# REPORT ON GEOLOGICAL, GEOCHEMICAL MAGNETOMETER AND INDUCED POLARIZATION - RESISTIVITY SURVEYS

COYOTE 1 - 33 CLAIMS

REVELSTOKE/KAMLOOPS MINING DIVISIONS

82L/15 AND 82M/2

LATITUDE: 50°57'
LONGITUDE: 118°55'

OWNER/OPERATOR: HUDSON'S BAY OIL AND GAS COMPANY LIMITED

AUTHORS: P. R. BRESEE, R. C. EVERETT AND G. I. HALL

WORK PERIOD: MAY 16 - AUGUST 20; SEPTEMBER 15 - 24, 1980

DATE SUBMITTED: APRIL 30, 1981



part 1 of 3

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## INTRODUCTION

During the periods May 16 to August 20 and September 15 to 24, 1980 Hudson's Bay Oil and Gas Company Limited personnel carried out geological mapping, induced polarization and magnetometer surveys and collected soil, stream sediment, water and rock samples over portions of the Coyote 1-33 claim block. This work was completed as follow-up to the discovery of molybdenite bearing boulders in Coyote claims 6 and 8.

## LOCATION

The Coyote claims are located on the north side of the Trans Canada Highway near Malakwa, B.C. centred at a latitude of 50°57' and longitude of 118°55'. The claims are part of NTS sheets 82L/15 and 82M/2. Approximate boundaries of the property are from Willis Lake on the east to Anstey Arm of Shuswap Lake on the west and from south of Malakwa to Queest Creek on the north. (Figures 1 and 2).

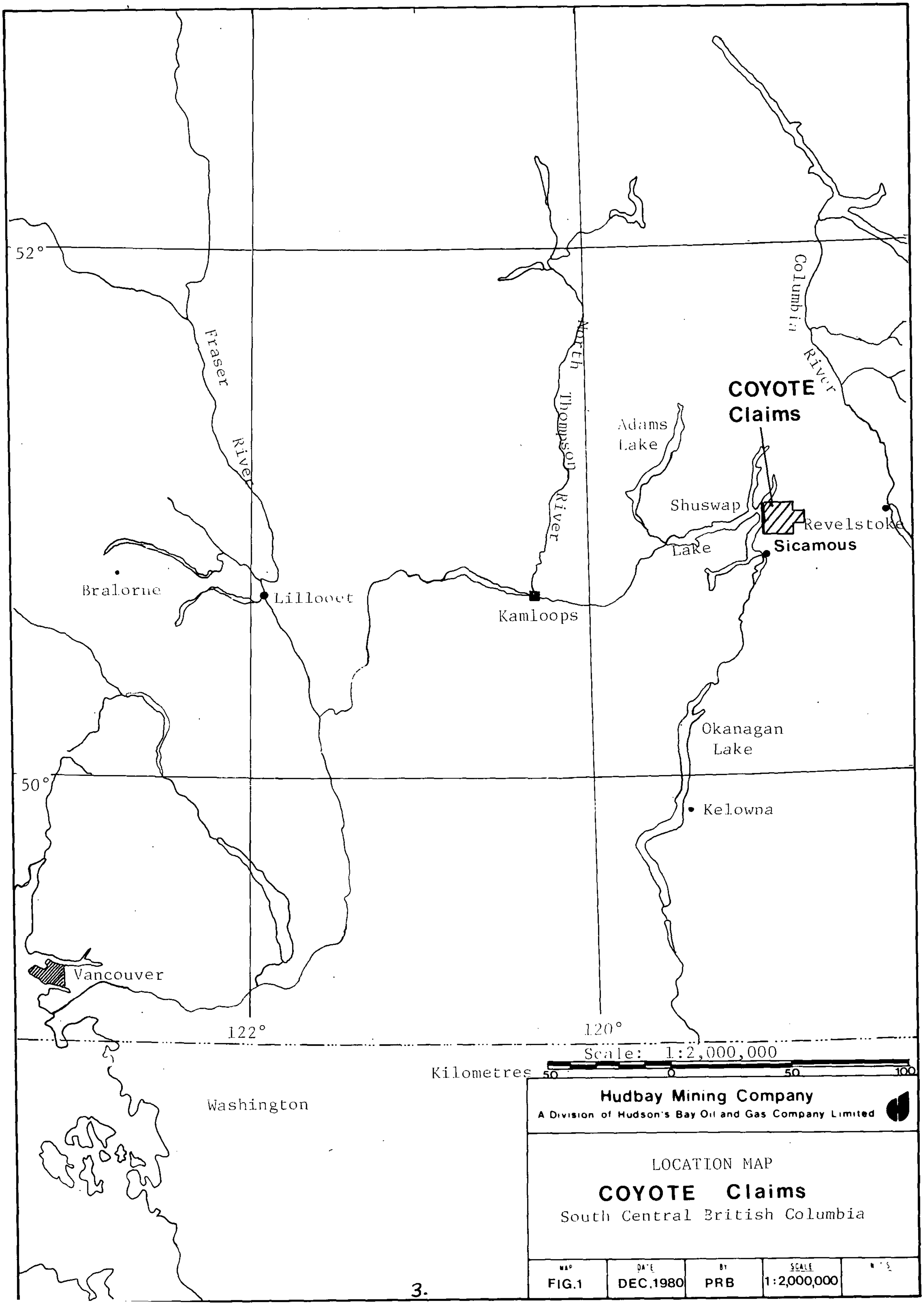
## ACCESS

Access to the eastern portion of the claim block is via the Queest Mountain road which originates in Malakwa and ends at the Forestry Lookout on Queest Mountain. Another route which eventually joins the Queest Mountain road originates at the sawmill burner located 4 kilometres east of Malakwa. A network of logging roads constructed by Drew Sawmills of Malakwa branch out from this road providing access to the eastern grid area.

Access to the western portion of the claim block and grid area is via a main logging haul road originating in Sicamous and a network of subsidiary logging roads constructed by Federated Co-op of Canoe, B.C.

Two other major roads with subsidiary branches exist. One, starting at the Malakwa dump 2 kilometres southeast of Malakwa, transects the southern most claims and the other, originating at the sawmill northeast of Malakwa and known as the West Gorge Creek Road, reaches the eastern most claims.

The majority of roads are passible only to four wheel drive vehicles.




Hudbay Mining Company
A Division of Hudson's Bay Oil and Gas Company Limited

LOCATION MAP

**COYOTE Claims**

South Central British Columbia

| MAP | DATE | BY | SCALE | N.T.S. |
|---|---|---|---|---|
| FIG.1 | DEC.1980 | PRB | 1:2,000,000 | |

## EXPLORATION HISTORY

The Coyote claims surround a property known as the MAL 1 claim currently held by B.P. Canada Inc. Molybdenite mineralization on this claim has been explored by a short adit and trenching since the 1930's. More recent work (1971-1973) has consisted of soil geochemistry and magnetometer surveys by Darva Resources and Development Ltd. (GEM 1971, 1973).

The area around Queest Mountain has also received some attention in the search for massive sulphides. In 1971, the Shuswap Syndicate completed geologic mapping, ground magnetometer, geochemical soil surveys and three diamond drill holes totalling 220 m. Copper-silver mineralization is reported in breccias, quartz veins, fractures and as disseminations along foliation planes in metasedimentary rocks, skarn and massive pyrrhotite lenses. (GEM 1972).

## PROPERTY

The Coyote claim block consists of 30 metric claim units and 3 fractional claims and are recorded in the Revelstoke and Kamloops Mining Divisions. The claims are owned and operated by Hudson's Bay Oil and Gas Company Limited of Calgary, Alberta.

Details of the claims upon which the surveys were conducted are listed as follows:

| Claim | Size Units | Mining Division | Tag No. | Record No. | Record Date |
|---|---|---|---|---|---|
| 1 | 20 | Revelstoke | 62363 | 970 | 80-06-23 |
| 2 | 20 | Revelstoke | 62364 | 971 | 80-06-23 |
| 3 | 20 | Kamloops/Revelstoke | 62365 | 972 | 80-06-23 |
| 4 | 20 | Revelstoke | 62366 | 973 | 80-06-23 |
| 5 | 20 | Kamloops/Revelstoke | 62367 | 974 | 80-06-23 |
| 6 | 20 | Revelstoke | 62368 | 975 | 80-06-23 |
| 7 | 20 | Kamloops/Revelstoke | 62369 | 976 | 80-06-23 |
| 8 | 20 | Revelstoke | 62370 | 977 | 80-06-23 |
| 9 | 20 | Kamloops/Revelstoke | 62372 | 978 | 80-06-23 |
| 10 | 20 | Kamloops/Revelstoke | 62371 | 979 | 80-06-23 |
| 11 | 20 | Kamloops/Revelstoke | 62378 | 980 | 80-06-23 |
| 12 | 20 | Revelstoke | 62379 | 981 | 80-06-23 |
| 13 | 20 | Kamloops/Revelstoke | 62380 | 982 | 80-06-23 |
| 14 | 20 | Kamloops/Revelstoke | 62381 | 983 | 80-06-23 |
| 15 | 20 | Kamloops | 62392 | 2695 | 80-06-23 |
| 16 | 20 | Kamloops | 62383 | 2696 | 80-06-23 |
| 17 | 20 | Kamloops | 62384 | 2697 | 80-06-23 |
| 18 | 20 | Kamloops | 62385 | 2698 | 80-06-23 |
| 19 | 20 | Kamloops | 62394 | 2699 | 80-06-23 |
| 20 | 20 | Kamloops | 62394 | 2700 | 80-06-23 |
| 21 | 20 | Kamloops | 62390 | 2701 | 80-06-23 |
| 22 | 20 | Kamloops | 62395 | 2702 | 80-06-23 |
| 23 | 20 | Kamloops | 62396 | 2703 | 80-06-23 |
| 24 | 20 | Kamloops | 62397 | 2704 | 80-06-23 |
| 25 | 20 | Kamloops | 62398 | 2705 | 80-06-23 |
| 26 | 12 | Revelstoke | 62374 | 984 | 80-06-23 |
| 27 | 8 | Revelstoke | 62377 | 985 | 80-06-23 |
| 28 | 12 | Revelstoke | 62375 | 986 | 80-06-23 |
| 29 | 20 | Revelstoke | 62376 | 987 | 80-06-23 |
| 30 | Fr. | Revelstoke | 62387 | 1014 | 80-06-23 |
| 31 | 4 | Revelstoke | 62391 | 988 | 80-06-23 |
| 32 | Fr. | Revelstoke | 62388 | 989 | 80-06-23 |
| 33 | Fr. | Kamloops/Revelstoke | 62359 | 2706 | 80-06-23 |

## PHYSIOGRAPHY

### Topography and Vegetation

Topographic relief on the property is moderate to steep with elevations ranging between approximately 360m to over 2090 m above sea level. Queest Mountain is the highest point in the area with an elevation of 2087 m.

Steepest sections on the property are in the valleys of Haycock and Legerwood Creeks with slopes averaging between 30 degrees and 40 degrees. Topography is shown on Figure 2.

Drainage on the property is to the south-southeast into the Eagle River and to the west into Shuswap Lake. The major creeks are Legerwood, Haycock, Simm and Perrin which flow year round. The remainder of the streams are small, often channel-less seeps subject to drying up in the late summer. Subterranean water flow exists in some areas underlain by marble.

A large portion of the property has been logged. In these areas, burn, deadfall and 'buckbrush' hamper traversing. The boundaries of previous logging operations are shown on the soil geochemical plans (Figures 7 and 13).

In areas of forest cover, trees consist of mature hemlock, spruce, pine and minor balsam. Underbrush consisting of 'buckbrush' and tag alder is thick in some areas. Devil's club is prevalent in the Haycock and Legerwood Creek basins.

Above an elevation of 1980 m, tree cover thins to interspersed meadows.

## Overburden

Overburden in the survey area consists of a combination of glacially transported and residual types. Glacial striae observed at two locations in Coyote 9 and 17 suggest local glacial transport directions between 160 and 180 degrees azimuth. Transport distances are not discernable.

Road cuts show overburden thickness to range between 0.5 and 2 m on average. Greatest thickness of overburden occurs within the valley of Haycock Creek where there is significant downslope transport. Talus accumulations are most prevalent beneath the northwesterly ridge through Coyote 7 and 8 with boulder fields containing displaced blocks up to 5m in diameter.

Soil profile development in the area is generally poor to moderate. A representative profile consists of:

- up to 5 cm — Dark black humus composed of roots, needles and talus cobbles.
- 10 to 15 cm — Light grey leached horizon. Thickest in alpine meadows.
- 10 to 15 cm — Rusty to medium brown silt, sand and pebbles. Recognizable micaceous flakes. Thin to absent in poorly drained areas.

Soil profiles are often substantially disturbed in areas of previous logging.

## GRID ESTABLISHMENT

Hip-chain and compass metric grids for survey control were established at two separate locations in the claim block.

### Grid A

An eastern grid totalling 65 line kilometres was established over Coyote 6 and portions of Coyote 5, 7, and 8. A north-south baseline (120E) was flagged and picketed at 50 m stations. East-west grid lines cutting the baseline were located at 200 m intervals from 104+00 N to 138+00 N and an additional line at 139+50 N. Stations along these lines were located at 50 m intervals from the baseline to 100E and 133E. Lines 130 -139+50 N were extended beyond 110E to intersect the Queest Mountain road.

Detail lines at 100 m intervals were established at the following locations:

| | |
|---|---|
| 113 N | 127+50 - 133E |
| 115 N | 120 - 133E |
| 117 N | 120 - 133E |
| 121 N | 115 - 133E |
| 123 N | 115 - 133E |
| 125 N | 115 - 133E |
| 127 N | 115 - 133E |
| 129 N | 115 - 125E |
| 131 N | 116 - 125E |

Detail lines at 50 m intervals were established at the following locations:

| | |
|---|---|
| 126+50 N | 115 - 125E |
| 127+50 N | 115 - 125E |
| 128+50 N | 115 - 125E |
| 129+50 N | 115 - 125E |
| 130+50 N | 116 - 125E |
| 131+50 N | 116 - 125E |

## Grid B

A western grid totalling 44 line kilometres was established over portions of Coyote 16, 17 and 18. An east-west baseline (135 N) was flagged at 50 m stations. North-South grid lines cutting the baseline were flagged at 200 m intervals from 45+00 E to 79+00 E. Stations along these lines were located at 50 m intervals from the baseline to 125 N and 145 N. Lines 45 to 55E were extended further south to 115 N and the baseline extended further east to 92E.

## RECONNAISSANCE LINES

Lines for reconnaissance soil sampling traverses were established at three locations on the eastern portion of the claim block.

In Coyote 9, six lines (0S-10S) at 200 m spacings were chained and flagged using the northern claim line of Coyote 9 as 0S. All lines extended from the road through Coyote 9 to the western boundary of this claim and were flagged at 50 m stations.

In Coyote 4 and 27, three lines were chained and flagged at 50 m stations. One line 1.6 km in length was made along the east-west trending road in Coyote 4 and two east-west lines, 2.1 km in length made in Coyote 27.

Finally, in Coyote 26, 28 and 29 six lines were established at contour elevations 3000, 3200, 3400, 3600, and 3800 feet using altimeter and hipchain for control. Lines originated along the road through Coyote 26 and were flagged at 50 m stations to the northern claim line of Coyote 26 and 28.

## GEOLOGY

The most recent and complete public report on the geology of the survey area is contained in Geological Survey of Canada Open File 637. An earlier account of the geology in the area is given by Jones (1959). Details of molybdenite mineralization on the MAL 1 claim are described by Stevenson (1940).

Regionally, the property lies within the western margin of the Shuswap Metamorphic Complex in low to medium grade metamorphic terrane. Rocks of this Complex have undergone several episodes of deformation, metamorphism and intrusion, the timing of which is still largely uncertain.

Geological mapping on the property was done at a scale of 1:10 000. Exposure on the claims is generally poor, restricted to steep ridges, road cuts, banks of major streams and thinly drift covered alpine meadows.

The Coyote claims are underlain by multipli-deformed metasedimentary and metavolcanic rocks probably correlative with the Paleozoic Eagle Bay Formation. This rock sequence has been intruded by two plutonic phases and later stage derivatives.

Geology of the claims are shown in Figures 3 and 4. Lithologic descriptions of individual units follows.

Unit 1a Quartz - sericite schist, quartz-mica schist, phyllite

This unit is widespread in occurrence over the property and is commonly found intercalated with Units 1b and 1d. Rocks of this unit are silvery grey to rusty brown and composed of alternating fine-grained quartz-rich and muscovite-biotite layers 2 - 5 mm thick.

Micaceous constituents generally exhibit well developed lineation and a superimposed oblique cleavage which is often pervasive enough to form small scale corrugations.

Unit 1b Quartzite-siliceous schist

This unit is similarly widespread but varies in textural style over the property. In the eastern portion of the property quartzites are light to dark grey, fine-grained with minor sericite partings. Fine-grained galena was found in a quartzite exposure in COYOTE 6. In the western portion of the property (COYOTE 18) quartzites are white to buff coloured, coarse-grained with well developed blocky cleavage. The rock is composed essentially of quartz with no impurities and forms highly resistant ridges.

Unit 1c Biotite schist; hornblende - biotite schist

The rocks of this unit are brownish to black, fine to medium-grained and represents a variation of unit 1a with higher proportions of biotite and chlorite to muscovite. Biotite schists commonly occur in contact with unit 5 granodiorite.

A major exposure of hornblende - biotite schist occurs near 128 N/118+50E in COYOTE 8. The rock is dark green to brown, medium-grained and composed essentially of chloritized hornblende and minor biotite and feldspar.

Unit 1d Porphyroblastic garnet (sillimanite) mica schist

There are several localized occurrences of this unit throughout the property. Overall the unit occurs as intercalations up to 0.5 m thick within unit 1a. The most extensive exposure of garnet-mica schists occurs adjacent to molybdenite-bearing granodiorite in COYOTE 6 and 8. At this location, garnet dodecahedrons up to 4 mm in diameter are set in a silvery matrix of muscovite and biotite. The garnet is the reddish variety probably almandine. Accessory sillimanite, in the form of slender needles up to 2 cm long, is present along foliation planes in many garnet-bearing schists.

One outcrop of staurolite schist was noted in COYOTE 6. It is composed of 5% staurolite, occurring as twinned prisms up to 4 mm in diameter.

Unit 1e Andesite, lapilli tuff

Several rounded outcrops of a fine-grained massive greenish grey to brown andesite are exposed in a logged clearing in COYOTE 16. The rock is equigranular to slightly porphyritic composed of sausseritized plagioclase and chloritized hornblende. Several hundred metres to the southwest are two outcrops of lapilli tuff. Lithic fragments of dark to light grey tuff up to 10 cm long are elongated 320 degrees in a fine-grained brown groundmass. The tuff is cut by one cm wide ribbony quartz veins. No sulphide mineralization or magnetization was noted in either rock type.

Unit 1f Chloritic schist, chloritic phyllite, greenstone

This unit is restricted in occurrence to the western half of the property chiefly in COYOTE 1 and 3 with scattered occurrences in COYOTE 17. Rocks of this unit are dark grey to green, massive to highly fissile and composed almost entirely of fine-grained chlorite with minor epidote, feldspar and quartz occurring as concordant and cross-cutting seams. In COYOTE 13, exposures are strongly magnetic with magnetite occurring as disseminated euhedral crystals up to 3 mm in diameter with slight concentration along 3 - 10 mm siliceous seams. Overall thickness of this unit may be as much as 300 m in COYOTE 1 and 3.

In COYOTE 17, pyritiferous chloritic schists occur as xenolithic repetitions up to 3 m thick within unit 5 leuco-quartz granodiorite porphyry.

This unit is thought to be of volcanic origin, but original volcanic character is obscured by metamorphism.

Unit 1g Gneissic granodiorite, gneiss

This unit, exposed in COYOTE 11 and 22, probably represents the oldest rocks found on the property. The rocks of this unit are pale green, medium-grained and composed of alternating gneissic bands 2 - 3 mm thick, of feldspar and hornblende - biotite (30%). Quartz (up to 10%) occurs as lenticular eyes or augens 4 - 5 mm long. Accessory minerals include porphyroblastic actinolite and magnetite. The gneiss is typically massive with minor epidote and ptygmatic veining up to 10 cm wide and mafic xenoliths up to 30 cm in diameter.

Unit 2 Foliated acidic volcanic rocks, quartz feldspar porphyry, dacitic tuff

Exposure of this unit is confined solely to COYOTE 13. The unit is buff to pink and composed of plagioclase phenocrysts and quartz eyes, 2 - 3 mm in diameter in a siliceous matrix. Fine-grained disseminated and fracture plane pyrite is common, producing gossanous yellowish-brown outctrops.

This unit probably represents the extrusive equivalent of unit 5.

Unit 3 Crystalline limestone, dark grey foliated limestone, marble, minor skarn

An extensive carbonate unit overlies units 1 and 2 with greatest thicknesses exposed in COYOTE 3, 7, 9, 12 and 13. This unit varies from white, massive crystalline limestone, to bluish-grey to dark grey foliated limestone. Bedding is marked by differences in colour and resistance to weathering but is often obscured in the massive, crystalline variety.

Limestones have undergone varying degrees of recrystallization throughout the property. No fossil remains were observed in this unit. Accessory minerals to calcite include muscovite, tremolite, siderite and pyrite. Local collapse brecciation was observed.

An exposure of skarn occurs near 127 N/120E on Grid A. The rock is crudely banded, light pinkish - dark green and composed of fine-grained diopside, almandine garnet, quartz and pyrite.

Unit 3a Mudstone, argillite

One small exposure of this unit was seen in COYOTE 7. Dark grey to dark brown, crumbly mudstone about 8 m thick is exposed beneath flat-lying marble in a small creek bank. The upper and lower contacts are not exposed.

Unit 4 Porphyritic hornblende - biotite diorite
Unit 4a Hornblende diorite

Porphyritic hornblende - biotite diorite occurs along the eastern edge of Grid A, best exposed in road cuts along Road 4020. The rock is pale to brownish green, medium to coarse-grained composed of feldspar laths up to 2 cm long and 30 - 40% hornblende and biotite frequently comprising clots up to 5 cm in diameter. Chloritization of mafics is common. Jointing in this unit is generally widely spaced (up to 6 per m) and trace amounts of fracture plane pyrite were observed. The unit is cut by units 5 and 7 dikes.

One exposure of porphyritic hornblende - biotite diorite was found at 116N/115+50E suggesting that this unit mantles unit 5 on at least two sides.

A massive variety of this unit was located in COYOTE 26. It is medium-grained and composed of 10% - 15% biotite and hornblende.

Unit 5 Leuco-quartz granodiorite porphyry, minor quartz monzonite, breccia

Exposure of this unit is extensive, covering portions of COYOTE 6, 7, 8, 9, 10, 17, 18, 26 and 29. The rock is fine-grained, leucocratic with no mafic constitutents (except biotite where mineralized) and composed of up to 30% quartz, 60% - 70% feldspar and up to 10% fine-grained platey sericite. Quartz phenocrysts, 0.5 -1 mm in size, occur as coalescing 'eyes'. Staining of selected specimens reveals that potash feldspar contents may vary locally, enough to justify classifying these rocks as quartz monzonite.

This unit commonly occurs as dikes and sills up to 2 m wide within metasedimentary units.

Fracturing within this unit is generally closely spaced with densities as high as 50 per square metre area. Fractures consist of steeply dipping sets with the following orientations, in order of importance (see Figures 3 and 4).

| | |
|---|---|
| 350 - 358°** | |
| 48 - 50°** | **(predominate set) |
| 15 - 20°* | *(subsidiary set) |
| 328 - 332°* | |
| 270 - 280°* | |

Fractures are commonly tight and coated with iron oxides.

Minor quartz veins ranging in widths from 0.2 - 50 cm cut the intrusive and frequently exhibit pinch and swell structures. Opal veining up to 3 cm in width cut several granodiorite exposures in COYOTE 17 and 18.

Mineralization and alteration within this unit are discussed under subsequent sections.

An exposure of multi-lithic breccia located near 135N/55E was mapped. The breccia is composed 30% of angular fragments of granodiorite, pegmatite, schist and limestone 0.2 - 25 cm in size set in a muddy brown matrix. Vugs up to 5 cm in diameter within the breccia are filled with coarse-grained rhombs of calcite. The exposure of breccia is 1 m wide and pipe like in form.

<u>Unit 6a</u> <u>Quartz veining</u>

Major quartz veins, those 0.5 m or greater in width, are exposed at several localities on the property. Dominant vein orientation is north-south. Sulphide constituents were observed in only two veins. At an outcrop along

Road 4050 near baseline 120E, minor fine-grained specks of molybdenite occur in a medium-grained vuggy quartz vein 2 m wide trending northerly. At a second outcrop along the Queest Mountain Road north of Grid A, medium-grained pyrite occurs within a northeasterly trending quartz vein.

A major quartz vein 10 - 20 m wide, with an east-west orientation transects COYOTE 17 and 18. The coarse-grained texture and milky white colour of this vein suggests it may be the product of remobilization during metamorphism. There are no visible sulphides within this vein.

Unit 6b Pegmatite

Two widely separated outcrops of pegmatite were located. One near the southern boundary of COYOTE 26 is composed of coarse-grained quartz, orthoclase and books of muscovite up to 3 cm in diameter.

The second outcrop at 71E/128+50N in COYOTE 18 is composed predominantly of coarse-grained orthoclase and biotite with accessory tourmaline in the form of slender needles up to 2 cm long.

Unit 7 Undifferentiated intermediate - basic dike
Unit 7a Lamprophyre
Unit 7b Diabase

Youngest rocks on the property are dike rocks which transect exposures of units 1, 4 and 5. Rocks of this unit are medium to dark green, fine-grained and range in composition from andesite - biotite lamprophyre - diabase. Lamprophyre dikes are porphyritic containing phenocrysts of feldspar and biotite up to 1 mm in diameter with disseminated and fracture plane pyrite. Diabase dikes are typically massive with minor porphyritic occurrences. Dike widths range up to 4 m and dominant dike orientation is north-south.

## STRUCTURE

Structure in the area is complex and obscured. At least two deformative stages are recognized. Earliest observed structures are gneissic and schistose foliation and mineral alignment. This has been overprinted by an oblique crenulation cleavage and isoclinal folding deforming compositional layering. Latest structures are steep fractures and faults.

The predominant trend of most structural features is north-northwesterly. Projected major folds trend northwesterly and are mimicked by small scale folding. The abrupt change in foliation attitudes in Grid A is suggestive of doming in the area. Attitudes change from east-west with southerly dips in the southern half of the grid to northerly with dips to the east in the northern half of the grid.

Fault directions identified are northerly and northeasterly. A prominent fault disrupts molybdenite mineralization in the Grid A area. The fault is marked by a 5 m wide topographic depression and juxtaposes granodiorite porphyry hosting molybdenite and garnetiferous quartz-mica schists. The topographic lineament trends 355 degrees over a length of about 75 m (dip cannot be determined). Magnetic expression of this structure suggests it may be more extensive.

Another prominent structural feature in the vicinity of mineralization is pronounced tilting of adjacent metasedimentary rocks. Dips in these rocks steepen by as much as 50 degrees over 300 m in a westerly direction.

Finally, at least three stages of fracture development with or without quartz sealing are recognized within unit 5 intrusive. Several steeply dipping fracture patterns can be distinguished in the region as indicated on the equal area stereoprojections in Figures 3 and 4. Preferred orientations of fractures and veins have been previously discussed. A 10 degree-15 degree northerly rotation of major fracture sets is evident between the west and east halves of the claims. This may relate to differing stress conditions across the region.

## MOLYBDENITE MINERALIZATION

Molybdenite was found in float in five localities on the property and in place in one location over an area of approximately 100 by 150 m.

The original discovery of molybdenite on the property was within an angular boulder, 1.5 m in diameter, of strongly silicified and sericitized granodiorite porphyry located at 127N/117+50E on Grid A. Molybdenite in this boulder occurs as euhedral, medium to coarse-grained (1 - 4 mm) disseminations along uneven cleavage surfaces, as striated patches up to 5 cm large and as coarse-grained segregations, 2 - 5 cm large, associated with quartz vugs.

Molybdenum content of this boulder was 3900 ppm Mo determined by normal geochemical analysis and 0.8% Mo by wet assay analysis. It is believed that this boulder was displaced during logging operations and is not far removed from its source. Several other smaller boulders up to 40 cm in diameter and containing coarse-grained molybdenite rosettes were found within a 10 m radius of the high grade boulder.

