

4857

82E/16W

82E/16W

GEOLOGICAL REPORT on the UNDERGROUND WORKINGS

PAY DAY GROUP, LIGHTNING PEAK AREA

VERNON MINING DIVISION, B. C.

Latitude: 49°53.5' N

Longitude: 118°29' N

Owner/Operator: K.L. Daughtry

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT

NO. 4857 MAP

Vernon, B. C.
January 23, 1974

by
K.L. Daughtry, P.Eng.

4857

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INTRODUCTION

This report presents the results of a geological survey of the underground workings on the PAY DAY group of claims in the Lightning Peak area of south-central British Columbia. At the time of the survey, recent heavy snowfalls precluded the mapping of surface exposures and trenches. The descriptive material in the sections on Regional Geology and Geology of the PAY DAY Property was derived from the published sources quoted below, and from various Annual Reports of the Minister of Mines of British Columbia. The petrographic studies were performed by Dr. A.N. Le Cheminant of North Vancouver.

PROPERTY and OWNERSHIP

The PAY DAY Group comprises the PAY DAY 1 and 2 Mineral Claims (Record Nos. 17218-19) in the Lightning Peak area of the Vernon Mining Division, B.C. The claims were staked on May 28, 1973 and recorded on June 14, 1973 by K.L. Daughtry of Vernon, B.C. The owner of record at the date of this report is K.L. Daughtry. The work was performed and paid for by the same.

LOCATION, ACCESS, TOPOGRAPHY

The PAY DAY Group is at latitude $49^{\circ}53.5'$ N and longitude $118^{\circ}29'$ W, one-quarter mile west of the north fork of Rampalo Creek, a tributary of the Granby River (Figure 1). The settlement of Needles, on Lower Arrow Lake, is 17 miles east of the property, and the city of Vernon is about 40 miles to the north-west.

In dry weather, the property is accessible by traveling south on a bush road for about 17 miles from a point on Provincial Highway No. 6 near the junction of Thunder Creek and Inonoaklin River, 60 miles east of the village of Lumby. At the time of the geological survey described below, recent heavy snowfalls prevented the use of the road, and a helicopter was chartered from Vernon in order to gain access.

The claims are near the eastern margin of the Interior Plateau, on an upland area deeply incised by river and creek valleys. Elevations on the property vary from 5400 feet in the valley of Rampalo Creek to over 6100 feet on the upland west of the PAY DAY adit.

WORK PROGRAMME

A geological survey of the PAY DAY adit was conducted on October 29, 1973. Before mapping could begin, it was necessary to clean out broken timbers and fallen rock from the portal and parts of the adit. A 1 inch = 20 feet map of the area of the adit submitted as assessment work by Great Horn Mining Syndicate Inc. in 1970 (Assessment Report No. 2330, Map No. 10) was used as a base map. A chip sample was taken from the main zone and several grab samples representative of the various types of mineralization present were collected. A petrographic study of two of these grab samples were performed, and the compilation and interpretation of geological data was completed on October 30-31, 1973.

GEOLOGY

Regional Geology

The geology of the Lightning Peak area has been described most recently on Map 6-1957 of the Geological Survey of Canada (Scale 1 inch = 4 miles) by H.W. Little (Figure 2). A more detailed description of the regional geology is provided in G.S.C. Summary Report 1930, Part A (pp 79-115) by C.E. Cairnes.

The various mineral deposits and occurrences of the Lightning Peak area occur in a roof pendant of Upper Palaeozoic to Lower Mesozoic age enveloped by granitic rocks of the Mesozoic Nelson batholithic complex. The predominant lithologic types present in the roof pendant include metavolcanic flows, tuffs and breccias of andesitic and in places limy composition, and metasedimentary crystalline limestone and argillite.

All of the above rocks have been intimately invaded by dykes and small plugs related to the surrounding granitic batholithic rocks. Rock types include granite, quartz diorite, diorite and pegmatite.

The general structure of the roof pendant is that of a westerly plunging syncline. Near the eastern end of the roof pendant, in the area of the PAY DAY property, the lithologies are predominantly flow rocks and are gradually succeeded to the west by tuffaceous and then sedimentary rock types. The limestones may be the youngest rocks.

Lightning Peak proper is underlain by a thin layer of Tertiary basalt and occasional related mafic dykes occur.

GEOLOGY OF THE PAY DAY PROPERTY

The PAY DAY claims are underlain by a succession of folded and faulted metamorphic rocks of volcanic and sedimentary origin. The contact of the enclosing Nelson granitic rocks is a short distance east and north-east of the main showings.

