82-191

GEOLOGICAL - GEOCHEMICAL REPORT

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GEOLOGICAL MAPPING AND SOIL - SILT SAMPLING, SURVEY

PITA 1, 2, 3, 4, 5, 6, 7, 8 & 9

MINERAL CLAIMS

VERNON MINING DIVISION

N.T.S. 82 L/2

118° 30'-36' W. LONGITUDE 50° 7'-10' 30" LATITUDE

OWNER OF CLAIMS: MOHAWK OIL CO. LTD.

PREPARED BY: BRIAN CALLAGHAN

APRIL 2nd, 1982

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# APPENDICES

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### INTRODUCTION

A geological and geochemical survey was conducted on the Pita mineral claims during the early summer, for three weeks of the 1981 field season. The Pita claims are located within the Monashee Mountains of Southern British Columbia. This program was undertaken in order to evaluate the economic potential for base and precious metals. Enclosed are the results of this program including a series of maps depicting the geology and geochmical values.

### LOCATION

The Pita claims are located within the Monashee mountains of Southern British Columbia at approximately  $118^{\circ}$  30'36' west longitude and  $50^{\circ}$  7'-10'-30'' north latitude, NTS map sheet 82L/2. (See Figure 1).

#### ACCESS

Access to the Pita Claims is via Highway no. 6 east from Vernon where a turn off at Heckman Creek to the west is • made. This route along a good logging road can be taken to Inches Creek. The northern Pita Claim can be reached by following forestry roads that extend north of Inches Creek. Access to the eastern Pita Claims is via Highway no. 6 that passes parallel to Monashee Pass Creek.

#### PHYSIOGRAPHY AND VEGETATION

Elevations range between 1150 metres and 1700 metres. Elevation of Monashee Mountain to the east of Inches Creek and south of Monashee Creek is approximately 1830 metres. Relief generally is moderate and valleys are narrow and deep. Stands of evergreens include fir, spruce, jack pine; cedar and cottonwood. Deciduous trees include birch, alder and poplar. Streams draining timbered mountain slopes are surrounded by dense bent mountain alder and devil's club. Drainage systems include Heckman, Inches, Monashee, Monashee Pass, Big Goat, and Cedar Gulch Creek.

#### PROPERTY

The Pita Claims are currently held by the owners, Mohawk Oil Co. Ltd. and include:

CLAIM NAME	NO. OF UNITS	RECORD NO.	ANNIVERSARY DATE
Pita l	20	1032	March 6th, 1981
Pita 2 <sub>,</sub>	20	1033	March 6th, 1981,
Pita 3	15	1034	March 6th, 1981
Pita 4	15	1035	March 6th, 1981
Pita 5	20	1036	March 6th, 1981
Pita 6	20	1037	March 6th, 1981
Pita 7	12	1038	March 6th, 1981
Pita 8	16	1039	March 6th, 1981
Pita 9	20	1123	Sept. 21st, 1981

Pita 1 - 8 Mineral Claims were staked between the 14th and 21st of February, 1981. Pita 9 Mineral claim was staked on the 18th of September, 1981. (See Figure 2).

#### STATUS

Record numbers 1032 - 1039 were in good standing until March 6th, 1982. i.e. 1 year's assessment work required to keep claims in good standing is as follows:

\$100.00 per year for each unit with a recording fee of \$5.00 for every \$100.00 of work.

# HISTORY AND PREVIOUS WORK

Mining properties of historical interest in the vicinity of the Pita Claims date back to the late 1900's when exposures of high grade silver were recorded on Cherry Creek. Crown grants south and adjacent to the Pita Claims cover the old Monashee Gold Mine. Minor placer gold operations in the area include work on Heckman and Monashee Creek. No lode deposits have been mined since the 1940's in this area.

## REGIONAL GEOLOGY

The Pita claims are underlain by Cache Creek group rocks that are of Carboniferous (?) to Permian age. Three divisions of approximate equal thickness with rocks of similar lithology but in varying proportions consist of: Argillite' characteristic of division A; Volcanic rocks including andesite lava and tuff characteristic of division B; Limestone is a chief constituent of division C.

The Cache Creek group is overlain by Tertiary Kamloops Group olivine basaltic lavas and flow breccia. They are intruded by Nelson and Valhalla Coast intrusions of Jurassic to late Cretaceous age. They include granite, granodiorite and allied rocks.

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# LOCAL GEOLOGY

The Pita mineral claims are underlain by mostly Cache Creek group rocks that consist of black argillite and limestone. The grey to black argillite is massive and breaks with a blocky fracture. Most exposures of black argillite occur on the Pita 3 mineral claim and appear - locally folded especially along exposures adjacent to Highway no. 6 near the Cedar Gulch Creek. (See Figure 14)

Exposures of limestone occur intermixed with the argillite. They vary from fine to coarse grained white to light brown massive rocks that represent local exposures of possibly division C of the Cache Creek Group. Some of

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the limestone appears argillaceous and siliceous.

Chert nodules of probably concretionary origin appear in siliceous argillites which are in fault contact with exposures of Tertiary Kamloops group olivine basalt at the west end of traverse line Pita 5/In. The northern portion of mineral claim Pita 5 and the mineral claim Pita 4 east of Highway no. 6 are underlain by small exposures of andesite. They range in colour from light grey to greenish grey, are massive and break with a sub conchoidal fracture. Some of the andesites resemble the argillites.

Mottled green diorite occurs in the middle of this north west trending belt of Cache Creek group rocks. The diorite is equigranular and is composed of approximately 50% mafics. The mafics include 15% - 20% pyroxene, 20%-25% hornblende and approximately 10% biotite. Calcic Plagioclase represents approximately 35-40% and quartz less than 10%.Magnetite occurs as an accessory mineral.

#### MINERALIZATION

Mineralization of properties within the Cache Creek Group consists of gold, silver, lead, zinc, copper antimony, and arsenic that occurs in quartz veins. Mineralization on the Pita claims appears to be structurally controlled along the contact of the andesites and argillites west of the head waters of Monashee Creek, south of the Pita 2 mineral claim. Samples #4503-#4506 taken along a shear zone consisted of disseminated pyrite in hematite altered andesites (See Appendix I). Mineralization occurs along a road cut at the south end of traverse line Pita 1/1 East and consists mostly of disseminated Pyrite in highly altered argillites. Quartz veinlets in the argillites contain pyrite. Quartz veins 4" wide trend north west and dip to the west, south of Monashee Creek along traverse line Pita 4/2E. The quartz is not mineralized. Mineralization occurs in quartz veins at the contact with intrusives and Cache Creek Group rocks on Big Goat Creek. Disseminated and semi-massive pyrite occurs in narrow quartz veinlets. (See Appendix I).

