

5124

REPORT OF ASSESSMENT WORK
1974

Group 1:	CLAIMS - Lot 616s	Warwick	<u>Record</u>	36766
	Lot 1217	Fremont		36767
	Lot 2379	Admiral		36768
	Lot 3365	Coronation		36769
Group 11	CLAIMS Lot 1011	Spokane		36770

Similkameen Division: Yale District

Greenwood Mining Division

82E/2E

GEOLOGICAL WORK

by

J.E. Hughes, P. Eng. (B.C.)

Consulting Geologist

Department of	
Mines and Petroleum Resources	
ASSESSMENT REPORT	
NO. 5124	MAP _____

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CLAIMS: L 616s, 1217, 2379, 3365, 1011

Title and Ownership: The claims, Lots 616s, 1217, 2379, 3365, and 1011, are held by Mr. E.J. Taylor-Smith, of 2905, West 37th Avenue, Vancouver, B.C., according to Records, No. 36766,7,8,9, and 36770, September 12/73.

Location: The claims are in the vicinity of Greenwood. Claims of Group 1, overlap and adjoin the north part of the townsite, and extend eastwards, threequarters of a mile on the valley slopes of Boundary Creek. Claim L 1011, Group II, occupies the valley of Boundary Creek, one quarter to one half mile northward of the north municipal boundary of Greenwood.

Transport and Supply Routes: Greenwood is served by Highway No.3, and the Canadian Pacific Railway.

Topography: At Greenwood, Boundary Creek follows a southerly course along a valley floor about 2,450 feet elevation, confined by walls and slopes to 3,400 feet. Above the valley, uplands form a terrain of moderate relief, rising to hill and ridge summits between 4,500 and 5,000 feet elevation.

2

Description of Claims: Claim L 1217 occupies the east slope of the Boundary Valley, from the floor to 3,200 feet elevation. The ground is relatively open, about one third exposed to bedrock, the remainder under talus, thin soils, scrub, and timber. Exposures to bedrock decrease on higher ground along the valley slope, in Claim L 616s. Claim L 2379 covers part of Providence Creek: its west half, and the slope down to the creek are mostly drift covered. On the uplands, above 3,200 feet elevation, the ground in Claims L 616s and 2379, is mantled by 5 to 10 feet of glacial till with sands and silts, timbered, and lacking exposures to bedrock excepting road cuts.

Claim L 3365, on the valley floor of Boundary Creek, is residential land within the municipal boundaries of Greenwood: the claim is underlain by valley alluvium to depth undetermined.

Claim L 1011 across the valley of Boundary Creek, is transected by Highway 3, and the Canadian Pacific Railway, and occupied by farmland. Most of the claim is underlain by alluvium of the valley floor and the remnant terraces to 2,580 feet elevation. On the southeast side, a margin of alluvium reaches elevation of 2,640 feet. Bedrock on this side shows steep relief, indicative of a buried gorge. A salient of bedrock extends across the valley floor along the northeast border of the claim.

Access: Group I, Claims: The claims are well provided by access in the form of old roads. These are long neglected, but were well made, and for the most part remain in good condition; some sectors are in need of clearing, and repair at moderate effort and cost.

The main access is by road to the abandoned Providence Mine, Lot 618, via Elkhorn Street along the north municipal boundary of Greenwood, and therefrom along Providence Creek. The approach, a length of 800 feet to the crossing at elevation 3,140 feet at creek level, is part overgrown, washed out, and impassable for wheeled traffic without reconstruction. The road ascends the south wall of Providence Creek: at elevation about 3,200 feet, it turns southward along the east shoulder of Boundary valley to connect with the secondary road from Greenwood to Phoenix. Branch roads extend this access to the claims - one eastward along the upper slopes of the Providence Valley, and others to abandoned trails, and cuts along the upper slopes of the Boundary valley.

An old trail, to an abandoned working, on Claim L 1217, allows access from Strathmore Street, Greenwood. Much of the trail is serviceable, except the last 600 to 800 feet, which needs relocating.

Group II, Claim L 1011: The claim is within close working distance of Highway 3: a farm road, extending from the Providence Mine, follows its southeast boundary.

Assessment Work: Assessment work on the properties, Group I - Claims L616s, 1217, 2379, 3365, Group II - Claim L1011, consists of geological examination with supplementary prospecting. Field work, started at Greenwood August 22/74, and completed September 3/74, included mapping with supporting observations on adjoining ground.

GEOLOGY

Introductory

The oldest rocks are sediments and volcanics. They were altered, and intruded by diorite, and granodiorite in late Mesozoic time. Ore deposits occur in quartz veins and their wall rocks, along fractures which formed in the late stage of consolidation of the granodiorite intrusive. In its final consolidation, small scale dislocations affected the borders of the intrusive, and mineral veins. In Tertiary times, the area underwent uplift, flexure, and faulting, followed by emplacements of dykes and sills of basic and lamprophyric types.

Map Units - Lithology and sequences

The major units of lithology and sequence can be classified in the order -

- (1) Pre-Intrusives: sediments and volcanics
- (2) Intrusives: granodiorite, with lesser diorite, and pyroxenite
- (3) Dykes, sills, and plugs, of basic, and lamprophyric types
- (4) Quaternary deposits, of glacial and recent origin - till, silts, sands, and gravels.

