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Report of Geological Survey of

Groups K26, K27, K28, K29, K30

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Claims:

Group K26

GPX #8, GPX #9, GPX #15 Mineral Claims

GPX #15, GPX #16, GPX #17, GPX #18 Fractional Mineral

Claims.

Group X27

GPX, GPX #2, GPX #7 Mineral Claims

GPX #2, GPX #13, GPX #14 fractional mineral claims

GPX #3, GPX #4, GPX #5, GPX #6 Mineral Claims GPX #12 Fr M.C. & Keel Fr M.C.

Group 29
Phil No. 1, Phil #2, Phil #3, Phil #4, Phil #5, Phil #
Fr. Mineral claims.
and North Wind M.C.

Group 30
King M.C. King 2 M.C.

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490, 1170 S.E

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#14 4) Group K28

+15 5) Group K29

#16 6) Group K30

### Summary and Conclusion

Rossland volcanic rocks folded by forces from the west to form an syncline, about in the Eagle creek valley have been intruded by two types of Melson batholith rock. One was a quartz bearing rock, now found in the lower Sandy Creek basin. Two phases of this rock are, a normal granite, (or quartz Monzonite) and a granite porphyry lying to the south and separated from it by a narrow band of Rossland volcanic rock which contains one or more mineralized quartz veins. The second type is a non quartz bearing granitic rock (syenite to diorite) intruded into Magle creek valley area. This intrusion is thought to be the latter of the two. Its contact with the Rossland as seen in the Granite mines suggest it may be a chonolith. Evidences that it was rich in mineralizers are the metamorphosed contacts with flow rocks especially the eastern one. B-W quartz veins on its western side as contrasted with N-S veins in the eastern half are not readily explained.

Between the two main bodies of Helson granitic rock lies a comparatively narrow arm of syenite to diorite rock, which broaden as it extends to east, towards the Venus and Athabasca mines. Though not connected on surface with Eagle creek crystalline rock, it is similar in appearance but had biotite instead of hornblends as the mafic. It may be related. Some quartz veins are found in it and in the bordering volcanic rocks.

The difference in dip between the beds east and west of Sandy Creek suggest a fault at that point.

### INTRODUCTION

This report deals with five groups of claims, recorded as Group K30, K 26, K27, K28, K29, lying on the south slope of the Keotenay River between four and seven miles west of the City of Nelson. The claims in each group are as follows:

- K 29 Phil #1, #2, #3, #4, #5, #6 Fr MC and the Worth Wind MC
- K 30 King MC King 2 MC
- K 28 GPX #3, #4, #5, #6 M.C. and GPX #12 Fr MC & Keel Fr MC.
- K 26 GPX #8, #9, #15 MC and GPX #15, #16, #17, #18 Fr MC and Win Fr Mining Claim
- K 27 GPX, GPX #2, #7 MC GPX #2, #13, #14 Fr MC

They occupy parts of valleys of Sandy and Eagle creeks. Lumber operations in this area have left few stands of mature forest and young second growth hemlock covers most of the area. Old Legging and mining roads extend to the head waters of the creeks, making the area very accessable.

The survey was undertaken to determine the economic possibilities of the claims held by Kenville Gold Mines Ltd. and to obtain a basis for determining the nature and extent of future work in this area. The work consisted of finding all enterops, making a geological map, suggesting probable picture of the geology of the property. Some trenching was undertaken at important points and all quarts veins and mineralized outcrops were sampled and samples assayed.

Claim boundaries were cut where this had not already been done. These boundaries were then staked at hundred feet intervals with the aid of chain and clinemeter. Traverses were then made, by pace and compass at one hundred, one hundred and fifty and two hundred foot intervals across the claims, depending on the nature of the cover, visibility and relief. When outcreps were encountered the traverse was continued by chain and compass to the nearest boundary stake. Transit surveys were undertaken to map the adits on King M.C., King 2 M.C., and the workings on North Wind M.C. The writer was very ably assisted by Chester Hillar and Stanley Hogson, Science students of the University of British Columbia, and by Wm. Johnson. The writer also appreciated the helpful discussion with Dr. Little of the C.G.S., new working in the area.

The writer proposes to describe the geology of the individual groups and, under separate heading, to describe the features common to the area.

