyk directly over the undiscovered Kutcho Main Lens sulphide deposit. These claims were allowed to lapse when the other partners in the joint venture declined to fund further exploration. Imperial Oil returned to the area in 1972, after the statutes of the joint venture agreement expired, in order to re-stake the area. However, Sumac Mines Ltd. (the Canadian exploration subsidiary of Sumitomo) had conducted their own regional stream sediment sampling program earlier that season and in response to anomalous samples, R. Britten staked 8 ‘two-post’ claims along the anomalous stream, and an additional 8 claims (SMRB claims) along the geological strike direction resulting in the cruciform claim outline overlying the western part of the Kutcho Main Lens sulphide deposit and the whole of the Sumac deposit. Imperial Oil (later Esso Minerals Canada Ltd.) then staked a much larger area surrounding Sumac’s claims.

Beginning in 1973, exploration work was carried out by both Sumac and Esso and early success prompted additional staking. Diamond drilling commenced in 1974 and by 1982 approximately 60,000 metres had been drilled by both companies, defining three sulphide lenses. Additionally, Esso had drilled a number of exploration targets in other areas of the property with moderate success. Environmental, metallurgical and engineering studies were begun by both groups in 1980. A partnership agreement on engineering and development work was signed by Esso and Sumac in 1983 but was retroactive to 1981; the year Sumac

began work driving the adit in order to collect a 100-tonne bulk sample. The agreement was a 50:50 joint venture for development work, and culminated in a pre-feasibility study by Wright Engineers Limited in 1985. The pre-feasibility study indicated an 11.3% internal rate of return (IRR) when using a copper price of US$0.95. Given the risk factors involved and long-term price projections for copper below the 95 cent level, the companies put the project on hold pending further exploration results. Limited exploration on Esso's claims south of the main mineralized trend between 1985 and 1988 and the numerous earlier geophysical surveys suggested limited potential for additional shallow open-pit mineralization.

In 1989, Esso sold most of its mining assets to Homestake Canada Ltd. In 1990, Homestake optioned the Kutcho property to American Reserve Mining Corporation who funded a $1.1M exploration program (Homestake remained the operator) which included 7,031m of drilling in 28 holes (Holbek *et al*, 1991) mostly in outlying target areas and thereby earned a 20% interest. Exploration was successful in confirming the presence of extensive areas of favourable geology and alteration indicative of hydrothermal activity, but failed to discover zones of potentially economic mineralization. For example, 10 km southwest of the Kutcho deposit, a narrow zone of cryptocrystalline massive pyrite with a strike length in excess of five kilometres was intersected in four widely spaced drill holes but was barren of base or precious metals. American Reserve carried out engineering studies but did no further exploration work and relinquished the option in 1993 but retained a 20% interest in Homestake's property.

The property was optioned to Teck-Cominco Metals Ltd. in 1992. Teck-Cominco carried out deep penetration EM geophysical surveys (UTEM) over the Esso zone with the goal of defining additional conductors along the Kutcho trend. Due to extensive cover of conductive argillaceous units in the hanging wall, the UTEM system was unable to detect the Esso deposit or other conductors at depth, consequently Teck-Cominco dropped the option. Homestake was purchased by Barrick Gold Corp in 2003.

Extensions of the favourable Kutcho stratigraphy to the west have been staked and explored by various companies in the past. Shortly after the discovery of the Kutcho deposits, Noranda staked the Kutcho formation to the west of Kutcho Creek. Noranda conducted geophysical surveys, and completed a small drill program of three drill holes in 1990. The claims were allowed to lapse and were re-staked in 1995 by Gary Belik. Mr. Belik carried out a detailed mapping program and optioned the claims to Atna Resources in 1997. Atna conducted a UTEM geophysical survey and an extensive drill program of nine holes. Results of Atna's work were mixed, and although no deposits were discovered, significant weak to moderately mineralized alteration zones were intersected. Structural complexity and lack of clear geophysical targets prevented additional work and the option was terminated.

Negotiations by Western Keltic Mines Inc. to purchase the property from Barrick and Sumitomo were initiated in 2003 and concluded in early 2004. Western Keltic carried out diamond drilling within the Kutcho and Esso deposits during 2004 to confirm historical results and to obtain material for metallurgical studies (Holbek and Wilson, 2005).

From July to September, 2005, a 31-hole infill diamond drill program totaled 6342m. In the deposits area, sixteen holes extended and delineated the up- and down-dip limits of the Kutcho deposit and the underlying Footwall Zone. Four holes plus four branch holes located the western edge of the Esso deposit, and four holes discovered a higher grade core and the western limit to the Sumac Deposit. Regional exploration holes included one hole at the Jack Target which confirmed a weakly mineralized horizon 5km east of the Kutcho deposit, and one hole at the North Graben Target that aided in the geological understanding of the rhyolite flow-dome complex.

In 2006, Western Keltic Mines Inc. completed an in-fill diamond drilling program on the Kutcho property from mid-September to the end of October. A total of 1,870 metres were drilled in 23 BTW diameter diamond drillholes at a total cost of approximately $1 million.

In 2007, Western Keltic Mines focused on several aspects of pre-mine development, most of which had a field component. Logistical work involved expansion to a 45 man camp. Baseline environmental studies encompassed acid rock drainage, air quality, archaeology, fisheries, groundwater hydrology and hydrogeology, meteorological data collection, terrain mapping, traditional use characterization, plus vegetation and wildlife inventories. Technical surveys concentrated on road design, layout and survey; geotechnical foundation studies including seismic plus drill and test pit examination of soil and rock depths, composition and stability; surveying of claims, mining lease and drill collar locations; and geological mapping of potential limestone horizons in Andrea Creek. Engineering studies focussed on mine and mill layout, pit stability and design, database verification and resource calculation, geohazards identification, metallurgical studies, and water balance calculations. Non-engineering work included development of safety, environmental and First Nations policies, operational protocols and project scheduling. Local area consultations included discussions toward impact benefits agreements and well as the signing of MOU’s regarding ports, and with First Nations regarding project review participation and funding.

In 2008, Sherwood Copper Corporation purchased Western Keltic Mines Inc. and all assets and amalgamated these with Sherwood’s wholly-owned subsidiary which was renamed Kutcho Copper Corporation.

Between May and August of 2008, Kutcho Copper Corporation completed a major diamond drill program entirely within the perimeter of the Main lens. 9,905 metres of drilling in 78 holes (plus three abandoned holes) provided core for assay and metallurgical processing. Based on these drill results, a new resource calculation was prepared (Appendix II).

In late 2008 Sherwood Copper Corporation merged with Capstone Gold Corporation, forming Capstone Mining Corporation.

1.4 2009 EXPLORATION PROGRAM

Re-logging historic drillcore from the southern area of the claims was carried out in the spring of 2009 in preparation for a surface prospecting and mapping program over the same ground later in the season. Drillholes 90K-05, 90K-07, 90K-09, 90K-13 and 75E-028 were

selected because they intersect major felsic volcanic units, minor pyritic horizons and reported chert (exhalite) units. Together with adjacent drillholes 90K-15 and 90K-19, four of these drillholes comprise the only linear fence of drillholes across the southern limb of the main anticline in the Kutcho district. In the area of these drillholes, 7 kilometres southwest of the three Kutcho VMS deposits, the southern limb of this anticline exposes Kutcho Formation strata, part of the same favourable stratigraphy that hosts the VMS deposits on the north limb of the anticline.

2.0 GEOLOGY

2.1 REGIONAL GEOLOGY

The Kutcho property lies within the King Salmon Allochthon (KSA), a narrow belt of Permo-Triassic island-arc volcanic rocks (Kutcho Formation) and Jurassic sedimentary rocks. These strata are sandwiched between two northerly-dipping thrust faults, the Nahlin fault to the north, and the King Salmon fault to the south (Fig. 2.1).

Kutcho Formation is thickest in the area where it hosts the volcanogenic massive sulphide deposits due in part to primary deposition, but also to stratigraphic repetition by folding and, possibly, thrusting. KSA is terminated to the east, near the eastern edge of the property, by the strike-slip Kutcho fault (Gabrielse, 1978) but KSA extends to the west for hundreds of kilometers. However, Kutcho Formation volcanic rocks thin to the west and are poorly exposed from a point 10 km west of Kutcho Creek all the way to Dease Lake.

KSA stratigraphy consists primarily of the Kutcho Formation, overlain by the limestone of the Upper Triassic Sinwa Formation, which in turn is overlain by sediments, predominately argillite, of the Lower Jurassic Inklin Formation. Major folds are clearly delineated by the outcrop trace of the Sinwa limestone or by the contact between the Kutcho and Inklin Formations where Sinwa Formation is absent (Fig. 2.2).

2.2 PROPERTY GEOLOGY

2.2.1 Stratigraphy

Stratigraphy of the Kutcho property has been described by Thorstad (1983), Bridge (1984) and Holbek (1985) and is only be briefly reviewed here. Figure 2.3 shows the property geology map, and a generalized stratigraphic section is presented in Figure 2.4. Stratigraphy is best understood in the upper part of the Kutcho Formation where detailed drill information is available. The footwall stratigraphy, particularly away from the deposit area, is known only from surface mapping.

The lowest rocks in the section include interlayered basalt, basaltic tuff and wacke, rhyolitic lapilli tuff and trondhjemite intrusive. The mafic rocks are fine to very fine grained, chloritic, and equigranular to weakly porphyritic. The lapilli tuffs are pale grey, siliceous and commonly contain very fine quartz phenocrysts and lenticular fragments from 0.5 to 3 cm in length. Textures can only be seen on weathered, lichen-free, surfaces. The trondhjemite is described by Pearson and Panteleyev (1975) and Bridge *et al.* (1983) as fine-grained,

equigranular and plagioclase-rich. A weak but pervasive carbonate-chlorite-pyrite alteration of this unit is discernable.

Rocks overlying the basalt-lapilli tuff package have been termed the “ore-sequence” and consist of lapilli tuffs, crystal-lithic tuffs, quartz and quartz-feldspar crystal tuffs. Away from the deposit area, these units tend to be thin, interbedded, and variably but weakly altered. Fine quartz-crystal ash tuff with silica-rich laminations and rare thin zones of ferroan dolomite typically mark the distal exhalative zone. The sulphide zones occur at, or near to, the contact between footwall lapilli tuff and hangingwall quartz crystal tuff. In general both lapilli fragments and phenocrysts are much coarser grained in the vicinity of the deposits, and become progressively finer grained to the south and west. The quartz-feldspar crystal tuff is quartz-rich near the deposits and to the south becomes more feldspar-rich.

A large zone of feldspar crystal tuff with almost no free quartz occurs a few hundred metres south of the sulphide zones and it is indeterminate whether this unit is footwall, hangingwall, or a facies equivalent to the quartz-feldspar crystal tuff. An interesting feature is the occurrence of a coarse breccia texture within the quartz-feldspar crystal tuff immediately and are identical to crystal tuff matrix except for an increase in the amount of epidote to 10 percent. This feature has been interpreted to be a debris flow of semi-consolidated crystal tuff shed from a flow-dome complex, and trapped in a graben or half-graben structure which hosts the sulphide lenses.

Rocks between the ore sequence and the overlying conglomerate unit are referred to as the Tuff-Argillite Unit (TAU) and consist of gabbroic to basaltic intrusive sills and dikes, greywacke and argillite. In the area of the deposit the gabbroic units are coarse-grained and are commonly referred to as metagabbro. Higher in the section and both to the east and west from the Kutcho deposit this mafic unit becomes much finer grained and an intrusive origin is not so clearly identified. The amount of argillite increases in a westerly direction supporting the concept that this direction is towards the marine basin. The base of the TAU is interpreted to be a thrust fault and there are numerous other fault zones within the unit as noted in drill core and the adit.

Overlying the TAU, and truncating it to the west is the Kutcho Conglomerate. This unit is a heterolithic, fragment-supported conglomerate composed of sub-rounded clasts, ranging in size from 1 to 38 cm (long axis) and derived from all of the underlying lithologies. The conglomerate is conformably overlain and transitional into the Sinwa limestone, which in turn appears to be conformably overlain by Jurassic Inklin Formation argillite.

Kutcho Formation is Permo-Triassic. Thorstad (1983) determined an Upper Triassic age on the basis of Rb-Sr dating of volcanic rocks and regional stratigraphic constraints. Subsequent work by F. Childe at the Mineral Deposit Research Unit of The University of B.C. in 1996 indicates that ages range from uppermost Permian to Lower Triassic.

2.2.2 Structure

Rocks of the Kutcho Formation are characterized by planar foliation that has a relatively constant strike direction of 270 to 290 degrees with northerly dips from 45 to 65 degrees. The dip of foliation decreases with structural depth. This foliation is part of the stress envelope associated with the regional thrusting event that created the King Salmon Allocthon.

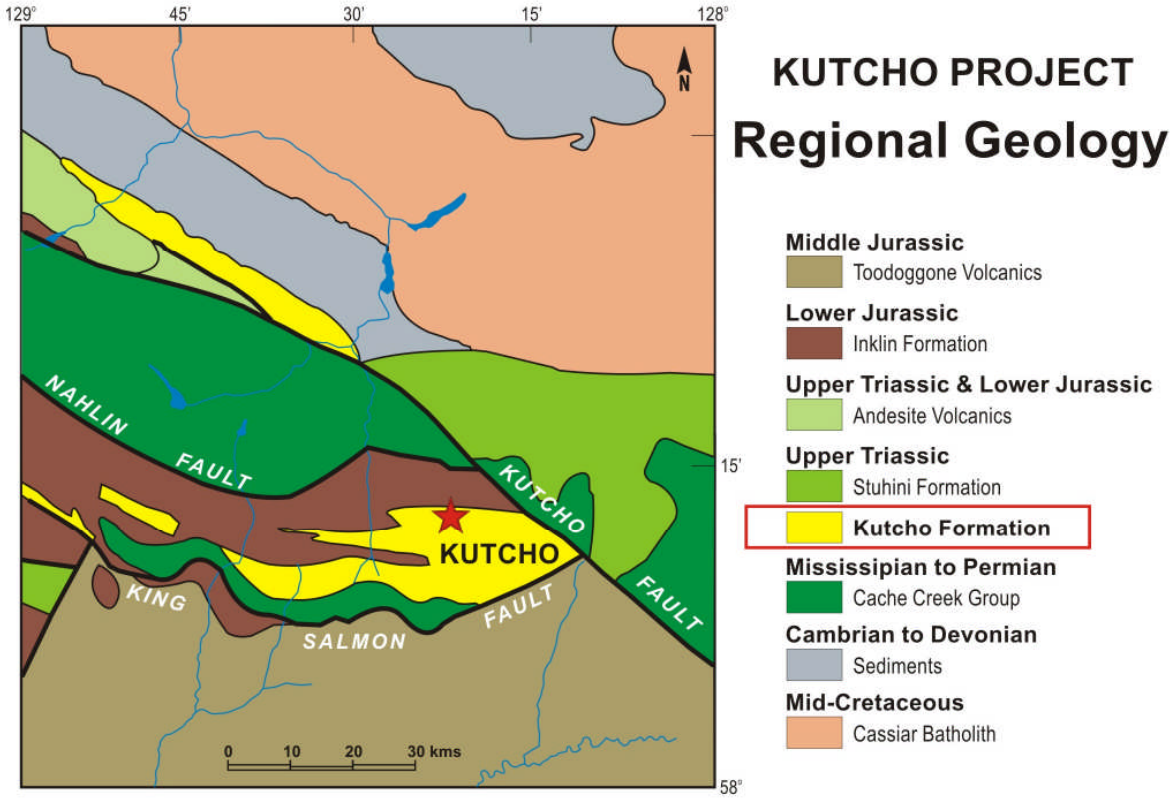

Figure 2.1 Regional Geologic Setting of the Kutcho Project

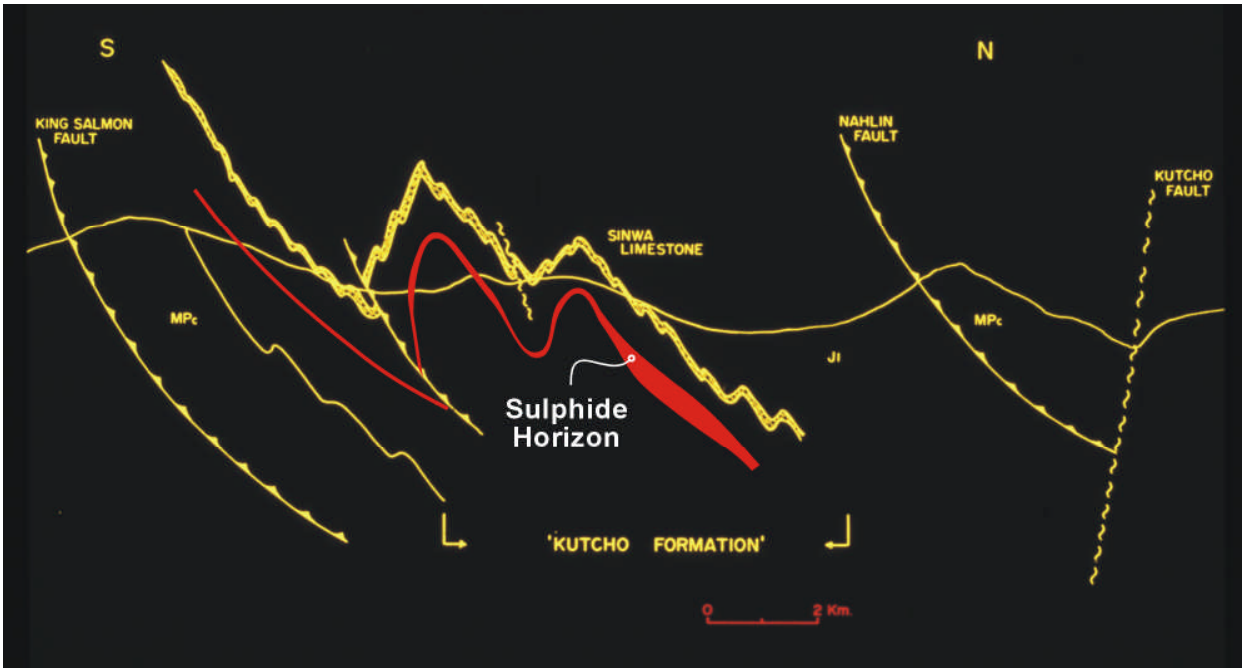

Figure 2.2 Schematic cross-section of the King Salmon Allochthon in the Kutcho deposit area

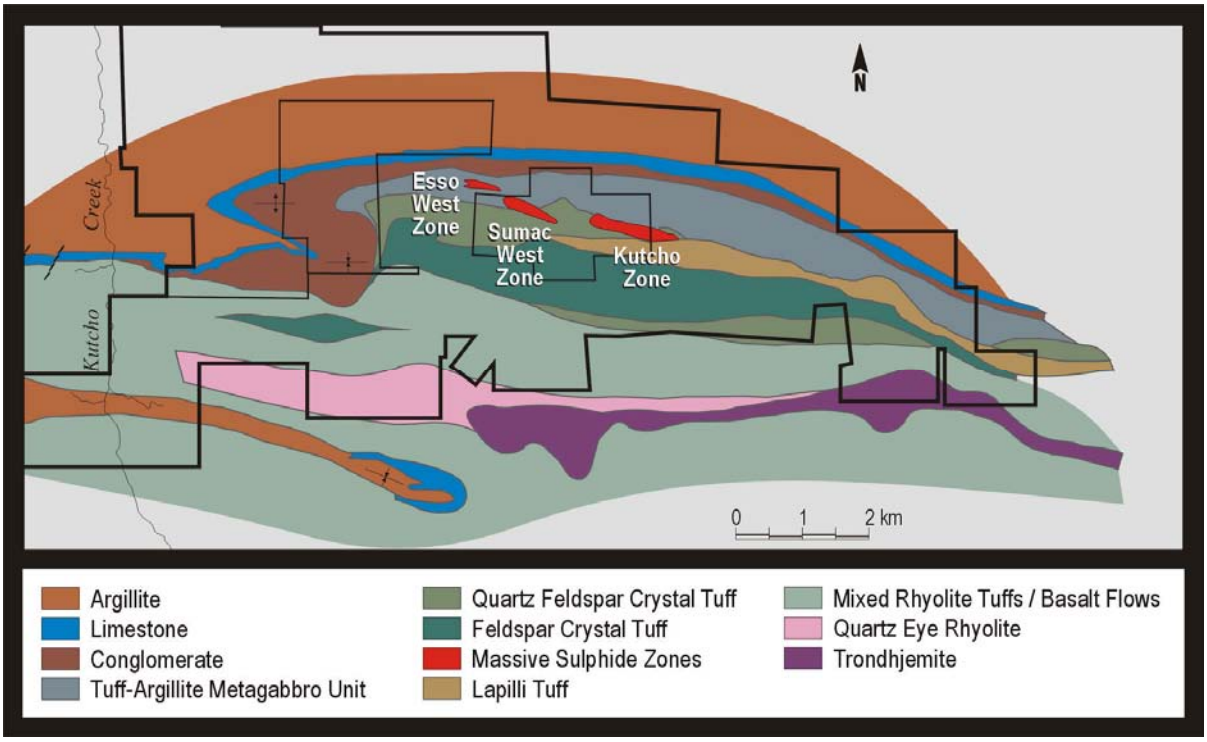

Figure 2.3 Kutcho Property Geological Plan (with historical claim outline and surface projection of sulphide deposits)

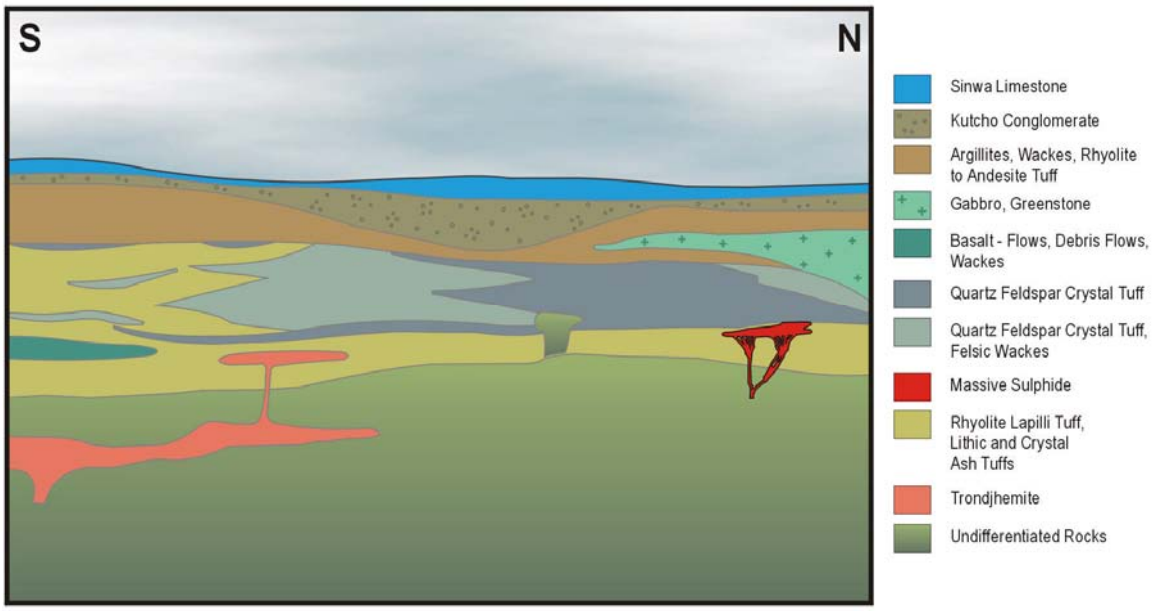

Figure 2.4 Schematic Stratigraphic Section (10x Vertical Exaggeration)

Folds are open to tight, asymmetrical, inclined and verging to the south. Folds plunge from 0 to 30 degrees west. Folds are most evident in well-bedded, competent units; fold data is heavily biased to the western property area, where these units predominate.

Structures that critically affect stratigraphic interpretation are the foliation-parallel thrust faults. These are difficult to detect in outcrop but can be inferred from foliation intensity, missing stratigraphy, contact geometry and topographic evidence. Faults of this type are considered to be present over the entire property.

3.0 MINERALIZATION AND ALTERATION

Three deposits comprise the Kutcho project. These form a west-plunging linear trend (Figure 2.3). From east to west the deposits are the Main, Sumac and Esso deposits (these deposits were previously termed Kutcho, Sumac West and Esso West respectively). The Main deposit crops out at its eastern end. Esso is blind and lies more than 400m below surface. A combined mineral resources for the three deposits is summarized in Table 3.1

CLASSIFICATION	m Tonnes	% Cu	% Zn	g/T Au	g/T Ag
Measured	**5.421**	**2.15**	**2.86**	**0.34**	**31.4**
Indicated	**4.994**	**2.14**	**2.83**	**0.39**	**33.5**
MEASURED and INDICATED	**10.415**	**2.14**	**2.85**	**0.36**	**32.4**
Inferred	**1.893**	**2.09**	**2.93**	**0.46**	**33.6**

Table 3.1 Measured, Indicated and Inferred Mineral Resources for the Kutcho Property (Resource updated by KCC on February 9, 2009. Tabulated at a 1.5% copper cut-off for all three deposits.) A detailed resource tabulation is included as Appendix II.

3.1 DEPOSIT TYPE

Mineralization at the Kutcho project is part of the volcanogenic massive sulphide (VMS) family of deposits. These deposits are a major source of copper, zinc, lead, silver and gold around the world. Speculation about the origin of these deposits goes back to mid 1850's when various French and English scientists postulated chemical precipitation from seafloor volcanic activity (Stanton, 1991). In the early 19th century, Japanese workers documented the sulphide textures preserved in the Kuroko deposits of Japan and the association of these deposits with rhyolite domes, developing the "submarine sinter theory". However, this work did not attract much attention and genetic theories or models of ore formation of this deposit type did not really gain international acceptance until similar observations were published by other workers in the 1950's and 1960's. Discovery of the Red Sea brine deposits in 1965 provided substantial impetus for the proponents of the "submarine exhalative" model. A certain amount of controversy between syngenetic and epigenetic theories continued through the 1970's, but with the advent of deep-sea submersibles and the filming of black and white "smokers" or hydrothermal vents in volcanic rift zones on the sea-floor, scientific models could go to a new level of detail.

VMS deposits have been classified into various subtypes depending upon the composition of the host rocks and the mineralization, and the tectonic setting. The Kutcho deposits are VMS deposits of the Kuroko type or Felsic volcanic-Siliciclastic depending upon the classification scheme. In this model, mineralization is related to felsic volcanism in island-arc or back-arc tectonic settings. A significant feature of VMS deposits from an exploration perspective is their tendency to occur in clusters. Larger VMS camps have up to 25 discrete deposits, and extensive mineralized districts are common.

Features of Kutcho deposits suggest that they formed at or near the seafloor in a structurally controlled depression, such as a half-graben. The VMS deposits at Kutcho have some features that are not common to this class of deposits: the absence of lead and barite is likely due to the low potassium content of the volcanic hostrocks (and presumably the associated rhyolite dome) and the presence of abundant carbonate of probable exhalative origin.

Alteration associated with VMS deposits is well documented and provides a valuable exploration tool, since the volume of altered rock is much larger (10 to 100 times greater) than the actual sulphide deposit, providing a larger exploration target. Extensive studies of the alteration around the Main (Kutcho) deposit have been completed and the alteration is chemically well-zoned about the hydrothermal vent area. Applying this known zonation, geochemical analysis of drill core within the alteration zone provides vectors towards a hydrothermal vent area and, hopefully, new sulphide deposits.

Geophysical techniques such as electro-magnetic (EM) and gravity surveys are useful for locating conductors or possible sulphide concentrations. EM methods can be used in airborne and ground surveys but can also be used within drillholes to locate “off-hole” conductors, thereby effectively increasing the search area of a drillhole. Many airborne and ground geophysical surveys have been completed on the Kutcho property and most high-priority targets have been investigated.

3.2.1 Main (Kutcho) Deposit

The Main deposit has an elliptical, lenticular shape with approximate dimensions of 1,500 m length, 260 m width (down-dip) and 20 m thickness (34 m maximum thickness). The long axis of the deposit plunges to the west-northwest at 12 degrees. The deposit is approximately conformable with stratigraphy. There is a gentle warping of the deposit such that the dip of the deposit changes from east to west and north to south. The shallowest dip, about 38^{o}, occurs at the southeastern edge and becomes progressively steeper, to about 63^{o}, at the northwestern edge. In general, the up-dip edge of the sulphide lens is narrow and pinches out, whereas the down-dip edge is thick and interlayered with tuffaceous rock (Fig. 3.1).

Sulphide mineralogy of the deposit is relatively simple and consists of pyrite, chalcopyrite, sphalerite and bornite, with minor chalcocite, tetrahedrite, diginite, galena, idiaite, hessite and electrum. Gangue minerals include quartz, dolomite, ankerite, sericite, gypsum and anhydrite. Fluorite and barite have been observed but do not occur in significant amounts.

Interpretation of the shape of the sulphide zone, taken together with the observed volcanic and depositional textures of the enclosing rocks, suggest that the sulphide mineralization was deposited in a structural depression, likely a half-graben. The internal stratigraphy of the Main deposit was determined by detailed drillcore logging along a single longitudinal section of drill holes (Figure 3.2; Holbek and Heberlein, 1986). The deposit appears to have formed from three hydrothermal-depositional cycles that begin with barren pyrite which grades into a copper-rich middle and zinc-rich top. Depositional cycles are commonly separated by layers of exhalative quartz and/or carbonate and minor volcanic ash. However, post-depositional hydrothermal activity resulted in sulphide replacement mineralization which tends to blur grade and cycle boundaries in some areas. Additional features such as an irregular depositional surface and localized slumping of sulphide mineralization or chimney collapse, and late-stage (post depositional) hydrothermal activity also cause complexity to the internal sulphide stratigraphy. Areas of late overprinting by oxidized copper species, and enrichment in precious metals, are interpreted as indicators of vent areas and occur along a linear trend on the down-dip side of the deposit with two "hot-spots" near each end of the deposit. However, no areas of 'classical' copper-rich footwall stringer mineralization have been encountered by drilling.

The upper contact of the sulphide mineralization is sharp with almost no sulphide minerals occurring in hangingwall rocks with the exception of scattered coarse crystals of porphyroblastic pyrite. However, sericite alteration of feldspar in the hangingwall strata is gradational from very weak at distances of up to 50m above the sulphide contact to intense from 1m to 10m above the sulphide lens. It is common for a shear zone to occur at the sulphide-schist contact which varies from 20cm to a maximum of 200cm in thickness and in many drillholes this hangingwall fault carries some grade. The base of the deposit consists of nearly barren massive pyrite with interstitial quartz. The contact between 'ore' and the footwall pyrite zone can be either gradational or sharp. Below the footwall pyrite zone is quartz-sericite schist with bands of generally barren, massive to semi-massive pyrite. The footwall pyrite content diminishes with depth away from the deposit, but extends to a maximum depth of 200m below the central part of the deposit. Although the footwall material appears to be of low competence in drillcore, it holds up very well in the underground adit.

3.2.2 Sumac Deposit

Sumac deposit has not previously received much attention due to its relatively low grades. It has been intersected in just 14 drillholes. A resource estimate is presented in Section 5.2.

Sumac mineralization is massive to banded pyrite with varying amounts of chalcopyrite and sphalerite, but lacking bornite. The deposit is oval, 300m long, 200m wide and from 20m to 32m thick. Hangingwall alteration is similar to the Main lens, but the footwall contains less pyritic banding, progressing much sooner into chlorite-altered lapilli-ash tuff.

The shape of the deposit is based on contours generated by a Mise à la Masse or downhole chargeability geophysical survey carried out during the early days of exploration. This survey was conducted by putting a transmitter electrode down the

drillhole and grounding it against the sulphide zone. Then chargeability is measured from surface by a receiver array run along a grid of stations.

3.2.3 Esso Deposit

Esso deposit was discovered by following the trend in mineralization westward beyond the Main and Sumac areas. The deposit lies between 400m and 520m below surface. Like the others, Esso is an elongate lens with dimensions 680m long, 110m wide and up to 24m thick. The deposit consists of two discrete lenses; a larger lower lens and a smaller upper lens. Drilling results suggest that the two lenses may be connected at some location, rather than displaced by faulting. There is a zonation in thickness and grades from the central area of the larger lens. Mineralization in Esso lens is higher grade than either the Main or Sumac deposits, but displays similar mineral zonation with either copper-rich or zinc-rich layers or zones. Hangingwall and footwall alteration is similar to the Main lens and three-dimensional modeling indicates that these two deposits lie along the same stratigraphic horizon.

Drillholes were spaced approximately 10m to 30m along sections and sections are variably spaced, between 60m and 120m. Mineralization which was located within 30m of a drill hole was classified as indicated, with the remainder classified as inferred. Approximately 50% of the mineralization was within 30m of a drillhole. The resource estimate is based on 43 drill intersections.

3.2.4 Other Mineralization

Other zones of mineralization on the Kutcho Property include the Footwall zone, and the Jenn area. The Footwall zone occurs approximately 100m stratigraphically below the footwall of the Main lens, and extends up-dip to surface in two locations. Footwall zone is 2m to 5m thick, and relatively zinc-rich compared to Main lens. Didur (1979) calculated an inferred resource estimate using a polygonal method, of 230,000 tonnes grading 1.47% Cu, 5.52% Zn, 43.7 g/t Ag and 0.4 g/t Au.

The Jenn claims at the eastern end of the property received a fair amount of exploration attention by Esso. Although significant alteration and some local mineralization were intersected, no resources have been defined in the Jenn area. Folding appears to limit the down-dip potential in this area but revisions to the structural interpretation are likely and detailed geophysical surveys may enhance the area's potential.

** Although the resource estimates described above pre-date the Standards on Mineral Resources and Reserves Definitions and Guidelines adopted by CIM council on August 20th, 2000, the use of the terms: Indicated and Inferred have been used and have the same meanings as the CIM definitions.*

4.0 2009 DRILLCORE RELOGGING

4.1 INTRODUCTION

Relogging of historic core from the southern area of the claims was carried out in the spring of 2009 in preparation for a surface prospecting and mapping program over the same ground later in the season (Figure 4.1). Drillholes 90K-05, 90K-07, 90K-09, 90K-13 and 75E-013 were selected because they intersect major felsic volcanic units, minor pyritic horizons and reported chert and carbonate (exhalite) units. Two of these holes also make up the southern part of a line of four drillholes that comprise the only linear fence

of drillholes across the southern limb of the main anticline in the Kutcho district – the Imperial anticline. In the area of these four drillholes, 7 kilometres southwest of the three Kutcho VMS deposits, the southern limb of this anticline exposes the same favourable stratigraphy that hosts the VMS deposits on the north limb of the anticline.

The decision to re-log these and other historic drillholes on the southern limb of the Imperial anticline was based on substantial advances in the understanding of:

- volcanic rock textures
- characteristic features of VMS sulphide deposits
- local and regional alteration haloes associated with VMS deposits
- key structural controls to the localization of the Kutcho VMS deposits
- pathfinder elements and minerals in the Kutcho VMS camp

since these holes were drilled and logged 20 years ago.

Our logging technique incorporates the lithological subdivisions developed and refined at the Kutcho Property through the exploration campaigns of the past 35 years. In addition, during 2008, Kutcho Copper Corporation developed a logging system incorporating geometallurgical best practices for description and classification of sulphide mineralisation. This technique is now applied in logging all new core and all historic core on the Kutcho property.

4.2 GEOLOGY OF DDH 90K-05

This drillhole was collared to test an EM conductor which remains unexplained. The hole also tests a horizon of pyritic chert that is well-exposed in a creek canyon 190 metres WSW of the collar The hole encounters an important sequence of felsic volcanics and thick exhalative chert and lesser carbonate units with minor associated stratabound pyrite. This drill intersection itself does not require direct follow-up, but it reveals a succession of favourable strata and quiescent conditions that should prompt a re-evaluation of existing stream sediment and soil geochemical survey results in this area, geophysical targets and a new detailed mapping and prospecting examination of the surface exposures of the area. The nearest drillhole is DDH 90K-11, 1,100 metres to the WNW. The nearest drillhole to the east lies more than 4km away.

4.3 GEOLOGY OF DDH 90K-07

This drillhole was drilled to test an EM conductor. The anomaly has been attributed to the semi-massive pyrite-pyrrhotite interval at 375.52m to 376.25m, but this is unlikely given the depth to this thin interval. The detailed corelog for this drillhole is included in this report as Appendix IV; the graphic log is displayed as Figure 4.3.

This drillhole intersected approximately equal volumes of felsic and mafic tuff to roughly 200 meters depth. Below this, the core is primarily mafic ash tuff with more frequent, but thin (10cm to 20cm) pyrite ± pyrrhotite-bearing silica exhalite (chert) horizons. It is significant that, even though the drillhole primarily cuts through mafic tuffs, the pyritic zones are closely associated with the minor felsic volcanic units and exhalite units.