At a second location near 126N/121+50E on Grid A, molybdenite was found in a subangular, sericitized granodiorite porphyry boulder approximately 0.5 m in diameter. Coarse-grained molybdenite rosettes up to 5 mm in diameter occur concentrated along an uneven cleavage surface. Molybdenum content obtained from geochemical analysis was 750 ppm Mo. Numerous other altered granodiorite boulders were found in the vicinity. Subsequent prospecting up slope resulted in the discovery of additional molybdenite within boulders beneath uprooted tree stumps and within granodiorite porphyry outcrops. Molybdenite mineralization in place occurs as disseminated thin hexagonal flakes up to 3 mm in diameter randomly oriented throughout the granodiorite. Two one-metre channel samples across separate outcrops at 126+50N/121+30E and 127+75N/120+80E contained 220 and 200 ppm Mo respectively. At 129N/121E, coarse-grained molybdenite occurs along a tight dry fracture within sericitized granodiorite. Analysis of a sample from this outcrop returned 1300 ppm Mo.

Molybdenite was discovered at a third location in three separate boulders 100 m apart within the bank below the Queest Mountain Road near its junction with Road 4050. Two subangular to subrounded boulders 30 cm in size contain minor fine-grained specks of molybdenite and pyrite associated with vuggy quartz and clay. Geochemical analyses of these boulders yielded results of 2 and 12 ppm Mo. The third mineralized boulder, 50 cm in size was of pegmatite containing coarse grains (1 cm) of feldspar and biotite. Molybdenite in this boulder occurs as extremely fine-grained specks within biotite segregations and analyzed 1300 ppm Mo. Source of these three mineralized boulders is unknown.

The fourth location of molybdenite-bearing float occurs along the Queest Mountain Road near its intersection with 106N. A subangular boulder of strongly, silicified granodiorite estimated to be up to 1 m in diameter and located beneath the centre of the road contains fine-grained disseminated molybdenite. A sample from the boulder analyzed 1300 ppm Mo.

Finally, a rounded boulder, 25 cm in diameter, of unaltered granodiorite and containing a few disseminations of fine-grained molybdenite was found along the ditch of the road through COYOTE 26 at an elevation of 850 m. Exposure in the area is minimal, so determining the source of the boulder is difficult to impossible.

In all cases, pyrite contents are trace to absent, but iron oxide (hematite and goethite) staining is ubiquitous in mineralized samples.

## Alteration

Alteration within the granodiorite porphyry consists predominately of quartz and sericite in varying intensity and lesser biotite and clay.

Overall distribution of quartz-sericite alteration is patchy, with strongest development in the vicinity of the original high grade boulder discovery in COYOTE 8. An almost exclusive relationship between biotite and molybdenite was observed. The biotite is iridescent, dark brown to black and occurs as disseminated grains and in felted clots up to 1 cm in diameter. Argillic (kaolinite) alteration is sporadic in distribution over areas of intrusive exposure in COYOTE 17 and 18.

Localized occurrences of epidote and silicification were mapped. Metasedimentary outcrops and boulders adjacent to mineralization are well indurated.

## MASSIVE SULPHIDE MINERALIZATION

### Massive Sulphide Horizon COYOTE 10

Stratiform massive sulphides are exposed in intermittent trenching, 700 m northeast of the cabin in COYOTE 10. Strongly oxidized sulphides occur within a horizon up to 2 m in thickness trending northwesterly over a length of 200 m. Intimately mixed fine-grained pyrrhotite and pyrite occur within a siliceous host frequently present as augens. Minor whisps of chalcopyrite were identified. Accessory tourmaline and carbonate were also recognized. Contact relations are seen in the northern most exposure where finely banded quartzite - quartz-biotite gneiss forms the hanging wall. Further south, limestone is exposed on the hanging wall side. Best analytical results obtained from this showing were 1250 - 2000 ppm Cu, with background values of Mo, Pb, Zn and Ag.

### Massive Sulphide Boulders COYOTE 9

Rusty subangular boulders up to 0.5 m in diameter were found along the Queest Mountain Road where it trends east-west in COYOTE 9.

The boulders contain up to 60% fine-grained pyrrhotite with minor chalcopyrite concentrated in the pressure shadows of siliceous knots up to 5 mm in diameter. Test pitting and trenching beneath the road has exposed gossanous limestone and limey quartz-biotite schists but was unsuccessful in locating sulphide mineralization.

A grab sample from the boulders analyzed 1 ppm Mo, 3090 ppm Cu, 283 ppm Pb, 37 ppm Zn and 4.8 ppm Ag.

### Sulphide Boulder COYOTE 16

A rusty boulder of fine-grained siliceous volcanics, approximately 0.5 m in diameter containing 5% pyrrhotite and traces of chalcopyrite, was found under a tree stump near the southeast corner of COYOTE 16. Quartz eyes up to one cm in diameter occur within a dark grey matrix containing disseminated sulphides. Analyses showed 1420 ppm Cu and background Mo, Pb, Zn and Ag values. The source of the boulder is unknown.

## GEOCHEMICAL SURVEY

The geochemical survey consisted of drainage sediment, water, rock and soil sampling. A total of 3643 samples were collected, consisting of 214 stream sediments, 37 waters, 451 rocks and 2941 soils.

## FIELD PROCEDURE

Stream sediments were collected from all major streams and seepages with well defined channels. Detailed sampling along Haycock and Legerwood Creeks consisted of sample collection at 200 ft. elevation intervals. Approximately 50 - 100 gm of sediment was collected at each site (usually a composite of several points along the channel). At locations composed predominately of coarse-grained sediments, substantially more sediment (about 200 gm) was collected to obtain sufficient fine material for analysis. Samples were placed in Kraft envelopes and allowed to dry prior to shipment.

Water sampling was initiated because of the number of springs and sub-surface seepages in the area. Clean, acid rinsed, 50 ml plastic bottles were used for sample collection. Before sampling, bottles were rinsed several times with the water to be sampled. Each sample was acidified using 2 or 3 drops of nitric acid. On-site determination of pH was made using indicator paper accurate to +0.5 pH units.

Rock samples were collected at random locations where exposure permitted by taking numerous chips over the outcrop face to compose a representative sample. Approximately 100 - 200 gm were collected in a Kraft paper envelope at each site.

Soil samples were collected at 50 m intervals along grid lines, contour lines or road banks. Samples at each site were collected from the B-horizon ranging in depth from 15 - 25 cm. In areas of previous logging an attempt was made to obtain undisturbed samples by sampling adjacent to tree stumps. Approximately 25 - 50 gm were collected at each site in a Kraft paper envelope.

## LABORATORY PROCEDURE

All samples were prepared and analyzed at Vangeochem Lab Ltd. in North Vancouver, B.C. Stream sediment and soil samples were dried in their envelopes at 35 degrees C, lumps disaggregated and samples sieved to pass 80 mesh. A portion of the -80 mesh fraction was subjected to a perchloric -nitric acid digestion and analyzed for molybdenum, copper, lead, zinc and silver using atomic absorption spectrophotometry. Detection limits for Mo, Cu, Pb, Zn are 1 ppm and for Ag, 0.1 ppm.

Rock samples were crushed, split and pulverized to pass 80 mesh. Metal extraction was accomplished using any or a combination of the following acid digestions in dilute or concentrate form:

a) $HClO_4$ - $HNO_3$
b) $HCl$ - $HNO_3$
c) $HCl$ - $H_2SO_4$.

Samples were analyzed for molybdenum, copper, lead, zinc and silver using atomic absorption spectrophotometry. One sample was analyzed for molybdenum using a wet assay technique.

Water samples were analyzed for a selected combination of the following elements: molybdenum, copper, lead, zinc, fluorine and uranium. Methods of metal extraction and detection for each element are summarized below.

| Element | Method of Extraction | Method of Detection | Detection Limit |
|---|---|---|---|
| Mo, Cu, Pb, Zn | APDC - MIBK | Atomic Absorption | 5 ppb |
| F | Buffer added | Specific ion | 10 ppb |
| U | Fusion and concentration | Fluorimetric | 0.02 ppb |

## RESULTS AND INTERPRETATION

Analytical results for all samples are presented in Figures 5 to 17. Frequency distributions and sample statistics for individual elements are included in these figures. In representing anomalous values, sample stations with metal concentrations greater than one and two standard deviations above the mean, have been flagged.

### Soils

Soil geochemistry reveals 2 areas, anomalous in molybdenum in the eastern half of the claims. The first area is a V-shaped anomaly located on Grid A, which is believed to originate from the discovered molybdenite showing in COYOTE 8. Intermittent anomalous values of up to 20 ppm extends 3000 m in a southeasterly direction, with a maximum width of 600 m. Anomalous levels of silver (maximum 1.3 ppm) are roughly coincident with this molybdenum anomaly.

A second anomaly, with approximate dimensions of 250 x 950 m and values up to 55 ppm Mo was located in COYOTE 28 and 29. Source of the anomaly is unknown as exposure in the area is sparse. Molybdenite bearing granodiorite float was found on the southern-most soil line.

Several isolated stations of up to 11 ppm Mo were found in COYOTE 9.

Elevated levels of lead (maximum 102 ppm) and silver (maximum 1.3 ppm) were detected in COYOTE 9 and elevated levels of zinc (maximum 309 ppm) in COYOTE 28 and 29. In general, anomalous lead, zinc and silver values are peripheral to molybdenum and may relate to undiscovered mineralization in these areas.

Soil geochemistry in the western half of the claims is generally featureless and provides little encouragement. Enrichments in lead and silver, of up to 2-3 times background were observed.

Stream Sediments and Waters

Stream sediment geochemistry detected:

1. Anomalous molybdenum (4-7 ppm) in the stream draining the area of the showing discovered in COYOTE 6 and 8 and in streams in the southeastern corner of Grid A (4-7 ppm). Source for the latter is unknown.

2. Anomalous zinc levels at the headwaters of Haycock Creek and in the stream draining COYOTE 20.

3. Anomalous copper, lead and/or zinc in three separate streams in COYOTE 9.

4. Anomalous copper in a stream draining massive sulphide mineralization in COYOTE 10.

Water geochemistry yielded one anomalous station, with 250 ppb F, at the southeastern edge of Grid A. In general, stream waters ranged in pH from 5.0 to 6.5 with no detectable base metals and background levels of fluorine and uranium.

Rocks

Rock geochemical results associated with observed mineralization have been discussed under MINERALIZATION and were excluded during calculations of sample statistics. The remaining features are evident from the survey:

1. Values of anomalous molybdenum (5-22 ppm) are centred in the area of discovered molybdenite on Grid A.

2. Anomalous zinc - (silver) was detected in a metasedimentary section along the north end of the Queest Mountain road. Within this section a pyritiferous quartz vein returned 110 ppm Mo but re-analysis and resampling did not duplicate this.

3. Anomalous copper - (zinc) was detected in metavolcanic rocks in COYOTE 3. Massive sulphide float was discovered in this area.

## MAGNETOMETER SURVEY

### Field Procedure

The magnetometer survey was completed using Geometrics Models G-816 and G-826 proton precession magnetometers which measure the total intensity of the earth's magnetic field. Thirty-six line kilometres were surveyed along lines in Grid A, with readings at 50 m intervals. Readings were corrected for diurnal variations and daily drift by tying into a base station established at 120N/120E.

### Results and Interpretation

Magnetic results are shown in plan in Figure 18 and in profile in Figures 21 through 25. Results are expressed above or below a datum of 58,000 gammas.

Total magnetic relief on the grid is 2,885 gamma with susceptibilities ranging between -1280 and 1605 gammas from datum. Background susceptibility values are in the order of 100 to 170 gammas above datum.

In general, the magnetics plan shows a north-northwesterly grain in collaboration with known structural information. Magnetic values typically increase towards the eastern boundary of the grid which may be in part due to exposure of diorite porphyry in this area. The western portion of the grid has little magnetic relief probably due to the greater thicknesses of drift within the Haycock Creek valley. Finally, there is some correlation between magnetic and I.P. chargeability anomalies.

Nine anomalous areas are recognized on Grid A and are documented below. Several of these anomalies may be the result of spheric noise which periodically affected the induced polarization surveys. Follow-up of these anomalies employing a recording magnetometer base station for correcting diurnal variations would be necessary to confirm the responses observed in this survey.

| Area | Approximate Location | Description |
| --- | --- | --- |
| 1. | 132-138N/112-116E | Magnetic trend 50-200 m wide and 600 m long (open to the north). Maximum magnitude 892 gammas. Associated I.P. chargeability values 50 - 150 milliseconds. Underlain by unit 1a, 1b, and 5 (sill). Depth estimate 50 m. |
| 2. | 128N/122-123E | Localized anomaly with total magnitude of 1245 gammas. Associated with fault-bounded contact between units 1d and 5. I.P. chargeabilities of 25 milliseconds. |
| 3. | 126N/119+50E | Localized anomaly with magnitude of 1572 gammas. Associated with banded pyritiferous garnet-diopside skarn (unit 3). |
| 4. | 112N/118+50E | A north-northeasterly trend up to 621 gammas in magnitude with a width of up to 300 m and length of over 300 m. The trend is associated with anomalous chargeabilities of 50 milliseconds. There is no exposure in the area. |
| 5. | 106-112N/126-131E | An area of high magnetic relief (up to 2252 gammas) composed of several magnetic highs and mantling lows. Anomalous chargeability values in the area range between 40 - 50 milliseconds. Limited exposure so explanation inconclusive. |
| 6. | 130N/130E | Localized anomaly of 501 gammas with limited exposure in area. |
| 7. | 125N/125E | Localized anomaly of 567 gammas underlain by units 1a and b. Possibly fault related. |
| 8. | 118N/121E | Local magnetic high of 1000 gammas. Cause unknown - possibly spurious anomaly. |
| 9. | 120/116E | Local magnetic low of 890 gammas. Cause unknown - possibly spurious anomaly. |

## INDUCED POLARIZATION AND RESISTIVITY SURVEYS

Induced polarization and resistivity surveys were undertaken to determine the location and extent of sulphide and related mineralization, as well as to extend areas of known bedrock geology into drift covered areas.

Two methods of surveying were employed; a detailed grid survey and reconnaissance surveys.

### DETAIL SURVEY - GRID 'A'

#### Field Procedure

The detailed survey of 39 line kilometres was conducted over Grid A. The instrumentation employed was a Phoenix IPT-1, 3000 watt frequency and time domain transmitter and two Crone 1P-IV time domain receivers. The equipment was operated in time domain and deployed in a gradient array with a receiver dipole spread of 100 m and with transmitter electrodes located on the periphery of the grid at separations in excess of 2300 m. Readings were taken at 50 m intervals along 200 m spaced flagged lines no greater than 250 m parallel to the transmitter dipole axis. The two receivers were operated simultaneously 200 m on either side of, as well as on, the transmitter dipole axis. Caution was exercised in operating at least 50 m from the transmitter wire to avoid the chance of electrical shock to the receiver operators and reduce the occurrence of electromagnetic coupling between transmitter wire and receiver dipoles.

Initial tests indicated that operating receivers at distances significantly greater than 200 m from the transmitter dipole axis produced too weak a signal for valid results.

Follow-up of significant anomalies was done by reading adjacent 100 m spaced lines and repeating of initially anomalous readings.

produced the single major anomalous response which occur on line 134N, 113+50E to 118+00E and to a lesser extent on lines 132N and 136N and follow-up lines 133N and 135N (Figures 21 and 22). The exposed bedrock of quartzite and quartz-sericite schist in the vicinity of the anomalous response gives no surficial indication of the probable cause of this anomaly. There is, however, an indication that the source of the anomalous response is a polarizable, less resistive body at considerable depth. Interpretation of corresponding anomalous magnetic data places the source at least 50 m from surface. Extensive depth to source is also indicated by the variation in response between initial and follow-up surveys which used two different transmitter electrode locations (Figures 21 and 22). The initial readings were greater than the follow-up readings. The former had topographically lower transmitter stake placement than the latter which could possibly have resulted in less energization of the source during follow-up and consequently a weaker response. This area requires a more detailed I.P./Resistivity depth-sounding technique to determine the nature of the source. Considering the limited extent (greater than 60 ms) of the anomalous zone indicated by the contouring of the chargeability data (Figure 26) and probable depth of the source, the 50 ms contour could indicate the maximum limits of the zone which would leave the zone still open to the north and with greater potential and significance.

A 60 ms chargeability anomaly with no corresponding drop in resistivity was located at 130N 122+00E. This response was noted in conjunction with silicified quartz-biotite schist outcrop. No obvious cause for the high chargeability response was observed. This anomaly warrants further investigation due to its proximity to the main anomalous zone.

Numerous isolated 40 to 50 ms responses were noted in the southern quarter of the grid. These also have no corresponding resistivity lows and are considered of low priority.

A feature worthy of discussion indicated by the remaining resistivity data is a 4000 to 6000 ohm-metres resistivity high which extends in a north-

northeasterly direction through the northeastern quadrant of the grid. This feature corresponds in places to a topographic depression and with known intrusive outcrop on line 126N. Corresponding chargeabilities are generally in the range previously stated for intrusive rock types.

High resistivity values on the eastern margins and isolated high resisitivity values on western margins of the grid are indicative of shallow overburden as are the isolated low resistivity values are probably related to deep and/or conductive surficial sediments.

## RECONNAISSANCE SURVEY

### Field Procedure

The reconnaissance survey was conducted in the vicinity of Grids A and B along selected logging roads and in some instances through open meadow and slashed areas, eliminating the need to run line through difficult terrain. Road density in some areas was sufficient to initially test areas of interest with a minimal amount of bush crashing.

The instrumentation employed consisted of a Scintrex IPC-8, 250-watt time domain, portable backpack transmitter and a Crone IP-IV time domain receiver. These were deployed in a 50 m double dipole array with a dipole separation of 100 m (n = 2). Survey station locations were marked with flagging at 50 m intervals along the roadside. Locations were controlled by compass and chain survey from known points such as road intersections, as the survey progressed.

### Results and Interpretation

Data collection and reduction was similar to that used for the detailed grid survey and was plotted as discrete values for chargeability and resistivity in plan at a scale of 1:10 000 in Figures 28 and 29 Coyote East, and in Figures 30 and 31 Coyote West.

Inspection of the reconnaissance survey data indicated two distinct suites of results for Coyote East and Coyote West as indicated by their respective mean values, Table 1. Thresholds for anomalous values were estimated on a percentile basis for each area and were assigned a rank, Table 1.

Coyote East Reconnaissance

The Coyote East reconnaissance survey covered 38 kilometres of road, approximately one half of which was within the perimeter of Grid A. Typical induced polarization and resistivity responses to various types of bedrock and surficial sediments were noted to be similar to those for the Grid A survey as outlined on page 32. The mean values of the reconnaissance survey are considerably lower for both chargeability and resistivity than those of the detailed survey. This may be explained by the characteristics of the two different dipole arrays employed. The gradient array potentially has a greater penetration in this application than the smaller dimensioned double dipole array. The latter is consequently responding to more overburden and less bedrock resulting in lower readings overall.

Results of the reconnaissance survey within Grid A generally correspond with the detailed survey results for induced polarization and require no further examination. The resistivity responses within the grid area, however, do not correspond well with the detailed grid survey results. This may be explained by the effects of lesser depth penetration and the varied orientation of the reconnaissance array relative to the detailed survey.

The results outside of the grid area, particularly in the area directly northwest of the grid are of interest. Corresponding chargeability highs of 40 to 60 ms and resistivity lows can be directly related to known intrusive and metasedimentary bedrock outcroppings which contain significant metallic sulphide mineralization. The expansion of the detailed induced polarization and resistivity survey into this area could better define the extent of the mineralization currently exposed.

Numerous resistivity lows with corresponding chargeability lows are probably indicative of surficial sediments. Chargeability highs and related resistivity highs are probably indicative of shallow overburden over poorly conducting bedrock.

Coyote West Reconnaissance

The Coyote West reconnaissance survey covered 15.5 kilometres of road in the Grid 'B' area. The typical induced polarization/resistivity responses for various lithologies were expected to be similar to those for Coyote East. Numerous exceptions, illustrated by the difference in mean values Table 1, resulted in anomalous thresholds of greater value for chargeability and lesser value for resistivity. The different background levels for Coyote West may reflect the greater abundance of pyrite and other alteration mineralization in the survey area, Figure 4. Coincident chargeability/resistivity anomalies in Coyote West generally occur in conjunction with various metasedimentary outcroppings intruded by granodioritic veins and dykes. Pyrite and kaolinite mineralization is often in general associated with these responses.

Responses of other chargeability/resistivity combinations are probably generated by similar conditions sited for Coyote East.

A more detailed survey would be required to determine more fully the significance of anomalies located in the Coyote West area.

## COYOTE EAST RECONNAISSANCE IP/RESISTIVITY

| Anomaly Rank | Percentile | Chargeability Milliseconds | Percentile | Resistivity ohm-metres |
|---|---|---|---|---|
| First | 97.5 | > 50 | 2.5 | < 350 |
| Second | 95.0 | 44 - 50 | 5.0 | 350 - 450 |
| Third | 90.0 | 36 - 43 | 10.0 | 451 - 550 |
| Fourth | 85.0 | 34 - 35 | 15.0 | 551 - 650 |
| Background | | < 35 | | > 650 |
| Range | | -14 - 60 | | 98 - 9723 |
| Mean | | 18 | | 1150 |

## COYOTE WEST RECONNAISSANCE IP/RESISTIVITY

| Anomaly Rank | Percentile | Chargeability Milliseconds | Percentile | Resistivity ohm-metres |
|---|---|---|---|---|
| First | 97.5 | > 79 | 2.5 | < 250 |
| Second | 95.0 | 77 - 79 | 5.0 | 250 - 350 |
| Third | 90.0 | 64 - 76 | 10.0 | 351 - 450 |
| Fourth | 85.0 | 48 - 63 | 15.0 | 451 - 525 |
| Background | | < 48 | | > 525 |
| Range | | -2 - 95 | | 135 - 6702 |
| Mean | | 32 | | 800 |

**TABLE 1**
**IP/RESISTIVITY STATISTICS**

## CONCLUSIONS AND RECOMMENDATIONS

1. A significant molybdenite showing was found in COYOTE 8. Host for the mineralization is altered leuco-quartz granodiorite porphyry, recognized as the youngest phase of multi-staged intrusion in the area. Extensive drift cover in the area makes geologic mapping inconclusive, so that size and shape of the mineralized intrusive phase are largely undetermined.

2. Wide distribution of molybdenite-bearing boulders suggests mineralization may be laterally extensive but largely buried beneath metasedimentary cover rocks.

3. Soil geochemical surveys were successful in locating two widely separated molybdenum anomalies in COYOTE 6 and 8 (associated with the discovered showing) and COYOTE 28 and 29. Source for the latter is unknown as exposure in the area is sparse.

4. Magnetometer and induced polarization surveys have located a sizeable peripheral anomaly in COYOTE 8 which requires further delineation, both laterally and at depth. A higher power - higher resolution I.P. technique will be required to accomplish this.

5. A program of bulldozer trenching and diamond drilling should be undertaken to test for buried molybdenite mineralization.

6. Finally, the massive sulphide potential of the claims requires further evaluation by extending geochemical and geophysical coverage in the areas of COYOTE 7, 9, 10 and 16.

# APPENDIX A

## STATEMENT OF COSTS:

The following section contains statements of costs incurred during field work and report preparation on the Coyote claims in 1980.

Field costs as used in this section include room and board, supplies and services and vehicle expenses incurred to support field personnel.

| | |
|---|---|
| Accommodation | $ 5,530.70 |
| Meals | 4,958.21 |
| Supplies and Services | 8,464.02 |
| Vehicle & fuel costs | 9,767.00 |
| Total | $28,719.93 |

Total man-days on the Coyote claims = 478 days.

Field costs = $\frac{\$28,719.93}{478 \text{ days}}$ = $60.00 per man day.

Claim Group: Coyote (3,4)

| Type of Work | Dates | | Salary Rate/Day | Sub-Total |
|---|---|---|---|---|
| Geological | June 11 | (1) | $ 70 | $ 70 |
| | June 4,14,15 | (3) | 70 | 210 |
| | June 5,14 | (2) | 85 | 170 |
| | June 4,11 | (2) | 170 | 340 |
| Field Costs: 8 mandays @ $60/manday | | | | 480 |
| Geochemical | Aug. 13,14,16 | (3) | 70 | 210 |
| 38 rock samples @ $7.00/sample analyses | | | | 266 |
| 81 soil & silt @ $5.25/sample analyses | | | | 425 |
| Field Costs: 3 mandays @ $60/manday | | | | 180 |
| Geophysical | Aug. 13,14,16 | (3) | 60 | 180 |
| | Aug. 13,4,16 | (3) | 65 | 195 |
| | June 23,24 | (2) | 66 | 132 |
| | June 23 | (1) | 66 | 66 |
| | June 23,24 | | | |
| | Aug. 13,14,16 | (5) | 75 | 375 |
| | June 23, Aug 13,14,16 | (4) | 110 | 440 |
| Field Costs: 18 mandays @ $60/manday | | | | 1,080 |
| IP Equipment Rental 5 days @ $130/day | | | | 650 |
| Report Preparation | | | | |
| | 3 days | | 85 | 255 |
| | 3 days | | 110 | 330 |
| | 1 day | | 170 | 170 |
| TOTAL | | | | $6,224 |

Claim Group: Coyote (5,6)

| Type of Work | Dates | | Salary Rate/Day | Sub-Total |
|---|---|---|---|---|
| Geological | June 23,25,26 | | | |
| | July 18,25 | (5) | $ 85 | $ 425 |
| | June 13, July 17, | | | |
| | 19,20, Aug. 10 | (5) | 170 | 850 |
| Field Costs: 10 mandays @ $60/manday | | | | 600 |
| Geochemical | June 15-19 | (5) | $ 66 | 330 |
| | June 15-19 | (5) | 66 | 330 |
| | June 15-18,25,26,28,30 | | | |
| | July 23,25 | (10) | 70 | 700 |
| | June 16-21,25,26,28,30 | (18) | 70 | 1,260 |
| | July 19,22,23,25,28,31 | | | |
| | June 15-19 | (5) | 75 | 375 |
| | June 15,16,18,19 | (4) | 85 | 340 |
| Field Costs: 47 mandays @ $60/mandays | | | | 2,820 |
| 36 samples @ $7.00/sample analyses | | | | 252 |
| 725 soil & silt samples @ $5.25/sample analyses | | | | 3,806 |
| Geophysical | June 25-26,30 | | | |
| IP Survey | July 8,10 | (5) | 40 | 200 |
| | July 10,23-31 | (10) | 60 | 600 |
| | July 23,31 | (9) | 65 | 585 |
| | June 22,25,26,29,30 | | | |
| | July 10,23,30 | (14) | 66 | 924 |
| | June 22,24-26,30 | (6) | 66 | 396 |
| | July 10 | | | |
| | June 22,25,26,30 | | | |
| | July 10,23,31 | (14) | 75 | 1,050 |
| | June 22,24,25,30 | | | |
| | July 23-25 | (7) | 110 | 770 |
| Field Costs: 65 mandays @ $60/manday | | | | 3,900 |
| Geophysics | | | | |
| IP Equipment Rental | | | | |
| 18 days @ $130/day | | | | 2,340 |
| Geophysical | | | | |
| Magnetometer | Sept. 19-22 | (4) | 85 | 340 |
| Survey | Sept. 19-22 | (4) | 100 | 400 |
| Equipment Rental 4 days @ $78/day | | | | 312 |
| Field Costs: 8 mandays @ $60/manday | | | | 480 |
| Report Preparation | | | | |
| | 3 days | | 85 | 255 |
| | 3 days | | 110 | 330 |
| | 1 day | | 170 | 170 |
| | TOTAL | | | $25,140 |

