BRITISH COLUMBIA

PROSPECTORS ASSISTANCE PROGRAM

MINISTRY OF ENERGY AND MINES

GEOLOGICAL SURVEY BRANCH

PROGRAM YEAR:	1998/99
REPORT #:	PAP 98-4
NAME:	HELGI SIGURGEIRSON

DIMENSION STONE PROSPECTING

PROJECT 98/99 P6

Contents

A. Summary of Prospecting Activities
- Summary
- Expenditures
- Daily Reports
- Vehicle Rates

B. Technical Report
- Introductory Notes
- Legend (for Maps 1 - 5)
- Area Reports, Photos & Maps (Areas 1 - 5)
- Appendix (Claim Maps & Record Sheets)

Report and Work by:
Helgi Sigurgeirson, B.Sc.Geol.

B. Technical Report

Introductory Notes

Prospecting began in late August 1998, and continued until the years end. Granite* outcrops and boulder fields, suitable for extracting blocks to be processed into split facing (Photo 0.1) and related products, were the main targets. The areas focused on were generally within a four hour drive of Vancouver, in the region of Highways 1 and 5 (east of Vancouver). Several granite prospects were located, and the Merrit-Kamloops-Cache Creek area was recognized to be highly prospective for basalt, also for facing (Photo 0.2).

The main prospecting activity was driving logging roads. Locked gates and heavy logging truck traffic were persistent problems. These roads were most easily negotiated by motorcycle. Due to a late start (the Grantee received no money until mid-September), bad weather often hampered prospecting. Sampling and prospecting will resume in the spring, once the winter snows melt.

* 'Granite' is the industry term for intrusive rocks with visible crystals.

Photo 0.1 - Split granite facing (square cut)

Photo 0.2 - Basalt facing

Legend (Maps 1 - 5)

① Location of Interest

 Target Intrusive

 Other Intrusives

 Possible Basalt Area

 Road Segment Travelled

 Gate

Project Area - Fraser Valley (Agassiz to Hope) **Reference Number** - 1

Location of Project Area - NTS: 92H05E, 92H06W **Lat/Long:** See map

Description of Location and Access - See location notes below

Commodity - Dimension Stone (Granite)

Known mineral occurrences in the project area - Hope Quarry

Work Performed - Prospecting (2.5 days).

Significant Results - No prospects found.

Assessment -Proximity to Vancouver made this a priority area. Generally, the area suffers from a lack of exposure, except on very steep slopes. A number of roads south and east of Hope, as well as the upper reaches of Hunter Creek, remain to be investigated.

Location Notes

1.1 Hill east of Agassiz

Access - Highway 7. There is a locked gate about 1 km east of the Agassiz Research Station.

Terrain & Overburden - A moderately steep hill rises abruptly out of the Fraser River floodplain. Patchy outcrops occur around the steep edges of the hill, which is otherwise covered by thin till.

Rock Quality - The outcrop examined was a white, medium grained biotite-hornblende granodiorite with joints averaging about 1 m apart (locally greater, Photo 1.1). Structural and textural indicators suggest the rock probably has fair splitting qualities.

1.2 Mount Agassiz

Access - Hot Spring Road.

Terrain & Overburden - High cliffs define the east edge of Mount Agassiz. Residential development right up to the cliffs precludes further investigation at this location.

Rock Quality - Probably similar to 1.1.

1.3 Mount Hicks

Access - Hydro Road through Sasquatch Provincial Park. There is a locked gate at the start of this road.

Terrain & Overburden - Cliff exposures of moderately fractured rock are visible from Highway 7. The top of Mount Hicks is characterized by till covered hills with little outcrop and heavy second growth forest (Photo 1.3).

Rock Quality - A small outcrop of weathered, light grey, medium grained hornblende-biotite granodiorite, with 0.5 - 1 m fracture spacing, was found on top of Mount Hicks.

Photo 1.1 - Granodiorite outcrop at the south end of the hill east of Agassiz.