Chalcopyrite mineralization was noted only in one location, 22.20m to 22.40m, as silica exhalite with 15% chalcopyrite and 5% pyrite as crude laminations. Other intervals of interest are: 297.90m to 302.14m, Pyritic ash tuff (PATF) with 8% py; 375.14m to 375.25m, Sulphide-enriched silica exhalite (SESX) with 5% py, 25% po; 375.25m to

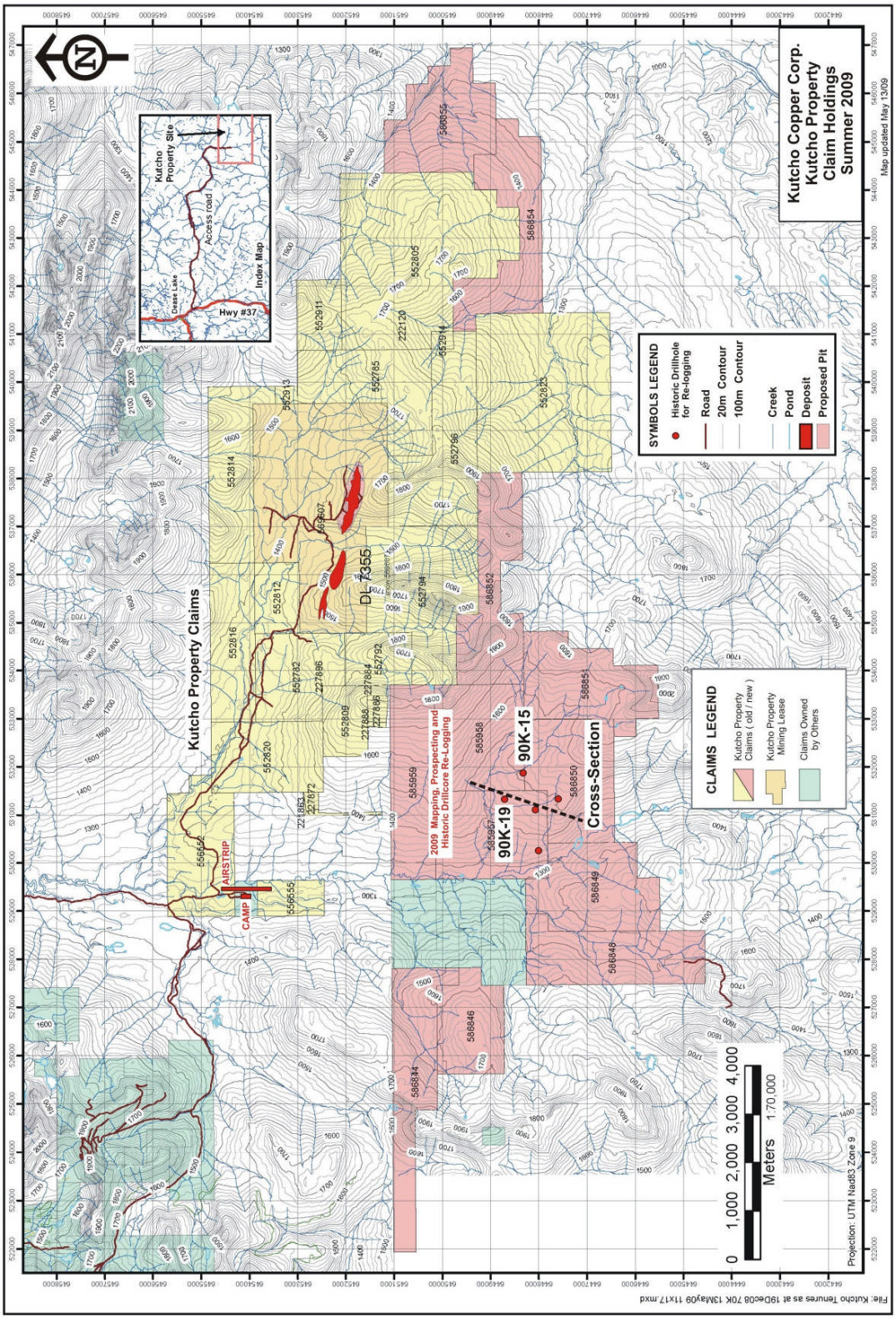

Figure 4.1 Drilhole Location Map

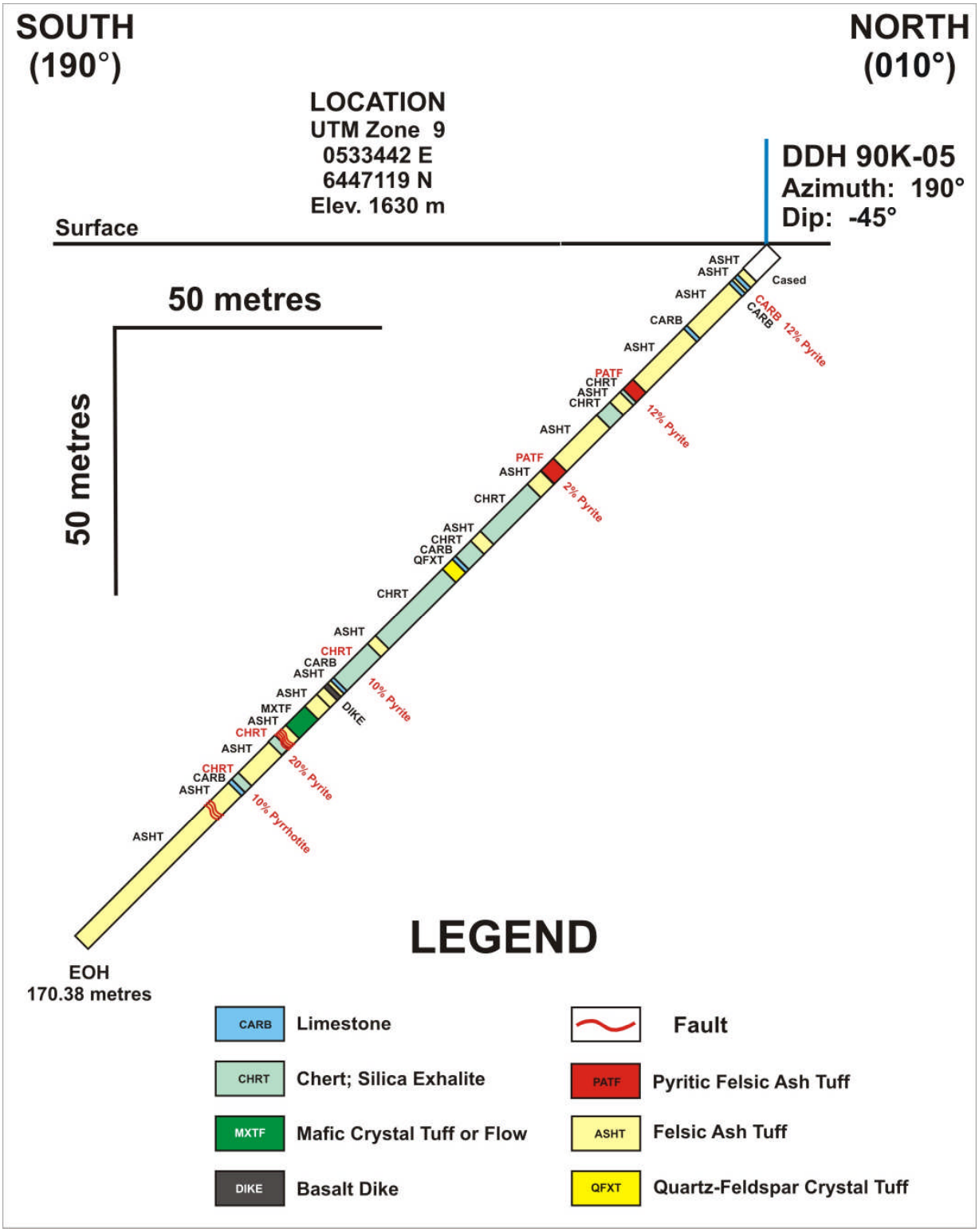

Figure 4.2 Graphic Log for DDH 90K-05

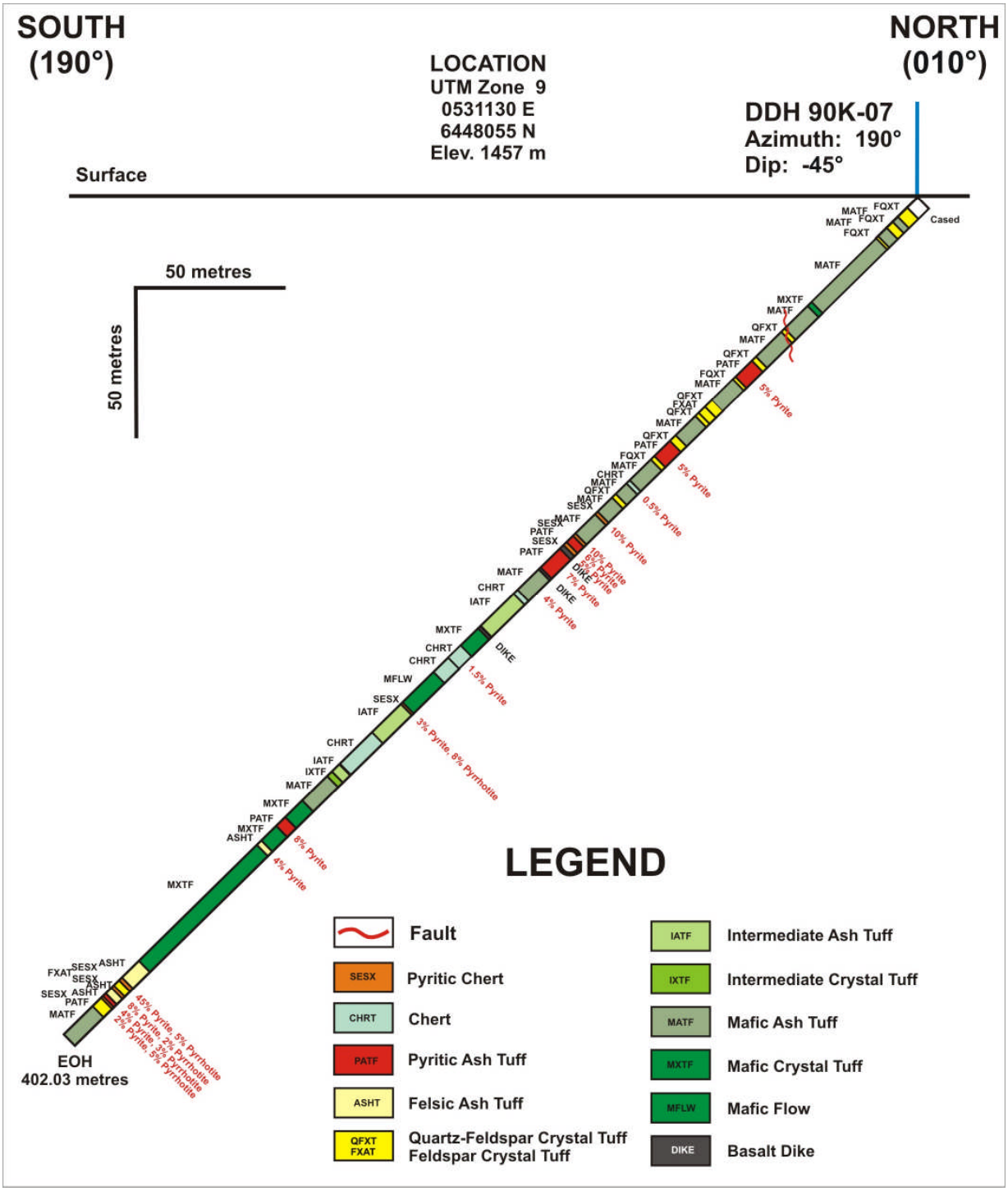

Figure 4.3 Graphic log for DDH 90K-07

375.52m, Felsic lapilli tuff (LLTF) with 3% py, 5% po; and 375.52m to 376.25m, Sulphide-enriched silica exhalite (SESX) with 45% semi-massive py, 5% po.

The thin layers of semi-massive and massive sulphide encountered in the final few metres of this deep drillhole remain an important exploration target on this property. A drillhole located to the south of this collar could test the same horizon with a shorter hole.

4.4 GEOLOGY OF DDH 90K-09

This drillhole tests an EM conductor. It is the only drillhole in this part of the southwest Kutcho Property. The detailed corelog for this drillhole is included in this report as Appendix V; the graphic log is displayed as Figure 4.4.

The hole intersects an impressive amount of stratabound pyritic sulphides that demand drill follow-up. The strata also demonstrate dramatically that in the Kutcho camp, stratabound exhalative sulphides can be associated with (hosted by) felsic volcanic ash, and/or mafic volcanic ash, and/or chert, and/or limestone/carbonate. Another revelation from this intersection is that it is pyritiferous from 44m depth to 370m depth, indicating a hydrothermal system that is both proximal and long-lived.

The distribution of sulphides in this hole emphasizes that in this part of the Kutcho Property, and probably everywhere, mafic volcanic strata are also highly prospective.

A final important point is that this drillhole has succeeded in intersecting four thin, closely-space exhalative layers of massive pyrite between 250m and 259m. The key question following from this is whether this lone drillhole has, by good fortune, cut the thickest, highest-grade interval within this mineralized zone in its first intersection, or whether this intersection is merely the edge of some larger mineralized blanket. The latter scenario is far more probable; many drill intersections that delineate the perimeter of Kutcho Main lens resemble this intersection.

The entire archive of exploration data covering this area of the property needs to be reassessed, but this drill intersection can be followed up by drilling on its own merits.

4.5 GEOLOGY OF DDH 90K-013

This hole was collared to test coincident airborne and ground EM conductors; both anomalies appear to be shallow-sourced. The detailed corelog for this drillhole is included as Appendix VI. The graphic log is displayed as Figure 4.5.

The drillhole intersects mafic ash and crystal tuff over its entire length with minor intercalated pyritic silica and silica-carbonate exhalite layers, pyritic tuff horizons, and one thick porphyritic basalt flow unit. Felsic volcanic units are conspicuously absent although property-scale mapping indicates that rhyolite strata overlie and underlie this thick mafic volcanic package.

Each of the eight pyritic exhalite (chert) horizons and the two unmineralized chert units represent brief quiescent periods during the eruption and accumulation of mafic volcanic flow and ash – evidence that pyritic exhalative hydrothermal activity was ongoing for a prolonged period. Only one pyritic exhalite unit displays minor chalcopyrite.

While this particular target does not require direct follow-up, this intersection confirms the indicators also obtained from geologic mapping, prospecting and from the five other widespaced drillholes in this thick mafic volcanic package - hydrothermal activity and

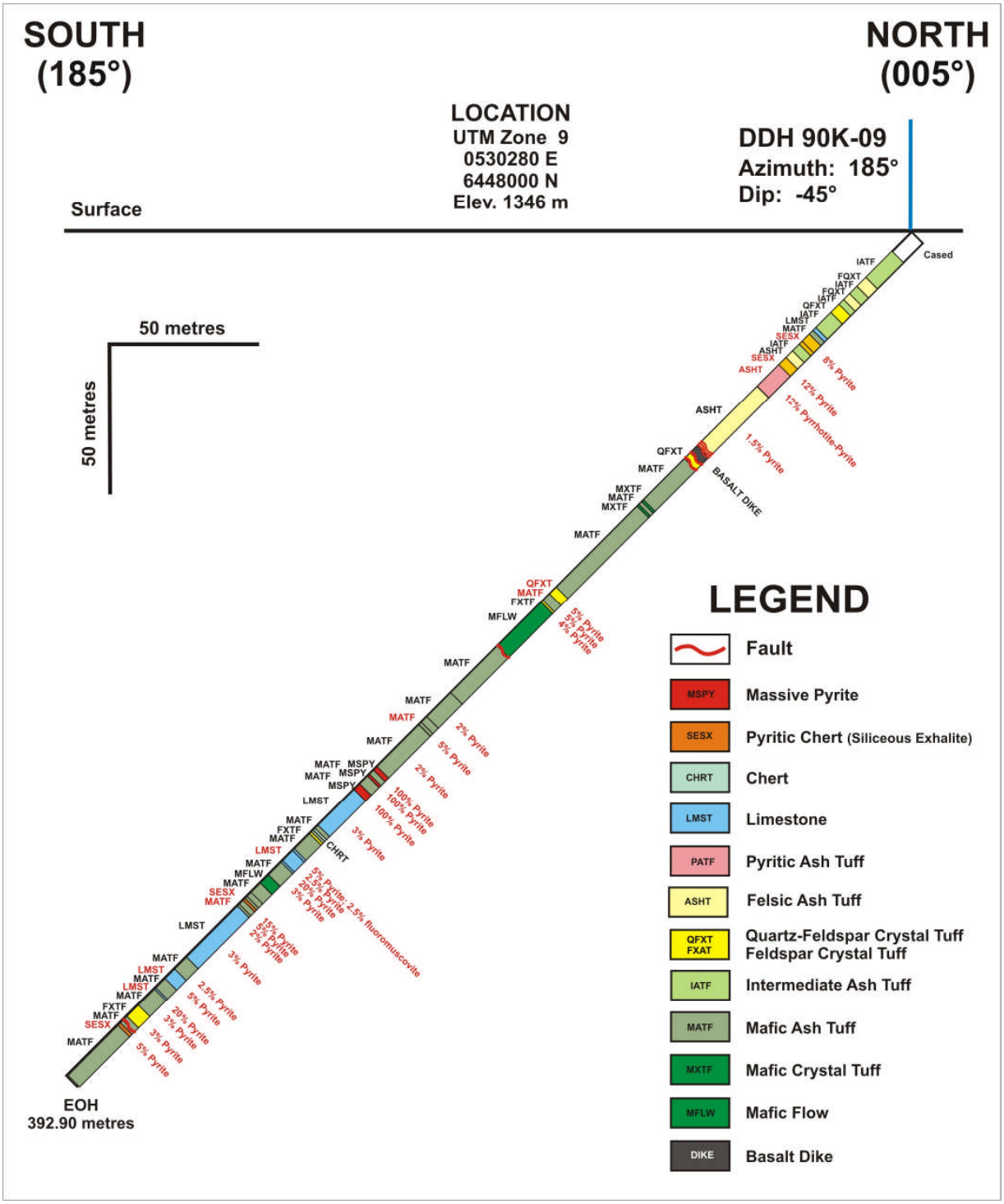

Figure 4.4 Graphic Log for DDH 90K-09

Figure 4.5 Graphic Log for DDH 90K-13

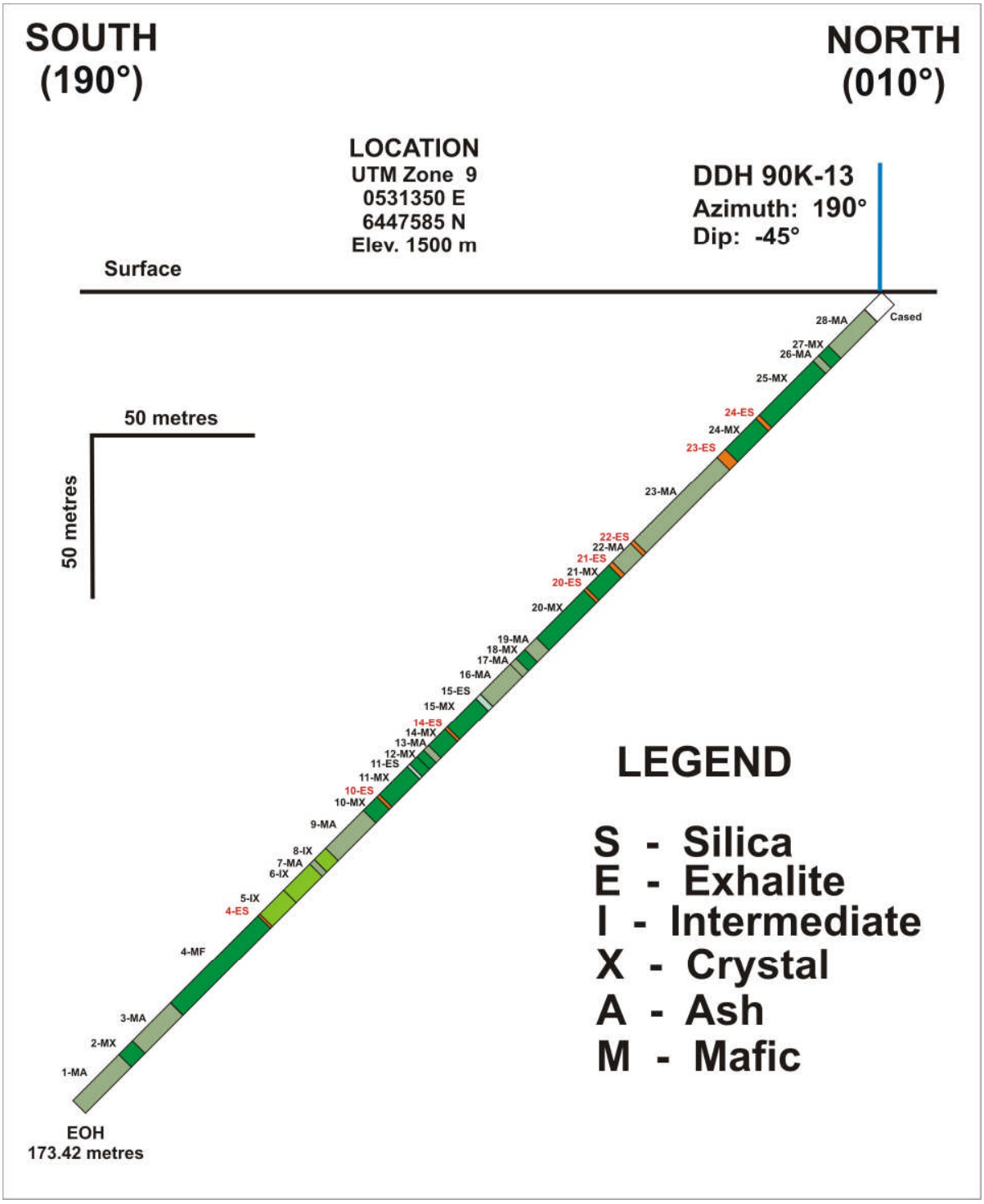

Figure 4.6 Graphic Log for DDH 90K-13 showing stratigraphic fingerprinting.

exhalative-style deposition of silica, carbonate and sulphides was essentially continuous and widespread during the eruption and build-up of this mafic volcanic pile. The challenge is to locate an area where focused fluids concentrated base metals, and where sulphides were able to accumulate in volume.

Our 2009 core-relogging program was completed in advance of renewed geologic mapping and prospecting in this area. Although the mafic pile is thick, it is also finite. It should be possible to break down the mafic and exhalative units into individual eruptive events with unique labels, so that we can attempt to correlate units and pairs of units between existing drillholes and 2009 traverses. An example of this `fingerprinting' concept has been applied to DDH 90K-13 and is shown in Figure 4.6.

4.6 GEOLOGY OF DDH 75E-028

Drillhole 75E-028 (a.k.a. DDH Bow 1) was drilled to test a geophysical anomaly. This is the southwesternmost drillhole on the Kutcho Property, and provides a section through the mafic volcanic section in an area of poor outcrop exposure. The detailed corelog for this drillhole is included as Appendix VII; the graphic log is displayed as Figure 4.7.

This drillhole intersected dominantly well-bedded calcareous mafic to intermediate ash tuff horizons, as well as one hornblende-plagioclase porphyritic mafic flow. The ash tuff units contain variable pyrite-pyrrhotite mineralization. A number of thin (<25cm) pyrite-pyrrhotite-bearing silica-carbonate exhalites were intersected and are summarized below, along with a particularly well-mineralized interval of ash tuff. **16.60m to 18.95m,** Sericite-carbonate altered ash tuff with 5% each laminated pyrite and pyrrhotite, 40% laminated to semi-massive pyrrhotite and 1%-2% pyrite. **57.58m to 57.79m,** Silica-carbonate exhalite, 40% laminated to semi-massive pyrrhotite and 1%-2% pyrite. **60.11m to 60.24m,** Silica-carbonate exhalite, 15% thin-bedded pyrrhotite. **62.13m to 62.28m,** Silica-carbonate exhalite, 15% laminated pyrrhotite.

4.7 CROSS-SECTION THROUGH DRILLHOLES 90K-07, K-13 K-15, AND K-19

A north-south cross-section through four drillholes is presented in Figure 4.8. The northward dip of strata is consistent with the orientation deduced from a 1975 regional mapping campaign, but does not support the interpretation of a simple anticline structure underlying the whole of the Kutcho Property.

Although individual volcanic units may be expected to record thickness changes and textural facies changes over the 1,080-metre distance between the drillhole collars along the line of section, the chemical composition of individual units will be constant and the general relationships within the thicker lithostratigraphic `packages' delineated on the cross-section will also be more consistent over distance. The details of the stratigraphic relationships between the felsic volcanic packages intersected in holes 15 and 19 are discussed in a companion Assessment Report (Alldrick, Willett and Wilson, 2009a) .

It was not possible to directly correlate any of the units cut by these drillholes with the hostrock units of the 3 Kutcho property VMS deposit which lie 7 kilometres to the northeast (see Figure 2.3). However, the VMS deposits all lie near the top of the volcanic succession, whereas the `shallowest' of the drillholes investigated in this study lies somewhere down-section from the mineralized strata.

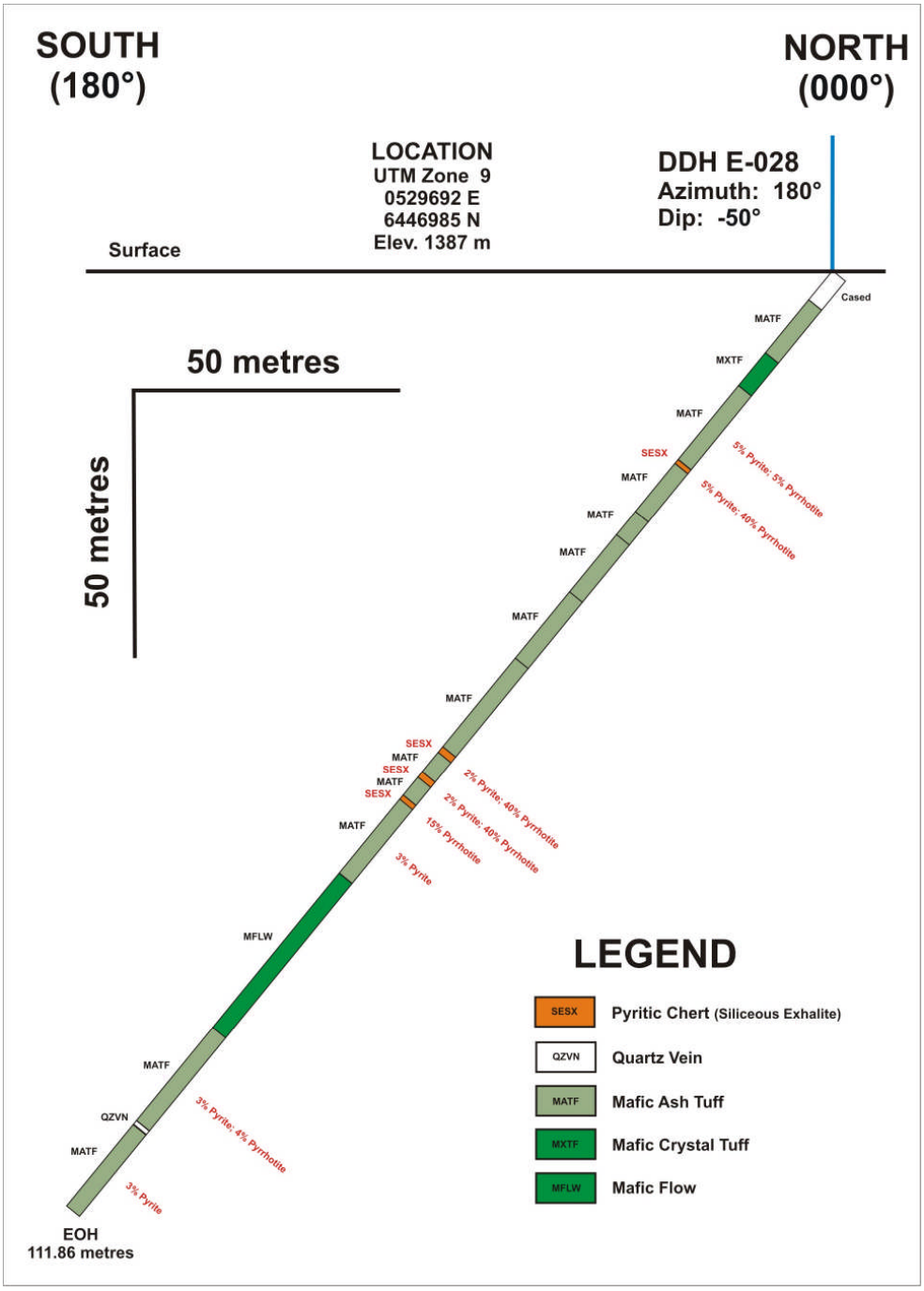

Figure 4.7 Graphic Log for DDH 75E-028

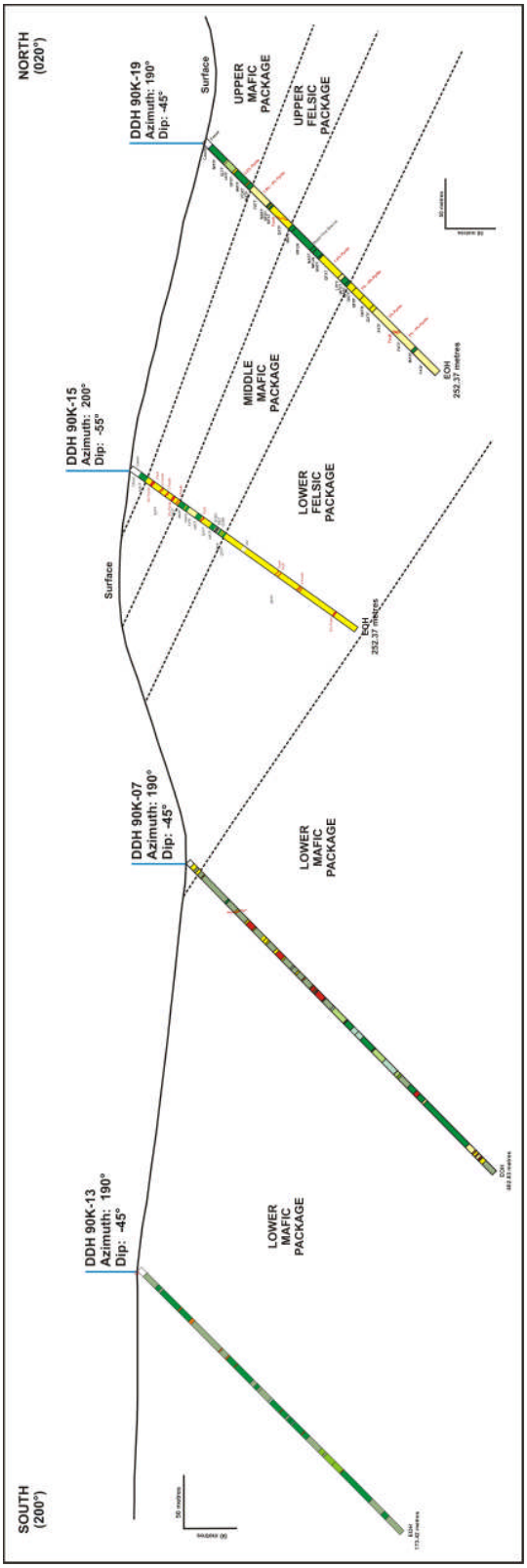

Figure 4.8 North-south cross-section through four drillholes

The thick succession of mafic volcanics in the Lower Mafic Package and the somewhat thinner overlying Middle Mafic Package and Upper Mafic Package are all unknown in the stratigraphic section immediately surrounding the VMS deposits. Measured from the Kutcho Main lens, the stratigraphically closest mafic volcanic units are identified in outcrop 2 kilometres directly south. This suggests that the entire stratigraphic section cut by the set of drillholes relogged in this study lie well down the stratigraphic column from the horizon where the three deposits lie.

The only preceding geologic study of the southern Kutcho Property was a 1975 regional mapping and prospecting program. This work was unable to resolve whether the mafic volcanic stratigraphy abundantly displayed on the southern part of the property was a lateral facies change of the shallow-level felsic volcanics which host the deposits to the north, or a different, deeper part of the stratigraphic column, although both scenarios were considered. The results from this relogging exercise suggest that the exposed strata on the southern part of the Kutcho property represent a much lower stratigraphic section than the stratigraphic interval exposed near the sulphide deposits.

5.0 CONCLUSIONS

Relogging all available historic drillcore should be an essential first step before embarking on renewed mineral exploration work in any part of this property.

Relogging historic drillcore provides an opportunity to apply insights gained from substantial advances in the understanding of:

- Volcanic rock textures
- Characteristic features of VMS sulphide deposits
- Local and regional alteration haloes associated with VMS deposits
- Key structural controls to the localization of the Kutcho VMS deposits

since the holes were first drilled and logged.

Results from relogging historic drillcore can be expected to:

- Shift exploration priorities within local areas of this property
- Shift exploration between different areas of this large property
- Enhance the overall geologic database

Results will also help support and justify exploration beyond the drilled areas.

A cross-section constructed from relogging historic drillholes from the southern Kutcho Property yields results consistent with the general structural setting determined in an early mapping program. However, the strata intersected in these holes represent a deeper slice through Kutcho Formation stratigraphy than the uppermost stratigraphic section exposed near the three massive sulphide deposits.

Detailed core-logging within felsic volcanic packages in adjacent drillholes clearly distinguishes between proximal and distal volcanic facies, focusing exploration efforts on strata closer to the volcanic vent.

Detailed core-logging within mafic volcanic packages provides data to support a stratigraphic `fingerprint' technique that may allow us to correlate individual extrusive and exhalative units within this thick, extensive, mineralized blanket of mafic volcanics, chert and limestone that stretches across the southern part of the Kutcho Property.

Drillhole 90K-09 intersected four thin units of exhalative massive pyrite-pyrrhotite, and thirteen semi-massive pyrite-pyrrhotite layers. The immediate area around this hole has a high priority for follow-up drilling.

Thin semi-massive and massive sulphide intersections in DDH 90K-07 also require drill follow-up.

The intersection in DDH 90K-05 shows that a thorough reassessment of the geology, showings, geophysics and geochemistry in the vicinity of the drillsite is warranted.

Relogging of the expensively acquired, carefully preserved, historic drillcore on this large property is a valuable exercise that must continue.

6.0 RECOMMENDATIONS

Relogging of the expensively acquired, carefully preserved, historic drillcore on this large property is a valuable exercise that must continue. Relogging of all available historic drillcore is an essential first step before embarking on renewed mineral exploration work on any part of this property.

Specific recommendations following from this study are:

- Strata on the southern part of the Kutcho Property represent a significantly deeper stratigraphic interval than the mineralized horizons hosting the three VMS deposits 7 kilometres to the northeast. The overall mineral potential of this southern rock package must be evaluated and prospected as a separate stratigraphic entity.
- The immediate area around DDH 90K-09 requires follow-up drilling.
- The immediate area around DDH 90K-07 requires follow-up drilling.
- A careful reassessment of the geology, showings, geophysics and geochemistry in the vicinity of the DDH 90K-05 is warranted.
- Re-log the remaining four drillholes through the thick mafic volcanic package that extends across the entire southern Kutcho Property, and `fingerprint' the individual volcanic and exhalative units to aid detailed stratigraphic correlation.

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APPENDIX I

LIST OF CLAIMS

FOR

KUTCHO PROPERTY

TABLE 1.1 KUTCHO PROPERTY CLAIMS (100% OWNED BY 218234)

Tenure Number	Tenure Claim	Claim Name	Map Number	Good to Date	Status	Mining Division	Area (ha)	Tag Number
221863	Mineral	LIN NO 1 FR	104I028	2017/Jan/31	GOOD	LIARD	25.0	38345
222120	Mineral	JEFF 114 FR	104I019	2011/Jan/31	GOOD	LIARD	25.0	72858
227872	Mineral	LIN #11	104I028	2017/Jan/31	GOOD	LIARD	25.0	459823M
227884	Mineral	KC 3	104I028	2017/Jan/31	GOOD	LIARD	25.0	248603M
227886	Mineral	KC 5	104I028	2017/Jan/31	GOOD	LIARD	25.0	248605M
227888	Mineral	KC 7	104I028	2017/Jan/31	GOOD	LIARD	25.0	248607M
227896	Mineral	KC 18	104I028	2010/Jan/31	GOOD	LIARD	25.0	248618M
552782	Mineral		104I	2017/Jan/31	GOOD		306.9	
552785	Mineral		104I	2017/Jan/31	GOOD		409.3	
552792	Mineral		104I	2017/Jan/31	GOOD		153.5	
552794	Mineral		104I	2017/Jan/31	GOOD		597.1	
552796	Mineral		104I	2017/Jan/31	GOOD		494.8	
552805	Mineral		104I	2017/Jan/31	GOOD		1074.7	
552809	Mineral		104I	2017/Jan/31	GOOD		136.4	
552812	Mineral		104I	2017/Jan/31	GOOD		136.4	
552814	Mineral		104I	2017/Jan/31	GOOD		357.9	
552816	Mineral		104I	2017/Jan/31	GOOD		306.8	
552820	Mineral		104I	2017/Jan/31	GOOD		340.9	
552823	Mineral		104I	2017/Jan/31	GOOD		921.8	
552911	Mineral	PASS1	104I	2017/Jan/31	GOOD		136.4	
552913	Mineral	ADD1	104I	2017/Jan/31	GOOD		17.0	
552914	Mineral	ADD2	104I	2017/Jan/31	GOOD		17.1	
556552	Mineral	ADD3	104I	2017/Jan/31	GOOD		374.9	
556555	Mineral	ADD4	104I	2017/Jan/31	GOOD		102.3	
569607	Mineral		104I	2009/Nov/07	GOOD		1090.0	
585957	Mineral	MOTHER 1	104I	2010/Jun/07	GOOD		426.6	
585958	Mineral	MOTHER 2	104I	2010/Jun/07	GOOD		409.6	
585959	Mineral	MOTHER 3	104I	2010/Jun/07	GOOD		375.3	
586844	Mineral	ACCENT 1	104I	2009/Oct/31	GOOD		426.5	
586846	Mineral	ACCENT 2	104I	2009/Oct/31	GOOD		273.0	
586848	Mineral	SOUTH FORK 1	104I	2010/Jun/25	GOOD		426.9	
586849	Mineral	SOUTH FORK 2	104I	2010/Jun/25	GOOD		426.9	
586850	Mineral	SOUTH FORK 3	104I	2010/Jun/25	GOOD		426.8	
586851	Mineral	SOUTH FORK 4	104I	2010/Jun/25	GOOD		426.9	
586852	Mineral	TRONDHJEMITE 1	104I	2010/Jun/25	GOOD		426.7	
586854	Mineral	TRONDHJEMITE 2	104I	2010/Jun/25	GOOD		426.7	
586855	Mineral	TRONDHJEMITE 3	104I	2010/Jun/25	GOOD		426.6	
						Total	**12,047.6**	

APPENDIX II

KUTCHO PROJECT RESOURCE TABLE

Summary – Main, Esso and Sumac Deposits[1]

CLASSIFICATION	M Tonnes	% Cu	% Zn	g/T Au	g/T Ag
Measured	5.421	2.15	2.86	0.34	31.4
Indicated	4.994	2.14	2.83	0.39	33.5
MEASURED and INDICATED	10.415	2.14	2.85	0.36	32.4
Inferred	1.893	2.09	2.93	0.46	33.6

[1] Numbers may not total due to rounding

Main Deposit - Mineral Resource Estimate at a 1.5% Copper Cut-Off [1]

CLASSIFICATION	M Tonnes	% Cu	% Zn	g/T Au	g/T Ag
Measured	5.421	2.15	2.86	0.34	31.4
Indicated	4.043	2.04	2.54	0.35	31.2
MEASURED and INDICATED	9.464	2.10	2.72	0.34	31.3
Inferred	0.464	1.84	2.83	0.43	31.6

[1] Numbers may not total due to rounding

Esso Deposit - Mineral Resource Estimate at a 1.5% Copper Cut-Off [1]

CLASSIFICATION	T Tonnes	% Cu	% Zn	g/T Au	g/T Ag
Measured	-	-	-	-	-
Indicated	951	2.60	4.10	0.56	43.4
MEASURED and INDICATED	951	2.60	4.10	0.56	43.4
Inferred	803	2.57	4.15	0.61	37.6

[1] Numbers may not total due to rounding

Sumac Deposit - NI43-101 Mineral Resource Estimate at a 1.5% Copper Cut-Off [1]

CLASSIFICATION	T Tonnes	% Cu	% Zn	g/T Au	g/T Ag
Measured	-	-	-	-	-
Indicated	-	-	-	-	-
MEASURED and INDICATED	-	-	-	-	-
Inferred	626	1.67	1.46	0.29	30.1

[1] Numbers may not total due to rounding

Source: Capstone Mining Corp., Press Release 09-04, February 10, 2009; *Capstone Announces Robust Mineral Resource Update for High Grade Kutcho Copper Project.*

APPENDIX III

DIAMOND DRILL LOG for DDH 90K-05

From	To	Litho	Simple Geo
0.00	4.60	CASE	RUBL

Casing and minor rubble.