Claim Group: Coyote (7,8)

| Type of Work | Dates | | Salary Rate/Day | Sub-Total |
|---|---|---|---|---|
| Geological | June 2,3,17,22,24,28,30<br>July 16,19,22,23,24,31<br>Aug. 1-4,6 | (18) | $ 85 | $ 1,615 |
| | June 19, Aug. 9 | (2) | 170 | 340 |
| Field Costs 20 mandays @ $60/manday | | | | 1,200 |
| Geochemical | | | | |
| | June 20,21, | (2) | 66 | 132 |
| | June 20,21 | (2) | 66 | 132 |
| | June 23,24<br>July 16,17,22,24,31 | (7) | 70 | 490 |
| | June 22-24, July 20,<br>24, Aug. 1-4,6 | (10) | 70 | 700 |
| | June 20,21 | (2) | 75 | 150 |
| | June 20,21 | (2) | 85 | 170 |
| 115 rock samples @ $7.00/sample analyses | | | | 805 |
| 562 soil and silt samples @ $5.25/sample analyses | | | | 2,950 |
| Field Cost 25 mandays @ $60/manday | | | | 1,500 |
| Geophysical | | | | |
| IP Survey | June 27,28, July 6 | (3) | 40 | 120 |
| | July 20, Aug. 1-8 | (9) | 60 | 540 |
| | July 20, Aug. 1-7 | (8) | 65 | 520 |
| | June 27,28 July 6,8,20 | (5) | 66 | 330 |
| | June 27,28, July 6,8 | (4) | 66 | 264 |
| | Aug. 1-4,6,7 | (6) | 70 | 420 |
| | June 27,28 July 6,8,20<br>Aug. 1-8 | (13) | 75 | 975 |
| | June 19-21,27,28,<br>July 6,8, Aug. 6,7 | (9) | 110 | 990 |
| Field Costs: 57 mandays @ $60/mandays | | | | 3,420 |
| IP equipment rental 13 days @ $130/day | | | | 1,690 |
| Geophysical | Sept. 16,17,18 | (3) | 85 | 255 |
| Mag Survey | Sept. 16,17,18 | (3) | 100 | 300 |
| Equipment Rental 3 days @ $78/day | | | | 234 |
| Field Costs 6 mandays @$60/manday | | | | 360 |
| Report Preparation | | | | |
| | 3 days | | $ 85 | 255 |
| | 3 days | | 110 | 330 |
| | 2 days | | 170 | 340 |
| | TOTAL | | | $21,527 |

Claim Group: Coyote (9,10)

| Type of Work | Dates | | Salary Rate/Day | Sub-Total |
|---|---|---|---|---|
| Geological | July 8,10 | (2) | $ 65 | $ 130 |
| | June 10,11,13<br>July 6,21,29,30 Aug. 8 | (9) | 85 | 765 |
| | July 6 | (1) | 70 | 70 |
| | June 11,12,13<br>July 6,21 | (5) | 70 | 350 |
| | July 6,7,8,10,12,21<br>Aug. 7 | (7) | 170 | 1,190 |
| Field Costs: 24 mandays @ $60/manday | | | | 1,440 |
| Geochemical | Aug. 8,12 | (2) | 65 | 130 |
| | Aug. 8,12 | (2) | 70 | 140 |
| | Aug. 8 | (1) | 70 | 70 |
| Field Costs: 5 mandays @ $60/manday | | | | 300 |
| 37 rock samples @ $7.00 per sample analyses | | | | 259 |
| 253 soil & silt samples @ $5.25 per sample analyses | | | | 1,328 |
| Geophysical | July 7,9 | (2) | 40 | 80 |
| | July 9,21,22 | (3) | 60 | 180 |
| | July 21,22 | (2) | 65 | 130 |
| | July 7,9,21,22 | (4) | 66 | 264 |
| | July 7,9 | (2) | 66 | 132 |
| | July 7,9,21,22 | (4) | 75 | 300 |
| | July 9 | (1) | 110 | 110 |
| Field Costs: 18 mandays @ $60/manday | | | | 1,080 |
| IP equipment rental 4 days @ $130/day | | | | 520 |
| Report Preparation | | | | |
| | 2 days | | $ 85 | 170 |
| | 2 days | | 110 | 220 |
| | 1 day | | 170 | 170 |
| | TOTAL | | | $ 9,528 |

Claim Group: Coyote (13,14)

| Type of Work | Dates | | Salary Rate/Day | Sub-Total |
|---|---|---|---|---|
| Geological & Geochemical | Aug. 18 | (1) | $ 65 | $ 65 |
| | June 5,6,14 | (3) | 70 | 210 |
| | June 9,10 | (2) | 70 | 140 |
| | June 9 | (1) | 85 | 85 |
| | Aug. 18 | (1) | 110 | 110 |
| | June 5,6,7,14,18 | (5) | 170 | 850 |
| Field Costs: 13 mandays @ $60/manday | | | | 780 |
| 12 rock samples @ $7.00/sample analyses | | | | 84 |
| 7 silt soil samples @ $5.25/sample analyses | | | | 37 |
| Geophysical | | | | |
| | July 16 | (1) | 60 | 60 |
| | July 16 | (1) | 66 | 66 |
| | July 16 | (1) | 66 | 66 |
| | July 16 | (1) | 75 | 75 |
| IP Equipment Rental 1 day @ $130/day | | | | 130 |
| Field Costs: 4 mandays @ $60/manday | | | | 240 |
| Report Preparation: | | | | |
| | 1 day | | 85 | 85 |
| | 1 day | | 110 | 110 |
| | 1 day | | 170 | 170 |
| | TOTAL | | | $ 3,363 |

Claim Group: Coyote (15,16)

| Type of Work | Dates | | Salary Rate/Day | Sub-Total |
| --- | --- | --- | --- | --- |
| Geological | June 7,8,9,13 | (4) | $ 70 | $ 280 |
| | June 5,6,8 | (3) | 70 | 210 |
| | June 8, July 15,28 | (3) | 85 | 255 |
| | June 8,13, July 15 | (3) | 170 | 510 |
| Field Costs: 13 mandays @ $60/manday | | | | 780 |
| Geophysical | July 11,14 | (2) | 40 | 80 |
| | July 14,18,19 | (3) | 60 | 180 |
| | July 13,14,18,19 | (4) | 65 | 260 |
| | July 14,18,19 | (3) | 66 | 198 |
| | July 11,13,14,18,19 | (5) | 66 | 330 |
| | July 14,18,19 | (3) | 75 | 225 |
| Field Costs: 20 mandays @ $60/manday | | | | 1,200 |
| IP Equipment Rental 5 days @$130/day | | | | 650 |
| Geochemical | Aug. 17 | (1) | 65 | 65 |
| | Aug. 12 | (1) | 60 | 60 |
| | Aug. 12,18, | (2) | 75 | 150 |
| Field Costs: 4 mandays @ $60/manday | | | | 240 |
| 15 rock samples @ $7.00/sample analyses | | | | 105 |
| 161 soil & silt samples @ $5.25/samply analyses | | | | 845 |
| Report preparation | | | | |
| | 2 days | | $85.00 | 170 |
| | 2 days | | 110.00 | 220 |
| | 1 day | | 170.00 | 170 |
| | TOTAL | | | $7,183 |

Claim Group: Coyote (18)

| Type of Work | Dates | | Salary Rate/Day | Sub-Total |
|---|---|---|---|---|
| Geological | July 7-10,13,14,15, 26,28 | (9) | $ 70 | $ 630 |
| | June 7, July 7-10,26 Aug. 12 | (7) | 70 | 490 |
| | June 4,6,7 July 14,26 | (5) | 85 | 425 |
| Field Costs: 21 mandays @ $60/manday | | | | 1,260 |
| Geochemical | | | | |
| | July 1-5 | (5) | 40 | 200 |
| | July 1-5 | (5) | 66 | 330 |
| | July 1-5 | (5) | 66 | 330 |
| | July 1-5 | (5) | 70 | 350 |
| | July 1-5 | (5) | 70 | 350 |
| | July 1-5 | (5) | 75 | 375 |
| | July 1,2,5 | (3) | 85 | 255 |
| | July 1-5 | (5) | 110 | 550 |
| Field Costs: 38 mandays @ $60/manday | | | | 2,280 |
| 115 rock samples @ $7.00/sample analyses | | | | 805 |
| 745 silt & soil samples @ 5.25/sample analyses | | | | 3,911 |
| Geophysical | July 13 | (1) | 40 | 40 |
| | July 11,13,15,17 | (4) | 60 | 240 |
| | July 11,15,17 | (3) | 65 | 195 |
| | July 11,13,15,17 | (4) | 66 | 264 |
| | July 15,17 | (2) | 66 | 132 |
| | July 11,13,15,17 | (4) | 75 | 300 |
| | July 11,13 | (2) | 110 | 220 |
| Field Costs: 20 mandays @ $60/manday | | | | 1,200 |
| IP equipment rental 4 days @ $130/day | | | | 520 |
| Report Preparation | | | | |
| | 3 days | | $ 85 | 255 |
| | 3 days | | 110 | 330 |
| | 1 day | | 170 | 170 |
| | TOTAL | | | $16,407 |

Claim Group: Coyote (26,31,32 Fraction)

| Type of Work | Dates | | Salary Rate/Day | Sub-Total |
|---|---|---|---|---|
| Geological | July 9,16 | (2) | $ 65 | $ 130 |
| | June 12 | (1) | 70 | 70 |
| | June 12, July 9,16 | (3) | 170 | 510 |
| Field Costs: 6 mandays @ $60/manday | | | | 360 |
| Geochemical | Aug. 7 | (1) | 70 | 70 |
| | Aug. 7, Sept. 23 | (2) | 85 | 170 |
| | Sept. 23 | (1) | 100 | 100 |
| Field Costs: 4 mandays @ $60/manday | | | | 240 |
| 15 silt & soil samples @ $5.25/sample analyses | | | | 78 |
| 10 rock samples @ 7.00/sample analyses | | | | 70 |
| Geophysical | Aug. 15 | (1) | 60 | 60 |
| | Aug. 15 | (1) | 65 | 65 |
| | Aug. 15 | (1) | 70 | 70 |
| | Aug. 15 | (1) | 75 | 75 |
| | Aug. 15 | (1) | 110 | 110 |
| IP equipment rental 1 day @ $130/day | | | | 130 |
| Field Cost: 5 mandays @ $60/manday | | | | 300 |
| Report Preparation | | | | |
| | 1 day | | $ 85 | 85 |
| | 1 day | | $ 170 | 170 |
| | TOTAL | | | $ 2,863 |

Claim Group: Coyote (27)

| Type of Work | Dates | | Salary Rate/Day | Sub-Total |
|---|---|---|---|---|
| Geochemical | Aug. 18 | (1) | $ 60 | $ 60 |
| | Aug. 18 | (1) | 70 | 70 |
| Field Cost: 2 mandays @ $60/manday | | | | 120 |
| 85 soil and silt samples @ $5.25/sample analyses | | | | 446 |
| Report preparation | | | | |
| | 1 day | | 85 | 85 |
| | 1 day | | 170 | 170 |
| | TOTAL | | | $ 951 |

Claim Group: Coyote (28,29)

| Type of Work | Dates | | Salary Rate/Day | Sub-Total |
|---|---|---|---|---|
| Geological | June 10 | (1) | $ 70 | $ 70 |
| | June 10 | (1) | 170 | 170 |
| Field Costs: 2 mandays @ $60/manday | | | | 120 |
| Geochemical | Aug. 9,11 | (2) | 60 | 120 |
| | Aug. 9,11 | (2) | 65 | 130 |
| | Aug. 9,11 | (2) | 70 | 140 |
| | Aug. 9,11 | (2) | 70 | 140 |
| | Aug. 9,11 | (2) | 75 | 150 |
| | Aug. 9,11 | (2) | 85 | 170 |
| Field Costs: 12 mandays @ $60/manday | | | | 720 |
| 272 silt & soil samples @ $5.25/sample | | | | 1,428 |
| 5 rock samples @ 7.00/sample | | | | 35 |
| Report Preparation | | | | |
| | 1 day | | 85 | 85 |
| | 1 day | | 170 | 170 |
| | TOTAL | | | $3,648 |

APPENDIX B

## STATEMENT OF QUALIFICATIONS

I, G. Ian Hall, of Calgary, Alberta, do hereby certify that:

1) I am a graduate of Michigan Technological University, with a B.S. (Honours) degree in Geology in 1965;

2) I am a graduate of the University of Wisconsin-Milwaukee in 1969 with an M.S. degree in Geology;

3) I have been engaged in minerals exploration as a student and professional geologist since 1962;

4) I have been employed by Hudson's Bay Oil and Gas Company Limited since December, 1970;

5) I am the senior author of this report describing field work carried out under my supervision in 1980.

G. Ian Hall
Staff Geologist

April 30, 1981
CALGARY, ALBERTA

## STATEMENT OF QUALIFICATIONS

I, Peter R. Bresee of Calgary, Alberta do hereby certify that:

1) I am a graduate of Queen's University with a B.Sc. (Honours) degree in Geological Engineering in 1978;

2) I have been engaged in minerals exploration as a student and geologist since 1976;

3) I have been employed by Hudson's Bay Oil and Gas Company Limited since May, 1979;

4) I am co-author of this report describing field work carried out under the supervision of G. Ian Hall, Staff Geologist.

Peter Bresee

Peter R. Bresee
Geologist

April 30, 1981
CALGARY, ALBERTA

## STATEMENT OF QUALIFICATIONS

I, R. C. Everett, of Calgary, Alberta, do hereby certify that:

1) I am a graduate of Cambrian College of Applied Arts & Technology Sudbury, Ontario, Canada, with a Technologists Diploma in Geology, 1974;

2) I have been engaged in geophysical and geological exploration for minerals since 1973;

3) I have been employed by Hudson's Bay Oil and Gas Company Limited since April, 1978;

4) I conducted the geophysical survey sited in this report under the indirect supervision of the Senior Staff Geophysicist.

R. C. Everett
Sr. Geophysical Technologist

April 30, 1981
CALGARY, ALBERTA

# APPENDIX C

## REFERENCES


Jones, A. G., 1959

Vernon Map - Area, British Columbia; Geological Survey of Canada Memoir 296

Stevenson, J. S., 1940

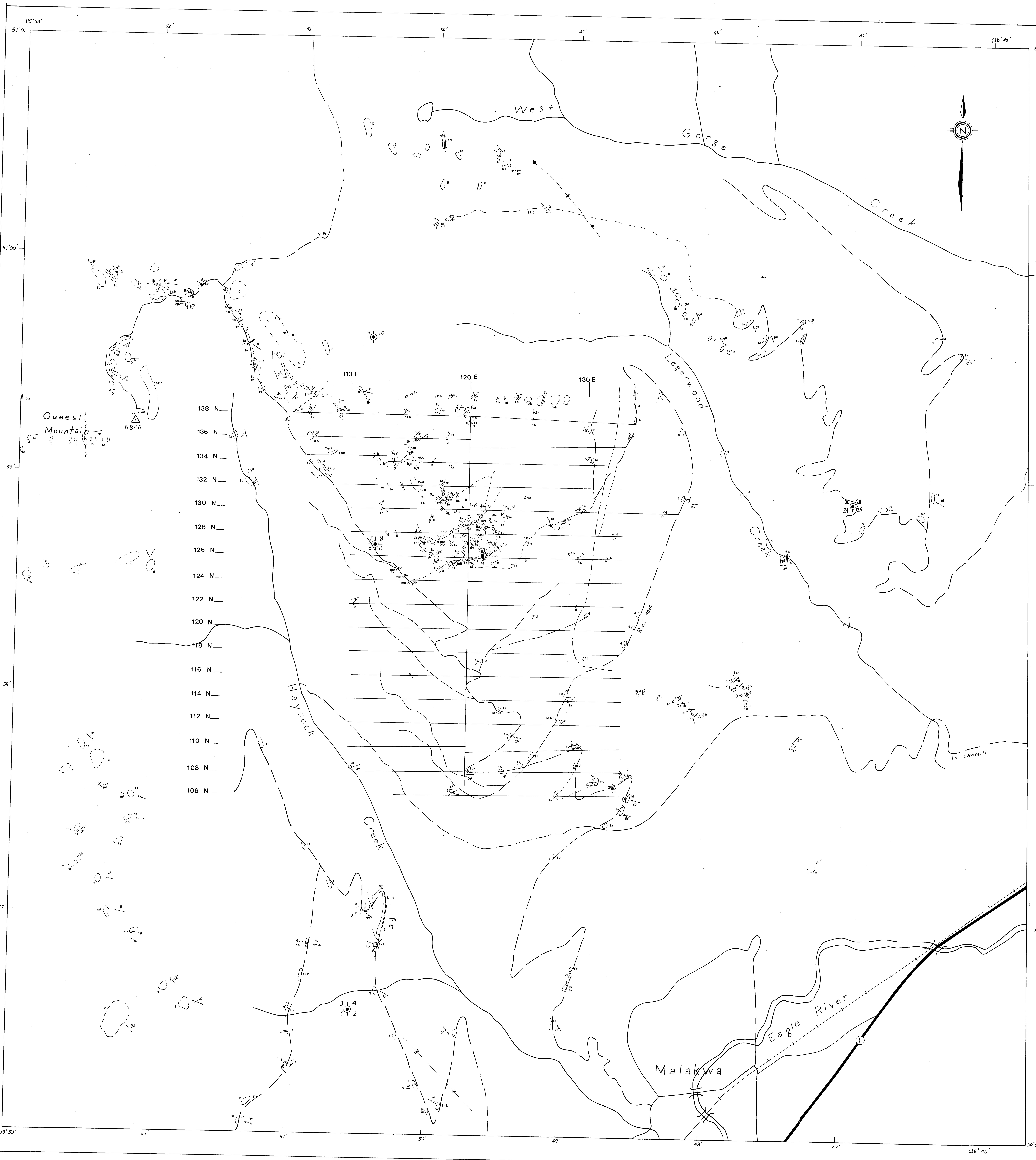
Molybdenum Deposits of British Columbia; British Columbia Department of Mines, Bulletin 9

1971, 1972, 1973

Geology, Exploration and Mining in British Columbia, British Columbia Department of Mines and Petroleum Resources

1978

Lithology, Stratigraphy, Structure and Mineral Occurrences, Thompson -Shuswap - Okanagan Map - Area, Geological Survey of Canada Open File 637




# LEGEND

LEGEND

LITHOLOGY

| | | |
|---|---|---|
| 7 | 7 | Undifferentiated intermediate - basic dike |
| | 7a | Lamprophyre |
| | 7b | Diabase |
| 6 | 6a | Quartz vein |
| | 6b | Pegmatite |
| 5 | | Leuco quartz granodiorite porphyry; leuco granodiorite, minor quartz monzonite, breccia |
| 4 | 4 | Hornblende - biotite diorite porphyry |
| | 4a | Hornblende diorite |
| 3 | 3 | Crystalline limestone, dark grey foliated limestone, marble, minor skarn |
| | 3a | Mudstone, argillite |
| 2 | | Foliated acid volcanic rocks, quartz - feldspar porphyry, dacitic tuff |
| 1 | 1a | Quartz-sericite schist, quartz-mica schist, phyllite |
| | 1b | Quartzite - siliceous schist |
| | 1c | Biotite schist; hornblende - biotite schist |
| | 1d | Porphyroblastic garnet (sillimanite) mica schist |
| | 1e | Andesite, lapilli tuff |
| | 1f | Chloritic schist, chloritic phyllite, greenstone |
| | 1g | Gneissic granodiorite, gneiss |

ABBREVIATIONS

Alteration Minerals

| | |
|---|---|
| ep | epidote |
| chl | chlorite |
| kaol | kaolinite |
| sil | silica |
| ser | sericite (muscovite) |
| bio | biotite |

Sulphide Minerals

| | |
|---|---|
| py | pyrite |
| po | pyrrhotite |
| mo | molybdenite |
| cpy | chalcopyrite |
| sph | sphalerite |
| gal | galena |
| ilm | ilmenite |

Miscellaneous

| | |
|---|---|
| mt | magnetite |
| tour | tourmaline |
| staur | staurolite |
| gn | garnet |
| di | diopside |
| trem | tremolite |
| qtz | quartz |
| bx | breccia |
| xn | xenolith |

SYMBOLS

- Geological boundary (approximate, assumed)
- Bedding with superimposed crenulation
- Foliation, schistosity, gneissosity with superimposed crenulation
- Lineation
- Fracturing, jointing, cleavage
- Fault, gauge zone
- Dike, sill or major vein
- Small scale folding with hinge axis direction
- Projected fold axis; antiform, synform
- Outcrop outline
- Trench
- Test pit
- Diamond drill hole
- Adit

Stereoprojection of Poles to Fractures and Veins


COYOTE EAST

CONTOURS 2-4-8-12-16-20% PER 1% AREA

Legal corner post with claim numbers

9567 part 2 of 3

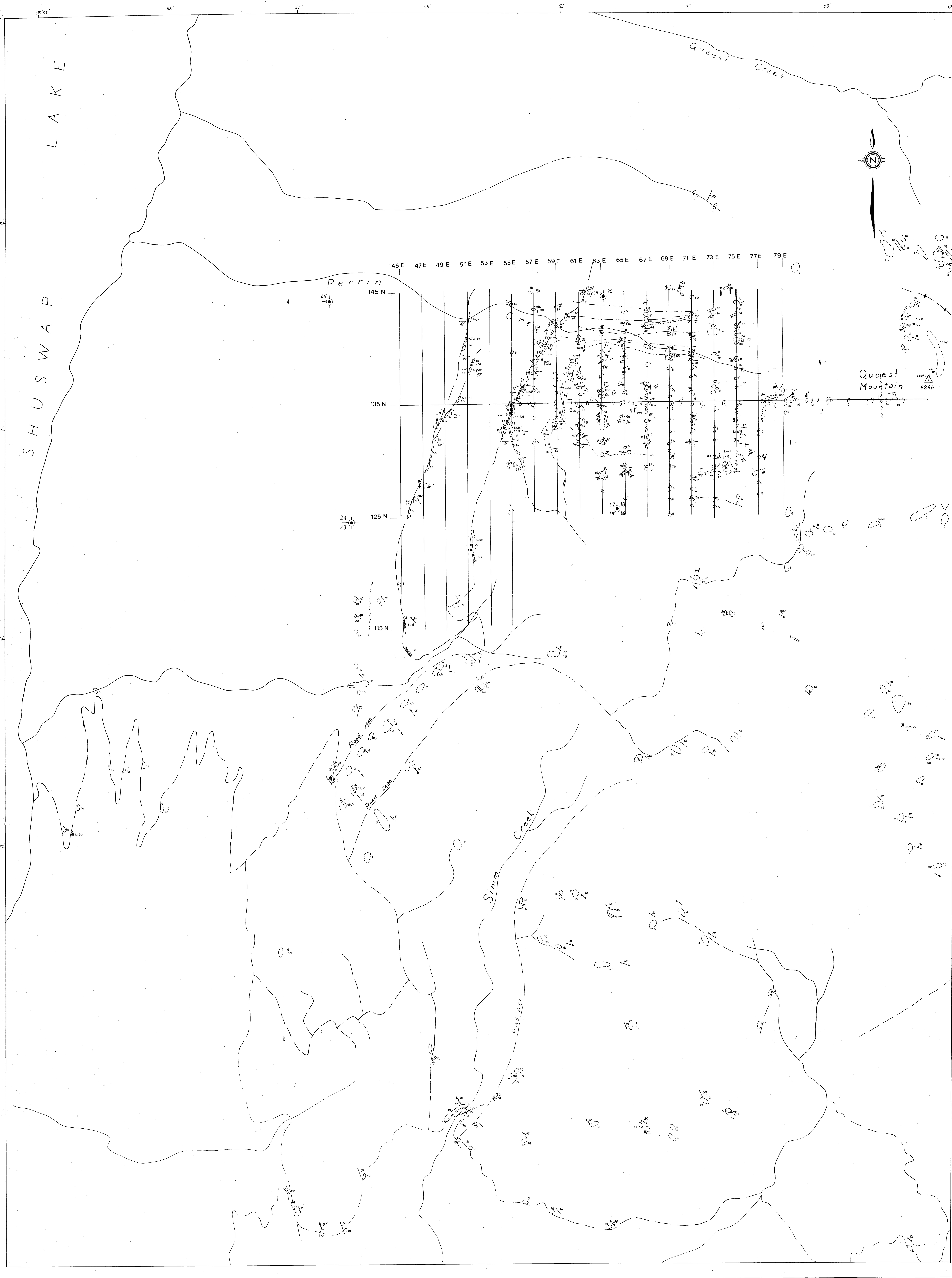
0 200 400 600 800 Metres

**Hudbay Mining Company**
A Division of Hudson's Bay Oil and Gas Company Limited

COYOTE CLAIMS EAST

## GEOLOGY

| MAP | DATE | BY | SCALE | N.T.S. |
|---|---|---|---|---|
| Fig. 3 | Oct 1980 | PRB | 1: 10.000 | 82L15 & M2 |




## LEGEND

### LITHOLOGY

| | | |
|---|---|---|
| 7 | 7 | Undifferentiated intermediate - basic dike |
| | 7a | Lamprophyre |
| | 7b | Diabase |
| 6 | 6a | Quartz vein |
| | 6b | Pegmatite |
| 5 | | Leuco quartz granodiorite porphyry; leuco granodiorite, minor quartz monzonite, breccia |
| 4 | 4 | Hornblende - biotite diorite porphyry |
| | 4a | Hornblende diorite |
| 3 | 3 | Crystalline limestone, dark grey foliated limestone, marble, minor skarn |
| | 3a | Mudstone, argillite |
| 2 | | Foliated acid volcanic rocks, quartz - feldspar porphyry, dacitic tuff |
| 1 | 1a | Quartz-sericite schist, quartz-mica schist, phyllite |
| | 1b | Quartzite - siliceous schist |
| | 1c | Biotite schist; hornblende - biotite schist |
| | 1d | Porphyroblastic garnet (sillimanite) mica schist |
| | 1e | Andesite, lapilli tuff |
| | 1f | Chloritic schist, chloritic phyllite, greenstone |
| | 1g | Gneissic granodiorite, gneiss |

### ABBREVIATIONS

**Alteration Minerals**

| | |
|---|---|
| ep | epidote |
| chl | chlorite |
| kaol | kaolinite |
| sil | silica |
| ser | sericite (muscovite) |
| bio | biotite |

**Sulphide Minerals**

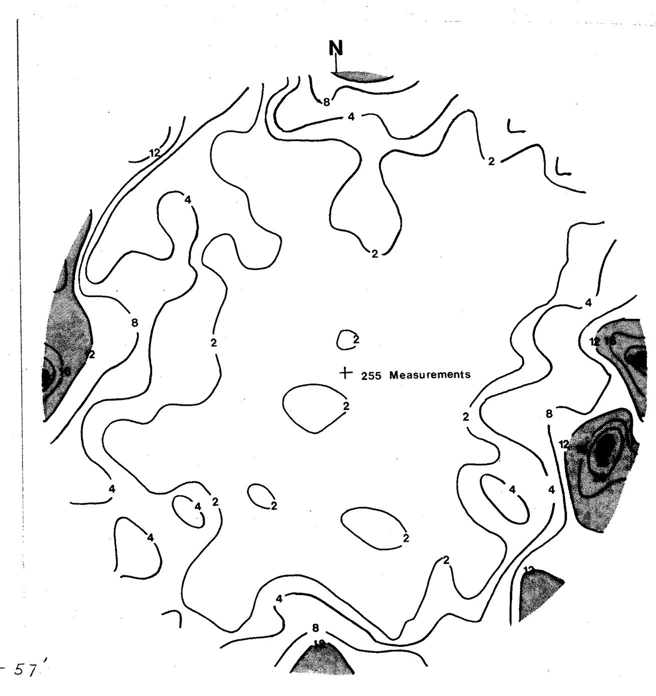
| | |
|---|---|
| py | pyrite |
| po | pyrrhotite |
| mo | molybdenite |
| cpy | chalcopyrite |
| sph | sphalerite |
| gal | galena |
| ilm | ilmenite |

**Miscellaneous**

| | |
|---|---|
| mt | magnetite |
| tour | tourmaline |
| staur | staurolite |
| gn | garnet |
| di | diopside |
| trem | tremolite |
| qtz | quartz |
| bx | breccia |
| xn | xenolith |

### SYMBOLS

Geological boundary (approximate, assumed)
Bedding with superimposed crenulation
Foliation, schistosity, gneissosity with superimposed crenulation
Lineation
Fracturing, jointing, cleavage
Fault, gauge zone
Dike, sill or major vein
Small scale folding with hinge axis direction
Projected fold axis; antiform, synform
Outcrop outline
Trench
Test pit
Diamond drill hole
Adit




