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MINING LANDS SECTION

MCVICAR LAKE PROPERTY

GEOLOGY REPORT

PROJECT NO. 1446

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SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Significant sulphide mineralization is found in four settings on this property. They are:

- 1) Trench Area 2
- 2) Trench Area 3
- 3) Finely disseminated pyrite associated with magnetite and hematite ironstone.
- 4) Massive to disseminated pyrrhotite, pyrite and rare chalcopyrite in very gossanous gabbro

Only the two trenched areas returned significant Au assays.

Mineralized Iron Formation

Sulphide mineralization, exclusively pyrite, is found in the MIS, HIS and the surrounding metavolcanics in the northeastern part of the property. It is present as fine grains and cubes, either disseminated throughout the rock or concentrated in fractures and fine quartz/chert stringers. Sulphide mineralization in ironstone is generally considered a favourable indicator for gold mineralization. The gold in the past producing Central Patricia Mine was associated with mineralized

Mineralized Gabbro

The gossanous gabbro is an extension of the cp, po showings to the east. These showings have been extensively trenched and drilled in the past, with disappointing results. The best assay result from the samples taken from the current claim group was an isolated 55 ppb Au and 2800 ppm (.28%) Cu. These areas warrant no further work.

iron formation. Dome's Dona Lake Deposit is also an iron formation hosted orebody.

A number of relatively random grab samples were taken from this unit during the course of mapping. The best assay result was 10 ppb Au. All other samples were either nil or <5 ppb. Despite these initially discouraging results, a more detailed and systematic sampling program is recommended to better evaluate the gold potential of these areas. The geology is favourable and, as gold mineralization tends to be localized, and sometimes erratic in nature, it is very possible that it may have been missed during the initial sampling.

Trench Area 2

Plan 1a shows the detailed geology of this area. It is an area of very altered, massive to extremely sheared mafic metavolcanics within a large gabbro body. Alteration is primarily iron carbonate, possibly ankerite, with subordinate sericitization and carbonation. It ranges from 5% in the massive units to 35% in the most sheared units. Quartz veins and a sliver of quartz porphyry are present at the south edge of this area, where shearing and alteration are most intense. While the metavolcanic-gabbro contact was not seen due to deep overburden, at the south end of the trenches a 1 to 2m subcropping scarp exposed in the trenches suggests that it is a faulted or sheared contact.

The presence of the metavolcanics within the gabbro, the progressive increase in intensity of shearing and alteration to the south, the localization of the quartz veins and porphyry in this most sheared zone, and the apparently faulted or sheared nature of the contact with the gabbro suggest structural control for the mineralization in this area, related to the emplacement of the gabbro.

Plan 1b shows the location and results of the sampling. Thirty-seven channel samples, ranging from 1 to 2.5m in length, and five grab samples (four quartz vein, one felsic intrusive) were taken from the old (Kenlew Mines Limited, 1959), trenches in this area. Results of the channel sampling ranged from nil to 1620 ppb. The best results were obtained from those samples with a significant quartz vein component. The grab samples from the quartz veins returned gold values ranging from 500 to 6990 ppb (.2 oz/T). These results indicate that the gold in this area is concentrated in the quartz veins, a conclusion that is confirmed by the results of the sampling in Trench Area 3, summarized below. Some of the samples were assayed for silver as well as gold and, while most returned nil values, channel sample 2491 assayed 110 ppb Au and .5 ppm Ag. 2528, a quartz vein grab sample, assayed 1920 ppb Au and 14.5 ppm Ag (.42 oz/T).

Trench Area 3

Plan 2a shows the detailed geology of this area. It is essentially a series of feldspar porphyritic dykes intruding a massive mafic metavolcanic. A shear zone is developed at the contact of the metavolcanic with one of these dykes. This shear zone hosts a 1-10 cm gold bearing quartz vein. There is very little alteration or mineralization in either the massive metavolcanic or the porphyritic unit. The shear zone appears weakly silicified and contains trace pyrite overall, with local concentrations of 3-5%. The quartz vein varies in colour from dark smoky grey at the south end of Trench 11, to milky white at the north end. 4% chalcopyrite, 2% pyrite and 1% pyrrhotite are present in the vein at the south end of the trench, while there is only 3% pyrite in the vein at the north end of the trench.

The development of a shear zone at the contact of the meta-volcanic with the dyke indicates that it is a result of the intrusion of the dyke. The relationship of the dyke to the gabbro was not observed, however, it is likely that the gabbro played some role in this area as it is very close to the gabbro-metavolcanic contact. A prominent joint set on this property was observed to have an attitude very similar to that of the dyke (348/75). This suggest some form of structural control over the emplacement of the dykes, and the associated shear zone.

Fourteen channel samples, ranging from 1 to 2.5m in length, and six grab samples, were taken from three trenches in this area. Plan 2b shows the location, length and results of the sampling. The channel samples included representative areas of the metavolcanic and porphyry, as well as the shear zone/quartz vein, while all the grab samples were from the quartz vein. The best assay from the six channel samples that did not include the quartz vein was 35 ppb Au. The values from those samples that did include the quartz vein ranged from nil to 1710 ppb Au. The grab samples ranged from 30 to 48,550 ppb Au (1.24 oz/T). These results confirm that the gold in this area is concentrated in the quartz veins.

CONCLUSIONS

The high grade quartz veins in Trench Areas 2 and 3 are the areas of greatest interest on this property. Regionally, high grade quartz veins host the only previously known gold occurrences in this belt.

The gold showing between Shonia and McVicar Lakes, currently held by Noranda, is hosted by quartz veins in a quartz porphyry (Laird, 1930). The gold showing discovered by Duration Mines and Wilshire Energy Resources in the Semia Lake area is hosted by quartz veins in a sheared intermediate metavolcanic. The past producing Pickle Crow Mine orebody was composed of a small number of high grade quartz veins (NMI File Au 4).

While the quartz veins must be considered the primary target, the sheared host rock does contain anomalous amounts of gold (up to 410 ppb) and should not be ignored. This rock is extremely weathered and much of the gold may have been leached from it.

While the southern edge of trench areas 2 and 3 is reasonably well defined by the gabbro, lack of outcrop means that they are open for at least limited distances in all other directions. An airborne survey to be completed this winter may help delineate the extent of these areas. A soil sampling program carried out over these areas proved inconclusive. All samples returned nil Au values, however, this is probably due to depth of overburden. The occurrence of quartz veins in both these areas appears to be structurally controlled. If this is the case it is possible that significant additional quantities of quartz vein exist in the trenched areas. Accordingly, subsequent work on this property should concentrate on determining the extent of the known gold bearing quartz veins and on locating any others that may be present.

The economic significance of the mineralized iron formation on this property appears minimal at the present time. Final assessment of its potential, however, should wait until a detailed geochemical analysis of the whole rock data is completed, and the proposed detailed sampling program has been carried out.

RECOMMENDATIONS

It is recommended that:

- 1) The two trenched areas be stripped to the maximum extent possible using hand tools and a power pump and mapped in detail.
- 2) They then be blasted and extensively sampled. Should the results of this channel sampling prove encouraging, a limited diamond drilling program should be considered.
- 3) A program of systematic, detailed sampling be carried out over the mineralized iron formation to better evaluate its economic potential.

These recommendations are based on the information available to date. The results of the geochemical interpretation of the whole rock data, and the ground and airborne geophysical surveys should be considered before a follow-up program is finalized.

INTRODUCTION

This report describes the field work carried out by I. Allen, G. Vogg, B. Hill, C. Waldie and V. Mitchell on a 28 claim group in the McVicar Lake Area of the Gitchie River (Lang Lake) Greenstone Belt. This property was staked to secure ground around a quartz vein sampled during reconnaissance mapping of the area, that assayed 42,550 ppb Au (1.24 oz/T). A program of detailed mapping and concurrent soil and lithogeochemical sampling was undertaken during September and early October, using a 100m cut grid for control. A total of 221 lithogeochemical samples were taken, of which 115 were analyzed for whole rock and trace elements (Au, Cu, Zn, As) and 106 for trace elements only. In addition, 85 humus samples were taken. These were assayed for Au, Cu and Zn.

