MICHAEL ALLAN POWER

GEOLOGY REPORT ON MOOSEHORN RANGE PROPERTY

WHITEHORSE MINING DISTRICT, YUKON TERRITORY

NTS 115 N/2

BY

120126

D.B. CRAIG, PH.D., P. ENG.

NOVEMBER 1989

NUMBER	TYPE	LENGTH
PL 8243	CREEK LEASE	1 MILE

LOCATION: 63º 04' 42" N LATITUDE/ 141º 00' 00" W LONGITUDE

OWNER: MICHAEL ALLAN POWER

GEOLOGIST: D.B. CRAIG

This report has been examined by the Geological Evaluation Unit under Section 41 Yukon Placer Mining Act and is recommended as allowable representation work in the amount of $ 1000.00.

for Chief Geologist, Exploration and Geological Services Division, Northern Affairs Program for Commissioner of Yukon Territory.

SUMMARY

The property consists of a one mile lease to prospect (No 8243) under the terms of the Yukon Placer Mining Act, on the west side of the Moosehorn Range, north of Beaver Creek, in the Whitehorse Mining District. The downstream end of the lease is on the Yukon-Alaska border (141 st Meridian). Access is by fixed wing aircraft to either of two 650 m airstrips on the west and east sides of the Moosehorn Range, from Beaver Creek, 70 km due south, or Dawson City, 130 km to the northeast. Bulk supplies, fuel and equipment are taken to the area annually from January to March, over a winter road from Beaver Creek, on the Alaska Highway.

Placer gold was discovered two kilometres to the southeast of Lease 8243, at the head of Kenyon Creek (local name) in 1975. Kenyon Creek was mined each year from 1976 to 1987, producing in excess of 30,000 crude ounces gold, from approximately 4000 metres of creek valley. Mining on the properties of Claymore Resources was shifted to Swampy Creek (local name for the next creek south of Kenyon Creek) in 1988 where Cantung Mining Co., the present operators, mined the past two seasons.

Lease 8243 was prospected and geologically examined during the period 24 to 27 August 1989. This report is based on that work and the literature on the area, particularly Mineral Industry Report 1976 Yukon Territory by J.A. Morin et al.

The conclusion is that the lease is underlain by similar bedrock and contains similar alluvial and residual gravels to those on the immediately adjacent, highly productive Kenyon Creek. Free gold is present in the surface gravels in small amounts.

The lease is worthy of further exploration, by test pitting or rotary drilling, to demonstrate the presence of gold at bedrock and to determine the grade of the gold bearing gravels.

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FIGURES

1. INTRODUCTION

Lease 8243 is a placer gold prospect on the Yukon-Alaska border, 70 kilometres north of Beaver Creek on the Alaska Highway (See Location Map). Adjacent creeks, immediately south, have been extensively mined. Kenyon Creek, two kilometres to the south has produced in excess of 30,000 crude ounces of gold over a mining life of 12 years. Mining on the next creek south began in 1988 and was continued in 1989 by the present operator, Cantung Mining Co.

No significant exploration has previously been done on the creek, other than a small excavation near the border, on the Yukon side. The area is part of the overall Moosehorn Range examined by Claymore Resources and Great Bear Mining as well as Indian Affairs and Northern Development geologists in 1975 and 1976.