Photo 1.3 - Mount Hicks

1.4 Wahleach (Jones) Lake

Access - Jones Creek Forest Service Road. The branch road following the creek immediately south of Mount Barr is overgrown and washed out after about 1 km. Most of the branch and spur roads in this area appear to be deactivated. The viewpoint at 1.4 is not accessible by road.

Terrain & Overburden - Forested, till covered hills with little outcrop are typical of this area.

Rock Quality - The outcrop at 1.4 is of light grey, medium grained hornblende-biotite granodiorite with joint spacings averaging about 1 m.

1.5 Hunter Creek

Access - Hunter Creek Forest Service Road. There is a locked gate at 4.2 km on the east branch.

Terrain & Overburden - Cliffs of exposed rock rise steeply out of the Fraser Valley, but there is little outcrop in the forested, till covered slopes thereafter. Creek headwaters visible to the south from the viewpoint at 1.5 look promising and may be accessible.

Rock Quality - Widely spaced (often 2+ m), moderately to steeply dipping joints are visible in the cliff exposures. This rock is a weathered, white, medium grained (~3 mm) hornblende-biotite granodiorite.

1.6 Hope Quarry

Access - Highway 3, near the intersection of Highway 5.

Terrain & Overburden - Steep bluffs with much exposure.

Rock Quality - Widely spaced (aprox. 2 m) curviplanar, horizontal joints are clearly visible in the bluff exposures (Photo 1.6.a).The quarry site itself appears to be more intensely fractured (Photo 1.6.b). Both a grey and a white phase of fine grained biotite-hornblende granodiorite occur at this site. Blocks from this site had a good splitting grain, but the quarry doesn't look like it will produce much more.

1.7 Cliffs east of Ruby Creek

Access - Highway 7, about 1 km east of Ruby Creek.

Terrain & Overburden - The cliffs here are characteristic of this section of the Fraser Valley.

Rock Quality - The rock here is a foliated, white, medium grained hornblende-biotite quartz diorite. It is probably a poor splitting rock..

1.8 Silver Lake Provincial Park

Access - Silver Skagit Road

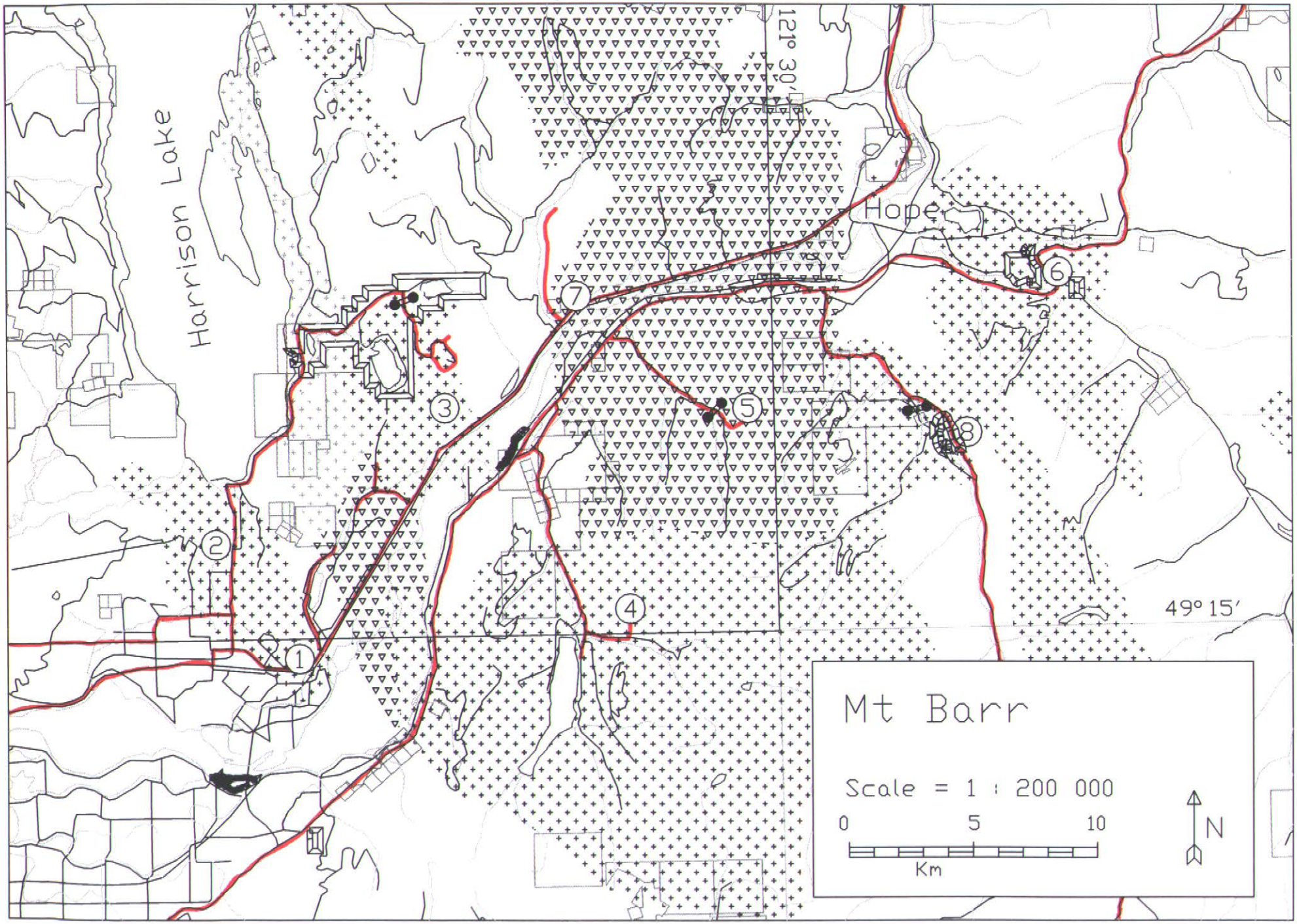
Terrain & Overburden - This area is characterized by forested, moderate slopes at lower elevations, and cliffs of relatively unfractured rock at higher elevations to the east.