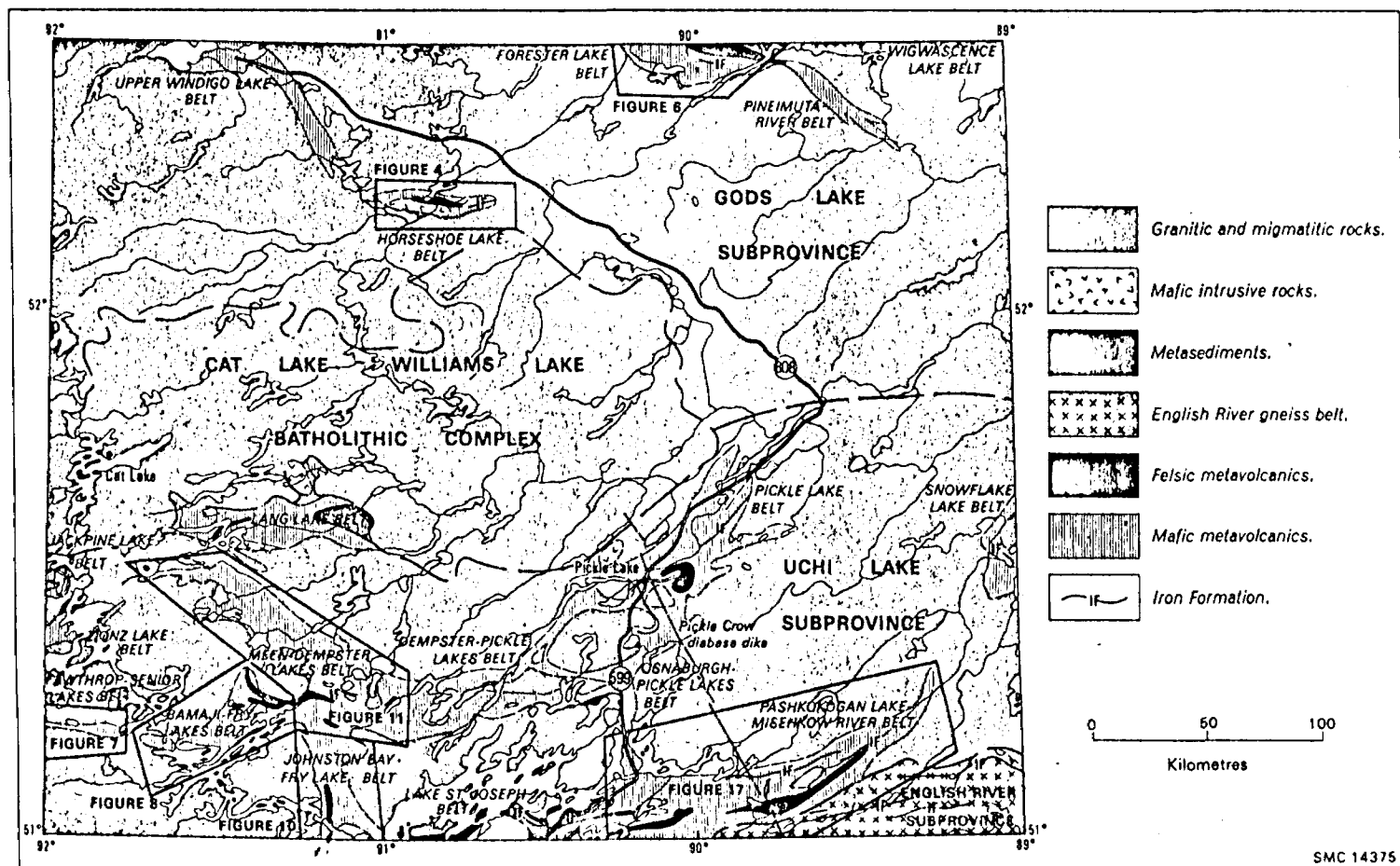
LOCATION, ACCESS, TOPOGRAPHY

The 28 claim group (KRL846023 - KRL846037 inclusive and KRL846053 - KRL846065 inclusive) is located approximately 80 km West of Pickle Lake and 120 km NE of Sioux Lookout, Ontario (see Figure 1), in NTS: Block 52011 and is shown on the McVicar Lake claim map G-2121.

Access is by float/ski plane from either Pickle Lake or Sioux Lookout.

The claim group is approximately 20% outcrop, consisting mainly of low rounded mounds within large sand ridges that cover 40% of the property. The sand ridges are generally surrounded by muskeg with appreciable amounts of spruce bog and alder swamp. Relief is gentle,

FIGURE 1



Location and regional geology

From Sage and Breaks, 1982

seldom exceeding 3-5m, although there are some 10-15m cliffs in the southeastern part of the property. Overburden in the muskeg and swamps appears to be quite deep, while the sand ridges represent shallow subcrop. They are covered mainly by Spruce with subordinate Jack Pine and Tamarack. Labrador Tea and moss are ubiquitous.

PREVIOUS WORK

The McVicar Lake Area was mapped by Laird in 1929 (O.D.M. Map 39d) and by Fenwick in 1970 (O.G.S. Map P.665).

Kenlew Mines Limited staked a group of claims in 1959 that included the current claim group and a number of po, cp showings to the east. In the area of the current claim group they conducted a program of extensive stripping and 4 DDH (total 225m) in 1959. The trenches follow quartz veins suggesting that gold was the target in this area of the property, rather than base metals. The drill logs indicate the presence of altered, sheared, mineralized mafic metavolcanic, however, no assay results are available.

Kerr Addison optioned the Kenlew claim group in 1962. As they were interested primarily in base metals, concentrating their efforts on the cp, po showings to the east, they ignored the gold potential of the area.

The area was restaked in 1972 by New Jersey Zinc and in 1975 by UMEX. Both were interested only in base metals and subsequently allowed the claims to lapse.

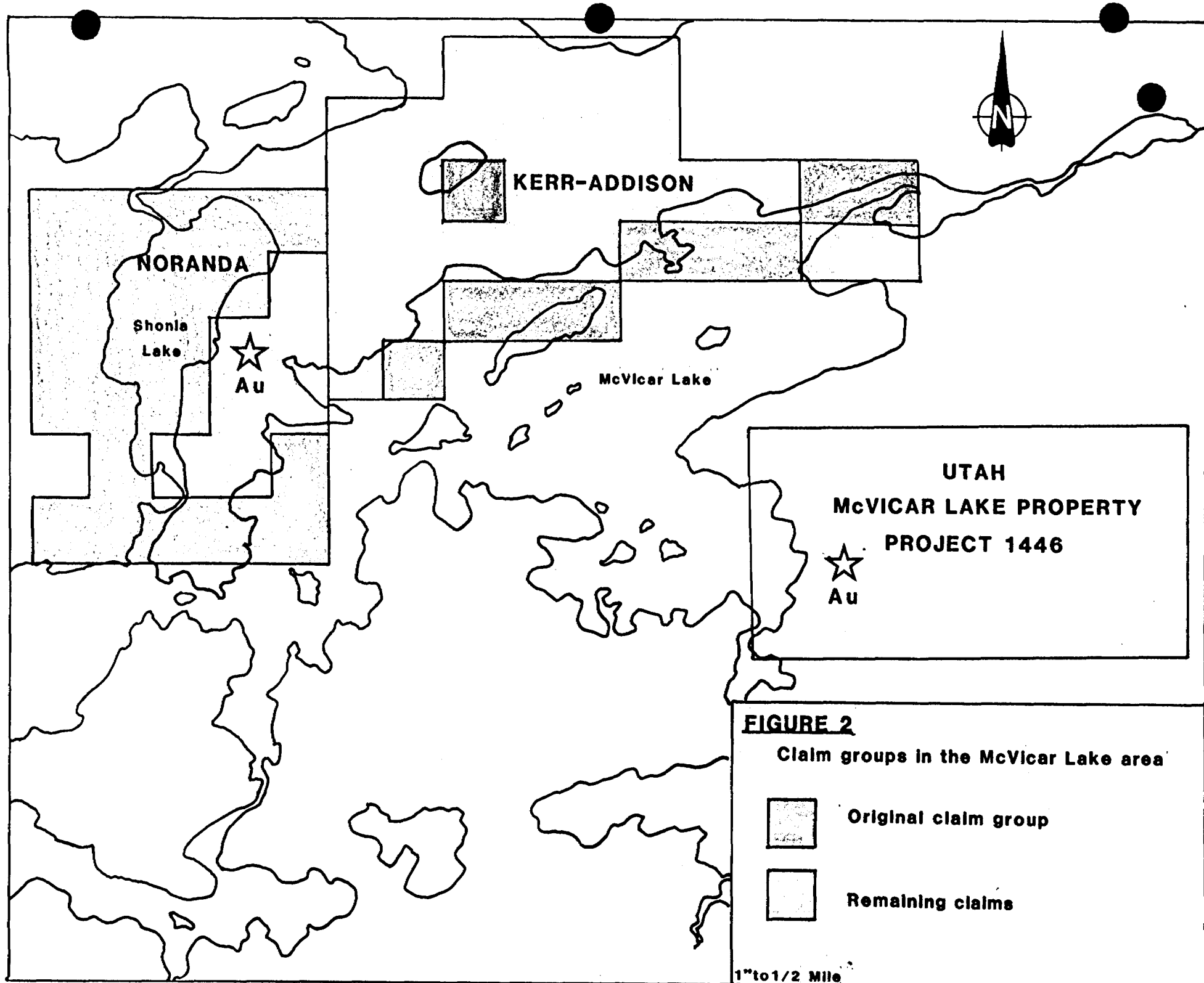
The area remained open until it was staked by Utah in August, 1985.

Noranda and Kerr Addison were active in the area in 1984, conducting detailed mapping and lithogeochemical sampling programs on their claim groups during the summer, however, neither returned to do any follow-up work this summer. Figure 2 shows the location of these claims relative to the McVicar Lake property, as well as their initial and present sizes. Noranda originally staked 25 claims over the only previously known gold showing in the area, between McVicar and Shonia Lakes. They have dropped 18 of these claims, retaining only the 7 immediately over the showing. Should these remaining claims be allowed to lapse, some consideration should be given to staking the ground. The Kerr Addison claim group was initially 37 claims, however 10 have been dropped. This ground is of little interest.

GENERAL GEOLOGY

The property lies within the Lang Lake metavolcanic-metasedimentary belt of the Uchi Lake SubProvince of the Canadian Shield (see Figure 1). The Lang Lake belt is an isoclinally folded syncline striking east-west and plunging to the east (Sage et. al., 1982).

The north half of the property is underlain by NE trending mafic and intermediate metavolcanic flows, the south half by a mafic intrusion of gabbro to anorthosite composition. Northeast trending bands of magnetite and hematite ironstone traverse the length of the property in the metavolcanic flows. A 2m wide felsic dyke was noted in the mafic metavolcanics near the contact with the gabbro on L8+00E. Scattered small outcrops of a porphyritic mafic dyke were also seen in the mafic metavolcanics. All rocks are of Precambrian age.



DETAILED GEOLOGY (MAP 1)

Mafic Metavolcanics

These are comprised of massive and foliated lavas, coarse-grained volcanic or mafic intrusive rocks, amphibolite and chlorite and chlorite-carbonate schist.

Massive and Foliated Lavas (Unit 1a)

These rocks are dark green on fresh surfaces and medium to dark green on weathered surfaces, are massive to weakly foliated, and are fine-grained to aphanitic. Jointing intensity in these outcrops ranges from very low to high, which can give the outcrops a rubbly appearance. Short, discontinuous, 1-10 cm wide barren, milky quartz veins are occasionally present along the fractures.