Stereoprojection of Poles to Fractures and Veins

COYOTE WEST

CONTOURS 2-4-8-12-16-20-24% PER 1% AREA

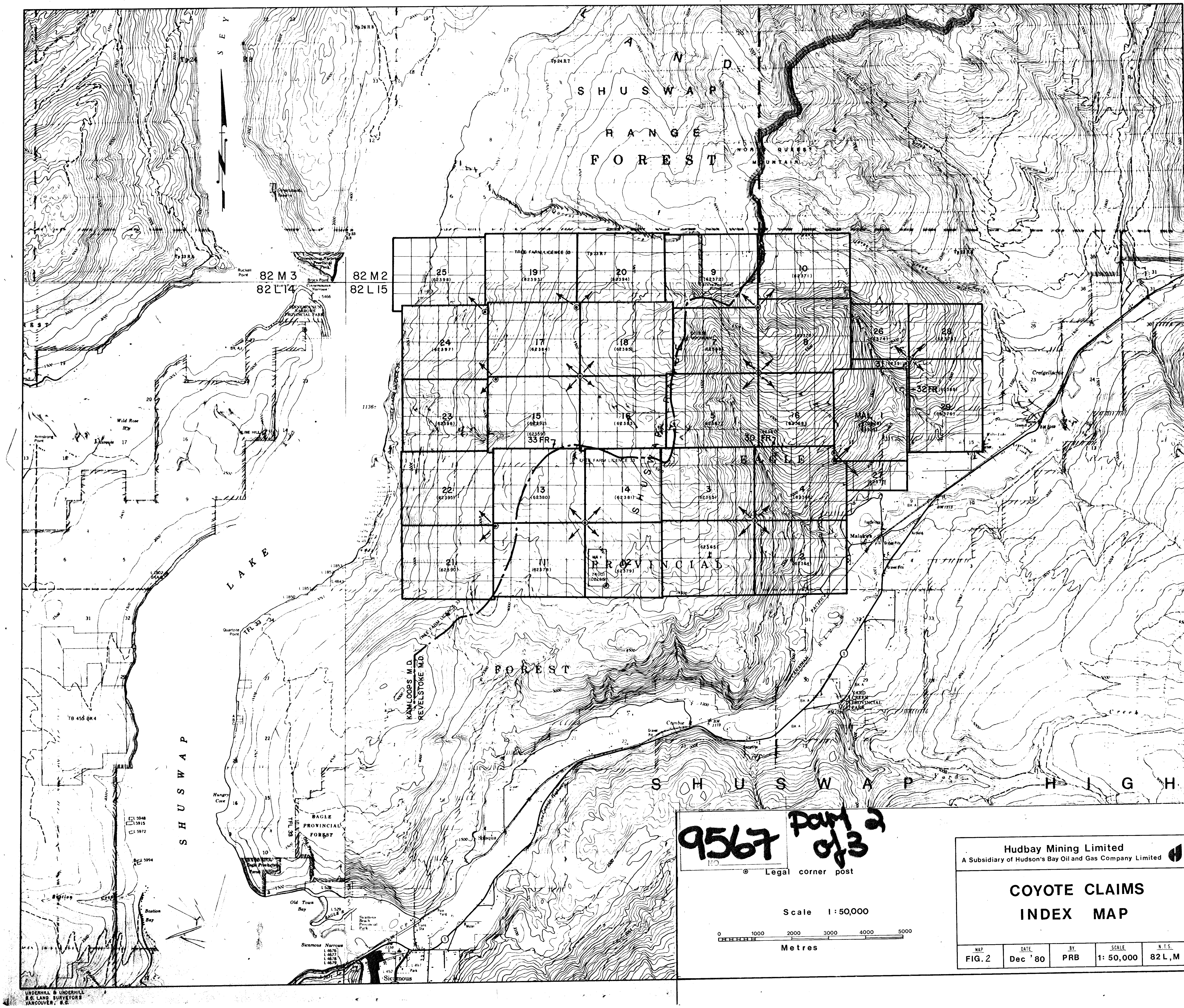
Legal corner post with claim numbers

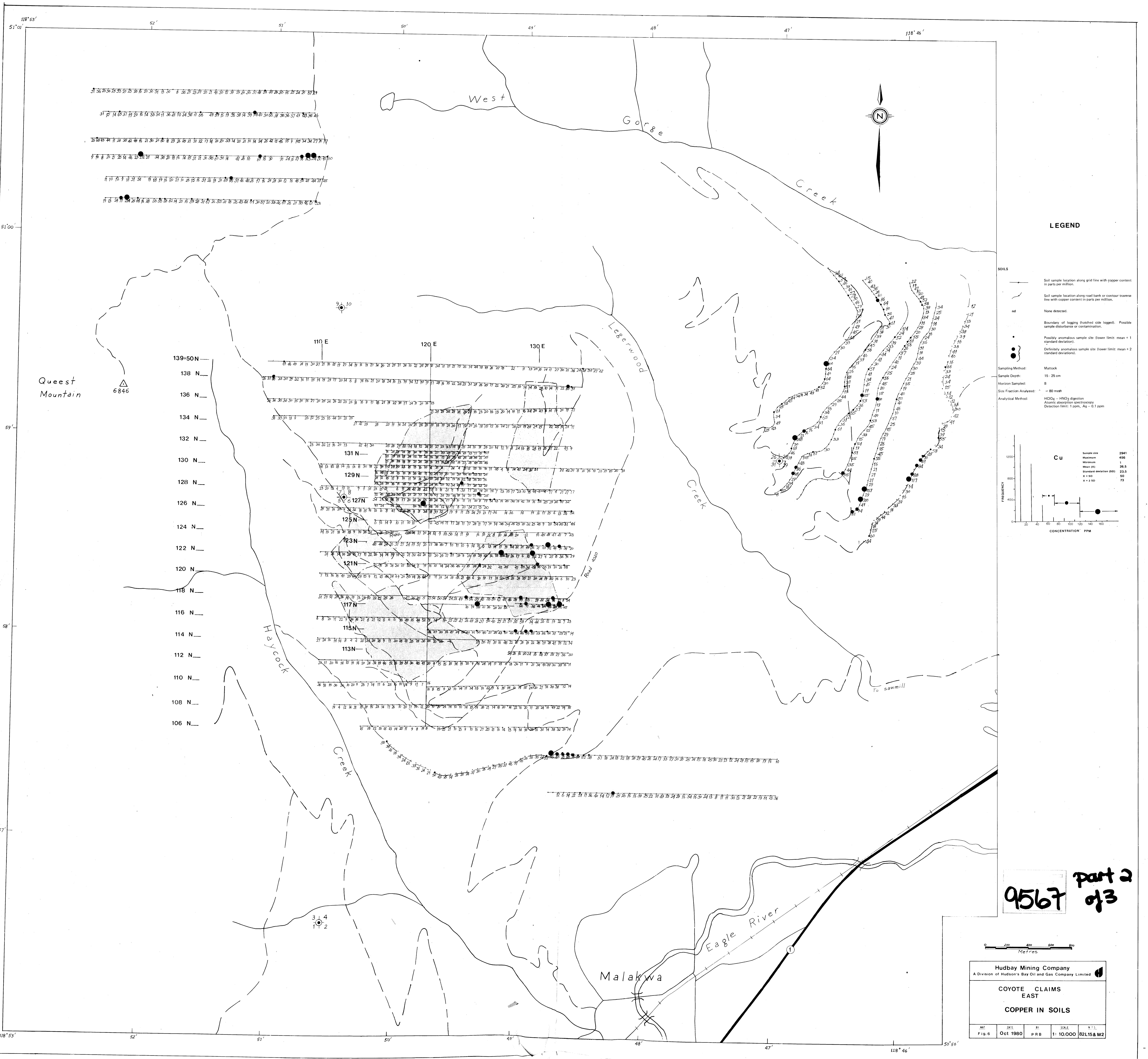
0 200 400 600 800
Metres

Hudbay Mining Limited
A Subsidiary of Hudson's Bay Oil and Gas Company Limited

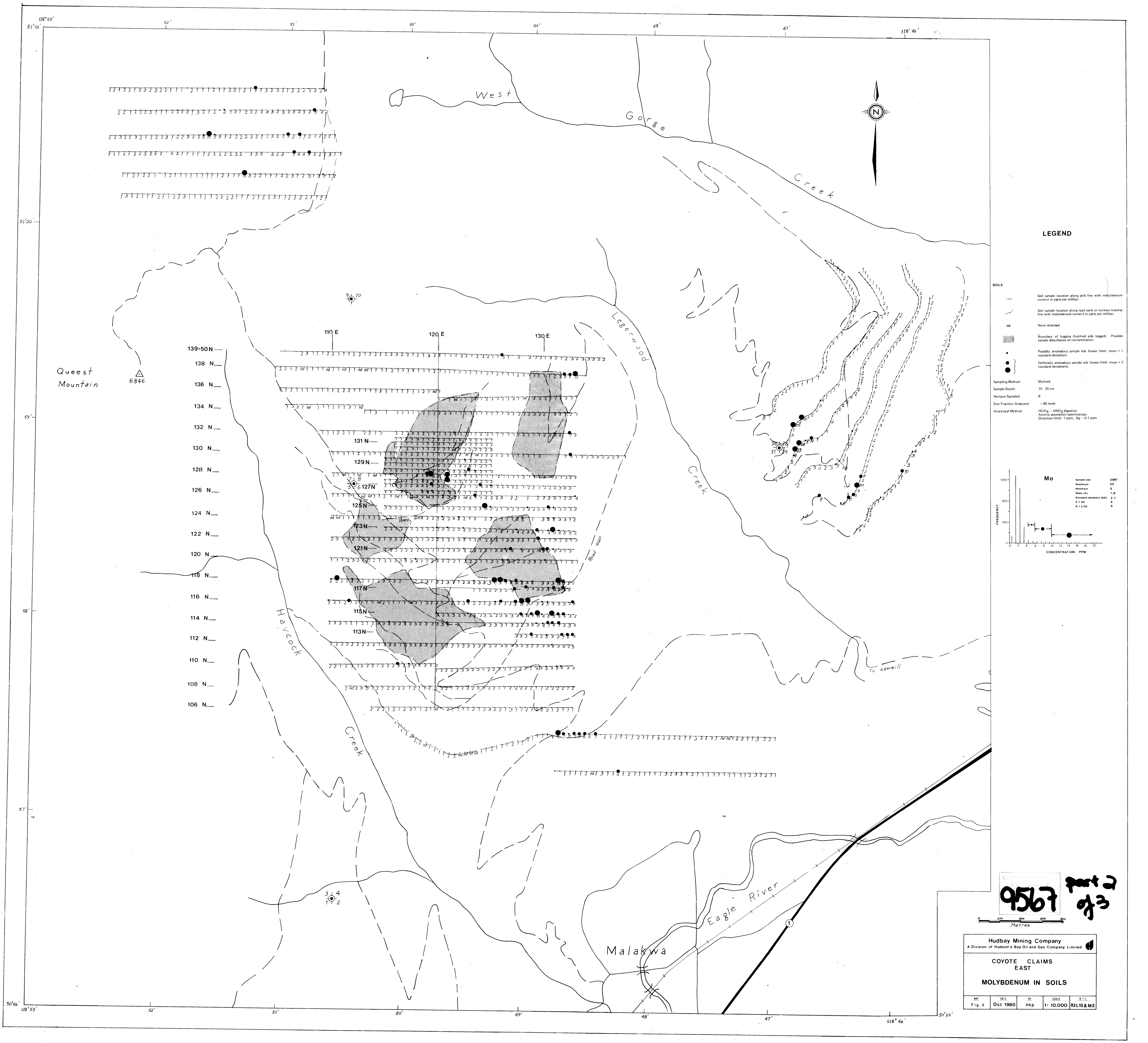
# COYOTE CLAIMS WEST
# GEOLOGY

| MAP | DATE | BY | SCALE | N.T.S. |
|---|---|---|---|---|
| FIG. 4 | FEB 1981 | PRB | 1:10,000 | 82L 15, M2 |


SHUSWAP RANGE FOREST
82 M 3
82 L 14
82 M 2
82 L 15
SHUSWAP LAKE
EAGLE PROVINCIAL FOREST
KAMLOOPS M.D.
REVELSTOKE M.D.
SHUSWAP HIGH
Sicamous
Malakwa
Craigellachie
TREE FARM LICENCE 33
9567
Part 2 of 3
Legal corner post
Scale 1:50,000
0 1000 2000 3000 4000 5000
Metres
Hudbay Mining Limited
A Subsidiary of Hudson's Bay Oil and Gas Company Limited
COYOTE CLAIMS
INDEX MAP
MAP FIG. 2
DATE Dec '80
BY PRB
SCALE 1: 50,000
N.T.S. 82 L, M
UNDERHILL & UNDERHILL
B.C. LAND SURVEYORS
VANCOUVER, B.C.



118°53′
51°01′
52′
51′
50′
49′
48′
47′
118°46′
51°00′
59′
58′
57′
50°56′
West
Gorge
Creek
Legerwood
Creek
Haycock
Creek
Road
To sawmill
Queest
Mountain
6846
Eagle River
Malakwa
110 E
120 E
130 E
139+50N
138 N
136 N
134 N
132 N
131 N
130 N
129 N
128 N
127N
126 N
125 N
124 N
123 N
122 N
121 N
120 N
118 N
117 N
116 N
115 N
114 N
113 N
112 N
110 N
108 N
106 N
N
LEGEND
SOILS
Soil sample location along grid line with copper content in parts per million.
Soil sample location along road bank or contour traverse line with copper content in parts per million.
nd
None detected.
Boundary of logging (hatched side logged). Possible sample disturbance or contamination.
Possibly anomalous sample site (lower limit: mean + 1 standard deviation).
Definitely anomalous sample site (lower limit: mean + 2 standard deviations).
Sampling Method: Mattock
Sample Depth: 15 - 25 cm
Horizon Sampled: B
Size Fraction Analyzed: − 80 mesh
Analytical Method: HClO4 − HNO3 digestion
Atomic absorption spectroscopy
Detection limit: 1 ppm, Ag − 0.1 ppm
Cu
Sample size 2941
Maximum 456
Minimum 1
Mean (X) 26.5
Standard deviation (SD) 23.5
X + SD 50
X + 2 SD 73
FREQUENCY
CONCENTRATION PPM
9567 part 2 of 3
0 200 400 600 800
Metres
Hudbay Mining Company
A Division of Hudson's Bay Oil and Gas Company Limited
COYOTE CLAIMS
EAST
COPPER IN SOILS
MAP Fig. 6
DATE Oct 1980
BY PRB
SCALE 1: 10.000
NTS 82L15 & M2

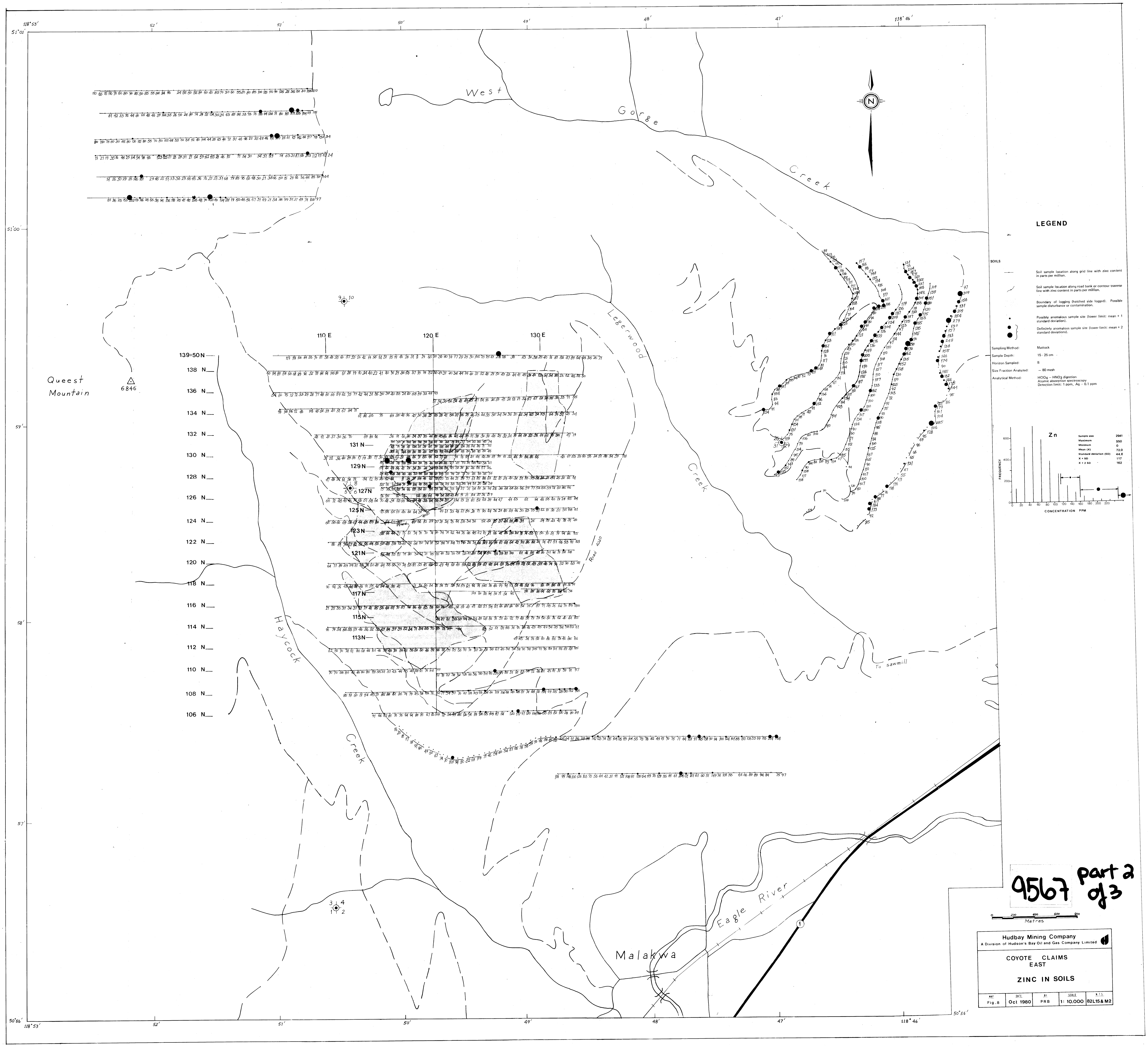



Hudbay Mining Company
A Division of Hudson's Bay Oil and Gas Company Limited

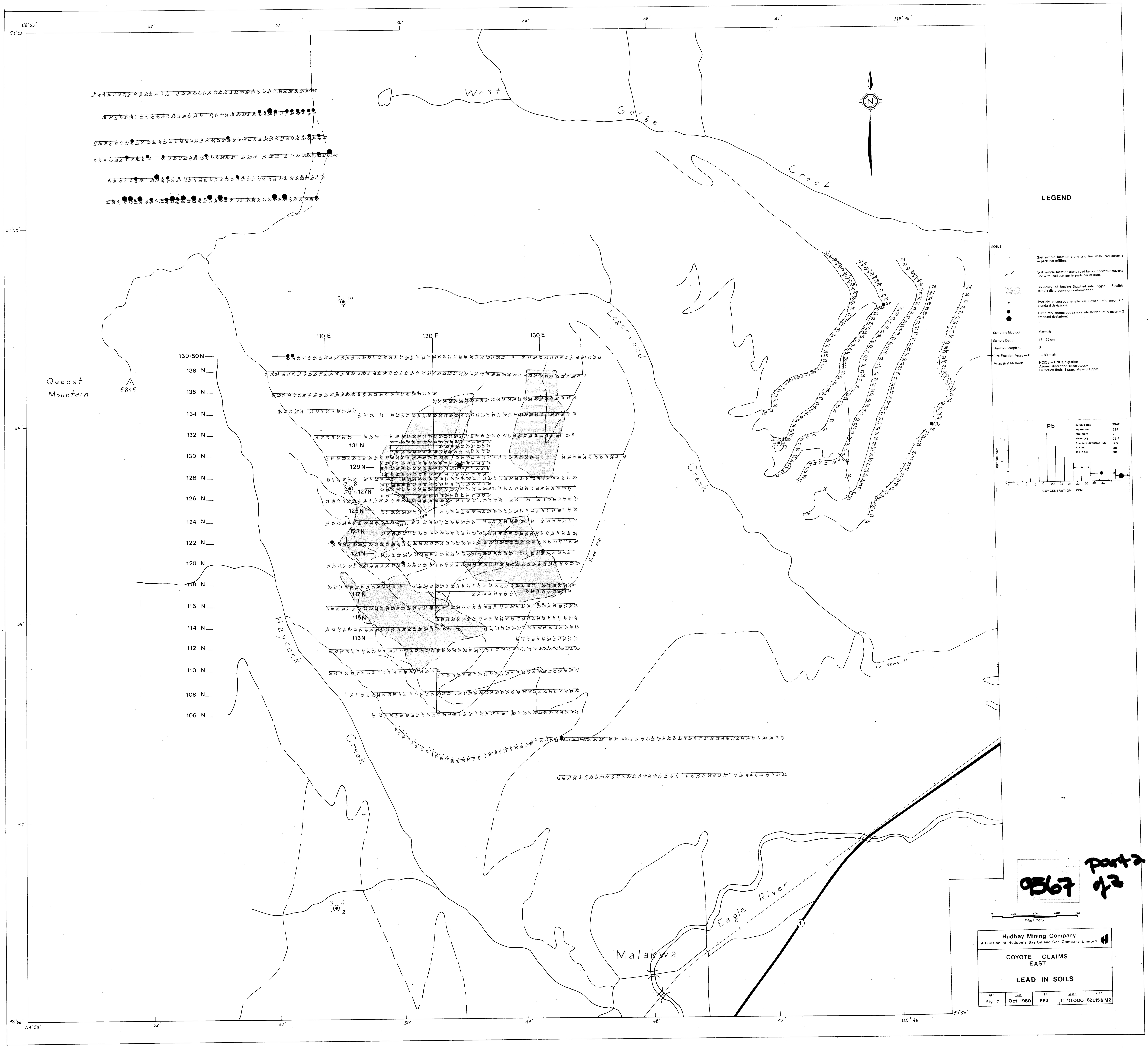
COYOTE CLAIMS
EAST

MOLYBDENUM IN SOILS

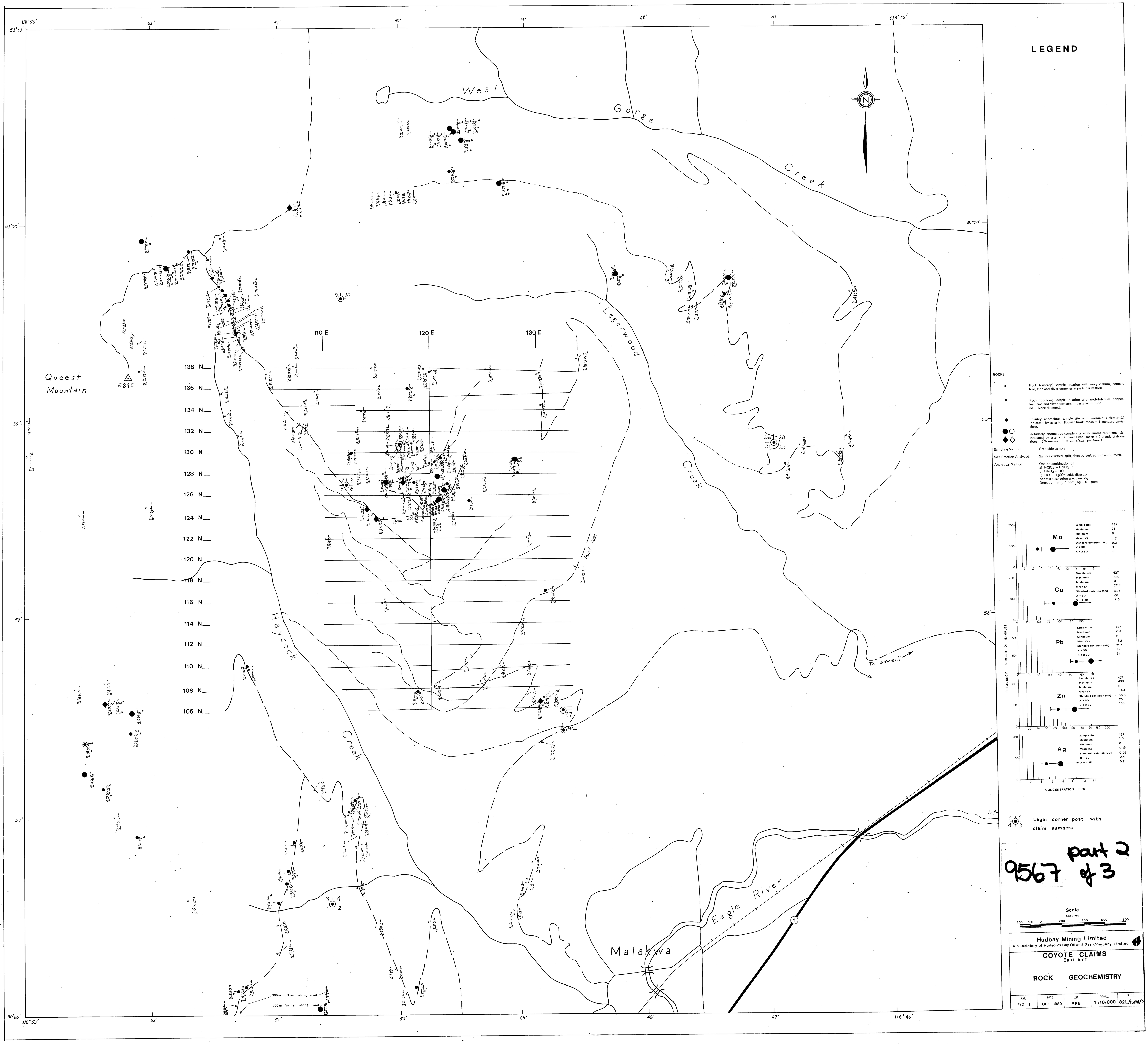
| MAP | DATE | BY | SCALE | NTS |
|---|---|---|---|---|
| Fig. 5 | Oct 1980 | PRB | 1: 10.000 | 82L15 & M2 |