The rocks near the main showings are metamorphosed greenish to greenish-grey finely crystalline tuffs and/or sediments. The main zone of sulphide mineralization strikes northerly and is apparently controlled by faulting. It is exposed in surface trenches for several hundred feet, extending both north and south of the adit.

GEOLOGY OF THE PAY DAY ADIT

The old adit on the PAY DAY 2 claim, driven prior to 1929 to test the mineralized zone exposed by surface trenching, intersected a zone of heavy sulphide mineralization. The adit is approximately 60 feet long and the face is about 30 feet below the surface. An inclined winze, now flooded, has been sunk near the face. Great Horn Mining Syndicate Inc. surveyed the workings in 1969 but no geological data is available.

The geology of the PAY DAY adit is shown on Figure 3. The host rock is an intensely fractured, folded and faulted sequence of light to dark greenish-grey fine to medium grained, altered limy tuffs or tuffaceous sediments. In places the rock is mainly calcareous, and in others has the appearance of a skarn. Innumerable broken and discontinuous carbonate veins and veinlets occur, particularly in the areas of most intense shearing and brecciation.

Several strong faults, slips and shears are present. The attitudes of these faults fall into two main groups; those striking north-east and dipping moderately west to steeply east; and those striking south-southeast and dipping steeply east or west. Slickensides are visible on most fault surfaces, and on many of the numerous fracture planes. These faults bound the mineralized zones, and apparently control their distribution.

Sulphide mineralization is ubiquitous in the adit. In the first four feet of the adit both the intensely fractured pale grey wall rock and the calcite veins are mineralized with up to 10% disseminated pyrite and minor amounts of other fine grained sulphides, possibly sphalerite and galena. The next 10.5 feet of intensely altered greenish-

grey to pinkish-green limy volcanic rock or skarn is variably mineralized with up to 10% pyrite in disseminations and small strips and blebs.

A two-foot zone (Zone 1) of sphalerite-pyrite galena-chalcopyrite mineralization follows, bounded on the east by a strong slip, and on the west by a fault. A representative grab sample of this material assayed 0.64% Cu., 3.26% Pb. ϕ , 12% Zn, 11.8 oz. Ag., 0.003 oz. Au., and 500 ppm Cd. The sulphide minerals exhibit a banded appearance, suggesting a possible stratiform nature.

The next 10 feet of the adit toward the face is in relatively unmineralized pale grey rock cut by many carbonate veins, veinlets and segregations. The following 10 feet is in a zone of completely crushed relatively barren grey rock, with the largest unbroken pieces about one inch across.

Following this is a 3-foot zone (Zone 2) of strong chalcopyrite-pyrite-sphalerite-galena mineralization. The sulphides occur as disseminations, pods and stringers in a gangue of quartz stringers and carbonate. A 3-foot continuous chip sample across this zone assayed 0.58% Cu, 5.66 oz. +5.16% Zn.
Ag_A This zone is bounded on the east by an eastward dipping

slip and on the west by a westerly dipping fault. These two structures apparently converge below the surface exposure, which would explain the absence of similar mineralization in the trenches. A representative grab sample of the higher grade mineralization from one of the sulphide pods assayed 7.84% Cu., 0.82% Pb, 2.2% Zn, 62.6 oz. Ag., * 0.003 oz. Au and 50 ppm Co.

The last 11 feet of the adit is inaccessible due to the flooded winze. The 8-foot section following the above high-grade zone appears to carry similar mineralization to the above zone, but of lower grade. The last 2 to 3 feet to the face appears to be in a vein zone of grey rock cut by numerous irregular quartz(?) and carbonate(?) stringers up to 8 inches wide.

The mineralization underground is localized in two distinct zones bounded by strong slips or faults. Further exploration work is required to determine the distribution and extent of these zones.

PETROGRAPHIC STUDIES

Dr. A.N. Le Cheminant of North Vancouver examined thin sections and polished sections of the two grab samples

submitted for assay, and copies of his report follow below. It is of interest to note that the only gangue minerals present are siderite, calcite, chalcedony, quartz and magnetite, and that it was not possible to determine the original nature of the host rock.

SUMMARY AND CONCLUSIONS

1. Two zones of silver-copper-zinc-lead mineralization occur on the PAY DAY property. Only one of these (Zone 1) is exposed by surface trenching, the other (Zone 2) probably pinches out below surface due to faulting.