The sequences are evident on the claims and surroundings. Their dating is referred to McNaughton (G.S.C., Paper 45-20, 1945) thus:- Unit (1), part Palaeozoic, Unit (2) late Mesozoic Unit (3) Tertiary.

Veins and mineralization and subsequent small scale dislocations belong to late and final stages of Unit (2) - the description of the Providence Mine sets out confirmatory evidence (McNaughton, 1945).

Uplift, flexure, and faulting precedes and may partly overlap the emplacement of the secondary intrusives, the dykes and sills of Tertiary age.

Map Unit (1): Pre-Intrusives

The sediments and volcanics are included in the undivided unit of the Pre-Intrusives.

Material of Unit (1) is altered and silicified by subsequent intrusion. Chert forms the major component, and is extensive. It is grey and light coloured with blue-green cast, aphanitic, uniform in texture, but locally marked by thin quartz laminae, and recrystallized lines. In exposures, the chert is closely or minutely fractured, and jointed on multiple planes which are commonly iron stained. Bedding is indistinct. The original form and nature of the chert is obscure, and there is no indicator to the degree of alteration and silicification.

Locally, in the Providence and Elkhorn claims, and northward, a few banded exposures are referred to volcanic origin. The rocks are schistose, very fine crystalline with folia of dark mica and quartz, in a dark aphanitic matrix.

Map Unit (2): Intrusives

The claims overlie part of the intrusives of Greenwood stock which consist mostly of granodiorite. Small crops of diorite, in the Spokane and Elkhorn claims, are seemingly contained about the margins of the stock. Contact relations of the diorite and granodiorite are not exposed. In the Spokane claim, the diorite is veined by quartz and calcite belonging to the mineralization of the nearby ground.

The granodiorite is light coloured, equigranular and composed of potash and plagioclase feldspars, quartz, hornblende, and biotite. Femic minerals amount to 15 to 20%. quartz about 25% and feldspars to the remainder. Laths of clear plagioclase indicate partial alteration and recrystallization. Hornblende, the major femic, is part chloritized. Biotite, is in varying proportions, less than 5%, and mostly unaltered.

The granodiorite shows some variations towards its contact; more replacement of hornblende by chlorite, tendency to foliation marked by hornblende, a decrease in femic components, and phases of intergrowth of feldspars and quartz in places. Sheared bands of granodiorite near the contact are chloritized and lined with epidote. A contact, or adjacent phase of the

granodiorite, is dense, fine crystalline and granular, with insets of quartz, chloritized traces of hornblende, and sericitized fringes of biotite.

The diorite is grey, and dark coloured, composed of opaque felspar, and black hornblende in intergrown and sub-idiomorphic forms: colour index is in the range of 45 to 55.

Pyroxenite, occurs in a small exposure in the west quarter of the Providence claim.

Map Unit (3): Dykes and Sills

The unit includes Tertiary intrusives which take the form of dykes, sills and plugs. They can be referred to two types, - felspar porphyry; and a basic lamprophyre.

The felspar porphyry is dark grey, fine crystalline with large insets of clear plagioclase: the ground is composed of felspar and femics, with a fine felt of interlocking amphibole laths, and set with flakes of biotite in varying proportion. The felspar-porphyry forms inclined sills along the north wall of Providence Creek, in the Admiral claim: other exposures in the Freemont and Admiral claims may represent plugs. The intrusive relations of the felspar porphyry are evident - as sills in Unit (1) with lower and upper contact and baked wall exposed along Providence Creek, and exposures of discrete mass within the granodiorite.

The generalized term, lamprophyre, applies to dyke rocks exposed in Freemont and Warwick claims. It is composed of felspar set in a choritic base, amphibole in felted growth of interlocking spindles, and coarse, lustrous flakes of biotite of sub-idiomorphic outline. Marginal facies of the dykes appear as greenish, chloritic, femic felt; and selvages are black and aphanitic. The lamprophyre occurs in dykes, cutting granodiorite and chert of Unit I. In one exposure

it is adjacent to felspar porphyry, either in contact or
emplaced within a few feet.

Structure

The outline of the granodiorite intrusive is closed to the north and east. Its contact crosses the south boundary of the Warwick claim, at elevation 3,450 feet and descends on a northwest trend to levels about 2,500 feet subsurface in the second Providence mine. Diorite outlies the north closure of granodiorite.

Cross joints in the granodiorite trend 010° to 020° ; inclined diagonal joints are less prominent. Veining with mineralization follows trends 040° to 060° , and 010° to 020° - however inferences on the relation of jointing, veining, and ore deposits are left open at present view.

Mineralized veins in the Elkhorn and Providence mines were dislocated, by low angle slips and faults, and offsets to 80 feet (McNaughton, 1945). A fault break between diorite and Unit (1) is inferred, on ground in Claim L 2068, 1,000 feet north of the east corner of the Spokane claim.

Lack of exposure, and indistinct and indeterminate bedding in Unit (1), allows only tenuous observations for other structures. A synform of north-northwest trend with parallel faulting is inferred to cross claim L 2289 : the structure may terminate along the margin of the granodiorite on the south. Faulting along Providence Creek may explain discontinuity, or lack of exposure of felspar prophyry sills to the south.