STRUCTURES					ALTERATION								MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC	From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample
0.00	4.60	NA																							

From	To	Litho	Simple Geo
4.60	6.61	ASHT	TUFF

Light grey-green, near-massive carbonate-flooded mafic coarse ash tuff. Moderate carbonate flooding plus strong epidote alteration. 1.5% fine bright pyrite crystals as disseminations and wisps. Possible crude bedding at 80 to 82 TCA. Sharp lower contact at 74 TCA.

STRUCTURES					ALTERATION								MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC	From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample
4.60	6.60	BD	81																						
Crude bedding?																									
					4.60	6.61	S	M	-	-	-	-	4.60	6.61	1.5	DIS									
					Moderate carbonate flooding; strong epidote flooding.																				
6.60	6.61	CT	74																						
Sharp lower contact.																									

From	To	Litho	Simple Geo
6.61	6.82	ASHT	TUFF

Well-bedded, thin-bedded, pale olive fine ash tuff. Bedding at 72 to 74 TCA; sharp lower contact at 60 TCA. Rock has moderate carbonate flooding and strong epidote alteration. 2% pyrite as disseminations and thin pyritic carbonate lamellae. Unit has several thin (< 1cm) light grey and dark grey carbonate and silica lamellae.

STRUCTURES					ALTERATION								MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC	From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample
6.61	6.81	BD	71																						
					6.61	6.82	S	M	-	-	-	-	6.61	6.82	2	DIS									
					Strong epidote flooding; moderate carbonate alteration.																				
6.81	6.82	CT	60																						
Sharp lower contact against limestone bed.																									

From	To	Litho	Simple Geo
6.82	6.90	CBSX	CBSX

Pyritic limestone layer within thin-bedded fine ash tuffs. 12% pyrite overall as laminae/beds.

STRUCTURES

From	To	Struct	CA	Strain
6.82	6.90	BD	74	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
6.82	6.90	VW	VW	-	-	-	-

Pyritic limestone

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
6.82	6.90	12	LB						

pyrite as laminae and beds

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
6.90	8.23	ASHT	TUFF

Pale olive green ash tuff; coarse-grained and granular. Faintly bedded at 56 TCA.

STRUCTURES

From	To	Struct	CA	Strain
6.90	8.23	BD	56	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
6.90	8.23	VW	VW	-	-	-	-

weak epidote alteration

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
6.90	8.23	0	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
8.23	8.68	CARB	CARB

Two intervals of white, crystalline, thin limestone beds within disrupted, `churned', pale olive coarse ash tuff. No pyrite noted.

STRUCTURES

From	To	Struct	CA	Strain
8.23	8.68	NA		

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
8.23	8.68	VW	VW	-	-	-	-

White limestone

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
8.23	8.68	0	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
8.68	20.00	ASHT	TUFF

Pale olive, well-bedded, medium-bedded, coarse ash tuffs. Coarse granular texture overall - in part due to epidote alteration? Minor silica and carbonate interbeds. Granular texture with moderate epidote flooding. 2cm medium grey limestone bed at 10.62m. Bedding at 71 TCA.
20cm zone of aligned hornblende needles centred at 11.70m.
16.15m to 16.50m Fault zone.
17.26m to 17.37m 11cm zone of bedded fine ash and a 1cm bed of grey limestone. Bedding at 58 TCA.
Overall pyrite content is trace fine pyrite dust.
Core is very weakly to weakly calcareous everywhere.

STRUCTURES

From	To	Struct	CA	Strain
8.68	10.62	BD	71	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
8.68	20.00	VW	VW	-	-	-	-

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
8.68	20.00	0.3	DIS						

Trace fine pyrite dust

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
8.68	20.00	ASHT	TUFF

(Continued from previous page)

STRUCTURES					ALTERATION								MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC	From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample
10.62	17.37	BD	58																						
17.37	20.00	BD	58																						

From	To	Litho	Simple Geo
20.00	20.26	CARB	CARB

Interbedded, medium-grey, limestone and pale olive fine ash tuff. Prominent soft-sediment defomation textures. Swirled beds. Possibly some silica in the carbonate beds.

STRUCTURES					ALTERATION								MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC	From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample
20.00	20.26	NA			20.00	20.26	VW	VW	-	-	-	-	20.00	20.26	0	DIS									
					limestone																				

From	To	Litho	Simple Geo
20.26	34.30	ASHT	TUFF

Pale olive, epidote-flooded, coarse ash tuff, with minor textural variations. Mostly granular and near-massive, with many narrow thin-bedded intercalations of finer-grained tuff.
23.12m to 23.40m, thin-bedded ash tuff with 50% white and light grey carbonate interbeds - a limy tuff horizon. Bedding at 78 TCA.
24.92m to 26.40m, core has a blotchy, granular to coarse crystalline appearance, likely due to patchy epidote alteration - no primary crystals noted.

STRUCTURES					ALTERATION								MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC	From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample
20.26	23.40	BD	78																						
													20.26	34.30	0	DIS									
23.40	34.30	BD	78																						

From	To	Litho	Simple Geo
34.30	36.15	PATF	TUFF

Pyritic ash tuff. Thin layers of near-massive pyrite scattered throughout this unit of thin-bedded fine ash tuff.
Pyritic beds at: 34.63m to 34.74m. Bedding at 76 TCA. 15% pyrite within carbonate-rich thin beds interclated with pale yellow-green epidotized fine ash tuff. Non-magnetic. There is another 16cm (total) of finely bedded semi-massive pyrite in 9 beds through the rest of this unit. Sawn core. Bedding constant. Gradational lower contact.

STRUCTURES					ALTERATION								MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC	From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample
34.30	36.15	BD	76		34.30	36.15	W	-	-	-	-	-	-	34.30	36.15	12	LB									
					Weak epidote																					

From	To	Litho	Simple Geo
36.15	37.22	ASHT	TUFF

Pale olive-green, granular, coarse ash tuff. Faintly bedded to massive. 5% fine calcite veinlet network overprinted.

STRUCTURES

From	To	Struct	CA	Strain
36.15	37.22	NA		

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
36.15	37.22	W	W	-	-	-	-

Calcite veinlets

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
36.15	37.22	0	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
37.22	37.60	CHRT	CHRT

Finely-bedded, thinly-bedded fine ash tuff. Bedding at 74 TCA., Colour-mottled thin layers are pale- to medium-green. Non-calcareous. Silicified throughout - this could be a tuffaceous chert.

STRUCTURES

From	To	Struct	CA	Strain
37.22	37.60	BD	74	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
37.22	37.60	M	W	-	-	-	M

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
37.22	37.60	0	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
37.60	39.85	ASHT	TUFF

Pale olive green, near-massive to faintly-bedded, coarse ash tuff. 5% thin calcite veinlet network overprinted. (Intermediate composition - trace chlorite on partings.)

STRUCTURES

From	To	Struct	CA	Strain
37.60	39.85	NA		

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
37.60	39.85	VW	W	-	-	-	-

Overprinted thin calcite veinlets.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
37.60	39.85	0	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
39.85	43.30	CHRT	CHRT

Dark greenish-grey, thin-bedded, tuffaceous chert (silicified tuff). There are also two buff-brown granular carbonate beds within this unit. Bedding at 76 TCA. Pyrite sub-trace as rare fine crystals.

STRUCTURES

From	To	Struct	CA	Strain
39.85	43.30	BD	76	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
39.85	43.30	M	W	-	-	-	M

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
39.85	43.30	0.1	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
43.30	54.56	ASHT	TUFF

Massive, pale olive, granular coarse ash tuff. Intermediate. Epidote-flooded throughout. Variable nil to moderate carbonate alteration. Minor thin scattered limestone beds with minor pyrite at 45.94m (3cm); 46.63m (1cm), 50.55m (4cm); 63.40m (1cm). Faint bedding variable, but averages 68 TCA.

STRUCTURES

From	To	Struct	CA	Strain
43.30	54.56	BD	68	

Bedding faint; variable orientation.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
43.30	54.56	M	W	-	-	-	-

Moderate epidote; weak carbonate

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
43.30	54.56	1	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
54.56	57.78	ASHT	TUFF

Medium greenish-grey, intermediate, thin-bedded, fine to coarse ash tuff with many thin fine-grained pyritic laminae (not sampled). Weakly calcareous to locally moderately calcareous groundmass, Moderate epidote alteration. Bedding at 76 TCA.

STRUCTURES

From	To	Struct	CA	Strain
54.56	57.78	BD	76	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
54.56	57.78	M	W	-	-	-	-

Moderate calcite; moderate epidote.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
54.56	57.78	2	LB						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
57.78	61.16	ASHT	TUFF

Massive to faintly bedded, pale olive, coarse granular ash tuff. Cut by one massive white bull quartz vein from 59.96m to 60.26m, which has dark green chlorite chunks along the vein margins. Local zones of faint bedding and thin carbonate beds; bedding at 72 TCA.

STRUCTURES

From	To	Struct	CA	Strain
57.78	61.16	BD	72	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
57.78	61.16	VW	VW	-	-	-	-

Weak epidote.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
57.78	61.16	0	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
61.16	73.54	CHRT	CHRT

Thin-bedded, finely-bedded, intermediate ash tuff interbedded with chert. Slighty varying textures throughout.
61.62m to 63.20m massive white bull quartz vein with thick dark green chlorite books in central selvage and along vein margins.
Overall colour pale grey olive. Weak to very weak calcite. Alternating olive and grey thin beds. The dark grey beds are mainly strongly siliceous/hard. This is a rhythmically interbedded tuffaceous chert, with the tuffaceous beds selectively epidotized.
Rare minor fine wisps and thin lamellae of pyrite. Pyrite 3% overall.
Uppermost 60cm of this unit is bedded volcanic ash only.

STRUCTURES

From	To	Struct	CA	Strain

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
61.16	73.54	CHRT	CHRT

Thin-bedded, finely-bedded, intermediate ash tuff interbedded with chert. Slighty varying textures throughout.
61.62m to 63.20m massive white bull quartz vein with thick dark green chlorite books in central selvage and along vein margins.
Overall colour pale grey olive. Weak to very weak calcite. Alternating olive and grey thin beds. The dark grey beds are mainly strongly siliceous/hard. This is a rhythmically interbedded tuffaceous chert, with the tuffaceous beds selectively epidotized.
Rare minor fine wisps and thin lamellae of pyrite. Pyrite 3% overall.
Uppermost 60cm of this unit is bedded volcanic ash only.

STRUCTURES

From	To	Struct	CA	Strain
61.16	73.54	NA		

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
61.16	73.54	VW	VW	-	-	-	M	-

Weak epidote.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
61.16	73.54	3	LB						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
73.54	76.00	ASHT	TUFF

Faintly-bedded, near-massive, medium grey-green, granular coarse ash tuff. Strongly (but not completely) epidotized.

STRUCTURES

From	To	Struct	CA	Strain
73.54	76.00	NA		

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
73.54	76.00	VW	VW	-	-	-	-	-

Strong epidote

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
73.54	76.00	0	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
76.00	80.05	CHRT	CHRT

Interbedded chert and tuff. Dark grey and pale green interbeds. Fine ash tuff beds are epidotized to pale olive. Pyrite concentrated along some siliceous bands; 3% fine pyrite as wisps and lamellae overall. Bedding undulates but averages 74 TCA. No foliation. Non-magnetic. Variable weak to moderate calcite alteration.

STRUCTURES

From	To	Struct	CA	Strain
76.00	80.05	BD	74	

Bedding undulates

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
76.00	80.05	W	W	-	-	-	-	-

Moderate epidote

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
76.00	80.05	3	LB						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
80.05	80.45	CARB	CARB

Buff-brown limestone. Thin-bedded. Strongly calcareous. Marks the base of the overlying chert unit. This unit includes 15cm of thin-laminated dark grey chert near the base of the limestone.

STRUCTURES

From	To	Struct	CA	Strain
80.05	80.45	NA		

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
80.05	80.45	W	W	-	-	-	-	-

Limestone

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
80.05	80.45	0	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
80.45	83.74	QFXT	TUFF

Medium-green, faintly bedded to massive, coarse quartz crystal tuff. Crowded with rounded quartz grains. Feldspars are selectively epidotized. Rock looks like dacite. Hard but not silicified. Bedding at 80 TCA. Tiny aligned hornblende needles in places. Partings as mixed sericite-chlorite. (minor). No pyrite noted.

STRUCTURES

From	To	Struct	CA	Strain
80.45	83.74	BD	80	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
80.45	83.74	W	W	-	-	-	-

Weak epidote, sericiute, chlorite.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
80.45	83.74	0	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
83.74	101.42	CHRT	CHRT

As above. Dark grey chert, thin- to medium-bedded. Interbedded with fine ash tuff - generally selectively epidotized. 1% fine disseminated bright pyrite overall with local bands of thin laminae of fine pyrite. Up to 8% pyrite over intervals as long as 50cm. This core is not split. Core is strongly siliceous throughout - trace calcite only. Bedding at 76 TCA. None of this interval has been assayed for metals or pathfinder elements.
101.12m to 101.32m Minor fault gouge and rock chips.
Sharp lower contact at 89 TCA.

STRUCTURES

From	To	Struct	CA	Strain
83.74	101.41	BD	76	
101.41	101.42	CT	89	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
83.74	101.42	M	W	-	-	-	W	-

Tuff bands are epidotized

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
83.74	101.42	1	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
101.42	103.50	ASHT	TUFF

Thin-bedded felsic ash tuff. Pale bone colour overall. Fine crystals; and trace fine pyrite dust. Non-calcareous. Siliceous. This is a rhyolite tuff or a tuffaceous chert. (Probably the former). Bedding at 81 TCA.

STRUCTURES

From	To	Struct	CA	Strain
101.42	103.50	BD	81	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
101.42	103.50	M	-	-	-	-	M	-

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
101.42	103.50	0.5	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
103.50	112.28	SESX	CHRT

Medium grey well-bedded, thin-bedded pyritic chert (silica exhalite). Variable light to dark grey bands. Pyrite 10% overall, with local zones up to 15% as disseminatiions, wisps and lamellae.
Fault from 109.42m to 109.62m; gouge and sand recovered.
Lower contact sharp at 83 TCA.

STRUCTURES

From	To	Struct	CA	Strain

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
103.50	112.28	SESX	CHRT

Medium grey well-bedded, thin-bedded pyritic chert (silica exhalite). Variable light to dark grey bands. Pyrite 10% overall, with local zones up to 15% as disseminatiions, wisps and lamellae.
Fault from 109.42m to 109.62m; gouge and sand recovered.
Lower contact sharp at 83 TCA.

STRUCTURES

From	To	Struct	CA	Strain
103.50	112.28	BD	83	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
103.50	112.28	-	-	-	-	-	-

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
103.50	112.28	10	LB						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
112.28	112.97	CARB	CARB

Buff-brown limestone to limy tuff. Only weakly calcareous, so maybe this is ferro-dolomite. Core is variably silicified. Bedding at 69 TCA, but there are also buckled beds. 2% fine pyrite as wisps and laminae.

STRUCTURES

From	To	Struct	CA	Strain
112.28	112.97	BD	69	

Buckled beds

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
112.28	112.97	W	-	-	-	-	W	-

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
112.28	112.97	2	LB						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
112.97	113.53	ASHT	TUFF

Pale cream/bone, thinly laminated ash tuff. Minor pyrite only (1%). Strongly siliceous, thinly-bedded rhyolite tuff or silicified tuff adjacent to a dike (below). See similar unit #24 above. Bedding at 71 TCA.

STRUCTURES

From	To	Struct	CA	Strain
112.97	113.53	BD	71	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
112.97	113.53	S	-	-	-	-	S	-

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
112.97	113.53	1	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
113.53	114.65	DYKE	DYKE

Amygdaloidal buff-olive dike with tiny hornblende needles, and tiny feldspar rhombs altered to orange ferro-dolomite. Chilled margins over 3cm.

STRUCTURES

From	To	Struct	CA	Strain
113.53	114.65	NA		

Dike

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
113.53	114.65	W	-	W	-	-	-	-

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
113.53	114.65	0	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
114.65	115.68	ASHT	TUFF

Return to the thin-bedded, bone-coloured siliceous rhyolite ash tuff. Bedding at 73 TCA.

STRUCTURES

From	To	Struct	CA	Strain
114.65	115.68	BD	73	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
114.65	115.68	W	-	-	-	-	W	-

Siliceous

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
114.65	115.68	0	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
115.68	119.91	ASHT	TUFF

Dark green-grey, faintly-bedded, intermediate to mafic coarse as tuff. Banding due to selective epidote alteration. Faintly-bedded at 82 TCA. Chlorite on partings. Two narrow, coarse white calcite veins centred at 116.96m and 118.97m. There are also 3 fine-grained ash bands within this unit.

STRUCTURES

From	To	Struct	CA	Strain
115.68	119.91	BD	82	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
115.68	119.91	W	-	-	-	-	-	-

Selective epidotization of layers

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
115.68	119.91	0	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
119.91	124.92	XATF	TUFF

Coarse, crystalline, intermediate to mafic ash tuff. Massive 1.5% fine disseminated pyrite. Colour-mottling due to alternating knots of chlorite and epidote alteration. Possibly chloritized relicts of hornblende laths up to 7mm long. Lower contact finer-grained (chilled) over 50cm. Possibly a crystalline flow-rock.

STRUCTURES

From	To	Struct	CA	Strain
119.91	124.92	NA		

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
119.91	124.92	W	-	-	-	-	-	-

Alternating chlorite and epidote knots

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
119.91	124.92	1.5	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
124.92	125.86	ASHT	TUFF

Repeat of the bone-coloured rhyolite tuff above (# 24 & #27) but here it is pale buff-peach colour. Still thin-bedded. Weak reaction to acid. Rock is softer, so perhaps it is ferro-dolomite flooded. Pyrite 3% as abundant fine wisps.Bedding averages 75 TCA.

STRUCTURES

From	To	Struct	CA	Strain
124.92	125.86	BD	75	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
124.92	125.86	W	-	W	-	-	-	-

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
124.92	125.86	3	LB						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
125.86	127.50	FLTZ	RUBL

Major fault zone. Large interval of gouge and lesser rubble recovered. Footwall rocks are strongly bleached and buff-orange altered (ankerite or ferro-dolomite) for one metre.

STRUCTURES

From	To	Struct	CA	Strain
125.86	127.50	FLTZ		
		Fault		

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
125.86	127.50	M	-	M	-	-	- -

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
125.86	127.50	0	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
127.50	127.81	ASHT	TUFF

Altered equivalent of thin-bedded felsic tuff of unit #32, etc. Ankeritized.

STRUCTURES

From	To	Struct	CA	Strain
127.50	127.81	NA		

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
127.50	127.81	S	-	S	-	-	- -
		Ankeritized					

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
127.50	127.81	0	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
127.81	128.26	CHRT	CHRT

Thin-bedded, dark chert with calcite laminae. Non-magnetic. 20% fine sulphides as wisps and laminations. Half of this core interval was sawn and sampled, half was not.

STRUCTURES

From	To	Struct	CA	Strain
127.81	128.26	NA		

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
127.81	128.26	VW	-	-	-	-	- -

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
127.81	128.26	20	LB						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
128.26	128.64	ASHT	TUFF

Same as unit #34 above chert, but shows fading bleaching-ankeritization overprint.

STRUCTURES

From	To	Struct	CA	Strain
128.26	128.64	NA		
		Ankerite		

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
128.26	128.64	W	-	W	-	-	- -

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
128.26	128.64	0	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
128.64	137.75	ASHT	TUFF

Granular coarse ash tuff. Light greyish-green. Varying textures throughout this interval, including two dark-grey limestone-chert beds in upper one metre. Thin-bedded to faintly bedded to massive texture. Bedding at 78 TCA.

STRUCTURES

From	To	Struct	CA	Strain
128.64	137.75	BD	78	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
128.64	137.75	VW	-	-	-	-	-

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
128.64	137.75	0	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
137.75	139.00	ASHT	TUFF

Interbedded rhyolite tuff and two thin charcoal chert beds near base. All are thin-bedded. 10% finest pyrrhotite lamellae in the black chert beds, and possibly some magnetite as well.

STRUCTURES

From	To	Struct	CA	Strain
137.75	139.00	NA		

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
137.75	139.00	VW	-	-	-	-	VW	-

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
137.75	139.00	0	DIS						

10% fine pyrrhotite lamellae; and possibly some fine magnetite.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
139.00	139.70	CARB	CARB

Buff-grey granular well-bedded dolomite. Very soft rock. Tuffaceous limestone. Bedding at 70 TCA.

STRUCTURES

From	To	Struct	CA	Strain
139.00	139.70	BD	70	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
139.00	139.70	VW	-	VW	-	-	-	-

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
139.00	139.70	0	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
139.70	170.38	ASHT	TUFF

Major tuff unit with some textural variability.
Light grey-green, thin-bedded to faintly-bedded to massive granular coarse ash tuff.
10cm dark grey limy tuff bed centred at 142.55m, with 30% finest pyrrhotite laminae. All of this interval has trace pyrrhotite and rare thin pyrrhotite lamellae.
Bedding variable, averaging 70 TCA. Weak chlorite on partings
?Intermediate compostion? Perhaps dacite.
Two large, adjacent fault breaks between 144.40m and 145.40m.
8 cm of pyrrhotite-rich fine ash tuff bed at 147.33m.
Four thin, black pyritic chert-calcite beds at 148.75m (4cm); 152.35m (6cm); 154.44m (8cm); 155.10m (10cm) - strong pyrrhotite in this last interval. Trace pyrrhotite common throughout the core.
Bedding 76 TCA at 158.50m.
Core gets paler down-section; calcite-flooding is moderate to strong throughout this lower interval.
Trace to minor pyrrhoitite to end of hole. Bedding variable and averages 64 TCA. Bedding at EOH is 76 TCA. Most of lower core is thin-bedded.

STRUCTURES

From	To	Struct	CA	Strain

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
139.70	170.38	ASHT	TUFF

Major tuff unit with some textural variability.
Light grey-green, thin-bedded to faintly-bedded to massive granular coarse ash tuff.
10cm dark grey limy tuff bed centred at 142.55m, with 30% finest pyrrhotite laminae. All of this interval has trace pyrrhotite and rare thin pyrrhotite lamellae.
Bedding variable, averaging 70 TCA. Weak chlorite on partings
?Intermediate compostion? Perhaps dacite.
Two large, adjacent fault breaks between 144.40m and 145.40m.
8 cm of pyrrhotite-rich fine ash tuff bed at 147.33m.
Four thin, black pyritic chert-calcite beds at 148.75m (4cm); 152.35m (6cm); 154.44m (8cm); 155.10m (10cm) - strong pyrrhotite in this last interval. Trace pyrrhotite common throughout the core.
Bedding 76 TCA at 158.50m.
Core gets paler down-section; calcite-flooding is moderate to strong throughout this lower interval.
Trace to minor pyrrhoitite to end of hole. Bedding variable and averages 64 TCA. Bedding at EOH is 76 TCA. Most of lower core is thin-bedded.

STRUCTURES

From	To	Struct	CA	Strain
139.70	170.38	BD	72	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
139.70	170.38	M	M	-	-	-	-

Calcite flooding; minor chorite on partings

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
139.70	170.38	1	LB						

SAMPLES

From	To	Sample

APPENDIX IV

DIAMOND DRILL LOG for DDH 90K-07

Drill Log KU90007

Unknown

Signature: _____ Initials: _____

From	To	Litho	Simple Geo
0.00	4.60	OVBD	

Casing /overburden

STRUCTURES

From	To	Struct	CA	Strain
0.00	4.60	NA		

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
0.00	4.60	-	-	-	-	-	-

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
0.00	4.60	0	-						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
4.60	8.80	LLTF	

Light brown felsic lapilli tuff. Beige-brown over the upper 3 metres, moderately chloritized to lower contact. Foliation/lamination at 50 TCA. Milky bull qtz vein at 5.50m to 5.70m. 2% disseminated medium-grained pyrite; rare chalcopyrite noted.

STRUCTURES

From	To	Struct	CA	Strain
4.60	8.79	FOL	50	M
8.79	8.80	CT	50	M

foliation/lamiination at 50 TCA.

lower contact at 50 TCA

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
4.60	7.96	M	-	-	-	-	-
7.96	8.80	M	-	-	-	-	-

weak to moderate chlorite alteration

weak ankerite and moderate chlorite alteration

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
4.60	8.80	2	DIS	CP	0.05				

2% disseminated medium-grained pyrite, trace chalcopyrite noted very rarely

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
8.80	10.58	QFXT	

Light blue-grey felsic quartz-feldspar crystal tuff. Riddled with hairline ankerite-filled fractures and partings. Foliation/lamination at 50 TCA. 0.25% fine diss. Pyrite. Lower contact at 50 TCA.

STRUCTURES

From	To	Struct	CA	Strain
8.80	10.57	FOL	50	W

Foliation/lamination at 50 TCA

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
8.80	10.58	QFXT	

Light blue-grey felsic quartz-feldspar crystal tuff. Riddled with hairline ankerite-filled fractures and partings. Foliation/lamination at 50 TCA. 0.25% fine diss. Pyrite. Lower contact at 50 TCA.

STRUCTURES

From	To	Struct	CA	Strain
10.57	10.58	CT	50	W
Lower contact at 50 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
8.80	10.58	M	-	-	-	-	-
Riddled with hairline ankerite-filled fractures and partings							M

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
8.80	10.58	0.25	-						
0.25% fine diss. Pyrite.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
10.58	11.60	ASHT	

Green-grey thin-bedded ash tuff with interbedded fine pyrite ash tuff (max thickness of 1 cm). 2-3% pyrite overall. Foliation/lamination at 30 to 45 TCA. Lower contact at 45 TCA.

STRUCTURES

From	To	Struct	CA	Strain
10.58	11.59	FOL	45	M
Foliation/lamination at 30 to 45 TCA				
11.59	11.60	CT	40	W
lower contact at 45 TCA				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
10.58	11.60	M	-	-	-	-	-

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
10.58	11.60	2.5	-						
2-3% pyrite overall									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
11.60	14.12	QFXT	

Pale peach and grey coloured crystal tuff with fine crystals and rythmic sericitic partings (60 TCA) representing Paper Schist. And local pyrite-sericite alteration. 0.5% pyrite overall, locally 5% as at 10 m interval centered at 13.20m. Lower contact at 50 TCA.

STRUCTURES

From	To	Struct	CA	Strain
11.60	14.11	LM	60	M
rhytmic sericitic parting (60 TCA)				
14.11	14.12	CT	59	
Lower contact at 50 TCA				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
11.60	14.12	S	W	-	S	-	-
weak carbonate, strong pyrite-sericite alteration							-

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
11.60	14.12	0.5	DIS						
0.5% pyrite overall, locally 5% as at 10 cm interval centered at 13.20m.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
14.12	18.65	ASHT	

Green fine-grained moderately chloritic mafic ash tuff. Well laminated at 45 TCA. Ankeritic at upper and lower contact (ankerite spotting). 0.5% fine dissseminated pyrite. Lower contact at 60 TCA and sharp.

STRUCTURES

From	To	Struct	CA	Strain
14.12	18.64	LM	45	W
Well laminated at 45 TCA				
18.64	18.65	CT	60	W
Lower contact at 60 TCA and sharp				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
14.12	18.65	W	-	-	-	-	-
weak chloritic partings							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
14.12	18.65	0.5	-						
0.5% fine dissseminated pyrite									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
18.65	19.70	QFXT	

Grey-blue generally massive felsic quartz-feldsapr crystal tuff. Sericitic partings common at 60 TCA. Heavily ankerite spotted. 0.15% fine disseminated pyrite overall. Lower contact sharp at 60 TCA.

STRUCTURES

From	To	Struct	CA	Strain
18.65	19.69	NA		
no structure				
19.69	19.70	CT	60	
Lower contact sharp at 60 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
18.65	19.70	W	-	-	W	-	-
sericitic partings common							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
18.65	19.70	0.15	-						
0.15% fine disseminated pyrite overall									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
19.70	22.20	ASHT	

Mafic ash tuff similar to 14.12m to 18.65m. Intraformational breccia zone centered at 21.80m. Subtrace pyrite. Lower contact at 65 TCA.

STRUCTURES

From	To	Struct	CA	Strain
19.70	22.19	LM	60	W
laminations at 60 TCA				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
19.70	22.20	VW	-	-	W	-	-
very weak epidote alteration							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
19.70	22.20	0.01	-						
subtrace pyrite									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
19.70	22.20	ASHT	

(Continued from previous page)

STRUCTURES

From	To	Struct	CA	Strain
22.19	22.20	CT	65	

Lower contact at 65 TCA

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
22.20	22.40	SESX	

Sulphide-rich silica exhalite with 15% chalcopyrite and 5% pyrite. Crudely laminated at 60 TCA. Lower contact in fault.

STRUCTURES

From	To	Struct	CA	Strain
22.20	22.39	LM	60	VW
22.39	22.40	FLT		M

Crudely laminated at 60 TCA

lower contact in fault

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
22.20	22.40	-	-	-	W	-	-

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
22.20	22.40	5	BLB	CP	15				

15% chalcopyrite and 5% pyrite

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
22.40	49.77	ASHT	TUFF

Similar to unit above (19.70m to 22.20m).

Upper contact with siliceous exhalite is a 15cm-20cm fault preserved as light grey clayey gouge.

Unit is dark greyish-green, crudely laminated choritic mafic (basalt) tuff. Strongly epidotized throughout, with overprinted irregular white patches of carbonate. Epidote post-dates carbonate patches. Laminated throughout at 50-60 deg TCA. Local lapilli-like textures.

Scattered coarse blebs and fine disseminations of pyrite throughout averaging 0.75%.

Waterlain tuff/ash.

Overall a thick homageneous unit, with an interval of more crystalline texture from 89.24 to 89.69m (core of a flow? Or a crystal-rich tuff?)

Gradational lower contact over 20cm.

STRUCTURES

From	To	Struct	CA	Strain
22.40	49.76	LM	55	VW

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
22.40	49.77	ASHT	TUFF

Similar to unit above (19.70m to 22.20m).

Upper contact with siliceous exhalite is a 15cm-20cm fault preserved as light grey clayey gouge.

Unit is dark greyish-green, crudely laminated choritic mafic (basalt) tuff. Strongly epidotized throughout, with overprinted irregular white patches of carbonate. Epidote post-dates carbonate patches. Laminated throughout at 50-60 deg TCA. Local lapilli-like textures.

Scattered coarse blebs and fine disseminations of pyrite throughout averaging 0.75%.

Waterlain tuff/ash.

Overall a thick homageneous unit, with an interval of more crystalline texture from 89.24 to 89.69m (core of a flow? Or a crystal-rich tuff?)

Gradational lower contact over 20cm.

STRUCTURES

From	To	Struct	CA	Strain
49.76	49.77	CT		

gradational lower contact over 20cm.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
22.40	49.77	M	M	-	W	-	- -

Chlorite moderate to strong (probably original mafic tuff); Epidote moderate to strong overprinted.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
22.40	49.77	0.75	BLB						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
49.77	51.98	LLTF	TUFF

Feldspar crystal tuff. Faintly bedded at 65 deg TCA. 15% coarse feldspar, moderately altered, anhedral to euhedral. Up to 1 cm long.

Up to 1.5% coarse (medium-grained) scattered pyrite blebs locallized along hairline fractures.

Colour medium greyish-green. Weak to moderate epidote alteration, rare hairline fractures with minor calcite.

Lower contact sharp at 65 deg TCA.

STRUCTURES

From	To	Struct	CA	Strain
49.77	51.88	BD	65	
51.88	51.98	CT	65	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
49.77	51.98	W	VW	-	W	-	- -

Epidote - weak

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
49.77	51.98	1.5	BLB						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
51.98	61.83	ASHT	TUFF

Similar mafic tuff as above, but with several prominent thin pyritic beds, and minor intercalated thin felsic crystal tuff layers.

Well laminated, thin laminated (bedded?) 55 deg TCA.

Very sharp upper and lower contact - lower at 55 deg TCA.

Minor fault from 60.90m-61.83m. Gouge and broken core.

Overall 3-4% pyrite as 1cm-2cm primary banded sulphide layers and as lesser fine disseminations and `stringers' (fractures fills) occassional associated with bedding-parallel carbonate veins.

Alteration - chloritic; weak to moderate carbonate; moderate epidote throughout.

Centered at 57.30m is a 3m felsic crystal tuff.

Centered at 57.50m is a 10cm thick felsic crystal tuff. Conformable. Crudely bedded. Quartz-feldspar crystals. Crystal-crowded, essentially a bed of crystals

STRUCTURES

From	To	Struct	CA	Strain
51.98	60.90	BD	55	
60.90	61.82	FLT		M
61.82	61.83	CT	55	

Minor fault from 60.90-61.83m. Gouge and broken core.

Minor fault from 60.90-61.83m. Gouge and broken core.

lower contact at 55 TCA

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
51.98	61.83	M	W	-	W	-	-	-

Epidote moderate, ubiquitous; chlorite strong (primary mafic tuff)

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
51.98	61.83	4	LB						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
61.83	62.53	QFXT	TUFF

Coarse quartz-feldspar crystal tuff. Faintly bedded at 60 deg TCA. Crystal-crowded, with smaller fine mafic minerals that have altered to dark chlorite.

Late coarse blebs of bright pyrite. 0.5%.

Chloritzed mafics (weak); weak epidote.

STRUCTURES

From	To	Struct	CA	Strain
61.83	62.52	BD	60	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
61.83	62.53	QFXT	TUFF

Coarse quartz-feldspar crystal tuff. Faintly bedded at 60 deg TCA. Crystal-crowded, with smaller fine mafic minerals that have altered to dark chlorite.

Late coarse blebs of bright pyrite. 0.5%.

Chloritzed mafics (weak); weak epidote.

STRUCTURES

From	To	Struct	CA	Strain
62.52	62.53	CT	60	

core piece of lower contact is missing

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
61.83	62.53	W	W	-	W	-	- -

Weak chlorite; weak epidote

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
61.83	62.53	0.5	BLB						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
62.53	74.45	ASHT	TUFF

Mafic ash tuff. Chloritic. Well laminated/bedded.

Pyritic and pyrrhotite. 1.5% pyrite and trace fine disseminated pyrrhotite. Pyrite as scattered coarse blebs and very thin laminations.

Alteration - weak to moderate carbonate and weak epidote alteration.

One minor felsic crystal tuff horizon, 26cm thick, centred at 73.5m

Bedding at 60 deg TCA.

From 67.20m-69.00m, there are cross-cutting and bedding-parallel, weakly vuggy, quartz-carbonate breccia veins with scattered pyrite blebs. Bedding parallel zones are 4cm and 5cm thick.

STRUCTURES

From	To	Struct	CA	Strain
62.53	74.44	BD	60	
74.44	74.45	CT	60	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
62.53	74.45	M	M	-	W	-	- -

Epidote weak; Strong chlorite (primary mafic tuff)

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
62.53	74.45	1.5	BLB						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
74.45	76.17	QFXT	TUFF

Coarse quartz-feldspar crowded crystal tuff similar to above units.

Crude bedding at 65 deg TCS.

Moderate to strong epidote alteration of feldspars.

Very little sulphiude - trace pyrite overall.

Epidote concentrates along crenulated stylolites. Rare coarse calcite veinlets - sometimes pink-coloured.

Bedding, 65 deg TCA. Lower contact sharp at 60 deg TCA.

STRUCTURES

From	To	Struct	CA	Strain
74.45	76.16	BD	65	
76.16	76.17	CT	60	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
74.45	76.17	M	M	-	W	-	- -

Moderate epidote replacing feldspars; weak carbonate; weak chlorite

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
74.45	76.17	0.01	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
76.17	85.55	ASHT	TUFF

Dark grey-green, thin-bedded mafic ash tuff.

Many pyritic beds / laminae, ranging up to 8 cm thick. Silica layers within these pyritic intervals plus very fine ash laminae. Also some late, blebby disseminated pyrite. 5.0% pyrite overall.

Bedding at 65 deg TCA.

Four discrete primary sulphide bands from 3 cm to 8 cm thick

Alteration very weak epidote, weak carbonate, moderate chlorite (primary)

STRUCTURES

From	To	Struct	CA	Strain
76.17	85.54	BD	65	
85.54	85.55	CT	65	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
76.17	85.55	W	W	-	W	-	- -

Epidote very weak; chlorite strong (primary mafic tuff)

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
76.17	85.55	5	LB						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
85.55	87.07	FQXT	TUFF

Feldspar-quartz crystal tuff; similar to above units with lesser quartz.

Crudely bedded.at 55 deg TCA. Sharp upper and lower contacts at 60 deg TCA.

Moderate to strong chlorite alteration; epidote moderate; no carbonate.

1.0% overall disseminated blebby pyrite.

Crush zone/fault 5 cm thick, centred at 86.97m.

STRUCTURES

From	To	Struct	CA	Strain
85.55	86.95	BD	55	
86.95	87.00	FLT		S
87.00	87.06	BD	55	
87.06	87.07	CT	60	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
85.55	87.07	-	W	-	W	-	-	-

Moderate epidote alteration

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
85.55	87.07	1	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
87.07	89.60	ASHT	TUFF

Mafic ash tuff. Thin-bedded at 60 TCA.

Bedding-parallel seams of carbonate, and occassional cross-cutting veinlets. Weak carbonate alteration; weak epidote alteration.

Sulphides - pyrite is 1% as thin, mm-scale laminations and rare blebs.

Lower contact is sharp at 60 TCA

STRUCTURES

From	To	Struct	CA	Strain
87.07	89.59	BD	60	
89.59	89.60	CT	60	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
87.07	89.60	W	W	-	W	-	-	-

Epidote is weak. ? Leucoxene.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
87.07	89.60	1	LB						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
89.60	90.65	FQXT	TUFF

Felsic feldspar-quartz crystal tuff. Crystal-rich, but not a crowded tuff.

Very weak epidote chlorite alteration.

Crudely bedded at 60 TCA.

Pyrite is trace, disseminated.

Fine leucoxene.after ilmenite. (?)

STRUCTURES

From	To	Struct	CA	Strain
89.60	90.64	BD	60	
Crudely bedded at 60 TCA.				
90.64	90.65	CT	60	
Lower contact at 60 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
89.60	90.65	VW	-	-	-	-	-
very weak epidote-chlorite alteration, minor leucoxene observed.							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
89.60	90.65	0.05	DIS						
trace disseminated pyrite									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
90.65	96.81	ASHT	TUFF

Mafic ash tuff. Thin-bedded to fine-bedded throughout. More grey mud/silt beds down-section. Beds up to 5 cm thick but most are a few mm thcik.

Bedding at 65 TCA
Alteration - very weak epidote; very weak carbonate.

But muddy layers are strongly limy. (limy muds).

Pyrite - fine disseminated pyrite and minor pyritic laminae. Overall 1.0% pyrite. Laminae from mm to 3 cm thick.

STRUCTURES

From	To	Struct	CA	Strain
90.65	96.80	BD	65	
Weak epidoat alteration. Carbonate mud layers.				
96.80	96.81	CT	60	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
90.65	96.81	W	W	-	W	-	-

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
90.65	96.81	1	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
96.81	100.30	QFXT	TUFF

Felsic crystal tuff. Coarse blue-grey quartz crystals up to 1 cm diam.

Crude bedding at 70 deg.

Weak chlorite alteration. Sulphides - trace pyrite.

Crush zone at basal contact is 15cm thick.