### GROGRAPHY

The relief and drainage of the area in which lie the groups of claims being covered in this report is shown on the accompanying key map. This is an enlargement of a map supplied by the Canadian Geological Survey. The C.G.S. map was made from air photographs on a scale of one half mile to the inch. We have enlarged the map by means of a pantograph to a scale of one quarter inch to the mile, and drawn in the four groups of claims on which this season's work was done. Elevations extend from twentyfive hundred to five thousand eight hundred feet on the claims. Drainage is to the north into the Kootenay River. The three important streams are Sandy Creek, Eagle Creek and Forty-nine Creek. Although the relief gives fairly steep side hills, outcrops are in general rare, bedrock being covered by a fairly heavy overburden ranging in thickness from a few to twenty or more feet. Bedrock exposures occur generally in the steep sides of the creek beds, where the relief becomes greater than the angle of repose; and on the tops of the ridges which have been in places cleared to bedrock by glaciation or weather. Another source of bedrock information is provided by the work of the early prospectors who did a tremendous amount of sluicing and trenching. Although most of these cuts have been partially refilled, some bedrock and many dumps remain exposed.

# Stratigraphy and Postography, Areal.

Flow rocks of undetermined thickness once covered this area. These lavas vary in color from soft green to almost black and in texture and structure from amorphus to porphyry, with fine grained matrix.

They have been named Rossland. Intruded into these flow rocks are bodies of plutonic rocks, arms of the Nelson granite extending to the south. from the parent body to the North. There are three phases of this plutonic rock easily distinguishable beside some metomorphased contact sones. One phase, a granitic rock is seen on the King MC of Group 30. It is quarts bearing and hornblends is the chief mafic. The second phase lies in the Eagle Creek basip. It is a medium grained diorite with no visible quartz and with somewhat altered amphiboles. It is seen cutting through group K25. A third phase is encountered on King 2 MC. It is a porphyritic variety of granite with large (to one inch) feldspar crystalls prominently displayed. The thickness of the Rossland Lavas was not determinable due to the limited nature of the survey. However from Sandy Creek west to the diorite on group K26 the flow rocks with a plan width of 1500° and a dip to the west of 50° indicates 1150° feet. But much of the several thousand feet of rocks which overlay the Melson granite during its formation may well have been the Rossland Volcanies.

The granitic rocks have been thought of as the tops or cupolas of an under-lying batholith. However a Rossland-granite contact in the granite mine dips (45°) forty-five degrees to the west, suggesting that that particular body of diorite may have the form of a chonolith. This view would considerable alter the present theory of the origin of the ore bodies in that area.

Descriptions of dikes & vein will be taken up in the discussions of the groups in which they occur.

### The Phil group (Group K 29)

The Phil Group, is situated on the well rounded hill between Eagle & 49 creeks and lie between contours 3700 & 4300 as shown on the Key map. Rock exposures are best seen on the North Wind Claim which lies on the crest, and in the bed of a seasonal stream cutting the west slope of Phil #2 Pr M.C.

Thirty outcrops on these claims were located and examined and many outcrops behind the claims lines but pertinent to the geological picture of the group were examined and mapped. The greater part of these claims are underlain by a phase of the Nelson granite.

One occurrance of Rossland rock was mapped on Phil #2 Fr M.C. near 49 Creek road. Outcrops along 49 Creek and trenching on the Hazel claims to the South of the Phil group give us approximately the location of the contact with the Welson granite on the Phil group and a clue to specification of the laws covered by overburden on group K 29.

Megascepic examination of the Welson granite, which appears to be uniform within the group boundaries, showed the following: grey to pinkish color; coarsely (8 mm) crystaline; no quarts is visible. Feldspar are glassy white and cream colored, about 50% acid feldspars. The dark mineral is hornblende.

The volcanic rock seen at the south end of phil #2

Fr MC had a dark green fine grained matrix in which a few
poorly formed crystals of larger size (3 mm) are seen.

Other phases of the Rossland Volcanics were noted on the 49

Creek road and mapped. Variations are frequent and distinguishable phases occupy from a few inches to many feet of the exposures.

One Phase distinctly perphyritic extends from stations 25-00 for 30°. Data sufficient to calculate the stratographic thickness the Rossland flows was not available.

A lamprophyic dike was encountered on Phil #7. The outcrop was large, about eight feet in diameter. Indications of its strike were lacking. It was a black rock with large (12 mm) well developed crystals of brown biotite. One other dike of rock indistinguishable, from this is uncovered on the North Wind M.C. where it cuts the quarts wein.

A quartz vein is exposed on the North Wind M.C. It is a milky quartz with varying amounts of sulphides of sinc, lead, iron & copper. Trenching has exposed this vein at the east end as 0.5 feet wide and dipping  $59^{\circ}$  to the south. At the west end the vein is about  $2\frac{1}{2}$  feet wide. The average strike seems to be about N 50° E.