Mineralization

Ore deposits in the area and surroundings of the Claims Group I and II occur in veins and their walls. The veins of quartz and calcite cut granodiorite, diorite, and sediments and volcanics of Unit (1). A description of ore deposits in the Elkhorn and Providence Mines is given by McNaughton (1945). Observations of assessment work confirms similarities of mineralization in the Claims of Group I and II and the nearby ground, - but are fragmentary being confined to mine dumps and surface at old workings. Following remarks apply to the general area and surroundings of Claims Group I and II.

Ore minerals in mine waste include pyrite, chalcopyrite, chalcocite, galena, sphalerite, ruby silver, trace of native silver - mostly fine and dispersed, and probably unrepresentative of the ore bodies. Veins are thin, 1 to 20 inches width at present observation, single, or compound with stringers, and splits of wall rock. Quartz forms most of the gangue, filling vein or lining the wall: open splits in the quartz veins are filled with calcite, a few are left as vugs. Ore minerals, occur in quartz along the walls as replacement, and in wall rocks as replacement around fine vein lines and branches.

ECONOMIC GEOLOGY

Mineral Production

Records of mineral production for metals, gold, silver, copper, lead and zinc, for the area and surroundings of the Claims Group I and II, are summarized in the following list.

Mining started in the Greenwood camp about 1891 and declined in the late 1920's, and was thereafter intermittent: the Providence mine had the last recorded production in the vicinity of claims, 1961. Economic factors, changes and trends in mining practice, partly account for the decline, but it seems likely that difficulties in maintaining continuity and grade of ore was also contributory.

Record of Mineral Production

Area of Claims - Group I and II, and surroundings.

Totals of production to 1973 - from records of Department of Mines and Petroleum Resources, B.C.

Production for the indicated periods may be intermittent or continuous.

Freemont: L 616s: 1918

Tons mined, 5

Gold 1 oz, Silver 144 oz

Copper ----, Lead ----, Zinc ----

Strathmore: L 2068: 1900 - 1918

Tons mined 218

Gold 154 oz, Silver 17,124 oz

Providence: L 618: 1893 - 1961

Tons mined 11,491

Gold 5,888 oz, Silver 1,367,503 oz

Copper ----, Lead 402,161 lbs, Zinc 259,768 lbs

Defiance: L 758: 1893 and 1924

Tons mined 4

Gold 6 oz, Silver 1,545 oz

Copper ---, Lead 269 lbs, Zinc ----

Elkhorn: L 818: 1905 - 47

Tons mined 197

Gold 167 oz, Silver 14,678 oz

Copper ----, Lead 19,981 lbs, Zinc 3,756 lbs

Elkhorn Fraction: L 297s: 1925 - 7

Tons mined 48

Gold 8 oz, Silver 7,773 oz

Copper ----, Lead 5,001 lbs, Zinc 11,683 lbs

Sunset: L 2068: 1900 - 1918

Tons mined 120,489

Gold 4,649 oz, Silver 24,015 oz

Copper 1,910,265 lbs, Lead ----, Zinc----

Mines, Prospects and Workings; Claims, Group I and II

The claims have been prospected closely in the past - probably at several times. Clearing, trenches and pits are confined to showings in bedrock.

The Freemont and Spokane claims were worked underground.

Freemont Claim

The old mine at Freemont has a record for production - gold 1 oz, and silver 144 oz, for 1918.

The mine is located on the east slope of the Boundary valley, at elevation 2,900 feet. It was worked by shaft, inclined about 70° , on heading 110° , and sunk on a vein dipping $013^{\circ}/70^{\circ}$. The vein of quartz with calcite, cuts granodiorite; it varies from 12 to 20 inches width, and is compound and splits in places. The mine dump shows pyrite and chalcopryrite in wall rock and vein contact, and a trace of native silver. The shaft, to 6 by 8 feet, is open and uncollared.

A second working is located about the south boundary of the Freemont claim, 700 to 800 feet east of the Greenwood municipal boundary, at elevation 2,800 feet. The location, and reference to the claim boundary, require to be determined by survey.

The working consists of a shaft inclined about 45° on

heading 100⁰, to follow a vein about 12 inches wide and striking about 015⁰. The shaft is open, uncollared, and filled with water 8 feet down. The dump is small and shows vein material, quartz and calcite, and pyrite in small crystals.

Spokane Claim

There is no recorded production for the claim.

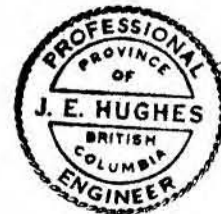
A prospect shaft was sunk on north corner of the claim, about 100 feet east of Highway 3. It followed veining in diorite. Mined rock has been removed, probably in the working of the nearby gravel pit. The shaft is open and uncollared.

An incline was driven in the east corner of the claim, near in diorite. The opening is part fallen in, and the surrounding ground and spoil, part overgrown.