# GEOLOGICAL AND GEOCHEMICAL SURVEY PROCEDURE

Geological mapping of the property was done at a scale of 1:5000 over an area that encompassed approximately 6000 The compilation map was produced from a 1972 hectacres. Forest cover Map 82-L-2-H and pentagraphed to the approximate scale of 1:7920. Where possible, outcrops were identified by using B.C. Government airphotos at a scale 1:15840. These outcrops were visited and examined in the field. Other outcrops not visible on airphoto were examined and prospected during chain and compass traversing between identifiably points and then recorded. The overall extent of geological contacts was plotted utilizing 1.) the geological mapping, 2.) Data from an airborne magnetic survey of the Creighton Creek area by Geoterrex from January 1972 to February 1972, 3.) A structural interpretation utilizing 1974 air photography at a scale of 1:15840.

The regional geochemical programme involved the collection of a total of 882 soil, silt, and rock chip samples which were analyzed for copper, zinc, lead, silver and gold. Of these 786 were soil samples, 74 were stream sediment samples and 22 were rock chip samples. Traverse lines were 500 metres apart; soil samples were taken every 50 metres along flagged traverses.

The sampled "B" Horizon ranged in colour from light reddish brown to deep rusty brown and varied in depth from approximately 17cms. - 45cms. Shovels were used to obtain a good representation soil sample of the finer soil fraction.

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Coarse rock debris and organic matter was discarded. Samples were not taken in areas of talus overlying bedrock or areas of swamp. The "C" horizon was sampled whenever "B" horizon was not obtainable. Silt samples were taken every 50 metres where possible. The location was flagged and the elevation recorded at the sample site.

## TESTING PROCEDURE

Samples in bags were dried to room tenperature. They were then packaged shipped to Kamloops for analysis by Kamloops Research and Assay Laboratories Ltd. for copper, silver, lead, gold and zinc. Samples were dried and screened to minus 80 mesh. Then a measured amount of the screened material was digested in hot aqua regia. Gold samples were fire assayed were quantitatively determined by atomic absorption. Atomic absorption method was used for copper, lead, zinc, and silver.

Rock chip samples were crushed and pulverized and analyzed by the same procedure used for analyzing the soil and silt samples. The copper, lead, zinc, and silver results were reported in parts per million (ppm) and gold in parts per billion (ppb). The values were plotted on single element maps of the property, contoured and subanomalies, anomalies and 2nd order anomalies defined.

#### TREATMENT OF GEOCHEMICAL DATA

Cumulative frequency distributions for gold, silver, lead, zinc and copper were completed for the four geological énvironments. Also, the mean and standard deviation were calculated. Subanomalous, anomalous and second order anomalous values were identified (See Figures 4-13). The mean value plus one standard deviation were considered to be subanomalous and important as an indicator of mineralization. Those values contoured at intervals of two standard deviations plus the mean value were considered anomalous. Second order anomalies were considered to be values greater than two standard deviations plus the mean value.

The contour interval was based on the range of anomalous values and were established in convenient increments.

# INTERPRETATION OF THE GEOCHEMICAL AND GEOLOGICAL DATA

Second order gold anomalies in the northern portion of the Pita 1 mineral claim are underlain by argillite and limestone. The anomalies trend in an east-west direction parallel to the inferred geological contact with intrusives to the north. An anomalous zone of silver and zinc also occurs along this contact and extends farther to the east as far as Cedar Gulch Creek. Anomalous gold values on traverse line Pita 3/3W trend north-south with downslope dispersion to the east into Cedar Gulch Creek. South of this gold anomaly, second order lead occurs along an inferred geological contact with diorite and Cache Creek Group rocks.

Second order copper anomalies are confined mostly to the central upper elevations that are underlain by both diorite and Cache Creek Group rocks. These anomalies appear to trend north-west. Second order anomalies of copper are overlain with second order anomalous zinc and subanomalous lead between Cedar Gulch Creek and the west side of Monashee Pass Creek.

An extensive second order zinc and lead anomalous zone occurs north of Inches Creek in the Pita 1 mineral claim that is underlain by Cache Creek Argillites. This anomalous zone extends approximately 600 metres north-south. To the south-east argillite is mineralized with dissemin-

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ated pyrite along a road cut at traverse line Pita 1/1 E. This outcrop extends to the west for approximately 300 metres. A second order anomalous gold zone occurs south and east of this mineralized outcrop.

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CONCLUSIONS

- The clusters of anomalies that occur north of Inches Creek and to the east of Heckman Creek may represent a broad area of mineralization of good economic potential.
- 2.) Mineralization appears to be structurally controlled along contact areas between intrusives and Cache Creek group angillites and limestone.
- 3.) The area south of Inches Creek has less economic potential.

# RECOMMENDATIONS

- 1.) Detailed geological mapping of anomalous zones.
- 2.) A closely spaced follow up soil geochemistry program over anomalous zones.
- 3.) VLF-EM and magnetometer surveys shoud be carried out over the property.
- 4.) Trench and further expose mineralized areas along the road cuts for possible diamond drilling and sampling.

# BIBLIOGRAPHY

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JONES, A.G. (1959) Vernon Map Area British Columbia, G.S.C. Memoir 296.

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AUTHOR'S QUALIFICATIONS

BRIAN CALLAGHAN

I graduated from Brandon University, Manitoba in 1980 with a Bachelor of Science Degree in Geology. The following is a synopsis of my employment experience.

- June October Esso Minerals, Canada Geological assistant - exploration in Northern Manitoba, Northern Saskatchewan,
  MacKenzie, B.C., and various properties in the Stewart area of B.C. including the Grande Duc Mine.
- 1981 February 23/81 to present. Exploration Geologist Mohawk Oil Co. Ltd. Responsibilities included core logging, supervision of field crews, geological and geochem prospecting.

2nd April 1982 Brian Carraghan DATED: SIGNED:

BRIAN CALLAGHAN

# APPENDIX I

## ITEMIZED COST STATEMENT

- 786 soil samples and 274 silt samples were analyzed \$ 9,738.04 for Au, Cu; Pb, Zn, Ag at \$9.85 per sample less discount.
- 2.) 34 Rock Samples were analyzed for Au, Ag, Cu, Pb, 577.50 An, at a cost of \$11.75 for rock geochem and \$30.00 for rock assays.
- 3.) Printing costs for map reproduction, xeroxing etc. 120.31
- 4.) Brian Callaghan Exploration Geologist, 28 days at 3,080.00
   \$110.00 per day between July 6th and July 31st, 1981
   and between February 22nd and February 26th, 1982.
- 5.) Matt Waldner Chief Geologist, 5 days at \$210.00 per day between July 6th and July 8th, 1981 and on February 15th and 16th, 1982.
- 6.) Steve Maltby Senior Geological Technologist, 41 4,100.00 days at \$100.00 per day between July 6th and July 31st, 1981 and between November 31st and December 18th, 1981 and between February 4th and February 18th, 1982.
- 7.) Dave Newton Senior Geological Technologist, 38 days \$ 3,230.00 at \$85.00 per day between July 7th and July 17th, 1981 and between October 22nd and October 30th 1981 and between December 10th and December 18th, 1981 and between January 26th, and March 5th, 1982.