2. The distribution of mineralization is apparently controlled by faulting, and future exploration should take this into consideration.

Vernon, B. C.
January 23, 1974

Respectfully submitted,



K.L. Daughtry, P.Eng.

STATEMENT OF WORK PERFORMED AND EXPENDITURESLabour

Geological mapping, sampling, surveying,
 compilation and interpretation of data
 and preparation of report.

K.L. Daughtry
 (October 29-31, 1973)

Cleaning broken timber and fallen rock
 from PAY DAY adit.

R. Biggs and K.L. Daughtry
 (October 29, 1973) \$192.50


Transport

Helicopter charter (Terr-Air, Vernon, B.C.)
 1½ hours @ \$160.00 per ¾ hour
 (October 29, 1973)

\$240.00

Total \$432.50

Vernon, B. C.
 January 23, 1974


 K.L. Daughtry, P.Eng.

STATEMENT OF QUALIFICATIONS

I, Kenneth Linton Daughtry, of Vernon, British Columbia, hereby certify that:

1. I am a Consulting Geologist in mineral exploration with business address at P.O. Box 795, Vernon, B.C.
2. I am a graduate of Carleton University in Ottawa, Ontario with a Bachelor of Science degree in geology and chemistry.
3. I am a Registered Professional Engineer in the Provinces of British Columbia and Ontario, and a Fellow of the Geological Association of Canada.
4. I have practised my profession in Canada, Ireland and the United States for nine years.
5. I am the owner of record of the PAY DAY Mineral claims at the date of writing of this report.
6. The statements made in this report are based upon information gained from personal examination of the PAY DAY property in May and October 1973, and from reports of the federal and provincial governments.
7. This report was prepared to fulfill assessment requirements.

Vernon, B. C.
January 23, 1974


K.L. Daughtry, P.Eng.

Pay Day Adit Zone 2

SPECIMEN NO: 96387

Mineralogy and Mode:

40% Gangue:

20% Carbonate: <0.1 - 0.5mm., 0.1mm., anhedral, interstitial to sulfides and oxides, x-ray determination indicates the carbonate is mainly siderite. Minor calcite is also present.

5% Chalcedony and Quartz: <0.1 - 0.3mm., 0.1mm., anhedral spherulitic aggregates of chalcedony and less commonly larger individual quartz grains, interstitial.

15% Magnetite: <0.1 - 0.2mm., 0.1mm., brownish-grey in polish section, unusual sheaf-like habit resembling biotite foils (replacement?), concentrated in one band.

60% Sulfides:

35% Chalcopyrite: <0.1 - 5mm., 0.3mm., anhedral, yellow.

24% Pyrite: <0.1 - 3mm., subhedral to euhedral, yellowish-white, variable habit in different bands, ranges from fine-grained aggregates to euhedral crystals up to 3mm. in diameter.

1% Sphalerite: <0.1mm., anhedral, grey, small grains enclosed within chalcopyrite.

Remarks:

Banded copper ore with associated carbonate (siderite) - quartz - magnetite gangue. Mineral percentages vary considerably among bands. X-ray diffraction traces verify the presence of quartz, chalcopyrite, pyrite, siderite, and sphalerite. Calena was also detected in an area not represented in either the polish or thin section. Chalcopyrite associated with magnetite bands is a deeper yellow colour than in chalcopyrite - pyrite rich bands. This may reflect different copper content in the chalcopyrite.

Petrography by Dr. A. N. LeCheminant

Pay Day Adit Zone 1

SPECIMEN NO: 96388

Mineralogy and Mode:

65% Gangue:

35% Quartz: <0.1 - 1mm., 0.2mm., anhedral to euhedral, variable grain size and texture, small amounts of fine-grained chalcedony associated with carbonate.

20% Carbonate: <0.1 - 0.5mm., <0.1mm., anhedral, colourless to yellow-brown, poorly developed colloform structure, x-ray determination indicates the carbonate is siderite. Carbonate in thin cross-cutting veinlets is probably calcite.

10% Magnetite: <0.1 - 1mm., <0.1mm., anhedral, disseminated grains closely associated with fine-grained carbonate.

35% Sulfides:

22% Sphalerite: <0.1 - 2mm., 0.5mm., anhedral, grey in polish section, translucent brown in thin section.

3% Galena: <0.1 - 0.5mm., <0.1mm., subhedral to anhedral, white in polish section, (triangular pits along cleavage), closely associated with sphalerite, commonly occurs as small grains on the margins of sphalerite.