Rock Quality - A roadworks boulder pile examined was composed of a white, medium grained hornblende-biotite granodiorite. It looked have mediocre splitting qualities.

Photo 1.6.a - Widely spaced jointing on the south side of the Hope Quarry knoll.

Photo 1.6.b - The Hope Quarry.

Map 1


Harrison Lake
121° 30′
Hope
49° 15′
1
2
3
4
5
6
7
8
Mt Barr
Scale = 1 : 200 000
0
5
10
Km
N

Project Area - Chehalis (Map 2) **Reference Number** - 2

Location of Project Area - NTS: 92G08E **Lat/Long:** See map

Description of Location and Access - See location notes below

Commodity - Dimension Stone (Granite)

Known mineral occurrences in the project area - None

Work Performed - Prospecting (1.5 days).

Significant Results - No prospects found.

Assessment -This area was originally given a high priority on the basis of mountaineering reports of unfractured granite. The roads west of Chehalis Lake and north of Mount Jasper have yet to be thoroughly investigated. Elsewhere in this area there is generally little outcrop.

Location Notes

2.1 Elbow Lake

Access - Chehalis Forest Service Road.

Terrain & Overburden - Steep hills with patchy outcrop.

Rock Quality - White, course grained granodiorite occurs in a roadcut on the west side of elbow lake. This rock was somewhat weathered and had a fracture spacing on the order of 0.5 - 1 m, but exposures visible on the east side of the lake appear to be less fractured.

2.2 Skwellipil Creek

Access - Skwellipil Creek Road, north branch. Frequent, large cross ditches on this road make 4 wheel drive necessary. The viewpoint at 2.2 was reached by hiking up a deactivated spur road.

Terrain & Overburden - The south side of the valley is characterized by steep, high cliffs with large talus aprons (Photo 2.2). Moderately steep, till covered slopes are found on the north side.

Rock Quality - The cliffs across the valley appear to have a meter scale fracture spacing. Float examined on the north side was a grey, medium grained granodiorite with about 5% large (~5 mm) anhedral white feldspars. Irregular fracture patterns and boulder shapes suggest that this rock does not have good splitting qualities.