STRUCTURES

From	To	Struct	CA	Strain
96.81	100.15	BD	70	
100.15	100.29	FLT		VS
100.29	100.30	CT		VS

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
96.81	100.15	W	VW	-	W	-	- -
100.15	100.30	-	-	-	-	-	- -

VW chlorite; very weak epidote.

gouge & sericite in fault zone

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
96.81	100.30	0.01	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
100.30	103.20	FXTF	TUFF

Feldspar crystal tuff with aphyric sections. Medium drab green. No quartz phenos.

Well foliated (late shearing?)

Bedding at 65 TCA.

Pyrite 0.5% as fine disseminations.

Weak carbonate; very weak epidote alteration.

Numerous narrow (<5cm) fault gouge zones throughout.

Lower contact sharp at 60 deg TCA.

STRUCTURES

From	To	Struct	CA	Strain
100.30	103.19	BD	65	
103.19	103.20	CT	60	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
100.30	103.20	W	VW	-	-	-	- -

Weak epidote; weak chlorite; weak hematite alteration on partings.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
100.30	103.20	0.5	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
103.20	105.20	ASHT	TUFF

Pale grey-blue ash tuff. Probably bleached mafic tuff.

Thin-bedded at 70 deg TCA.

Rare thin pyritic laminations. And 4% finest pyrite dust.

Sericitic, Minor amount as fine partings.

STRUCTURES

From	To	Struct	CA	Strain
103.20	105.19	BD	70	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
103.20	105.20	W	VW	-	-	-	W	-

Weak sericite alteration; bleached core. Originally probably mafic tuff.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
103.20	105.20	4	DIS						

SAMPLES

From	To	Sample

From	To	Struct	CA	Strain
105.19	105.20	CT		

core missing

From	To	Litho	Simple Geo
105.20	106.10	QFXT	TUFF

Felsic quartz-feldspar crystal tuff, similar to overlying units.

Very weak chlorite alteration.

Thin bedded at 60 TCA.

Many tiny buff leucoxene (or carbonate?) crystal.

Trace pyrite; basal 20 cm is 3% blebby pyrite.

STRUCTURES

From	To	Struct	CA	Strain
105.20	106.09	BD	60	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
105.20	106.10	W	VW	-	-	-	-	-

very weak chlorite alteration.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
105.20	106.10	1	DIS						

SAMPLES

From	To	Sample

From	To	Struct	CA	Strain
106.09	106.10	CT	60	

Sharp lower contact

From	To	Litho	Simple Geo
106.10	114.53	ASHT	TUFF

Medium to dark grey finely laminated ash tuff. Less chlorite. An intermediate to mafic tuff.

Bedding at 70 TCA.

Pitted texture due to leaching fo minor carbonate minerals.

6% fine wispy pyrite as mm-scale laminations and as discrete blebs .

Distinctive yellow discolorations to this core

Very weak calcite alteration as cross-cutting seams/veins; very weak chlorite alteration

STRUCTURES

From	To	Struct	CA	Strain
106.10	114.52	BD	70	
114.52	114.53	CT	70	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
106.10	114.53	W	W	-	-	-	-

weak chlorite alteration

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
106.10	114.53	6	LB						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
114.53	117.04	QFXT	TUFF

Felsic, coarse-grained quartz-feldspar crystal tuff.

Well bedded. Bedding at 60 TCA.

A few % disseminated leucoxene (carbonate?). Weak to moderate epidote. Weak chlorite.

Trace pyrite.

10cm ash tuff unit intercalated near upper contact.

Gradational lower contact as crystal fade out.

STRUCTURES

From	To	Struct	CA	Strain
114.53	117.03	BD	60	
117.03	117.04	CT		

Gradational lower contact

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
114.53	117.04	W	W	-	-	-	-

Weak to moderate epidote; weak chlorite.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
114.53	117.04	0.01	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
117.04	124.00	ASHT	TUFF

Ash tuff, mafic. Medium greyish-green. Thinly bedded at 70 TCA.

Alteration - moderate carbonate; weak epidote; weak chlorite.

Fault zone from 118m-119.4m. Highly broken core and several <10cm gouge zones.

Pyrite 5% as coarse blebs distributed along carbonate bands and as rare <1mm laminations.

Lower contact sharp at 70 TCA.

STRUCTURES

From	To	Struct	CA	Strain
117.04	118.00	BD	70	
118.00	119.30	FLT		S
119.30	123.99	BD	70	
123.99	124.00	CT	70	
		SHARP		

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
117.04	124.00	M	M	-	-	-	-
		Weak epidote; weak chlorite					

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
117.04	124.00	5	BLB						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
124.00	126.68	FQXT	TUFF

Felsic feldspar-quartz crystal tuff. Plag crystals strongly epidotized

Thin bedded at 70 TCA.

Locally crowded crystals.

Single milky quartz vein at 123.95m is 1 cm thick.

Weak to moderate chlorite-altered groundmass.

2% leucoxene flecks (carbonate?)

Trace pyrite.

STRUCTURES

From	To	Struct	CA	Strain
124.00	126.67	BD	70	
126.67	126.68	CT	70	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
124.00	126.68	W	-	-	-	-	-
		weak to moderate chlorite-altered groundmass					

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
124.00	126.68	0.01	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
126.68	135.00	ASHT	TUFF

Thin-bedded mafic ash tuff. Light green-grey to medium green-grey downhole.

Bedding at 70 TCA.

Very weak calcite-epidote alteration.

Narrow fault at 127.70m to 127.75m low angle (30 TCA); a thin chloritic gouge zone.

Sand & mud seam - 129.50m to 129.65m - sand, gouge and spun core.

Pyrite 1% overall; content increases downhole.

STRUCTURES

From	To	Struct	CA	Strain
126.68	134.85	BD	70	
134.85	134.99	FLT		VS
134.99	135.00	CT		

crush zone

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
126.68	135.00	W	W	-	-	-	-

Weak epidote alteration

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
126.68	135.00	1	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
135.00	137.00	SEXL	CHRT

Pale green chert or strongly silicified tuff, with later white quartz interlaminations..

Bedding at 70 TCA.

Locally vuggy, late quartz-carbonate veins. Beds look disrupted, undulating.

Pyrite 0.5% along partings and as rare disseminations.

Weak chlorite partings;

Lower contact within interval of broken core.

STRUCTURES

From	To	Struct	CA	Strain
135.00	136.99	BD	70	
136.99	137.00	CT		

broken core obscures contact

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
135.00	137.00	W	-	-	-	-	-

Weak chlorite partings; silicification?

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
135.00	137.00	0.5	LB						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
137.00	142.38	ASHT	TUFF

Drab green mafic ash tuff.

Superbly bedded. Local limy mud beds. At 70 TCA.

Alteration weak epidote, very weak chlorite. Trace fluoromuscovite within late bull quartz veins.

5% pyrite as semi-massive beds up to 10 cm thick, and as disseminations.

Sporadic 1cm-thick gouge zones throughout.

Lower contact sharp.

STRUCTURES

From	To	Struct	CA	Strain
137.00	142.37	BD	70	
142.37	142.38	CT	65	

Sharp

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
137.00	142.38	W	-	-	-	-	-

Very weak epidote; very weak chlorite; trace fluoromuscovite

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
137.00	142.38	5	LB						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
142.38	145.15	QFXT	TUFF

Felsic quartz-feldspar crystal tuff. Light greyish-green.

Bedding at 65 TCA.

2% tiny leucoxene crystals.

Lower contact sharp at 65 TCA

Weak chlorite along partings.

One 2 cm bed of intercalated ash tuff.

Trace pyrite only.

STRUCTURES

From	To	Struct	CA	Strain
142.38	145.14	BD	65	
145.14	145.15	CT	65	

Sharp

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
142.38	145.15	W	-	-	-	-	-

Weak chlorite along partings; minor leucoxene

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
142.38	145.15	0.01	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
145.15	150.90	ASHT	TUFF

Medium grey-green mafic ash tuff. Well-bedded at 65 TCA.

30cm interval of spaced foliation planes filled by ankerite.

30cm intercalation of carbonate-rich silty sediment centred at 148.00m.

Pyrite 0.5% as disseminations and rare laminations.

7cm of fault gouge centred on 147.90m.

STRUCTURES

From	To	Struct	CA	Strain
145.15	150.89	BD	65	
150.89	150.90	CT	65	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
145.15	150.90	W	W	-	-	-	-	-

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
145.15	150.90	0.5	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
150.90	151.45	CHRT	CHRT

Thin-bedded palest green chert. Strings of pyrite blebs along foliation planes.

Pyrite 10%; trace chalcopyrite.

Bedding at 70 TCA. Lower contact is sharp at 70 TCA.

STRUCTURES

From	To	Struct	CA	Strain
150.90	151.44	BD	70	
				none noted
151.44	151.45	CT	70	
				Sharp

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
150.90	151.45	-	-	-	-	-	-	-

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
150.90	151.45	10	LB						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
151.45	161.77	ASHT	TUFF

Well-bedded mafic ash tuff. Bedding at 65 TCA.

Alteration: Limonite after fine pyrite; very weak carbonate.

Pyrite variable. From 151.7m to 154.2m pyrite content is 6% as fine-grained laminations.

STRUCTURES

From	To	Struct	CA	Strain

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
151.45	161.77	ASHT	TUFF

Well-bedded mafic ash tuff. Bedding at 65 TCA.

Alteration: Limonite after fine pyrite; very weak carbonate.

Pyrite variable. From 151.7m to 154.2m pyrite content is 6% as fine-grained laminations.

STRUCTURES

From	To	Struct	CA	Strain
151.45	161.76	BD	65	
161.76	161.77	CT	65	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
151.45	161.77	W	W	-	-	-	-

Limonite after pyrite

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
151.45	161.77	6	LB						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
161.77	162.82	CHRT	CHRT

Pale grey, well-bedded pyritic chert.

Upper contact marked by 10cm thick bull quartz vein parallell to bedding.

Bedding at 45-60 TCA (undulating). Lower contact at 50 TCA

Up to 8% fine pyrite aggregate in blebs in quartz vein. Overall 5% pyrite in chert.

STRUCTURES

From	To	Struct	CA	Strain
161.77	162.81	BD	60	
162.81	162.82	CT	50	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
161.77	162.82	-	-	-	-	-	-

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
161.77	162.82	5	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
162.82	164.61	ASHT	TUFF

Mafic ash tuff, thin-bedded at 50 TCA.

Alteration - very weak carbonate alteration. Upper and lower contacts are ankerite-rich over 15 cm.

7% pyrite as fine laminae.

STRUCTURES

From	To	Struct	CA	Strain
162.82	164.60	BD	50	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
162.82	164.61	VW	-	-	-	-	-

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
162.82	164.61	7	LB						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
162.82	164.61	ASHT	TUFF

(Continued from previous page)

STRUCTURES

From	To	Struct	CA	Strain
164.60	164.61	CT	65	

Sharp

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
164.61	165.18	CHRT	CHRT

Chert, pale grey-beige. Thin-bedded at 65 TCA.

2% disseminated pyrite.

STRUCTURES

From	To	Struct	CA	Strain
164.61	165.17	BD	65	
165.17	165.18	CT	65	

Sharp

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
164.61	165.18	-	-	-	-	-	-

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
164.61	165.18	2	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
165.18	165.28	ASHT	TUFF

Narrow slice of mafic ash tuff preserved between chert unit and intrusive basalt dyke.

Thin-bedded at 70 TCA.

Strong ankeritic alteration.

STRUCTURES

From	To	Struct	CA	Strain
165.18	165.27	BD	70	
165.27	165.28	CT	70	

SHARP. Intrusive contact.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
165.18	165.28	-	-	-	-	-	-	S

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
165.18	165.28	0	-						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
165.28	167.98	DYKE	DYKE

Basalt feeder dike. Amygdaloidal, with xenoliths. Amygdales are calcite.

Bleached, baked, flesh-pale beach buff-peach colour.

Minor scattered euhedral hornblende laths. The hornblende and some of the calcite vesicles are partially weathered out.

Orientation.of contact 45 TCA. Heterolitic intrusive breccia along outer margin.

Rock is entirely dolomite or ankerite altered.

Sulphides - none.

STRUCTURES

From	To	Struct	CA	Strain
165.28	167.98	CT		

Both contacts are 45 TCA

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
165.28	167.98	S	-	-	-	-	-	S

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
165.28	167.98	0	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
167.98	177.31	ASHT	TUFF

Mafic ash tuff. Medium green-grey.

Thin-bedded at 55 TCA

Alteration is weak epidote-carbonate.

Pyrite 7% overall - dominantly as mm-scale laminations.

Moderately to strongly ankeritic over basal 60cm.

STRUCTURES

From	To	Struct	CA	Strain
167.98	177.30	BD	55	
177.30	177.31	CT	55	

Sharp

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
167.98	177.31	W	W	-	-	-	-	M

Weak epidote alteration

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
167.98	177.31	7	LB						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
177.31	177.70	DYKE	

Basaltic dike simililar to dike from 165.28m-167.98m, except feldspar-phyric with very rare amygdales. Flesh to peach coloured and intensely ankeritic. No visible sulphides. Lower intrusive contact sharp at 30 TCA.

STRUCTURES

From	To	Struct	CA	Strain
177.31	177.69	NA		
		unfoliated		
177.69	177.70	CT	30	VW
		Lower intrusive contact sharp at 30 TCA.		

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
177.31	177.70	S	-	-	-	-	S
		intensely ankeritic					

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
177.31	177.70	0	-						
		no visible sulphides							

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
177.70	189.03	ASHT	

Light green-grey mafic ash tuff. Thin-bedded at 65 TCA. Moderate carbonate as bedding-parallel millimeter (less frequently up to 1 cm thick) scale laminations that are more frequent from 177.70m to to 181.50m. Weak epidote except for rare intense patches. Overall, 2% pyrite dominantly as bedding-parallel millimeter scale laminations associated mostly with carbonate. 2 cm limestone bed with 15% pyrite centered at 188.77m.
177.70 to 181.50m: 4% pyrite.
181.50 to 189.03m: 1.5% pyrite.
Lower contact sharp at 65 TCA.

STRUCTURES

From	To	Struct	CA	Strain
177.70	189.02	BD	65	
		Thin-bedded at 65 TCA		
189.02	189.03	CT	65	
		sharp lower contact at 65 TCA.		

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
177.70	181.50	M	M	-	-	-	-
		carbonate occurs as bedding-parallel laminations; very weak epidote alteration					
181.50	189.03	W	W	-	-	-	-
		carbonate occurs as bedding-parallel laminations; very weak epidote alteration					

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
177.70	181.50	4	LB						
		4% pyrite dominantly as bedding-parallel millimeter-scale laminations associated mostly with carbonate.							
181.50	189.03	1.5	LB						
		1.5% pyrite dominantly as bedding-parallel millimeter-scale laminations associated mostly with carbonate.							

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
189.03	189.11	CARB	

Pale grey, faintly bedded pyritic limestone. Bedding at 60 TCA. 10%-12% blebby pytite. Lower contact at 65 TCA.

STRUCTURES

From	To	Struct	CA	Strain
189.03	189.10	BD	60	VW
Bedding at 60 TCA.				
189.10	189.11	CT	65	
Lower contact at 65 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
189.03	189.11	W	W	-	-	-	-	-

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
189.03	189.11	11	LB						
10%-12% blebby pyrite									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
189.11	190.79	ASHT	

Light green-grey mafic ash tuff. Bedding at 65 TCA. Generally weak carbonate as millimetre-scale laminations. Very weak epidote alteration. 1.5% pyrite as sparse millimeter-scale laminations. Minor carbonate vein hydrobreccia over basal 50 cm. Lower contact sharp at 65 TCA.

STRUCTURES

From	To	Struct	CA	Strain
189.11	190.78	BD	65	
Bedding at 65 TCA				
190.78	190.79	CT	65	
Lower contact sharp at 65 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
189.11	190.79	W	W	-	-	-	-	-
Generally weak carbonate as millimetre-scale laminations. Very weak epidote alteration								

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
189.11	190.79	1.5	LB						
1.5% pyrite as sparse millimetre-scale laminations.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
190.79	191.19	CHRT	

Pale to apple green, well-bedded chert. Bedding at 60 TCA. Riddled with millimeter-scale, low to moderate angle, ankerite-quartz veinlets. No visible sulphides. Lower contact sharp at 60 TCA.

STRUCTURES

From	To	Struct	CA	Strain
190.79	191.18	BD	60	
Bedding at 60 TCA				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
190.79	191.19	W	W	-	-	-	-	-
no discernible alteration								

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
190.79	191.19	0	-						
no visible sulphides									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
190.79	191.19	CHRT	

(Continued from previous page)

STRUCTURES					ALTERATION								MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC	From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample
191.18	191.19	CT	60																						

Lower contact sharp at 60 TCA.

From	To	Litho	Simple Geo
191.19	206.30	FXTF	

Medium green to medium and drab brown-green fine-grained feldspar crystal tuff. Bedding at 65 TCA. 10% off-white feldsapr crystals overall, with intervals that are sandy but very crystal poor. Unit becomes progressively coarser (sandy) downhole. From 191.50m to 198.00m, unit exhibits distinct brownish colour, but is not carbonate altered. Overall weak to moderate carbonate occurs a bedding-parallel laminations; partcularly pronounced from 202.50m to 206.30m. Bull quartz veining noted from 203.30m to 203.70m. 1% pyrite as millimeter-scale laminations. Sharp lower contact at 40 TCA.

STRUCTURES					ALTERATION								MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC	From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample
					191.19	202.50	W	W	-	-	-	-													
					weak carbonate laminations																					
191.19	206.29	BD	65	VW																					
Bedding at 65 TCA																									
													191.19	206.30	1	LB									
													1% pyrite as millimeter-scale laminations.												
					202.50	206.30	M	M	-	-	-	-	-												
					weak carbonate laminations																					
206.29	206.30	CT	40																						

Sharp lower contact at 40 TCA

From	To	Litho	Simple Geo
206.30	208.00	DYKE	

Light peach-coloured, intensely ankerite altered, amygdaloidal hornblende porphyritic mafic dyke. No visible sulphides. Heterolithic intrusive lower contact. Lower contact at 40 TCA.

STRUCTURES					ALTERATION								MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC	From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample
206.30	207.99	NA																							
unfoliated																									
					206.30	208.00	M	M	-	-	-	-	VS												
					very strong ankerite alteration																					
													206.30	208.00	0	-									
													no visible sulphides												

From	To	Litho	Simple Geo
206.30	208.00	DYKE	

(Continued from previous page)

STRUCTURES

From	To	Struct	CA	Strain
207.99	208.00	CT	40	

lower contact at 40 TCA

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
208.00	216.86	FXTF	

Medium green, fiine to medium-grained mafic feldspar crystal tuff. Variable grain size and variably crystal-rich. Moderate to pervasive epidote alteration, with degree of epidotization increasing with increasing feldspar crystal content. Bedding at 60 TCA, with bedding more well developed in finer grained tuff. Trace pyrite overall. Lower contact sharp at 50 TCA.

STRUCTURES

From	To	Struct	CA	Strain
208.00	216.85	BD	60	
		unfoliated		
216.85	216.86	CT	50	
		Lower contact sharp at 50 TCA.		

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
208.00	216.86	M	W	-	-	-	-
		weak carbonated and moderate epidote alteration.					

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
208.00	216.86	0.05	BLB						
		trace blebby pyrite.							

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
216.86	220.81	CHRT	

Light green-grey well bedded chert. Bedding at 50 TCA, but locally disrupted by bull quartz veining and brecciation. Very minor dolomite along fractures. 1-2% pyrite as medium-grained blebs and knots. Lower contact at 65 TCA.

STRUCTURES

From	To	Struct	CA	Strain
216.86	220.80	BD	50	
		bedding at 50 TCA		
220.80	220.81	CT	65	
		lower contact at 65 TCA		

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
216.86	220.81	VW	-	VW	-	-	-
		Very minor dolomite along fractures					

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
216.86	220.81	1.5	BLB						
		1%-2% blebby pyrite							

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
220.81	221.73	FXTF	

Light green fine to medium grained mafic feldspar crystal tuff. Bedded at 65 TCA. Moderately epidote altered. Subtrace pyrite. Lower contact 65 TCA.

STRUCTURES

From	To	Struct	CA	Strain
220.81	221.72	BD	65	
Bedded at 65 TCA				
221.72	221.73	CT	65	
Lower contact at 65 TCA				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
220.81	221.73	M	-	-	-	-	-
moderate epidote alteration							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
220.81	221.73	0.01	-						
sub-trace pyrite									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
221.73	228.61	CHRT	

Light to medium grey-green thin-bedded chert. Bedding at 55 to 60 TCA. Locally pale brown limonite stained. Riddled with hairline low angle ankerite filled fractures which locally exhibit cm-scale offset across individual beds. No visible sulphides. Lower contact brecciated.

STRUCTURES

From	To	Struct	CA	Strain
221.73	228.60	BD	57	VW
bedded at 55 to 60 TCA.				
228.60	228.61	CT		
lower contact brecciated				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
221.73	228.61	VW	-	-	-	-	VW
Riddled with hairline low angle ankerite filled fractures							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
221.73	228.61	0	-						
no visible sulphides									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
228.61	237.90	MFLW	

Pale grey-green, medium-grained bleached mafic flow. Flow brecciated and bull quartz vein injected over upper 60 cm to 229.21m.

Near upper contact there is a zone of peperite texture centred on 230.00m.

6 cm intercalated sedimentary band centred at 236.10m.

15cm bull quartz vein centered 237.63m.

Moerately to well-bedded from 234.20m to end of unit, at 50-60 TCA. Bedding at lower contact 50 TCA.

3% pyrrhotite; 2% pyrite as fine disseminations and as clots associated with upper flow breccia contact.

STRUCTURES

From	To	Struct	CA	Strain

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
228.61	237.90	MFLW	

Pale grey-green, medium-grained bleached mafic flow. Flow brecciated and bull quartz vein injected over upper 60 cm to 229.21m.

Near upper contact there is a zone of peperite texture centred on 230.00m.

6 cm intercalated sedimentary band centred at 236.10m.

15cm bull quartz vein centered 237.63m.

Moerately to well-bedded from 234.20m to end of unit, at 50-60 TCA. Bedding at lower contact 50 TCA.

3% pyrrhotite; 2% pyrite as fine disseminations and as clots associated with upper flow breccia contact.

STRUCTURES

From	To	Struct	CA	Strain
228.61	234.20	NA		
234.20	237.89	BD	55	
237.89	237.90	CT		

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
228.61	237.90	S	M	M	-	-	- -

Weak epidote

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
228.61	237.90	3	LB	PY	2				

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
237.90	241.10	ASHT	TUFF

Well-bedded, thin-bedded ash tuff, plus mudstone plus cherty layers. Bedding at 70 TCA. Medium buff-grey.

Attentuated along laminations (sheared). Probably shearing in sed. sequence in footwall of mafic flow above.

Moderate carbonate alteration. 3% pyrrhotite and 1.5% pyrite dominantly as laminations. Lower contact at 50 TCA

Overall disrupted appearance.

Sulphides 8% fine pyrite and pyrrhotite as laminations. (5 py; 3 po).

Lower contact sharp against underlyiing chert unit at 65 TCA.

STRUCTURES

From	To	Struct	CA	Strain
237.90	241.09	BD	70	

bedding at 70 TCA

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
237.90	241.10	M	M	-	-	-	- -

moderate carbonate alteration

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
237.90	241.10	1.5	LB	PO	3				

3% pyrrhotite and 1.5% pyrite dominantly as laminations.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
237.90	241.10	ASHT	TUFF

(Continued from previous page)

STRUCTURES

From	To	Struct	CA	Strain
241.09	241.10	CT	50	

lower contact at 50 TCA

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
241.10	242.41	CHRT	

Medium brown-grey to buff coloured, thin-bedded tuff with minor cm-scale interbedded ash tuff. Bedding at 60 TCA. Weak to moderate carbonate alteration. 15% pyrite as conformable massive bands between 2 mm and 2 cm thick, often associated with calcite. Lower contact sharp at 60 TCA.

STRUCTURES

From	To	Struct	CA	Strain
241.10	242.40	BD	60	

bedding at 60 TCA

From	To	Struct	CA	Strain
242.40	242.41	CT	60	

lower contact at 60 TCA

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
241.10	242.41	M	M	-	-	-	-

moderate calcite as laminations and within ash tuff matrix

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
241.10	242.41	15	MLB						

5% pyrite as conformable massive bands between 2 mm and 2 cm thick, often associated with calcite

From	To	Litho	Simple Geo
242.41	243.02	ASHT	

Thin-bedded grey to buff felsic ash tuff with minor interbedded chert. Bedding at 55 TCA. Weak carbonate as matrix alteration. 1-2% fine grained pyrite as >1 mm thick laminations and along hairline fractures. Lower contact sharp at 55 TCA.

STRUCTURES

From	To	Struct	CA	Strain
242.41	243.01	BD	55	

bedding at 55 TCA

From	To	Struct	CA	Strain
243.01	243.02	BD	55	

lower contact at 55 TCA

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
242.41	243.02	W	M	-	-	-	-

Weak carbonate as matrix alteration.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
242.41	243.02	1.5	-						

1-2% fine grained pyrite as >1 mm thick laminations and along hairline fractures

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
243.02	251.80	FXAT	

Pale grey-green, intermediate, moderately-bedded crystal ash tuff. Composed of weakly epidotized diffuse feldspar masses in an ash to locally sandy matrix. Moderate interbedded carbonate; carbonate bands range from 1 mm to cm thick. Very minor interbedded chert/mudstone. Bedding at 60 TCA. Overall, 2% pyrrhotite and 2% pyrite as evenly disseminated flecks and blebs. Lower contact sharp at 55 TCA.

245.19m to 245..87m Interval of interbedded crystal ash tuff, chert and mudstone exhibiting soft-sediment deformation. 7% pyrite, dominantly within single 2 cm band, and 5% pyrhhotite as laminations.

STRUCTURES

From	To	Struct	CA	Strain
243.02	251.79	BD	60	
		bedding at 60 TCA.		
251.79	251.80	CT	55	
		lower contact at 55 TCA		

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
243.02	251.80	M	M	-	-	-	- -
		moderate carbonate and epidote alteration					

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
243.02	245.19	2	BLB	PO	2				
		7% pyrite, dominantly within single 2 cm band, and 5% pyrhhotite as laminations.							
245.19	245.87	7	MLB	PO	5				
		7% pyrite, dominantly within single 2 cm band, and 5% pyrhhotite as laminations.							
245.87	251.80	2	BLB	PO	2				
		7% pyrite, dominantly within single 2 cm band, and 5% pyrhhotite as laminations.							

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
251.80	251.95	SEXL	

Medium grey, thin-bedded silica exhalite/chert. Bedding at 60 TCA. Moderate carbonate as laminations. 6% po and 4% py as laminations. Lower contact sharp at 60 TCA.

STRUCTURES

From	To	Struct	CA	Strain
251.80	251.94	BD	60	
		bedding at 60 TCA.		
251.94	251.95	CT	60	
		lower contact at 60 TCA		

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
251.80	251.95	M	M	-	-	-	- -
		moderate carbonate as laminations					

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
251.80	251.95	4	LB	PO	6				
		6% po and 4% py as laminations.							

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
251.95	253.55	FXAT	

Intermediate crystal ash tuff similar to 243.02m to 251.80m., with minor interbedded limestone. Bedding at 60 TCA. 6% po and 4% py as laminations. Lower contact undulating.

254.10m to 254.55m: bedding warped to undulating over basal 45 cm with minor interbedded limestone.

STRUCTURES

From	To	Struct	CA	Strain
251.95	253.54	BD	60	
bedding at 60 TCA				
253.54	253.55	CT		
undulating lower contact				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
251.95	253.55	W	W	-	-	-	-
weak carbonate and epidote alteration							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
251.95	253.55	1	DIS	PO	2				
6% po and 4% py as laminations									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
253.55	254.10	CARB	

Medium grey, thin-bedded limestone with interbedded buff coloured ash tuff. Bedding somewhat warped to locally folded, but generally at 65 TCA. 5% po laminations. Lower contact irregular.

STRUCTURES

From	To	Struct	CA	Strain
253.55	254.09	BD	65	
Bedding somewhat warped to locally folded, but generally at 65 TCA				
254.09	254.10	CT		
lower contact irregular				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
253.55	254.10	W	W	-	-	-	-

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
253.55	254.10	0	-	PO	5				
5% po laminations									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
254.10	267.20	FXAT	

Pale grey-green, intermediate, moderately to well-bedded crystal ash tuff with very minor dark grey chert interbeds. Composed of weakly epidotized diffuse feldspar masses in an ash to locally sandy matrix. Bedding is well developed when ash is fine and crystal poor. Bedding at 60 to 70 TCA. Moderate carbonate and moderate epidote alteration. 1-2% disseminated pyrite to 262.00m. From 262.00m to 267.20m, 0.25% disseminated pyrite. Lower contact sharp at 75 TCA.
3 cm chert bed centered at 254.38m.
257.69m to 257.83m interbedded crystal ash tuff and chert.

STRUCTURES

From	To	Struct	CA	Strain

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
254.10	267.20	FXAT	

Pale grey-green, intermediate, moderately to well-bedded crystal ash tuff with very minor dark grey chert interbeds. Composed of weakly epidotized diffuse feldspar masses in an ash to locally sandy matrix. Bedding is well developed when ash is fine and crystal poor. Bedding at 60 to 70 TCA. Moderate carbonate and moderate epidote alteration. 1-2% disseminated pyrite to 262.00m. From 262.00m to 267.20m, 0.25% disseminated pyrite. Lower contact sharp at 75 TCA.
3 cm chert bed centered at 254.38m.
257.69m to 257.83m interbedded crystal ash tuff and chert.

STRUCTURES

From	To	Struct	CA	Strain
254.10	267.19	BD	65	
Bedding at 60 to 70 TCA.				
267.19	267.20	CT	75	
Lower contact sharp at 75 TCA				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
254.10	267.20	M	W	-	-	-	-	-
Moderate carbonate and moderate epidote alteration.								

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
254.10	262.00	1.5	DIS						
1-2% disseminated pyrite									
262.00	267.20	0.25	DIS						
0.25% disseminated pyrite.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
267.20	267.28	CHRT	

Dark grey, thin-bedded, weakly sheared chert with interbedded ash tuff. Bedding at 75 TCA. 15% laminated pyrite. Lower contact sharp at 75 TCA.

STRUCTURES

From	To	Struct	CA	Strain
267.20	267.27	BD	75	
Bedding at 75 TCA.				
267.27	267.28	CT	75	
Lowerr contact at 75 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
267.20	267.28	M	W	-	-	-	-	-

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
267.20	267.28	15	LB						
15% laminated pyrite.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
267.28	270.78	FXAT	

Light grey-green, intermediate crystal ash tuff. Bedding at 70 TCA. Variable crystal content across lithology. Moderate carbonate and weak epidote alteration.
Possible rare lapilli occur as diffuse dark green lensoidal chlorite clots. 0.5% disseminated pyrite. Lower contact gradational.

STRUCTURES

ALTERATION

MINERALIZATION

SAMPLES

From	To	Litho	Simple Geo
267.28	270.78	FXAT	

Light grey-green, intermediate crystal ash tuff. Bedding at 70 TCA. Variable crystal content across lithology. Moderate carbonate and weak epidote alteration. Possible rare lapilli occur as diffuse dark green lensoidal chlorite clots. 0.5% disseminated pyrite. Lower contact gradational.

STRUCTURES

From	To	Struct	CA	Strain
267.28	270.77	BD	70	
bedding at 70 TCA				
270.77	270.78	CT		
lower contact gradational.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
267.28	270.78	M	M	-	-	-	-
Moderate carbonate and weak epidote alteration.							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
267.28	270.78	0.5	DIS						
0.5% disseminated pyrite.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
270.78	272.35	FXTF	

Light to medium green, medium-grained, poorly bedded feldspar crystal tuff with thin ash tuff interbeds. Bedding at 70 TCA. Weak epidote alteration. 0.1% fine dissemianted pyrite. Lower contact gradational.

STRUCTURES

From	To	Struct	CA	Strain
270.78	272.34	BD	70	
bedding at 70 TCA				
272.34	272.35	CT		
lower contact gradational				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
270.78	272.35	W	-	-	-	-	-
weak epidote alteration							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
270.78	272.35	0.1	DIS						
0.1% fine disseminated pyrite									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
272.35	274.31	FXAT	

Pale grey-green, moderately-bedded feldspar crystal-ash tuff with very minor, thin disrupted mudstone beds. Bedding at 75 TCA. Weak epidote alteration. Weak carbonate as laminations. 0.75% streaky conformable and blebby pyrite. Lower contact at 70 TCA.

STRUCTURES

From	To	Struct	CA	Strain
272.35	274.30	BD	75	
Bedding at 75 TCA				
274.30	274.31	CT	70	
lower contact at 70 TCA				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
272.35	274.31	W	W	-	-	-	-
Weak epidote alteration. Weak carbonate as laminations.							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
272.35	274.31	0.75	LB						
0.75% streaky conformable and blebby pyrite									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
274.31	278.30	ASHT	

Pale grey-green, thin-bedded mafic ash tuff. Bedding at 80 TCA. Moderate carbonate as laminations, weak epidote alteration. Limey ash beds occur from 274.45m to 274.65m. Overall 1% pyrite as millimeter-thick sporadic laminations. Lower contact sharp at 80 TCA.

STRUCTURES

From	To	Struct	CA	Strain
274.31	278.29	BD	80	
Bedding at 80 TCA				
278.29	278.30	CT	80	
Lower contact sharp at 80 TCA				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
274.31	278.30	M	M	-	-	-	-
Moderate carbonate as laminations, weak epidote alteration							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
274.31	278.30	1	LB						
Overall 1% pyrite as millimeter-thick sporadic laminations									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
278.30	278.60	CHRT	

Medium to dark grey, very thin-bedded chert with a single 2 cm thick ash tuff interbed. Bedding at 80 TCA. Cut by hairline low-angle and core-axis-parallel calcite-filled hairline fractures. Trace pyrite. Lower contact at 80 TCA.

STRUCTURES

From	To	Struct	CA	Strain
278.30	278.59	BD	80	
bedding at 80 TCA				
278.59	278.60	CT	80	
lower contact at 80 TCA				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
278.30	278.60	M	M	-	-	-	-

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
278.30	278.60	0.05	DIS						
trace disseminated pyrite									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
278.60	279.85	ASHT	

Pale grey-green, laminated to very thin-bedded, mafic to intermediate ash tuff. Bedding at 85 TCA. Weak epidote; moderate carbonate alteration. 1-2% pyrite as very fine grained laminations. Lower contact sharp at 85 TCA.

STRUCTURES

From	To	Struct	CA	Strain
278.60	279.84	BD	85	
bedding at 85 TCA				
279.84	279.85	CT	85	
lower contact at 85 TCA				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
278.60	279.85	M	M	-	-	-	-
weak epidote, moderate carbonate alteration.							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
278.60	279.85	1.5	LB						
1-2% pyrite as very fine grained laminations									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
279.85	280.00	QXTF	

Very light grey quartz crystal rich tuff. Extremely siliceous. Very faint bedding at 85 TCA. Cut by hairline low-angle to core-axis-parallel calcite-filled fractures. Trace pyrite. Lower contact at 85 TCA.

STRUCTURES

From	To	Struct	CA	Strain
279.85	279.99	BD	85	
bedding at 85 TCA.				
279.99	280.00	CT	85	
lower contact at 85 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
279.85	280.00	-	-	-	-	-	-
no visible alteration							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
279.85	280.00	0.05	DIS						
trace disseminated pyrite									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
280.00	280.64	ASHT	

Light grey green, thin-bedded, mafic to intermediate ash tuff. Bedding at 85 TCA. Weak to moderate carbonate as laminations. Strongly silicified over upper 10 cm. 0.1% pyrite as rare laminations. Lower contact sharp at 85 TCA.

STRUCTURES

From	To	Struct	CA	Strain
280.00	280.63	BD	85	
bedding at 85TCA				
280.63	280.64	CT	85	
lower contact sharp at 85 TCA				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
280.00	280.10	S	W	-	-	-	S
strong silicification, weak carbonate as laminations.							
280.10	280.64	M	M	-	-	-	-
moderate carbonate as laminations							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
280.00	280.64	0.1	LB						
0.1% pyrite as rare laminations.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
280.64	290.64	ASHT	

Medium to dark green well (thin) bedded mafic ash tuff. Bedding at 85 TCA to 285.00m. From 285.00m to 290.64m, bedding at 90 TCA. Very rare and thin (less than 10 cm thick) feldsapr crystal ash tuff beds observed. Moderate carbonate as laminations. From 288.70m to 290.64m, moderately to locally intensely epidotized, associated with gradually increasing occurrence of feldspar crystal tuff interbeds. Weakly to moderately chloritic. 3 cm gouge zone noted centered at 284.25m. Overall, 0.25% disseminated pyrite. Lower contact sharp at 85 TCA, demarcated by dominant crystal ash tuff below this.

STRUCTURES

From	To	Struct	CA	Strain

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
280.64	290.64	ASHT	

Medium to dark green well (thin) bedded mafic ash tuff. Bedding at 85 TCA to 285.00m. From 285.00m to 290.64m, bedding at 90 TCA. Very rare and thin (less than 10 cm thick) feldsapr crystal ash tuff beds observed. Moderate carbonate as laminations. From 288.70m to 290.64m, moderately to locally intensely epidotized, associated with gradually increasing occurrence of feldspar crystal tuff interbeds. Weakly to moderately chloritic. 3 cm gouge zone noted centered at 284.25m. Overall, 0.25% disseminated pyrite. Lower contact sharp at 85 TCA, demarcated by dominant crystal ash tuff below this.

STRUCTURES

From	To	Struct	CA	Strain
280.64	284.23	BD	85	
bedding at 85 TCA.				
284.23	284.26	FLT	85	S
chloritic fault gouge				
284.26	285.00	BD	85	
bedding at 85 TCA.				
285.00	290.63	BD	90	
bedding at 90 TCA.				
290.63	290.64	CT	85	
lower contact at 85 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
280.64	288.70	M	M	-	-	-	-
moderate carbonate as laminations							
288.70	290.64	S	M	-	-	-	-
moderate carbonate as laminations, moderately to locally intensely epidotized, associated with gradually increasing occurrence of feldsapr cryst tuff interbeds							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
280.64	290.64	0.25	DIS						
0.25% disseminated pyrite.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
290.64	297.90	FXAT	

Medium green, moderately bedded, mafic feldspar crystal ash tuff. Bedding variably developed at 85 TCA. Patchy epidote alteration (moderate) throughout associated mainly with calcite veins/hydrobreccia zones which locally disrupt bedding. 1% pyrite as discreet millimeter-thick and scattered laminations. Lower contact sharp at 85 TCA.

STRUCTURES

From	To	Struct	CA	Strain
290.64	297.89	BD	85	
bedding at 85 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
290.64	297.90	M	M	-	-	-	-
Patchy epidote alteration (moderate) throughout associated mainly with calcite veins/hydrobreccia zones							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
290.64	297.90	1	LB						
1% pyrite as discreet millimeter-thick and scattered laminations									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
290.64	297.90	FXAT	

(Continued from previous page)

STRUCTURES

From	To	Struct	CA	Strain
297.89	297.90	CT	85	

sharp lower contact at 85 TCA.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
297.90	302.14	PATF	

Pale to medium grey-green laminated to thin-bedded intermediate(?) pyritic ash tuff. Bedding at 65 TCA. Pale green chloritic partings common. Weak to moderate carbonate as laminations and as a lesser matrix component. 7% to 9% pyrite as 1-3 millimeter thick laminations. Lower contact sharp at 70 TCA.