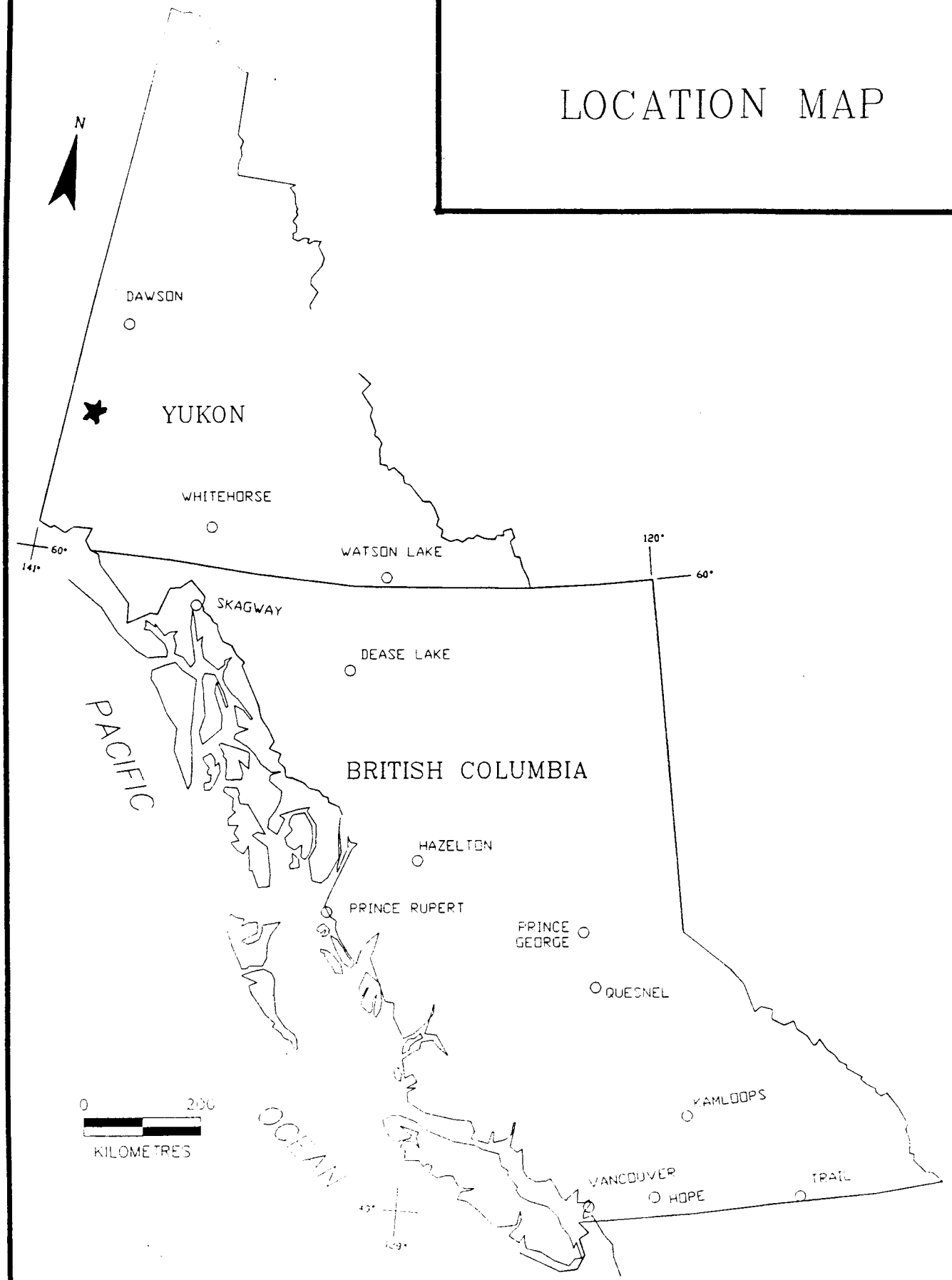
1.1 LOCATION AND ACCESS

The one mile lease is situated on an unnamed creek flowing southwestward across the Yukon-Alaska border at Latitude 63 o 04 ' 42 " north and Longitude 141 o 00 ' 00 " west. Access to the mining area is by means of fixed wing aircraft to two 650 metre gravel airstrips on the west and east sides of the Moosehorn Range from either Beaver Creek, 70 kilometres to the south or from Dawson City, 130 kilometres to the northeast. Heavy equipment, bulk supplies and fuel are brought in from Beaver Creek over a 75 kilometre winter road during the period January to March each year. Access for the geological work covered by this report was from Dawson City.