Weak carbonate alteration is present in most outcrops, mainly as coatings on joint surfaces. Iron oxide staining is also ubiquitous in these outcrops. It is usually seen as a 1-2 cm band on joint surfaces. Sulphide mineralization, principally finely disseminated pyrite, occasionally pyrrhotite, is rare in these rocks and where present seldom exceeds 1%.

Coarse-Grained Lava (Unit 1b)

This unit is very similar to 1a, differing only in grain size which ranges from 1 mm to 5-7 mm. The more coarse-grained outcrops appear gabbroic but are believed to be simply a coarser phase of the flow. Outcrops of this unit are scattered

throughout the northern part of this property, however, no pattern is evident in their occurrence or distribution.

Amphibolite (Unit 1c)

This unit is distinguished by the presence of abundant 0.5 to 3 mm hornblende needles. The rock is dark green-blue on both fresh and weathered surfaces, is massive to weakly foliated and occurs in scattered outcrops in the northern part of the property. Alteration and mineralization are as described for the massive and foliated lavas.

Chlorite and Chlorite-Carbonate Schist (Unit 1d)

This unit generally occurs as short (1-2m) zones of weak to moderate shearing within a larger, generally massive outcrop. Chlorite and occasionally carbonate are developed along the shear planes, usually with trace to minor (<1%) pyrite, although one outcrop of contained 15% pyrite.

All the samples taken from these shear zones returned negligible gold values.

This unit is found scattered throughout the northern part of the property, showing no particular pattern in distribution or occurrence. In most cases the shearing is probably related to the intrusion of the gabbro to the south.

Intermediate Metavolcanics

Silicified Intermediate Metavolcanics (Unit 2a)

This unit is very hard, producing a distinct ringing sound when hit with a hammer. It is usually massive, can be well-

jointed, and is light to medium green-grey on fresh surfaces, light creamy brown on weathered surfaces.

Alteration is primarily moderate to intense silicification. This is probably responsible for the extremely fine-grained appearance of the rock and for the subconchoidal fracture shown by this unit. Minor carbonate alteration is also present, usually as coatings on the joint surfaces. Weak iron oxide staining is common, as is pyrite, which usually occurs as extremely fine disseminations comprising up to 3% of the rock.

Bands of magnetite and hematite ironstone are common in this unit. Proximal to these bands the metavolcanic is amygdular, the 1-7 mm calcite amygdules comprising up to 30% of the rock. Concentrations of up to 10% pyrite are common in this zone.

Chemical Sediments

There are 4 subdivisions of chemical sediments on this property. They are:

- 1) Unit 3a - massive magnetite ironstone
- 2) Unit 3b - banded magnetite ironstone
- 3) Unit 3c - cherty magnetite ironstone
- 4) Unit 3d - hematite ironstone

Magnetite Ironstone (MIS)

The differences between the 3 types of magnetite ironstone are based on the presence/absence of banding and on the amount of chert present. The massive magnetite ironstone shows no banding or bedding, while the banded unit has 5 mm to 10 cm bands, frequently with mm scale laminae within the bands. Neither of

these units contains more than 10% chert. The cherty unit contains up to 60% chert and is usually banded.

In most cases the magnetite is fine-grained, in the case of the cherty units it is aphanitic. Occasionally 1-2 mm crystals of magnetite are visible in an outcrop. The amount of magnetite present in the outcrops varies from a minimum of approximately 20% to a maximum of approximately 90%. Accordingly there are varying degrees of magnetism, from outcrops that do not visibly affect a compass held at chest height, to areas where a pencil magnet cannot easily be shaken off a sample from which it is suspended.

There is no obvious alteration in these outcrops. Moderate to intense iron staining is common, on both weathered surfaces and bedding and banding planes. Where they are not rusty, all surfaces are black. Minor (common) to 10% (rare) pyrite is present in these units in the eastern part of the property as fine disseminations and as blebs concentrated along fractures and quartz/chert stringers. Another feature seen only in the eastern part of the property is the association of MIS with hematite ironstone (HIS). They are either interbedded or MIS occurs as rims around a core of HIS.

Hematite Ironstone

This unit is characterized by the bright red colour of the jasper. The rock is usually well laminated (1 mm - 1 cm), is aphanitic and appears unaltered. It is only found in association with MIS, while MIS is frequently found without HIS. Pyrite

mineralization is common in this unit, as fine disseminations and as blebs concentrated along fractures and quartz/chert stringers.

Folding is common in all the ironstone outcrops. It ranges from gentle flexures in the banding to repeated, tight, "S" shaped drag folds which appear to be parasitic on the major regional fold. All the ironstone outcrops are hosted by either mafic or intermediate metavolcanics. 1-5 cm beds of siltstone are occasionally interbedded with the ironstone.

The presence of both MIS and HIS indicates a change from a reducing (MIS) to an oxidizing (HIS) environment.

Mafic Intrusive Rocks

There are 3 subdivisions within this group of rocks, based on a visual estimate of the amount of plagioclase present. They are:

- 1) Unit 4a - gabbro (<50% plagioclase)
- 2) Unit 4b - anorthositic gabbro (50-90%) plagioclase
- 3) Unit 4c - anorthosite (>90% plagioclase).

Gabbros are the most common subdivision, while anorthosites are rare. Aside from feldspar content these rock types all show similar features.

The outcrops are predominantly massive, grain size is quite variable, ranging from 3 mm to 1.5 cm, and the rocks are usually equigranular, rarely porphyritic. Fresh surfaces are a mottled green-white. In the gabbros the green predominates, however, with increasing feldspar content the white becomes more prevalent.

Carbonate alteration is usually present, but is generally weak and confined to joint surfaces. A few scattered outcrops appeared to have been silicified, including the gossanous, mineralized zones, where intense silicification predominates. These areas are discussed in more detail in the following section on areas of economic interest. Aside from these gossan zones, sulphide mineralization, mainly pyrrhotite with some pyrite, does not exceed 3%. Zenoliths of mafic volcanic are common in the gabbro near the contact with the mafic flows to the north. They are generally angular and range from a few centimeters to metres in size.

Felsic Intrusive Rocks (Unit 5a)

There are two outcrops of felsic intrusive rock present on this claim group. One is a quartz porphyry dyke found in Trench Area 2, which is discussed in detail in the following section on areas of economic interest. The other was found on L8E, just south of the baseline.

This dyke is at least 2m wide and 3m long, however, no contacts were exposed due to deep overburden in the area. The rock is light grey-green on fresh surfaces and light creamy-buff coloured on weathered surfaces. It is massive, well jointed, and very fine-grained. The rock is very siliceous (primary), extremely hard, and contains abundant angular lenses and stringers of quartz up to 20 cm in size. 1% pyrite is present as discontinuous stringers and clots. Alteration consists of weak, disseminated clots of carbonate.

There are two subdivisions within this rock type. They are:

- 1) porphyritic mafic dykes
- 2) altered mafic intrusive

Porphyritic Mafic Dykes (Unit 6a)

There are two occurrences of this unit on the claim group. They are characterized by 1 cm euhedral white plagioclase phenocrysts set in a fine-grained, dark green groundmass. The only alteration present is minor carbonation of the phenocrysts. Sulphide mineralization is confined to trace disseminated pyrite.

Altered Mafic Intrusive (Unit 6b)

This rock type was found in only one location on the property, at 4+25N on L8E. The rock is massive, well jointed and almost aphanitic. It is light buff-grey on fresh surfaces and light creamy-brown on weathered surfaces. Alteration consists of weak, pervasive silicification, moderate, pervasive sericitization and moderate carbonation on fracture surfaces. Sulphide mineralization is confined to 2-3% pyrite as cubes on fracture surfaces and 1-5% disseminated grains throughout the rock. Iron staining is common on joint surfaces and weathered surfaces.

STRUCTURE AND METAMORPHISM

The major structure influencing the Lang Lake Belt is an isoclinally folded syncline striking about N70E and plunging 40-60 degrees E. In the McVicar Lake Area the axis of the syncline is located between

Boyes and Lang Lakes (Sage and Breaks, 1982).

Within the claim group the majority of the foliations strike in the 290-310 degree range with dips of 55-65 degrees. With one major exception, the shear zones on the property also fall in this range. The exception is the shear zone hosting the gold bearing quartz vein in Trench Area 3, which has an attitude of 348/75.

As most of the shear zones are developed in mafic metavolcanics at or near the contact with the gabbro, which strikes slightly N of E, they are believed to be related to the emplacement of this intrusion. A number of NW striking, .5 to 2.5m wide feldspar porphyry dykes intrude the mafic volcanics in Trench Area 3. The presence of a shear zone at the mafic metavolcanic/dyke contact suggests that it is related to these dykes, rather than the gabbro. Bedding attitudes measured in the ironstone strike 070-080 and dip 80-90 degrees.

Drag folds are common in the ironstone. They are generally tight, isoclinal S-folds which are parasitic on the major regional fold. They trend 070° and plunge 30-40 degrees.

Joints are the most common structural feature of the rocks in this claim group. While many of the outcrops showed no discernable foliation, almost all had measurable joints. Most of the joints appear to fall into two main groups. These are:

- 1) strike: 340-345, dip: 72-80
- 2) strike: 355-009, dip: 65-85

The attitude of the first group is very similar to that of the feldspar porphyry dykes and shear zone in Trench Area 3, suggesting that the dykes may have intruded along pre-existing fractures in the mafic metavolcanic.

The metamorphic grade of the area is mainly greenschist of regional metamorphism, although there are scattered outcrops of amphibolite.

AREAS OF ECONOMIC INTEREST

Significant sulphide mineralization is found in four areas on this property. They are:

- 1) Trench Area 2
- 2) Trench Area 3
- 3) Massive to disseminated pyrrhotite, pyrite and rare chalcopryite in very gossanous gabbro
- 4) Finely disseminated pyrite associated with magnetite and hematite ironstone.