7% Pyrite: <0.1 - 0.5mm., <0.1mm., euhedral to anhedral, yellowish-white, concentrated in irregular veinlets.

3% Chalcopyrite: <0.1 - 1mm., <0.1mm., anhedral, associated with pyrite, occurs in centre of pyrite-rich veinlets and in one late cross-cutting veinlet.

Remarks:

Weakly banded zinc-copper-lead ore with associated carbonate (siderite), quartz, and magnetite gangue. Mineral percentages are highly variable. X-ray diffraction traces verify the presence of quartz, sphalerite, galena, and siderite. The mineralogy is identical to specimen 96387 although the proportions and textures differ considerably. The nature of the original host rock can not be ascertained in either specimen.

Petrography by Dr. A.N. Le Cheminant

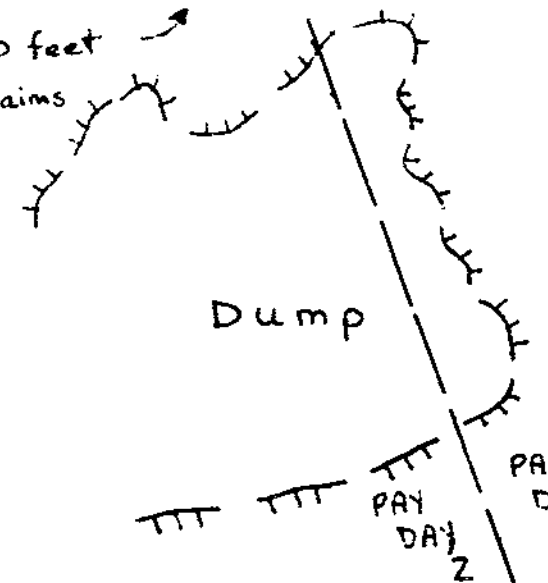
166+00E

167+00E

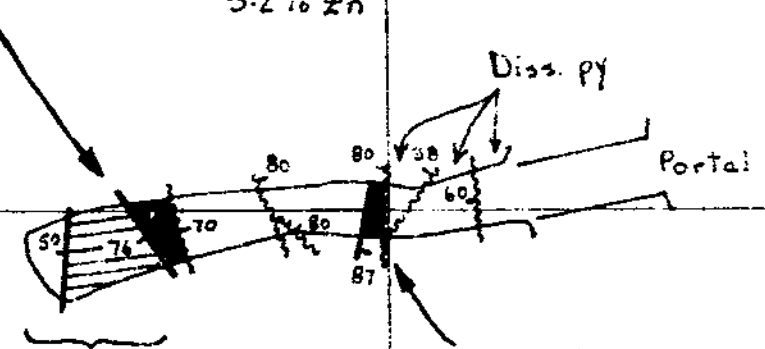
Zone 2 - stringer & heavy sulphides
cp-py-sp-(ga)

Chip sample (3ft.) :- 0.58% Cu 5.7oz Ag
5.2% Zn

No 1 Posts 600 feet
PAY DAY 1 & 2 Claims



30+00S



Inclined Winze
(Flooded)

Zone 1 - banded sulphides
sp-py-ga-cp.

Grab sample :- 0.64% Cu 11.8oz Ag
3.26% Pb 12% Zn

Scale



Shear or strong slip

Fault

Zone of sulphide mineralization

Zone of sulphide mineralization
- inaccessible due to flooding

PAY DAY GROUP

VERNON M.D. B.C.