1.2 PHYSIOGRAPHY

The creek is on the west side of the Moosehorn Range, an area of gently rolling, flat-topped hills and ridges which has not experienced continental glaciation. Blocky felsenmeer (boulder fields) cover much of the upland, the boulders being weathered loose from the underlying bedrock, largely by frost action, and are almost in situ. The lower slopes of the

LOCATION MAP



range are cut by the small creek valleys. The creek valley examined ranges in elevation from apoproximately 2500 feet (800 m) at the downstream end at the border to 3500 feet (1100 m) at the upper end and is part of the lower slope of the overall Moosehorn Range topography. The valley is in the shape of a broad, asymmetrical V, with the north side having coarse slide rock, being steeper than the south side. Gradient is approximately 1000 ft/ mile (200 m/km). The valley bottom is characterized by tussock tundra muskeg and dwarf birch, with poplar, birch and black spruce on the valley sides.

1.3 CLAIM INFORMATION

The property consists of a one mile Placer Lease, No 8243, in the name of Michael Allan Power of Whitehorse, covering the period 31 March l989 to 31 March l990.

1.4 HISTORY

The first recorded discovery of gold in the Moosehorn Range was that by Quintana Minerals in 1970 of gold bearing vein quartz in boulders. The SIL claims, staked on this discovery, were allowed to lapse. The ground was restaked by A. Harmon in 1972 as the DEA Group and tranferred to Great Bear Mining Co. Ltd. In summer 1974, geologist M. Kenyon discovered visible gold southwest of these DEA claims, presumably in segments of quartz veins in the blocky felsenmeer of the upland. This ground was staked as quartz claims (LORI) by Claymore Resources. The ground was explored by geochemistry, geophysics, trenching and diamond drilling. The quartz veins carrying the gold trend north-northwest along the crest and upper western flank of the upland. Where intersected by the diamond drills, at some 10 meters depth, they were found to be narrow (6 inches/15 cm) and low grade, although there were local, high grade intersections.

In 1975 M. Kenyon discovered coarse, easily panned gold in the upper portion of what came to be known as Kenyon Creek. Evaluation work followed with bulk sampling and test mining in 1976. Production of gold was reported as 1895 ounces crude ounces gold and 40 ounces of jewellry grade gold from the first 12,000 cubic yards sluiced. The creek was then mined every season from 1976 to 1987, when operations ceased at the Alaska border, producing a total of greater than 30,000 crude ounces gold.