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J.E. Hughes

Victoria, September 9th 1974



PHOTOGRAPHS

1. Freemont Mine: view to shaft - centre and concealed; vein at foot of granodiorite on right



2. Inclined sill of felspar porphyry, north wall of Providence Creek, Admiral claim: hammer marks contact lower contact of sill with chert of Unit 1



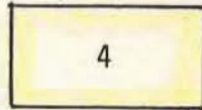
3. Part of Spokane claim, northwest of railway line: diorite in foreground: view from east corner of claim



FIGURE 3: LEGEND

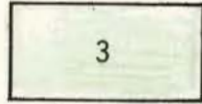
MAP UNITS

Drift (4)



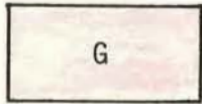
Till, silts, sands, gravels:
thick cover

Dykes and
Sills (3)

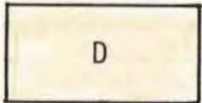


Felspar porphyry 3f
Lamprophyre 3e

Intrusives
(2)



Granodiorite

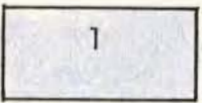


Diorite

P

Pyroxenite

Pre-Intrusives
(1)



Chert: sediments, and
volcanics; silicified rock

MAP SYMBOLS

—— Unit boundary

- - - Drift boundary

W W Fault inferred

//// Shear band

—^v Vein

Veining, multiple

^v Veining, diffuse

X Showing, oxidized
ground

◇ X Antiform, synform

→ Dip, degrees

◻ Mine shaft

Y Adit

▷ Opening or incline

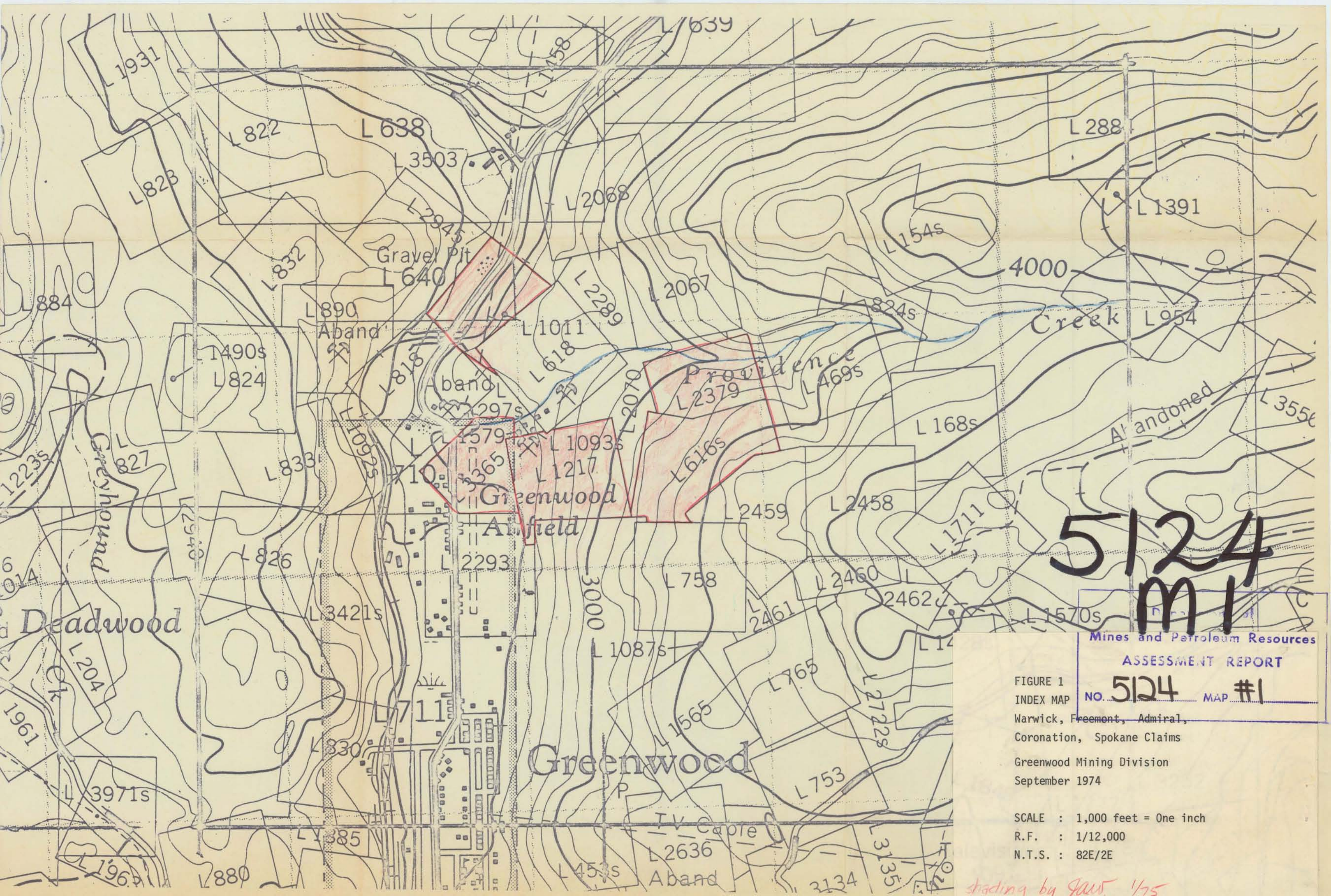
⊙ Made ground

⋮ Trench

⤵ Prospect pit

- - - Access road trail

◻ Mine mill, abandoned



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Mines and Petroleum Resources
ASSESSMENT REPORT