STRUCTURES

From	To	Struct	CA	Strain
297.90	302.13	BD	65	

bedding at 65 TCA

From	To	Struct	CA	Strain
302.13	302.14	CT	70	

sharp lower contact at 70 TCA.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
297.90	302.14	M	M	-	-	-	-

Pale green chloritic partings common. Weak to moderate carbonate as laminations and as a lesser matrix component

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
297.90	302.14	8	LB						

7% to 9% pyrite as 1-3 millimeter thick laminations

From	To	Litho	Simple Geo
302.14	308.19	FXAT	

Medium green, moderately chloritic, mafic feldsapr crystal ash tuff with ash tuff interbeds that occur more frequently towards lower contact. Bedding at 60 to 70 TCA. Weak epidote alteration to 306.20m; trace pyrite. From 306.20m to 308.19m, approximately 70/30 feldspar crystal ash tuff/fine ash tuff to pyritic ash tuff. Over this interval, moderate carbonate and weak epidote alteration, and 3-5% pyrite as laminations. Lower contact gradational.

STRUCTURES

From	To	Struct	CA	Strain
302.14	308.18	BD	65	

bedding at 60 to 70 TCA.

From	To	Struct	CA	Strain
308.18	308.19	CT		

lower contact gradational.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
302.14	306.20	W	-	-	-	-	-
306.20	308.19	M	-	-	-	-	-

weak epidote alteration.

moderate carbonate and weak epidote alteration

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
302.14	306.20	0.05	DIS						
306.20	308.19	4	LB						

trace pyrite

3-5% pyrite as laminations

From	To	Litho	Simple Geo
308.19	310.90	ASHT	

Medium grey, well-bedded ash tuff to pyritic ash tuff. Bedding at 70 TCA. Moderate carbonate alteration as laminations. 4%-5% pyrite as laminations. Lower contact sharp at 75 TCA.

STRUCTURES

From	To	Struct	CA	Strain
308.19	310.89	BD	70	
bedding at 70 TCA.				
310.89	310.90	CT	75	
Lower contact sharp at 75 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
308.19	310.90	M	M	-	-	-	-
moderate carbonate alteration as laminations							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
308.19	310.90	4.5	LB						
4% to 5% pyrite as laminations.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
310.90	367.88	FXAT	

Thick sequence of crudely to moderately bedded mafic feldspar crystal ash tuff. Bedding at 70 TCA. Lithology is relatively homogeneous throughout, with the exception of short variably-textured intervals as noted. Patchy moderate epidote alteration throughout, often associated with carbonate veining and carbonate hydraulic breccia. Overall, 2% to 3% pyrite as laminations and along calcite vein margins. Sharp lower contact at 70 TCA.

317.10m to 318.20m : Possible agglomeratic interval composed of pale green diffuse rounded "bombs" in a chloritic ash tuff.
343.00m: center of 8 cm thick very fine grained pale grey carbonate-rich ash tuff interval.
352.80m to 353.00m: interbedded ash tuff and crystal ash tuff.
367.26m to 367.88m: Basal interval composed of coarse mafic feldspar crystal tuff.

STRUCTURES

From	To	Struct	CA	Strain
310.90	367.87	BD	70	
bedding at 70 TCA.				
367.87	367.88	CT	70	
sharp lower contact at 70 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
310.90	367.88	M	W	-	-	-	-
Patchy moderate epidote alteration throughout, often associated with carbonate veining and carbonate hydraulic breccia.							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
310.90	367.88	2.5	LB						
Overall, 2% to 3% pyrite as laminations and along calcite vein margins									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
367.88	375.14	ASHT	

Pale to light grey thin-bedded felsic (?) ash tuff. Bedding at 65 TCA and locally very gently warped to kinked. Very weak carbonate alteration. Very weak chlorite and sericite partings. From 367.88m to 373.75.00m, 1%-2% pyrite as very thin (less than or equal to) 1 mm laminations. From 373.75m to 375.14m 2% pyrrhotite, 1 to 2% pyrite as laminations. Lower contact sharp at 70 TCA.

STRUCTURES

From	To	Struct	CA	Strain
367.88	375.13	BD	65	
bedding at 65 TCA.				
375.13	375.14	CT	70	
lower contact sharp at 70 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
367.88	375.14	VW	VW	-	VW	-	- -
Very weak carbonate alteration. Very weak chlorite and sericite partings							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
367.88	373.75	1.5	LB						
1-2% pyrite as very thin (less than or equal to) 1 mm laminations									
373.75	375.14	1.5	LB	PO	2				
2% pyrrhotite, 1 to 2% pyrite as laminations.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
375.14	375.25	SESX	

Dark grey, pyrite-rich silica exhalite. Bedding at 65 TCA. Minor carbonate as extremely thin laminations. Lower contact sharp at 65 TCA.

STRUCTURES

From	To	Struct	CA	Strain
375.14	375.24	BD	65	
bedding at 65 TCA				
375.24	375.25	CT	65	
sharp lower contact at 65 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
375.14	375.25	VW	VW	-	-	-	- -
Minor carbonate as extremely thin laminations							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
375.14	375.25	5	MLB	PO	25				
Minor carbonate as extremely thin laminations									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
375.25	375.52	LLTF	

Pale grey to grey-white felsic lapilli tuff with 5% elongate felsic lapilli up to 1.5 cm in length. Laminated to thin-bedded at 70 TCA. No significant alteration. 5% pyrrhotite, 3% pyrite as discontinuous millimeter-thick laminations. Lower contact sharp at 65 TCA.

STRUCTURES

From	To	Struct	CA	Strain
375.25	375.51	BD	70	
bedding at 70 TCA.				
375.51	375.52	CT	65	
sharp lower contact at 65 Tca				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
375.25	375.52	-	-	-	-	-	-

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
375.25	375.52	3	LB	PO	5				
5% pyrrhotite, 3% pyrite as discontinuous millimeter thick laminations.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
375.52	376.62	SESX	

Dark grey, thin-bedded pyrite-pyrrhotite rich silica exhalative. Bedding at 70 to 80 TCA. 50% sulphides (45% pyrite, 5% pyrrhotite) as fine to very fine grained massive to semi-massive conformable bands. Very minor calcite along partings/bedding. Lower contact at 75 TCA.
376.35m to 376.48m 12cm bed of buff-grey felsic lapilli tuff, silicified at upper contact.

STRUCTURES

From	To	Struct	CA	Strain
375.52	376.61	BD	75	
Bedding at 70 to 80 TCA				
376.61	376.62	CT	75	
Lower contact at 75 TCA				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
375.52	376.62	VW	VW	-	-	-	-
Very minor calcite along partings/bedding							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
375.52	376.62	45	MLB	PO	5				
50% sulphides (45% pyrite, 5% pyrrhotite) as fine to very fine grained massive to semi-massive conformable bands.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
376.62	377.65	ASHT	

Pale green-grey intermediate (?) ash tuff. Bedding at 70 TCA. Weak to moderate carbonate as laminations. Very weak matrix epidote alteration. 1.5% pyrrhotite, 0.5% pyrite associated mainly with carbonate rich laminations. Lower contact sharp at 70 TCA.

STRUCTURES

From	To	Struct	CA	Strain
376.62	377.64	BD	70	
bedding at 70 TCA				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
376.62	377.65	ASHT	

Pale green-grey intermediate (?) ash tuff. Bedding at 70 TCA. Weak to moderate carbonate as laminations. Very weak matrix epidote alteration. 1.5% pyrrhotite, 0.5% pyrite associated mainly with carbonate rich laminations. Lower contact sharp at 70 TCA.

STRUCTURES

From	To	Struct	CA	Strain
377.64	377.65	CT	70	

sharp lower contact at 70 TCA.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
376.62	377.65	W	W	-	-	-	- -

Weak to moderate carbonate as laminations.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
376.62	377.65	0.5	LB	PO	1.5				

1.5% pyrrhotite, 0.5% pyrite associated mainly with carbonate rich laminations

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
377.65	377.78	SESX	

Medium to dark grey, thin-bedded pyrrhotite-pyrite rich silica exhalite. Bedding at 75 TCA. 6% pyrrhotite, 3% pyrite as laminations. Lower contact sharp at 75 TCA.

STRUCTURES

From	To	Struct	CA	Strain
377.65	377.77	BD	75	

bedding at 75 TCA.

From	To	Struct	CA	Strain
377.77	377.78	CT	75	

lower contact at 75 TCA.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
377.65	377.78	-	-	-	-	-	- -

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
377.65	377.78	3	LB	PO	6				

6% pyrrhotite, 3% pyrite as laminations.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
377.78	379.02	FXAT	

Very pale green, weakly epidotized intermediate (?) feldspar crystal ash tuff. Generally massive. 5%-7% pyrite and pyrrhotite as regularly disseminated flecks and along margins of rare calcite veinlets. Lower contact sharp at 70 TCA.

STRUCTURES

From	To	Struct	CA	Strain
377.78	379.01	NA		

massive

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
377.78	379.02	W	-	-	-	-	- -

weakly epidote alteration

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
377.78	379.02	3	DIS	PO	3				

5%-7% pyrite and pyrrhotite as regularly dissemianted flecks and along margins of rare calcite veinlets

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
377.78	379.02	FXAT	

(Continued from previous page)

STRUCTURES

From	To	Struct	CA	Strain
379.01	379.02	CT	70	

lower contact sharp at 70 TCA.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
379.02	379.26	SESX	

Medium to dark grey, thin-bedded pyrite-pyrrhotite-rich silica exhalite. Bedding at 70 TCA. No significant alteration. 8% pyrite and 2% pyrrhotite as semi-massive laminations. Lower contact sharp at 75 TCA.

STRUCTURES

From	To	Struct	CA	Strain
379.02	379.25	BD	75	

bedding at 75 TCA

From	To	Struct	CA	Strain
379.25	379.26	CT	75	

sharp lower contact at 75 TCA

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
379.02	379.26	-	-	-	-	-	-

No significant alteration

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
379.02	379.26	8	LB	PO	2				

8% pyrite and 2% pyrrhotite as semi-massive laminations

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
379.26	382.68	ASHT	

Pale green intermediate (?) generally weakly bedded ash tuff. Bedding at 75 TCA. Weak epidote and very weak carbonate alteration. Bull milky white quartz vein noted from 381.07m to 381.17m. 2.5% pyrrhotite, 1% pyrite as elongate conformable flecks. Lower contact gradational.

STRUCTURES

From	To	Struct	CA	Strain
379.26	382.67	BD	75	

bedding at 75 TCA

From	To	Struct	CA	Strain
382.67	382.68	CT		

gradational contact

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
379.26	382.68	W	VW	-	-	-	-

Weak epidote and very weak carbonate alteration

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
379.26	382.68	1.5	DIS	PO	2.5				

2.5% pyrrhotite, 1% pyrite as elongate conformable flecks.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
382.68	383.62	FXAT	

Light grey, fine-grained intermediate (?) feldspar crystal ash tuff. Bedding locally well developed at 75 TCA. Weak epidote and moderate carbonate alteration. 2% pyrite and 2% pyrrhotite as discontinuous elongate and conformable flecks. Lower contact sharp at 75 TCA.

STRUCTURES

From	To	Struct	CA	Strain
382.68	383.61	BD	75	
Bedding locally well developed at 75 TCA.				
383.61	383.62	CT	75	
Lower contact sharp at 75 TCA				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
382.68	383.62	M	M	-	-	-	-
Weak epidote and moderate carbonate alteration.							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
382.68	383.62	2	DIS	PO	2				
2% pyrite and 2% pyrrhotite as discontinuous elongate and conformable flecks.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
383.62	383.72	SESX	

Dark grey, well-bedded pyrite-pyrrhotite-rich silica exhalite. Bedding at 70 TCA. 10% pyrite, 3% pyrrhotite as fine to dusty laminations. Sharp lower contact at 70 TCA.

STRUCTURES

From	To	Struct	CA	Strain
383.62	383.71	BD	70	
bedding at 70 TCA.				
383.71	383.72	CT	70	
sharp lower contact at 70 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
383.62	383.72	-	-	-	-	-	-
no significant alteration							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
383.62	383.72	10	LB	PO	3				
10% pyrite, 3% pyrrhotite as fine to dusty laminations									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
383.72	384.45	FXAT	

Light green fine grained intermediate (?) feldspar crystal ash tuff. Generally massive. Weak epidote and carbonate alteration. Moderately fractured locally with calcite filling fractures. 4% pyrite, 3% pyrrhotite as disseminations. Lower contact sharp at 70 TCA.

STRUCTURES

From	To	Struct	CA	Strain
383.72	384.44	NA		
massive				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
383.72	384.45	FXAT	

Light green fine grained intermediate (?) feldspar crystal ash tuff. Generally massive. Weak epidote and carbonate alteration. Moderately fractured locally with calcite filling fractures. 4% pyrite, 3% pyrrhotite as disseminations. Lower contact sharp at 70 TCA.

STRUCTURES

From	To	Struct	CA	Strain
384.44	384.45	CT	70	
lower contact sharp at 70 TCA				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
383.72	384.45	W	W	-	-	-	- -
Weak epidote and carbonate alteration							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
383.72	384.45	4	DIS	PO	3				
4% pyrite, 3% pyrrhotite as disseminations									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
384.45	384.52	SESX	

Dark grey, thin-bedded pyrrhotite-pyrite-rich silica exhalite. Bedding at 75 TCA. Moderate carbonate laminations. 5% pyrrhotite, 2% pyrite as laminations. Sharp lower contact at 75 TCA.

STRUCTURES

From	To	Struct	CA	Strain
384.45	384.51	BD	75	
bedding at 75 TCA				
384.51	384.52	CT	75	
Sharp lower contact at 75 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
384.45	384.52	M	M	-	-	-	- -
Moderate carbonate laminations							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
384.45	384.52	2	LB	PO	5				
5% pyrrhotite, 2% pyrite as laminations.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
384.52	387.25	FXAT	

Medium green, fine to medium-grained, mafic to intermediate feldspar crystal ash tuff. Massive, with very rare thin (< 1 cm) intercalated carbonate beds. Weak epidote alteration. 1% each disseminated pyrite and pyrrhotite. Gradational lower contact.

STRUCTURES

From	To	Struct	CA	Strain
384.52	387.24	NA		
massive				
387.24	387.25	CT		
gradational lower contact				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
384.52	387.25	VW	-	-	-	-	- -
weak epidote alteration							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
384.52	387.25	1	DIS	PO	1				
1% each disseminated pyrite and pyrrhotite.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
387.25	402.03	ASHT	

Medium green, massive to well-bedded mafic ash tuff with minor intercalated limestone and silica exhalite as noted. Moderate epidote alteration, weak carbonate as laminations. 0.5% each disseminated pyrite and pyrrhotite
387.25m to 391.00m: massive mafic ash tuff.
391.00m to 402.03m: moderately to well bedded at 80 TCA.
392.35m: center of 3 cm thick silica exhalite with 10 pyrrhotite and 2% pyrite.
393.87m: center of 5 cm pyrrhotite-pyrite rich silica exhalite with 20% pyrrhotite.

End of Hole.

STRUCTURES

From	To	Struct	CA	Strain
387.25	391.00	NA		
		massive		
391.00	402.03	BD	80	
		moderately to well bedded at 80 TCA.		

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
387.25	402.03	VW	-	-	-	-	-
		Moderate epidote alteration, weak carbonate as laminations.					

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
387.25	392.34	0.5	DIS	PO	0.5				
		0.5% each disseminated pyrite and pyrrhotite							
392.34	392.37	2	LB	PO	10				
		3 cm thick silica exhalite with 10 pyrrhotite and 2% pyrite.							
392.37	393.85	0.5	DIS	PO	0.5				
		0.5% each disseminated pyrite and pyrrhotite							
393.85	393.90	0	-	PO	20				
		5 cm pyrrhotite-pyrite rich silica exhalite with 20% pyrrhotite.							
393.90	402.03	0.5	DIS	PO	0.5				
		0.5% each disseminated pyrite and pyrrhotite							

SAMPLES

From	To	Sample

APPENDIX V

DIAMOND DRILL LOG for DDH 90K-09

From	To	Litho	Simple Geo
0.00	9.10	CASE	CASE

Cased

STRUCTURES					ALTERATION								MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC	From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample
0.00	9.10	NA			0.00	9.10	-	-	-	-	-	-	-	0.00	9.10	0	DIS								

From	To	Litho	Simple Geo
9.10	9.50	RUBL	RUBL

Broken bedrock and ground core. Broken along sericitic partings.

STRUCTURES					ALTERATION								MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC	From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample
9.10	9.50	NA			9.10	9.50	-	-	-	-	-	-	-	9.10	9.50	0	DIS								

From	To	Litho	Simple Geo
9.50	21.28	ASHT	TUFF

Pale grey-green, thin-bedded, granular, coarse ash tuff with minor crystal and pyritic laminations. Intermediate to felsic composition.
Bedding marked by sericitic partings. Bedding at 63 to 67 TCA; averages 65 TCA.
Pyrite 1% fine disseminated euhedral crystals.
Alteration - carbonate in groundmass and minor calcite laminae; plus sericitic partings.
Sharp lower contact at 65 TCA.

STRUCTURES					ALTERATION								MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC	From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample
9.50	21.27	BD	65																						
					9.50	21.28	M	M	-	M	-	-	-	9.50	21.28	1	DIS								
					Moderate carbonate flooding and sericitic partings.																						
21.27	21.28	CT	65																						
		Sharp																							

From	To	Litho	Simple Geo
21.28	25.00	FQXT	TUFF

Feldspar-quartz crystal tuff. Intermediate to mafic composition (probably intermediate). Abundant feldspar crystals range up to 8 mm across and are predominantly replaced by buff-green epidote. Smaller pale-grey, glassy quartz crystals are visible with hand lens only.
No pyrite noted.
Bedding is 65 TCA. Alteration is moderate carbonate flooding, and chlorite and sericite on partings.
Lower contact is sharp at 65 TCA, marked by the disappearance of crystals.

STRUCTURES

From	To	Struct	CA	Strain
21.28	24.99	BD	65	
24.99	25.00	CT	65	

Sharp lower contact.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
21.28	25.00	M	M	-	M	-	W -

Weak chlorite on partings.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
21.28	25.00	0	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
25.00	28.96	ASHT	TUFF

Andesite or dacite. Fine grained, well-bedded, thin-bedded intermediate fine ash tuff. Bedding at 70 TCA.
Locally silicified, with ghosts of lensoid lapilli shapes.
1.5% pyrite as disseminations and thin laminations.
Sharp lower contact at 69 TCA.

STRUCTURES

From	To	Struct	CA	Strain
25.00	28.95	BD	70	
28.95	28.96	CT	69	

Sharp lower contact.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
25.00	28.96	W	M	-	M	-	W -

Weakly silicified; weakly chloritic.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
25.00	28.96	1.5	LB						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
28.96	31.52	FQXT	TUFF

Feldspar-quartz crystal tuff. Intermediate to mafic composition (probably intermediate). Abundant feldspar crystals range up to 8 mm across and are predominantly replaced by buff-green epidote. Smaller pale grey glassy quartz crystals are visible with hand lens only.
No pyrite noted.
Bedding is at 60 TCA; lower contact is sharp at 65 TCA, marked by the disappearance of crystals.

STRUCTURES

From	To	Struct	CA	Strain
28.96	31.51	BD	60	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
28.96	31.52	-	-	-	-	-	- -

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
28.96	31.52	0	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
28.96	31.52	FQXT	TUFF

(Continued from previous page)

STRUCTURES

From	To	Struct	CA	Strain
31.51	31.52	CT	65	

Sharp lower contact.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
31.52	33.75	ASHT	TUFF

Intermediate ash tuff. Well-bedded, thin-bedded. Weakly silicified in places.
Bedding at 62 TCA; lower contact sharp at 80 TCA.
Rare fine pyrite dust; one large (4mm) pyrite bleb overprinted.
Minor sericite and chlorite on partings.

STRUCTURES

From	To	Struct	CA	Strain
31.52	33.74	BD	62	
33.74	33.75	CT	80	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
31.52	33.75	W	-	-	W	-	W	-

Minor sericite and chlorite on partings.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
31.52	33.75	0.01	DIS						

Rare pyrite dust.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
33.75	37.63	QFXT	TUFF

Strongly chloritized, quartz-feldspar crystal tuff with abundant (crowded) large pale-grey quartz crystals. Rhyolite. Moderately well-bedded.
Medium grey-green colour.
Bedding at 68 TCA; lower contact sharp at 68 TCA.
Pyrite - no fine pyrite noted; one large (1cm) pyrite crystal aggregate overprinted.
Feldspar less abundant than in overlying crystal tuffs, and is wholly altered to epidote.

STRUCTURES

From	To	Struct	CA	Strain
33.75	37.62	BD	68	
37.62	37.63	CT	68	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
33.75	37.63	M	-	-	W	-	-	-

Moderate epidote; strong chlorite.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
33.75	37.63	0	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
37.63	44.34	ASHT	TUFF

Thin-bedded, well-bedded ash tuff. Intermediate (dacite?).
Bedding at 64 TCA.
Lower contact is gradational into carbonate exhalite at 64 TCA.
Pyrite - trace fine pyrite dust only.
Partings show both chlorite and sericite. No obvious epidote. Local layers of core are silicified but not bleached.
Fault zone from 41.80m to 42.40m has only minor gouge, but has a long interval of surrounding core which is sheared and altered by ankeritized foliation planes and with other planar brittle fractures coated with black manganese.

STRUCTURES

From	To	Struct	CA	Strain
37.63	41.80	BD	64	
41.80	42.40	FLT		VS
42.40	44.33	BD	64	
44.33	44.34	CT	64	

Gradational lower contact into limestone.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
37.63	44.34	W	-	-	W	-	W	-

Weak chlorite and sericite on partings.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
37.63	44.34	0.01	DIS						

SAMPLES

From	To	Sample

From	To	Simple Geo
44.34	46.12	CARB

Limestone. Nodules of light grey crystalline carbonate within ash tuff forms the upper and lower marginal zones to a 1.3m thick massive limestone (carbonate exhalite) unit.
Massive carbonate section is 1.30m long. This is a good example of a `carbonate exhalite' accumulation within a larger intermediate to felsic ash tuff unit.
10% fine pyrite as large agggregate blobs / blebs, and as patches along select horizons.
Bedding is variable but averages 90 TCA. Lower contact sharp at 78 TCA - marked by chlorite plus pyrite on parting.

STRUCTURES

From	To	Struct	CA	Strain
44.34	46.11	BD	90	

Bedding attitudes variable.

From	To	Struct	CA	Strain
46.11	46.12	CT	78	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
44.34	46.12	-	-	-	-	-	-	-

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
44.34	46.12	10	NOD						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
46.12	47.52	ASHT	TUFF

Mafic coarse ash tuff. Weakly bedded. Dark grey-green. Tiny grains (crystals) altered to epidote.
Faint bedding at 62 TCA; lower contact sharp at 75 TCA.
Trace fine disseminated pyrite.

STRUCTURES

From	To	Struct	CA	Strain
46.12	47.51	BD	62	
47.51	47.52	CT	75	

Sharp lower contact.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
46.12	47.52	W	-	-	-	-	-

Weak epidote relacement of tiny grains or crystals. Strong chlorite (primary mafic tuff).

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
46.12	47.52	0.01	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
47.52	50.73	QCSX	EXHL

Classic, thin-bedded, weakly pyritic silica plus carbonate exhalite (chert-carbonate).
Pale to light, warm buff-grey colour of varaible intensity.
Absolutely no foliation.
Thin bedded, well-bedded undulatory (wavy) beds. Carbonate occurs as beds and as lenses and nodules; not strongly reactive, so suspect dolomite / ferro-dolomite - which also explains the light brown colour.
Bedding consistent at 72 TCA throughout. Lower contact sharp at 72 TCA.
Individual beds are variably carbonate and silica-rich. Partings undulate and are marked by bright sericite.
Pyrite content is variable from 3% to 10%, averaging 8%. Primarily as fine-grained laminations, with lesser disseminated crystals. No other sulphides noted.

STRUCTURES

From	To	Struct	CA	Strain
47.52	50.72	BD	72	
50.72	50.73	CT	72	

Sharp lower contact.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
47.52	50.73	W	-	-	W	-	-

Sericitic partings.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
47.52	50.73	8	LB						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
50.73	51.23	QFXT	TUFF

Quartz-feldspar crystal tuff. Pale grey-green. Medium-grained. Crudely bedded. Weak sericite on partings. No pyrite noted. 30% quartz crystals with lesser feldspar.Tiny buff granules may be trace epidote alteration (?carbonate?).
Bedding at 68 TCA; lower contact sharp at 74 TCA.
Absolutely no foliation.

STRUCTURES

From	To	Struct	CA	Strain

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
50.73	51.23	QFXT	TUFF

Quartz-feldspar crystal tuff. Pale grey-green. Medium-grained. Crudely bedded. Weak sericite on partings. No pyrite noted. 30% quartz crystals with lesser feldspar.Tiny buff granules may be trace epidote alteration (?carbonate?).
Bedding at 68 TCA; lower contact sharp at 74 TCA.
Absolutely no foliation.

STRUCTURES

From	To	Struct	CA	Strain
50.73	51.22	BD	68	
51.22	51.23	CT	74	

Sharp lower contact.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
50.73	51.23	W	-	-	W	-	-	-

Sericite on partings; weak chlorite.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
50.73	51.23	0	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
51.23	52.05	QCSX	EXHL

Back to same pale warm buff-grey silica + carbonate exhalite unit (chert-limestone). Probably dolomitic. Less pyrite than overlying unit.
Well-bedded and thin-bedded. Bedding at 65 to 72 TCA but averages 70 TCA; lower contact sharp at 70 TCA.
Alteration - minor sericite and lesser black chlorite on partings.
From 51.60m to 51.90m there are fine crystals incorporated (intermixed crystal tuff component).
Trace fine disseminated pyrite dust only.

STRUCTURES

From	To	Struct	CA	Strain
51.23	52.04	BD	70	
52.04	52.05	CT	70	

Sharp lower contact.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
51.23	52.05	W	-	-	W	-	-	-

Weak sericite and chlorite on partings.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
51.23	52.05	0.01	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
52.05	55.58	ASHT	TUFF

Pale green-grey coarse ash tuff. Intermediate (andesite-dacite). Dacite - because unit is more silicieous under lens.
Well-bedded; medium-bedded. Bedding ranges from 60 to 72 TCA but averages 70 TCA; lower contact sharp at 68 TCA.
Alteration - weak chlorite on partings; lesser sericite.
Absolutely no foliation.
Pyrite - trace fine disseminated pyrite dust only.
Lower one metre of unit is more thin-bedded; one bedding surface shows flame structure.

STRUCTURES

From	To	Struct	CA	Strain
52.05	55.57	BD	70	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
52.05	55.58	ASHT	TUFF

Pale green-grey coarse ash tuff. Intermediate (andesite-dacite). Dacite - because unit is more silicieous under lens.
Well-bedded; medium-bedded. Bedding ranges from 60 to 72 TCA but averages 70 TCA; lower contact sharp at 68 TCA.
Alteration - weak chlorite on partings; lesser sericite.
Absolutely no foliation.
Pyrite - trace fine disseminated pyrite dust only.
Lower one metre of unit is more thin-bedded; one bedding surface shows flame structure.

STRUCTURES

From	To	Struct	CA	Strain
55.57	55.58	CT	68	

Sharp lower contact.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
52.05	55.58	W	-	-	VW	-	- -

Minor chlorite on partings.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
52.05	55.58	0.01	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
55.58	58.41	ASHT	TUFF

Intermixed / interbedded tuff and limestone. Light grey-green overall, but unit consists of alternating light grey carbonate and dark green tuff bands.
Well-bedded; thin-bedded. Bedding at 68 to 70 TCA, averages 69 TCA. Lower contact gradational over 23cm with bedding at 60 TCA throughout.
Alteration - weak chlorite on partings and moderate epidote overprinting on tuffaceous bands and replacing scattered small feldspar crystals.
Pyrite - trace fine disseminated pyrite, but several laminations have concentrated webs of fine-grained net-textured pyrrhotite. Overall about 5% of unit is pyrrhotite. No chalcopyrite noted.
Once again, foliation-free core.

STRUCTURES

From	To	Struct	CA	Strain
55.58	58.40	BD	69	
58.40	58.41	CT	60	

Gradational lower contact over 23cm.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
55.58	58.41	W	-	-	VW	-	- -

Weak chlorite on partings and moderate epidote patches replacing tuff.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
55.58	58.41	0.01	DIS	PO	5				

Web-textured pyrrhotite concentrated along thin laminae - thickest band is 3cm.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
58.41	61.70	QCSX	EXHL

Similar to above units # 12 and 14. Thin-bedded, well-bedded silica and carbonate exhalite (chert-limestone).
Light grey chert dominates over carbonate beds. Bedding at 63 to 72 TCA; averages 70 TCA. Lower contact sharp at 72 TCA.
Alteration - moderate sericite and chlorite on partings. Thin ash laminae between some carbonate and chert layers.
Pyrite - ranges from 10% to 15% as abundant fine laminations that have a distinct bright yellow weathering / staining after jarosite (secondary Fe-carbonate).
Average pyite content 12%. No chalcopyrite noted; no pyrrhotite noted.

STRUCTURES

From	To	Struct	CA	Strain
58.41	61.69	BD	70	
61.69	61.70	CT	72	

Sharp lower contact.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
58.41	61.70	M	-	-	S	-	-	-

Moderate sericite and chlorite on partings.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
58.41	61.70	12	LB						

10% to 15% pyritic laminae. No copper minerals.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
61.70	71.80	ASHT	TUFF

Important unit of intermediate coarse ash tuff interbedded with carbonate. Probably dacite. Distinctly sulphide-rich. Overall pale buff colour.
Medium-bedded, with bedding at 50 to 68 TCA, average 60 TCA. Lower contact sharp at 58 TCA. Lower 1.5 metres of unit is thin bedded, with trace sulphides only.
This unit has fine pyrite-pyrrhotite speckling throughout, but has 4 distinct sulphide-rich horizons where pyrite > pyrrhotite, but both minerals are present. No chalcopyrite noted. Semi-massive pyrite-pyrrhotite horizons are centred at 61.70m (2cm thick); 67.55 (3cm); 68.05 (18cm) and 69.58m (14cm). Average pyrite + pyrrhotite content is 12%; overall 9% pyrite and 3% pyrrhotite.
Alteration - from 64.20m to 65.70m minor pale bright green fluoromuscovite (a little too pale?) mixed with sericite. Minor sericite on fractures. All rock is carbonate flooded.

STRUCTURES

From	To	Struct	CA	Strain
61.70	71.79	BD	60	
71.79	71.80	CT	58	

Sharp lower contact.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
61.70	71.80	M	M	-	W	-	-	-

Trace to minor fluoromuscovite (?) on some partings in centre of unit.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
61.70	71.80	9	LB	PO	2				

4 semi-massive layers; 12% sulphides overall.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
71.80	98.70	ASHT	TUFF

Pale to light greenish-grey (pale olive) well-bedded, thin-bedded, coarse ash tuff. Intermediate - probably dacite.
Alteration - carbonate flooded throughout unit (weak to moderate). Moderate epidote flooding of ash tuff obscures original composition and imparts light olive colour to unit.
Sulphides - 0.5% fine pyrrhotite wisps throughout. Thin pyrrhotite-pyrite lamellae are concentrated along carbonate beds. Overall sulphide content of unit is 1.5%.
Minor textural changes through this thick unit include: narrow intervals with abundant fine feldsapr crystals; thin-bedded intervals; near-massive intervals; thin white quartz veins parallel to bedding. Plus the 19 thin intercalated pale grey carbonate (limestone) beds.
Core is weakly ankeritized in the one metre approaching the basal fault, and for a one metre interval surrounding a narrow foliated zone centred on 80.46m.
There are 19 thin carbonate beds scattered throughtout the main ash tuff unit. The thickest of these is 15cm. These typically host thin pyrrhotite-pyrite layers.
Bedding ranges 57 to 72 TCA, averaging 69 TCA. Faintly bedded near mid-unit. Lower contact is at brittle fault break at 98.70m.

STRUCTURES

From	To	Struct	CA	Strain
71.80	98.69	BD	69	
Bedding ranges from 57 to 72 TCA.				
98.69	98.70	CT		VS
Lower contact is against a fault.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
71.80	98.70	W	W	-	VW	-	- -
Carbonate flooding, moderate epidote flooding.							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
71.80	98.70	0.5	DIS	PO	1				

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
98.70	100.40	FLTZ	RUBL

Major fault break marked by 25 cm of weakly cemented sand, gouge and grit, and broad marginal zones of shattered angular ankeritized wallrock. The broken wallrock on the hangingwall side of the gouge shows no fluoromuscovite. The metre-long interval of broken ankeritized bedded coarse ash tuff that lies below the 25 cm interval of cemented fault gouge and grit incorporates sericitic partings and 3% bright teal-green fluoromuscovite. The lower 10cm of this fault zone is a second gouge zone with fractured ash tuff clasts on the hangingwall side and intact basalt porphyry on the footwall side.

STRUCTURES

From	To	Struct	CA	Strain
98.70	100.40	FLT		VS
Mixed gouge and large, angular wallrock fragments.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
98.70	100.40	M	-	-	M	-	- -
3% fluoromuscovite within the sericite partings.							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
98.70	100.40	0.75	DIS						
Fine wisps of pyrite (possibly some pyrrhotite)									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
100.40	103.33	DYKE	DYKE

Massive, medium-grained, basalt porphyry dike. Weathered surface is medium pinkish-grey due to weak ankerite `paint'. `Crowded' euhedral cream plagioclase crystals and rosettes (glomeroporphyritic) comprise 35% of rock. Minor large (up to 1.5 cm long) acicular hornblende crystals are altered to chlorite and selectively leached. And 8% small, ragged, calcite-filled amygdales. Slightly finer grainsize near contact margins. It looks like this dike has a narrow margin of fault gouge along its contact. No sulphides noted.
Larger Ca-plagioclase crystals are wholly altered to epidote, preserving the euhedral and glomereroporphyitic crystal forms. Fresh core surface reveals a second finer white acicular plagioclase phase (Na-plagicoase?) that is not altered to epidote. This finer-grained acicular Na-plagiclase phase displays crystal alignment / flow alignment (`flow foliation').

STRUCTURES

From	To	Struct	CA	Strain
100.40	103.33	DY		

Dike margins are narrow faults.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
100.40	103.33	W	W	-	M	-	- -

Weak to moderate epidote replacement of plagioclase crystals. Amygdales are filled with calcite.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
100.40	103.33	0	DIS						

No sulphides noted.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
103.33	103.98	FLTZ	RUBL

Fault zone at footwall contact of basalt dike is marked by minor fault gouge and chunks of fractured wallrock (from subjacent unit) broken along sericitic partings. Minor fluoromuscovite associated with some of this sericite.

STRUCTURES

From	To	Struct	CA	Strain
103.33	103.98	FLT		VS

Gouge and broken wallrock.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
103.33	103.98	M	-	-	S	-	- -

Minor fluoromuscovite within sericite.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
103.33	103.98	0	DIS						

No pyrite noted.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
103.98	106.30	QFXT	TUFF

Quartz-feldspar crystal tuff. White to pale grey to pale pink (slight ankerite or hematite overprint).
Well-bedded and thin-bedded with bedding at 60 TCA throughout. Lower contact is a fault.
Pyrite as 1% fine disseminated euhedral crystals.
Alteration - rock is siliceous everywhere, but upper 50cm is silcified and bleached white. No carbonate. Moderate sericite on abundant partings.

STRUCTURES

From	To	Struct	CA	Strain
103.98	106.30	BD	60	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
103.98	106.30	M	-	-	M	-	M -

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
103.98	106.30	1	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
106.30	106.80	FLTZ	RUBL

Narrow fault zone marked by minor gouge and lots of wallrock chips broken along sericitic partings.

STRUCTURES

From	To	Struct	CA	Strain

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
106.30	106.80	FLTZ	RUBL

Narrow fault zone marked by minor gouge and lots of wallrock chips broken along sericitic partings.

STRUCTURES

From	To	Struct	CA	Strain
106.30	106.80	FLT		VS

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
106.30	106.80	M	-	-	-	-	-	-

Strong sericite on wallrock clasts.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
106.30	106.80	0	DIS						

No pyrite noted.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
106.80	125.83	ASHT	TUFF

Mafic ash tuff. Thin-bedded, well-bedded. Dark green overall, with thin (1cm) dark grey intercalations - soft, but no reaction - dolomite?
Bedding ranges from 65 to 78 TCA; mainly around 78 TCA. Lower contact sharp at 80 TCA.
Textures range from fine ash tuff, to coarse ash tuff, to local thin crystal tuff intervals (fine feldspars altered to epidote). Medium grey to dark grey intercalations appear to be non-chloritc intervals of the same ash tuff - not a carbonate interbed.
Upper part of unit is strongly chloritic and very dark green. This grades down into strongly epidotized rock below 112.00m, and rock colour changes to medium olive green.
0.5% pyrite as fine disseminated dust and a few larger (2mm-3mm) scattered euhedral crystals.
Strong epidote alteration from 116.50m to 117.00m and from 117.90m to 118.40m likely represent wholesale replacement of carbonate interbeds.

STRUCTURES

From	To	Struct	CA	Strain
106.80	125.82	BD	78	
125.82	125.83	CT	80	

Sharp lower contact.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
106.80	125.83	S	-	-	-	-	-	-

Stong chlorite (primary mafic tuff); strong to very strong epidote replacement.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
106.80	125.83	0.5	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
125.83	126.28	FXTF	TUFF

Narrow unit of mafic to intermediate, coarse-grained feldspar crystal tuff. Crudely bedded at 77 TCA; sharp lower contact at 80 TCA.
Important thin lamellae that are hornblende-rich. Chloritized acicular hornblende crystals range up to 1cm long.
This feldspar-hornblende crystal tuff can be directly correlated with the feldspar-hornblende porphyritic basalt dikes seen in nearby drillholes (90K-07 and 90K-15).
0.5% fine bright euhedral pyrite crystals.
Alteration. Minor chlorite on partings. Epidote replacement of large feldspars and some thin laminae. Unaltered fine euhedral white feldspar crystals can also be seen with a handlens - so, similar feldspar phenocyst assemblage as the basalt dike.

STRUCTURES

From	To	Struct	CA	Strain
125.83	126.27	BD	77	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
125.83	126.28	FXTF	TUFF

Narrow unit of mafic to intermediate, coarse-grained feldspar crystal tuff. Crudely bedded at 77 TCA; sharp lower contact at 80 TCA.
Important thin lamellae that are hornblende-rich. Chloritized acicular hornblende crystals range up to 1cm long.
This feldspar-hornblende crystal tuff can be directly correlated with the feldspar-hornblende porphyritic basalt dikes seen in nearby drillholes (90K-07 and 90K-15).
0.5% fine bright euhedral pyrite crystals.
Alteration. Minor chlorite on partings. Epidote replacement of large feldspars and some thin laminae. Unaltered fine euhedral white feldspar crystals can also be seen with a handlens - so, similar feldspar phenocyst assemblage as the basalt dike.