## Geologic Structure

The intrusive rock is directly connected with the Melson granite North of Kootenay river and terminates a few thousand feet south of the claims. It may be a cupola from a submerged bathclith or a chonolith from the main body to the north.

As the contact is not seen, contact phenomena can only be inferred. They seem to have little effect on the greenstone as observed on 49 creek road. There is an outcrop of gneissic granite just above the point where the contact is thought to pass through the 49 creek road, (not in the map area) indicating some contact metomorphism. It is clearly banded with light and dark minerals indicating some digestion of the Rossland rocks along the contact.

The vein exposed on the North Wind M.C. strike H 50 H and has a dip to south of about  $65^{\circ}$ .

The exposed lamprophyre dike strikes N 29 B.

The most prominent fault in this area is exposed in the miracle workings where a shear zone about 5° wide striking M 75° E, dips 45°S. A mineralized quartz vein is seen in this shear. An unsuccessful attempt was made to find this fault within the claim boundaries.

### Group X 30 (The King Group)

This group is on the east side of Sandy Greek 1500 feet south of granite Road. It rises to the south giving a difference in relief of about 500 feet. Ruk exposures are seen along the west boundary where Sandy Creek has cut down through the glacial till and a short distance into bed rock (about 50 feet). There are also some exposure on the east boundary which is on the crest of a hill. The claims are almost entirely covered with glacial debris in the form of terminal moraines.

### Petropgraphy

Twenty-five outcrops were located and mapped. The area is underlein with the granitic rock of the Nelson Bath-clith, two phases being prominent. On the south half of Kind 2 M.C. is seen a phase of Helson granite characterised by large (to one inch) feldspar crystals. The ground mass of the porphyry consists of a medium to course grained crystaline rock of the following compositions Quartz as glassy nobs up to 5 mm in size and comprising of 15% of the rock. The feldspars are glassy to white to cream. The large phenocrysts are light colored and appear to be close to the rectangular form. The dark mineral is hornblends.

The granite on the northern part of the group is medium to ourse grained and very similar to the matrix of the porphyry described above.

Rossland volcanics are seen in the MF and M corners, of King 2 M.C. It is a dark green, vaguely crystalline flow which is thought to have the composition of dacite. In the Morth corner it is exposed by one enterop, and four trenshes which were cut to expose a quartz voim. The dimensions and attitude could not be determined. However, if we assume the attitude to be similar to the exposure of Hossland on the west corner, the width is about two hundred feet. The exposure at the west corner of the claim is seen on the west bank of the stream. Its boundaries are not exposed but

judging from the position of the two adits on the east bank, the width is between 100° and 200°. It also contains a quarts vein varying from 1° to 5° wide, of white crystalline. quartz, slightly mineralized and with an attitude of N34° E 66° S.W. It is possible the two outcrops are parts of the same body. The quartz vein in the North corner was not seen but judging from the collection of quarts on the dump it is at least as large as the one to the west.

Two hundred and fifty feet K-W of the Rossland outcrop there is exposed in the creek bed on both banks, a lamprophye dike which strikes W 12 E and dips 77° to the south. It is 2.5° wide and is bordered on the north by a light colored symmite dike followed by another dike of dark grey fine grained rock.

The joint pattern displayed by granite outcrop at 27700M, 26500M shows a fracture pattern W35M, 25M; W15W, 65W; W73W, 50M. There is quarts vein material in the fracture W73W which has a shear some about an inch wide. Displacement of a one inch pegmatite dike shows fault (W35M) as a reverse fault. The quarts vein shows open space filling and thus normal faulting.

### Group K 26

This group is underlain by three bands of rocks with contacts striking between H & W. A band of Ressland volcanics cuts the North east side of GPX No 12 Fr M.C. striking N 72°N. The contact is not seen but good exposures of flow rocks and the granitic rock lying to the south are seen within fifty feet of each other, thereby defining the contact.

oribes a curve concave to the north across the depression of Sandy Creek, it is thought that the contact dips to the south west as in the granite mine. The width of the body of Rossland has not been determined. However its N contact with the granite is seen on Granite Road and its position near the Dexter fraction has been located approximately. Producing this line across Sandy Creek at the mill site, a point indicated by the topography as the possible contact, gives a probable width of 1500 feet.

Strategraphically the flow beds have a small dip to West. Thickness is not determinable.