The two trenched areas are among those stripped by Kenlew in 1959. Trench Area 1 (Plan 3) is another of these previously stripped areas, but all samples from this area returned nil Au values. This is also the case with Trench Area 4 (Plan 4).

Trench Area 2 (Plans 1a, b)

The geology map of the 1446 claim group (MAP 1), shows that the mafic metavolcanics of Trench Area 2 are surrounded by the gabbro intrusion. No contact was seen due to relatively deep overburden. To

the north, east and west the volcanics disappear under a progressively deeper layer of overburden, however, at the south edge the volcanics end abruptly as a small (1-2m) subcropping scarp face exposed in the trenches, suggesting a faulted or sheared contact with the gabbro. Alteration, intensity of quartz veining and degree of shearing increase to the south, becoming most intense at the scarp edge. These observations suggest structural control related to the gabbro.

There are five subdivisions of mafic metavolcanics in this area, differentiated on the basis of degree of shearing (E-W) and alteration, as well as a felsic sill and numerous quartz veins/lenses in this area. Plan 1a shows the relationships of these six rock types and the quartz veins.

The five subdivisions of mafic metavolcanics are:

- 1a) massive
- 1b) bleached
- 1c) slightly sheared
- 1d) moderately sheared
- 1e) intensely sheared

Alteration is similar in all the subdivisions, increasing in intensity from 1a to 1e. 1b, a massive unit, is distinguished from 1a by its distinctive pale yellow-green colour.

The predominant form of alteration present is iron carbonate, possibly ankerite, occurring as pods and stringers that comprise from 3% (1a) to 30% (1e) of the rock. Within the 5-10 cm weathered zone the iron carbonate is present as a crumbly, earthy brown substance which grades into a soft creamy yellow mineral with depth. The 1-5 mm

stringers are developed along the shear planes. They are often associated with 1 mm to 1 cm quartz stringers and frequently weather out creating vugs in the weathered zone. Other alteration minerals present are sericite and carbonate, however, these are subordinate to the iron carbonate, ranging from <1% (1a) to a combined maximum of 5% (1e).

The only sulphide mineral present in this area is pyrite, present as fine (.2 - 1 mm) disseminated grains and less commonly, cubes. The amount of pyrite seen in the metavolcanics ranges from nil to trace amounts in unit 1a, to 15-20% in unit 1e.

Unit 2 is a thin (10-20 cm) band of felsic intrusive located at the S end of Trench 5. It contains 20 to 30% quartz eyes and appears to be a quartz porphyry similar to that hosting the Shonia Lake gold showing.

The alteration present in this unit is the same as that seen in the metavolcanics. Iron carbonate predominates, comprising 5-10% of the rock, which is moderately sheared and weathered and contains abundant quartz lenses and stringers. Pyrite is present as fine grains and cubes concentrated along shear planes in amounts ranging from 12-15% locally.

The quartz veins in this area are concentrated along the south edge. They are mainly sugary to glassy, milky quartz, range from 10 cm to 1m wide, and are generally concordant with the stratigraphy. They occur mainly in the 1e unit, are quite fractured, and inclusions of wallrock are common. 10-20% pyrite, as very fine grains, occurs mainly along the edges of these inclusions. An earthy brown ring of

weathered material, probably iron carbonate, is common on many of the fracture surfaces.

Thirty-seven channel samples, ranging from 1 to 2.5m in length, were taken from the six trenches in this area. All outcrop exposed in the trenches was sampled. In addition, five grab samples were taken, four from the quartz veins and one from the felsic intrusive. Plan 1b shows the location, length and results of this sampling. The channel sample values ranged from nil to 1620 ppb Au. The best results were obtained from those samples with a significant quartz vein component. The grab samples from the quartz veins also returned gold values ranging from 500 to 6990 ppb, the highest value from this area.

These results indicate that the gold in this area is concentrated in the quartz veins, a conclusion confirmed by the results of the sampling in Trench Area 3, discussed below. Some of the samples were assayed for silver as well as gold and, while most returned nil values, channel sample 24 assayed 110 ppb Au and .5 ppm Ag 2528, a quartz vein grab sample, assayed 1920 ppb Au and 14.5 ppm Ag.

Trench Area 3 (Plans 2a, b)

The trenches in this area expose an alternating series of massive mafic metavolcanics and feldspar porphyritic dykes (Plan 2a). At the contact of the metavolcanic with one of these dykes a N-S shear zone is developed that hosts a gold bearing quartz vein. A grab sample which assayed 48,550 ppb Au, taken from this quartz vein during reconnaissance mapping, led to the staking of this property.

The shear zone is 1.5m wide at the south end of Trench 11 but narrows progressively until it pinches out at the north end of the

trench. It is not exposed in Trench 10, but is present in Trench 9, where it appears slightly offset from its location in Trench 11 (Plan 2a). The rock in the shear zone is dark green, weakly to moderately weathered and is very fine grained. The degree of shearing is weak to moderate and alteration, mainly silicification, is weak. Pyrite is present in trace amounts generally, however, local concentrations of up to 5% were seen.

The mafic metavolcanic unit is massive to slightly foliated, dark green and only slightly weathered. Only minor (<1%) pyrite mineralization exists and the rock appears unaltered. The only feature of note is a network of moderate to locally intense fine carbonate stringers. Closer examination reveals that the stringers are actually areas of bleaching along fractures with little or no carbonate present.

The porphyritic unit is characterized by 1-2 mm plagioclase laths, comprising 10-20% of the rock, set in an aphanitic, mafic matrix. This unit is massive to weakly foliated, and can be distinguished from the metavolcanic unit by the presence of the phenocrysts and its light creamy brown colour on weathered surfaces. No alteration or sulphide mineralization is present.

The quartz vein pinches and swells in Trench 11, varying from 1-10 cm wide and pinches out with the shear zone, re-appearing in the shear zone in Trench 9. In Trench 11 the vein is very dark grey at the south end, becoming milky to the north. Sulphide mineralization at the south of the trench comprises 2% Pyrite, 1% Pyrrhotite and 4% Chalcopyrite (samples 2268, 2573), however, it decreases to the north until there is only 3% pyrite in sample 2532 and none in the vein in

Trench 9. Intense iron staining, possibly iron carbonate as seen in the Area #2 trenches, is present on fracture surfaces in all the samples.

Fourteen channel samples, ranging from 1 to 2.5m in length, were taken from three trenches in this area. Only scattered representative samples were taken from the metavolcanic and intrusive units, however, the shear zone and quartz vein were sampled extensively. In addition to the channel samples, five grab samples were taken from the quartz vein. Plan 2b shows the location, length and results of the sampling. As was the case in Area #2, the best gold values were obtained from the quartz vein grab samples. These ranged from 30 to 42,550 ppb Au. The eight channel samples that included the quartz vein were 1.5m wide centered on the vein, and included varying amounts of the shear zone and the other units. The assay results from these samples ranged from nil to 1710 ppb. The highest assay value from the six channel samples that did not include the quartz vein was 35 ppb Au.

Gabbro-Hosted Massive Sulphides

These scattered areas of mineralization are the western extension of the po, cp showings just east of the property (discussed in more detail in the report of the reconnaissance mapping of the Gitche River Belt). They are marked by intense gossan and weathering, in most cases have been trenched and occasionally have been drilled.

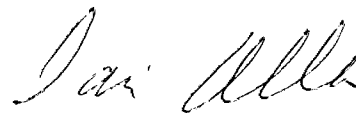
The rock hosting the mineralization is a medium to coarse-grained gabbro, however, in areas of mineralization the rock has been intensely silicified and appears fine-grained.

Mineralization ranges from 20 to 90% of the rock and consists mainly of massive pyrrhotite, with occasional pyrite and rare chalcopyrite.

A number of grab samples were taken from these mineralized areas, however, the results are disappointing. The best assay is an isolated sample that returned 55 ppb Au and 2800 ppm (.28%) Cu. The vast majority of the samples returned either nil (Swastika) or <5 (TSL) ppb Au. There are no other Cu assays greater than 800 ppm, and only seven greater than 300 ppm. Zinc values greater than 100 ppm are rare.

Mineralized Ironstone

Sulphide mineralization, exclusively pyrite, is found in the MIS, HIS and the surrounding metavolcanic. It is present as fine grains and cubes, either disseminated throughout the rock or concentrated in fractures and fine quartz/chert stringers. One sample from these units assayed 10 ppb Au, all the rest were either nil (Swastika) or <5 (TSL).



Respectfully Submitted

By:

Iain A. Allen, B.Sc.

November, 1985



Ontario

Ministry of
Northern Development
and Mines

Ministère du
Développement du Nord
et des Mines



52011SW0010 2.11011 MCVICAR LAKE

900

May 30, 1988

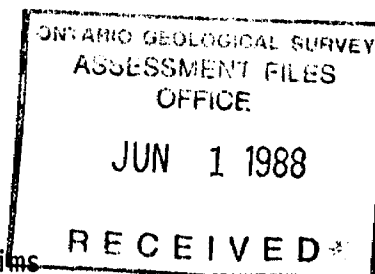
Your File: W8803-088

Our file: 2.11011

Mining Recorder
Ministry of Northern Development and Mines
P.O. Box 324
Red Lake, Ontario
POV 2M0

Dear Madam:

RE: Notice of Intent dated May 13, 1988
Geological Survey submitted on Mining Claims
KRL 846023 et al in the Area of McVicar Lake



The assessment work credits, as listed with the above-mentioned Notice of Intent, have been approved as of the above date.

Please inform the recorded holder of these mining claims and so indicate on your records.