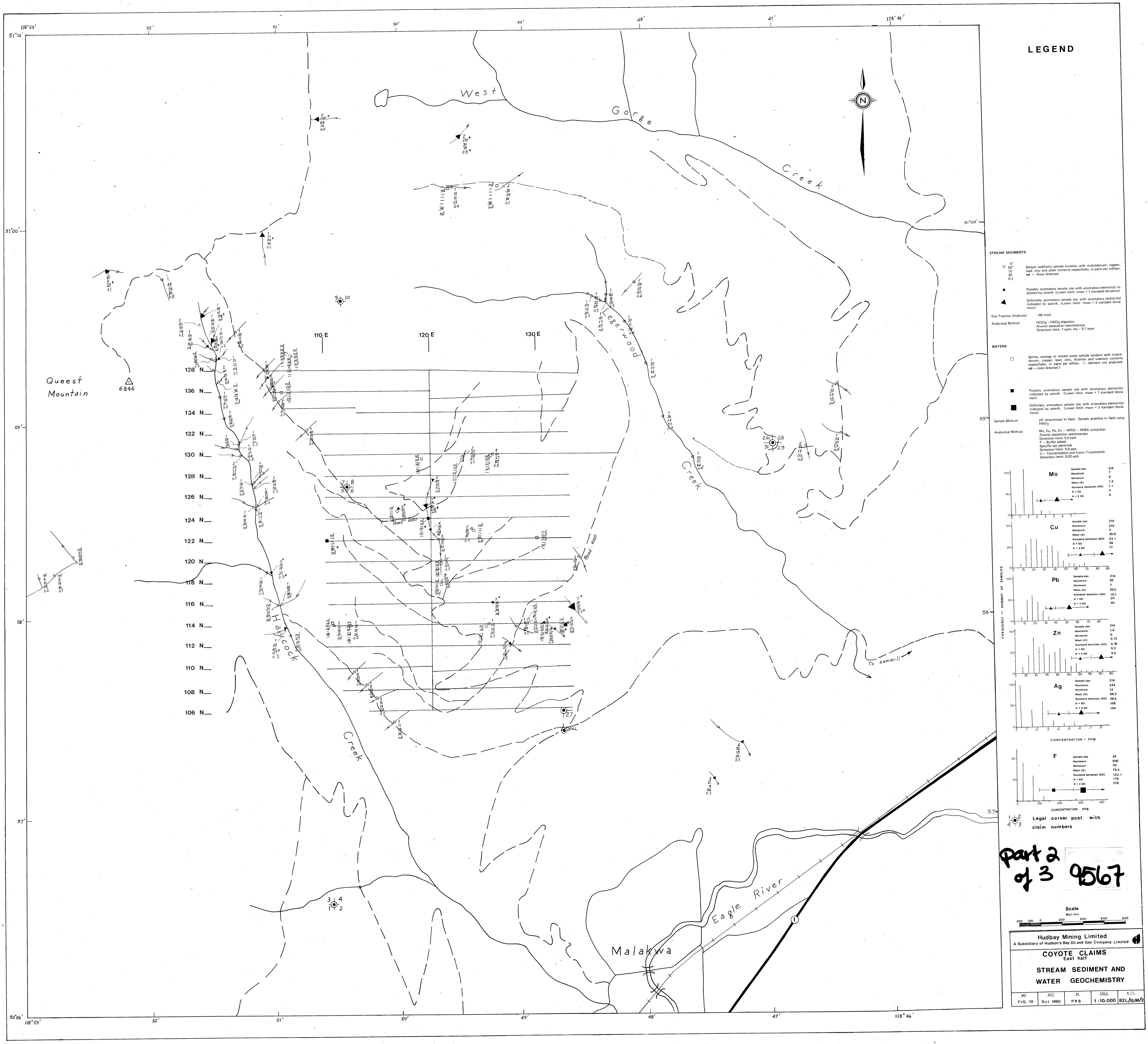


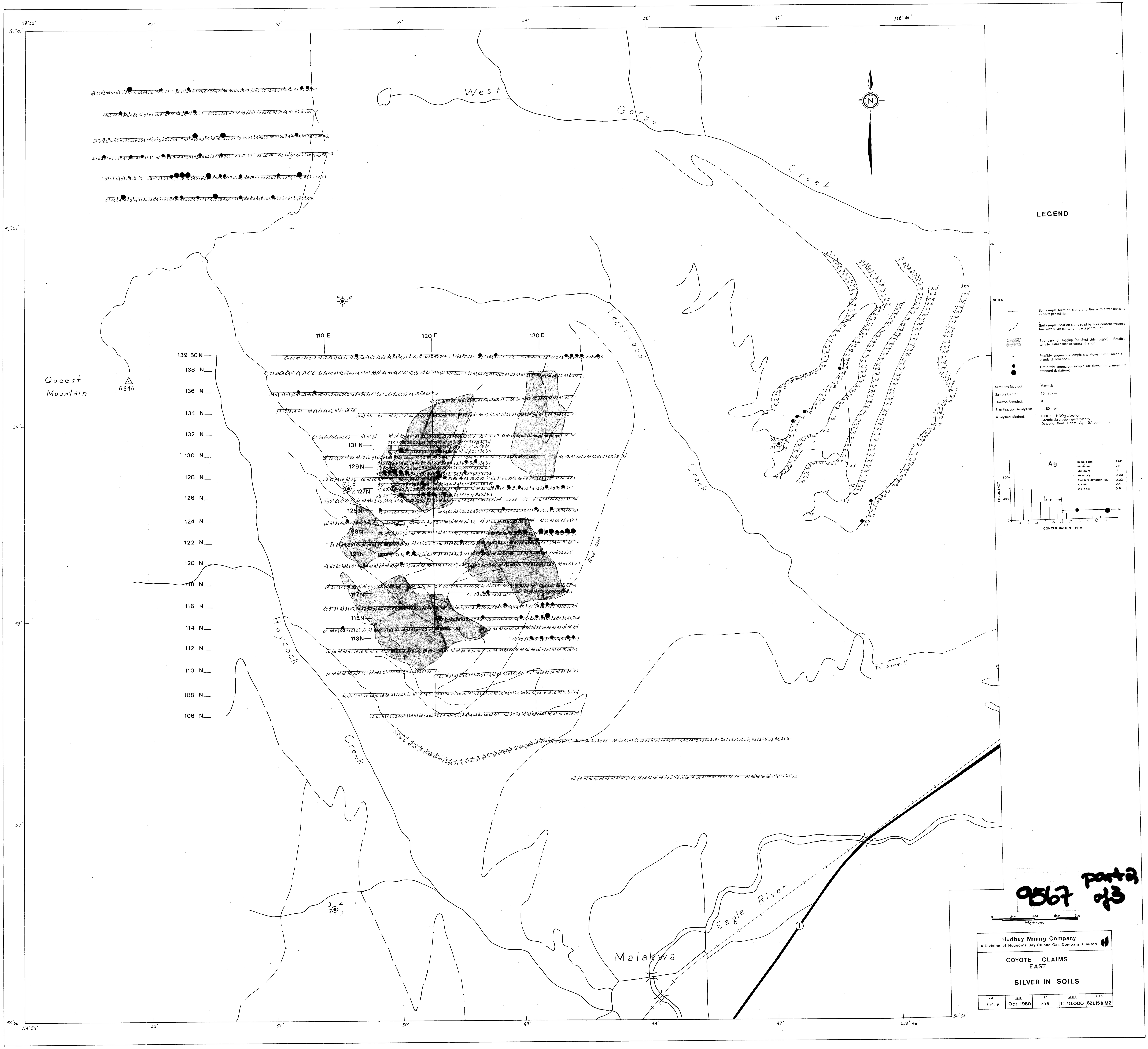
West Gorge Creek
Leberwood Creek
Haycock Creek
Eagle River
Queest Mountain
6846
Malakwa
To sawmill
110 E
120 E
130 E
139+50 N
138 N
136 N
134 N
132 N
130 N
128 N
126 N
124 N
122 N
120 N
118 N
116 N
114 N
112 N
110 N
108 N
106 N
131 N
129 N
127 N
125 N
123 N
121 N
117 N
115 N
113 N
LEGEND
SOILS
Soil sample location along grid line with zinc content in parts per million.
Soil sample location along road bank or contour traverse line with zinc content in parts per million.
Boundary of logging (hatched side logged). Possible sample disturbance or contamination.
Possibly anomalous sample site (lower limit: mean + 1 standard deviation).
Definitely anomalous sample site (lower limit: mean + 2 standard deviations).
Sampling Method: Mattock
Sample Depth: 15 - 25 cm
Horizon Sampled: B
Size Fraction Analyzed: — 80 mesh
Analytical Method: HClO4 — HNO3 digestion
Atomic absorption spectroscopy
Detection limit: 1 ppm, Ag — 0.1 ppm
Zn
Sample size 2941
Maximum 550
Minimum 0
Mean (X) 72.0
Standard deviation (SD) 44.8
X + SD 117
X + 2 SD 162
FREQUENCY
CONCENTRATION PPM
9567 part 2 of 3
0 200 400 600 800
Metres
Hudbay Mining Company
A Division of Hudson's Bay Oil and Gas Company Limited
COYOTE CLAIMS EAST
ZINC IN SOILS
MAP Fig. 8
DATE Oct 1980
BY PRB
SCALE 1: 10.000
N T S 82L15 & M2



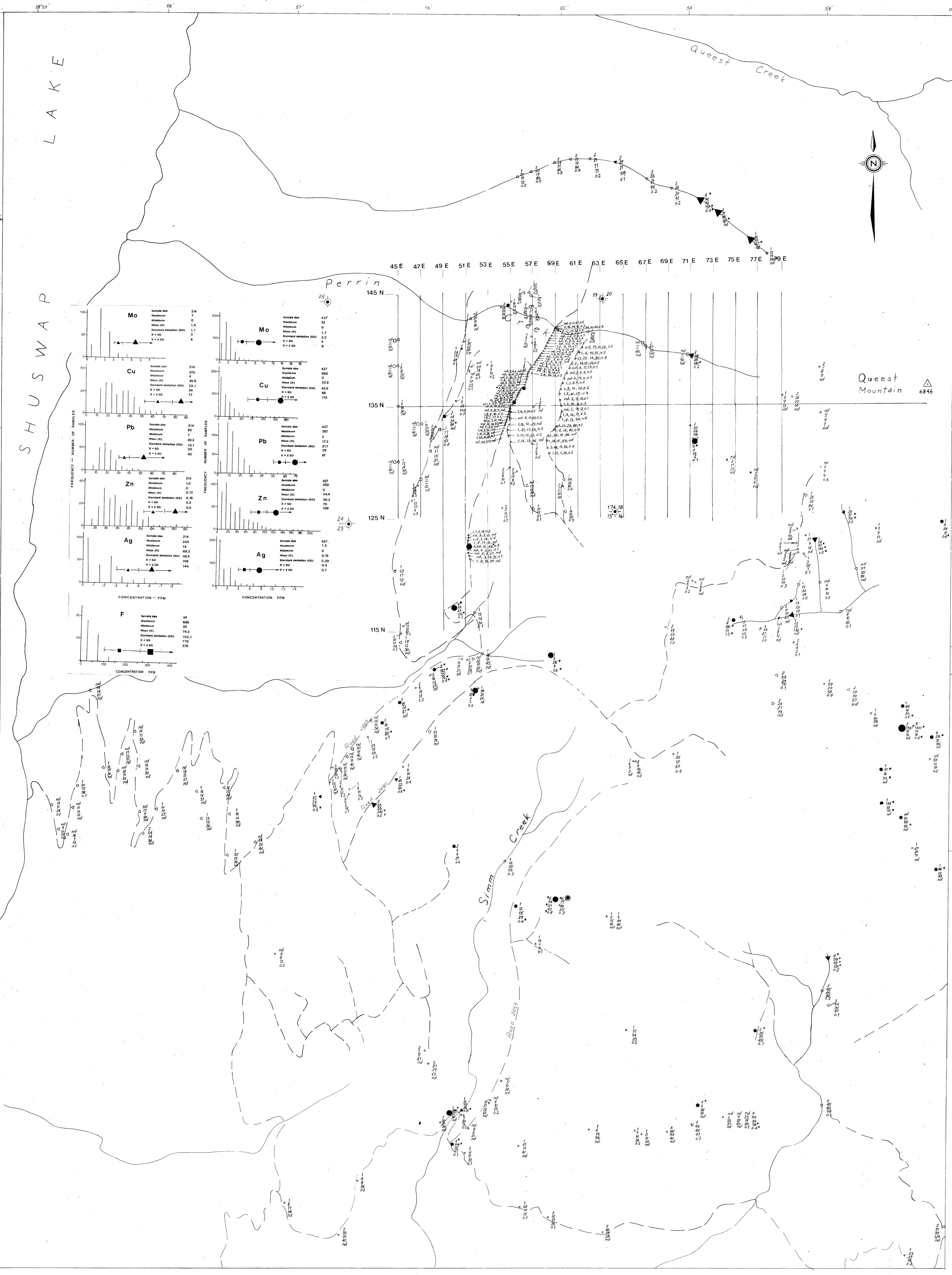
118°53'
52'
51'
50'
49'
48'
47'
118°46'
51°01'
51°00'
59'
58'
57'
50°56'
West
Gorge
Creek
Leggerwood
Creek
Queest
Mountain
6846
Haycock
Creek
Eagle River
Malakwa
To sawmill
Road 4020
110 E
120 E
130 E
139+50N
138 N
136 N
134 N
132 N
131 N
130 N
129 N
128 N
127 N
126 N
125 N
124 N
123 N
122 N
121 N
120 N
118 N
117 N
116 N
115 N
114 N
113 N
112 N
110 N
108 N
106 N
N
LEGEND
SOILS
Soil sample location along grid line with lead content in parts per million.
Soil sample location along road bank or contour traverse line with lead content in parts per million.
Boundary of logging (hatched side logged). Possible sample disturbance or contamination.
Possibly anomalous sample site (lower limit: mean + 1 standard deviation).
Definitely anomalous sample site (lower limit: mean + 2 standard deviations).
Sampling Method: Mattock
Sample Depth: 15 - 25 cm
Horizon Sampled: B
Size Fraction Analyzed: -80 mesh
Analytical Method: HClO4 – HNO3 digestion
Atomic absorption spectroscopy
Detection limit: 1 ppm, Ag – 0.1 ppm
Pb
Sample size 2941
Maximum 224
Minimum 2
Mean (X) 22.4
Standard deviation (SD) 8.3
X + SD 30
X + 2 SD 38
FREQUENCY
CONCENTRATION PPM
9567
part 2 of 2
0 200 400 600 800
Metres
Hudbay Mining Company
A Division of Hudson's Bay Oil and Gas Company Limited
COYOTE CLAIMS
EAST
LEAD IN SOILS
MAP Fig 7
DATE Oct 1980
BY PRB
SCALE 1: 10.000
N T S 82L15 & M2


LEGEND
ROCKS
Rock (outcrop) sample location with molybdenum, copper, lead, zinc and silver contents in parts per million.
Rock (boulder) sample location with molybdenum, copper, lead zinc and silver contents in parts per million.
nd – None detected.
Possibly anomalous sample site with anomalous element(s) indicated by asterik. (Lower limit: mean + 1 standard deviation).
Definitely anomalous sample site with anomalous element(s) indicated by asterik. (Lower limit: mean + 2 standard deviations). (Diamond – anomalous boulder)
Sampling Method: Grab chip sample
Size Fraction Analyzed: Sample crushed, split, then pulverized to pass 80 mesh.
Analytical Method: One or combination of
a) HClO4 – HNO3
b) HNO3 – HCl
c) HCl – H2SO4 acids digestion
Atomic absorption spectroscopy
Detection limit: 1 ppm, Ag – 0.1 ppm
Mo
Sample size 427
Maximum 23
Minimum 0
Mean (X) 1.7
Standard deviation (SD) 2.2
X + SD 4
X + 2 SD 6
Cu
Sample size 427
Maximum 680
Minimum 0
Mean (X) 22.8
Standard deviation (SD) 43.5
X + SD 66
X + 2 SD 110
Pb
Sample size 427
Maximum 287
Minimum 2
Mean (X) 17.2
Standard deviation (SD) 21.7
X + SD 39
X + 2 SD 61
Zn
Sample size 427
Maximum 430
Minimum 0
Mean (X) 34.4
Standard deviation (SD) 36.3
X + SD 70
X + 2 SD 106
Ag
Sample size 427
Maximum 1.3
Minimum 0
Mean (X) 0.15
Standard deviation (SD) 0.29
X + SD 0.4
X + 2 SD 0.7
FREQUENCY NUMBER OF SAMPLES
CONCENTRATION PPM
Legal corner post with claim numbers
West Gorge Creek
Legerwood Creek
Haycock Creek
Eagle River
Malakwa
Queest Mountain
6846
To sawmill
Road
110 E
120 E
130 E
138 N
136 N
134 N
132 N
130 N
128 N
126 N
124 N
122 N
120 N
118 N
116 N
114 N
112 N
110 N
108 N
106 N
300m further along road
900m further along road
118°53'
118°46'
51°01'
51°00'
50°56'
9567
part 2 of 3
Scale
Metres
200 100 0 200 400 600 800
Hudbay Mining Limited
A Subsidiary of Hudson's Bay Oil and Gas Company Limited
COYOTE CLAIMS
East half
ROCK GEOCHEMISTRY
MAP FIG. 11
DATE OCT. 1980
BY PRB
SCALE 1:10,000
N.T.S. 82L/15;M/2


LEGEND
STREAM SEDIMENTS
Stream sediment sample location with molybdenum, copper, lead, zinc and silver contents respectively, in parts per million. nd – None detected.
Possibly anomalous sample site with anomalous element(s) indicated by asterik. (Lower limit: mean + 1 standard deviation).
Definitely anomalous sample site with anomalous element(s) indicated by asterik. (Lower limit: mean + 2 standard deviations).
Size Fraction Analyzed: –80 mesh
Analytical Method: HClO4 –HNO3 digestion
Atomic absorption spectroscopy
Detection limit: 1 ppm, Ag – 0.1 ppm
WATERS
Spring, seepage or stream water sample location with molybdenum, copper, lead, zinc, fluorine and uranium contents respectively, in parts per billion. (– element not analyzed; nd – none detected.)
Possibly anomalous sample site with anomalous element(s) indicated by asterik. (Lower limit: mean + 1 standard deviation).
Definitely anomalous sample site with anomalous element(s) indicated by asterik. (Lower limit: mean + 2 standard deviations).
Sample Method: pH determined in field. Sample acidified in field using HNO3
Analytical Method: Mo, Cu, Pb, Zn – APDC – MIBK extraction
Atomic absorption spectroscopy
Detection limit: 5.0 ppb
F – Buffer added
Specific ion electrode
Detection limit: 5.0 ppb
U – Concentration and fusion Fluorimetric
Detection limit: 0.02 ppb
Mo
Sample size 214
Maximum 7
Minimum 0
Mean (X) 1.4
Standard deviation (SD) 1.1
X + SD 3
X + 2 SD 4
Cu
Sample size 214
Maximum 270
Minimum 4
Mean (X) 30.8
Standard deviation (SD) 23.1
X + SD 54
X + 2 SD 77
Pb
Sample size 214
Maximum 82
Minimum 7
Mean (X) 20.3
Standard deviation (SD) 10.1
X + SD 30
X + 2 SD 40
Zn
Sample size 214
Maximum 1.0
Minimum 0
Mean (X) 0.13
Standard deviation (SD) 0.16
X + SD 0.3
X + 2 SD 0.5
Ag
Sample size 214
Maximum 244
Minimum 14
Mean (X) 68.2
Standard deviation (SD) 38.5
X + SD 106
X + 2 SD 144
FREQUENCY — NUMBER OF SAMPLES
CONCENTRATION — PPM
F
Sample size 34
Maximum 600
Minimum 30
Mean (X) 74.3
Standard deviation (SD) 102.1
X + SD 176
X + 2 SD 278
CONCENTRATION PPB
Legal corner post with claim numbers
Part 2 of 3 9567
Scale
Metres
Hudbay Mining Limited
A Subsidiary of Hudson's Bay Oil and Gas Company Limited
COYOTE CLAIMS
East half
STREAM SEDIMENT AND WATER GEOCHEMISTRY
MAP FIG. 10
DATE Oct 1980
BY PRB
SCALE 1:10,000
N.T.S. 82L/15;M/2
West Gorge Creek
Queest Mountain
6846
Ledgerwood Creek
Haycock Creek
Eagle River
Malakwa
To sawmill
Road
110 E
120 E
130 E
138 N
136 N
134 N
132 N
130 N
128 N
126 N
124 N
122 N
120 N
118 N
116 N
114 N
112 N
110 N
108 N
106 N
118°53'
118°46'
51°01'
51°00'
50°56'



West Gorge Creek
Leger wood Creek
Haycock Creek
Eagle River
Malakwa
Queest Mountain
6846
To sawmill
Road 4020
110 E
120 E
130 E
139+50N
138 N
136 N
134 N
132 N
130 N
128 N
126 N
124 N
122 N
120 N
118 N
116 N
114 N
112 N
110 N
108 N
106 N
LEGEND
SOILS
Soil sample location along grid line with silver content in parts per million.
Soil sample location along road bank or contour traverse line with silver content in parts per million.
Boundary of logging (hatched side logged). Possible sample disturbance or contamination.
Possibly anomalous sample site (lower limit: mean + 1 standard deviation).
Definitely anomalous sample site (lower limit: mean + 2 standard deviations).
Sampling Method: Mattock
Sample Depth: 15 - 25 cm
Horizon Sampled: B
Size Fraction Analyzed: — 80 mesh
Analytical Method: HClO4 — HNO3 digestion
Atomic absorption spectroscopy
Detection limit: 1 ppm, Ag — 0.1 ppm
Ag
Sample size 2941
Maximum 2.0
Minimum 0
Mean (X) 0.20
Standard deviation (SD) 0.22
X + SD 0.4
X + 2 SD 0.6
FREQUENCY
CONCENTRATION PPM
9567 part 2 of 3
0 200 400 600 800
Metres
Hudbay Mining Company
A Division of Hudson's Bay Oil and Gas Company Limited
COYOTE CLAIMS
EAST
SILVER IN SOILS
MAP Fig. 9
DATE Oct 1980
BY PRB
SCALE 1: 10.000
N T S 82L15 & M2




# LEGEND

**STREAM SEDIMENTS**

| | |
|---|---|
| ▽ 5* 50* 15 30 0.2 | Stream sediment sample location with molybdenum, copper, lead, zinc and silver contents respectively, in parts per million. **nd** — None detected. |
| ◀ (small) | Possibly anomalous sample site with anomalous element(s) indicated by asterik. (Lower limit: mean + 1 standard deviation). |
| ◀ (large) | Definitely anomalous sample site with anomalous element(s) indicated by asterik. (Lower limit: mean + 2 standard deviations). |

Size Fraction Analyzed: −80 mesh

Analytical Method: $HClO_4 - HNO_3$ digestion
Atomic absorption spectroscopy
Detection limit: 1 ppm, Ag – 0.1 ppm

**WATERS**

| | |
|---|---|
| □ | Spring, seepage or stream water sample location with molybdenum, copper, lead, zinc, fluorine and uranium contents respectively, in parts per billion. (— element not analyzed; **nd** — none detected.) |
| ■ (small) | Possibly anomalous sample site with anomalous element(s) indicated by asterik. (Lower limit: mean + 1 standard deviation). |
| ■ (large) | Definitely anomalous sample site with anomalous element(s) indicated by asterik. (Lower limit: mean + 2 standard deviations). |

Sample Method: pH determined in field. Sample acidified in field using $HNO_3$

Analytical Method: Mo, Cu, Pb, Zn – APDC – MIBK extraction
Atomic absorption spectroscopy
Detection limit: 5.0 ppb
F – Buffer added
Specific ion electrode
Detection limit: 5.0 ppb
U – Concentration and fusion Fluorimetric
Detection limit: 0.02 ppb

**ROCKS**

| | |
|---|---|
| o | Rock (outcrop) sample location with molybdenum, copper, lead, zinc and silver contents in parts per million. |
| X | Rock (boulder) sample location with molybdenum, copper, lead zinc and silver contents in parts per million. **nd** – None detected. |
| ● (small) | Possibly anomalous sample site with anomalous element(s) indicated by asterik. (Lower limit: mean + 1 standard deviation). |
| ● (large) | Definitely anomalous sample site with anomalous element(s) indicated by asterik. (Lower limit: mean + 2 standard deviations). |

Sampling Method: Grab chip sample

Size Fraction Analyzed: Sample crushed, split, then pulverized to pass 80 mesh.

Analytical Method: One or combination of
a) $HClO_4 - HNO_3$
b) $HNO_3 - HCl$
c) $HCl - H_2SO_4$ acids digestion
Atomic absorption spectroscopy
Detection limit: 1 ppm, Ag – 0.1 ppm

Legal corner post with claim numbers

Metres

part 3 of 3

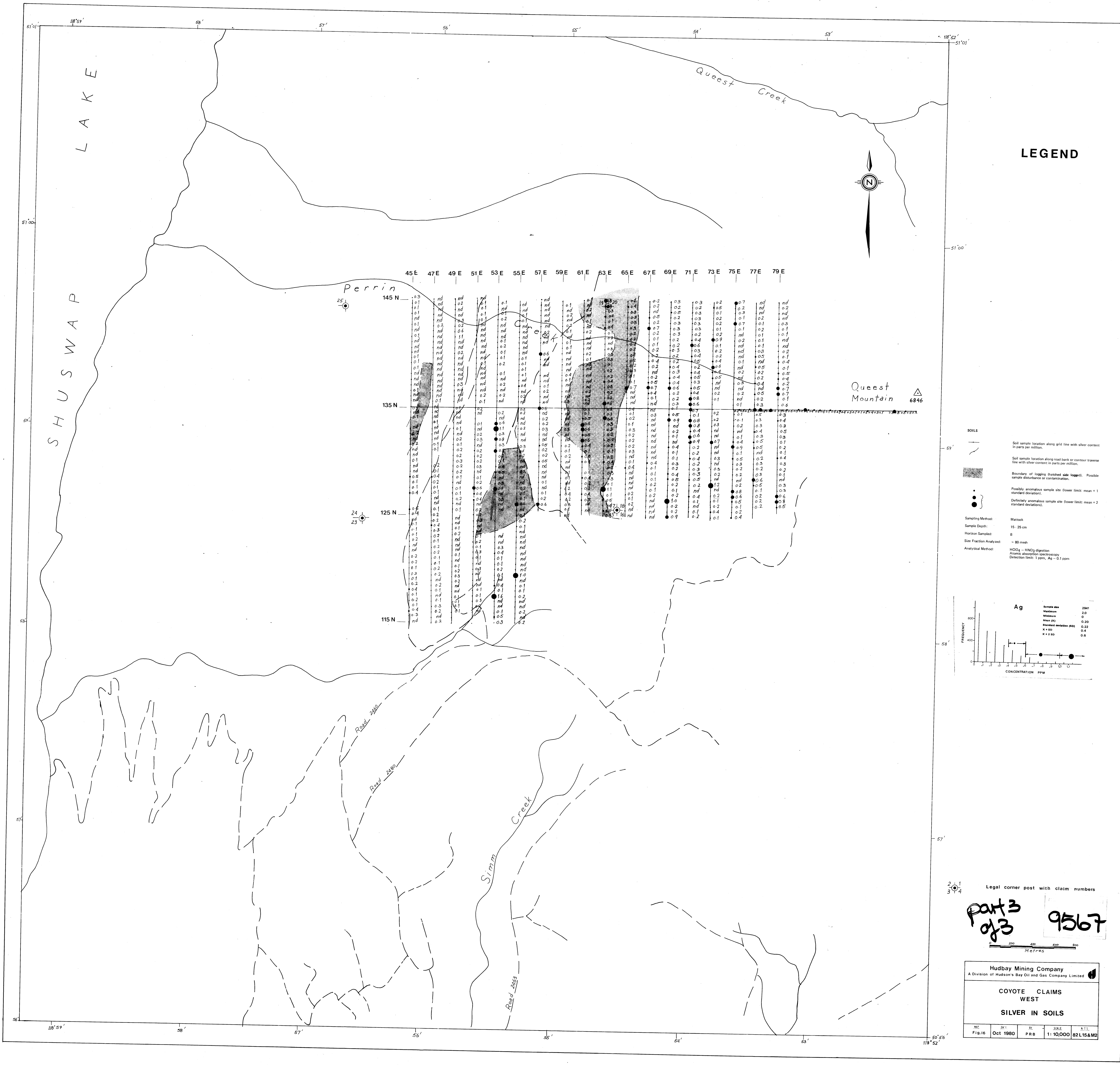
9567

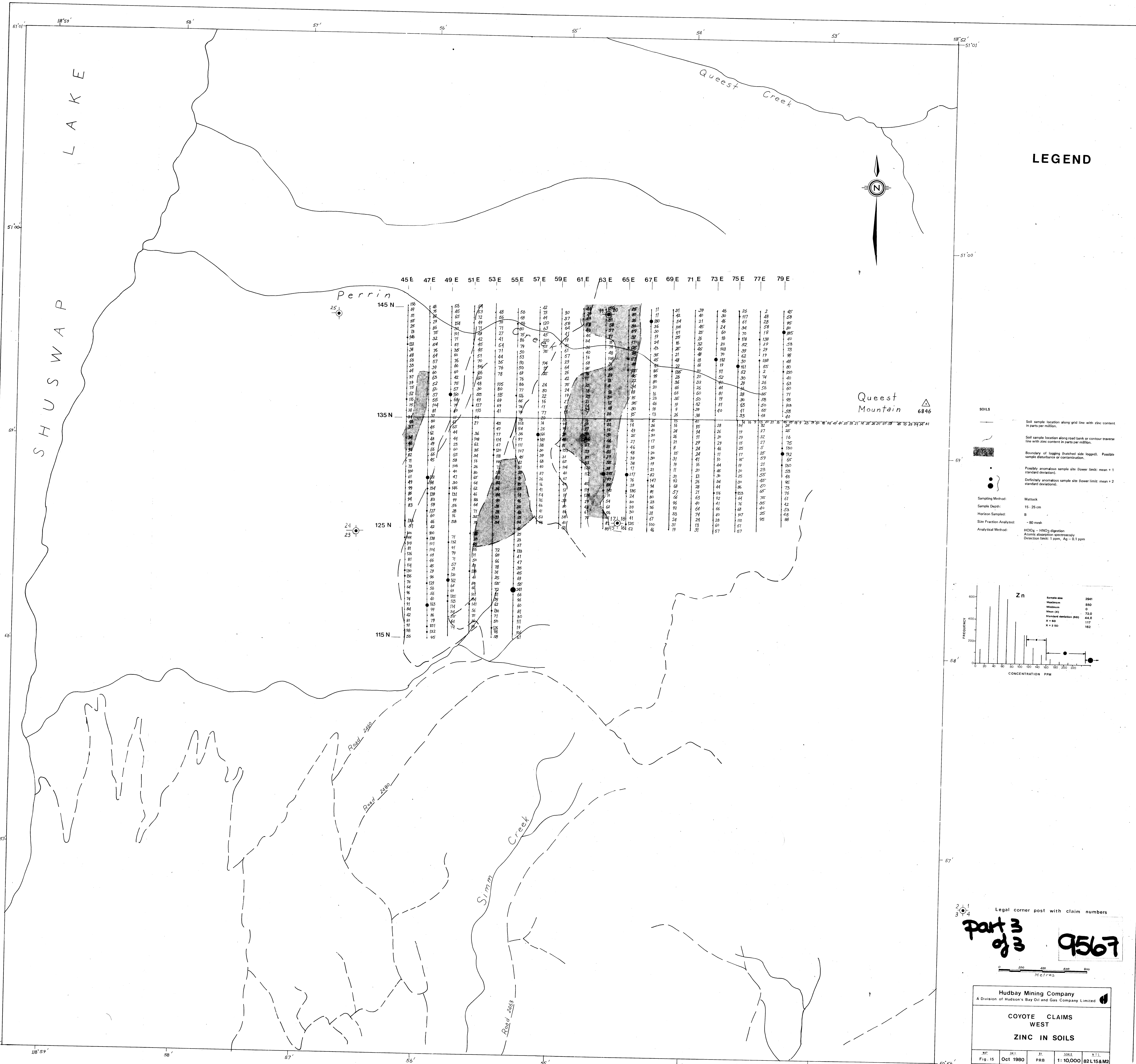
Hudbay Mining Limited
A Subsidiary of Hudson's Bay Oil and Gas Company Limited