Photo 2.2 - Skwellipil Creek. View south of location 2.2.

Photo 2.3 - Statlu Creek. View west from location 2.3.

2.3 Statlu Creek

Access - North Statlu Road, east branch.

Terrain & Overburden - Steep outcrop is common at higher elevations, while till (east side) or talus (west side) blankets the lower slopes (Photo 2.3).

Rock Quality - Probably similar to 2.2.

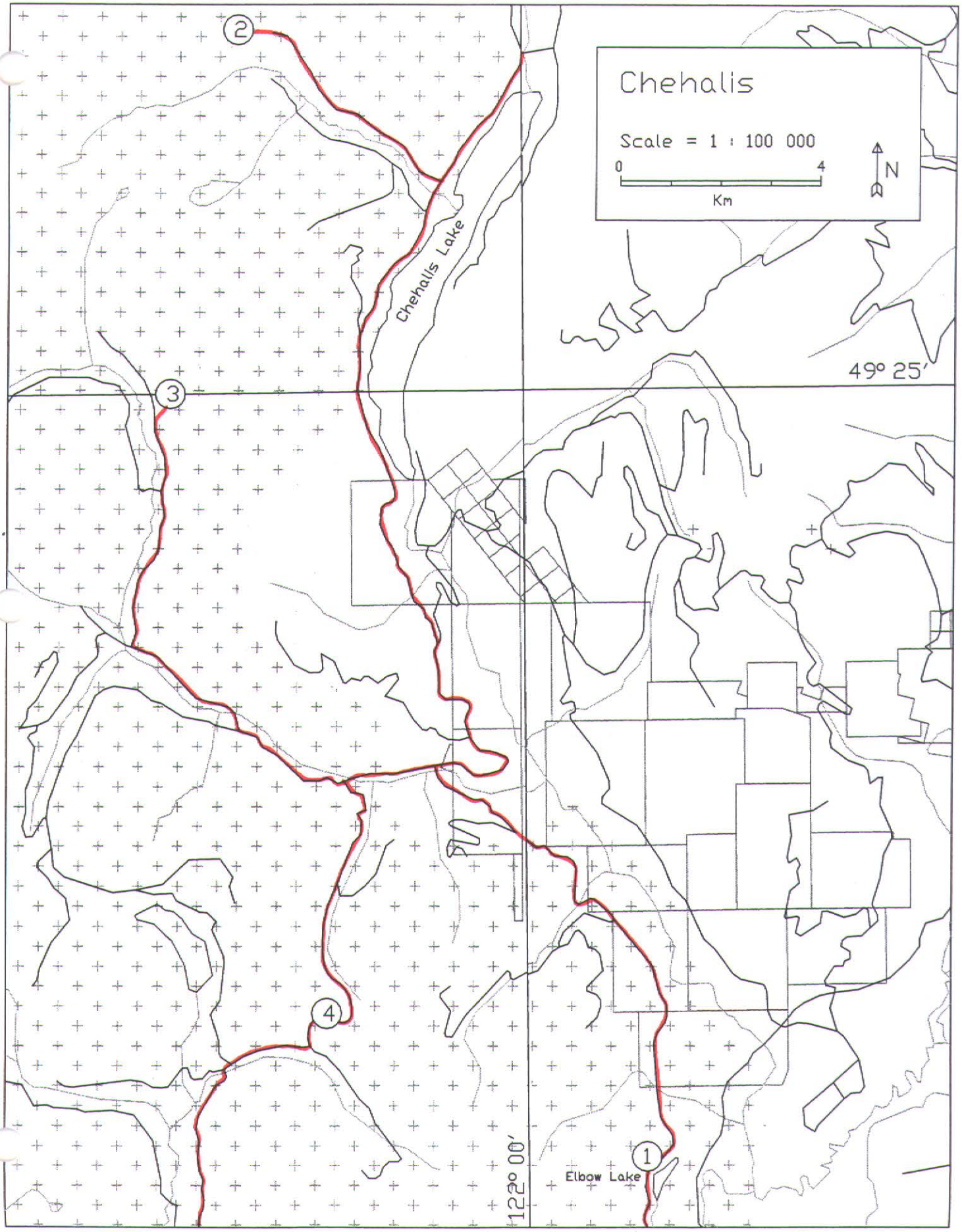
2.4 Margaret Pass

Access - Margaret Creek Road

Terrain & Overburden - Outcrop is rare in the large, moderately steep hills of this area.