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8.) Gary Shabaga, Junior Field Assistant 23 days at \$ 2,679.00 \$73.00 per day between July 7th and July 31st, 1981 9.) Ken Lyons, Junior Field Assistant, 12 days at \$68.00 816.00 per day between July 6th and July 17th, 1981. 10.) Dan Jeffries Junior Field Assistant, 23 days at 1,196.00 \$52.00 per day between July 7th and July 31st, 1981. 11.) Transportation: Camp to claims and back (82 km.) at 738.00 25¢ a km. (4-wheel drive) for 18 trips (2 weeks). Office to Camp and back (216 km) at 15¢ 97.20 a km. (2-wheel drive) for 3 trips. Room and Board for field crews, 124 days at 12.) 3,720.00 \$300.00 per day between July 6th and July 31st 1981. 13.) Shipping charges (by bus) from Vernon to Kamloops 57.85 of geochem samples. 14.) Miscellaneous equipment, supplies and service \$ 200.00 charges. \$ 30,399.90

# AMOUNTS APPLIED

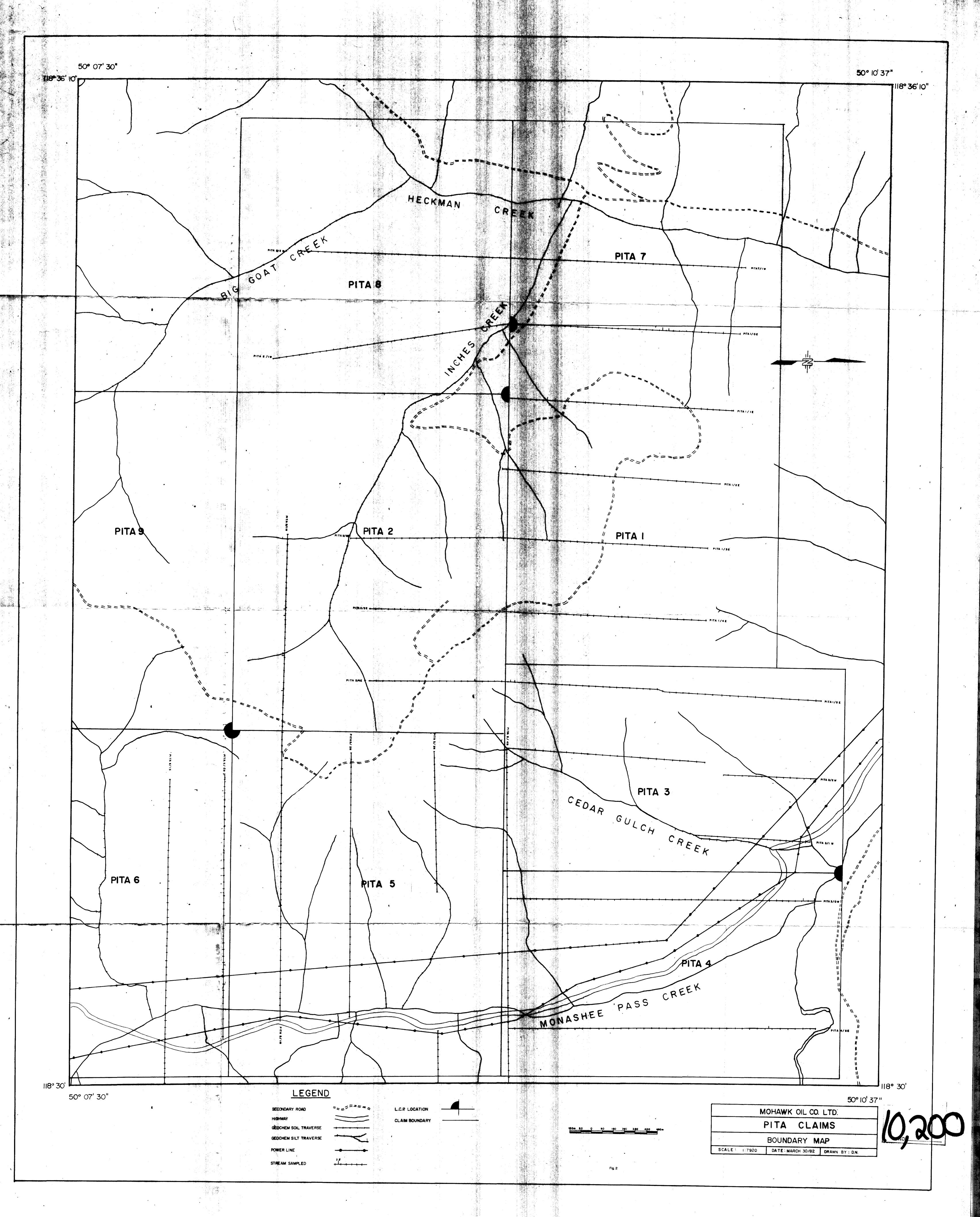
The amounts applied were apportional to the Pita North Mineral Claim Group on the basis of the number of geochemical samples collected from each area. Forty-One percent of the samples came from the South Group and Fifty-Nine percent from the North Claim Group. APPENDIX II