2. GEOLOGY

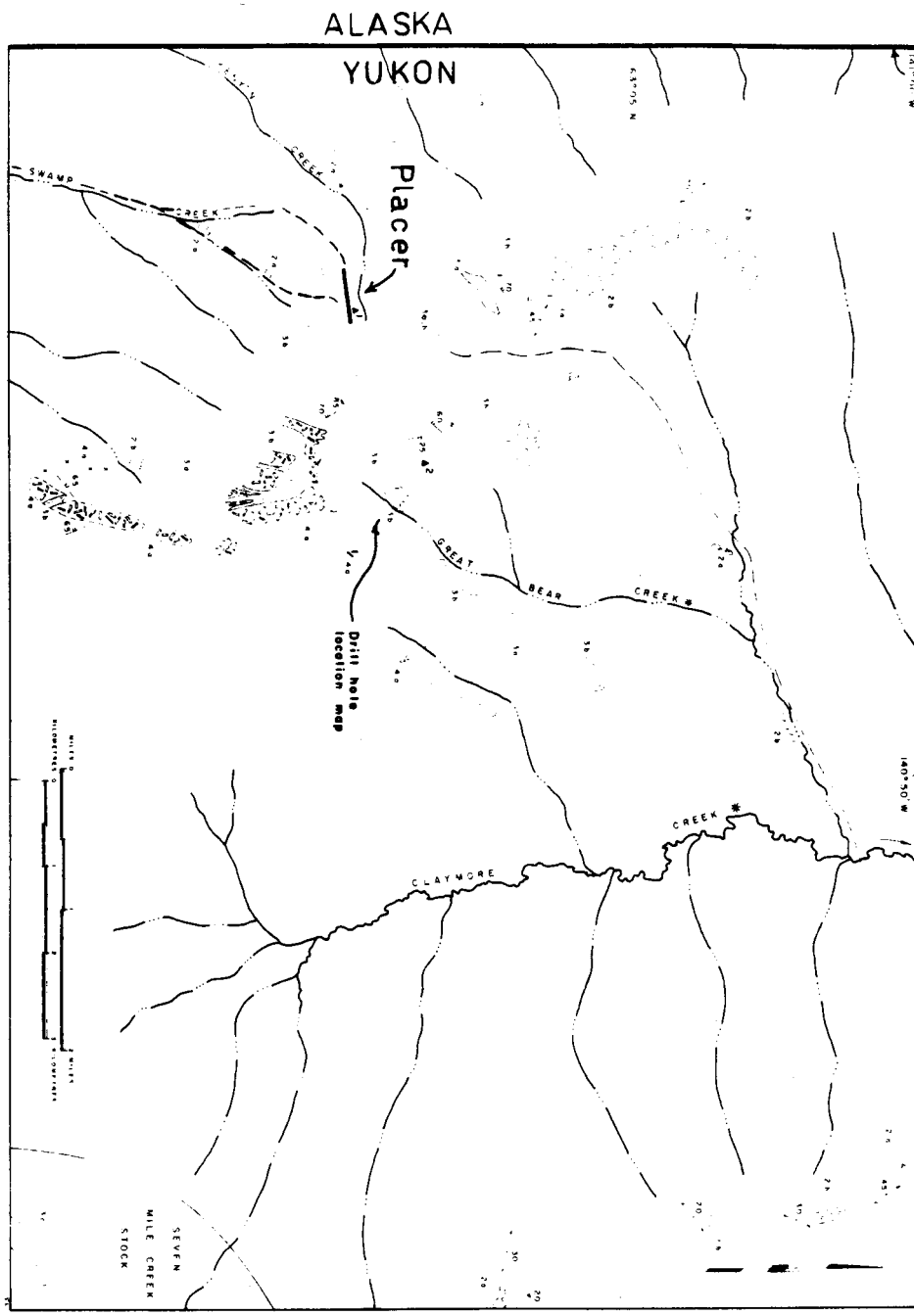
2.1 GEOLOGICAL SETTING

The area is underlain by rocks of the Mesozoic Klotassin Batholith, locally consisting of massive, equigranular granodiorite and foliated granodiorite, both with accesssory biotite and hornblende in varying proportions. The frost fractured and heaved felsenmeer boulders, abundant on the uplands, are near enough to being in situ to be used for determination of the bedrock type. These consist of the massive, medium-grained hornblende biotite granodiorite (unit 3a, Morin et al, 1976). To the west, on the intermediate and lower slopes, towards the Alaska border, the rocks are, in part, hornblende biotite granodiorite (unit 2a, Morin et al 1976). (See accompanying sketch map from Morin et al).

The quartz veins examined in the course of the exploration work described above occur in the massive granodiorite near the crest of the upland.

2.2 PROPERTY WORK

Following staking in March of 1989, the property was geologically examined during the period 24 to 27 August 1989. Bedrock outcrops, where exposed, were identified as to rock type. The rocks in the upper portion of the stream valley consist of the massive, medium-grained biotite hornblende granodiorite (unit 3 b, Morin et al.). Those in the lower portion of the creek show some foliation and are hornblende biotite granodiorite (unit 2a Morin et al) A small outcrop 700 m upstream on the


ALASKA
YUKON
Placer
SWAMP
CREEK
GREAT
BEAR
CREEK
Drill hole
location map
CLAYMORE
CREEK
SEVEN
MILE CREEK
STOCK

GEOLOGY OF THE MOOSEHORN RANGE, 115 N-2

LEGEND

4 Porphyritic Dyke Rocks

a Quartz diorite, granodiorite porphyry

INTRUSIVE TO GRADATIONAL CONTACT

3 Massive Equigranular to Porphyritic Stock Rocks

a Hornblende biotite granodiorite

b Biotite granodiorite, quartz monzonite

c Porphyritic quartz monzonite

GRADATIONAL CONTACT

2 Foliated Granitic Rocks

a Hornblende biotite granodioritic, diorite

b Biotite granodiorite

INTRUSIVE CONTACT

1 Yukon Group

a Quartzite

b Biotite quartz feldspar schist

SYMBOLS

Rock outcrop, mainly felsenmeer

20 Lineation

Foliation, inclined, vertical

Joint, inclined, vertical

Geological contact, assumed

Tote Road

Camp Location, 1 - Claymore
2 - Great Bear

Airstrip

Local creek name

Geology by J. Morin, 1976

KC

lease consists of a tan-grey, sugary textured rock, containing fine grains of sulphide (pyrite in an andesite dyke ?)