NO. 5124 MAP #1

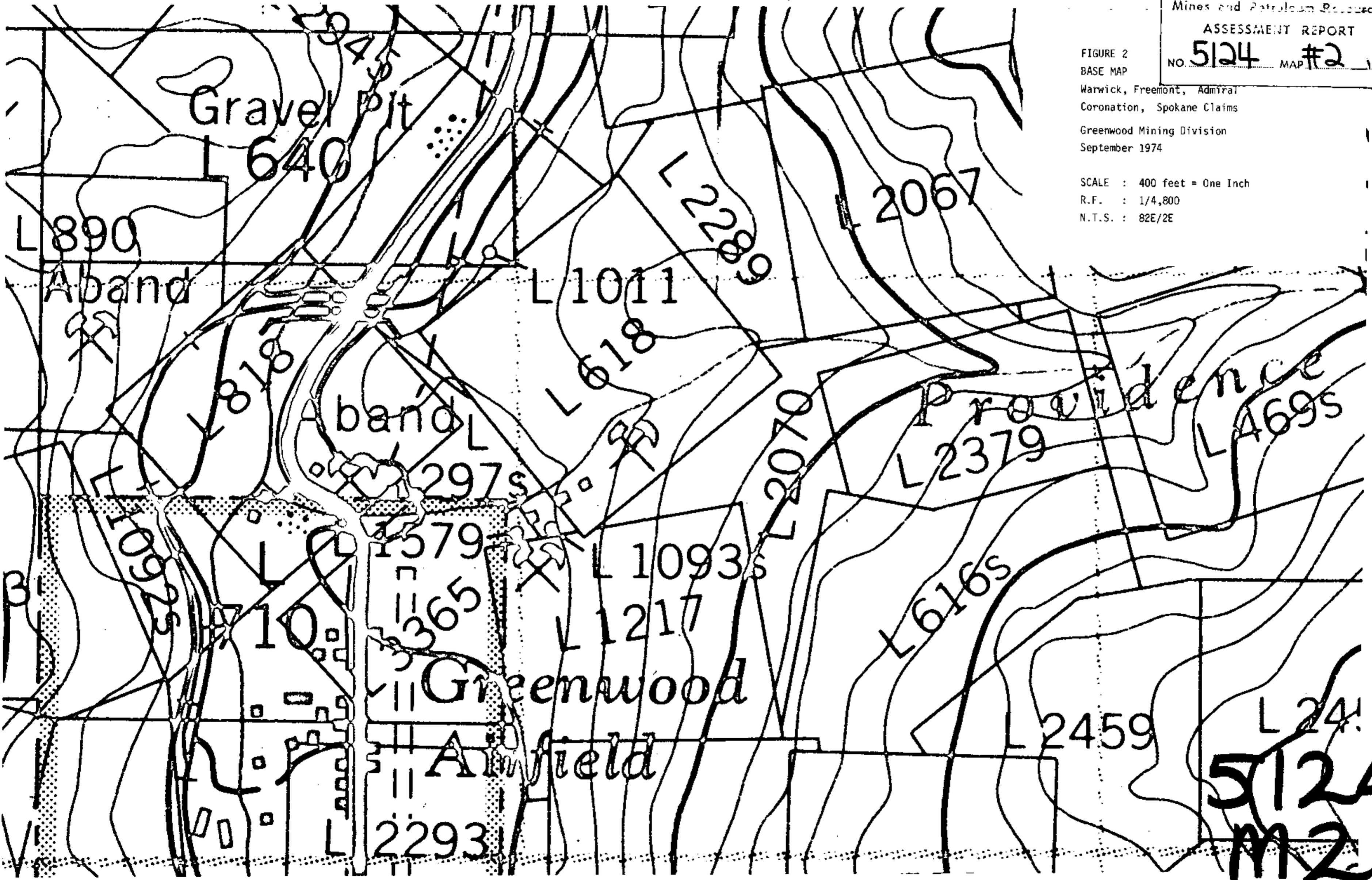
FIGURE 1
INDEX MAP
Warwick, Freemont, Admiral,
Coronation, Spokane Claims
Greenwood Mining Division
September 1974

SCALE : 1,000 feet = One inch
R.F. : 1/12,000
N.T.S. : 82E/2E

shading by JAW 1/75

FIGURE 2
BASE MAP
Warwick, Fremont, Admiral
Coronation, Spokane Claims
Greenwood Mining Division
September 1974