Yours sincerely,

W.R. Cowan, Manager
Mining Lands Section
Mines and Minerals Division

Whitney Block, Room 6610
Queen's Park
Toronto, Ontario
M7A 1W3

Telephone: (416) 965-4888

RM:p1

Enclosure: Technical Assessment Work Credits

cc: Mr. G.H. Ferguson
Mining & Lands Commissioner
Toronto, Ontario

Resident Geologist
Red Lake, Ontario

BHP-Utah Mines Ltd.
Suite 900
25 Adelaide Street E.
Toronto, Ontario
M5C 1Y2



Date
May 13, 1988

Mining Recorder's Report of
Work No. W8803-088

Recorded Holder

BHP-Utah Mines Ltd.

Township or Area

McVicar Lake

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical Electromagnetic _____ days Magnetometer _____ days Radiometric _____ days Induced polarization _____ days Other _____ days Section 77 (19) See "Mining Claims Assessed" column Geological _____ 40 _____ days Geochemical _____ days Man days ☐ Airborne ☐ Special provision ☒ Ground ☒ ☐ Credits have been reduced because of partial coverage of claims. ☐ Credits have been reduced because of corrections to work dates and figures of applicant.	KRL 846027 to 037 inclusive 846053 to 063 inclusive

Special credits under section 77 (16) for the following mining claims

20 days

KRL 846023 to 026 inclusive

No credits have been allowed for the following mining claims

☐ not sufficiently covered by the survey ☐ insufficient technical data filed



Ministry of
Northern Development
and Mines

Report of Work

DOCUMENT No.

(Geophysical, Geological, Geochemical and Expenditures) W8803-088

Instructions: — Please type or print.
— If number of mining claims traversed exceeds space on this form, attach a list.

Note: — Only days credits calculated in the "Expenditures" section may be entered in the "Expend. Days Cr." columns.
— Do not use shaded areas below.

MINING ID'S

2.11011

Mining Act

Type of Survey(s) Geological Mapping		Township or Area McVicar Lake 6-2121	
Claim Holder(s) BHP-Utah Mines Ltd.		Prospector's Licence No. T.793	
Address 900-25 Adelaide St. E., Toronto, Ontario M5C 1Y2			
Survey Company As Above		Date of Survey (from & to) 01 09 85 10 10 85 Day Mo. Yr. Day Mo. Yr.	
Name and Address of Author (of Geol. Technical report) Iain Allen c/o above address		Total Miles of line Cut 45km	

Credits Requested per Each Claim in Columns at right

Mining Claims Traversed (List in numerical sequence)

Special Provisions For first survey: Enter 40 days. (This includes line cutting) For each additional survey: using the same grid: Enter 20 days (for each)	Geophysical - Electromagnetic - Magnetometer - Radiometric - Other Geological Geochemical	Days per Claim 40
Man Days Complete reverse side and enter total in item	Geophysical - Electromagnetic - Magnetometer - Radiometric - Other Geological Geochemical	Days per Claim
Airborne Credits Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic Magnetometer Radiometric	Days per Claim

[illegible]

Expenditures (excludes power stripping)

Type of Work Performed
Performed on Claimant
Calculation of Expenditure Days Credits
Total Expenditures \$ ÷ 15 = Total Days Credits
Instructions Total Days Credits may be apportioned at the claim holder's choice. Enter number of days credits per claim selected in columns at right.

Total number of mining claims covered by this report of work.

26
28

Date	Recorded Holder or Agent (Signature)
April 2, 1988	Take, S. L.

For Office Use Only		
Total Days Cr. Recorded	Date Recorded APRIL 7, 1988	Mining Recorder <i>[Signature]</i>
1040	Date Approved as Recorded <i>[Signature]</i>	Branch Director <i>[Signature]</i>

Certification Verifying Report of Work Rodney N. Thomas

I hereby certify that I have a personal and intimate knowledge of the facts set forth in the Report of Work annexed hereto, having performed the work or witnessed same during and/or after its completion and the annexed report is true.

Name and Postal Address of Person Certifying	
Rodney N. Thomas	BHP-Utah Mines Ltd., 900-25 Adelaide St. E., Toronto, Ontario
M5C 1Y2	
Date Certified	Certified by (Signature)
April 2, 1988	<i>Rocky - [Signature]</i>

REPORT OF WORK CLAIMLIST - APRIL 02, 1988

MDIV	CLAIM	RECDATE	WKP	PREVFILED	AMT	WKDUE	WKFILED	THIS REPORT	TALLY
KRL	846023	850828	80		20	40		1	
KRL	846024	850828	80		20	40		1	
KRL	846025	850828	80		20	40		1	
KRL	846026	850828	80		20	40		1	
KRL	846027	850828	80		20	40		1	
KRL	846028	850828	146		56	40		1	
KRL	846029	850828	80		20	40		1	
KRL	846030	850828	80		20	40		1	
KRL	846031	850828	80		20	40		1	
KRL	846032	850828	80		20	40		1	
KRL	846033	850828	80		20	40		1	
KRL	846034	850828	80		20	40		1	
KRL	846035	850828	80		20	40		1	
KRL	846036	850828	80		20	40		1	
KRL	846037	850828	80		20	40		1	
KRL	846053	850828	80		20	40		1	
KRL	846054	850828	80		20	40		1	
KRL	846055	850828	80		20	40		1	
KRL	846056	850828	80		20	40		1	
KRL	846057	850828	80		20	40		1	
KRL	846058	850828	80		20	40		1	
KRL	846059	850828	80		20	40		1	
KRL	846060	850828	80		20	40		1	
KRL	846061	850828	80		20	40		1	
KRL	846062	850828	80		20	40		1	
KRL	846063	850828	80		20	40		1	
KRL	846064	851010	80		20	40		1	
KRL	846065	851010	80		20	40		1	
TOTAL						1120		28	
						1040		26	



TYPE OF DOCUMENT	SYMBOL
PATENT, SURFACE & MINING RIGHTS	●
" SURFACE RIGHTS ONLY	◐
" " MINING RIGHTS ONLY	◑
LEASE SURFACE & MINING RIGHTS	■
" SURFACE RIGHTS ONLY	◼
" " MINING RIGHTS ONLY	◽
LICENCE OF OCCUPATION	▼
ORDER IN COUNCIL	◎
RESERVATION	⊙
CANCELLED	⊘
SAND & GRAVEL	⊖

AREAS WITHDRAWN FROM DISPOSITION

M.R.O. - MINING RIGHTS ONLY

S.R.O. - SURFACE RIGHTS ONLY

M.+S. - MINING AND SURFACE RIGHTS

A circular stamp with the word "RECEIVED" in a bold, sans-serif font at the top. Below it, the date "MAY - 5 1968" is stamped. At the bottom, the text "PATRICIA MINING DIVISION" is stamped in a smaller font. The entire stamp is enclosed in a circular border with small tick marks around the perimeter.

Figure 1 consists of two horizontal lines representing sampling areas. The top line has tick marks at 0, 1000, 2000, 4000, 6000, and 8000. The bottom line has tick marks at 0, 200, 1000, and 2000. Below the bottom line, there is a scale bar with labels '1 km' and '(2 km)'.

M.N.R. ADMINISTRATIVE DISTRICT
SIOUX LOOKOUT
MINING DIVISION
PATRICIA
LAND TITLES / REGISTRY DIVISION
KENORA (PATRICIA PORTION)