Rock Quality - A very fractured, coarse grained white & red granite, containing about 15% red alkali feldspar, outcrops at 2.4.

Map 2


Chehalis
Scale = 1 : 100 000
0
4
Km
N
Chehalis Lake
49° 25′
122° 00′
Elbow Lake
1
2
3
4

Project Area - Chilliwack Lake (Map 3) **Reference Number** - 3

Location of Project Area - NTS: 92H03W & 92H04E **Lat/Long:** See map

Description of Location and Access - See location notes below

Commodity - Dimension Stone (Granite)

Known mineral occurrences in the project area - Chilliwack Lake Quarry, Skagit Valley Site

Work Performed - Prospecting (4 days), Sampling (1 day); small waste blocks at the Chilliwack Lake Quarry were handsplit with a splitting maul (Photo 3.1.a), then squared on the hydraulic splitter at Bedrock Granite Sales.

Significant Results - Nesakwatch Creek boulder field (not staked). Photo 3.2.a.
UTM - 5431000 N, 606000 E
Elevation - 1000 m
Sampling results - Not yet sampled, but the presence of large squarish boulders suggests good splitting qualities.
Geology - Light grey, medium grained, hornblende-biotite granodiorite.

Assessment - The Chilliwack Lake area is the most prospective area investigated thus far. It features proximity to Vancouver, good road access, and an attractive grey stone with few fractures. Splitting tests on rock at the Chilliwack Lake Quarry, and examination of blocks and boulders elsewhere, suggest that the granodiorites and granites of the Chilliwack Lake Batholith generally have good splitting qualities.

Several economic boulder fields have been identified, though site 3.1 (Chilliwack Lake Quarry) is now part of a no staking reserve, and site 3.4 (Skagit Valley Site) is being worked by Pacific Quarry Industries. Sampling and prospecting (aided by airphoto studies) will resume in the spring, as soon as snow conditions allow.

Location Notes

3.1 Chilliwack Lake Quarry (Sumas Sky Quarry). Photo 3.1.b.
Access - Chilliwack Lake Road
Terrain & Overburden - Granodiorite bluffs rise steeply out of the Chilliwack River floodplain. There is frequent exposure in bluff faces. 500+ tonnes of boulder talus at the foot of the bluffs can be found about 200 m east of site 3.1.b.
Rock Quality - Curviplanar, generally horizontal joints, occur at 2+ m spacings (Photo 3.1.b). The rock is a light grey, fine grained (~1 mm) biotite granodiorite, though colour and texture vary due to irregular schlieren. Testing indicates a good splitting grain.