Geology of PAY DAY Adit

PAY DAY 2 Mineral Claim

Scale: 1 inch = 20 feet

K.L. Daughtry P. Eng Jan. 1974

Note: Grid from Great Horn Mining Syndicate Inc.
Assessment Report No 2330

31+00S

4857M3

Figure 3

K.L. Daughtry
Jan 23, 1974

4857 #3

Missouri State University

Department of Biology

NO. 4857 #2

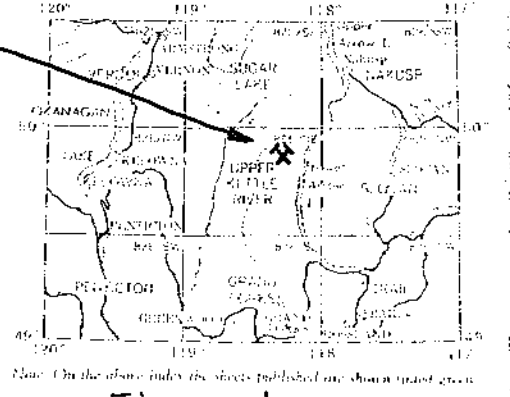
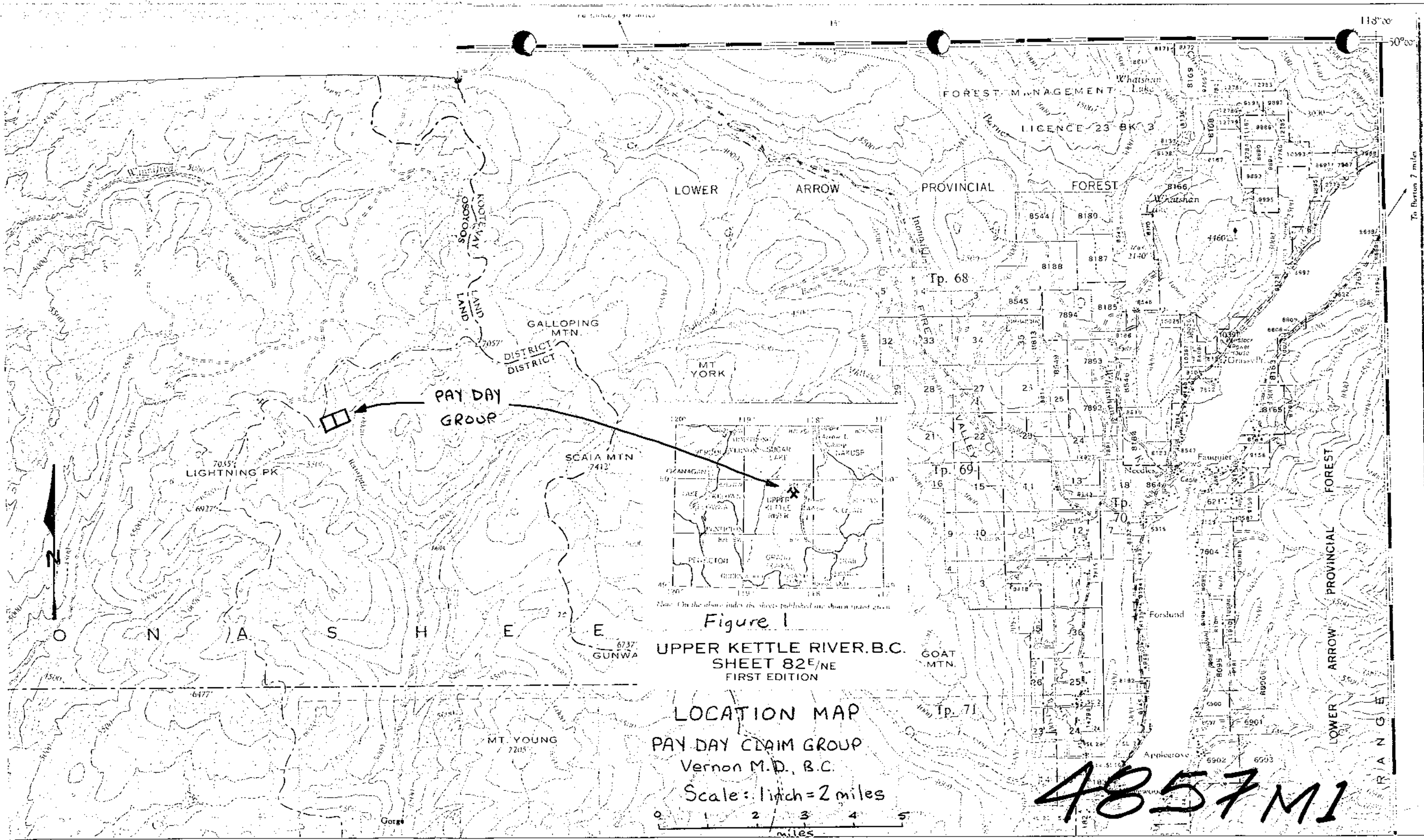


Figure 1
 UPPER KETTLE RIVER, B.C.
 SHEET 82E/NE
 FIRST EDITION

LOCATION MAP
 PAY DAY CLAIM GROUP
 Vernon M.D., B.C.
 Scale: 1 inch = 2 miles

4857 MI

Department of
Mines and Geographical Resources

Annual Report

NO. **4857** AMP #1