SCALE : 400 feet = One Inch
R.F. : 1/4,800
N.T.S. : 82E/2E



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M2

ASSESSMENT REPORT

NO. 5124 MAP #3

FIGURE 3

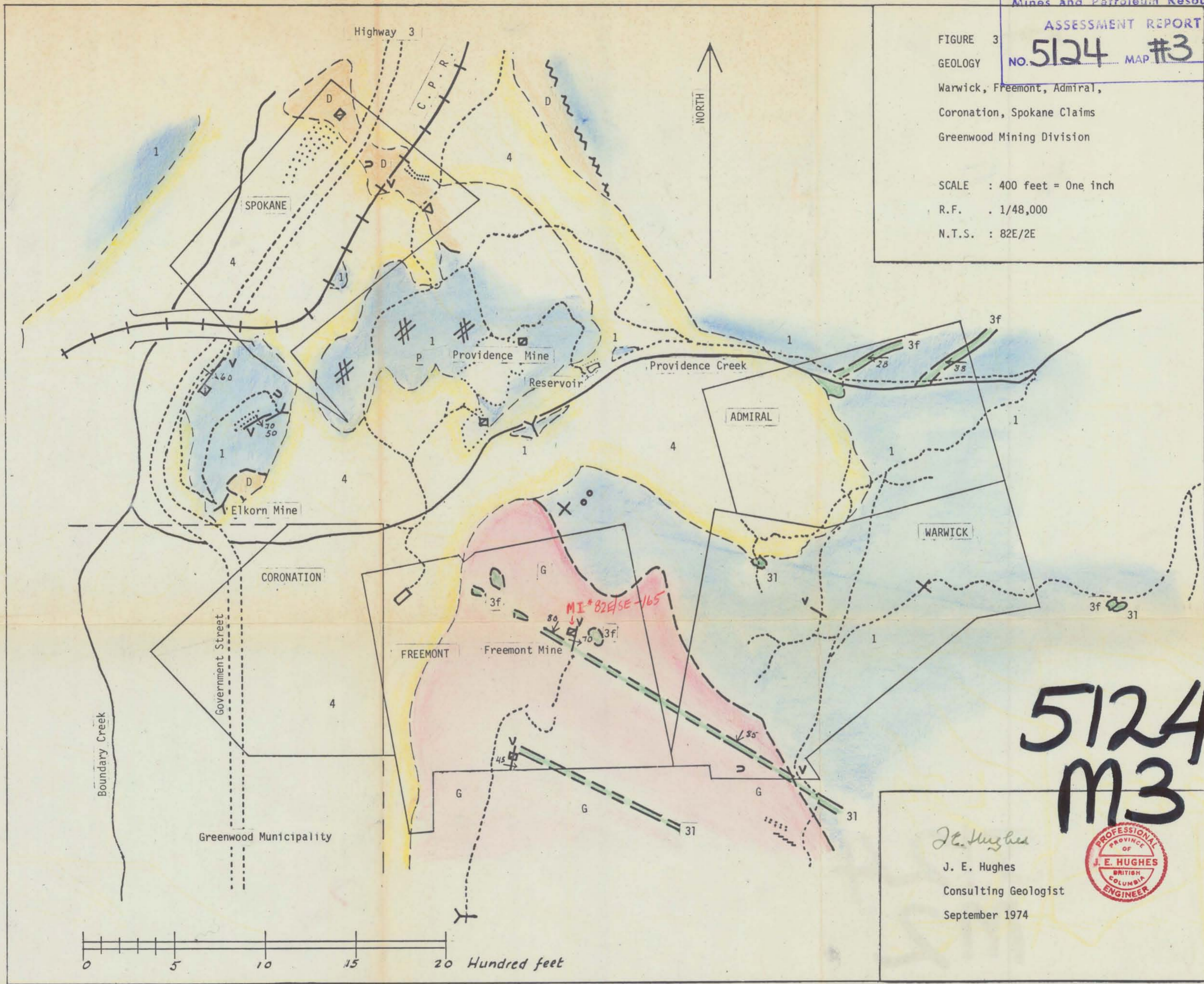
GEOLOGY

Warwick, Freemont, Admiral,
Coronation, Spokane Claims
Greenwood Mining Division

SCALE : 400 feet = One inch

R.F. : 1/48,000

N.T.S. : 82E/2E

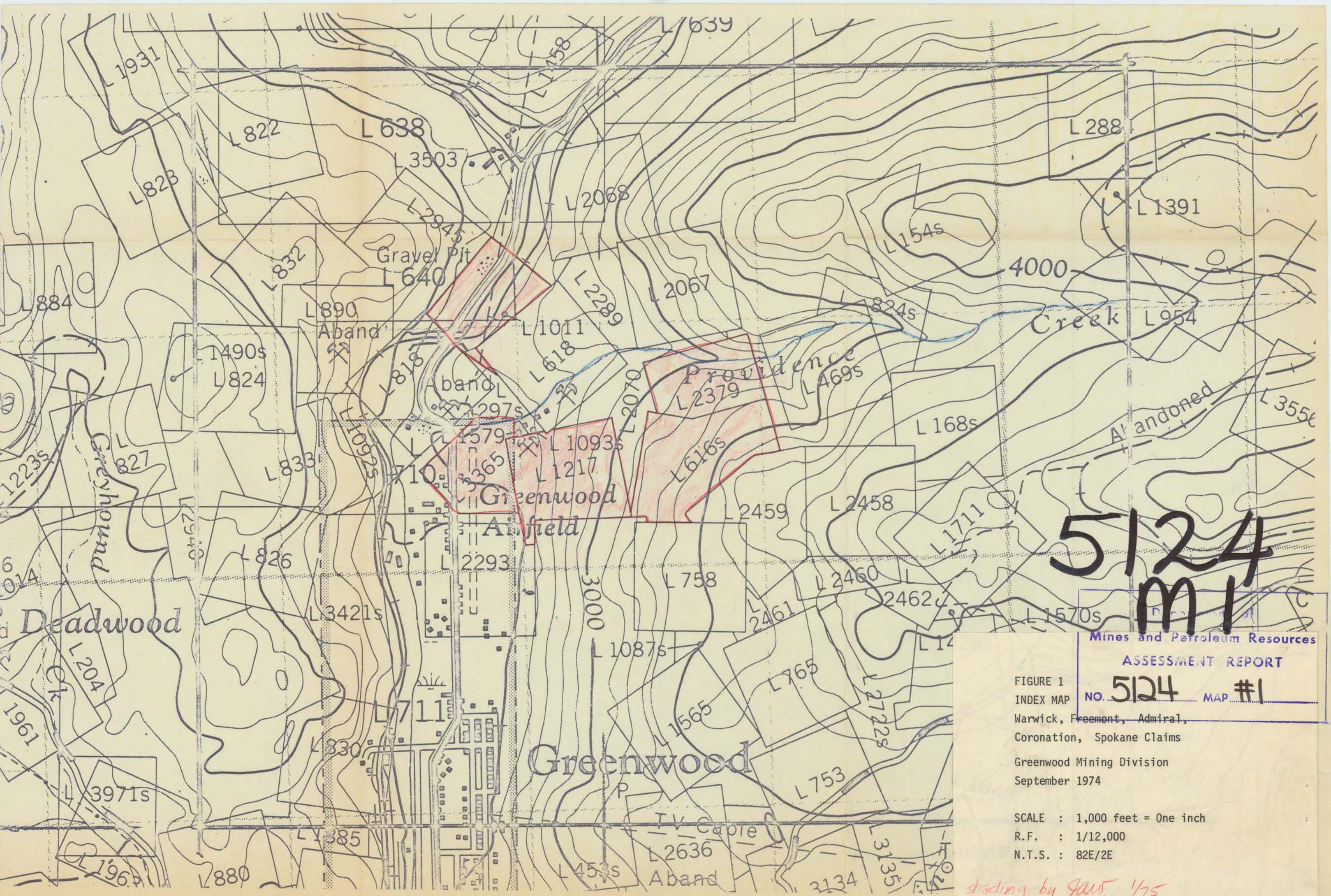