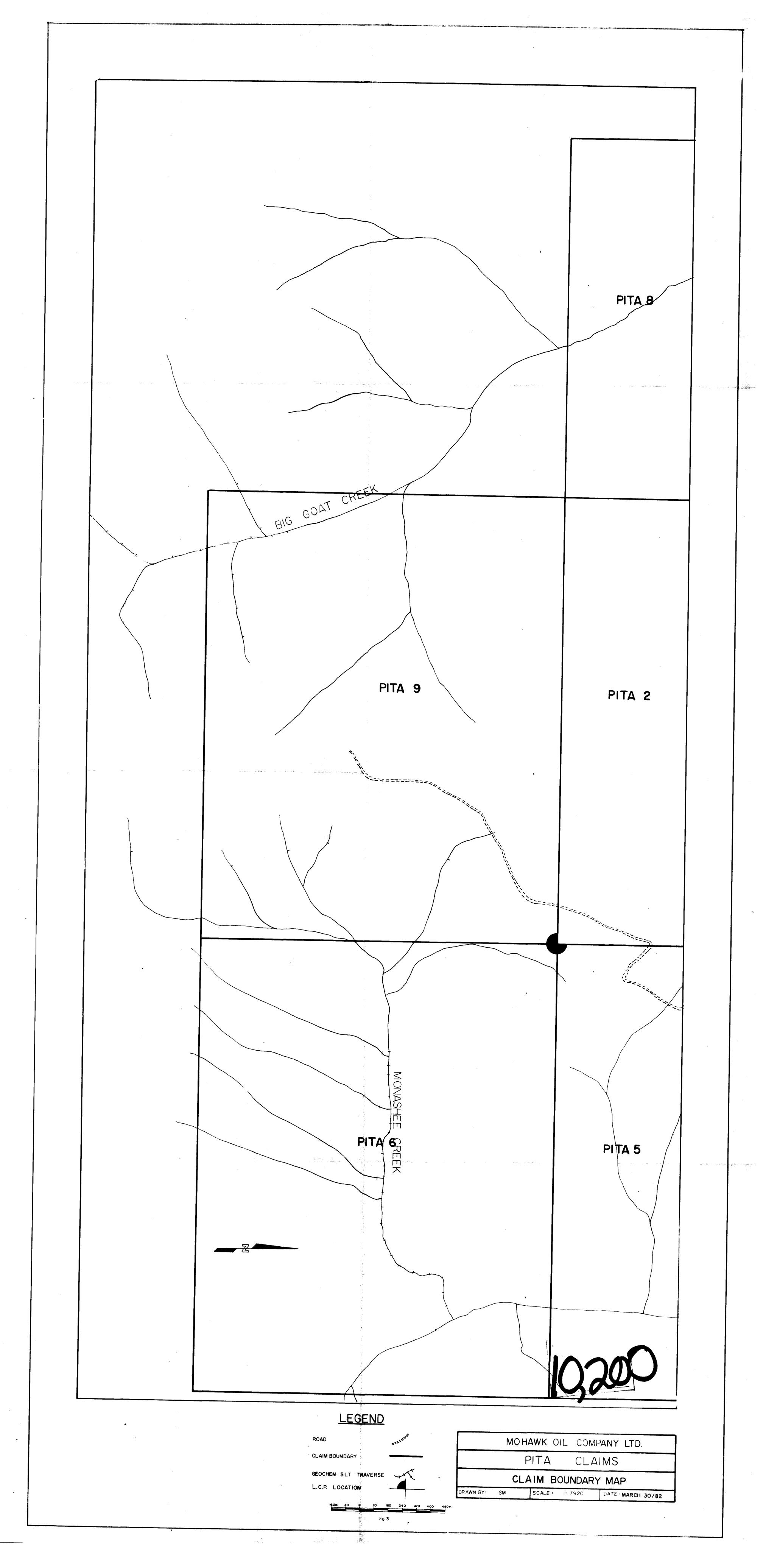
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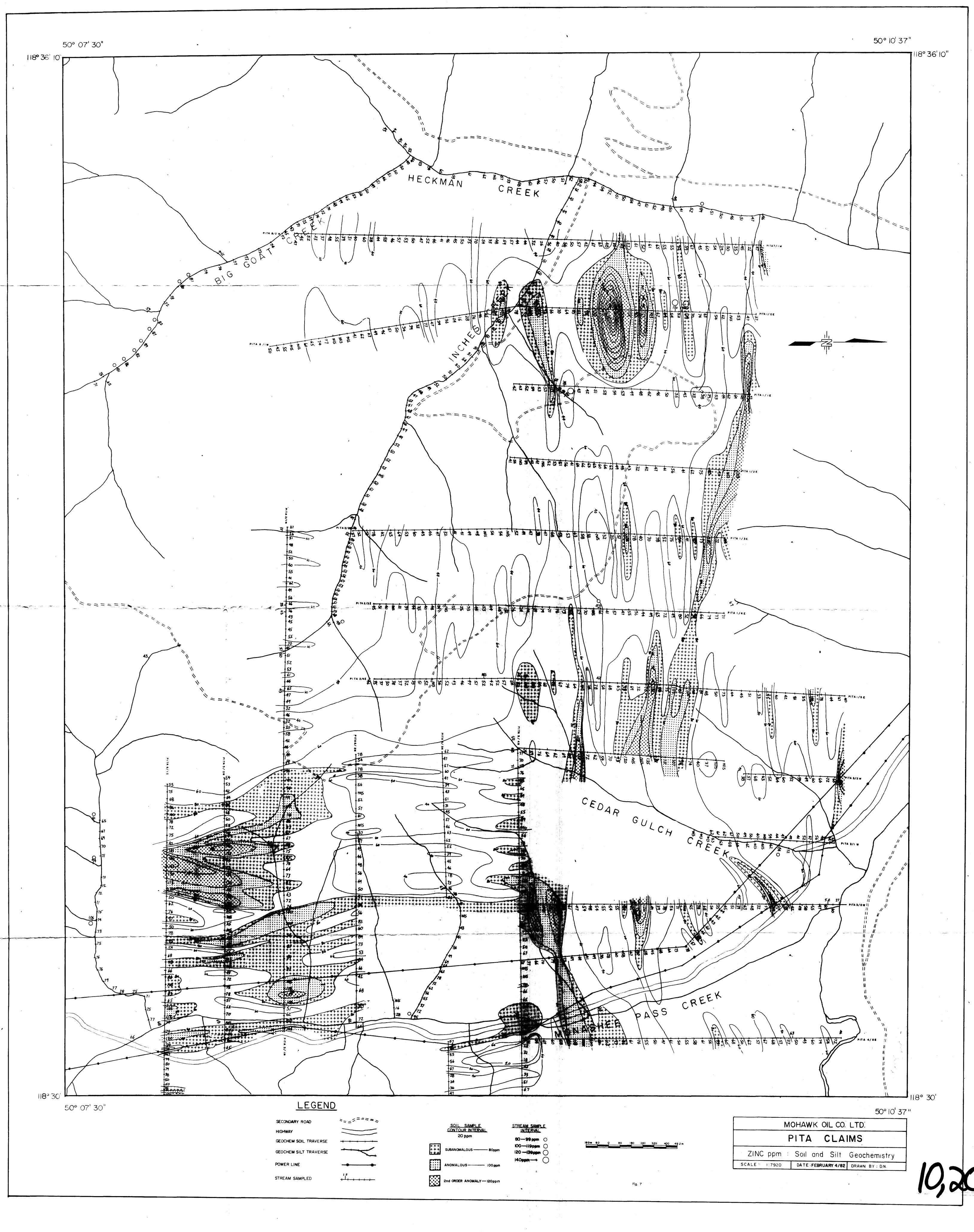
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