number

G-2121

CANNON LAKE G-1978

FEB 17/87
JULY 20/87
46 5/87

MEEN LAKE G-2122

200

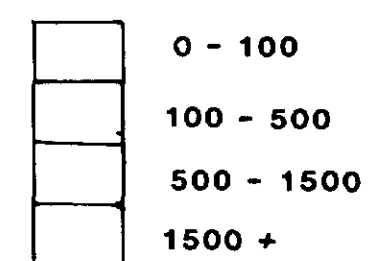
5159.2



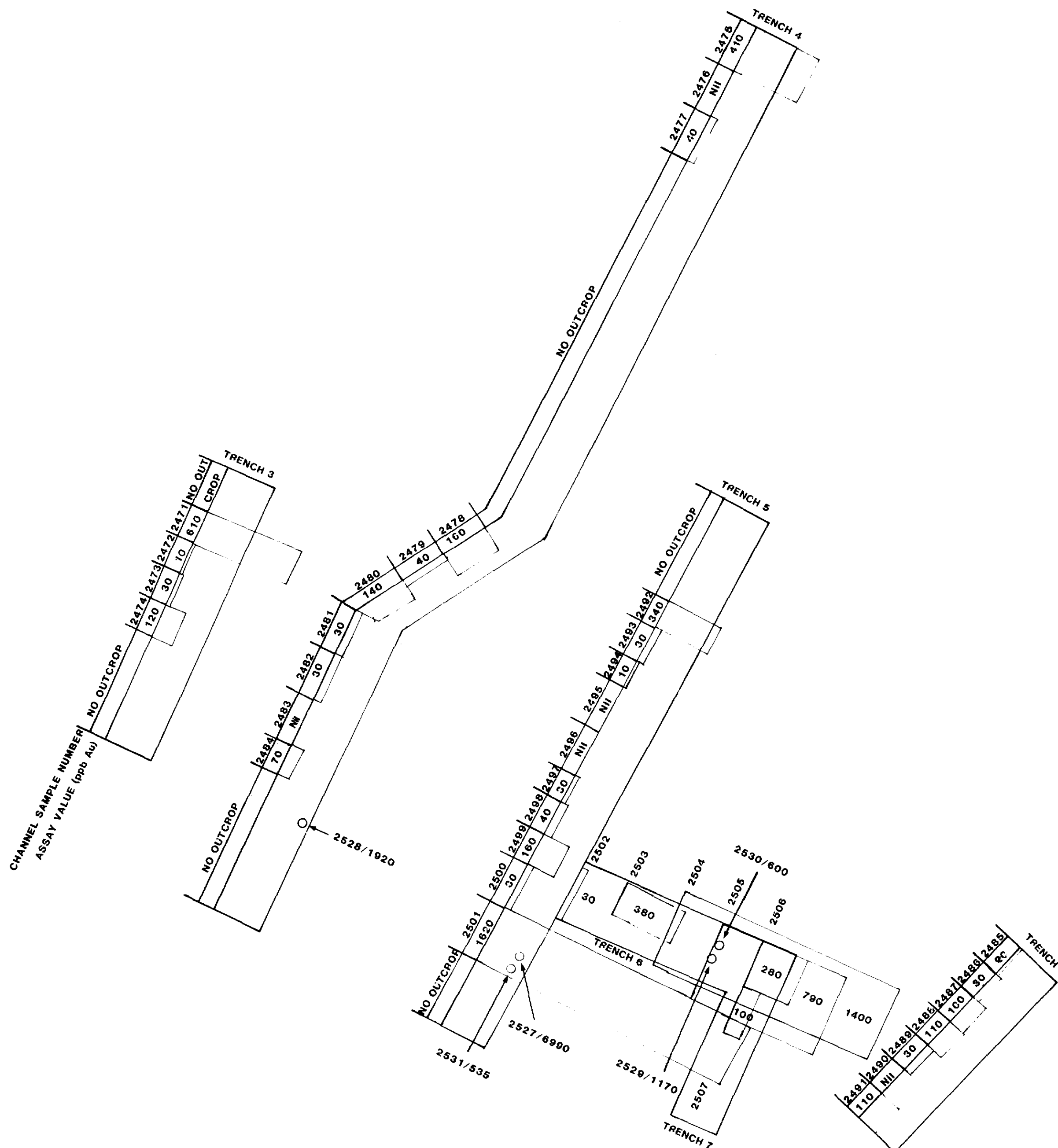
LINE 1+00 E

LEGEND

GOLD VALUES (ppb)



GRAB SAMPLE NUMBER/ASSAY VALUE (ppb Au)



UTAH MINES LIMITED

EXPLORATION DEPARTMENT
TORONTO, ONTARIO, CANADA

McVICAR LAKE PROPERTY

AREA 2 TRENCHES

2.11011

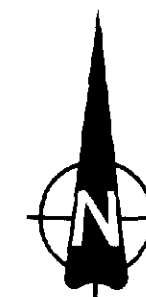
Plan 1b: Assay values

DATE	DRAWN	CHECKED	REVISED	N.T.S.	FILE	MAP
21/10/85	IAA			52011		OF

0 SCALE

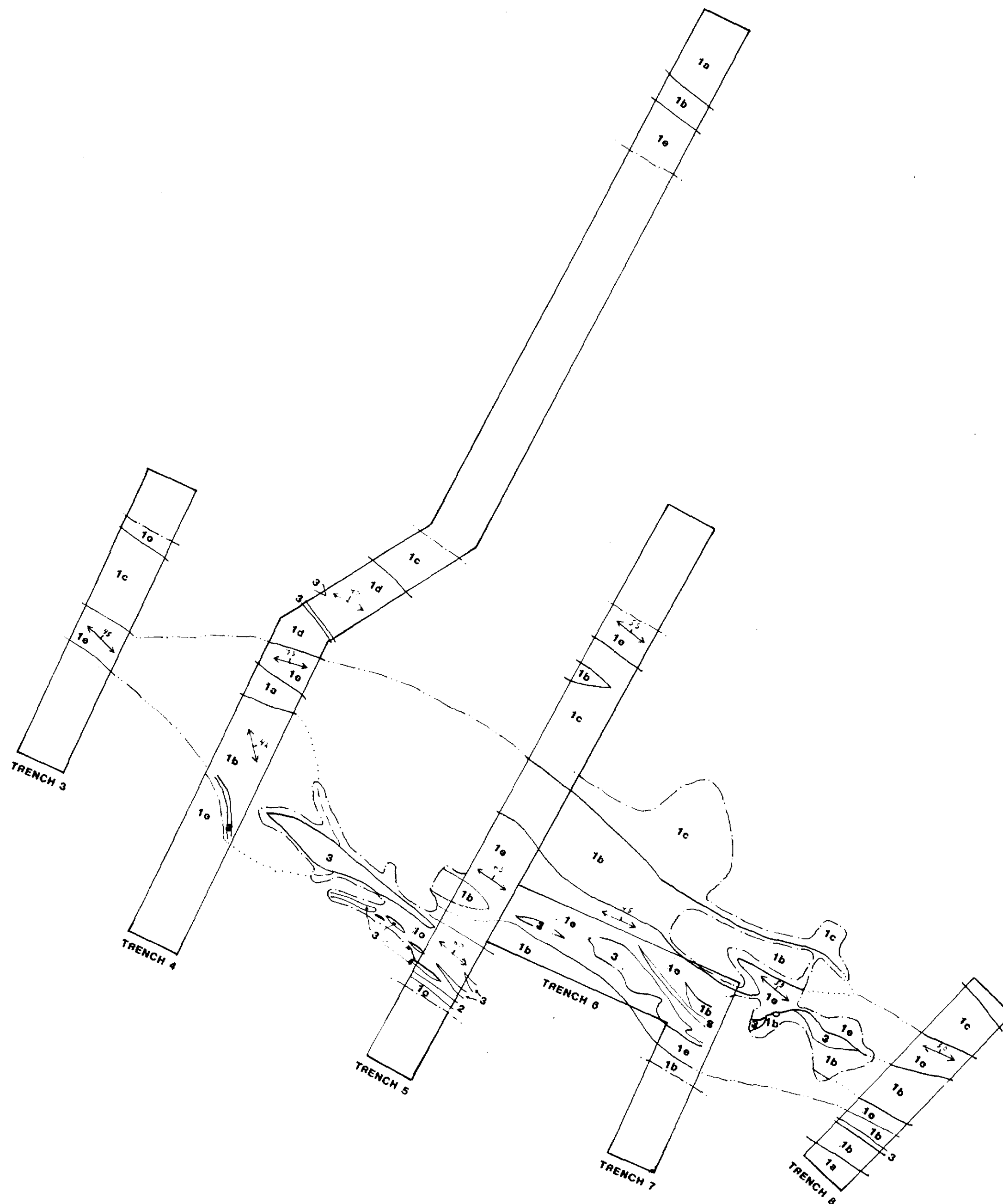


520115W0010 2.11011 McVICAR LAKE



LINE 1400 E

2+25 S



LEGEND

3

QUARTZ VEINS

2

FELSIC SILL(?)

MAFIC METAVOLCANICS

1a

MASSIVE

1b

BLEACHED

1c

SLIGHTLY SHEARED

1d

MODERATELY SHEARED

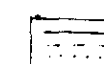
1e

INTENSELY SHEARED

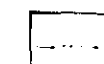
SYMBOLS



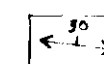
LIMIT OF EXPOSED OUTCROP



GEOLOGICAL CONTACT
(DEFINED, APPROXIMATE, ASSUMED)