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M3

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September 1974





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MI

Mines and Petroleum Resources
ASSESSMENT REPORT

NO. 5124 MAP #1

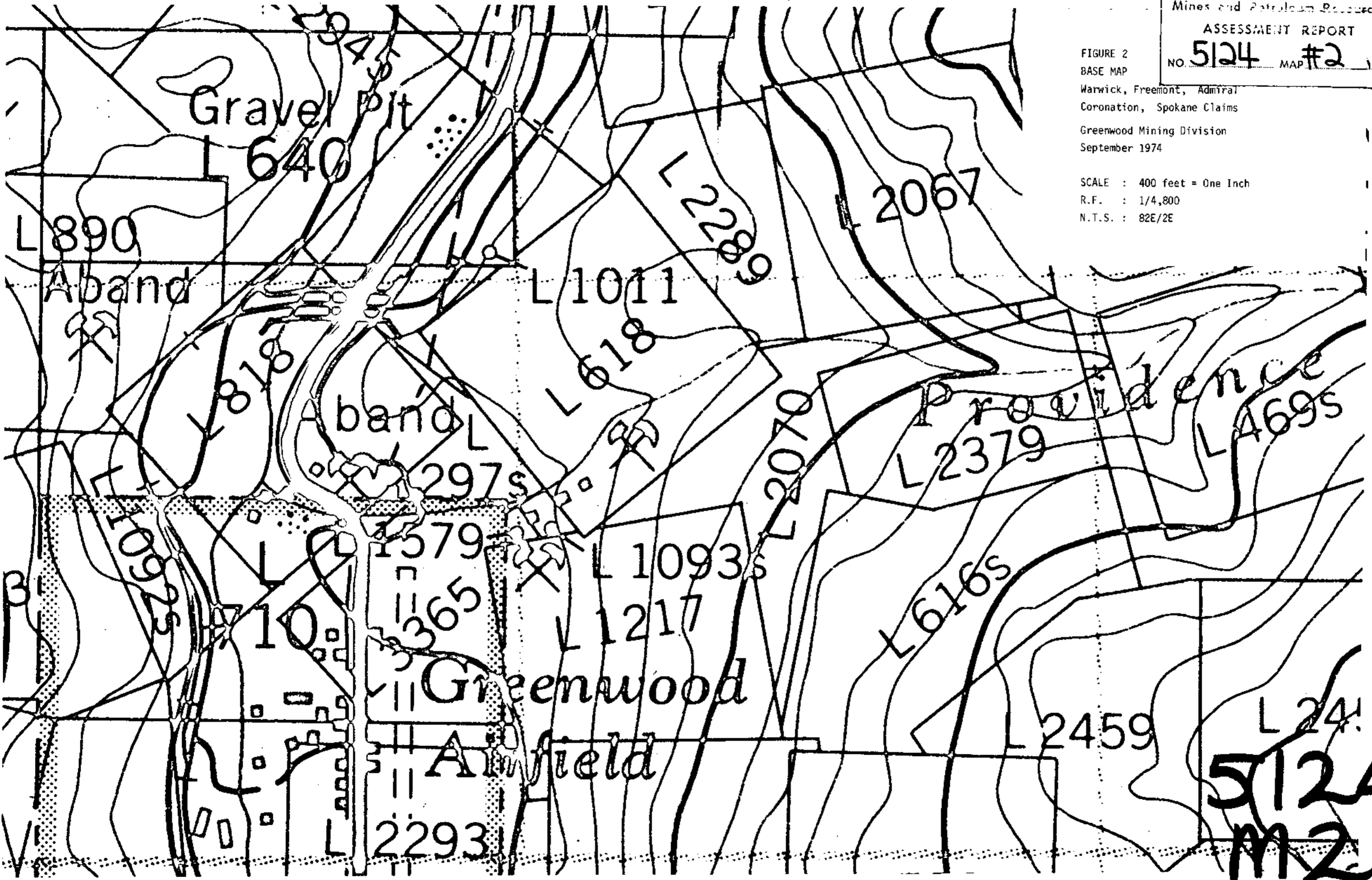
FIGURE 1
INDEX MAP
Warwick, Freemont, Admiral,
Coronation, Spokane Claims
Greenwood Mining Division
September 1974