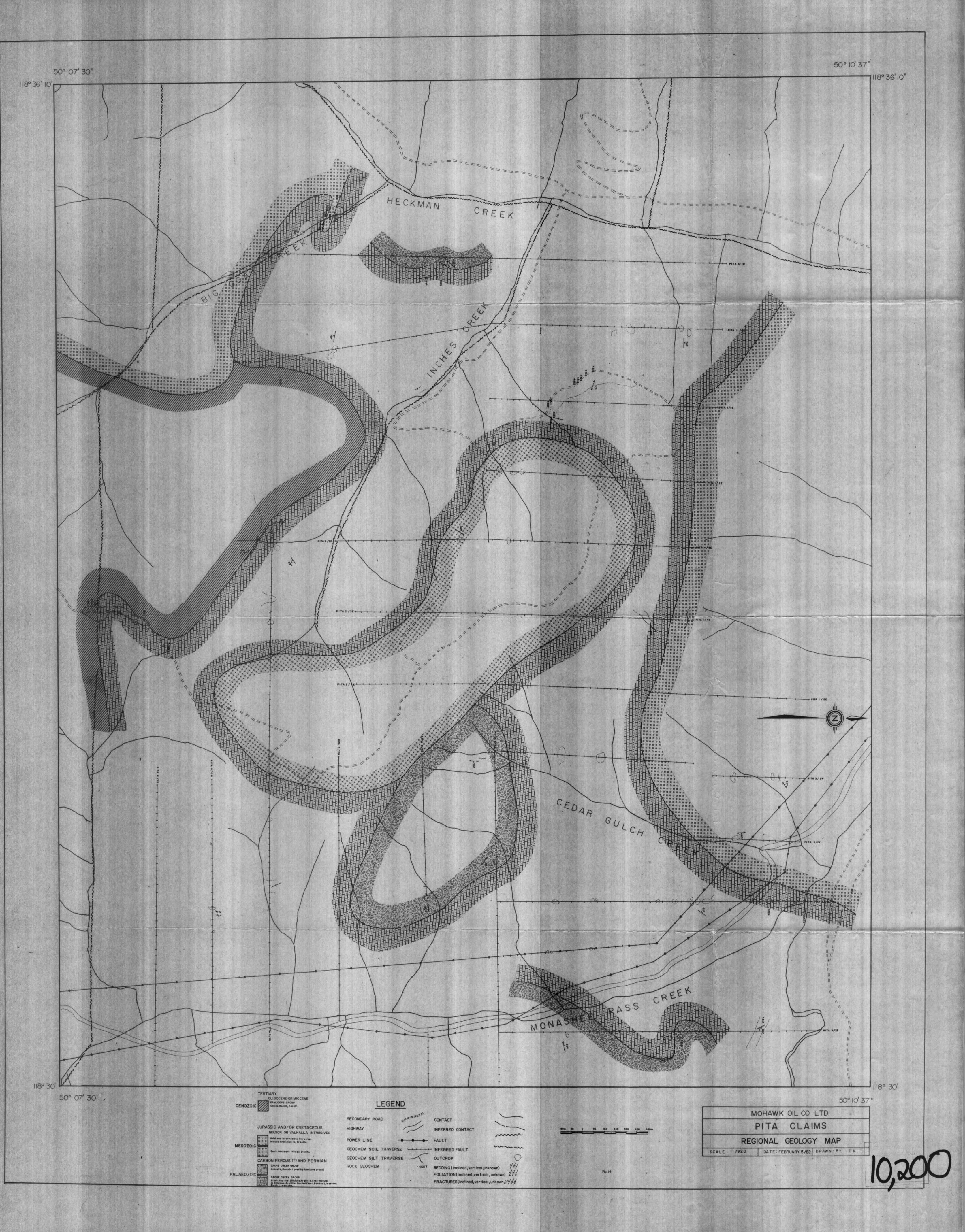
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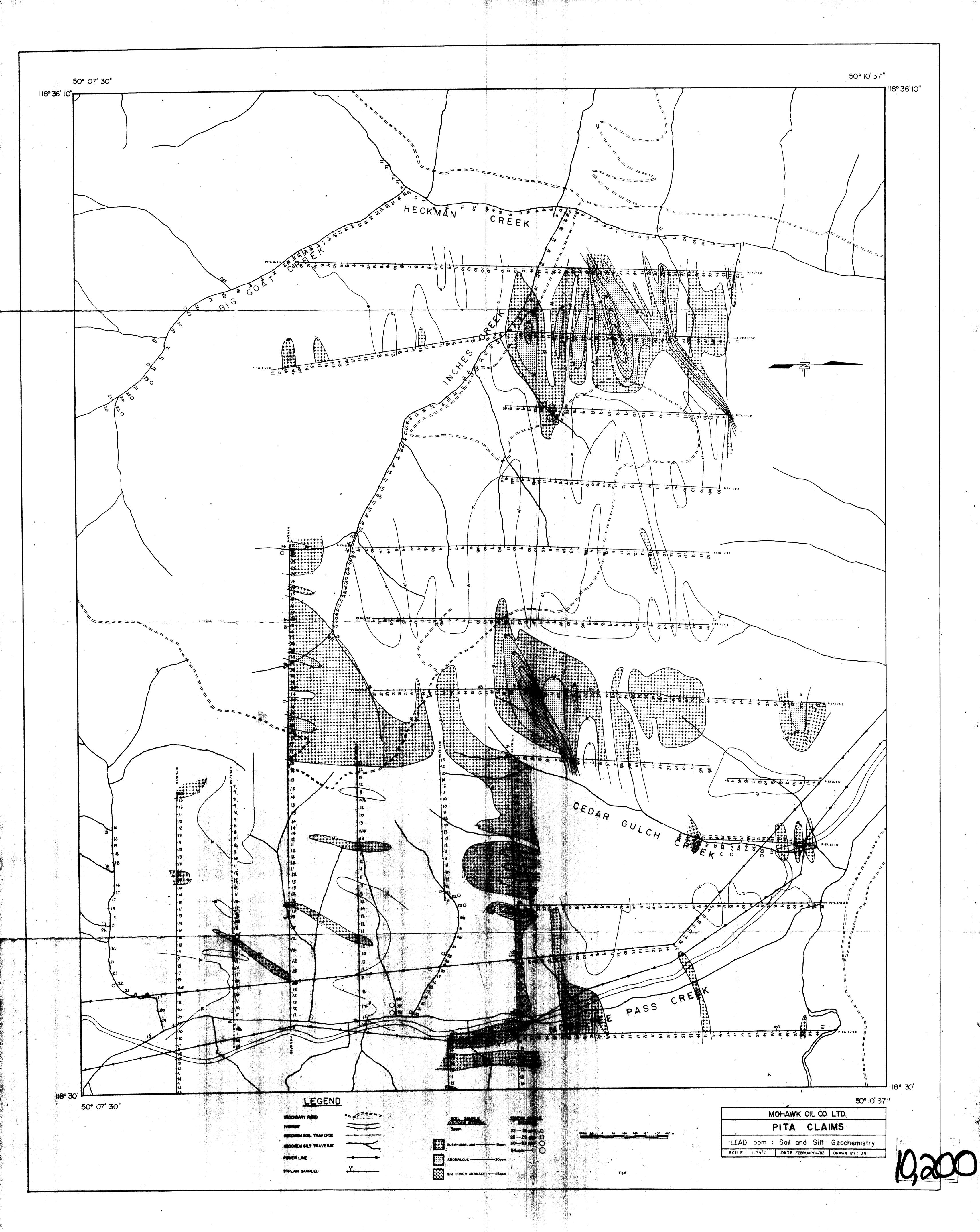