INFERRED CORRELATION



SHEARING

UTAH MINES LIMITED

EXPLORATION DEPARTMENT
TORONTO ONTARIO CANADA

McVICAR LAKE PROPERTY

AREA 2 TRENCHES

2.11011

Plan 1a: Geology

DATE	DRAWN	CHECKED	REVISED	N.T.S.	FILE	MAP
21/10/85	IAA			52011		OF

SCALE
0 5
METRES



5201150010 2.11011 McVICAR LAKE

DDH 9, LOCATION APPROXIMATE
252/-45

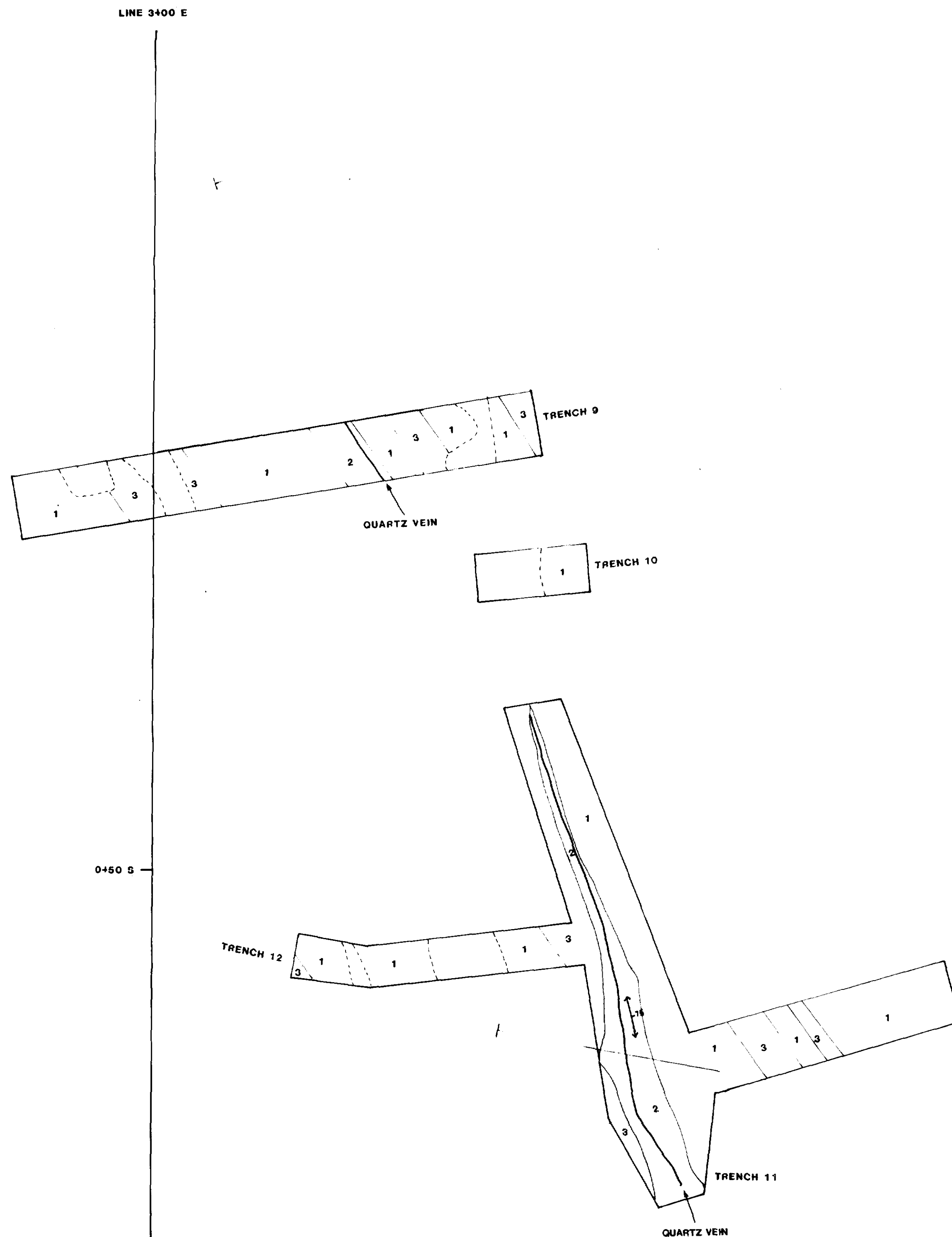


LEGEND

- 3 FELDSPAR PORPHYRY DIKE
- 2 SHEAR ZONE
- 1 MASSIVE MAFIC VOLCANIC

SYMBOLS

- LIMIT OF EXPOSED OUTCROP
- GEOLOGICAL CONTACT
- SHEARING
- DRILL HOLE
(Kenlew Mines Limited, 1959)



DDH 3, COLLAR LOCATED
280/-45

UTAH MINES LIMITED
EXPLORATION DEPARTMENT
TORONTO ONTARIO CANADA

McVICAR LAKE PROPERTY

AREA 3 TRENCHES

2. 11011

Plan 2a: Geology

DATE	DRAWN	CHECKED	REVISED	N.T.S.	FILE	MAP
24/10/80	IAA			52011		OF

0 METRES 5



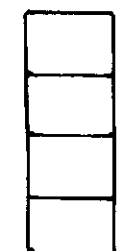
52011500010 2.11011 McVICAR LAKE

LINE 3+00 E



LEGEND

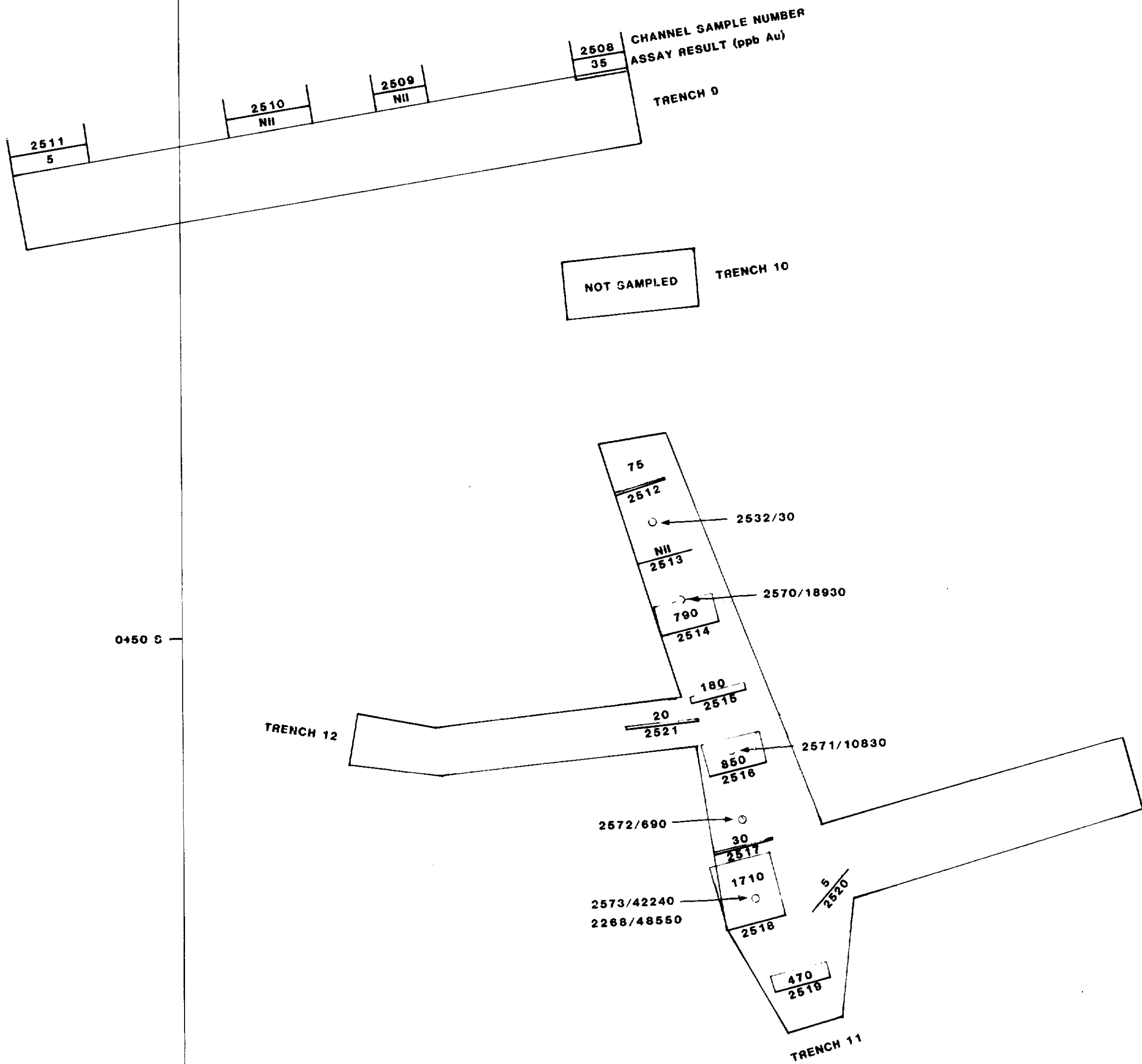
GOLD VALUES (ppb)



0 - 500
500 - 5000
5000 - 15000
15000 +



GRAB SAMPLE NUMBER/ASSAY VALUE (ppb Au)



UTAH MINES LIMITED
EXPLORATION DEPARTMENT
TORONTO ONTARIO CANADA

McVICAR LAKE PROPERTY

AREA 3 TRENCHES

2.11011

Plan 2b: Assay values

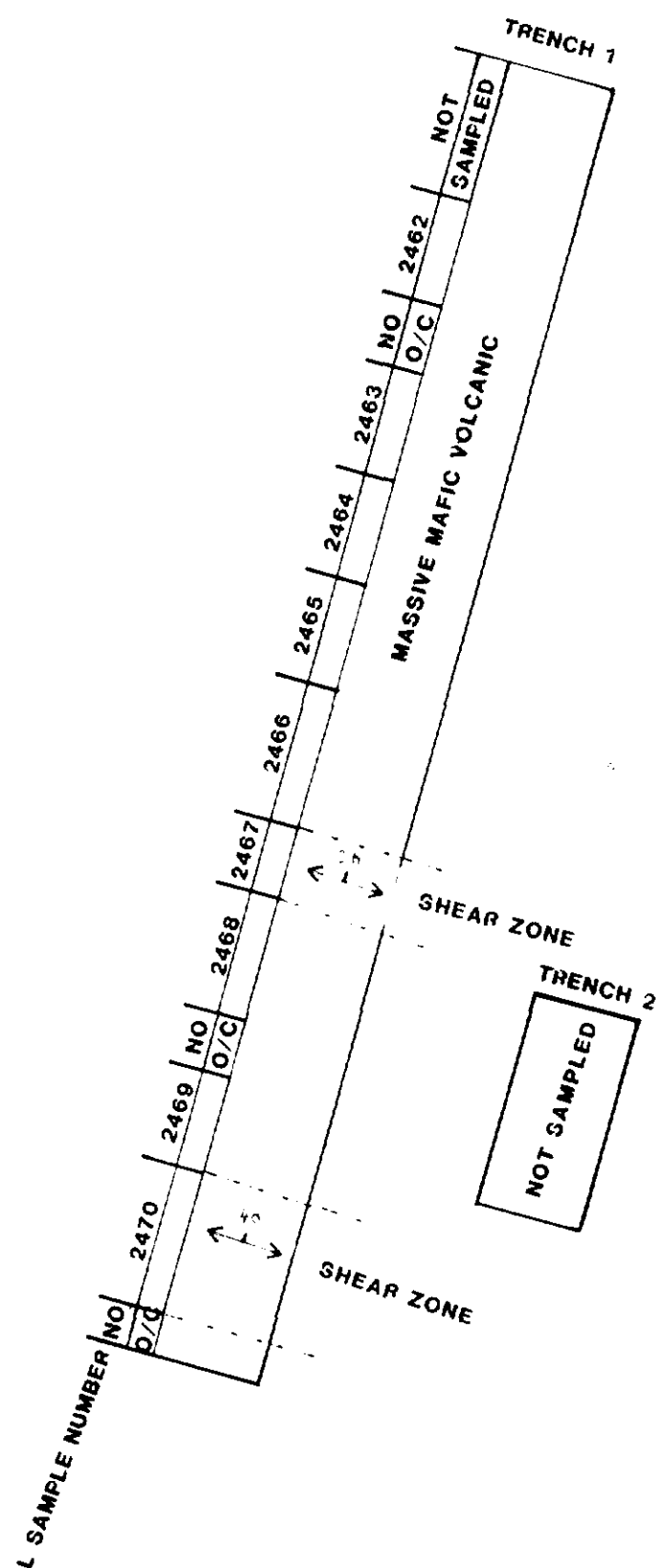
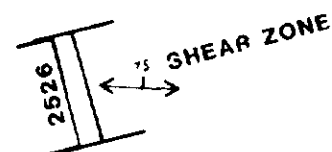
DATE	DRAWN	CHECKED	REVISED	N.T.S.	FILE	MAP
24/10/85	IAA			82011		OF