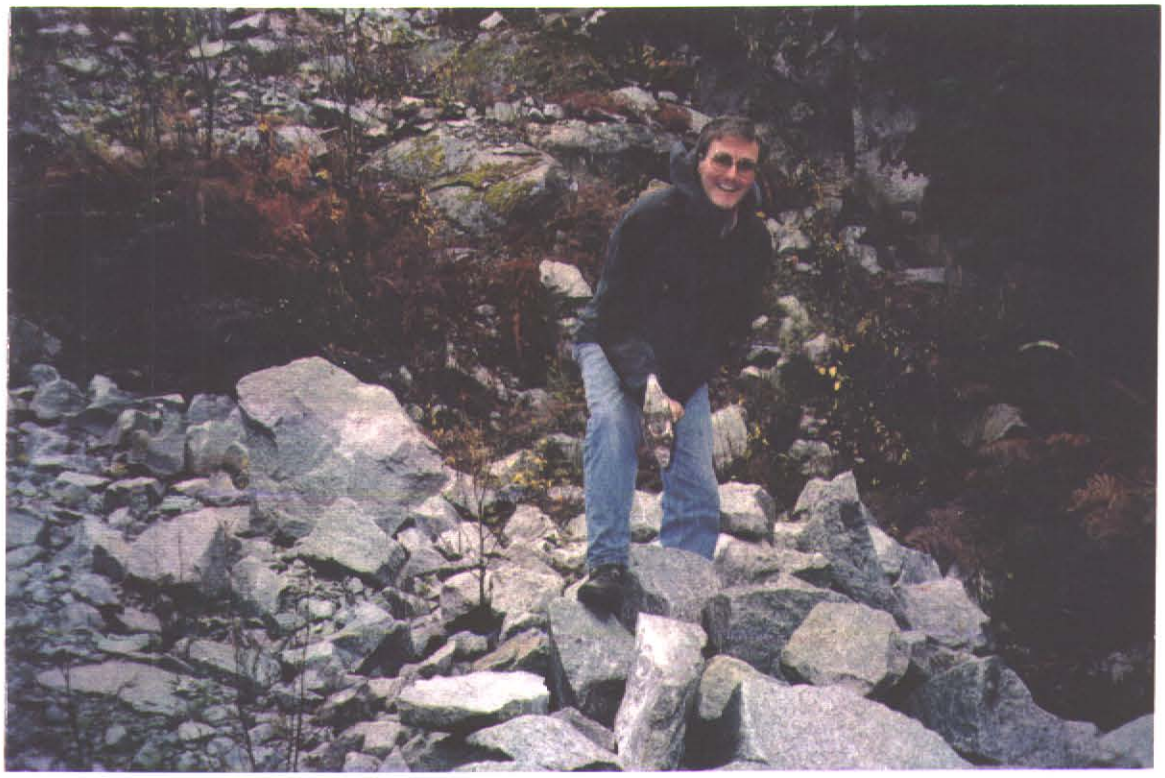


Photo 3.1.a - Handsplitting waste rock at the Chilliwack Lake Quarry.

Photo 3.2.a - Boulders beside the Nesakwatch Creek logging road.

Photo 3.1.b - Widely spaced joints visible in the quarry face (Chilliwack Lake Quarry).

Photo 3.2.b - Nesakwatch Creek. West side of valley.

3.2 Nesakwatch Creek

Access - Nesakwatch Forest Service Road. There is a locked gate about 4 km in from the Chilliwack river road (entrance at the Riverside Recreation Site). The road deteriorates somewhat about 1 km past the boulder field site, though it was still 2 wheel drive where walked. The spur road towards Mount Slesse appears to be overgrown.

Terrain & Overburden - Moderately steep lower elevations are underlain by till, while higher elevations, in the southern half of the valley, feature steep cliffs of bare rock (Photo 3.2.b).

Rock Quality - Widely spaced vertical joints in cliff exposures, and large squarish boulders, indicate the rock is relatively unfractured. Boulders examined were a light grey, medium grained (~2 mm), hornblende-biotite granodiorite (locally granite).

3.3 Centre Creek

Access - Paulsen Road. There is a locked gate about 1 km in from the Riverside Recreation Site entrance. The spur road at 3.3 was overgrown and washed out in several places.

Terrain & Overburden - Steep exposures of bare rock occur from 3.3 on (Photo 3.3.a). Before this little exposure was noted in the till covered valley. The spur road at 3.3 was investigated because topographic maps showed it reaching a bowl with moderate slopes.

Rock Quality - Float observed suggests that there is more fracturing and alteration here than elsewhere in this area. It is likely rock quality will improve further south, away from the edge of the batholith and what appears to be a large structure at 3.3.

3.4 Skagit Valley Site

Access - Silver Skagit Road

Terrain & Overburden - The boulder field (Photo 3.4.a) occurs between the road and Klesilkwa Creek, in a large valley. Most of the scattered boulders appear to be under 40 tonnes, but one boulder originally over 2000 tonnes was unearthed here (Photo 3.4.b).

Rock Quality - Two types of rock are found in the boulders at this site, a medium grey, medium grained granodiorite and (more commonly) a light pink, fine grained granite. Both types of rock here appear to have a good splitting grain, though even the smaller boulders here are drilled through and blasted (Photo 3.4.c).