**COYOTE CLAIMS WEST**

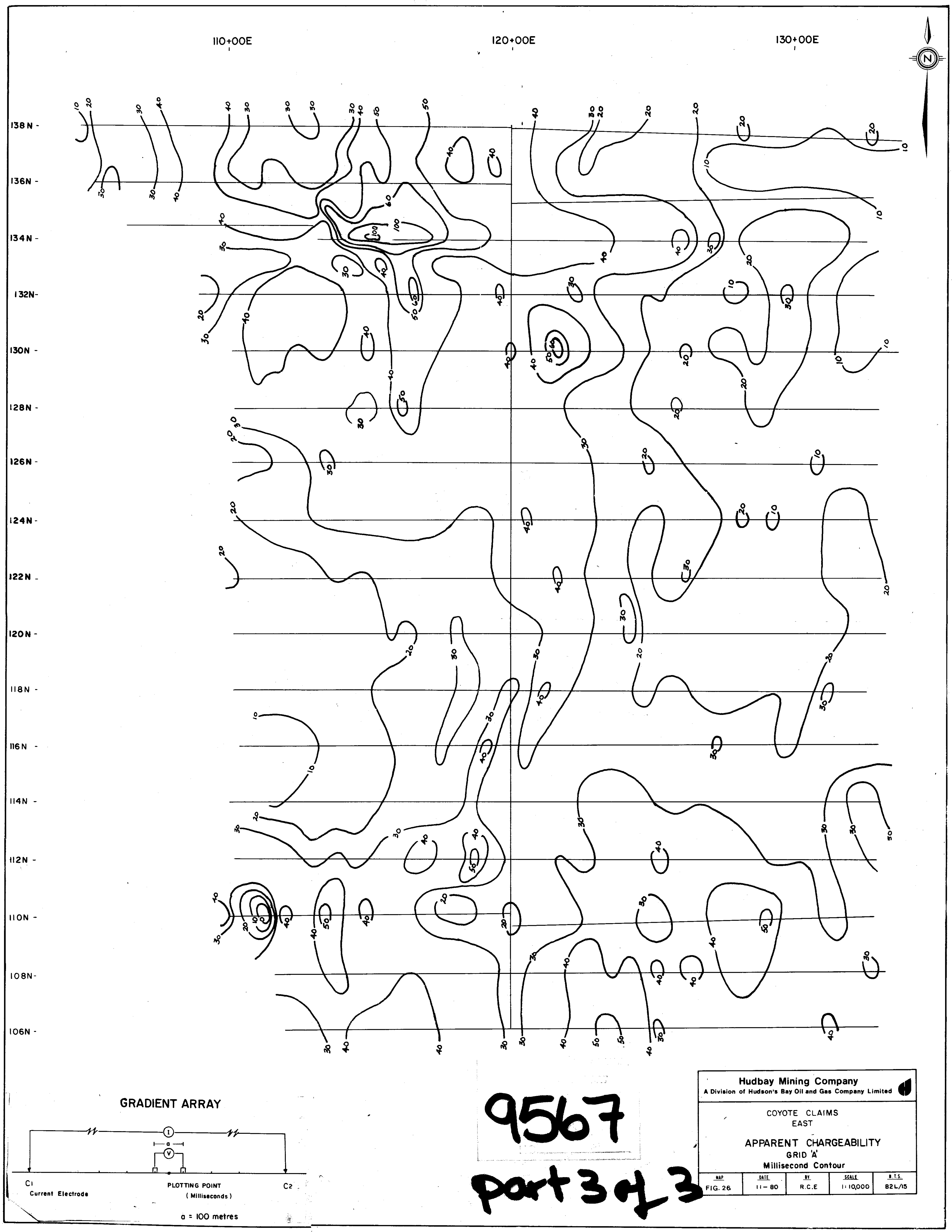
**STREAM SEDIMENT, WATER AND ROCK GEOCHEMISTRY**

| MAP | DATE | BY | SCALE | N.T.S. |
|---|---|---|---|---|
| FIG. 17 | OCT 1980 | PRB | 1: 10,000 | 82 L/15; M/2 |

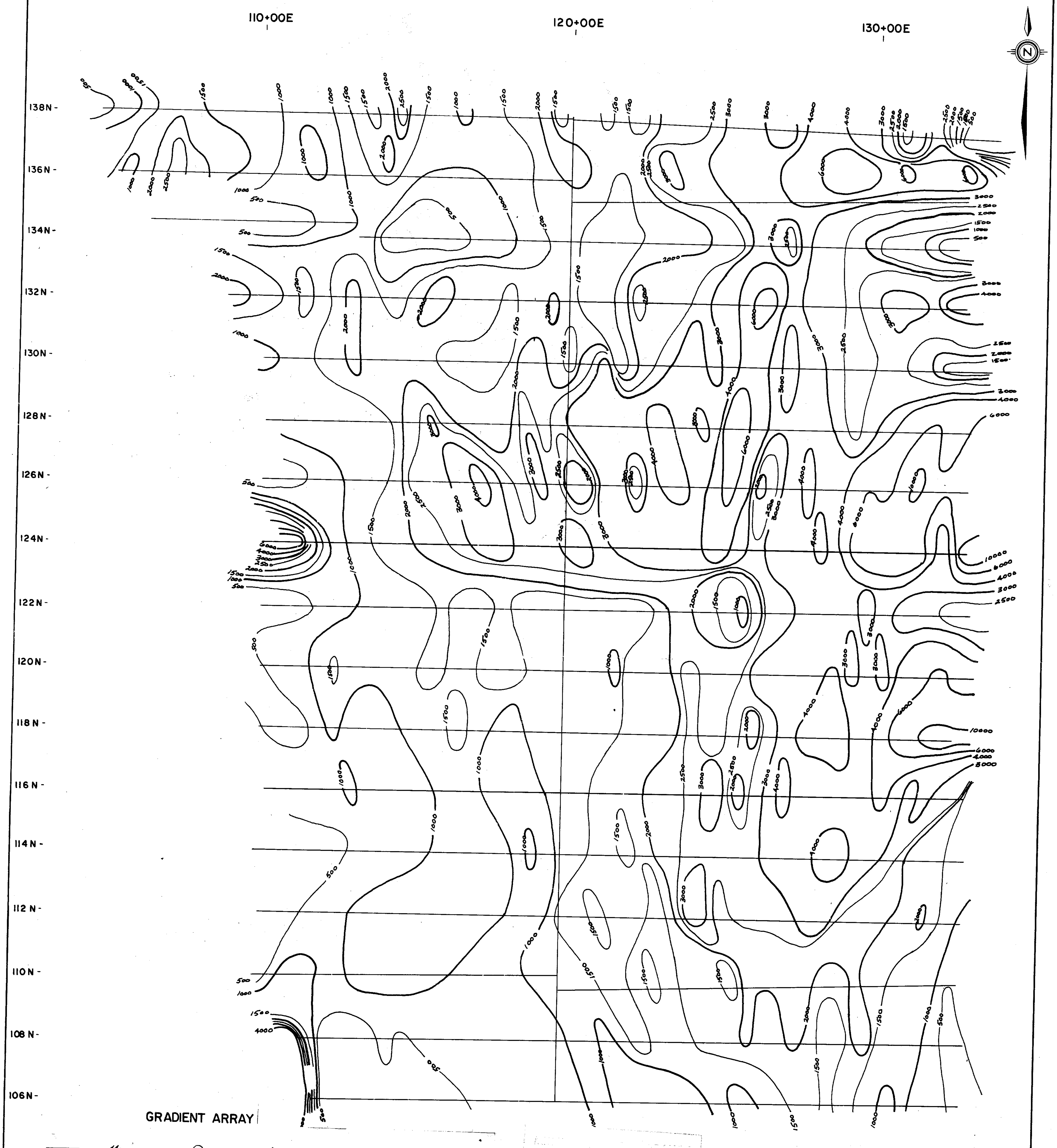

LEGEND
SHUSWAP LAKE
Queest Creek
Perrin Creek
Queest Mountain
6846
Simm Creek
Road 2460
Road 2480
Road 2463
145 N
135 N
125 N
115 N
45 E
47 E
49 E
51 E
53 E
55 E
57 E
59 E
61 E
63 E
65 E
67 E
69 E
71 E
73 E
75 E
77 E
79 E
118°59'
58'
57'
56'
55'
54'
53'
118°52'
51°01'
51°00'
59'
58'
57'
50°56'
SOILS
Soil sample location along grid line with silver content in parts per million.
Soil sample location along road bank or contour traverse line with silver content in parts per million.
Boundary of logging (hatched side logged). Possible sample disturbance or contamination.
Possibly anomalous sample site (lower limit: mean + 1 standard deviation).
Definitely anomalous sample site (lower limit: mean + 2 standard deviations).
Sampling Method: Mattock
Sample Depth: 15 - 25 cm
Horizon Sampled: B
Size Fraction Analyzed: − 80 mesh
Analytical Method: $HClO_4 - HNO_3$ digestion
Atomic absorption spectroscopy
Detection limit: 1 ppm, Ag − 0.1 ppm
Ag
Sample size 2941
Maximum 2.0
Minimum 0
Mean (X) 0.20
Standard deviation (SD) 0.22
X + SD 0.4
X + 2 SD 0.6
FREQUENCY
CONCENTRATION PPM
Legal corner post with claim numbers
part 3 of 3
9567
0 200 400 600 800
Metres
Hudbay Mining Company
A Division of Hudson's Bay Oil and Gas Company Limited
COYOTE CLAIMS
WEST
SILVER IN SOILS
MAP Fig.16
DATE Oct 1980
BY PRB
SCALE 1: 10,000
N.T.S. 82 L15&M2



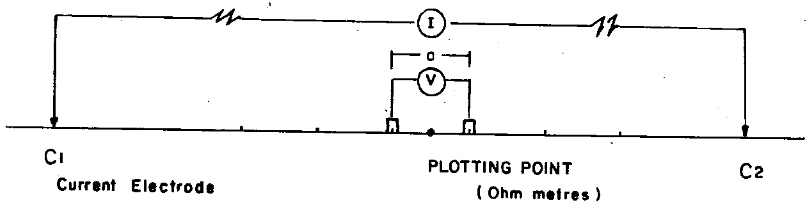
SHUSWAP LAKE
Perrin Creek
Queest Creek
Queest Mountain
6846
Simm Creek
Road 2480
Road 2463
145 N
135 N
125 N
115 N
45 E
47 E
49 E
51 E
53 E
55 E
57 E
59 E
61 E
63 E
65 E
67 E
69 E
71 E
73 E
75 E
77 E
79 E
LEGEND
SOILS
Soil sample location along grid line with zinc content in parts per million.
Soil sample location along road bank or contour traverse line with zinc content in parts per million.
Boundary of logging (hatched side logged). Possible sample disturbance or contamination.
Possibly anomalous sample site (lower limit: mean + 1 standard deviation).
Definitely anomalous sample site (lower limit: mean + 2 standard deviations).
Sampling Method: Mattock
Sample Depth: 15 - 25 cm
Horizon Sampled: B
Size Fraction Analyzed: - 80 mesh
Analytical Method: HClO4 – HNO3 digestion
Atomic absorption spectroscopy
Detection limit: 1 ppm, Ag – 0.1 ppm
Zn
Sample size 2941
Maximum 550
Minimum 0
Mean (X) 72.0
Standard deviation (SD) 44.8
X + SD 117
X + 2 SD 162
FREQUENCY
CONCENTRATION PPM
Legal corner post with claim numbers
part 3 of 3
9567
Metres
Hudbay Mining Company
A Division of Hudson's Bay Oil and Gas Company Limited
COYOTE CLAIMS WEST
ZINC IN SOILS
Fig. 15
Oct 1980
PRB
1: 10,000
82L15&M2




9567
part 3 of 3




GRADIENT ARRAY




a = 100 metres

Transmitter: Phoenix IPT-1, 3000 Watt
Time Domain

Receiver: Crone IP-IV, T.D.

9567
Part 3 of 3

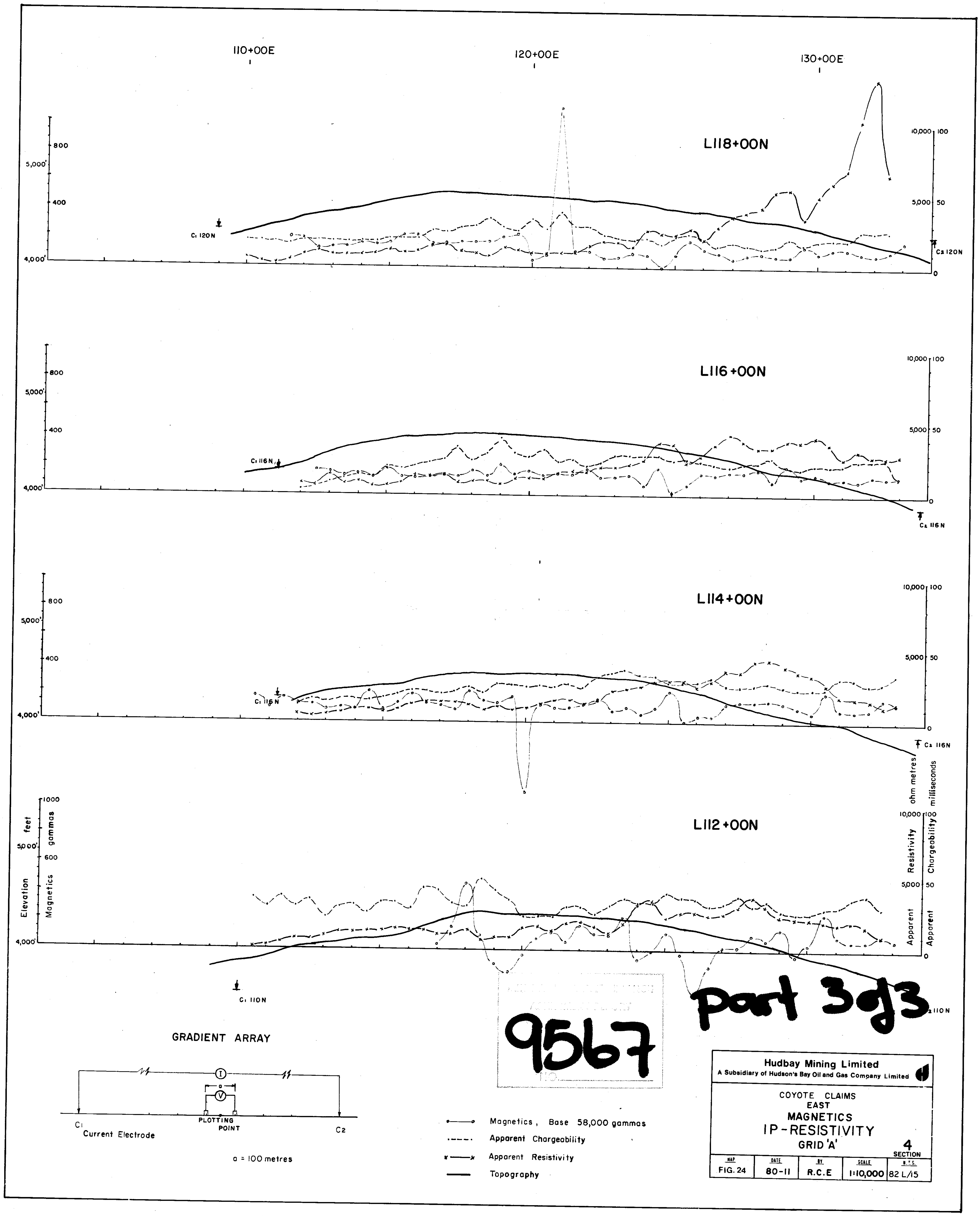
**Hudbay Mining Company**
A Division of Hudson's Bay Oil and Gas Company Limited

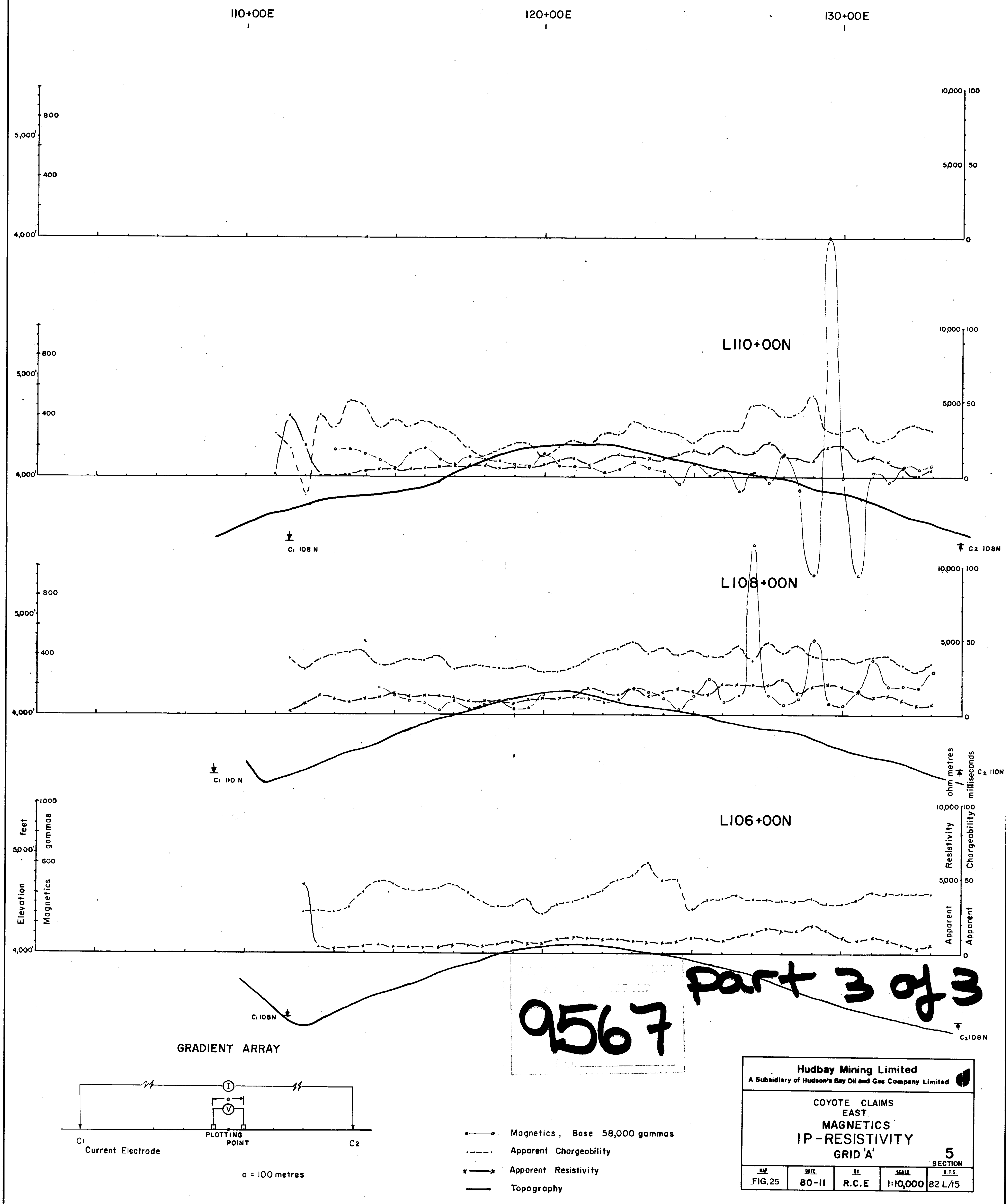
COYOTE CLAIMS
EAST

APPARENT RESISTIVITY
GRID 'A'
Ohm Metres Contour [1]

| MAP | DATE | BY | SCALE | N.T.S. |
|---|---|---|---|---|
| FIG. 27 | 11 - 80 | R.C.E | 1:10,000 | 82L/15 |

1 Does not include L 133N & L135N


110+00E
120+00E
130+00E
L118+00N
L116+00N
L114+00N
L112+00N
C1 120N
C2 120N
C1 116N
C2 116N
C1 116N
C2 116N
C1 110N
2 110N
800
400
5,000'
4,000'
1000
600
10,000 100
5,000 50
0
Elevation feet
Magnetics gammas
Apparent Resistivity ohm metres
Apparent Chargeability milliseconds
GRADIENT ARRAY
C1
Current Electrode
PLOTTING POINT
C2
a = 100 metres
Magnetics, Base 58,000 gammas
Apparent Chargeability
Apparent Resistivity
Topography
Hudbay Mining Limited
A Subsidiary of Hudson's Bay Oil and Gas Company Limited
COYOTE CLAIMS
EAST
MAGNETICS
IP-RESISTIVITY
GRID 'A'
4
SECTION
MAP
FIG. 24
DATE
80-11
BY
R.C.E
SCALE
1:10,000
N.T.S.
82 L/15
9567
Part 3 of 3



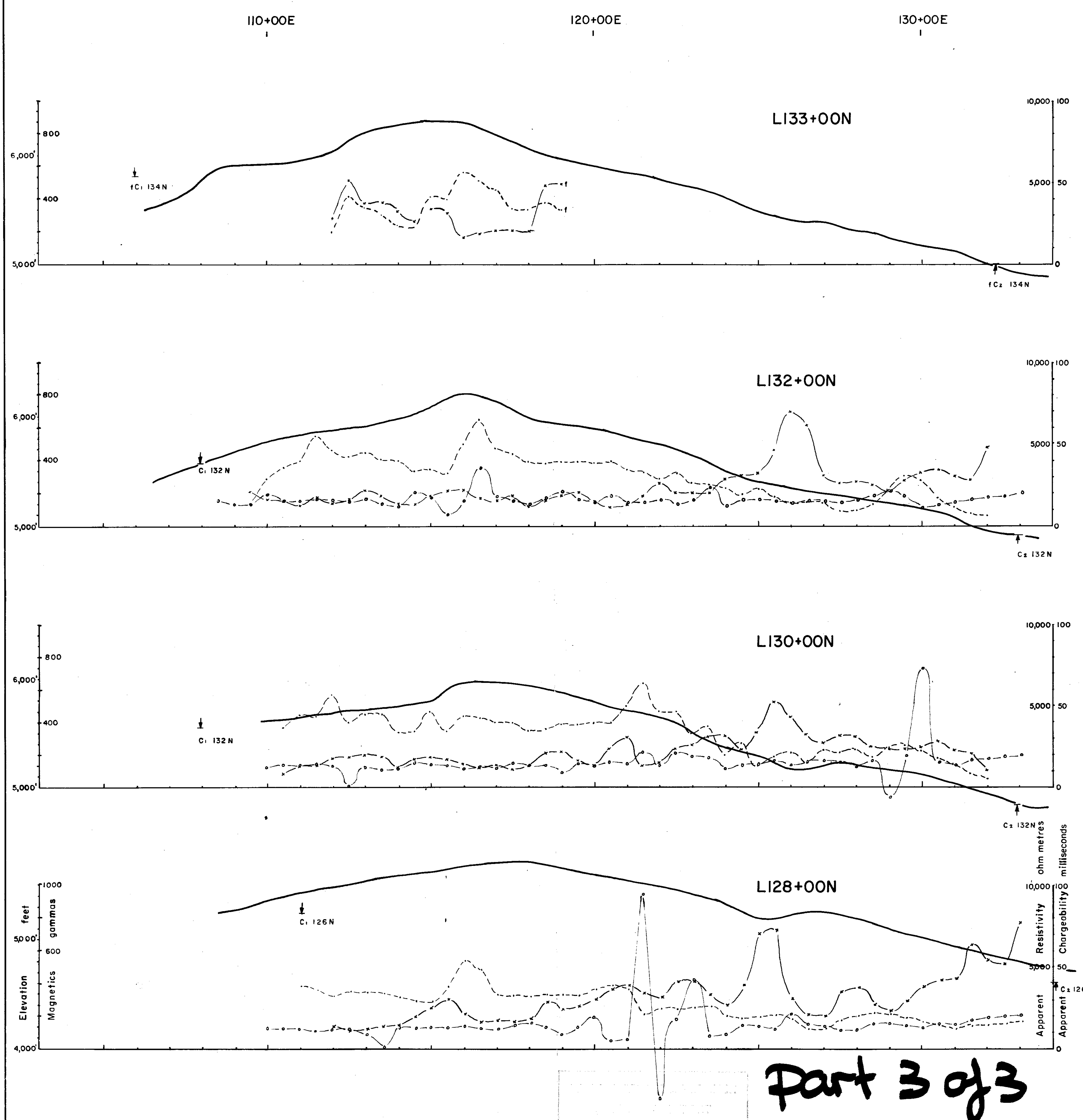

9567 part 3 of 3

**Hudbay Mining Limited**
A Subsidiary of Hudson's Bay Oil and Gas Company Limited

COYOTE CLAIMS
EAST
MAGNETICS
IP-RESISTIVITY
GRID 'A'

5 SECTION

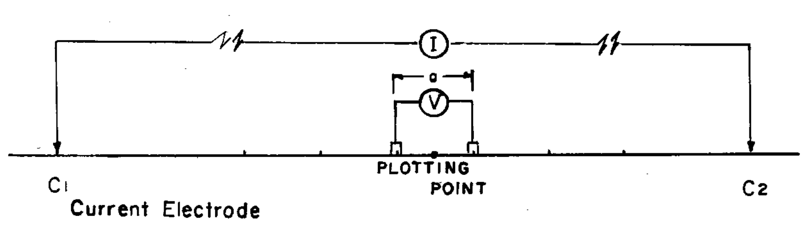
| MAP | DATE | BY | SCALE | N.T.S. |
|---|---|---|---|---|
| FIG. 25 | 80-11 | R.C.E | 1:10,000 | 82 L/15 |