The Rossland rocks in this area are typically dark green and vaguely crystalline to amorphous flow rocks. There are spots of light colored felspars about 1 mm and some better formed pyroxene crystals of the same size. Its composition appears to be near a basic dacite.

Bordering the Rossland on the south is a band of Nelson rock about 500 feet wide at the eastern boundary which extends, as a narrowing arm to the EV and terminating in the Golden Eagle MC. The rock of this phase of the Nelson Eatholith is medium grained, well formed crystall. Quarts was not seen. The light colored feldspars form a mat into which the dark minerals, mostly hornblends is set. Other felspar laths are distinct. The mafic is Brown biotite.

As this body of rock about Monyonite in composition is not connected by outcrops to the north its immediate source is in doubt. It differs in its composition from the bodies of Melson to the east in being non quarts-bearing. It differs from the diorite to the west in its mafic content. A later phase from the same source as the Eagle creek diorite seems the most probable explanation.

The quartz veins seen on the main outcrop are very irregular and the strikes and dips shown on the map are an estimated average.

The vein seen on the east side of the outcrop is in a fault with shear zone of about 0.8 feet with strike and dip as indicated on the map. (N60W,55°S).

To the south west, the granitic body, flow rocks cover the remainder of the group, except the NE corner of GPX3 M.C. where the outcrops do not give a clear picture. DDH #99 intersects a few fingers of rock which has been logged as Diorite. The many outcrops of this rock may indicate these fingers are more numerous to the N.

The flow rock is typical Ressland of medium to dark green, amorphus to vaguely crystalline.

Black miceus-lamprophyre dikes appear on GPX Nos. 3 & 4 with an apparent strike of NoE. Exposed width is about 2 ft.

We folding is apparent and beds where seen have a westerly dip of 500 and are striking N 30 W.

Faults with various widths of shear zone were mapped as striking N 22° W and dipping 75° W and 55° E. This would indicate the causal force as a resultant pressure from the west normal to a plane striking N 20 W and dipping 30° east. The fault must have occurred at a time when the beds were less competent than they now appear to be.

Group K 26 consisting of the three mineral claims and five fractional mineral claims lying astride the Sandy Creek basin. Elevations are between the 3000 and the 5000 contours. Exposures are numerous, seventy being mapped within the boundries and a few outside them.

On Group K 26, an arm of the Nelson granitic rock previously described in K28 underlies the north east portion of GPX 18 Fr MC. To the west of this body, the claims are underlain with Rossland volcanics as far as the Win Fr M.C. under which is found another phase of the Nelson granite.

The phase of the Welson batholith found on GPX 17 and 18 Fr M.C. is a light grey medium crystalline rock.

Quartz is not visible and the feldspar composition as mongonite to diorite. It is well exposed in a stream bed in GPX Fr MC where its sharp sentact with the greenstone to the south is easily seen. Other points of contact are seen to the MW as mapped. Although there is a considerable gap between this outcrop and those on GPX #12, because of the similarity of the rock we are assuming them to be the same body.

The Rossland flows found to south west, are for the most part typical as described above. The variations noted are the exposures on GPX 15 Fr M.C. which have become a light color on weathered surfaces; the bluff, on Sandy Creek on GPX 5 M.C. are distinctly banded by thin layers of Alternating light and dark layers. It is here that the attitude of the flows is best seen. Hear the western edge the Rossland rock becomes altered, seaked and dioritized as it merges into the crystalline rocks seen on Win Fr M.C.

A possible explanation is that the intrusive rocks were rich in mineralizers.

The contact here is roughly N 10° W, and in plan is an undulating line possibly due to displacement by faulting but more likely due to the dipping contact meeting an uneven topography.

The phase of plutonic rock seen on the Win Fr M.C. claim is a dull to dark grey, and medium to coarsely crystalline. We quartz is seen and the feldspars are dark grey. The dark mineral appears to be an altered pyroxene and constitutes about 25% of the rock. The rock appears to be a dierite. One fault is seen striking N 22E and dipping 50° easterly. Some quartz vein material in the 5 inch shear some (mapped). Small veinlets of quartz are seen in the dierite and greenstone on GPX \$15 Fr M.C.

A 3 inch quartz wein was seen in the Rossland outcrop on GPX 15 Fr striking N 50 W and dipping southerly.

Group K 27 is situated as indicated on the Key map on the crest between Sandy & Eagle Creek. It comprises 3 mineral claims and three fraptional mineral claims as listed in introduction.

GPX MC & GPX 2 MC are underlain by Rossland flow rocks, typical of the laws described above.