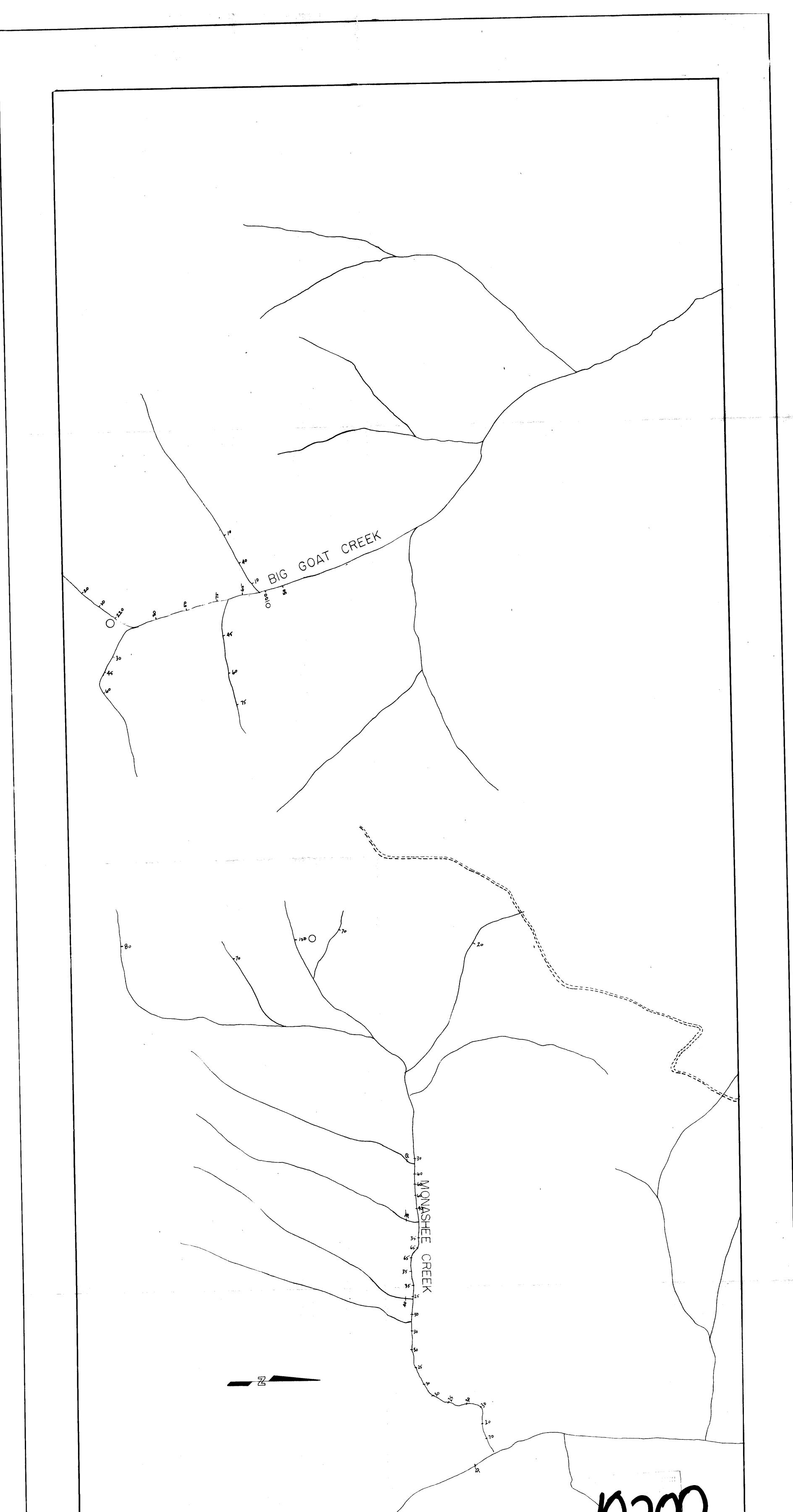


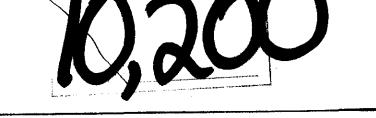


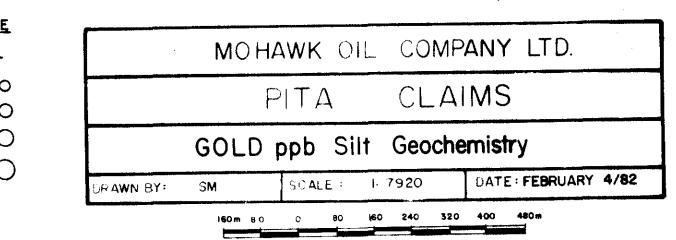


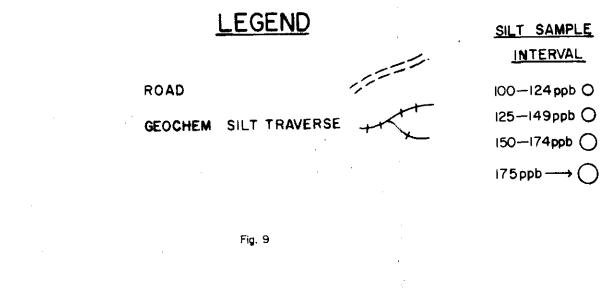