520115W0010 2.11011 McVICAR LAKE

LINE 0+00 E

0+25 S



UTAH MINES LIMITED

EXPLORATION DEPARTMENT
TORONTO ONTARIO CANADA

McVICAR LAKE PROPERTY

TRENCH AREA #1

2.11011

Plan 3

DATE	DRAWN	CHECKED	REVISED	N.T.S.	FILE	MAP
25/10/85	IAA			52011		OF

SCALE



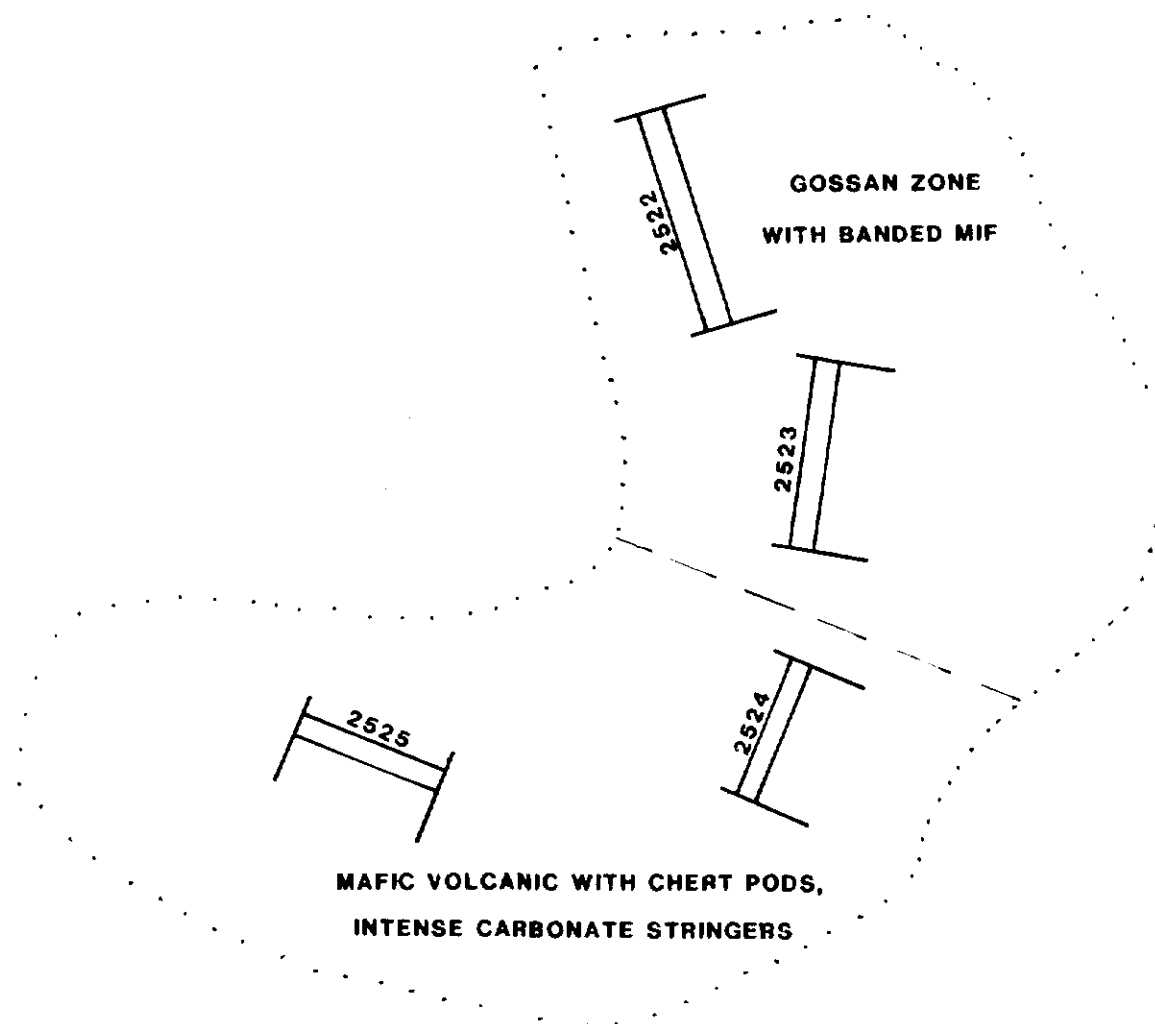
NOTE: ALL SAMPLES RETURNED NIL Au VALUES



52011SW0010 2.11011 McVICAR LAKE

BASE LINE

2+25 E



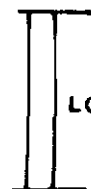
← LIMIT OF EXPOSED OUTCROP

2.11011



52011SW0010 2.11011 MCVICAR LAKE

260



LOCATION OF CHANNEL SAMPLE WITH SAMPLE NUMBER AND ASSAY VALUE

NOTE: ALL SAMPLES RETURNED NIL Au VALUES

UTAH MINES LIMITED
EXPLORATION DEPARTMENT
TORONTO, ONTARIO, CANADA

McVICAR LAKE PROPERTY

TRENCH AREA #4

Plan 4

DATE	DRAWN	CHECKED	REVISED	NTS	FILE	MAP
	IAA			52011		OF

0 METRES 5

LEGEND

PRECAMBRIAN
PROTEROZOIC
LATE MAFIC INTRUSIVE ROCKS
6a Porphyritic mafic dike
6b Altered mafic intrusive

INTRUSIVE CONTACT

ARCHEAN
FELSIC INTRUSIVE ROCKS
5a Felsic dike

INTRUSIVE CONTACT

MAFIC INTRUSIVE ROCKS
4a Gabbro
4b Anorthositic gabbro
4c Anorthosite

INTRUSIVE CONTACT

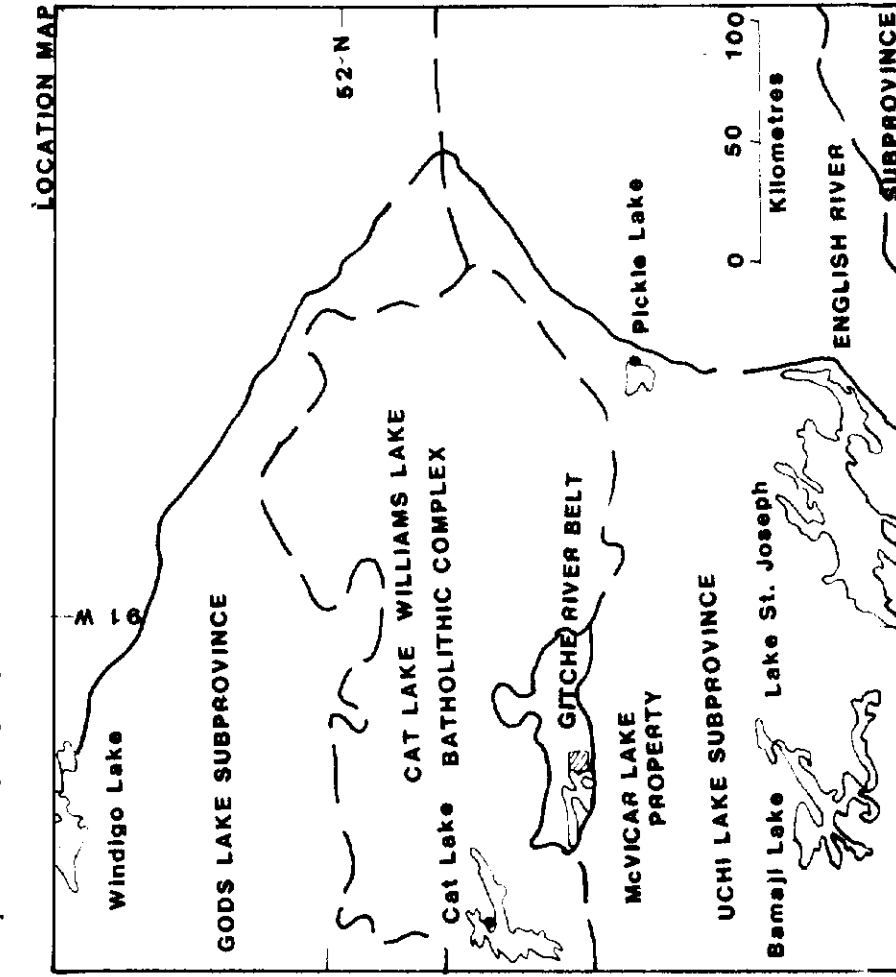
CHEMICAL SEDIMENTS
3a Massive magnetite ironstone
3b Banded magnetite ironstone
3c Cherty magnetite ironstone
3d Hematite ironstone

INTERMEDIATE METAVOLCANICS
2a Silicified lava

MAFIC METAVOLCANICS
1a Massive and foliated lava
1b Coarse-grained volcanic or mafic intrusive rocks
1c Amphibolite
1d Chlorite, chlorite-carbonate schist

SYMBOLS

Geological boundary
Outcrop
Trench
Claim line, post
Drill hole (Kennew Mines Ltd., 1959)
Shearing (inclined)
Foliation (inclined)
Bedding (inclined)
Drag foli with plunge
Joint (inclined, vertical)
Rock sample location —
whole rock and trace element analysis
Rock sample location — trace element analysis
Outcrop description only
Topographic boundary



UTAH MINES LIMITED
EXPLORATION DEPARTMENT
TORONTO, ONTARIO, CANADA

McVICAR LAKE PROPERTY

GEOLOGY
2.11011

DATE	DRAWN	CHECKED	REVISED	INTS.	FILE	MAP	OF
2/7/10/85	IAA			52011			
SCALE							0 100 200 300 METRES