The contact with the diorite to the west is an irregular line about N-S on the west side of GPX & GPX2 Mining claims.

The rock lying to the west is the altered diorite as described above for 100 to 1000 feet and grades into a light grey diorite with medium sized well formed crystals. The feldspars are light grey to glassy with many laths showing. The mafics are hornblende and constitute about 30% of the rock. Marrow quartz veins are noted in two places as mapped, in the Rossland.

Three faults were seen and mapped, one was exposed by a pit on western tip of GPX 2 Fr. It struck M-S and was vertical. The shear was marked with copper stain. The second was seen on the same claim on a pit at the south end. It strikes M 65 E and dips 10° to the North. A third fault is in the greenstone at the N end of the same claim, striking M20H and dipping 35° to the west.

The Rossland in the middle of GPX 14 Fr M.C. might be explained as a small reminent of a roof pendent, or as one caps of an embayment and is tenatively mapped as the latter.

### Summary and Conclusions

## <u>Geological Structure</u> - Regional,

The Rossland flow rock extending north, to the Koetenay river and in places a little beyond were folded by a
force acting from west, which produced a syncline with axis
approximately in the Eagle creek basin. Striking about 15°
west of south and with axis plunging to the south and axial
plane inclined to the East.

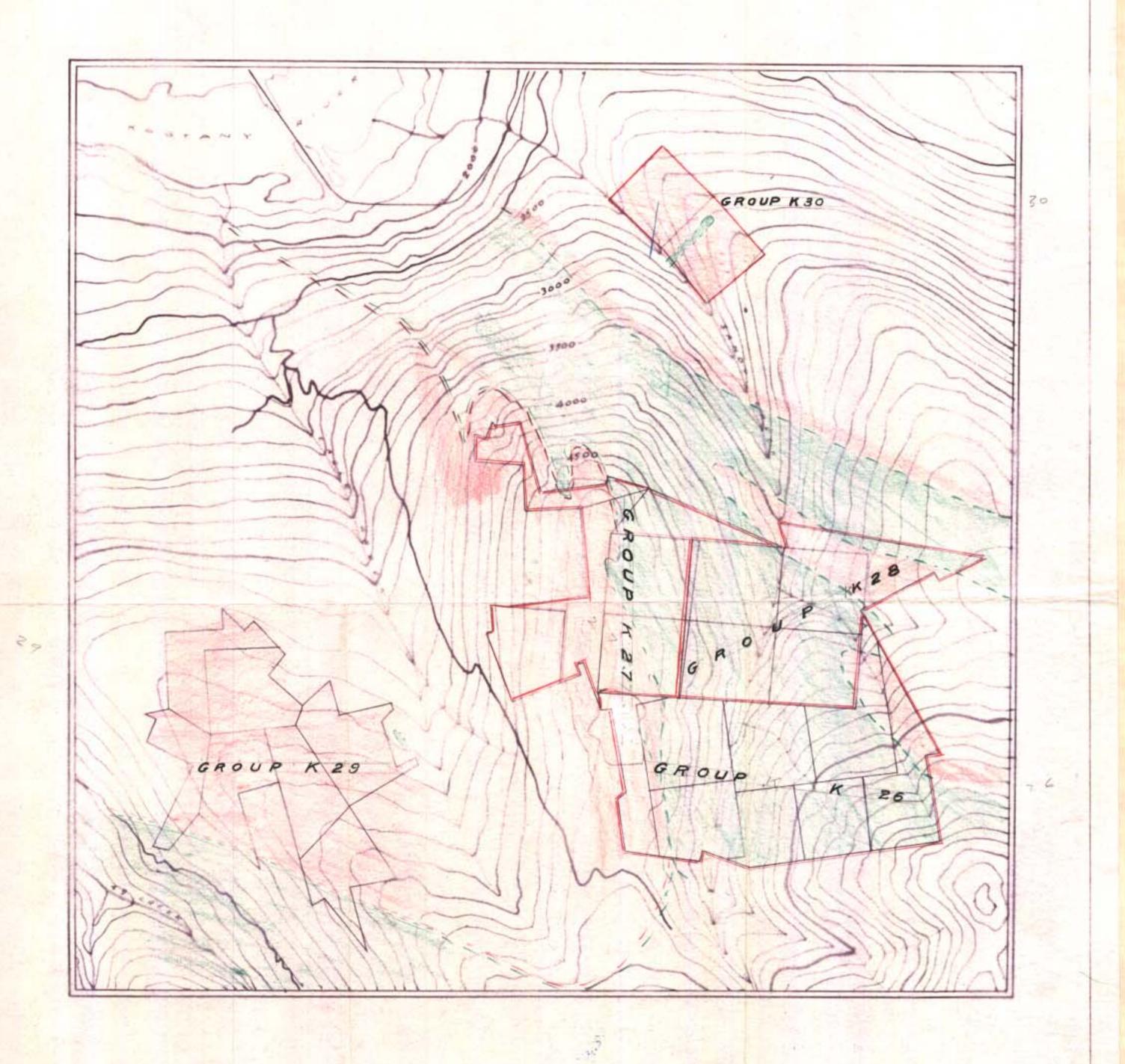
Intruded into these flow are three bodies of the Melson granitic rocks. One occupied what is now the Eagle creek basin and the territory to the west of it, for maximum width of about two miles and extending south about three miles. Its contact on the east with the Rossland volcanics is said to dip west at 45° (granite mine). This suggests that the body may be a chonolith. Its contact along the east boundary of Win Fr indicates the contact dip East.