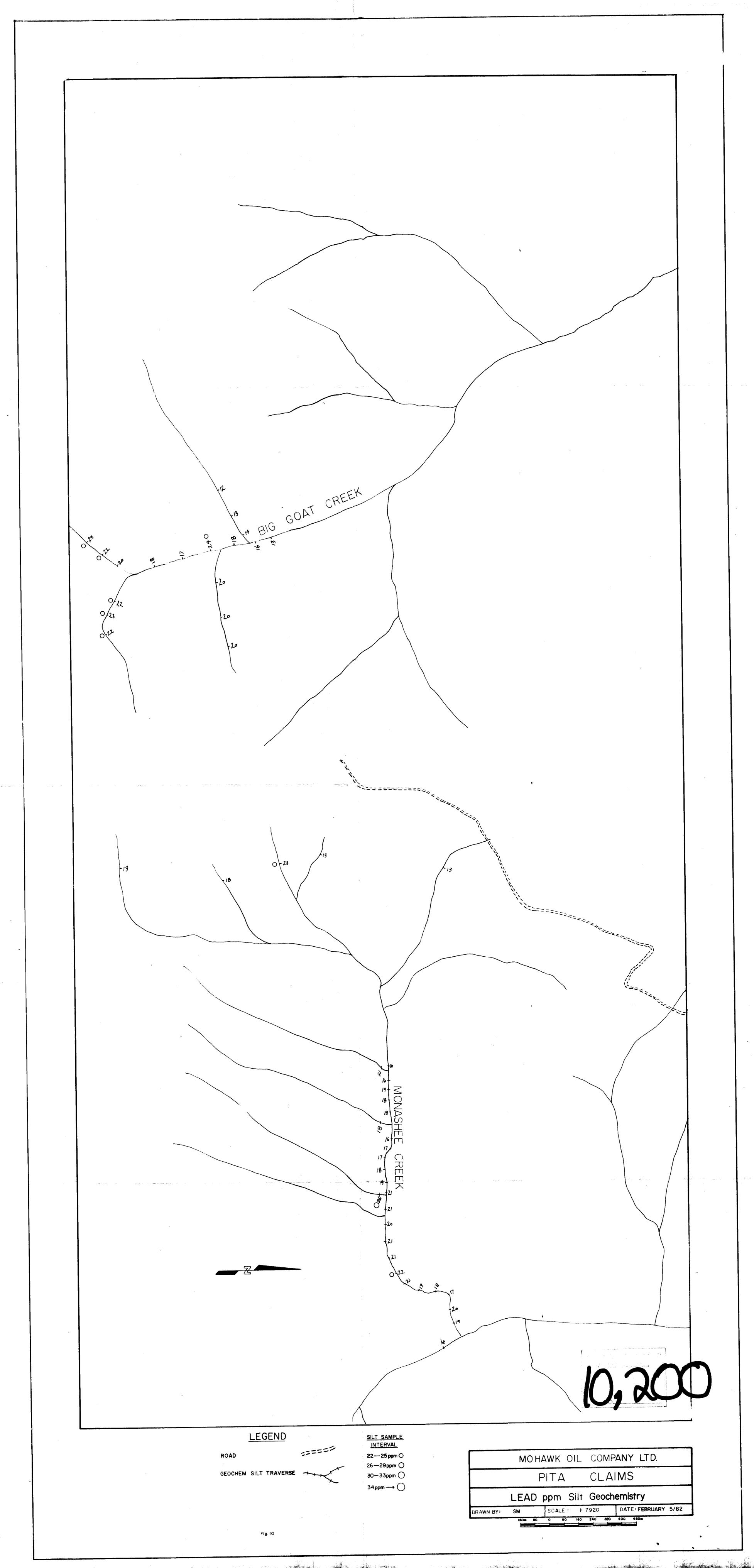






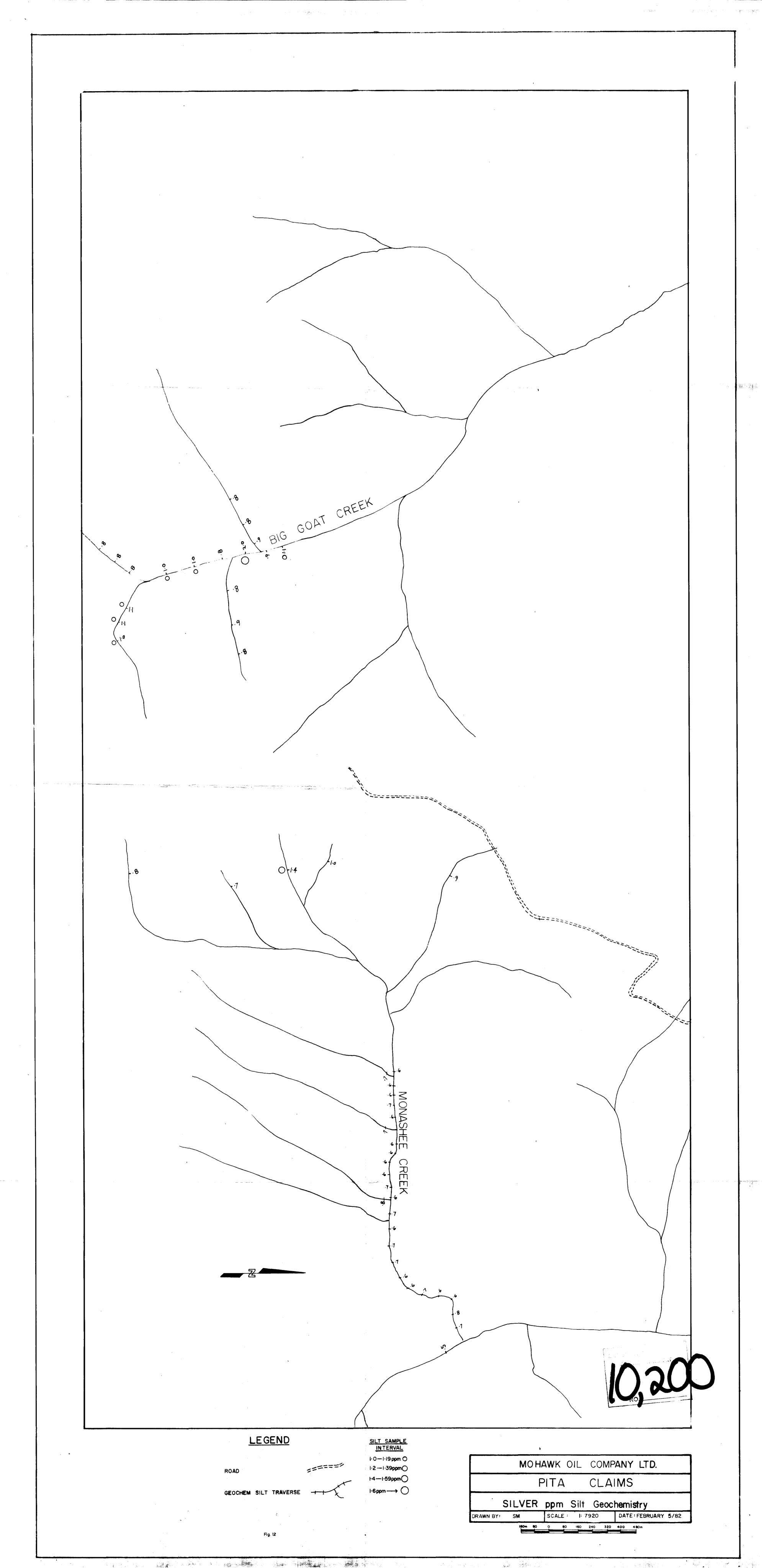


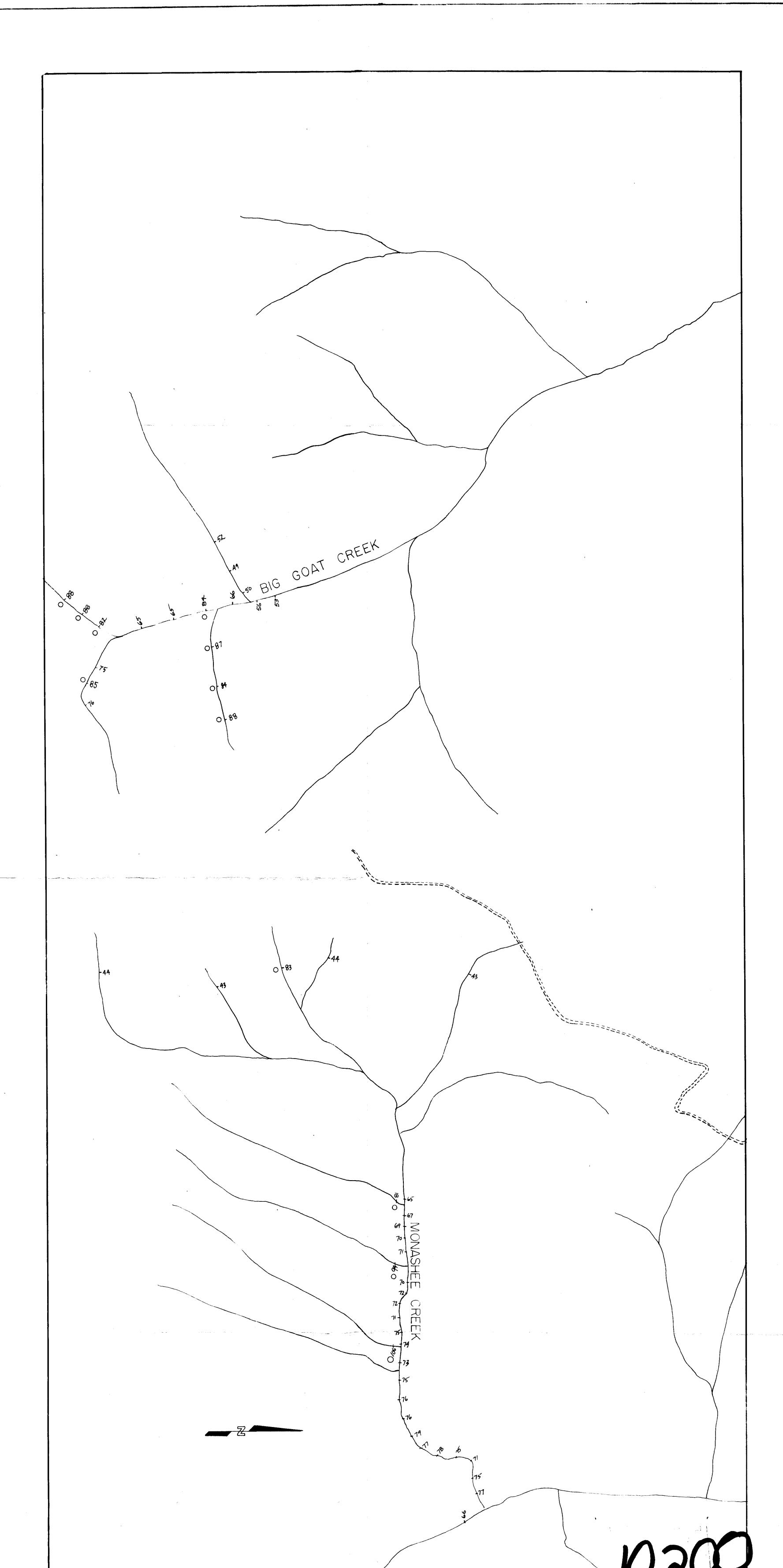


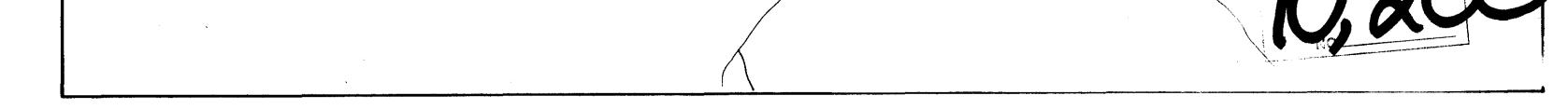




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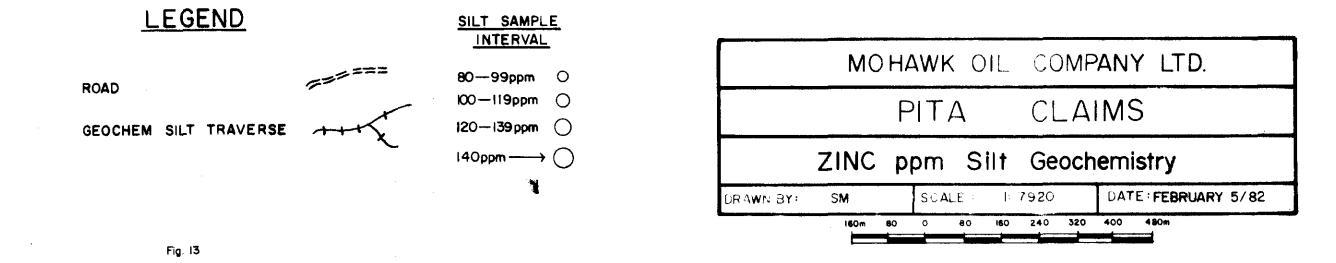






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