Test pans were taken at frequent intervals to compare gravel types with the known material of the adjacent productive creek and to check for the presence of free gold. The unconsolidated section consists of slide rock, silt, then alluvial gravel, characteristically made up of decomposed, rough fragments of granodiorite similar to that of the upland felsenmeer and ridge outcrops. Included are fragments containing vuggy, open spaced quartz vein material, reminiscent of the quartz veins of the uplands.

3. CONCLUSIONS

Gold bearing quartz veins in granodiorite trend north-northwest along and near the crest of the Moosehorn Range. These veins are erratic, pinching at depth and along strike. They contain sporadic, but locally high grade gold sections. The erosion of the upper portion of these veins represents the most probable source of the nearby placer gold on the west and east flanks of the Moosehorn Range. Free gold is present in the alluvial gravels and in decomposed, residual portions of the granodiorite near the airstrip at the head of Kenyon Creek, characteristically in vuggy quartz. The gold is rough and angular, consistent with little to negligible transport. To the extent that some portion of the vein system was present where material was eroded and transported into the creek valley of Lease 8243, there should be gold present in these gravels also.

In suppport of this are the following:

1. The gravels consist of rough angular granodiorite.

2. A small fraction of the creek gravel is vuggy quartz.

3. Surface testing demonstrates the presence of fine gold along the length of the lease. This gold is too fine to determine whether it has the rough angular features of that in the decomposed granodiorite, or that in the adjacent placers.

The above features are adequate grounds to retain the lease and to test the gravels to bedrock by test pitting or rotary drilling.

Respectfully Submitted

D.B. Craig, Ph.D., P. Eng.

REFERENCES

MORIN, J.A. et al. 1977; Mineral Industry Report 1976, Yukon Territory, EGS 1977-1, Pages 33-54.

STATEMENT OF QUALIFICATIONS

DOUGLAS B. CRAIG, PH.D., P. ENG.

ACADEMIC

1958	B.A. Sc.	Geological Engineering	University of British Columbia
1966	Ph. D.	Geology	University of Wisconsin

PROFESSIONAL

1955 - 1965	Field Assistant and Sponsored Thesis	Geological Survey of Canada
1966 - 1968	Geologist	CIDA/Geological Survey of Jamaica
1968 -1969	Geologist	Department of Mines and Petroleum Resources of British Columbia
1969 - 1979	Regional Geologist Yukon	Department of Indian Affairs and Northern Development
1979 -1987	Instructor, Geology	Yukon College

COST STATEMENT

Labour (K. Mulloy) 2 days at $150	$300
Geologist (D. Craig) 2 days at $350	$700
Report Preparation	$200
Total Cost	$1200

APPENDIX

Test pan locations - as numbered on Claim Map (in Pocket)