The second body of Nelson rock intruded it the Rossland occupies the lower valley of Sandy and extends several miles to the east. Being quarts bearing it is thought to be the earlier. It is a quartz monzonite.

There are two distinct phases - one, a normal monzonite, the other a porphyry. A narrow body of crystalline rock lies between these. It resembles the diorites to the west as it has no quarts, but it appears to have come in from the east.

A difference in dip between the flows east and west of Sandy creek basin suggests a fault at this point.

oint. Wallace R Baker



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Department of
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ASSESSMENT REPORT

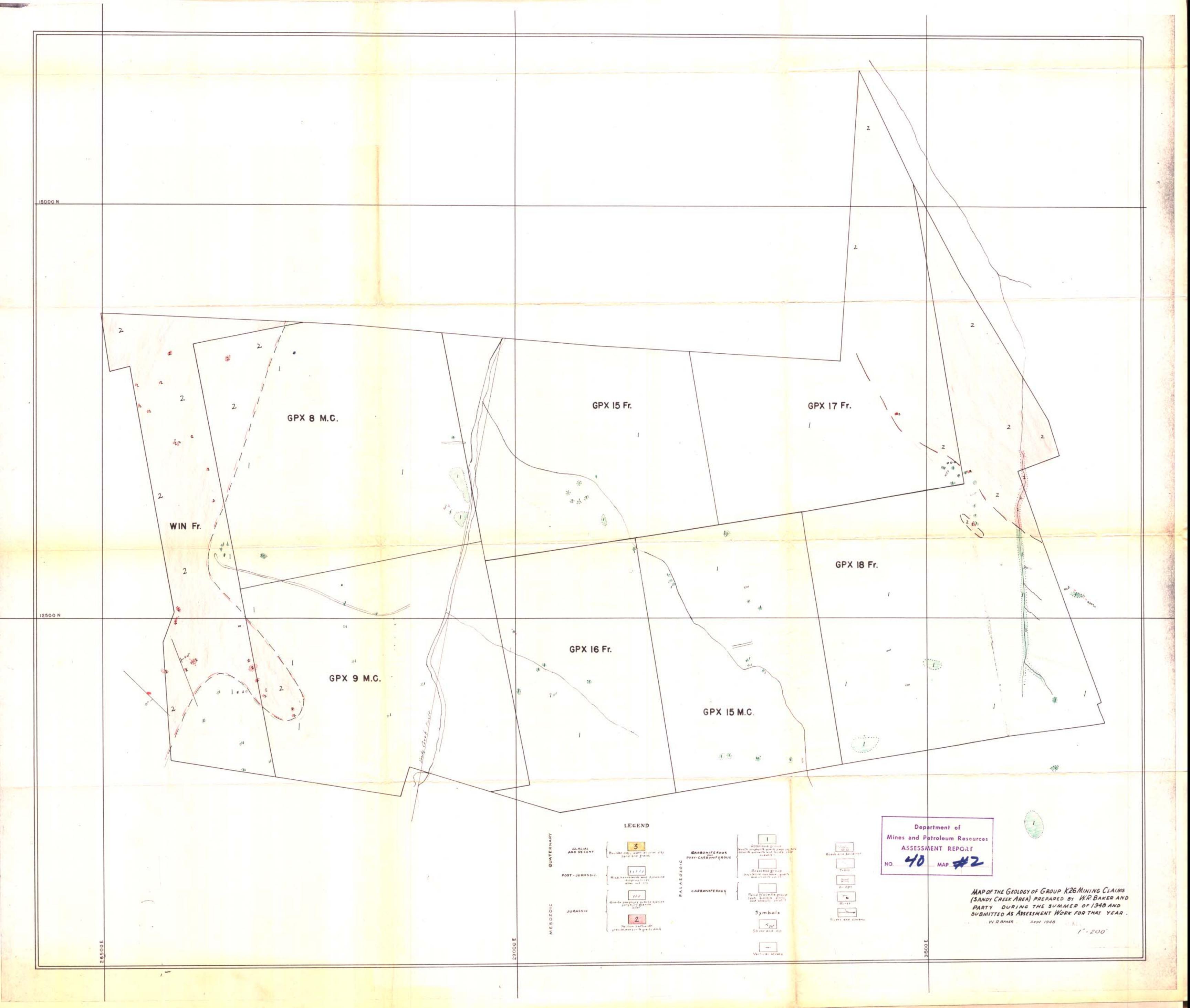
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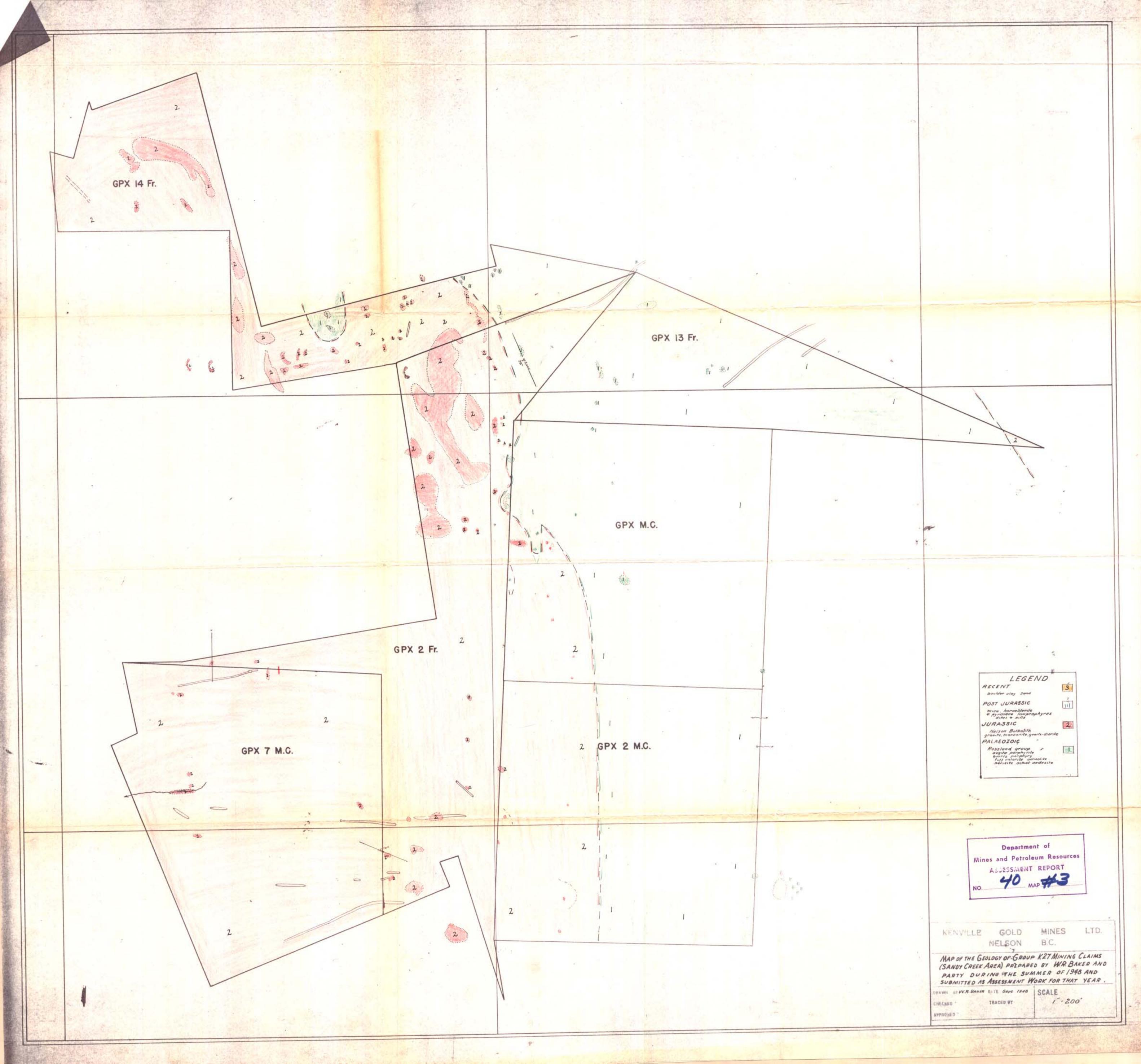
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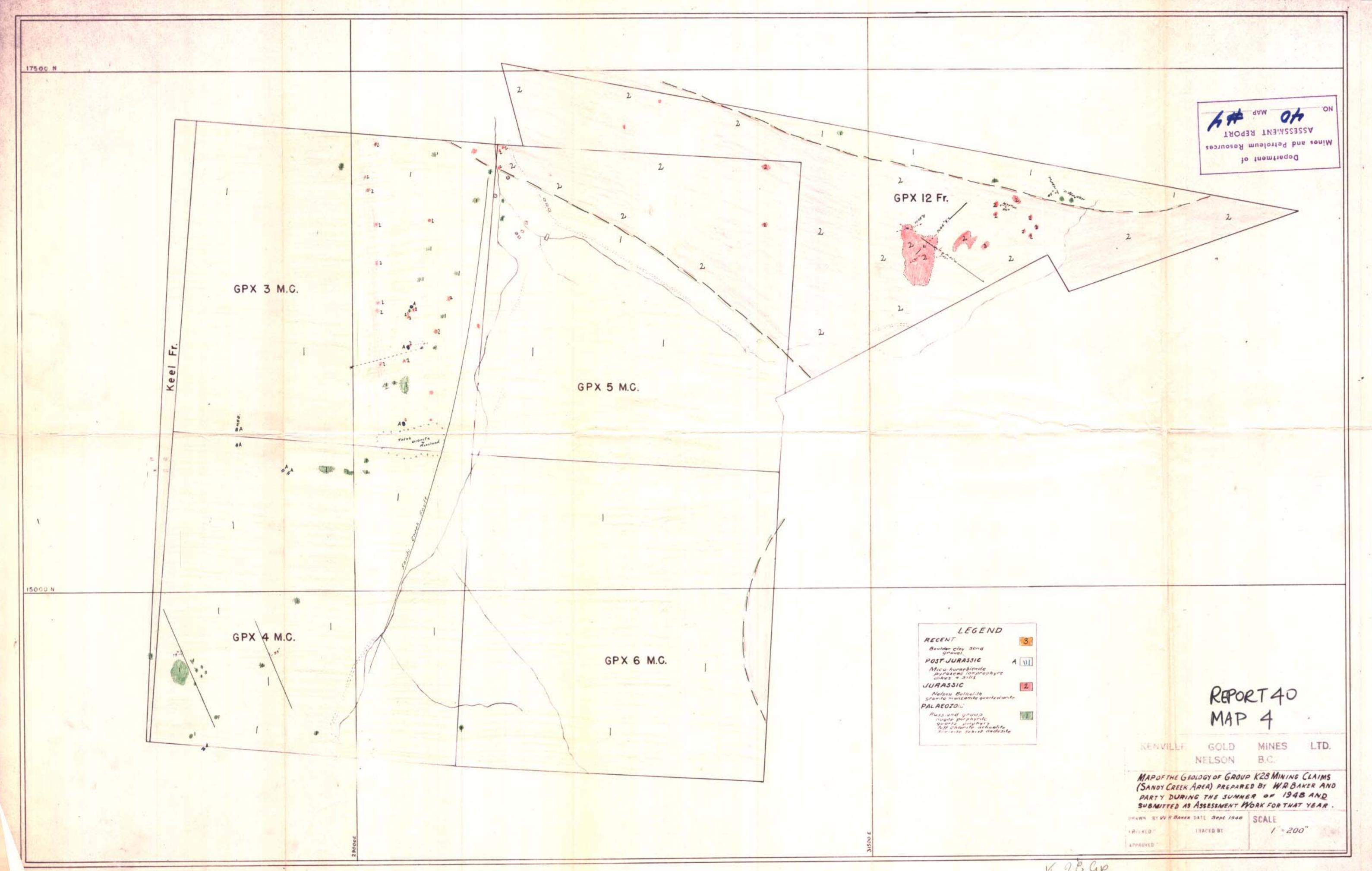
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SEALF Im = #m

REPORT 40 MAP 1







11 28 GP