SCALE : 1,000 feet = One inch
R.F. : 1/12,000
N.T.S. : 82E/2E

shading by JAW 1/75

FIGURE 2
BASE MAP
Warwick, Fremont, Admiral
Coronation, Spokane Claims
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September 1974

SCALE : 400 feet = One Inch
R.F. : 1/4,800
N.T.S. : 82E/2E



5124
M2

ASSESSMENT REPORT

NO. 5124 MAP #3

FIGURE 3

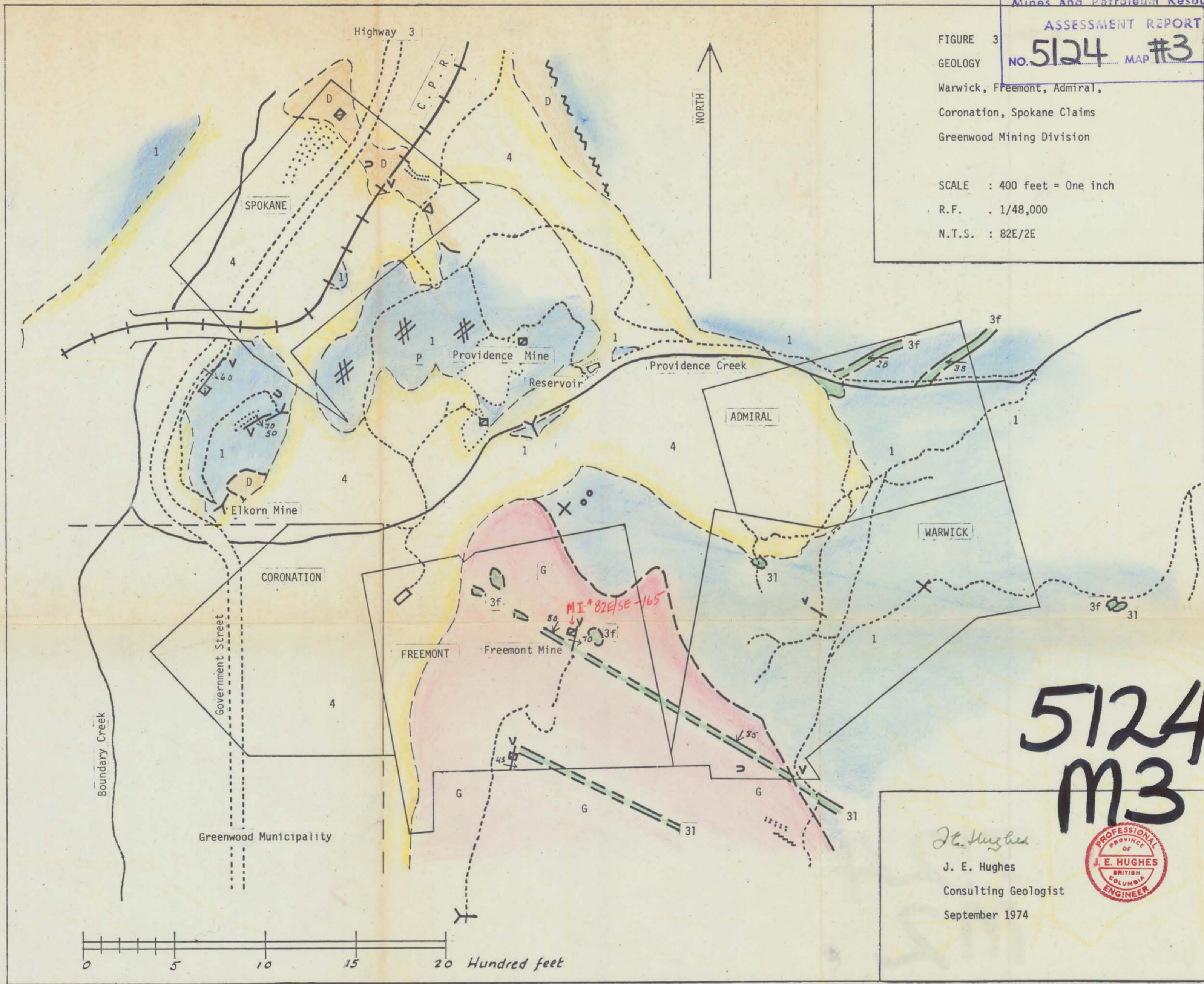
GEOLOGY

Warwick, Freemont, Admiral,
Coronation, Spokane Claims
Greenwood Mining Division

SCALE : 400 feet = One inch

R.F. : 1/48,000

N.T.S. : 82E/2E



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M3

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