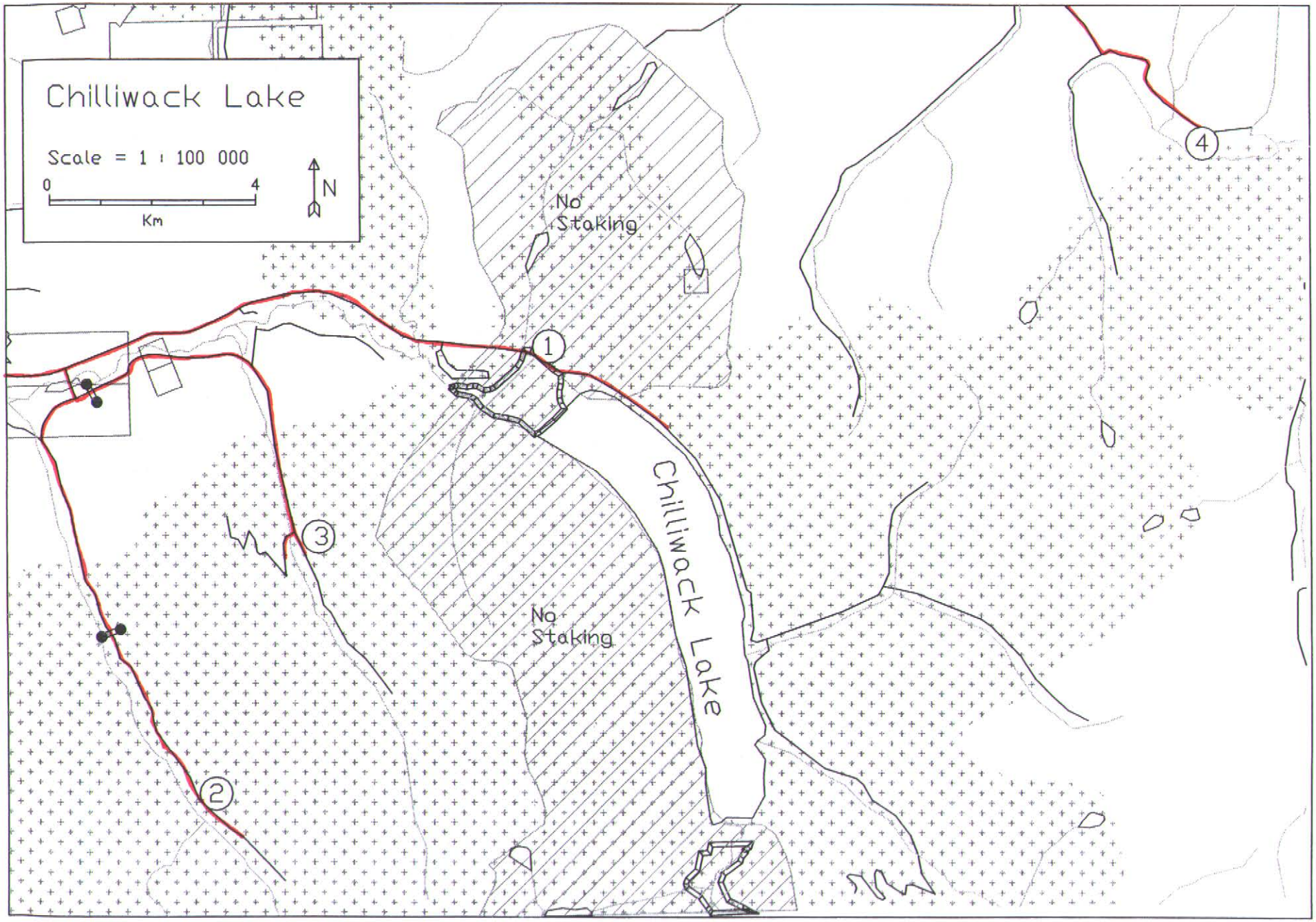
Photo 3.4.a - Skagit Valley boulder field.

Photo 3.4.b - Main workings at the Skagit Valley Site. This boulder of pink granite was originally 2000+ tonnes.