Part 3 of 3

9567

GRADIENT ARRAY




a = 100 metres

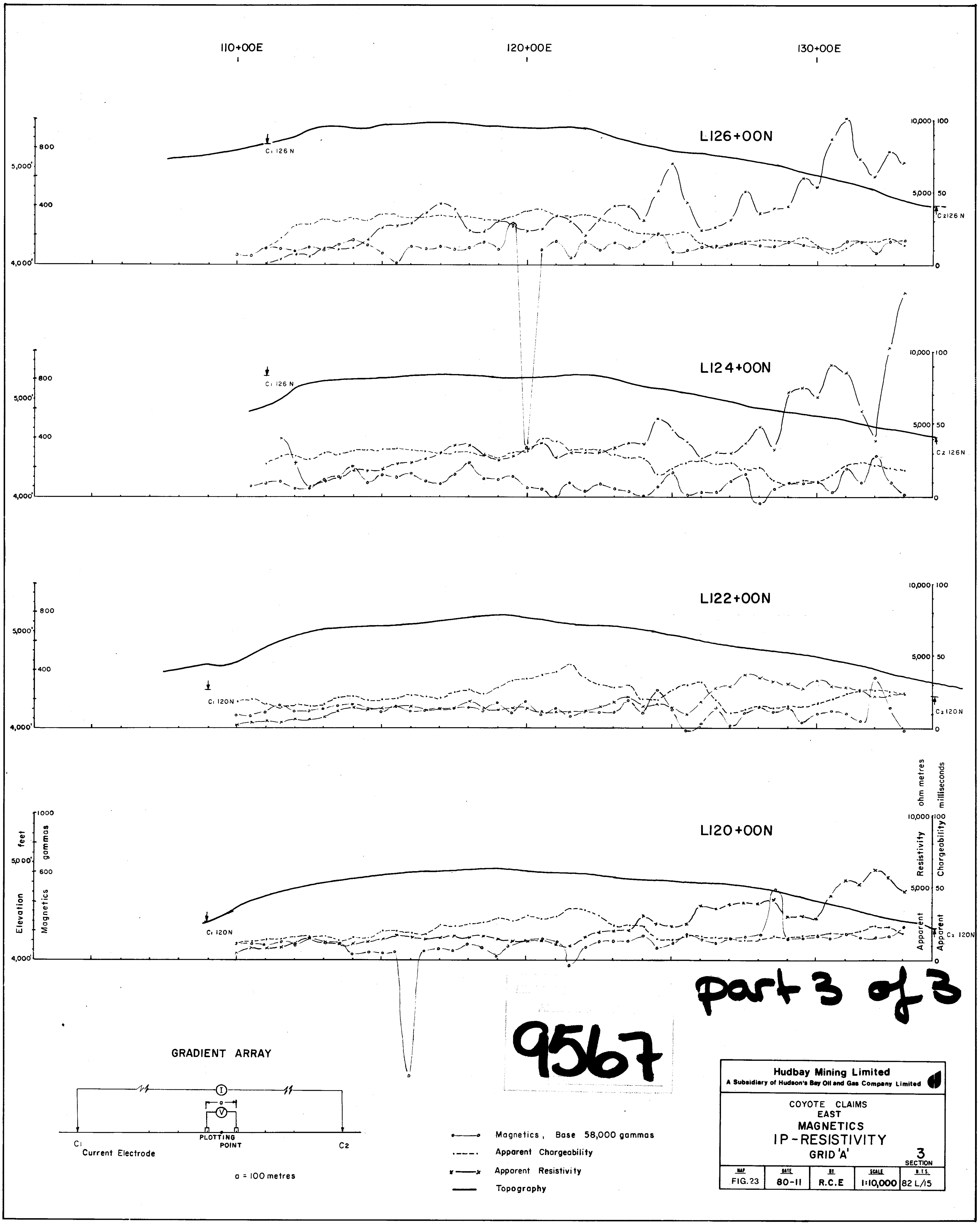
- Magnetics, Base 58,000 gammas
- Apparent Chargeability
- Apparent Resistivity
- Topography
- f Follow-up

**Hudbay Mining Limited**
A Subsidiary of Hudson's Bay Oil and Gas Company Limited

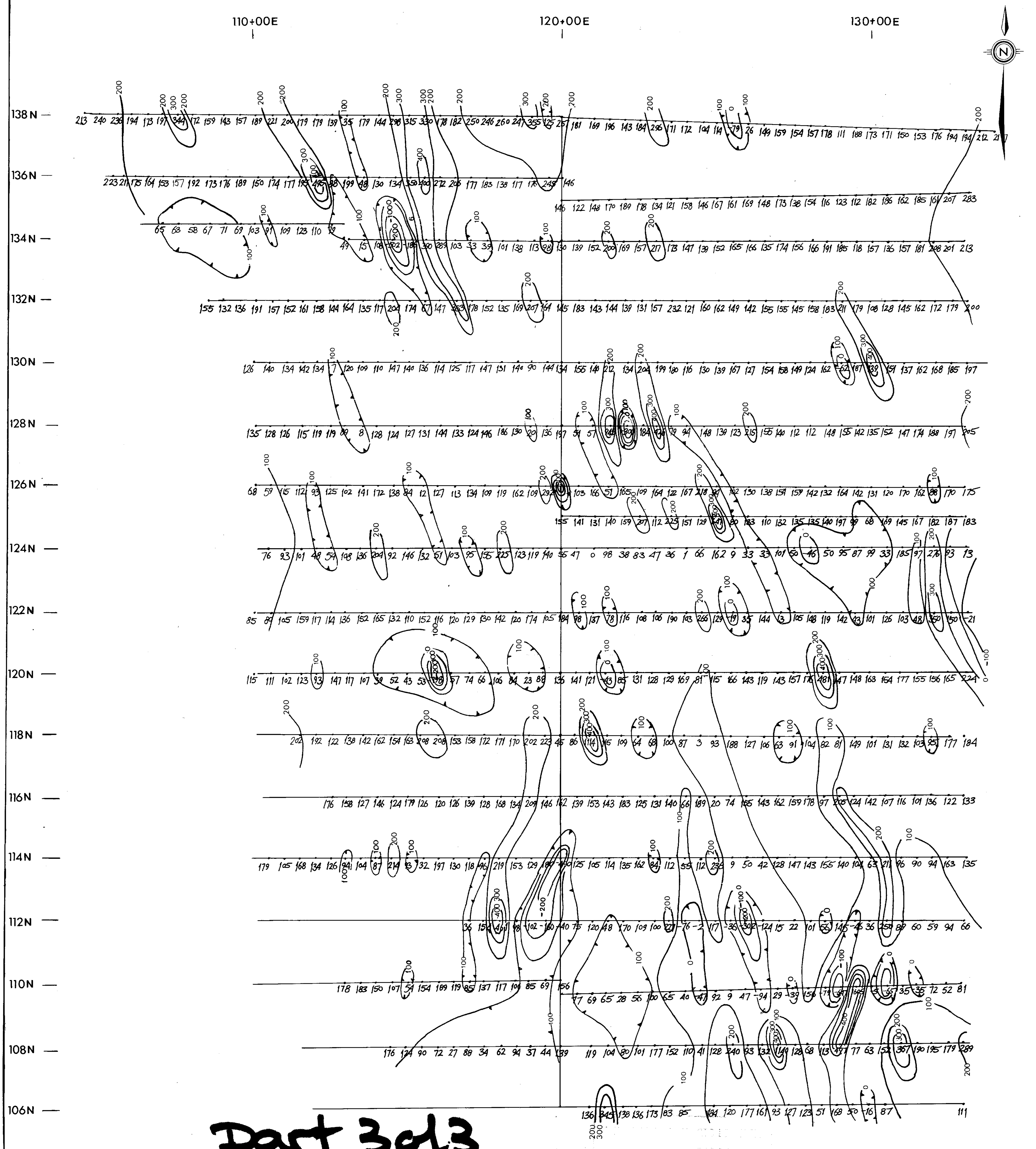
COYOTE CLAIMS
EAST
MAGNETICS
IP-RESISTIVITY
GRID 'A'

2
SECTION

| MAP | DATE | BY | SCALE | N.T.S. |
|---|---|---|---|---|
| FIG. 22 | 80-11 | R.C.E | 1:10,000 | 82 L/15 |



110+00E
120+00E
130+00E
L126+00N
L124+00N
L122+00N
L120+00N
C1 126N
C2 126N
C1 120N
C2 120N
1000
800
600
400
5,000'
4,000'
10,000
5,000
100
50
0
Elevation feet
Magnetics gammas
Apparent Resistivity ohm metres
Apparent Chargeability milliseconds
GRADIENT ARRAY
C1
Current Electrode
PLOTTING POINT
C2
a = 100 metres
Magnetics, Base 58,000 gammas
Apparent Chargeability
Apparent Resistivity
Topography
Hudbay Mining Limited
A Subsidiary of Hudson's Bay Oil and Gas Company Limited
COYOTE CLAIMS
EAST
MAGNETICS
IP-RESISTIVITY
GRID 'A'
3
SECTION
MAP FIG. 23
DATE 80-11
BY R.C.E
SCALE 1:10,000
N.T.S. 82 L/15
part 3 of 3
9567




Part 3 of 3

9567

Instrument : Geometrics Models G 816,826
Proton Precession Magnetometers

Datum : 58,000 Gammas (Total Field)

All readings corrected for diurnal variation and daily drift using base station at 120N/120E

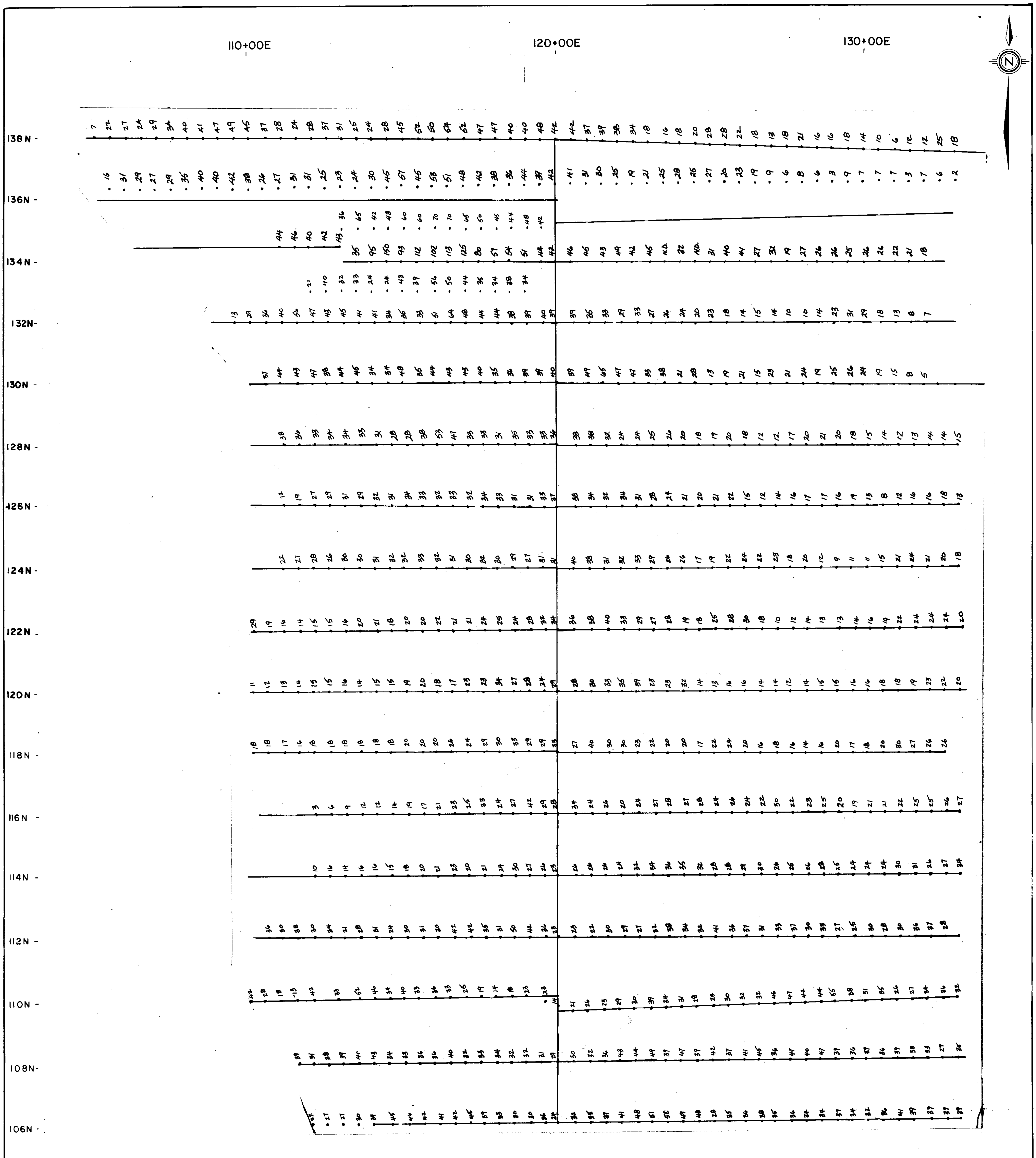
Contour interval : 100 gammas

SCALE
0 200 400 600 800
Metres

**Hudbay Mining Limited**
A Subsidiary of Hudson's Bay Oil and Gas Company Limited

COYOTE CLAIMS
EAST
GRID A
## Magnetics

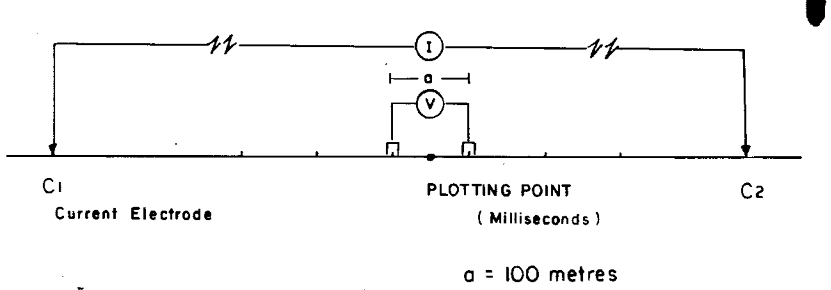
| MAP | DATE | BY | SCALE | N.T.S. |
|---|---|---|---|---|
| FIG 18 | 12-80 | PRB | 1 10,000 | 82 L/15 |




Part 3 of 3

9567

## GRADIENT ARRAY

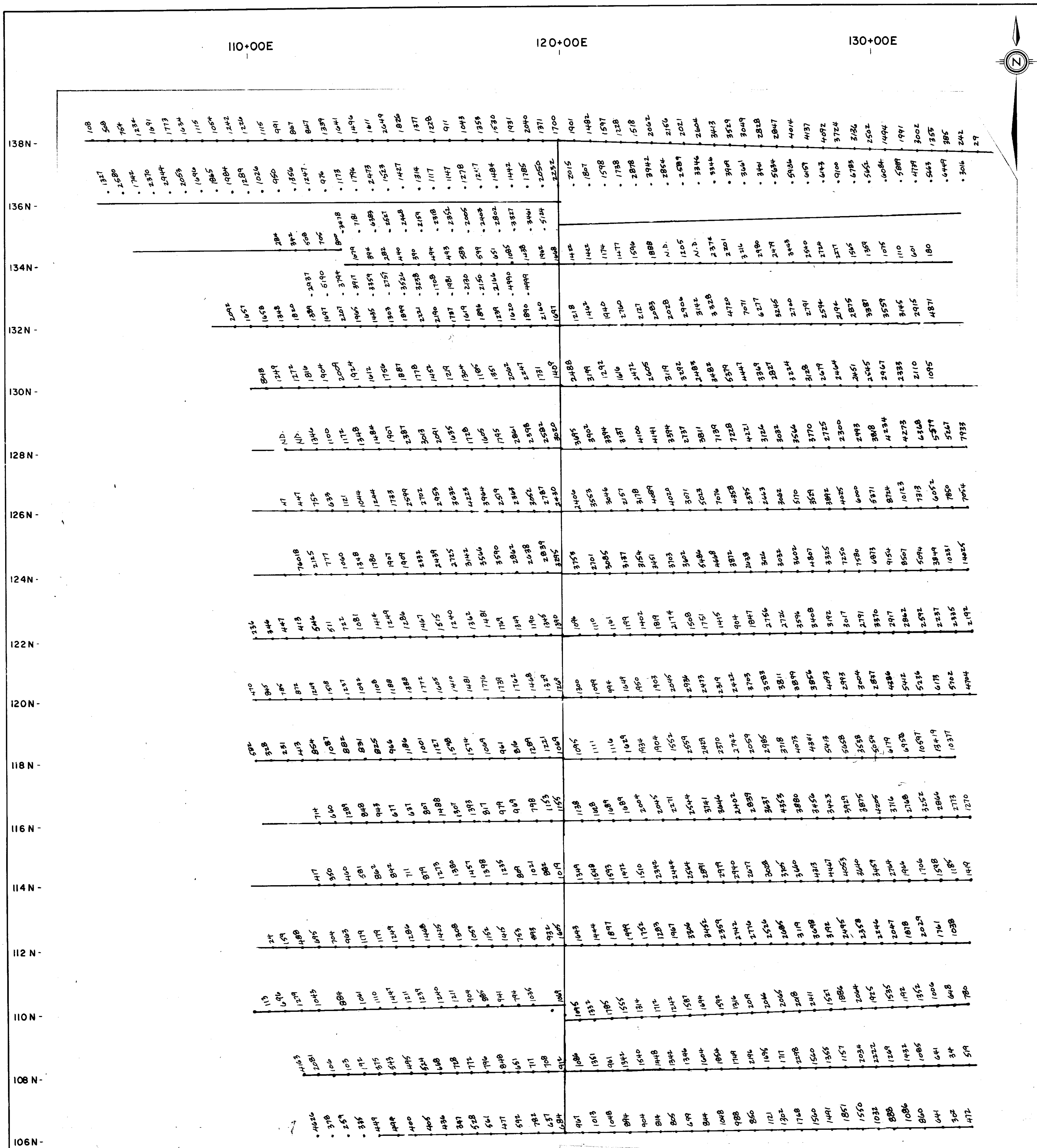



**Hudbay Mining Company**
A Division of Hudson's Bay Oil and Gas Company Limited

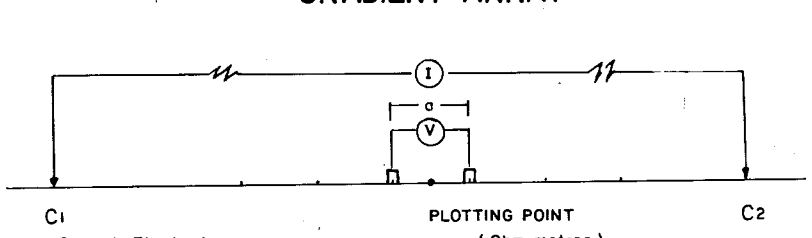
COYOTE CLAIMS
EAST

APPARENT CHARGEABILITY
GRID 'A'
Millisecond Contour

| MAP | DATE | BY | SCALE | N.T.S. |
|---|---|---|---|---|
| FIG. 19 | 11 - 80 | R.C.E | 1:10,000 | 82 L/15 |




GRADIENT ARRAY




a = 100 metres

Transmitter: Phoenix IPT-1, 3000 Watt
Time Domain

Receiver: Crone IP-IV, T.D.

9567
part 3 of 3

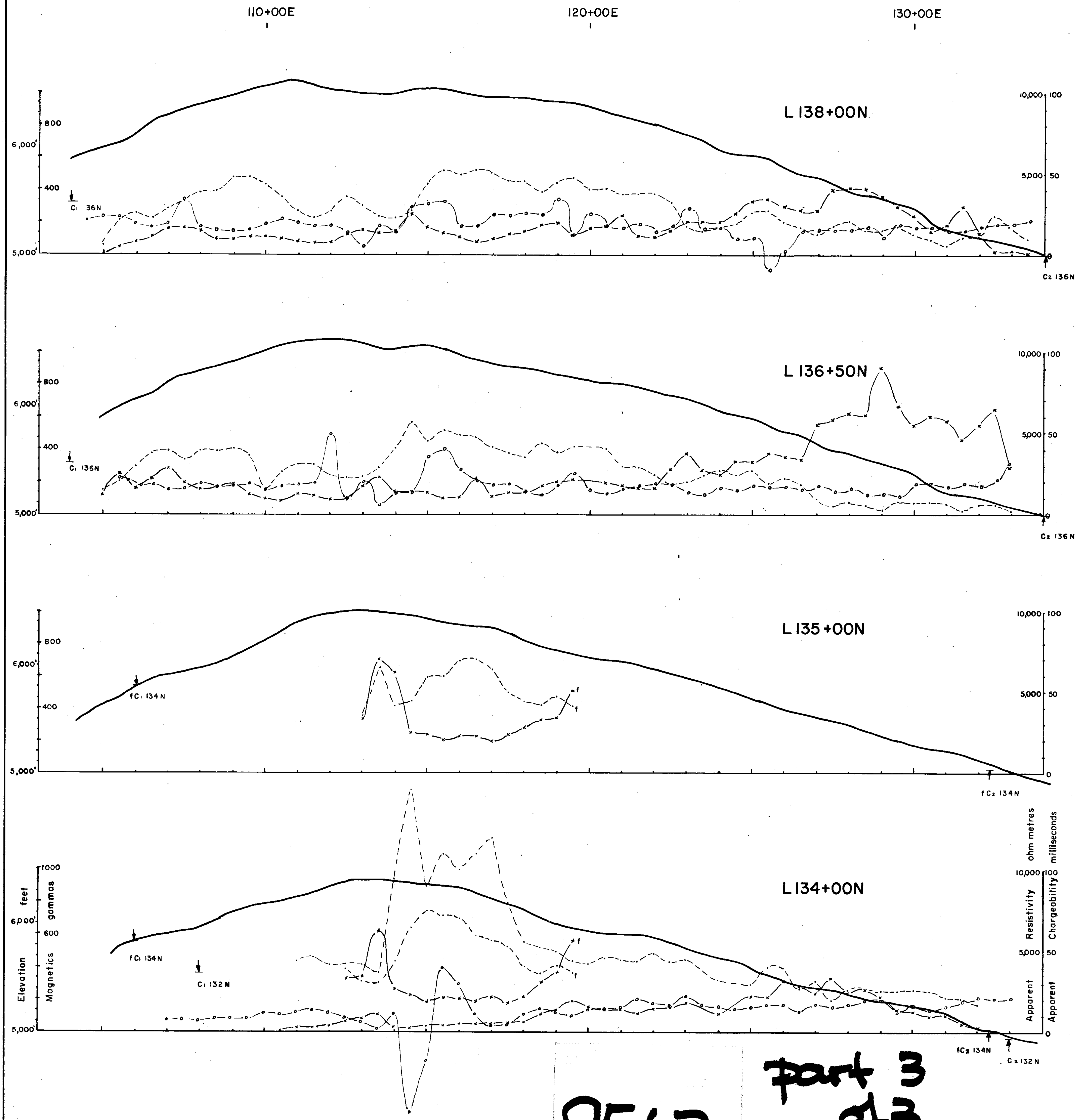
**Hudbay Mining Company**
A Division of Hudson's Bay Oil and Gas Company Limited

COYOTE CLAIMS
EAST

APPARENT RESISTIVITY
GRID 'A'
Ohm Metres Contour [1]

| MAP | DATE | BY | SCALE | N.T.S. |
|---|---|---|---|---|
| FIG. 20 | 11 - 80 | R.C.E | 1:10,000 | 82L/15 |

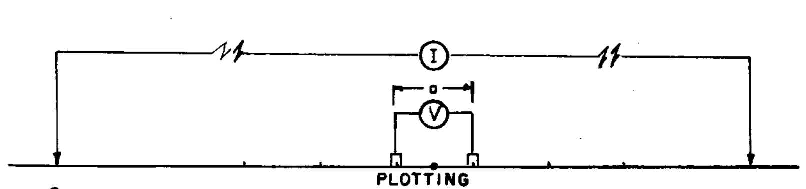
1 Does not include L 133N & L135N




9567

part 3 of 3

GRADIENT ARRAY




Current Electrode

a = 100 metres

Magnetics, Base 58,000 gammas

Apparent Chargeability

Apparent Resistivity

Topography

f Follow-up

**Hudbay Mining Limited**

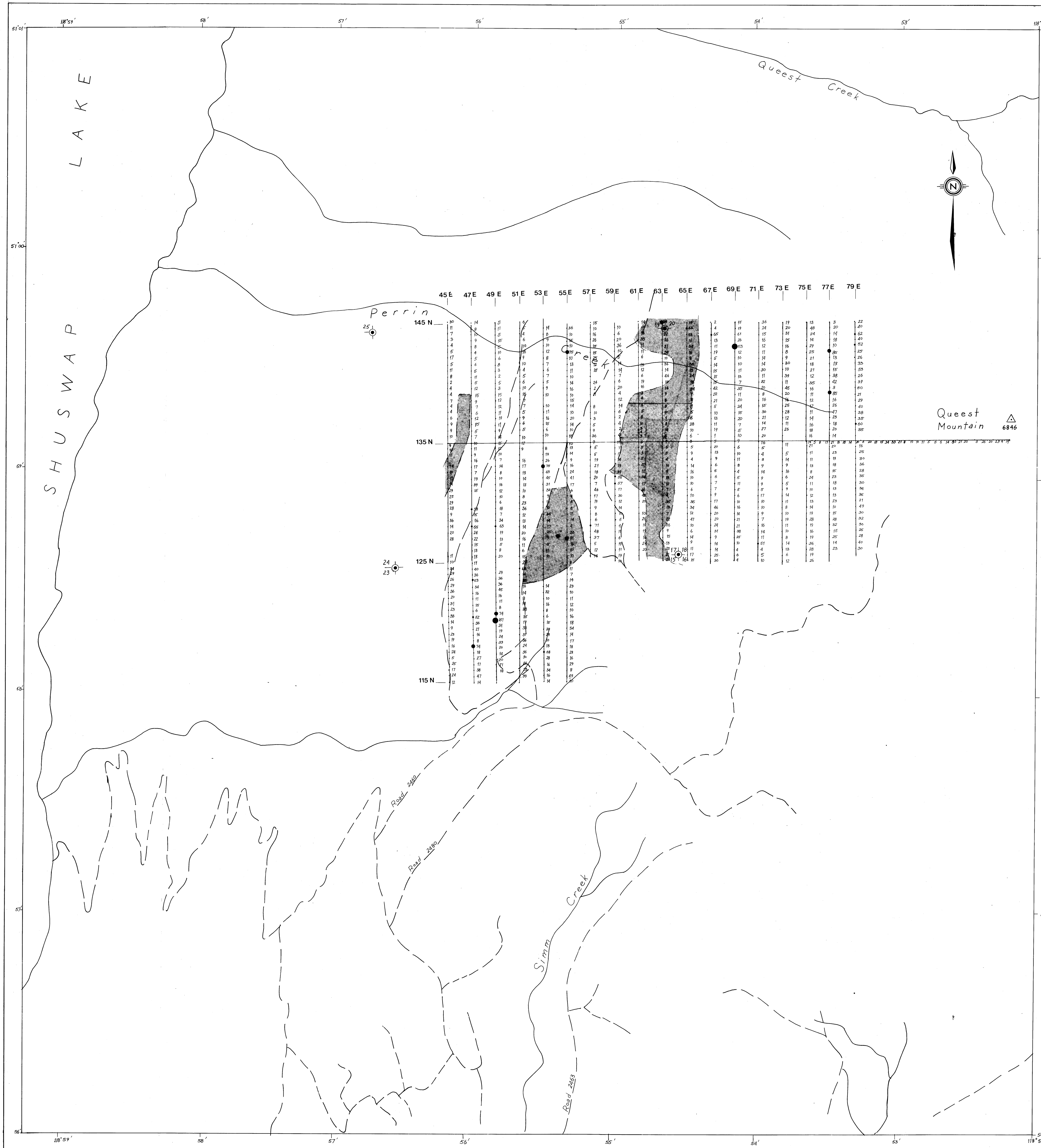
A Subsidiary of Hudson's Bay Oil and Gas Company Limited

COYOTE CLAIMS
EAST

MAGNETICS
IP-RESISTIVITY
GRID 'A'

SECTION I

| MAP | DATE | BY | SCALE | N.T.S. |
|---|---|---|---|---|
| FIG. 21 | 80-11 | R.C.E | 1:10,000 | 82 L/15 |




# LEGEND

**SOILS**

Soil sample location along grid line with copper content in parts per million.

Soil sample location along road bank or contour traverse line with copper content in parts per million.

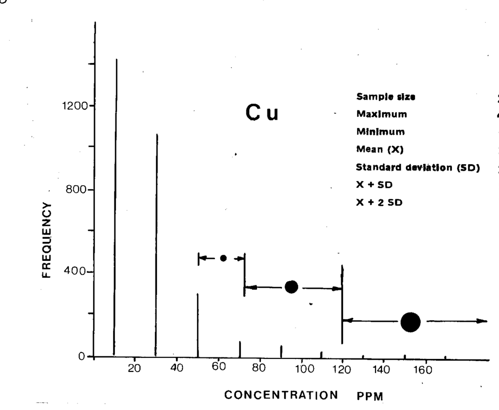
nd — None detected.