STRUCTURES

From	To	Struct	CA	Strain
126.27	126.28	CT	80	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
125.83	126.28	M	-	-	-	-	-

Moderate epidote; weak chlorite

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
125.83	126.28	0.5	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
126.28	127.39	ASHT	TUFF

Mafic ash tuff. Well-bedded, thin-bedded, strongly chloritic, moderate epidote.
Bedding at 78 TCA; lower contact sharp at 80 TCA.
Mainly fine ash tuff, but grading to granular coarse ash tuff in places.
Alteration - Strong chlorite on partings (primary mafic tuff); selective strong epidote replacement of abudant thin carbonate laminae; most (but not all) thin carbonate beds are strongly epidote altered.
Pyrite - unit is pyrite free. No sulphides noted.

STRUCTURES

From	To	Struct	CA	Strain
126.28	127.38	BD	78	
127.38	127.39	CT	80	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
126.28	127.39	S	-	-	-	-	-

Strong chlorite; moderate epidote, weak carbonate.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
126.28	127.39	0	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
127.39	128.47	FXTF	TUFF

Coarse feldspar crystal tuff. Similar to nearby overlying unit.
Crude bedding at 80 TCA; sharp lower contact at 86 TCA.
Trace fine euhedral pyrite crystals.
No hornblende noted here. See previous discussion.

STRUCTURES

From	To	Struct	CA	Strain
127.39	128.46	BD	80	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
127.39	128.47	FXTF	TUFF

Coarse feldspar crystal tuff. Similar to nearby overlying unit.
Crude bedding at 80 TCA; sharp lower contact at 86 TCA.
Trace fine euhedral pyrite crystals.
No hornblende noted here. See previous discussion.

STRUCTURES

From	To	Struct	CA	Strain
128.46	128.47	CT	86	

Sharp lower contact.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
127.39	128.47	W	-	-	-	-	-

Moderate chlorite; moderate epidote replacing Ca-plagioclase phenocrysts.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
127.39	128.47	0.01	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
128.47	165.94	ASHT	TUFF

Mafic ash tuff. Well-bedded, thin-bedded. Strongly epidotized throughout. Slight textural variations throughout.
Bedding ranges from 56 to 86 TCA, averaging 80 TCA. Lower contact sharp at 75 TCA.
Textures range from fine ash tuff to granular coarse ash tuff, to a few thin intercalations of fine feldspar crystal tuff. Rare dark grey intercalations are non-chloritic ash layers.
Alteration. Strong chlorite (primary mafic tuff); strong epidote alteration; minor carbonate.
Pyrite is rare to 160.00m, occurring as scattered large euhedral crystals and as a few thin fine-grained laminae around 158.50m. Below 160.00m pyrite concentration increases to 2% as scattered large (8mm) euhdral overprinted crystals.
From 147.78m to 148.90m there are two cherty (silicified) beds, which area light grey, non-pyritic. These could be broken out as a separate chert unit, but it looks more like silicification.

STRUCTURES

From	To	Struct	CA	Strain
128.47	165.93	BD	80	
165.93	165.94	CT	75	

Sharp lower contact.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
128.47	165.94	S	-	-	-	-	-

Strong chlorite; strong epidote.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
128.47	160.00	0.01	DIS						
160.00	165.94	2	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
165.94	169.58	QFXT	TUFF

Coarse-grained quartz-feldspar crystal tuff - different from above FXTF units. Medium greyish-green.
Crudely bedded and faintly bedded. Bedding at 75 TCA; lower contact sharp but ragged at 75 TCA.
Minor fine disseminated pyrite only.
Alteration - strong epidote, weak chlorite.
Quartz crystals up to 8mm diam. Large feldspars have blurred outlines due to epidotization.
Alteration - strong epidote; feldspars wholly replaced by epidote. No hornblende noted. No fine white plagioclase noted, but level of epidotization is higher.

STRUCTURES

From	To	Struct	CA	Strain
165.94	169.57	BD	75	
169.57	169.58	CT	75	

Ragged lower contact.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
165.94	169.58	S	-	-	-	-	-

Strong epidote flooding; weak chlorite.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
165.94	169.58	0.5	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
169.58	170.05	ASHT	TUFF

Well-bedded, thin-bedded mafic ash tuff. Medium grey-green. Strongly epidotized; several thin carbonate beds.
Bedding ranges from 65 to 85 TCA; averages 70 TCA. Lower contact sharp at 65 TCA.
Pyrite 4% to 5% as fine pyritic lamellae within carbonate laminae.
Strongly epidotized, weak chlorite-sericite along partings.

STRUCTURES

From	To	Struct	CA	Strain
169.58	170.04	BD	70	
170.04	170.05	CT	65	

Sharp lower contact.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
169.58	170.05	S	-	-	-	-	-

Strong epidote flooding; weak chlorite and sericite.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
169.58	170.05	5	LB						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
170.05	170.22	FQXT	TUFF

Coarse feldspar-quartz crystal tuff with 4% fine disseminated euhedral pyrite. Similar to overlying unit but smaller and fewer quartz crystals. Less intense epidote alteration. Weak chlorite on partings. Siliceous rock. Rhyolite.
Lower contact sharp at 75 TCA.
5% fine disseminated pyrite.

STRUCTURES

From	To	Struct	CA	Strain
170.05	170.21	BD	75	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
170.05	170.22	FQXT	TUFF

Coarse feldspar-quartz crystal tuff with 4% fine disseminated euhedral pyrite. Similar to overlying unit but smaller and fewer quartz crystals. Less intense epidote alteration. Weak chlorite on partings. Siliceous rock. Rhyolite.
Lower contact sharp at 75 TCA.
5% fine disseminated pyrite.

STRUCTURES

From	To	Struct	CA	Strain
170.21	170.22	CT	75	

Sharp lower contact

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
170.05	170.22	M	-	-	-	-	M -

Siliceous, moderate epidote; weak chlorite

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
170.05	170.22	5	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
170.22	172.45	ASHT	TUFF

Mafic ash tuff. Well-bedded, thin-bedded.
Bedding at 65 to 80 TCA; averaging 75 TCA. Lower contact sharp at 73 TCA.
Light greyish-green to warm buff-green down-section.
Pyrite variable 3% to 5% as fine disseminations and fine-grained laminations along limy beds.
Rock is carbonate-flooded; also abundant thin carbonate beds. Moderate epidote alteration.
Textures - well-bedded fine ash to coarse ash tuffs with a few large strongly epidotized clasts of quartz-eye rhyolite (up to 6 cm across).

STRUCTURES

From	To	Struct	CA	Strain
170.22	172.44	BD	75	
172.44	172.45	CT	73	

Sharp lower contact.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
170.22	172.45	M	S	-	-	-	- -

Moderate epidote flooding.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
170.22	172.45	4	LB						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
172.45	173.13	FXTF	TUFF

Strongly epidotized feldspar crystal tuff. Crowded with crystals - rock looks siliceous - dacite? Pale yellow-grey-green overall.
Bedding at 78 TCA; lower contact sharp at 82 TCA.
Pyrite - trace finest wisps only.

STRUCTURES

From	To	Struct	CA	Strain
172.45	173.12	BD	78	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
172.45	173.13	M	M	-	-	-	- -

Strong epidote flooding.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
172.45	173.13	0.01	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
172.45	173.13	FXTF	TUFF

(Continued from previous page)

STRUCTURES

From	To	Struct	CA	Strain
173.12	173.13	CT	82	

Sharp lower contact.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
173.13	193.46	MFLW	UNKN

This `unit' is a major mafic extrusive complex with 6 main sub-units (including one thick, late, bull-quartz vein).
173.13m to 179.63m Massive, epidote flooded, granular rock. Ghosts of large globular forms and local mafic (dark chloritic) selvages - this may be wholly altered pillows. No bedding. No crystals. Locally crackled. Uppermost 15cm is thin-bedded but wholly epidotized. No pyrite noted. Could this be 100% altered hyaloclastite?
179.63m to 184.55m Breccia. Coarse, rounded blocks of mafic volcanic `floating' in dark grey carbonate selvage with minor pyite. This looks like small, intact pillows and broken pillow breccia in carbonate mud. Less epidotized than overlying unit; some chloritic rock survives. 2% pyrite overall, although the grade within the interpillow carbonate patches is relatively higher. Estimate that 12% of this interval is grey carbonate selvage.
184.55m to 188.94m Massive, flow-foliated hornblende-plagioclase porphyritic basalt or diorite. Hornblende is altered to chlorite; plagioclase altered to epidote - groundmass looks entirely epidotized. Difficult rock to interpret. Massive, featureless, except for clear flow-foliation at 72 TCA. Upper 80 cm is a progressively finer-grained `chill margin'. Lower contact is sharp against chloritized gouge of a 1-cm-thick shear at 37 TCA. Hornblende laths range up to 1cm long, but most are 8mm. No pyrite noted.
188.94m to 188.95m Fault. 1cm thick, dark green chlorite gouge.
188.95m to 193.13m Fine grained mafic ash tuff. Thick-bedded, well-bedded. Strongly epidotized. A few large globular clasts. Soft sediment structures? Pillow forms? Trace fine disseminated pyrite only. Within this interval from 190.18m to 191.45m, is a massive white bull quartz vein with accessory dark green chlorite.
193.13m to 193.46m Well-bedded, thin-bedded asht tuff with lithic clasts - looks like disrupted sediments just below the floor of the flow. Lithic clasts are black siltstone. Bedding averages 50 TCA; lower contact sharp against fault at 50 TCA. Maroon and olive green colours due to eipdote and hematite alteration. This is a strongly altered mafic ash tuff. No pyrite noted. This rock also contains small quartz grains - could it be a wholly relithified fault breccia (cataclastite to mylonite)?

STRUCTURES

From	To	Struct	CA	Strain
173.13	188.94	FB	72	
188.94	193.45	BD	50	
193.45	193.46	CT	50	

Sharp lower contact against fault.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
173.13	193.46	S	M	-	-	-	-

Strong epidote flooding; moderate chlorite.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
173.13	193.46	0.05	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
193.46	193.66	FLTZ	RUBL

Narrow fault zone filled with gouge, sand and rock chips.

STRUCTURES

From	To	Struct	CA	Strain

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
193.46	193.66	FLTZ	RUBL

Narrow fault zone filled with gouge, sand and rock chips.

STRUCTURES

From	To	Struct	CA	Strain
193.46	193.66	FLT		VS

Fault zone

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
193.46	193.66	-	-	-	-	-	-	-

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
193.46	193.66	0	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
193.66	215.26	LLAT	TUFF

Well-bedded, medium green to light olive, mafic lithic lapilli ash tuff with rounded quartz grains. This is a large, complex unit with many internal textural divisions.
First 2m includes 25cm of well-bedded, thin-bedded coarse ash tuff with bedding at 45 TCA (paleotopography).
195.88m to 196.28m Massive white bull quartz vein cut by fault. 15cm of buff gouge from 195 93m to 196.08m.
197.30m to 199.50m There is an abrupt increase in the number of thin carbonate intercalations - and a similar jump in the pyrite concentration occuring as pyrite laminae along the carbonate beds. 15% pyrite over this interval. Bedding at 44 TCA - rock looks like mafic volcanic clasts in mafic ash tuff with abundant thin intervening carbonate beds.
199.50m to 200.25m Well-bedded, thin-bedded mafic ash tuff. Bedding at 66 to 72 TCA. Mafic fine ash to coarse ash tuff, with scattered rounded small (<1cm diam) lithic clasts throughout. Minor fine pyrite scattered along bedding planes.
200.25m to 200.71m Coarse lithic lapilli tuff - same groundmass as overlying unit but with large rounded volcanic clasts wholly altered to epidote.
200.71m to 201.80m Well-bedded, medium-bedded mafic coarse ash tuff. Medium green to light olive green. Waves of strong epidote alteration. Bedding 65 to 75 TCA - average 70 TCA. Rare fine disseminated pyrite.
201.80m to 206.65m Bedded mafic lithic lapilli tuff. Unit cut by narrow late bull quartz vein with minor dark chlorite patches. Large rounded lithic clasts are strongly epidote-altered and surrounded by thin bands of dark green mafic ash with pyrite concetrations. Estimate 1.5% pyrite overall. Sparse bedding at 55 TCA.
206.65m to 210.70m Complex interval of abundant rounded volcanic lapilli strongly altered to epidote, well-bedded mafic ash tuff groundmass with common thin dark grey carbonate intercalations and several bands (beds) rich in rounded grey quartz grain up to 1.4 cm diam. One 60 cm intreval is about 25% quartz grains. Bedding at 60 TCA. 1% minor fine pyrite as thin laminations.
210.70m to 212.14m Well-bedded, thin-bedded mafic fine ash to coarse ash tuff. Medium grey green to light olive gtreen with moderate epidote alteration. Bedding at 65 to 70 TCA, averaging 65 TCA. Trace fine pyrite dust. Rare, scattered rounded quartz crystals.
212.14m to 215.26m, massive pale olive green, epidote-flooded ash tuff or hyaloclastite(?). A few large scattered rounded grey quartz crystals. Trace fine disseminated pyrite. Lower 80 cm of this interval displays crude bedding at 65 TCA. Lower contact sharp at 75 TCA.

STRUCTURES

From	To	Struct	CA	Strain
193.66	193.91	BD	45	

Paleotopographic drape.

193.91	195.88	QV		
195.88	199.50	BD	44	
199.50	200.25	BD		
200.25	201.80	BD	70	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
193.66	200.71	S	-	-	-	-	-	-

Strong epidote flooding.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
193.66	197.30	1	DIS						
197.30	199.50	15	LB						
199.50	200.25	1	DIS						
200.25	201.80	0.1	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
193.66	215.26	LLAT	TUFF

(Continued from previous page)

STRUCTURES

From	To	Struct	CA	Strain
201.80	206.65	BD	55	
		Sparse bedding.		
206.65	210.70	BD	60	
210.70	212.14	BD	65	
212.14	215.25	BD	65	
215.25	215.26	CT	75	
		Sharp lower contact.		

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
200.71	210.70	S	-	-	-	-	-
		Strong epidote flooding.					
210.70	212.14	M	-	-	-	-	-
		Moderate epidote flooding.					
212.14	215.26	S	-	-	-	-	-
		Strong epidote flooding.					

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
201.80	206.65	1.5	DIS						
206.65	210.70	1	LB						
210.70	212.14	0.1	DIS						
212.14	215.26	0.1	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
215.26	225.90	ASHT	TUFF

Thin-bedded, well-bedded mafic ash tuff. Variable colour - light grey-green to light olive to light grey. Carbonate intercalations are common throughout this unit and are pyritic. Bedding varies from 65 to 70 TCA, averages 70 TCA. Lower contact is sharp at 75 TCA. 2% pyrite as thin fine-grained laminae. 5% of unit is thin carbonate interbeds. Epidote alteration fades out below 221.50m. Partings are weakly chloritic throughout unit.

STRUCTURES

From	To	Struct	CA	Strain
215.26	225.89	BD	70	
225.89	225.90	CT	75	
		Sharp lower contact.		

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
215.26	225.90	M	-	-	-	-	-
		Moderate to weak epidote flooding; weak chlorite.					

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
215.26	225.90	2	LB						
		Pyritic carbonate interbeds.							

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
225.90	228.87	ASHT	TUFF

Massive mafic ash tuff. Pale grey-olive throughout; moderate epidote flooding. Faint fragmental texture. Local bedding at 60 TCA; sharp lower contact at 65 TCA. Minor light grey granular carbonate within matrix between these large clasts. Minor fine euhedral pyrite associated with this carbonate.

STRUCTURES

From	To	Struct	CA	Strain
225.90	228.86	BD	60	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
225.90	228.87	ASHT	TUFF

Massive mafic ash tuff. Pale grey-olive throughout; moderate epidote flooding. Faint fragmental texture. Local bedding at 60 TCA; sharp lower contact at 65 TCA. Minor light grey granular carbonate within matrix between these large clasts. Minor fine euhedral pyrite associated with this carbonate.

STRUCTURES

From	To	Struct	CA	Strain
228.86	228.87	CT	65	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
225.90	228.87	M	-	-	-	-	-
Moderate epidote flooding; weak chlorite.							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
225.90	228.87	1	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
228.87	249.72	ASHT	TUFF

Major intermediate ash tuff unit with varying textures and sulphide content.
228.87m to 230.26m Thin-bedded, well-bedded felsic ash tuff with abundant thin carbonate intercalations and pyrite laminae. Bedding at 65 TCA. 5% pyrite as fine-grained laminae. Siliceous in places, pale waxy grey everywhere. Sericitic partings.
230.26m to 230.76m, 50cm limestone bed with small angular mafic clasts. 2% fine disseminated pyrite.
230.76m to 233.41m Well-bedded, thin-bedded intermediate (or mafic) coarse ash tuff with large rounded volcanic clasts that are wholly epidote-flooded. Pyrite content variable, but averages 4% as wisps and disseminated crystals.
233.41m to 233.50m Narrow fault with a 5cm thick white bull quartz vein along the lower margin.
233.50m to 238.46m Well-bedded, thin-bedded, cherty intermediate to mafic ash tuff. Colour medium grey to light olive. Bedding from 62 to 78 TCA, averages 69 TCA. Irregular epidote flooding. 5% fine pyrite laminae scattered throughout. 235.20m to 235.57m is an epidote-flooded mafic ash tuff zone.
238.46m to 239.06m Fault Zone. Two narrow intervals of gouge plus extensive wallrock chips.
239.06m to 243.42m Well-bedded, thin-bedded, limy, weakly pyritic mafic ash tuff. Carbonate interbeds make up to 40% of this interval. Pyrite as fine-grained laminations and as disseminated crystals averages 4% of rock. Bedding undulates but averages 85 TCA.
243.42m to 243.72m Four thin pyritic bands over this interval in epidotised, bedded mafic ash tuff. Bedding at 65 TCA. Moderate epidote, multiple thin carbonate intercalations.
243.72m to 249.72m Massive to weakly bedded mafic coarse ash tuff, with random large fragments and local thin carbonate beds. Strongly epidotized throughout, and pyrite -pyrrhotite laminations. Crude bedding preserved at 80 to 85 TCA. Chlorite or carbonate on partings. Pyrite content is trace to minor except at laminations. Lower contact is sharp at 80 TCA. 20cm interval of 20% pyrrhotite-pyrite laminations with coase ash centred on 247.15m - a clue to what lies below.

STRUCTURES

From	To	Struct	CA	Strain
228.87	230.26	BD	65	
230.26	233.50	BD	70	
233.50	238.46	BD	78	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
228.87	230.26	W	-	-	W	-	W -
230.26	233.41	M	-	-	W	-	- -
Moderate epidote flooding.							
233.41	238.46	M	-	-	W	-	- -
Irregular epidote flooding.							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
228.87	230.26	5	LB						
230.26	230.76	2	DIS						
230.76	233.41	4	DIS						
233.41	238.46	5	LB						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
228.87	249.72	ASHT	TUFF

(Continued from previous page)

STRUCTURES

From	To	Struct	CA	Strain
238.46	239.06	FLT		VS
239.06	243.42	BD	85	
243.42	243.72	BD	65	
243.72	249.71	BD	82	
249.71	249.72	CT	80	

Sharp lower contact.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
238.46	243.72	M	-	-	W	-	- -

Moderate epidote flooding.

From	To	INT	CC	DO	SR	AK	SC
243.72	249.72	S	-	-	W	-	- -

Strong epidote alteration.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
238.46	243.42	4	LB						
243.42	249.72	2	LB						

Pyrite-pyrrhotite laminations.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
249.72	251.22	MSPY	MSPY

Very fine-grained massive pyrite. Faintly bedded at 55 TCA. No other sulphides noted. Gangue-free. Non-magnetic.

STRUCTURES

From	To	Struct	CA	Strain
249.72	251.21	BD	55	
251.21	251.22	CT	63	

Sharp upper contact.

Sharp lower contact.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
249.72	251.22	-	-	-	W	-	- -

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
249.72	251.22	100	MS						

Very fine-grained massive sedimentary / exhalative pyrite.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
251.22	253.12	ASHT	TUFF

Medium green to dark grey-green coarse ash tuff. Moderately bedded. Medium-bedded at 67 TCA. Lower contact sharp against sulphides at 67 TCA.
Weak epidote bands, moderate chlorite on partings. No pyrite noted (!).

STRUCTURES

From	To	Struct	CA	Strain
251.22	253.11	BD	67	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
251.22	253.12	ASHT	TUFF

Medium green to dark grey-green coarse ash tuff. Moderately bedded. Medium-bedded at 67 TCA. Lower contact sharp against sulphides at 67 TCA.
Weak epidote bands, moderate chlorite on partings. No pyrite noted (!).

STRUCTURES

From	To	Struct	CA	Strain
253.11	253.12	CT	67	

Sharp lower contact.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
251.22	253.12	W	-	-	-	-	-

Weak epidote; moderate chlorite.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
251.22	253.12	0	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
253.12	253.60	MSPY	

Massive finest grained pyrite-pyrrhotite. Moderate to high pyrrhotite content with concentration increasing down-section. A great deal of this mineralized core has been removed - only 18cm out of 48 cm is preserved in box. No other sulphides noted.

STRUCTURES

From	To	Struct	CA	Strain
253.12	253.60	NA		

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
253.12	253.60	-	-	-	-	-	-

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
253.12	253.60	60	MS						

40% massive pyrrhotite.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
253.60	257.67	ASHT	TUFF

Mafic coarse ash tuff. Medium grey-green granular appearance. Faintly bedded; medium-bedded. Bedding at 78 to 82 TCA; averages 80 TCA. Upper contact missing; lower contact sharp at sulphides, and slightly undulatory at 80 TCA. Moderate chlorite and minor pyrite on partings. Rare fine disseminated pyrite only.
Late thin white carbonate veinlets.

STRUCTURES

From	To	Struct	CA	Strain
253.60	257.66	BD	80	
257.66	257.67	CT	80	

Sharp lower contact.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
253.60	257.67	M	-	-	-	-	-

Moderate chlorite; weak carbonate; no epidote.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
253.60	257.67	0.01	DIS						

Rare fine pyrite only.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
257.67	258.03	MSPY	MSPY

Massive pyrite bed. Very fine grey. Dark grey. Almost looks like bedded pyritic mud. 5cm tuff layer within, divides this unit into two layers. Weak pyrrhotite concentrated at the top of both layers. Sharp upper and lower contacts with lower contact at 68 TCA.

STRUCTURES

From	To	Struct	CA	Strain
257.67	258.02	BD	75	
258.02	258.03	CT	68	

Sharp lower contact.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
257.67	258.03	-	-	-	-	-	-

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
257.67	258.03	100	MS						

This rock may be very fine grained pyritic mudstone.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
258.03	258.58	ASHT	TUFF

Felsic ash tuff (or wholly bleached and moderately silcified mafic tuff). Faintly bedded. 8% fine-grained wisps of pyrite and pyrrhotite along foliation. Bedding at 62 TCA; foliation at 76 TCA. Sharp lower contact at 68 TCA. Moderate sericite + pyrite on partings.

STRUCTURES

From	To	Struct	CA	Strain
258.03	258.57	BD	62	

Foliation at 76 TCA.

From	To	Struct	CA	Strain
258.57	258.58	CT	68	

Sharp lower contact.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
258.03	258.58	W	-	-	W	-	-	-

Sericite and pyrite on partings. Bleached and moderately silicified.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
258.03	258.58	4	LB	PO	4				

8% wisps of fine pyrrhotite-pyrite.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
258.58	258.68	MSPY	MSPY

Massive pyrite-pyrrhotite, with pyrrhotite > pyrite. Sharp upper and lower contacts at 68 TCA. Fine-grained dark grey pyritic mud with bands of medium-grained sulphide preserved.

STRUCTURES

From	To	Struct	CA	Strain
258.58	258.67	BD	68	
258.67	258.68	CT	68	

Sharp lower contact.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
258.58	258.68	-	-	-	W	-	-	-

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
258.58	258.68	50	MS	PO	50				

Crudely laminated pyrrhotite-pyrite.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
258.68	259.63	ASHT	TUFF

Moderately bedded coarse ash tuff. Faint colour-mottling indicates that this is a bleached intermediate to mafic tuff. Pyrite-pyrrhotite wisps vary from 3% to 8%, so average 5%. Bedding at 67 TCA; sharp lower contact at 72 TCA.. Moderate chlorite-sericite on partings.

STRUCTURES

From	To	Struct	CA	Strain
258.68	259.62	BD	67	
259.62	259.63	CT	72	

Sharp lower contact.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
258.68	259.63	M	-	-	W	-	-	-

Moderate chlorite-sericite on partings only. Core is colour-mottled due to patchy bleaching

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
258.68	259.63	2.5	LB	PO	2.5				

Average 5% wisps of pyrrhotite-pyrite.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
259.63	259.77	SMPY	MSSX

14cm interval of interbedded pyrite and coarse ash tuff. Three separate thin sulphide-rich beds have a cumulative thickness of 7cm. Gangue within these layers is carbonate - this is sulphide-rich carbonate exhalite. Pyrrhotite>pyrite, but both are present - no other sulphides noted. Intevening coarse ash tuff is bleached white, faintly laminated with 8% fine pyrrhotite wisps and thinnest (1-2mm) carbonate lamellae. Moderate sericite on partings. Bedding at 70 TCA; sharp lower contact at 70 TCA.

STRUCTURES

From	To	Struct	CA	Strain
259.63	259.76	BD	70	
259.76	259.77	CT	70	

Sharp lower contact.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
259.63	259.77	W	-	-	W	-	-	-

Bleached tuff; sericite on partings.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
259.63	259.77	10	LB	PY	40				

Semi-massive, banded, pyrrhotite-pyrite.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
259.77	276.93	CARB	CARB

Tuffaceous limestone. Well-bedded, thin-bedded. Light grey limestone interbedded with bright yellow-green (epidotized) to dark green (chloritized) thin mafic tuff bands. Almost rhythmically layered. This is a major 18m-thick limestone unit, well down in the volcanic pile.
Bedding ranges from 72 to 76 TCA, averaging 74 TCA. Sharp lower contact against narrow fault at 72 TCA.
Strong chlorite on partings; with sericite in some bleached intervals. Weak to moderate epidote flooding.
Pyrite - 3% fine disseminated pyrite throughout, with local more pyritic laminantions up to 6% fine pyrite. This interval resembles the footwall alteration zone at Kutcho Main Lens, except that the host is carbonate-rich rather than wholly silicified. No oxidation of sulphides due to the ubiquitous carbonate.

STRUCTURES

From	To	Struct	CA	Strain
259.77	276.89	BD	74	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
259.77	276.93	CARB	CARB

Tuffaceous limestone. Well-bedded, thin-bedded. Light grey limestone interbedded with bright yellow-green (epidotized) to dark green (chloritized) thin mafic tuff bands. Almost rhythmically layered. This is a major 18m-thick limestone unit, well down in the volcanic pile.
Bedding ranges from 72 to 76 TCA, averaging 74 TCA. Sharp lower contact against narrow fault at 72 TCA.
Strong chlorite on partings; with sericite in some bleached intervals. Weak to moderate epidote flooding.
Pyrite - 3% fine disseminated pyrite throughout, with local more pyritic laminantions up to 6% fine pyrite. This interval resembles the footwall alteration zone at Kutcho Main Lens, except that the host is carbonate-rich rather than wholly silicified. No oxidation of sulphides due to the ubiquitous carbonate.

STRUCTURES

From	To	Struct	CA	Strain
276.89	276.93	FLT	72	VS

4 cm fault zone filled with chlorite gouge and shreds of mafic tuff.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
259.77	276.93	M	-	-	W	-	- -

Moderate chlorite and epidote with local sericitization.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
259.77	276.93	5	LB						

Pyrite laminations and disseminations throughout this unit.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
276.93	278.33	ASHT	TUFF

Thin-bedded, well-bedded granular coarse mafic ash tuff. Medium olive green to very dark green colour-striping of alternating beds due to selective epidotization of layers. Bedding 75 to 83 TCA, with sharp lower contact at 77 TCA. Partings are moderately chlorite or sericite, depending on location of altered bands. Rare fine disseminated pyrite only.

STRUCTURES

From	To	Struct	CA	Strain
276.93	278.32	BD	78	
278.32	278.33	CT	77	

Slightly gradational lower contact.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
276.93	278.33	M	-	-	W	-	- -

Strong chlorite (primary mafic ash tuff); moderate epidote and weak sericite.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
276.93	278.33	0.01	DIS						

Rare fine disseminated pyrite.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
278.33	279.03	CHRT	CHRT

Thinly bedded chert. Light waxy grey. Fine disseminated pyrite 1.5%. Minor tuffaceous content - usually epidotized. Bedding 76 to 80 TCA, averaging 78 TCA.
Lower contact sharp at 76 TCA.

STRUCTURES

From	To	Struct	CA	Strain
278.33	279.02	BD	78	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
278.33	279.03	CHRT	CHRT

Thinly bedded chert. Light waxy grey. Fine disseminated pyrite 1.5%. Minor tuffaceous content - usually epidotized. Bedding 76 to 80 TCA, averaging 78 TCA.
Lower contact sharp at 76 TCA.

STRUCTURES

From	To	Struct	CA	Strain
279.02	279.03	CT	76	

Sharp lower contact.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
278.33	279.03	M	S	-	W	-	S	-

Chert; weakly tuffaceous.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
278.33	279.03	1.5	DIS						

Weakly pyritic chert.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
279.03	280.24	ASHT	TUFF

Color-banded mafic coarse ash tuff. Similar to unit #51. Bedding varies between 72 to 80 TCA; sharp lower contact at 74 TCA. Pyrite as trace fine pyrite dust.
Parings show moderate chlorite and weak sericite.

STRUCTURES

From	To	Struct	CA	Strain
279.03	280.23	BD	74	
280.23	280.24	CT	74	

Sharp lower contact.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
279.03	280.24	M	S	-	W	-	-	-

Moderate chlorite alteration.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
279.03	280.24	0.01	DIS						

Trace fine pyrite dust.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
280.24	280.71	FXTF	TUFF

Coarse feldspar crystal tuff. Massive to faintly laminated. Trace fine disseminated pyrite. Groundmass looks siliceous. Dacite crystal tuff(?). Feldspars are large and alterered, with buff-colorred fuzzy outlines (epidote? or dolomite?) Glomeroporphyritic feldspar noted. No hornblende. No quartz - a few tiny white unaltered feldspars in groundmass. Lower contact 75 TCA and slightly gradational. Not a chilled margin. Fracture surfaces show weak chlorite.

STRUCTURES

From	To	Struct	CA	Strain
280.24	280.70	NA		
280.70	280.71	CT	75	

Gradational lower contact.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
280.24	280.71	W	S	-	W	-	W	-

Very weak chlorite.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
280.24	280.71	0.1	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
280.71	287.78	ASHT	TUFF

Well-bedded, thin-bedded mafic coarse ash tuff. Similar to overlying units #53 and #51. Medium green to dark green as alternating colour bands. Bedding 73 TCA. Strong carbonate flooding of lower section. Pyrite 1% as fine disseminations and wisps. Strong chorite development on partings. Lower, more carbonate-rich section also has a moderate epidote overprint. Sections within the carbonate-rich zones host 3% pyrite. This lower interval is really a limy tuff. Lower contact lies at a narrow chloritic fault - filled with chloritic gouge.

STRUCTURES

From	To	Struct	CA	Strain
280.71	287.70	BD	73	
287.70	287.78	FLT		VS

Chloritic gouge in narrow falt.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
280.71	287.78	S	M	-	W	-	-	-

Weak epidote; stong chlorite (primary mafic ash tuff).

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
280.71	287.78	2	DIS						

Pyrite increases from 1% to 3% down-section. Occurs as disseminations and wisps.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
287.78	288.37	CQSX	CBSX

Well-bedded, thin-bedded, light grey limy siliceous pyritic ash tuff. 5% pyrite as disseminations and wisps. No pyrrhotite. Pyrite generates a greenish-yellow stain when weathered. Rock is a weakly tuffaceous pyritic exhalite. Partings have strong sericite. Unstained core sections show 2.5% fine fluoromuscovite lamellae. Bedding is 72 to 78 TCA, averaging 75 TCA. Sharp lower contact at 78 TCA.

STRUCTURES

From	To	Struct	CA	Strain
287.78	288.36	BD	75	
288.36	288.37	CT	78	

Sharp lower contact.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
287.78	288.37	S	S	-	S	-	S	-

2.5% fluoromuscovite wisps / lamellae.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
287.78	288.37	5	LB						

Pyrite as disseminations and wisps. No pyrrhotite noted.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
288.37	293.58	CARB	CARB

Light grey, thin-bedded limestone with a greenish tint due to interlaminated ash layers. Tuffaceous limestone. Well-bedded, thin-bedded. Pyrite averages 2.5 % as disseminations and wisps, but there are a few thin pyritic lamellae. Epidote develops along aome tuffaceous bands, giving the bright green colour. Bedding is 78 throughout, but the sharp lower contact is at 73 TCA. Moderate chlorite with weak sericite on partings.

STRUCTURES

From	To	Struct	CA	Strain
288.37	293.57	BD	78	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
288.37	293.58	W	S	-	W	-	-	-

Weak epidote; weak chlorite.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
288.37	293.58	2.5	DIS						

Fine pyrite as disseminations, wisps and lamellae.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
288.37	293.58	CARB	CARB

(Continued from previous page)

STRUCTURES

From	To	Struct	CA	Strain
293.57	293.58	CT	73	

Sharp lower contact.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
293.58	293.67	CBSX	CBSX

Pyritic limestone (carbonate exhalite). Weakly tuffaceous. Thin bedded, well-bedded. 20% fine pyrite as disseminations and laminations. Bedding at 73 TCA. Lower contact marked by a thin white quartz veinlet. No other sulphides noted. No pyrrhotite.

STRUCTURES

From	To	Struct	CA	Strain
293.58	293.66	BD	73	
293.66	293.67	QV		

5mm quartz veinlet along lower contact.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
293.58	293.67	VW	-	-	VW	-	-

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
293.58	293.67	20	LB						

Laminations, wisps and disseminated pyrite in limestone.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
293.67	294.24	CARB	CARB

Tuffaceous limestone or limy tuff. Well-bedded, thin-bedded. Weakly pyritic. Trace fine disseminations and wisps of pyrite and pyrrhotite. Partings are mixed moderate chlorite -sericite. Overall core colour is pale buff. No obvious epidote. Bedding 77 to 85 TCA; lower contact sharp at 83 TCA.

STRUCTURES

From	To	Struct	CA	Strain
293.67	294.23	BD	81	
294.23	294.24	CT	83	

Sharp lower contact.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
293.67	294.24	W	-	-	VW	-	W	-

Bleached, but not silicified. Perhaps this is carbonate-flooded tuff. Weak chlorite-sericite on partings.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
293.67	294.24	0.1	DIS	PO	0.1				

Trace pyrite and pyrrhotite disseminations and wisps.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
294.24	300.27	ASHT	TUFF

Brecciated and crackled mafic coarse ash tuff in a carbonate matrix. Overall light grey to light to medium green rock.This is a complex mixed unit of massive coarse ash tuff, brecciated coarse ash tuff, and tuffaceous carbonate. All with a later overprinted carbonate veinlet network. Pyrite 2%, as fine bright disseminated crystals overall, but local zones include wisps and lamellae of up to 4% pyrite. Bedding at 75 to 83 TCA, averaging 79 TCA. Moderate epidote alteration in places. Sharp lower contact at 78 TCA. Ragged bedding only in massive coarse ash tuff sections.

STRUCTURES

From	To	Struct	CA	Strain
294.24	300.26	BD	79	
300.26	300.27	CT	78	

Sharp lower contact.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
294.24	300.27	W	M	-	W	-	-	-

Moderate epidote flooding.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
294.24	300.27	3	DIS						

Disseminations, wisps and lamellae of bright pyrite.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
300.27	303.44	MFLW	UNKN

Massive porphyritic basalt flow. Chilled upper margin; crystalline core. Lower contact marked by 3cm of white bull quartz with fine-grained chloritic clasts. Might alternately be a porphyritic gabbroic sill. Although only 3m thick, there are several textural changes within this unit. Upper 80 cm is chilled, pale olive in colour but grain size grows from an aphanitic chill margin to porphyry texture over 80cm. Upper porphyry displays stubby mafic phenocrysts (pyroxene?), but in the lower metre of the unit the phenocrysts are elongate (hornblende?). All phenocrysts are mafic and replaced by black chlorite. Phenocrysts are ~ 50% of core - crowded porphyry. 0.5% to 1.0% fine bright disseminated pyrite crystals. No bedding, but elongate crystals near the base of unit show alignment (flow-foliation). Rock is carbonate-flooded. Overall colour is medium green-grey to medium grey-green.

STRUCTURES

From	To	Struct	CA	Strain
300.27	303.44	FB		

Flow-foliated hornblendes in lower 1m of this unit.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
300.27	303.44	M	M	-	W	-	-	-

Carbonate flooding; chlorite-altered mafic phenocrysts.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
300.27	303.44	0.75	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
303.44	308.11	ASHT	TUFF

Fine to coarse ash tuff. Well-bedded, thin-bedded. Light grey to light buff colour. Bedding at 80 TCA throughout; lower contact sharp at 75 TCA. Variable, trace to minor disseminated coarse (1-2mm) disseminated pyrite crystals, plus three thin pyritic laminae centred at 305.58m (5 cm thick), 305.77m (1 cm), and at 305.96 (2cm); 50% granular pyrite crystals and wisps are scattered within black interlaminated mudstone and carbonate (black material could alternately be chlorite or biotite). Alteration - buff carbonate (ferro-dolomite), but rock is strongly limy everywhere. Moderate sericite on partings.

STRUCTURES

From	To	Struct	CA	Strain
303.44	308.10	BD	80	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
303.44	308.11	M	M	M	M	-	-	-

Carbonate flooded, bleached, sericitzed.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
303.44	308.11	1	LB						

Trace pyrrhotite. Disseminated pyrite with three pyrite-rich beds.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
303.44	308.11	ASHT	TUFF

(Continued from previous page)

STRUCTURES

From	To	Struct	CA	Strain
308.10	308.11	CT	75	

Sharp lower contact.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
308.11	309.90	ASHT	TUFF

Medium green mafic coarse ash tuff. Well-bedded, thin-bedded. Medium grey-green. A few small (3cm) lensoid lapilli. Lots of thin carbonate lamellae. Minor (1%) fine disseminated pyrite crystals. Carbonate-flooded throughout. Many thin scattered light-grey carbonate bands. Chlorite on partings. Bedding variable 75 to 85 TCA; sharp lower contact at 80 TCA.

STRUCTURES

From	To	Struct	CA	Strain
308.11	309.89	BD	80	
309.89	309.90	CT	80	

Sharp lower contact.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
308.11	309.90	M	S	-	M	-	-	-

Carbonate-flooded mafic tuff with thin carbonate beds and chlorite partings.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
308.11	309.90	1	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
309.90	310.76	ASHT	TUFF

Pale green grey, limy thin-bedded coarse ash tuff. 5% disseminated to wispy bright pyrite. Rock is strongly bleached but not siliceous. Strong carbonate flooding throughout. Bedding at 78 to 87 TCA; gradational lower contact at 80 TCA.