Test No.	Colours
1	2
2	1
3	1
4	0
5	2
6	1

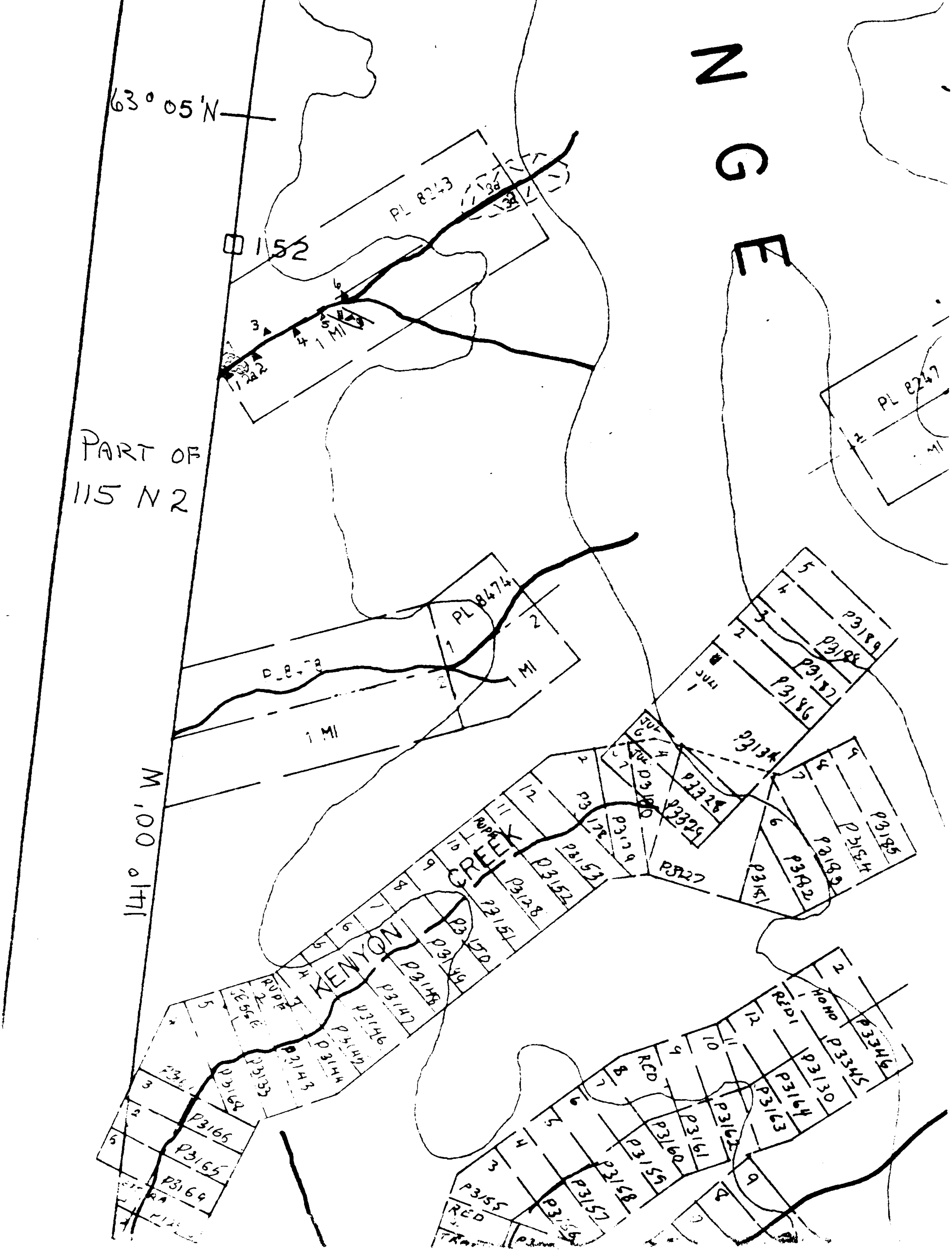
Outcrops: Test Site 1 : Slightly foliated, medium grained hornblende biotite granodiorite (Unit 2a, Morin et al) occurs at the western end of the lease (Alaska border)

Test Site 5 : Dyke outcrop (Unit 4 ?) tan-gray, fine grained sugary textured rock containing fine grains of sulphide (pyrite in andesite).

Upper part of lease : coarse, blocky felsenmeer consisting of unfoliated hornblende biotite granodiorite (unit 3a).

Unconsolidated Section : Test Site 1 : Slide rock, variable thickness,
Silt 1 - 2 m
Alluvial gravel 3 m est.

Test Site 6 : Silt
Alluvial gravels



63° 05'N
152
N
G
E
PL 8243
1 MI
PART OF
115 N2
PL 8247
PL 8474
1 MI
140° 00'W
KENYON
CREEK
P3189
P3188
P3187
P3186
P3328
P3329
P3185
P3184
P3183
P3182
P3181
P3127
P3152
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