Boundary of logging (hatched side logged). Possible sample disturbance or contamination.

Possibly anomalous sample site (lower limit: mean + 1 standard deviation).

Definitely anomalous sample site (lower limit: mean + 2 standard deviations).

| | |
|---|---|
| Sampling Method: | Mattock |
| Sample Depth: | 15 - 25 cm |
| Horizon Sampled: | B |
| Size Fraction Analyzed: | — 80 mesh |
| Analytical Method: | $HClO_4 - HNO_3$ digestion<br>Atomic absorption spectroscopy<br>Detection limit: 1 ppm, Ag – 0.1 ppm |




| | |
|---|---|
| Sample size | 2941 |
| Maximum | 456 |
| Minimum | 1 |
| Mean (X) | 26.5 |
| Standard deviation (SD) | 23.5 |
| X + SD | 50 |
| X + 2 SD | 73 |

Legal corner post with claim numbers

part 3 of 3

9567

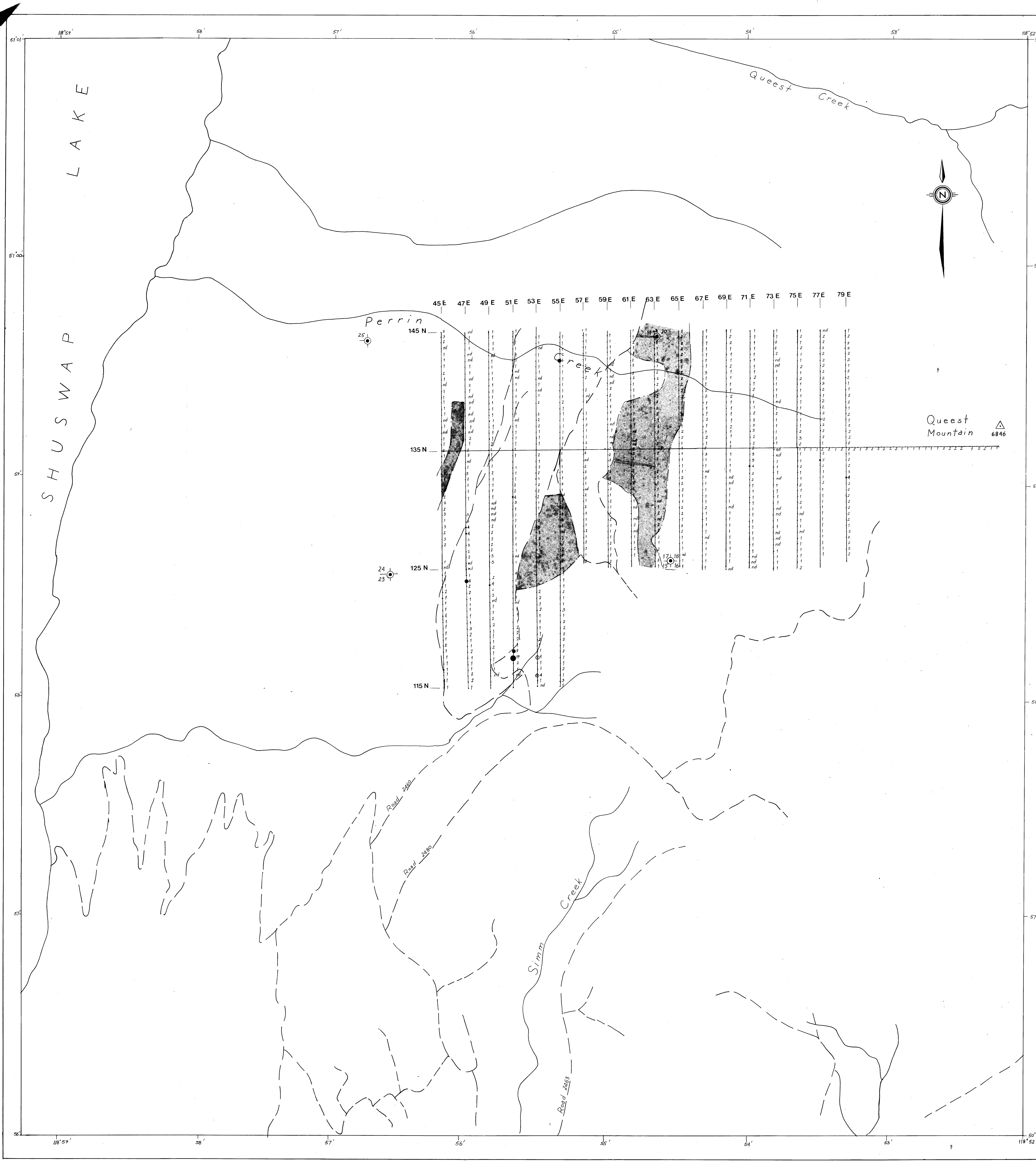
0 200 400 600 800 Metres

**Hudbay Mining Company**
A Division of Hudson's Bay Oil and Gas Company Limited

## COYOTE CLAIMS WEST

## COPPER IN SOILS

| MAP | DATE | BY | SCALE | N.T.S. |
|---|---|---|---|---|
| Fig. 13 | Oct 1980 | PRB | 1: 10,000 | 82 L15 & M2 |




# LEGEND

SOILS

Soil sample location along grid line with molybdenum content in parts per million.

Soil sample location along road bank or contour traverse line with molybdenum content in parts per million.

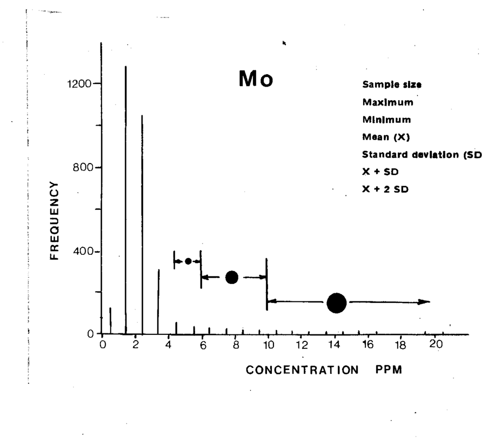
nd — None detected.

Boundary of logging (hatched side logged). Possible sample disturbance or contamination.

Possibly anomalous sample site (lower limit: mean + 1 standard deviation).

Definitely anomalous sample site (lower limit: mean + 2 standard deviations).

| | |
|---|---|
| Sampling Method: | Mattock |
| Sample Depth: | 15 - 25 cm |
| Horizon Sampled: | B |
| Size Fraction Analyzed: | − 80 mesh |
| Analytical Method: | $HClO_4$ − $HNO_3$ digestion<br>Atomic absorption spectroscopy<br>Detection limit: 1 ppm, Ag − 0.1 ppm |




| | |
|---|---|
| Sample size | 2941 |
| Maximum | 55 |
| Minimum | 0 |
| Mean (X) | 1.9 |
| Standard deviation (SD) | 2.1 |
| X + SD | 4 |
| X + 2 SD | 6 |

Legal corner post with claim numbers

part 3 of 3

9567

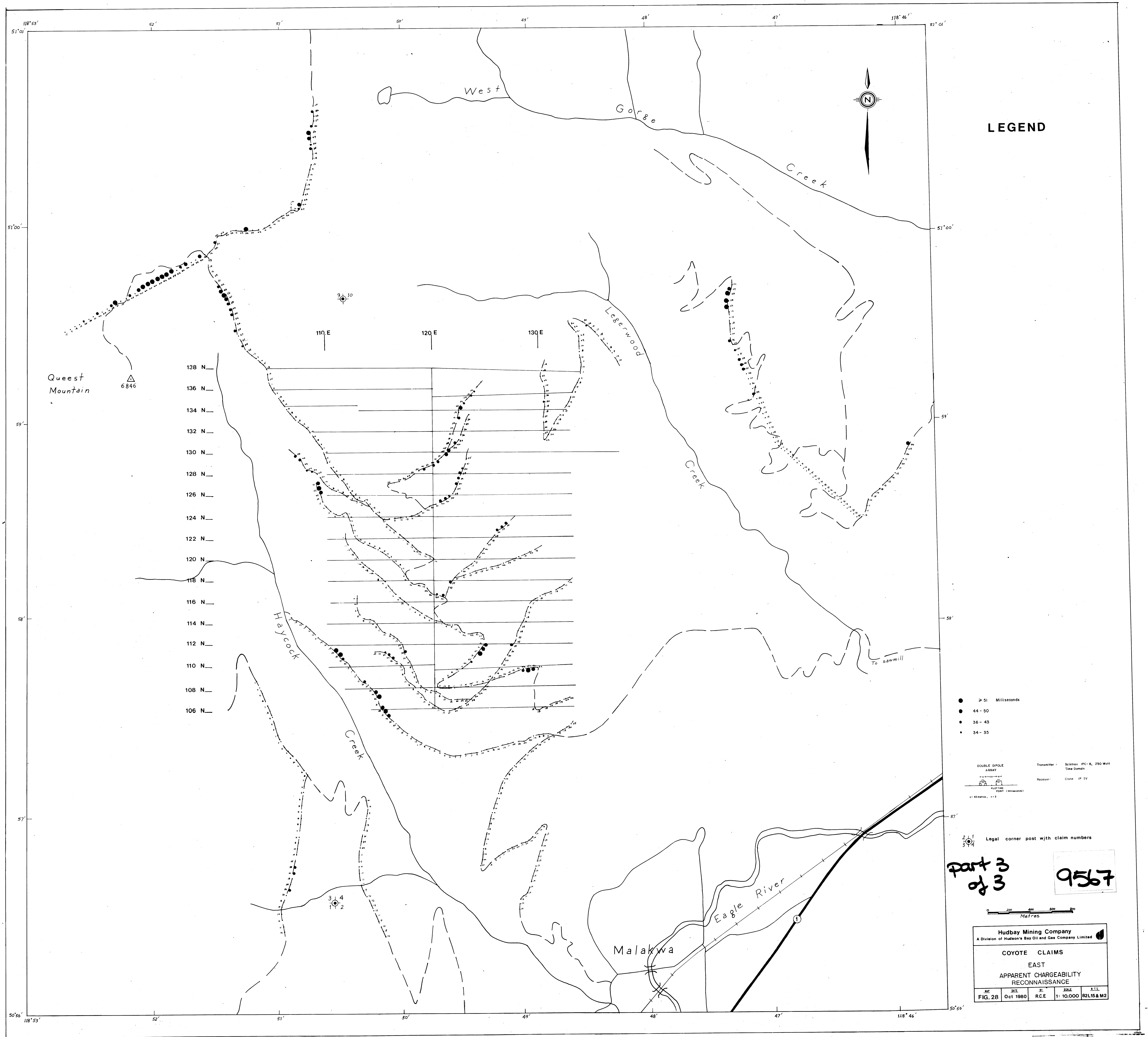
0 200 400 600 800
Metres

**Hudbay Mining Company**
A Division of Hudson's Bay Oil and Gas Company Limited

**COYOTE CLAIMS WEST**

**MOLYBDENUM IN SOILS**

| MAP | DATE | BY | SCALE | N.T.S. |
|---|---|---|---|---|
| Fig. 12 | Oct 1980 | PRB | 1: 10,000 | 82 L 15 & M2 |


LEGEND
≥ 51 Milliseconds
44 - 50
36 - 43
34 - 35
DOUBLE DIPOLE ARRAY
PLOTTING POINT (Milliseconds)
a = 50 metres, n = 2
Transmitter: Scintrex IPC-8, 250 Watt Time Domain
Receiver: Crone IP IV
Legal corner post with claim numbers
part 3 of 3
9567
0 200 400 600 800
Metres
Hudbay Mining Company
A Division of Hudson's Bay Oil and Gas Company Limited
COYOTE CLAIMS
EAST
APPARENT CHARGEABILITY
RECONNAISSANCE
MAP FIG. 28
DATE Oct 1980
BY R.C.E
SCALE 1: 10.000
N.T.S. 82L15 & M2
West Gorge Creek
Legerwood Creek
Haycock Creek
Queest Mountain
6846
Eagle River
Malakwa
To sawmill
110 E
120 E
130 E
138 N
136 N
134 N
132 N
130 N
128 N
126 N
124 N
122 N
120 N
118 N
116 N
114 N
112 N
110 N
108 N
106 N
118°53'
52'
51'
50'
49'
48'
47'
118°46'
51°01'
51°00'
59'
58'
57'
50°56'


## LEGEND

**SOILS**

Soil sample location along grid line with lead content in parts per million.

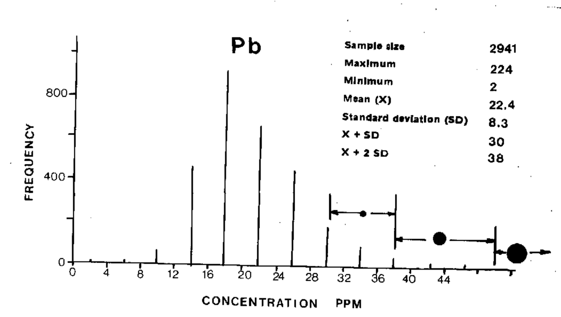
Soil sample location along road bank or contour traverse line with lead content in parts per million.

Boundary of logging (hatched side logged). Possible sample disturbance or contamination.

Possibly anomalous sample site (lower limit: mean + 1 standard deviation).

Definitely anomalous sample site (lower limit: mean + 2 standard deviations).

| | |
|---|---|
| Sampling Method: | Mattock |
| Sample Depth: | 15 - 25 cm |
| Horizon Sampled: | B |
| Size Fraction Analyzed: | - 80 mesh |
| Analytical Method: | $HClO_4 - HNO_3$ digestion<br>Atomic absorption spectroscopy<br>Detection limit: 1 ppm, Ag – 0.1 ppm |




Legal corner post with claim numbers

part 3 of 3 9567

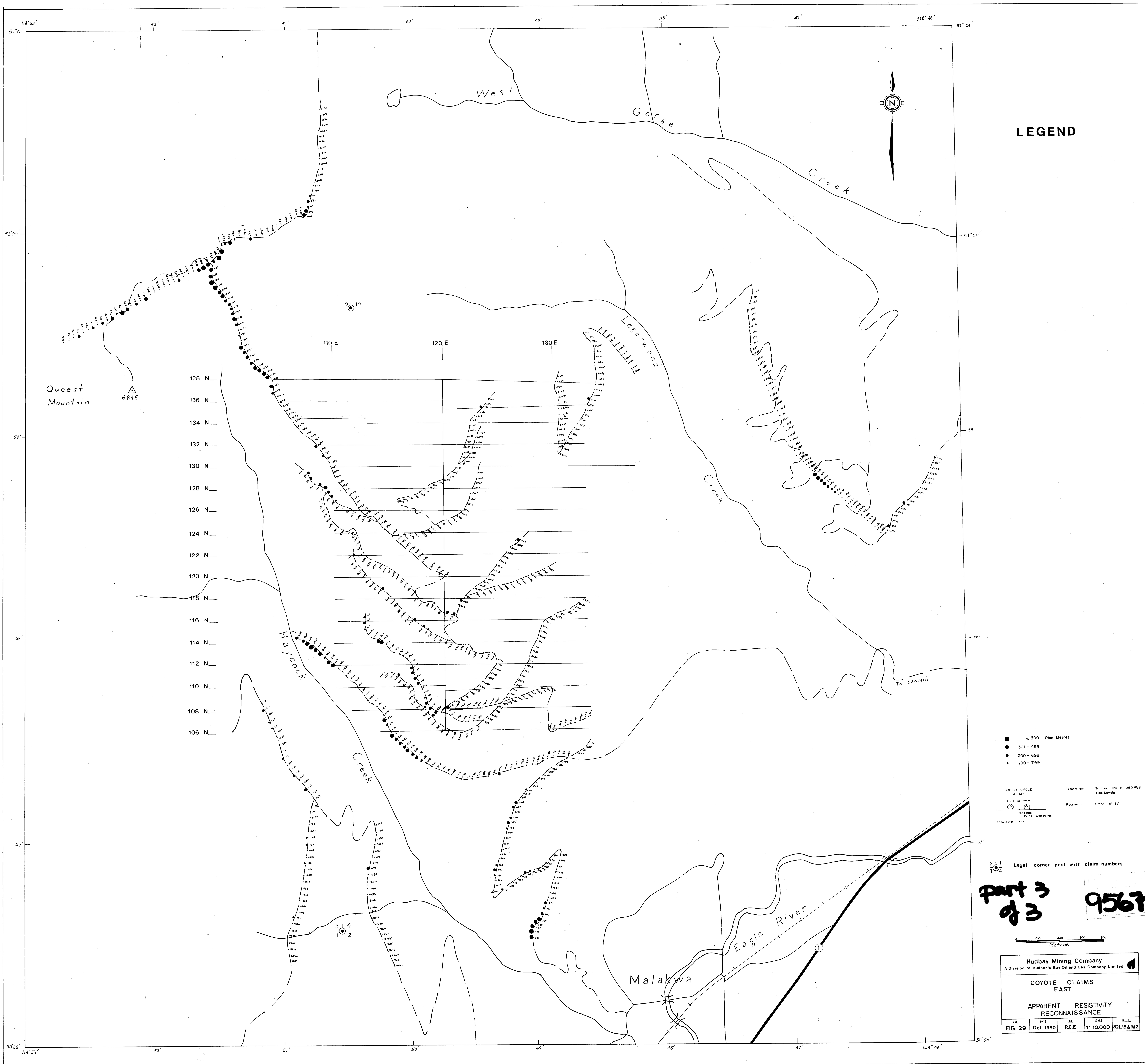
0 200 400 600 800
Metres

**Hudbay Mining Company**
A Division of Hudson's Bay Oil and Gas Company Limited

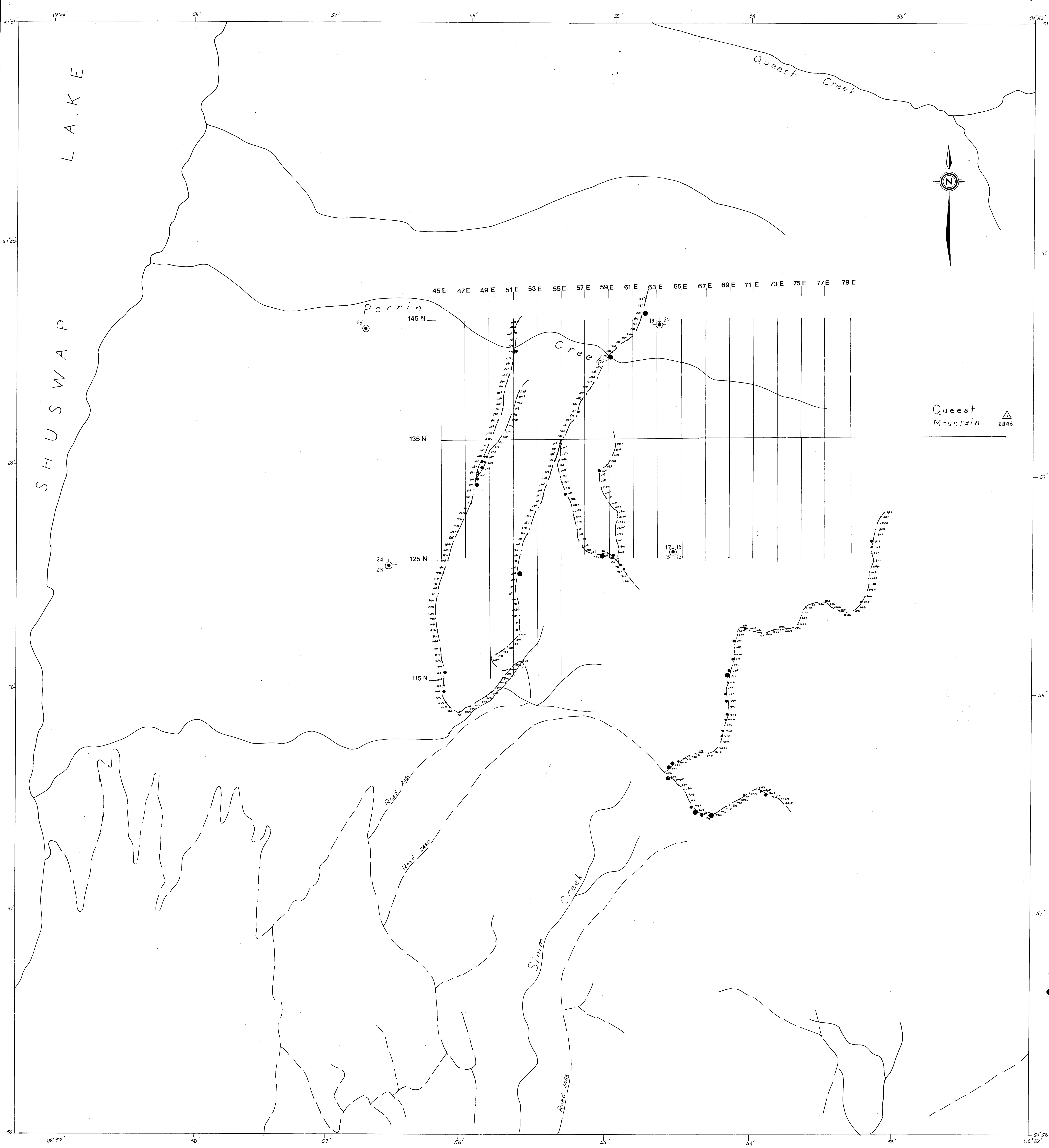
# COYOTE CLAIMS WEST

# LEAD IN SOILS

| MAP | DATE | BY | SCALE | N T S |
|---|---|---|---|---|
| Fig. 14 | Oct 1980 | PRB | 1: 10,000 | 82 L 15 & M2 |



LEGEND
West Gorge Creek
Legerwood Creek
Haycock Creek
Eagle River
Malakwa
To sawmill
Queest Mountain
6846
110 E
120 E
130 E
138 N
136 N
134 N
132 N
130 N
128 N
126 N
124 N
122 N
120 N
118 N
116 N
114 N
112 N
110 N
108 N
106 N
< 300 Ohm Metres
301 - 499
500 - 699
700 - 799
DOUBLE DIPOLE ARRAY
PLOTTING POINT (Ohm metres)
a = 50 metres, n = 2
Transmitter : Scintrex IPC-8, 250 Watt Time Domain.
Receiver : Crone IP IV
Legal corner post with claim numbers
part 3 of 3
9567
0 200 400 600 800
Metres
Hudbay Mining Company
A Division of Hudson's Bay Oil and Gas Company Limited
COYOTE CLAIMS EAST
APPARENT RESISTIVITY RECONNAISSANCE
MAP FIG. 29
DATE Oct 1980
BY R.C.E
SCALE 1: 10.000
N T S 82L15 & M2




# LEGEND

- >250 Ohm Metres
- 251 - 350
- 351 - 450
- 451 - 525

DOUBLE DIPOLE ARRAY

PLOTTING POINT (Ohm metres)

a = 50 metres, n = 2

Transmitter : Scintrex IPC-8, 250 Watt Time Domain

Receiver : Crone IP-IV

Legal corner post with claim numbers

Part 3 of 3 9567

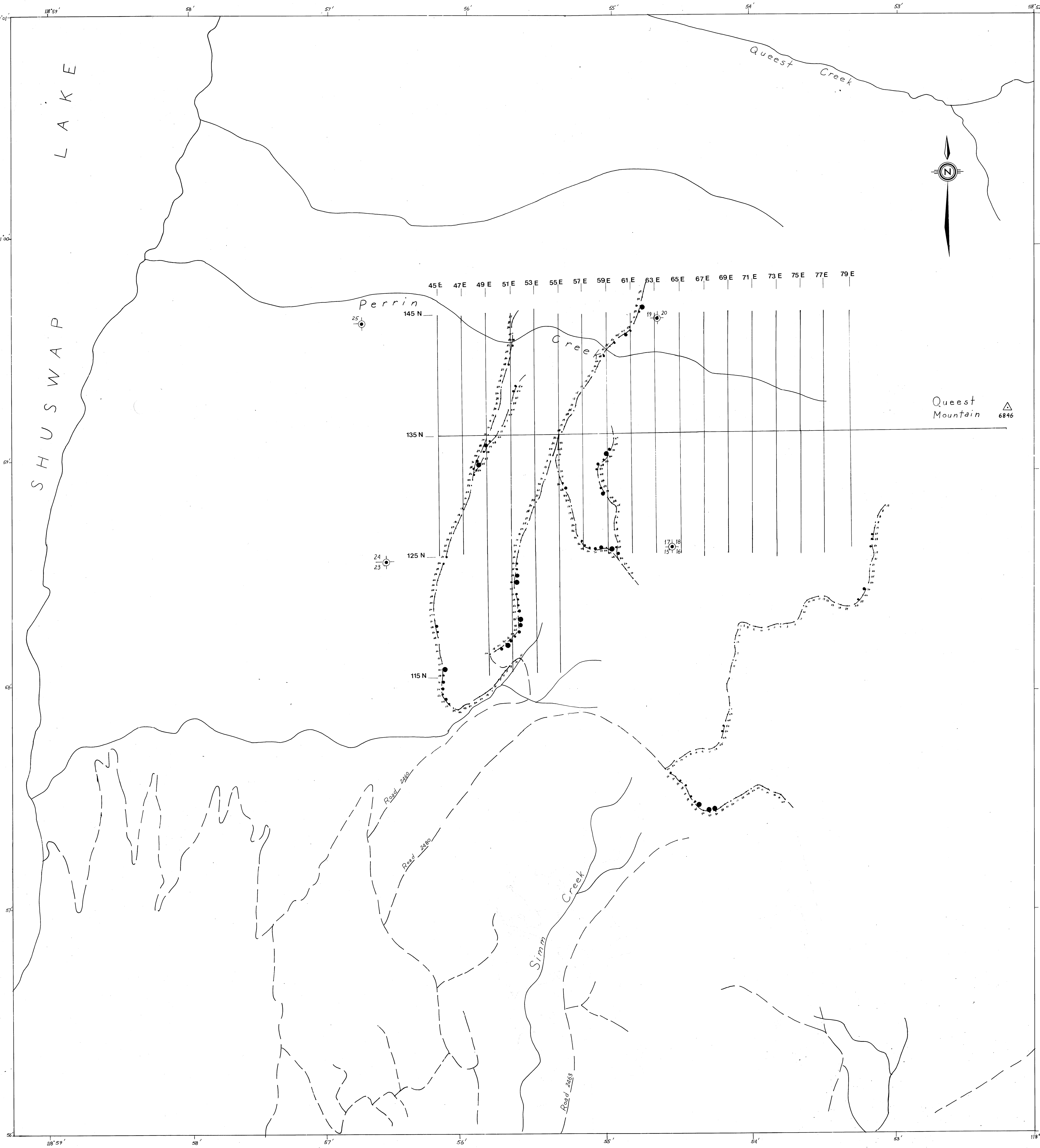
0 200 400 600 800
Metres

**Hudbay Mining Company**
A Division of Hudson's Bay Oil and Gas Company Limited

**COYOTE CLAIMS WEST**

**APPARENT RESISTIVITY RECONNAISSANCE**

| MAP | DATE | BY | SCALE | N T S |
|---|---|---|---|---|
| FIG. 31 | Oct 1980 | R.C.E | 1: 10,000 | 82 L15&M2 |




## LEGEND

| | |
|---|---|
| ● | ≥80 Milliseconds |
| ● | 77 – 79 |
| ● | 64 – 76 |
| • | 48 – 63 |

DOUBLE DIPOLE ARRAY

PLOTTING POINT (Milliseconds)

a = 50 metres, n = 2

Transmitter: Scintrex IPC-8, 250 Watt Time Domain

Receiver: Crone IP IV

Legal corner post with claim numbers

Part 3 of 3

9567

0 200 400 600 800
Metres

**Hudbay Mining Company**
A Division of Hudson's Bay Oil and Gas Company Limited

**COYOTE CLAIMS WEST**

**APPARENT CHARGEABILITY RECONNAISSANCE**

| MAP | DATE | BY | SCALE | N.T.S. |
|---|---|---|---|---|
| FIG.30 | Oct 1980 | R.C.E | 1: 10,000 | 82 L15 & M2 |