STRUCTURES

From	To	Struct	CA	Strain
309.90	310.75	BD	83	
310.75	310.76	CT	80	

Gradational lower contact.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
309.90	310.76	S	S	-	M	-	-	-

Carbonate-flooded, bleached, pyritized core.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
309.90	310.76	5	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
310.76	311.45	SESX	EXHL

Tuffaceous, pyritic chert with minor carbonate laminae. Buff to pink coloured. Well-bedded, thin-bedded. No pyrrhotite. Pyrite 15% as bright disseminated grains, wisps, lamellae and large fine-grained ragged overprinted patches. No other sulphides noted. Rock is about 40% fine intercalated coarse ash tuff. Bedding at 76 to 84 TCA; sharp lower contact at 80 TCA.

STRUCTURES

From	To	Struct	CA	Strain
310.76	311.44	BD	80	
311.44	311.45	CT	80	

Sharp lower contact.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
310.76	311.45	M	M	-	M	-	- -

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
310.76	311.45	15	LB						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
311.45	313.67	ASHT	TUFF

Ferro-dolomite-flooded fine ash tuff. Well-bedded and thin-bedded. Only upside of core is rusty coloured, underside is pale grey-buff. Pyrite 5% as bright disseminated crystals and wisps. Bedding at 85 TCA throughout. Foliation-free rock. Partings are weakly sericitic.

STRUCTURES

From	To	Struct	CA	Strain
311.45	313.66	BD	85	
313.66	313.67	CT	85	

Gradational lower contact.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
311.45	313.67	S	M	S	W	-	- -

Strong ferro-dolomite flooding. Weak sericite.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
311.45	313.67	5	DIS						

Disseminated and wisps of bright pyrite. No other sulphides noted.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
313.67	314.58	ASHT	TUFF

Well-bedded, thin-bedded mafic ash tuff. Carbonate-flooded. Medium to dark green overall. Bedding ranges 74 to 88 TCA; sharp lower contact at 75 TCA. Chlorite partings. 2% fine bright diisseminated pyrite crystals. No other sulphides noted.

STRUCTURES

From	To	Struct	CA	Strain
313.67	314.57	BD	82	
314.57	314.58	CT	75	

Sharp lower contact against a thin carbonate-pyrite bed.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
313.67	314.58	S	S	-	-	-	- -

Chlorite on partings.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
313.67	314.58	2	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
314.58	338.02	CARB	CARB

Tuffaceous limestone. Well-bedded, thin-bedded. Overall light yellow-green colour due to overprinted epidote. Ash component varies from fine ash to coarse ash, and the amount varies throughout unit - but is always < 50% of core. Bedding 73 to 82 TCA; sharp lower contact at 76 TCA. Pyrite 2% to 5% as fine bright disseminations and wisps. Sharp upper and lower contacts are both pyrite-rich carbonate bands (25% pyrite).
Moderate chlorite-sericite on partings. Local strong epidote flooding, weak-to moderate overall.

STRUCTURES

From	To	Struct	CA	Strain
314.58	338.01	BD	78	
338.01	338.02	CT	76	

Sharp lower contact.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
314.58	338.02	M	S	-	-	-	-	-	-

Moderate epidote flooding; weak chlorite-sericite on partings.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
314.58	338.02	3	DIS						

Pyrite disseminated wisps and laminae. No other sulphides noted.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
338.02	343.45	ASHT	TUFF

Well-bedded, thin-bedded, carbonate flooded, mafic ash tuff. Dark green to medium yellow-green colour due to local weak epidote overprint. Bedding 75 to 77 TCA; gradational lower contact at 77 TCA. Pyrite 2% to 3%% fine bright crystals disseminated throughout, with local thin pyritic lamellae - trace pyrrhotite. Strong carbonate flooding and about one-third of core is carbonate intercalations - concentration of carbonate beds varies throughout interval. Overall 20% epidote flooding, Moderate chlorite on partings.

STRUCTURES

From	To	Struct	CA	Strain
338.02	343.44	BD	76	
343.44	343.45	CT	77	

Gradational lower contact.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
338.02	343.45	S	S	-	-	-	-	-	-

Moderate epidote flooding.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
338.02	343.45	2.5	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
343.45	348.12	CARB	CARB

Tuffaceous pyritic limestone. Well-bedded, thin-bedded. 5% pyrite as disseminated crystals, blebs, wisps and laminae. Bedding at 76 to 80 TCA; sharp lower contact at 78 TCA. Strong epidote flooding. Overall light grey-green with colour ranging from pale grey to medium green. Ash compnent is mafic fine ash tuff.

STRUCTURES

From	To	Struct	CA	Strain
343.45	348.11	BD	78	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
343.45	348.12	M	S	-	-	-	-	-	-

Moderate epidote flooding. Chlorite on partings.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
343.45	348.12	5	LB						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
343.45	348.12	CARB	CARB

(Continued from previous page)

STRUCTURES					ALTERATION								MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC	From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample
348.11	348.12	CT	78																						

Sharp lower contact.

From	To	Litho	Simple Geo
348.12	360.73	ASHT	TUFF

Carbonate-flooded mafic ash tuff, with a thin pyritic carbonate exhalite intercalation. Well-bedded, thin-bedded, overall; with local (30cm) massive-textured intervals. Overall light grey-yellow-green to medium grey-green. Variable from fine ash tuff to coarse ash tuff. Bedding 80 to 90 TCA; sharp lower contact at 90 TCA.
Pyrite variable from 2% to 3% fine bright disseminated crystals - plus there are nine thin (1cm-4cm) pyrite-rich carbonate lamellae. Plus there is one 16cm thick pyritic carbonate bed from 352.62m to 352.78m - 20% finest pyrite lamellae within very thin-bedded pale grey carbonate with tuffaceous layers.
20% to 25% epidote flooding throughout. Partings are chlorite-sericite.

STRUCTURES					ALTERATION								MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC	From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample
													348.12	352.62	3	DIS									
													Pyrite disseminations and lamellae.												
348.12	360.72	BD	85																						
					348.12	360.73	M	S	-	VW	-	-	-												
					Moderate epidote flooding; moderate chlorite on partings with lesser sericite.																						
													352.62	352.68	20	LB									
													Pyrite-rich tuffaceous carbonate bed.												
													352.68	360.73	3	DIS									
													Pyrite disseminations and lamellae.												
360.72	360.73	CT	90																						

Sharp lower contact.

From	To	Litho	Simple Geo
360.73	365.83	FXTF	TUFF

Feldspar-hornblende crystal tuff enveloped above and below by mafic ash tuff and thin interrcalated chert beds. Overall light greenish-grey colour. Moderate epidote flooding. Bedding 74 to 83 TCA; averaging 78. Lower contact sharp at 70 TCA. Pyrite 1% fine disseminations throughout tuff, but up to 10% to 20% fine pyrrhotite within tuffaceous chert beds. There are 5 pyritic chert units within this interval - the thickest is 10 cm.
Lower part of this unit shows fuzzy crystal outlines, obscured by strong epidote and chlorite alteration. Strong carbonate flooding. Crystals look like crowded feldspar and stubby hornblende, all < 5mm long - but texture could be colour-mottling due to strong overprinted alteration. There is no bedding or chert layers preserved in this interval (362.60 to 365.15m) though, so massive crystal tuff is more likely.

STRUCTURES					ALTERATION								MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC	From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample

From	To	Litho	Simple Geo
360.73	365.83	FXTF	TUFF

Feldspar-hornblende crystal tuff enveloped above and below by mafic ash tuff and thin interrcalated chert beds. Overall light greenish-grey colour. Moderate epidote flooding. Bedding 74 to 83 TCA; averaging 78. Lower contact sharp at 70 TCA. Pyrite 1% fine disseminations throughout tuff, but up to 10% to 20% fine pyrrhotite within tuffaceous chert beds. There are 5 pyritic chert units within this interval - the thickest is 10 cm.
Lower part of this unit shows fuzzy crystal outlines, obscured by strong epidote and chlorite alteration. Strong carbonate flooding. Crystals look like crowded feldspar and stubby hornblende, all < 5mm long - but texture could be colour-mottling due to strong overprinted alteration. There is no bedding or chert layers preserved in this interval (362.60 to 365.15m) though, so massive crystal tuff is more likely.

STRUCTURES

From	To	Struct	CA	Strain
360.73	365.82	BD	78	
365.82	365.83	CT	70	

Sharp lower contact against pyritic chert interbed.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
360.73	365.83	S	S	-	VW	-	-	-

Strong carbonate and epidote; moderate chlorite alteration.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
360.73	365.83	3	DIS						

5 pyritic chert intervals within this unit - with up to 20% pyrite.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
365.83	367.62	ASHT	TUFF

Massive mafic coarse ash tuff, terminated by fault at 367.35m. Medium green-grey colour. Rock looks faintly bedded, medium-bedded, and granular. But textures are obscured by strong epidote overprinting. Weak carbonate flooding. Core is well-fractured for one full metre above the fault. Pyrite - trace fine pyrite dust only.

STRUCTURES

From	To	Struct	CA	Strain
365.83	367.35	BD	80	
367.35	367.62	FLT		VS

Fault zone - weakly ankeritized. Rock chips and muddy brown-olive gouge.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
365.83	367.62	S	W	-	-	-	-	-

Strong epidote overprint.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
365.83	367.62	0.1	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
367.62	368.78	ASHT	TUFF

Granular massive mafic coarse ash tuff. As unit #73 above. Separated by minor fault.

STRUCTURES

From	To	Struct	CA	Strain
367.62	368.78	BD	80	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
367.62	368.78	S	W	-	-	-	-	-

Strong epidote flooding.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
367.62	368.78	0.1	DIS						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
368.78	369.50	SESX	CHRT

Thin-bedded pyritic chert. Contorted and brecciated. Weakly pyritic. 5% very fine pyrite with trace pyrrhotite along contorted thin bedding planes. Unit cut by minor late white bull quartz veins with clots of black chlorite.

STRUCTURES

From	To	Struct	CA	Strain
368.78	369.50	SSF		S

Contorted thin-bedded chert.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
368.78	369.50	-	-	-	-	-	-

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
368.78	369.50	5	DIS						

Trace fine pyrrhotite.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
369.50	392.89	ASHT	TUFF

Massive to faintly bedded coarse ash tuff to End Of Hole. Variably-textured with local fine ash tuff, and faint crystal tuff zones, and several pyritic chert intercalations (as in above unit).
Bedding ranges from 85 to 75 TCA. 75 TCA at EOH.
EOH at 392.89m.

Pyrite - no pyrite. 1% finest pyrrhotite throughout as disseminations and wisps. 10% to 15% pyrrhotite wisps within the thin-bedded chert. Chert intervals: 377.18m to 377.48m; 5cm centred on 380.55m; 5cm centred on 386.81m; 2cm centred at 390.40m; 1cm centred on 391.04m; 2cm centred on 391.10m.

Also from 371.17m to 371.28m, there is a massive white bull quartz vein with chunks of dark green chlorite. There is a 2cm carbonate bed centred on 388.48m.

Overall colour is light gre0green. Alterration - strong epidote flooding. Weak chlorite and very weak sericite on partings. Weak carbonate flooding throughout. Although rock looks massive to faintly bedded in many areas, recurrence of thinly-bedded shcrts indicates that probable fine bedding throughout the tuff unit has been obscured by alteration.

STRUCTURES

From	To	Struct	CA	Strain
369.50	392.88	BD	80	
392.88	392.89	BD	75	

Bedding at EOH is 75 TCA.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
369.50	392.89	S	W	-	VW	-	-

Strong epidote flooding; weak carbonate flooding.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
369.50	392.89	0	DIS	PO	1				

10% to 15% pyrrhotite as disseminations, wisps and lamellae within thin-bedded chert units.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
392.89	392.90	ASHT	TUFF

End Of Hole

STRUCTURES

From	To	Struct	CA	Strain
392.89	392.90	NA		

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
392.89	392.90	-	-	-	-	-	-

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
392.89	392.90	0	DIS						

SAMPLES

From	To	Sample

APPENDIX VI

DIAMOND DRILL LOG for DDH 90K-13

From	To	Litho	Simple Geo
0.00	3.05	OVBD	

Casing/overburden

STRUCTURES

From	To	Struct	CA	Strain
0.00	3.05	NA		

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
0.00	3.05	-	-	-	-	-	-

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
0.00	3.05	0	-						

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
3.05	10.90	ASHT	

Medium green, moderately chloritic, thin-bedded mafic ash tuff. Bedding quite variable, indicating broad folding or broad undulations. From 3.05m to 5.40m, bedding at 78 TCA. From 5.40m to 9.80m, bedding at 65 TCA, and from 9.80m to10.90m, bedding at 50 TCA. Moderate carbonate as laminations. 0.25% disseminated pyrite. Gradational lower contact.

STRUCTURES

From	To	Struct	CA	Strain
3.05	5.40	BD	78	
	bedding at 78 TCA.			
5.40	9.80	BD	65	
	bedding at 65 TCA.			
9.80	10.89	BD	50	
	bedding at 50 TCA			
10.89	10.90	CT		
	gradational lower contact			

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
3.05	10.90	M	M	-	-	-	-
	moderately chloritic, moderate carbonate as laminations.						

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
3.05	10.90	0.25	DIS						
	0.25% disseminated pyrite.								

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
10.90	13.11	FXAT	

Medium green, moderately chloritic mafic feldspar crystal ash tuff. Very faint bedding evident at 65 TCA. Mottled appearance due to faint in situ brecciation and carbonate (calcite) flooding. Very weak to weak epidote alteration of plagioclase crystals. Trace disseminated pyrite. Gradational lower contact.

STRUCTURES

From	To	Struct	CA	Strain
10.90	13.10	BD	65	
	bedding at 65 TCA.			
13.10	13.11	CT		
	gradational lower contact			

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
10.90	13.11	M	M	-	-	-	-
	moderate carbonate flooding, weak to very weak epidote alteration						

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
10.90	13.11	0.05	DIS						
	trace disseminated pyrite.								

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
13.11	14.04	ASHT	

Medium green, moderately chloritic mafic ash tuff. Bedding at 85 TCA. Very fine grained to locally muddy, but with less than 1 cm thick mafic feldspar crystal ash tuff interbeds. Upper 45 cm riddled with carbonate laminations. 1% pyrrhotite, restricted to two conformable less than 2 cm thick calcite seams. Lower contact sharp at 75 TCA.

STRUCTURES

From	To	Struct	CA	Strain
13.11	14.03	BD	85	
bedding at 85 TCA				
14.03	14.04	CT	75	
Lower contact sharp at 75 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
13.11	14.04	M	M	-	-	-	-
moderate carbonate as laminations, moderately chloritic							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
13.11	14.04	0	-	PO	1				
1% pyrrhotite, restricted to two conformable less than 2 cm thick calcite seams.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
14.04	25.55	FXAT	

Light to medium green, weakly to moderately chloritic, mafic feldspar crystal ash tuff with sporadic thin (less than 25cm) mafic ash tuff interbeds. Very weakly bedded at 60 to 70 TCA; bedding is best determined from the ash tuff interbeds. Plagioclase crystals are very weakly epidotized. Overall the crystal ash tuff is a rather montonous lithology. Trace sulphides overall. Sharp lower contact at 62 TCA
20.05m to 20.07m: interval of interbedded very fine to muddy mafic ash tuff and crstal ash tuff. Soft sediment deformation evident in the thin disrupted muddy ash tuff beds. 2%-3% pyrrhotite.

STRUCTURES

From	To	Struct	CA	Strain
14.04	25.54	BD	65	
Very weakly bedded at 60 to 70 TCA				
25.54	25.55	CT	62	
Lower contact sharp at 62 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
14.04	25.55	VW	VW	-	-	-	-
very weak epidote and carbonate alteration							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
14.04	25.55	0	-	PO	0.05				
trace pyrrhotite overall, restricted to the ash tuff interbeds.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
25.55	25.77	SESX	

Medium to dark grey, thin-bedded pyrite-rich silica exhalite. Bedding at 65 TCA. 25% heavily disseminated and laminated pyrite, 2% pyrrhotite. Sharp lower contact at 65 TCA.

STRUCTURES

From	To	Struct	CA	Strain

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
25.55	25.77	SESX	

Medium to dark grey, thin-bedded pyrite-rich silica exhalite. Bedding at 65 TCA. 25% heavily disseminated and laminated pyrite, 2% pyrrhotite. Sharp lower contact at 65 TCA.

STRUCTURES

From	To	Struct	CA	Strain
25.55	25.76	BD	65	
bedding at 65 TCA				
25.76	25.77	CT	65	
Sharp lower contact at 65 TCA				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
25.55	25.77	-	-	-	-	-	-
weak epidote alteration							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
25.55	25.77	25	LB	PO	2				
25 % heavily disseminated and laminated pyrite; 2% pyrrhotite									
25.77	33.49	0.05	DIS						
trace disseminated pyrite.									
33.49	33.58	8	LB						
pyritic silica exhalite with 8% laminated and disseminated pyrite.									
33.58	34.23	0.05	DIS						
trace disseminated pyrite.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
25.77	34.23	FXAT	

Light to medium green, weakly to moderately chloritic, mafic feldspar crystal ash tuff with sporadic thin mafic ash tuff interbeds as per 14.04m to 25.55m.
Bedding at 65 TCA. Weak epidote alteration. Trace pyrite overall. Sharp lower contact at 60 TCA.
33.49m to 33.58m pyritic silica exhalite with 8% laminated and disseminated pyrite.

STRUCTURES

From	To	Struct	CA	Strain
25.77	34.22	BD	65	
bedding at 65 TCA.				
34.22	34.23	CT	60	
sharp lower contact at 60 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
25.77	34.23	W	-	-	-	-	-
weak epidote alteration							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
25.77	33.49	0.05	DIS						
trace disseminated pyrite.									
33.49	33.58	8	LB						
pyritic silica exhalite with 8% laminated and disseminated pyrite.									
33.58	34.23	0.05	DIS						
trace disseminated pyrite.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
34.23	34.53	ASHT	

Light to medium green moderately chloritic mafic ash tuff. Highly deformed as evidenced by wormy "box folded" and very thin (< 4mm) carbonate beds-likely a soft-sediment deformation feature. Moderately epidote altered (pistachio green colour). 3% pyrite and 2% pyrrhotite, associated solely with the carbonate beds. Lower contact sharp at 70 TCA.

STRUCTURES

From	To	Struct	CA	Strain
34.23	34.52	SSF		
small-scale folds due to soft-sediment deformatoin.				
34.52	34.53	CT	70	
sharp lower contact at 70 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
34.23	34.53	M	M	-	-	-	-
moderate carbonate as thin beds, moderate epidote alteration.							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
34.23	34.53	3	LB	PO	2				
3% pyrite and 2% pyrrhotite, associated solely with the carbonate beds.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
34.53	52.08	FXAT	

Medium green, weakly to moderately chloritic mafic feldspar crystal ash tuff with minor mafic ash tuff interbeds. Unit becomes somewhat coarser downhole. Faint bedding at 70 TCA. Flame structures (ash tuff into sandy tuff) indicate tops are uphole at 38.94m. Weak to moderate epidote alteration and very minor carbonate laminations. Overall 0.1% disseminated pyrite. Sporadic quartz-carbonate veins (up to 3 cm thick), occasionally with minor pyrite and pyrrhotite, cross-cut the tuff at 80 to 90 TCA. Lower contact sharp at 68 TCA.

STRUCTURES

From	To	Struct	CA	Strain
34.53	52.07	BD	70	
faint bedding at 70 TCA.				
52.07	52.08	CT	68	
Lower contact sharp at 68 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
34.53	52.08	W	VW	-	-	-	-
very minor carbonate as laminations, weak to moderate epidote, weakly to moderately chloritic.							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
34.53	52.08	0.1	DIS						
0.1% disseminated pyrite.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
52.08	52.51	SESX	

Dark grey, thin-bedded, pyrite-rich silica exhalite. Bedding at 45 TCA. A thin black mudstone bed incorporated near the upper contact is dismembered along its length. Weak carbonate alteration. 12% laminated pyrrhotite, 4% pyrite. Sharp lower contact at 40 TCA.

STRUCTURES

From	To	Struct	CA	Strain

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
52.08	52.51	SESX	

Dark grey, thin-bedded, pyrite-rich silica exhalite. Bedding at 45 TCA. A thin black mudstone bed incorporated near the upper contact is dismembered along its length. Weak carbonate alteration. 12% laminated pyrrhotite, 4% pyrite. Sharp lower contact at 40 TCA.

STRUCTURES

From	To	Struct	CA	Strain
52.08	52.50	BD	45	
bedding at 45 TCA.				
52.50	52.51	CT	40	
Sharp lower contact at 40 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
52.08	52.51	W	W	-	-	-	-
weak carbonate alteration.							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
52.08	52.51	4	LB	PO	12				
12% laminated pyrrhotite, 4% pyrite.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
52.51	57.71	ASHT	

Medium green, moderately chloritized, thin-bedded mafic ash tuff. Bedding at 70 TCA. Weak to moderate carbonate as laminations. Two narrow pyrrhotite-pyrite rich silca exhalite horizons occur centered at 56.28m and 56.52m. (In fact, although these silica exhalites encountered thus far in this hole are thin, they are quite numerous and therefore encouraging). Overall, 1% pyrite and 1% pyrrhotite, dominantly associated with narrow silica exhalites. Minor carbonate veining. Sharp lower contact at 60 TCA, with carbonate laminations and dusty and coarse sulphides concentrated over the basal 4 cm.

STRUCTURES

From	To	Struct	CA	Strain
52.51	57.70	BD	70	
Bedding at 70 TCA				
57.70	57.71	CT	60	
Sharp lower contact at 60 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
52.51	57.71	W	W	-	-	-	-
Weak to moderate carbonate as laminations							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
52.51	57.71	1	LB	PO	1				
1% pyrite and 1% pyrrhotite, dominantly assocated with thin silica exhalite beds.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
57.71	57.79	SESX	

Medium to dark grey, pyrrhotite-pyrite rich silica exhalite. Bedding at 65 TCA. 2 cm quartz-carbonate vein (conformable) occurs near upper contact. Overall 20% po, 5% py and 1% cpy as laminations; cpy as late blebs. Lower contact in broken core.

STRUCTURES

From	To	Struct	CA	Strain
57.71	57.78	BD	65	
bedding at 65 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
57.71	57.79	SESX	

Medium to dark grey, pyrrhotite-pyrite rich silica exhalite. Bedding at 65 TCA. 2 cm quartz-carbonate vein (conformable) occurs near upper contact. Overall 20% po, 5% py and 1% cpy as laminations; cpy as late blebs. Lower contact in broken core.

STRUCTURES

From	To	Struct	CA	Strain
57.78	57.79	CT		
Lower contact in broken core.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
57.71	57.79	VW	VW	-	-	-	-
very weak carbonate alteration.							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
57.71	57.79	5	LB	CP	1	PO	20		
20% po, 5% py and 1% cpy as laminations; cpy as late blebs.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
57.79	62.64	FXAT	

Medium green, weakly chloritic, medium-grained, massive mafic feldspar crystal ash tuff. Very weakly epidotized. Very minor carbonate laminations. Sub-trace pyrite. Sharp lower contact at 60 TCA.

STRUCTURES

From	To	Struct	CA	Strain
57.79	62.63	NA		
massive				
62.63	62.64	CT	60	
Sharp lower contact at 60 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
57.79	62.64	VW	VW	-	-	-	-
very weakly epidotized. Very minor carbonate laminations							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
57.79	62.64	0.01	DIS						
Sub-trace pyrite.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
62.64	62.77	SESX	

Dark grey, thin-bedded, pyrrhotite-rich silica exhalite. Bedding at 68 TCA. 25% banded semi-massive pyrrhotite and 2% pyrite as late 2mm subhedral to euhedral crystals overprinting pyrrhotite. Sharp lower contact at 75 TCA.

STRUCTURES

From	To	Struct	CA	Strain
62.64	62.76	BD	68	
Bedding at 68 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
62.64	62.77	-	-	-	-	-	-
no significant alteration.							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
62.64	62.77	2	DIS	PO	25				
25% banded semi-massive pyrrhotite and 2% pyrite as late 2mm subhedral to euhedral crystals overprinting pyrrhotite.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
62.64	62.77	SESX	

(Continued from previous page)

STRUCTURES

From	To	Struct	CA	Strain
62.76	62.77	CT		
Sharp lower contact at 75 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
62.77	63.22	0.01	DIS						
Sub-trace pyrite.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
62.77	63.22	FXAT	

Medium green, moderately-bedded, weakly chloritic mafic feldspar crystal ash tuff with 30% mafic ash tuff interbeds. Bedding at 65 TCA. Very weak carbonate as laminations. Sub-trace pyrite. Sharp lower contact at 65 TCA.

STRUCTURES

From	To	Struct	CA	Strain
62.77	63.21	BD	65	
Bedding at 65 TCA.				
63.21	63.22	CT	65	
Sharp lower contact at 65 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
62.77	63.22	VW	VW	-	-	-	-
very weak carbonate as laminations							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
62.77	63.22	0.01	DIS						
Sub-trace pyrite.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
63.22	73.74	FXAT	

Light to medium green, weakly chloritic and weakly epidotized, medium-grained, faintly-bedded mafic feldspar crystal ash tuff with minor interbedded mafic ash tuff. Bedding at 68 TCA. Plagioclase crystals are cloudy white with somewhat diffuse outlines. Minor carbonate lamination. A 2 cm bed of silica exhalite with 5% pyrrhotite occurs centered at 63.84m. Sporadic bull quartz veins noted. 0.25% disseminated pyrite and pyrrhotite. Gradational lower contact, with crystals fading out downhole.

STRUCTURES

From	To	Struct	CA	Strain
63.22	73.73	BD	68	
Bedding at 68 TCA.				
73.73	73.74	CT		
gradational lower contact.,				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
63.22	73.74	VW	VW	-	-	-	-
very weak epidote and carbonate alteration.							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
63.22	73.74	0.25	DIS	PO	0.25				
0.25% disseminated pyrite and pyrrhotite									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
73.74	76.66	ASHT	

Light to medium green, moderately to well-bedded, chloritic mafic ash tuff. Bedding at 70 TCA. Minor carbonate laminations. Weakly epidotized. 1% pyrite as blebby disseminations. Gradational lower contact.

STRUCTURES

From	To	Struct	CA	Strain
73.74	76.65	BD	70	
bedding at 70 TCA.				
76.65	76.66	CT		
gradational lower contact.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
73.74	76.66	W	W	-	-	-	-
weak carbonate and epidote alteration.							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
73.74	76.66	1	DIS						
1% pyrite as blebby disseminations.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
76.66	78.43	FXAT	

Light green weakly chloritic, weakly epidote altered, massive, medium grained mafic feldspar crystal ash tuff. Minor carbonate laminations and veins. 1% coarse pyrite blebs throughout. Gradational lower contact.

STRUCTURES

From	To	Struct	CA	Strain
76.66	78.42	NA		
massive				
78.42	78.43	CT		
gradational lower contact.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
76.66	78.43	W	W	-	-	-	-
weak epidote, chlorite and carbonate alteration.							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
76.66	78.43	1	BLB						
1% coarse pyrite blebs throughout.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
78.43	79.78	ASHT	

Light green, faintly bedded, moderately chloritic mafic ash tuff with minor intrerbedded mafic feldspar crystal ash tuff. Moderate epidote alteration throughout. Bedding rather faint at 68 TCA. Very minor carbonate within matrix and as very rare laminations. 2%-3% fine pyrrhotite and 2% fine pyrite as bedding-parallel flecks. Gradational lower contact.

STRUCTURES

From	To	Struct	CA	Strain
78.43	79.77	BD	68	

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
78.43	79.78	M	W	-	-	-	-
Moderate epidote alteration throughout. Weakly chloritic.Very minor carbonate within matrix and as very rare laminations.							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
78.43	79.78	2	DIS						
2%-3% fine pyrrhotite and 2% fine pyrite as bedding parallel flecks.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
78.43	79.78	ASHT	

(Continued from previous page)

STRUCTURES

From	To	Struct	CA	Strain
79.77	79.78	NA		

Gradational lower contact.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
79.78	80.42	FXAT	

Medium to coarse-grained, light green, moderately epidote-altered feldspar crystal ash tuff with thin ash tuff interbeds. Bedding as discerned in the ash tuff is at 70 TCA. 2% each disseminated pyrite and pyrrhotite. Lower contact at 70 TCA.

STRUCTURES

From	To	Struct	CA	Strain
79.78	80.41	BD	70	

Bedding as discerned in the ash tuff is at 70 TCA.

From	To	Struct	CA	Strain
80.41	80.42	CT	70	

Lower contact at 70 TCA.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
79.78	80.42	M	-	-	-	-	-	-

moderately epidote altered

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
79.78	80.42	2	DIS	PO	2				

2% each disseminated pyrite and pyrrhotite.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
80.42	85.51	ASHT	

Light green, well bedded, chloritic and moderately epidote-altered mafic ash tuff with minor (<10cm) mafic crystal ash tuff interbeds. Bedding at 70 to 80 TCA.
Minor carbonate as laminations. Overall, 1% disseminated pyrite and pyrrhotite except as noted. Lower contact gradational.
84.01m to 84.39m: Medium grey, moderately carbonate-altered ash tuff with 10% pyrrhotite, 4% pyrite as fine laminations.

STRUCTURES

From	To	Struct	CA	Strain
80.42	85.50	BD	75	

bedding at 70 to 80 TCA.

From	To	Struct	CA	Strain
85.50	85.51	CT		

lower contact gradational.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
80.42	84.01	M	W	-	-	-	-	-

weak carbonate, moderate epidote alteration.

From	To	INT	CC	DO	SR	AK	SC
84.01	84.39	M	M	-	-	-	-	-

moderate carbonate, moderate epidote alteration

From	To	INT	CC	DO	SR	AK	SC
84.39	85.51	M	W	-	-	-	-	-

weak carbonate, moderate epidote alteration.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
80.42	84.01	1	DIS	PO	1				

1% disseminated pyrite and pyrrhotite.

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
84.01	84.39	4	LB	PO	10				

10% pyrrhotite, 4% pyrite as fine laminations.

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
84.39	85.51	1	DIS	PO	1				

1% disseminated pyrite and pyrrhotite.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
85.51	88.55	FXAT	

Light to medium green, medium-grained weakly chloritized and epidotized, weakly-bedded mafic feldspar crystal ash tuff with very minor interbedded ash tuff. Bedding at 75 TCA. Very minor carbonate as laminations. 0.1% disseminated pyrite. Lower contact sharp at 75 TCA.

STRUCTURES

From	To	Struct	CA	Strain
85.51	88.54	BD	75	
bedding at 75 TCA.				
88.54	88.55	CT	75	
lower contact at 75 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
85.51	88.55	W	W	-	-	-	-
weak carbonate, chlorite and epidote alteratoin.							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
85.51	88.55	0.1	DIS						
0.1% disseminated pyrite.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
88.55	88.67	SEXL	

Dark grey, thin-bedded silica exhalite. Bedding at 75 TCA. trace pyrite. Lower contact sharp at 75 TCA.

STRUCTURES

From	To	Struct	CA	Strain
88.55	88.66	BD	75	
Bedding at 75 TCA.				
88.66	88.67	CT	75	
Lower contact at 75 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
88.55	88.67	-	-	-	-	-	-
no significant alteration							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
88.55	88.67	0	-						
trace pyrite									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
88.67	92.00	FXAT	

Light to medium green, medium-grained, weakly chloritized and epidotized, weakly-bedded mafic feldspar crystal ash tuff as per 85.51m to 88.55m. Bedding at 75 TCA. Very minor carbonate laminations. Trace disseminated pyrite. Lower contact sharp at 70 TCA.

STRUCTURES

From	To	Struct	CA	Strain
88.67	91.99	BD	75	
bedding at 75 TCA.				
91.99	92.00	CT	70	
Lower contact sharp at 70 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
88.67	92.00	W	VW	-	-	-	-
very weak carbonate and weak epidote-chlorite alteratoin.							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
88.67	92.00	0.05	DIS						
trace disseminated pyrite.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
92.00	92.12	SEXL	

Medium grey, well-bedded silica exhalite. Bedding at 70 TCA. Weak to moderate ankerite as partings/laminations. 6% pyrrhotite, 2% pyrite as very fine laminations. Sharp lower contact at 70 TCA.

STRUCTURES

From	To	Struct	CA	Strain
92.00	92.11	BD	70	
bedding at 70 TCA.				
92.11	92.12	CT	70	
sharp lower contact at 70 TCA				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
92.00	92.12	M	-	-	-	-	M
Weak to moderate ankerite as partings/laminations							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
92.00	92.12	2	LB	PO	6				
6% pyrrhotite, 2% pyrite as very fine laminations.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
92.12	96.53	FXAT	

Medium green, moderately chloritic, thin-bedded, variably-textured mafic feldspar crystal ash tuff with minor ash tuff interbeds. Moderately well-bedded at 75 to 85 TCA. Very weak carbonate alteration as laminations. Weak to moderate epidote alteration. The ash tuff interbeds contain lenses of coarse-grained feldspar crystal ash tuff as from 92.50m to 92.95m. 0.15% disseminated pyrrhotite, 0.1% disseminated pyrite. Gradational lower contact.

STRUCTURES

From	To	Struct	CA	Strain
92.12	96.52	BD	80	
Moderately well bedded at 75 to 85 TCA				
96.52	96.53	CT		
Gradational lower contact.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
92.12	96.53	M	VW	-	-	-	-
Very weak carbonate alteration as laminations. Weak to moderate epidote alteration, moderately chloritic.							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
92.12	96.53	0.1	DIS	PO	0.15				
0.15% disseminated pyrrhotite, 0.1% disseminated pyrite.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
96.53	97.70	ASHT	

Medium green, chloritic, moderately well-bedded mafic ash tuff with minor interedded mafic feldspar crystal ash tuff. Bedding at 75 TCA. Weak epidote alteration. Approximately 8% conformable and cross-cutting carbonate veins overall, with 30% pyrrhotite as massive bands and laminations. Otherwise, 1% each pyrite and pyrrhotite as disseminations in the ash tuff. Lower contact at 80 TCA.

STRUCTURES

From	To	Struct	CA	Strain
96.53	97.69	BD	75	
Bedding at 75 TCA				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
96.53	97.70	ASHT	

Medium green, chloritic, moderately well-bedded mafic ash tuff with minor interedded mafic feldspar crystal ash tuff. Bedding at 75 TCA. Weak epidote alteration. Approximately 8% conformable and cross-cutting carbonate veins overall, with 30% pyrrhotite as massive bands and laminations. Otherwise, 1% each pyrite and pyrrhotite as disseminations in the ash tuff. Lower contact at 80 TCA.

STRUCTURES

From	To	Struct	CA	Strain
97.69	97.70	CT	80	

Lower contact at 80 TCA.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
96.53	97.70	W	W	-	-	-	- -

weak epidote alteration, moderately chloritic, minor carbonate as laminations.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
96.53	97.70	1	DIS	PO	3.5				

1% each pyrite and pyrrhotite as disseminations in the ash tuff. Additional 2.5% pyrrhotite as massive bands and laminations in conformable and cross-cutting carbonate veins.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
97.70	100.08	FXAT	

Light green, weakly epidotized and chloritic, weakly-bedded mafic feldspar crystal ash tuff with interbedded mafic ash tuff. Bedding at 65 to 75 TCA. Variably fractured with fractures filled by pyrrhotite-bearing carbonate veinlets. Overall, 0.5% pyrite, 1.5% pyrrhotite associated with carbonate veining. Basal 12 cm weakly sheared to lower contact. Lower contact sharp at 72 TCA.
99.10m to 99.53m: brecciated mafic crystal ash tuff. Annealed by rusty (pyrite oxidized) carbonate.

STRUCTURES

From	To	Struct	CA	Strain
97.70	99.10	BD	70	

Bedding at 65 to 75 TCA.

From	To	Struct	CA	Strain
99.10	99.53	BX		

brecciated and carbonate-annealed mafic feldspar crystal ash tuff.

From	To	Struct	CA	Strain
99.53	100.07	BD	70	

Bedding at 65 to 75 TCA.

From	To	Struct	CA	Strain
100.07	100.08	CT	72	

Lower contact sharp at 72 TCA.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
97.70	100.08	W	W	-	-	-	- -

weak epidote, carbonate and chlorite alteration.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
97.70	100.08	0.5	FF	PO	1.5				

Overall, 0.5% pyrite, 1.5% pyrrhotite associated with fracture-controlled carbonate veining.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
100.08	100.16	SESX	

Medium grey, thin-bedded pyrrhotite-rich silica exhalite. Bedding at 80 TCA. 5%-7% pyrrhotite as fine laminations. Sharp lower contact at 80 TCA.

STRUCTURES

From	To	Struct	CA	Strain
100.08	100.15	BD	80	
Bedding at 80 TCA.				
100.15	100.16	CT	80	
Sharp lower contact at 80 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
100.08	100.16	-	-	-	-	-	-
no significant alteration							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
100.08	100.16	0	-	PO	6				
5%-7% pyrrhotite as fine laminations.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
100.16	102.20	FXAT	

Very pale green, weakly to moderately epidote-altered, mafic to intermediate feldspar crystal ash tuff. Faint bedding at 75 TCA. Very minor carbonate as laminations. 0.25% each pyrite and pyrrhotite as disseminations. Weakly sheared lower contact; sharp at 70 TCA.

STRUCTURES

From	To	Struct	CA	Strain
100.16	102.19	BD		
Faint bedding at 75 TCA.				
102.19	102.20	CT		

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
100.16	102.20	-	-	-	-	-	-
Weakly sheared lower contact; sharp at 70 TCA.							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
100.16	102.20	0.25	DIS	PO	0.25				
0.25% each pyrite and pyrrhotite as disseminations.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
102.20	102.63	SEXL	

Medium to dark grey, thin-bedded silica exhalite. Bedding at 67 TCA. Moderate carbonate along bedding partings. 0.5% to 1% pyrite along laminations. Sharp lower contact at 75 TCA.

STRUCTURES

From	To	Struct	CA	Strain
102.20	102.62	BD	67	
Bedding at 67 TCA.				
102.62	102.63	CT	75	
Sharp lower contact at 75 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
102.20	102.63	M	M	-	-	-	-
Moderate carbonate along bedding partings.							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
102.20	102.63	0.75	LB						
0.5% to 1% pyrite along laminations.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
102.63	107.64	FXAT	

Light green, weakly-bedded, weakly epidote-altered mafic to intermediate feldspar crystal ash tuff. Bedding at 60 TCA. Weakly to moderately sheared over upper 20 cm. Weak carbonate as laminations. 0.5% disseminated pyrite, 1% disseminated pyrrhotite. Sharp lower contact at 70 TCA.

STRUCTURES

From	To	Struct	CA	Strain
102.63	107.63	BD	60	
bedding at 60 TCA.				
107.63	107.64	CT	70	
Sharp lower contact at 70 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
102.63	107.64	W	VW	-	-	-	-
weakly epidote altered, very weak carbonate as laminations.							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
102.63	107.64	0.5	DIS	PO	1				
0.5% disseminated pyrite, 1% disseminated pyrrhotite.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
107.64	107.71	QCSX	

Dark grey, thin-bedded pyrite-pyrrhotite rich, silica-carbonate exhalite. Bedding at 70 TCA, and locally contorted. Moderate carbonate as thin beds and laminations. 5% pyrite, 5% pyrrhotite as laminations. Sharp lower contact at 67 TCA.

STRUCTURES

From	To	Struct	CA	Strain
107.64	107.70	BD	70	
bedding at 70 TCA.				
107.70	107.71	CT	67	
Sharp lower contact at 67 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
107.64	107.71	-	-	-	-	-	-
no significant alteration							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
107.64	107.71	5	LB	PO	5				
5% pyrite, 5% pyrrhotite as laminations									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
107.71	111.34	FXAT	

Very pale green, weakly epidotized, medium- to coarse-grained, faintly-bedded intermediate to mafic feldspar crystal ash tuff. Very faint bedding at 70 TCA. Very weak carbonate as sporadic ilaminations. 0.25% each pyrite and pyrrhotite as disseminations. Lower contact sharp at 70 TCA.

STRUCTURES

From	To	Struct	CA	Strain
107.71	111.33	BD	70	
Very faint bedding at 70 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
107.71	111.34	FXAT	

Very pale green, weakly epidotized, medium- to coarse-grained, faintly-bedded intermediate to mafic feldspar crystal ash tuff. Very faint bedding at 70 TCA.
Very weak carbonate as sporadic ilaminations. 0.25% each pyrite and pyrrhotite as disseminations. Lower contact sharp at 70 TCA.

STRUCTURES

From	To	Struct	CA	Strain
111.33	111.34	CT	70	

Lower contact sharp at 70 TCA.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
107.71	111.34	W	VW	-	-	-	-

Very weak carbonate as sporadic laminations, weak epidote alteration

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
107.71	111.34	0.25	DIS	PO	0.25				

0.25% each pyrite and pyrrhotite as disseminations

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
111.34	119.28	ASHT	

Very pale green, weakly epidote-altered, thin-bedded intermediate (?) to mafic ash tuff. With minor intermediate feldspar crystal ash interbeds. Grades from very fine to fine ash. Bedding at 72 TCA. Very minor carbonate as laminations. Interbedded silica exhalite occurs at upper contact as noted. 2% pyrite, 2% pyrrhotite dominantly as thin laminations. Gradational lower contact.
111.36m to 111.41m 5cm thick, thin-bedded pyrrhotite-rich silica exhalite layer with 8% laminated pyrrhotite.

STRUCTURES

From	To	Struct	CA	Strain
111.34	119.27	BD	72	

Bedding at 72 TCA

From	To	Struct	CA	Strain
119.27	119.28	CT		

Gradational lower contact

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
111.34	119.28	W	W	-	-	-	-

weak carbonate and epidote alteration

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
111.34	119.28	2	LB	PO	2				

2% pyrite, 2% pyrrhotite dominantly as thin laminations

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
119.28	121.67	FXAT	

Light green, weakly epidote-altered, weakly-bedded intermediate feldspar crystal ash tuff. Bedding at 75 TCA. Minor carbonate laminations, which commonly contain disseminated pyrrhotite. Otherwise trace disseminated pyrite and pyrrhotite in the tuff. Lower contact gradational.

STRUCTURES

From	To	Struct	CA	Strain
119.28	121.66	BD	75	

faint bedding at 75 TCA.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
119.28	121.67	M	M	-	-	-	-

moderate carbonate and weak epidote alteration

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
119.28	121.67	0.05	DIS	PY	1				

trace py and po in the tuff; 1% po associated with carbonate laminations.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
119.28	121.67	FXAT	

(Continued from previous page)

STRUCTURES

From	To	Struct	CA	Strain
121.66	121.67	CT		

gradational lower contact.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
121.67	122.68	ASHT	

Medium green, moderately chloritic, thin-bedded, intermediate to mafic ash tuff with thin interbedded limestone or carbonate exhalative. Bedding at 65 TCA. 3% pyrrhotite associate with carbonate intervals. 10cm thick bull quartz vein (conformable) from 122.03m to 122.13m. Lower contact of the ash tuff sharp at 65 TCA.

STRUCTURES

From	To	Struct	CA	Strain
121.67	122.67	BD	65	

Bedding at 65 TCA.

From	To	Struct	CA	Strain
122.67	122.68	CT	65	

Lower contact of the ash tuff sharp at 65 TCA

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
121.67	122.68	M	-	-	-	-	-

Moderate chlorite; weak epidote

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
121.67	122.68	0	-	PO	3				

3% pyrrhotite associate with carbonate intervals.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
122.68	128.27	FXAT	

Light green, weakly to moderately epidote-altered, faintly-bedded intermediate(?) feldspar crystal ash tuff. Bedding at 72 TCA. Moderate carbonate alteration as laminations and rare seams up to 3cm thick. Trace pyrite. 2%-3% pyrrhotite as elongate flecks paralleling bedding, and as laminations associated with carbonate. Lower contact gradational.

STRUCTURES

From	To	Struct	CA	Strain
122.68	128.26	BD	72	

Bedding at 72 TCA.

From	To	Struct	CA	Strain
128.26	128.27	CT		

gradational lower contact.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
122.68	128.27	M	M	-	-	-	-

moderate carbonate as laminations and rare seams; weak to moderate epidote.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
122.68	128.27	0.05	DIS	PO	2.5				

Trace pyrite. 2%-3% pyrrhotite as elongate flecks paralleling bedding, and as laminations associated with carbonate.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
128.27	129.25	ASHT	

Light green, moderately epidotized, thin-bedded intermediate to mafic ash tuff with interbedded pyrrhotite-rich silica-carbonate exhalite. Maximum thickness of the exhalites is 5 cm. Bedding at 70 TCA. Weak to moderate carbonate alteration as laminations. Sharp lower contact at 70 TCA. Exhalite intervals occur as follows:
128.72m to 128.77m 40% contorted massive pyrrhotite bands.
128.90m to 128.97m Three distinct bands with 10% pyrrhotite.
129.21m to 129.24m 3 cm band with 25% pyrrhotite.

STRUCTURES

From	To	Struct	CA	Strain
128.27	129.24	BD	70	
bedding at 70 TCA.				
129.24	129.25	CT	70	
sharp lower contact at 70 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
128.27	129.25	M	W	-	-	-	-
Weak to moderate carbonate alteration as laminations; moderate epidote alteration.							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
128.27	128.72	0.25	DIS	PO	0.25				
0.25% each dissemianted pyrite and pyrrhotite.									
128.72	129.25	2	LB	PO	7.5				
7%-8% pyrrhotite, 2% pyrite over entire interval, as laminations within several thin silica-carbonate exhalite beds.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
129.25	133.28	LXTF	

Light green, moderately bedded and foliated, weakly to moderately epidote-altered intermediate lithic-crystal tuff. Crystals are diffuse, very weakly epidote-altered plagioclase. Lithics are very dark grey, thin and elongate fragments that are very rarely crystalline. For the most part, the lithics appear to be chloritized and have somewhat diffuse outlines. Bedding-parallel foliation at 75 TCA. Very weak carbonate as laminations, particularly over upper 60 cm. Approximately 0.25% each disseminated pyrite and pyrrhotite. Lower contact sharp, slightly undulose, at 80 TCA.

STRUCTURES

From	To	Struct	CA	Strain
129.25	133.27	BD	75	
Bedding parallels foliation at 75 TCA.				
133.27	133.28	CT	80	
Lower contact sharp, slightly undulose, at 80				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
129.25	133.28	M	VW	-	-	-	-
moderately epidote altered, moderate chloritization. Lithic fragments show weak carbonate as laminations.							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
129.25	133.28	0.25	DIS	PO	0.25				
0.25% each disseminated pyrite and pyrrhotite									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
129.25	133.28	LXTF	

(Continued from previous page)

STRUCTURES

From	To	Struct	CA	Strain

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

TCA.

From	To	Litho	Simple Geo
133.28	133.96	SESX	

Dominantly light to medium grey, thin-bedded, pyrrhotite-pyrite rich, silica exhalite with interbedded and locally silicified intermediate ash tuff. Bedding at 76 TCA. Exhalite bands rythmically alternate with ash tuff interbeds; both occur in less than 3 cm thick bands. Very weak carbonate as laminations. Overall, 6% pyrrhotite and 2% pyrite as laminations. Lower contact sharp at 70 TCA.

STRUCTURES

From	To	Struct	CA	Strain
133.28	133.95	BD	76	
bedding at 76 TCA.				
133.95	133.96	CT	70	
sharp lower contact at 70 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
133.28	133.96	W	W	-	-	-	-
weak carbonate as laminations, weak epidote alteration of the tuff.							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
133.28	133.96	2	LB	PO	6				
Overall, 6% pyrrhotite and 2% pyrite as laminations									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
133.96	153.16	MFLW	

Light grey green, flow-banded to flow-foliated, to massive (at core) mafic to intermediate porphyritic flow. Upper and lower contacts have 0.75 meter thick chill margins. Groundmass of the lithology is essentially plagioclase, epidote and chlorite. The phenocrysts have been completely altered to chlorite, but original crystals appear to be stubby equant crystals, 2mm-4mm in size that appear approaching upper and lower contacts, to be deformed to elongate, and (with extreme stretching/flattening), nearly acicular crystals. On the other hand, these may represent two different phenocryst phases: stubby equant pyroxene, and elongate to acicular hornblende. This is less likely since the equant crystals occur in massive flow, whereas the elongate crystals occur in flow-banded to flow-foliated flow. So, this appears to a pyroxene porphyritic mafic flow. Very little alteration or veining beyond the above description. 0.1% each disseminated pyrite and pyrrhotite. Lower contact coincident with a 2 cm bull quartz vein.

STRUCTURES

From	To	Struct	CA	Strain
133.96	144.20	FOL	65	
flow foliated at 65 TCA.				
144.20	149.00	NA		
massive				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
133.96	153.16	M	-	-	-	-	-
weak to moderate epidote, moderate to intense chloritization of pyroxene phenocrysts.							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
133.96	153.16	0.1	DIS	PO	0.1				
0.1% each disseminated pyrite and pyrrhotite.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
133.96	153.16	MFLW	

(Continued from previous page)

STRUCTURES

From	To	Struct	CA	Strain
149.00	153.15	FOL	72	
flow foliated at 65 TCA.				
153.15	153.16	CT		
lower contact cut by bull quartz vein.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
153.16	153.83	FXAT	

Medium to dark green moderately chloritic feldspar crystal ash tuff. Bedding at 80 TCA. Moderate carbonate as laminations. A 5cm calcite vein (conformable) occurs from 153.38m to 153.43m. Trace pyrite overall in the tuff. Lower contact gradational.

STRUCTURES

From	To	Struct	CA	Strain
153.16	153.82	BD	80	
bedding at 80 TCA				
153.82	153.83	CT		
Lower contact gradational.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
153.16	153.83	M	M	-	-	-	-
moderately chloritic, moderate carbonate as laminations.							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
153.16	153.83	0.05	DIS						
trace disseminated pyrite.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
153.83	160.92	ASHT	

Medium to dark green, moderately epidote-altered, moderately chloritic, thin-bedded mafic ash tuff. Bedding at 75 TCA, where discernable. Weak to moderate carbonate as laminations. From 153.99m to 154.01m, 2cm thick interbedded pyrrhotite-rich silica+carbonate exhalite. Below 156.30m, fractures are developed in the tuff, and brittle deformation increases in intensity downhole. These fractures are hairline to several millimeters thick and appear to be biotite (or chlorite?)+/-carbonate filled. From 157.43m to lower contact, unit is essentially weakly bleached and in situ brecciated with carbonate and biotite(?)+/-carbonate healing fractures. Very small-scale (maximum 1-2 cm) offsets noted. Overall trace pyrite. Lower contact sharp at 75 TCA.

STRUCTURES

From	To	Struct	CA	Strain
153.83	157.43	BD	75	
bedding at 75 TCA.				
157.43	160.91	BX		
In situ brecciated tuff.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
153.83	157.43	M	W	-	-	-	-
weak carbonate, moderate epidote alteration.							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
153.83	160.92	0.05	DIS						
trace disseminated pyrite.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
153.83	160.92	ASHT	

(Continued from previous page)

STRUCTURES

From	To	Struct	CA	Strain
160.91	160.92	CT	75	

sharp lower contact at 75 TCA.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
157.43	160.92	M	M	-	-	-	- -

moderate carbonate matrix to breccia; moderate epidote alteration.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
160.92	161.02	MFLW	

Medium green, weakly chloritic porphyritic mafic flow. Upper and lower contacts are sharp, irregular and chilled. Composed of 25% chloritized hornblende phenocrysts and 10% off-white plagioclase phenocrysts in a weakly chloritic and epidote-altered groundmass. Trace pyrite.

STRUCTURES

From	To	Struct	CA	Strain
160.92	161.01	NA		

massive

From	To	Struct	CA	Strain
161.01	161.02	BD	75	

contact sharp, irregular and chilled.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
160.92	161.02	M	-	-	-	-	- -

chloritic groundmass, with chloritization of hornblende phenocrysts, weak epidote alteration.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
160.92	161.02	0.05	DIS						

trace disseminated pyrite.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
161.02	163.57	FXAT	

Medium green, weakly chloritic and moderately epidotized, intermediate crystal ash tuff with interbedded ash tuff. Bedding is very weakly developed at 75 TCA. Unit is weakly brecciated down to 162.00m. Minor carbonate laminations and fracture fills. Trace disseminated pyrite. Lower contact sharp at 78 TCA.

STRUCTURES

From	To	Struct	CA	Strain
161.02	162.00	BX		

weakly brecciated down

From	To	Struct	CA	Strain
162.00	163.56	BD	75	

weakly bedded at 75 TCA

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
161.02	163.57	M	W	-	-	-	- -

weakly chloritic, moderately epidotized, minor carbonate laminations and fracture fills

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
161.02	163.57	0.05	DIS						

Trace disseminated pyrite.

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
161.02	163.57	FXAT	

(Continued from previous page)

STRUCTURES

From	To	Struct	CA	Strain
163.56	163.57	CT	78	

sharp lower contact at 78 TCA

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
163.57	173.43	ASHT	

Medium to dark green, well-bedded, weakly to moderately chloritic, locally moderately epidote-altered mafic ash tuff with minor mafic feldspar crystal ash tuff interbeds (typically 2cm to 10cm thick). Bedding at 70 to 80 TCA. Ash is very fine, locally coarsening downhole. Moderate carbonate laminations which typically contain fine laminated pyrrhotite. Overall 1% pyrrhotite within carbonate bands and laminations, and 0.15% disseminated medium-grained pyrite.

End of Hole

STRUCTURES

From	To	Struct	CA	Strain
163.57	172.00	BD	70	

bedding at 70 TCA.

From	To	Struct	CA	Strain
172.00	173.43	BD	80	

bedding at 80 TCA

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
163.57	173.43	M	M	-	-	-	-

Moderate carbonate laminations, moderately chloritic and epidote altered.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
163.57	173.43	0.15	DIS	PO	1				

Overall 1% pyrrhotite within carbonate bands and laminations, and 0.15% disseminated medium grained pyrite.

SAMPLES

From	To	Sample

APPENDIX VII

DIAMOND DRILL LOG for DDH 75E-028

From	To	Litho	Simple Geo
0.00	3.96	OVBD	

Casing/overburden

STRUCTURES					ALTERATION								MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC	From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample
0.00	3.96	NA			0.00	3.96	-	-	-	-	-	-	-	0.00	3.96	0	-								

From	To	Litho	Simple Geo
3.96	9.85	ASHT	

Medium green, chloritic mafic to intermediate ash tuff. Bedding is extremely faint at 65 at TCA. Moderate epidote alteration. Very rare and thin feldspar crystal tuff interbeds. Minor sporadic carbonate and carbonate epidote veins, conformable or cross-cutting. Trace pyrite. Lower contact sharp at 75 TCA.

STRUCTURES					ALTERATION								MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC	From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample
3.96	9.84	BD	65																						
Bedding is extremely faint at 65 at TCA																									
					3.96	9.85	M	VW	-	-	-	-	-													
					moderate epidote alteration, moderately chloritic, very weak carbonate alteration.									3.96	9.85	0.05	DIS										
														trace disseminated pyrite.											
9.84	9.85	CT	75																						
sharp lower contact at 75 TCA.																									

From	To	Litho	Simple Geo
9.85	13.68	XATF	

Medium green to green-grey, faintly-bedded, chloritic and weak to moderately epidote-altered mafic to intermediate thin (1cm to 3cm) beds of what appear to be chloritized hornblende crystals. Locally this imparts a very fine "salt and pepper" texture. Riddled with hairline to 1mm-thick, low to moderate angle carbonate-amphibole(?) filled fractures from 10.25m to lower contact. Bedded limestone noted from 13.22m to 13.25m. Overall trace disseminated pyrite. Lower contact sharp at 65 TCA.

STRUCTURES					ALTERATION								MINERALIZATION										SAMPLES		
From	To	Struct	CA	Strain	From	To	INT	CC	DO	SR	AK	SC	From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%	From	To	Sample
9.85	13.67	BD	67																						
very faint bedding at 67 TCA.																									
					9.85	13.68	M	VW	-	-	-	-	-													
					moderate epidote and chlorite aletartion, very weak carbonate alteration.									9.85	13.68	0.05	DIS										
														trace disseminated pyrite.											

From	To	Litho	Simple Geo
9.85	13.68	XATF	

(Continued from previous page)

STRUCTURES

From	To	Struct	CA	Strain
13.67	13.68	CT	65	
sharp lower contact at 65 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
13.68	21.92	ASHT	

Very light blue-green to blue grey, faintly bedded intermediate(?) calcareous ash tuff to locally (and rarely) lithic ash tuff. The lithic ash tuff contains 2%-3% elongate chloritized lithic shards that are betweem 2mm and 10mm long. Bedding throughout this unit is moderately developed at 65 TCA. Lithology is characterized by variable but ubiquitous carbonate that occurs along hairline laminations; these laminae are often only visible with the aid of HCl, but overall there is approximately 10% carbonate in the calcareous tuff unit. 0.5% each disseminated pyrite and pyrrhotite, except where noted. Sharp lower contact at 55 TCA.
16.60m to 18.95m Interval of extremely rusty "burnt" calcareous and schistose ash tuff ash tuff. Sericite common on partings. Intensity of the oxidation suggests 8% to 10% sulphides; fresh surface on a single piece of core indicates 5% each laminated pyrite and pyrrhotiite. Foliation at 60 TCA.

STRUCTURES

From	To	Struct	CA	Strain
13.68	16.60	BD	65	
faint bedding at 65 TCA				
16.60	18.95	FOL	60	
moderately to well-foliated at 60 TCA.				
18.95	21.91	BD	65	
faint bedding at 65 TCA				
21.91	21.92	CT	55	
sharp lower contact at 55 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
13.68	16.60	S	S	-	-	-	-
Calcareous alteration throughout, weak chlorite alteration.							
16.60	18.95	VS	S	-	-	-	-
Strong carbonate and very strong sericite alteration.							
18.95	21.92	S	S	-	-	-	-
Calcareous alteration throughout, weak chlorite alteration.							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
13.68	16.60	0.5	DIS	PO	0.5				
0.5% each disseminated pyrite and pyrrhotite.									
16.60	18.95	5	LB	PO	5				
5% each laminated pyrite and pyrrhotiite									
18.95	21.92	0.5	DIS	PO	0.5				
0.5% each disseminated pyrite and pyrrhotite.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
21.92	22.01	SESX	

Dark grey, thin-bedded to laminated pyrrhotite-rich silica exhalite. Bedding at 60 TCA. Moderate carbonate as laminations. 40% semi-massive to massive pyrrhotite and 5% laminated pyrite. Sharp lower contact at 55 TCA.

STRUCTURES

From	To	Struct	CA	Strain
21.92	22.00	BD	60	
bedding at 60 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
21.92	22.01	SESX	

Dark grey, thin-bedded to laminated pyrrhotite-rich silica exhalite. Bedding at 60 TCA. Moderate carbonate as laminations. 40% semi-massive to massive pyrrhotite and 5% laminated pyrite. Sharp lower contact at 55 TCA.

STRUCTURES

From	To	Struct	CA	Strain
22.00	22.01	CT	55	
Lower contact sharp at 55 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
21.92	22.01	M	M	-	-	-	-
moderate carbonate as laminations.							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
21.92	22.01	5	LB	PO	40				
40% semi-massive to massive pyrrhotite and 5% laminated pyrite.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
22.01	57.58	ASHT	

Very light blue-green to blue-grey, faintly-bedded intermediate(?) calcareous ash tuff as per 13.68m to 21.92m, but slightly coarser grained and with rare crystal ash tuff beds. Bedding at 65 TCA. Rare lthic fragments observed. Sharp lower contact at 70 TCA. Overall 0.1% each disseminated pyrite and pyrrhotite, except as noted.
28.90m to 31.40m: In situ brecciated and carbonate flooded from with 25% carbonate.
39.25m to 47.80m: In situ brecciated and carbonate flooded from with 30% carbonate.
56.70m to 5.76m: Band of massive carbonate altered pyrrhotite with weakly epidotized incorporated clasts
At 42.64m: 5 mm pyrrhotite band associated with carbonate breccia.
55.20m to 57.58m: bedding more developed in finer ash tuff.

STRUCTURES

From	To	Struct	CA	Strain
22.01	28.90	BD	65	
bedding at 65 TCA.				
28.90	31.40	BX		M
in situ brecciated and carbonate flooded.				
31.40	39.25	BD	65	
bedding at 65 TCA.				
39.25	47.80	BX		M
in situ brecciated and carbonate flooded.				
47.80	57.57	BD	65	
bedding at 65 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
22.01	28.90	S	S	-	-	-	-
strong carbonate as laminations and matrix alteration within tuff.							
28.90	31.40	VS	VS	-	-	-	-
carbonate flooded; 25% carbonate							
31.40	39.25	S	S	-	-	-	-
strong carbonate as laminations and matrix alteration within tuff.							
39.25	47.80	VS	VS	-	-	-	-
carbonate flooded; 30% carbonate							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
22.01	56.70	0.1	DIS	PO	0.01				
0.1% each disseminated pyrite and pyrrhotite.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
22.01	57.58	ASHT	

(Continued from previous page)

STRUCTURES

From	To	Struct	CA	Strain
57.57	57.58	CT	70	
sharp lower contact at 70 TCA				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
47.80	57.58	S	S	-	-	-	- -
strong carbonate as laminations and matrix alteration within tuff.							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
56.70	56.76	0	-	PO	70				
70% massive pyrrhotite									
56.76	57.58	0.1	DIS	PO	0.1				
0.1% each disseminated pyrite and pyrrhotite.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
57.58	57.79	QCSX	

Very dark grey, thin-bedded pyrrhotite-enriched silica+carbonate exhalite. Bedding is contorted. Approximately 40% laminated to semi-massive pyrrhotite and 1%-2% pyrite. A piece of core appears to be missing at lower contact.

STRUCTURES

From	To	Struct	CA	Strain
57.58	57.78	BD		
bedding contorted				
57.78	57.79	CT		
A piece of core appears to be missing at lower contact.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
57.58	57.79	-	-	-	-	-	- -
no significant alteration.							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
57.58	57.79	1.5	LB	PO	40				
40% laminated to semi-massive pyrrhotite and 1%-2% pyrite									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
57.79	60.11	ASHT	

Very light green-blue, well-bedded calcareous ash tuff. Bedding at 66 TCA. Overall, 0.1% disseminated pyrite. Sharp lower contact at 76 TCA..
59.08m to 59.10m 1.5 cm thick band of pyrrhotite-enriched silica+carbonate exhalite with 15% pyrrhotite.

STRUCTURES

From	To	Struct	CA	Strain
57.79	60.10	BD	66	
bedding at 66 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
57.79	59.08	0.1	DIS						
0.1% disseminated pyrite.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
57.79	60.11	ASHT	

Very light green-blue, well-bedded calcareous ash tuff. Bedding at 66 TCA. Overall, 0.1% disseminated pyrite. Sharp lower contact at 76 TCA..
59.08m to 59.10m 1.5 cm thick band of pyrrhotite-enriched silica+carbonate exhalite with 15% pyrrhotite.

STRUCTURES

From	To	Struct	CA	Strain
60.10	60.11	CT	76	
sharp lower contact at 76 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
57.79	60.11	S	S	-	-	-	-
strong carbonate alteration							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
59.08	59.10	0.1	DIS						
1.5 cm thick band of pyrrhotite-enriched silica+carbonate exhalite with 15% pyrrhotite.									
59.10	60.11	0.1	DIS						
0.1% disseminated pyrite.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
60.11	60.24	QCSX	

Dark to medium grey, thin-bedded, silica+carbonate exhalite with 15% thin-bedded pyrrhotite. Bedding at 70 TCA. Sharp lower contact at 67 TCA.

STRUCTURES

From	To	Struct	CA	Strain
60.11	60.23	BD	70	
thin bedded at 70 TCA.				
60.23	60.24	CT	67	
sharp lower contact at 67 TCA				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
60.11	60.24	-	-	-	-	-	-
no significant alteration.							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
60.11	60.24	0	-	PO	15				
15% thin-bedded pyrrhotite									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
60.24	62.13	ASHT	

Very pale green-blue, weakly-bedded intermediate(?) calcareous ash tuff. Bedding at 75 TCA. 0.5% disseminated pyrite flecks. Sharp lower contact at 75 TCA.

STRUCTURES

From	To	Struct	CA	Strain
60.24	62.12	BD	75	
Bedding at 75 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
60.24	62.13	ASHT	

Very pale green-blue, weakly-bedded intermediate(?) calcareous ash tuff. Bedding at 75 TCA. 0.5% disseminated pyrite flecks. Sharp lower contact at 75 TCA.

STRUCTURES

From	To	Struct	CA	Strain
62.12	62.13	CT	75	
Sharp lower contact at 75 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
60.24	62.13	S	S	-	-	-	-
strong carbonate alteration							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
60.24	62.13	0.5	DIS						
0.5% disseminated pyrite flecks.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
62.13	62.28	QCSX	

Thin-bedded, dark grey pyrrhotite-enriched silica+carbonate exhalite. Bedding at 70 TCA. 15% laminated pyrrhotite. Sharp lower contact at 70 TCA.

STRUCTURES

From	To	Struct	CA	Strain
62.13	62.27	BD	70	
bedding at 70 TCA.				
62.27	62.28	CT	70	
Sharp lower contact at 70 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
62.13	62.28	-	-	-	-	-	-
no significant alteratoin							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
62.13	62.28	0	-	PO	15				
15% laminated pyrrhotite.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
62.28	72.45	ASHT	

Pale green-blue, well-bedded to faintly-bedded, intermediate and calcareous ash tuff. Bedding at 72 TCA. Two intervals, at 62.28m to 62.54m and 65.52m to 65.67m, are extremely rusty, thin-bedded non-calcareous ash tuff. Pyrite has completely weathered out but was likely around 5%, given the intense and discreet oxidized laminations. Otherwise, approximately 0.15% disseminated pyrite through rest of the unit. From 66.20m to 72.45m, the tuff becomes somewhat coarser, and bedding is only faintly developed. Lower contact very slightly gradational.

STRUCTURES

From	To	Struct	CA	Strain
62.28	72.44	BD	72	
well bedded to faintly bedded at 72 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
62.28	72.45	S	S	-	-	-	-
strong carbonate alteration							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
62.28	62.54	5	LB						
5% pyrite as laminations									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
62.28	72.45	ASHT	

(Continued from previous page)

STRUCTURES

From	To	Struct	CA	Strain
72.44	72.45	CT		
Lower contact very slightly gradational.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
72.45	87.00	M	-	-	-	-	-
moderate epidote and weak chlorite alteration.							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
62.54	65.52	0.15	DIS						
0.15% disseminated pyrite									
65.52	65.67	5	LB						
5% pyrite as laminations									
65.67	72.45	0.15	DIS						
0.15% disseminated pyrite									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
72.45	91.27	MFLW	

Very pale green, weakly foliated, mafic to intermediate porphyritic flow. Foliation at 72 TCA. Composed of 15% to 20% completely chloritized, 2mm to 6mm elongate amphibole crystals and rare (approx. 1%) anhedral altered feldspar crystals in a bleached epidote+/-chlorite altered groundmass. The amphibole crystals generally have diffuse crystal outlines due to alteration. Cut by minor carbonate and carbonate+chlorite filled fractures throughout. The flow is chilled from approximately 78.00m to 79.00m. From 79.00m to 79.07, sliver of bedded ash tuff separating this upper flow from a lower flow (and therefore a chill margin). Bedding in the tuff is at 70 TCA. 0.1% disseminated pyrite.
80.75m to 80. 86m: interval of massive mafic to intermediate flow with randomly oriented amphibole phenocrysts.
87.00m to 88.25m: Generally massive, more crystalline mafic to intermediate flow. Groundmass is more chloritized and less epidotized.
90.39m to 91.27m: Chill margin down to the lower contact. Lower contact is subtle and irregular.

STRUCTURES

From	To	Struct	CA	Strain
72.45	79.00	FOL	72	
moderately well developed foliation at 72 TCA.				
79.00	79.07	BD	70	
Bedding at 70 TCA, in a sliver of ash tuff.				
79.07	80.75	FOL	72	
moderately well developed foliation at 72 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
72.45	91.27	0.1	DIS						
0.1% disseminated pyrite.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
72.45	91.27	MFLW	

(Continued from previous page)

STRUCTURES

From	To	Struct	CA	Strain
80.75	80.86	NA		
core of massive mafic to intermediate flow				
80.86	87.00	FOL	72	
moderately well developed foliation at 72 TCA.				
87.00	88.25	NA		
interval of relative massive crystalline mafic to intermediate flow.				
88.25	91.26	FOL	72	
moderately well developed foliation at 72 TCA.				
91.26	91.27	CT		
Lower contact is subtle and irregular.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
87.00	88.25	M	-	-	-	-	-
moderate chlorite and weak epidote alteration.							
88.25	91.27	M	-	-	-	-	-
moderate epidote and weak chlorite alteration.							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
91.27	93.67	FXAT	

Medium grey-green, weakly-bedded, feldspar amphibole crystal ash tuff with minor interbedded ash tuff. Very weakly bedded at 66 TCA. Probably related to the upper MFLW. Moderate epidote and chlorite alteration. Very minor carbonate laminations and bands which are typically pyrrhotite-pyrite mineralized. Overall, 0.25% each disseminated and carbonate-associated pyrite and pyrrhotite. Sharp lower contact at 70 TCA.

STRUCTURES

From	To	Struct	CA	Strain
91.27	93.66	BD	66	
very weakly bedded at 66 TCA.				
93.66	93.67	CT	70	
sharp lower contact at 70 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
91.27	93.67	M	-	-	-	-	-
moderate epidote and chlorite alteration.							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
91.27	93.67	0.25	DIS	PO	0.25				
0.25% each disseminated and carbonate-associated pyrite and pyrrhotite.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
93.67	102.25	ASHT	

Medium green, moderately chloritic, moderately calcareous, weakly-bedded, mafic ash tuff with feldspar crystal ash tuff interbeds. Weakly bedding at 68 TCA from 93.67m to 96.48m, and finer grained and well-bedded at 70 TCA from 97.25m to 102.25m. Very weakly calcareous to 96.48m, and moderately to intensely calcareous from 96.48m to lower contact. Overall, 2%-3% pyrite and 3%-4% pyrrhotite as laminations (particularly associated with carbonate), and as bedding-parallel elongate flecks and disseminations. Sharp lower contact at 55 TCA.
96.48m to 97.25m: warm brownish-grey, brecciated and intensely carbonate flooded ash tuff; approximately 60% carbonate.
97.25m to 102.25m: medium green moderately epidote-chlorite altered well bedded mafic ash tuff with strong carbonate alteration as laminations and alteration within the tuff matrix. Bull quartz vein at at 101.96m to 102.07m.

STRUCTURES

From	To	Struct	CA	Strain
93.67	96.48	BD	68	
very weakly bedded at 68 TCA				
96.48	97.25	BX		
brecciated and carbonate flooded.				
97.25	102.24	BD	70	
well bedded at 70 TCA.				
102.24	102.25	CT	55	
Sharp lower contact at 55 TCA.				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
93.67	96.48	M	VW	-	-	-	-
moderate chlorite and epidote alteration; very weakly calcareous							
97.25	102.25	S	S	-	-	-	-
moderatey epidote-chlorite altered with strong carbonate alteration as laminations and alteration within the tuff matrix.							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
93.67	102.25	2.5	LB	PO	3.5				
2%-3% pyrite and 3%-4% pyrrhotite as laminations (particularly associated with carbonate), and as bedding parallel elongate flecks and disseminations.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
102.25	102.64	MFLW	

Medium green, well chloritized and moderately epiodtized, fine to medium grained massive mafic flow. Bull milky quartz veins with inclusions of chloritized ash tuff occur at the upper and lower contacts. Numerous xenoliths of chloritized mafic ash tuff occur within upper and lower contacts of the mafic flow. Groundmass and plagioclase crystals are moderately epidotized. Trace disseminated pyrite. Lower contact sharp but irregular.

STRUCTURES

From	To	Struct	CA	Strain
102.25	102.63	NA		
massive				

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
102.25	102.64	S	-	-	-	-	-
well chloritized and moderately epidotized.							

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
102.25	102.64	0.05	DIS						
Trace disseminated pyrite.									

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
102.25	102.64	MFLW	

(Continued from previous page)

STRUCTURES

From	To	Struct	CA	Strain
102.63	102.64	CT		

Lower contact sharp but irregular.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
102.64	102.86	QZVN	

Massive milky white quartz vein with inclusions of chloritized mafic ash tuff. No visible mineralization. A cluster of 1cm to 1.5 cm long euhedral peach-coloured calcite crystals occur within the center of the vein. Lower contact sharp and irregular.

STRUCTURES

From	To	Struct	CA	Strain
102.64	102.85	NA		

massive

From	To	Struct	CA	Strain
102.85	102.86	CT		

Lower contact sharp and irregular.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
102.64	102.86	W	-	-	-	-	-

cluster of 1cm to 1.5 cm long euhedral peach-coloured calcite crystals occur within the center of the vein.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
102.64	102.86	0	-						

no visible sulphides

SAMPLES

From	To	Sample

From	To	Litho	Simple Geo
102.86	111.86	ASHT	

Medium green, well chloritized and moderately epidotized, calcareous, thin-bedded mafic ash tuff with rare and sporadic thin (<4cm) mafic feldspar crystal ash tuff interbeds. Bedding well developed at 70 TCA. Strong carbonate alteration as laminations and matrix alteration. Epidote occurs as alteration of feldspar crystals within the feldspar crystal ash interbeds, as fine grained matrix alteration within the ash tuff, and as crystal growths overprinting carbonate thin beds and laminations. Overall, 3% pyrite associated with carbonate laminations.
End of Hole.

STRUCTURES

From	To	Struct	CA	Strain
102.86	111.86	BD	70	

well developed bedding at 70 TCA.

ALTERATION

From	To	INT	CC	DO	SR	AK	SC
102.86	111.86	S	S	-	-	-	-

well chloritized and moderately epidotized, strong carbonate alteration as laminations and matrix alteration.

MINERALIZATION

From	To	PY%	Style	Min	Min%	Min2	M2%	Min3	M3%
102.86	111.86	3	LB						

3% pyrite associated with carbonate laminations.

SAMPLES

From	To	Sample

APPENDIX VIII

ITEMIZED COST STATEMENT

(May 20 to June 4, 2009)

Wages:		
D.J. Alldrick	May 24 to June 2: 10 days at $400/day	$ 4,000.00
B.J. Willett	May 24 to June 2: 10 days at $400/day	$ 4,000.00
Travel (one-way):		
Air Canada	DJA & BJW	$ 848.00
Meals and Camp Accommodation (DJA & BJW):		
Meals	10 days at $30 per man/day	$ 600.00
Camp Operation	10 days at $30 per man/day	$ 600.00
Report Preparation:		
Text & map production (DJA)	2 days at $400/day	$ 800.00
Total Costs:		**$ 10,848.00**

APPENDIX IX

CERTIFICATES OF QUALIFICATION

Certificate of Qualifications

I, Dani Alldrick, of 1661 Hovey Road, Saanichton, in the Province of British Columbia, DO HEREBY CERTIFY:

1. THAT, I am a geologist residing in the District of Central Saanich, B.C, currently employed by Kutcho Copper Corporation, a wholly-owned subsidiary of Capstone Mining Corporation, 900-999 West Hastings St., Vancouver BC V6C 2W2.

2. THAT, I obtained a Bachelor of Science degree in Geophysics in 1971 and a Bachelor of Science degree in Geology in 1974 from The University of Western Ontario, London, Canada; a Master of Science degree in Mineral Exploration in 1978 from The Royal School of Mines, London, England; and a Ph.D in Economic Geology in 1991 from The University of British Columbia, Vancouver, Canada.

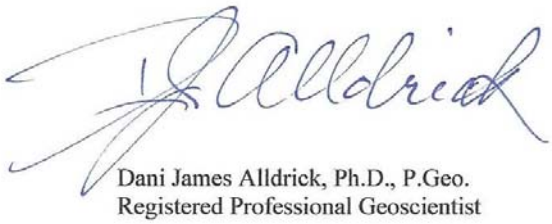
3. THAT, I have been continuously practicing my profession as a geologist since 1974 for Kutcho Copper Corporation, the Province of British Columbia, and Cominco Exploration Ltd.

4. THAT, I am Registered Professional Geoscientist (License # 109351) in good standing with the Association of Professional Engineers and Geoscientists of British Columbia.

5. THAT, this report is based upon my knowledge of the project gained from working on the project seasonally in 2008 and work conducted on the property from May 21st through June 18th, 2009.

Dated at Kutcho Creek camp, British Columbia this 3rd of August, 2009.

Signed By:



Dani James Alldrick, Ph.D., P.Geo.
Registered Professional Geoscientist

Certificate of Qualifications

I, Brian J. Willett, of the town of Kippens, Province of Newfoundland, do hereby certify that:

(1) I am Senior Project Geologist employed by Minto Explorations Ltd., a subsidiary of Capstone Mining Corporation, of P.O. Box 33174, Whitehorse, Yukon.

(2) I reside at 15 Fir Avenue, Kippens, NL, A2N 0A6.

(3) I am a graduate of Memorial University of Newfoundland with a Bachelor of Science degree in Earth Sciences (1985).

(4) I have been practicing my profession since 1985.

(5) That this report is based in part on property work I personally completed and/or directly supervised between May 21, 2009 and June 4, 2009.

Signed in the town of Kippens, this 7th day of July, 2009.

Brian J. Willett

Certificate of Qualifications

I, Robert G. Wilson, of 20216 8th Ave. Langley, in the Province of British Columbia, DO HEREBY CERTIFY:

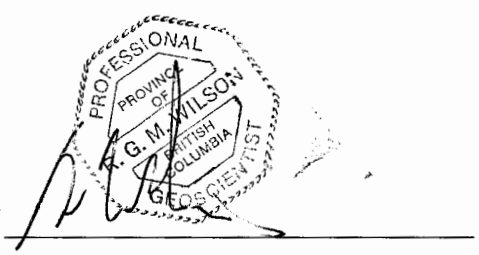
1. THAT I am employed by Capstone Mining Corp. of 900 - 999 West Hastings Street., Vancouver B.C. V6C 2W2

2. THAT I am a graduate of the University of British Columbia with a Bachelor of Science degree in Geology.

3. THAT I am a Professional Geoscientist registered in good standing with the Association of Professional Engineers and Geoscientists of the Province of British Columbia.

4. THAT historical sections of this report are based in part on property work I personally completed and/or directly supervised between March 2004 and October 2008.

DATED at Vancouver, British Columbia, this 20th day of August, 2009.



Robert G. Wilson, P.Geo.