Photo 3.4.c - Circa 30 tonne boulder being drilled.

Locked gates and snow make late season prospecting a trial (Centre Creek).

Map 3


Chilliwack Lake
Scale = 1 : 100 000
0
4
Km
N
No Staking
No Staking
Chilliwack Lake
1
2
3
4

Project Area - Needle Peak (Map 4) **Reference Number** - 4

Location of Project Area - NTS: **Lat/Long:** See map

Description of Location and Access - See location notes below

Commodity - Dimension Stone (Granite)

Known mineral occurrences in the project area - East Anderson River Quarry, Cascade Quarry.

Work Performed - Prospecting (3 days), claim staking (2 days).

Significant Results

West Anderson Prospect

Claim - Locutus (see appendix)
UTM - 5500000 N, 634750 E
Elevation - 1250 m
Sampling results - Not yet sampled, though orthogonal jointing, and what appears to be a well developed grain parallel to the horizontal joint set, suggest that the rock has good splitting qualities. The outcrop examined appears to have a thick (10+ cm) weathering rind.
Geology - The prospect is a bench approximately 400 m long (Photo 4.2.a) of white, medium grained hornblende-biotite granite(?) with blocky joints spaced 1-3 m apart (Photo 4.2.b). The dominant joint set is horizontal.

Coldwater Creek boulder field

Claim - Winky (see appendix)
UTM - 5494750 N, 628100 E
Elevation - 1200 m
Sampling results - Not yet sampled, though the rock appears to have a well developed grain.
Geology - The boulder field (Photo 4.1.a) is several hundred meters across and consists of 2-20 tonne boulders of greenish white, coarse grained hornblende-biotite granite.

Assessment - Good access and site qualities indicates that blocks could be taken cheaply from the prospects listed above. The size and frequency of boulders on the Winky claim needs to be better assessed. In both cases, thick weathering rinds and the light colour of the rock are potential problems (thick rinds increase waste, light coloured stone tends to sell more slowly than grey granite in the split stone market). The area has yet to be thoroughly investigated, especially the boulder field at 4.3.

Photo 4.2.a - West Anderson River Prospect (granite bench in the center of the photo). Note logging roads below and to the right of the bench.

Photo 4.2.b - 1.5 m joint spacing at the edge of the bench.

Photo 4.1.a - Coldwater Creek boulder field.

Photo 4.1.b - Large exposures of sheeted granodiorite (characteristic of the area)

Location Notes

4.1 Coldwater Creek

Access - Coldwater Creek logging road. The bridge shortly before the claim boundary has been dragged out and used to block the road.

Terrain & Overburden - Large exposures of sheeted granites and granodiorites dominate the higher elevations (Photo 4.1.b), often with large talus aprons below them. Till, containing scattered boulders and the occasional boulder field, covers the lower elevations. The area shown in Photo 4.1.b (about 2 km west of 4.1) features moderately sloped exposures which may be accessible.

Rock Quality - Moderately to steeply dipping exfoliation joints, usually 1+ m apart are the norm here. The coarse grained, greenish white rock comprising the boulder field at 4.1 described above has a distinct foliation (probably the splitting grain) and few fractures.

4.2 West Anderson River

Access - West Anderson Main. The locked gate at the logging camp at 16 km has a locked gate which will be opened on request by the caretaker.

Terrain & Overburden - The upper reaches of the valleys in this area are usually similar to 4.1, with respect to terrain.

Rock Quality - The prospect at 4.2 appears to be anomalous in that most exposures in the area have steeply dipping exfoliation joints rather than the blocky jointing found there. As well, boulders examined were usually a grey ganodiorite.

4.3 North Anderson River

Access - North Anderson logging road system.

Terrain & Overburden - Exceptionally large boulders were observed at 4.3 (Photo 4.3). This area is at the edge of a large claim block covering the east end of the valley. Otherwise similar to 4.1.

Rock Quality - Unknown, but likely relatively unfractured, judging by the size of the boulders.

4.4 East Anderson River Quarry

Access - East Anderson River logging road system.

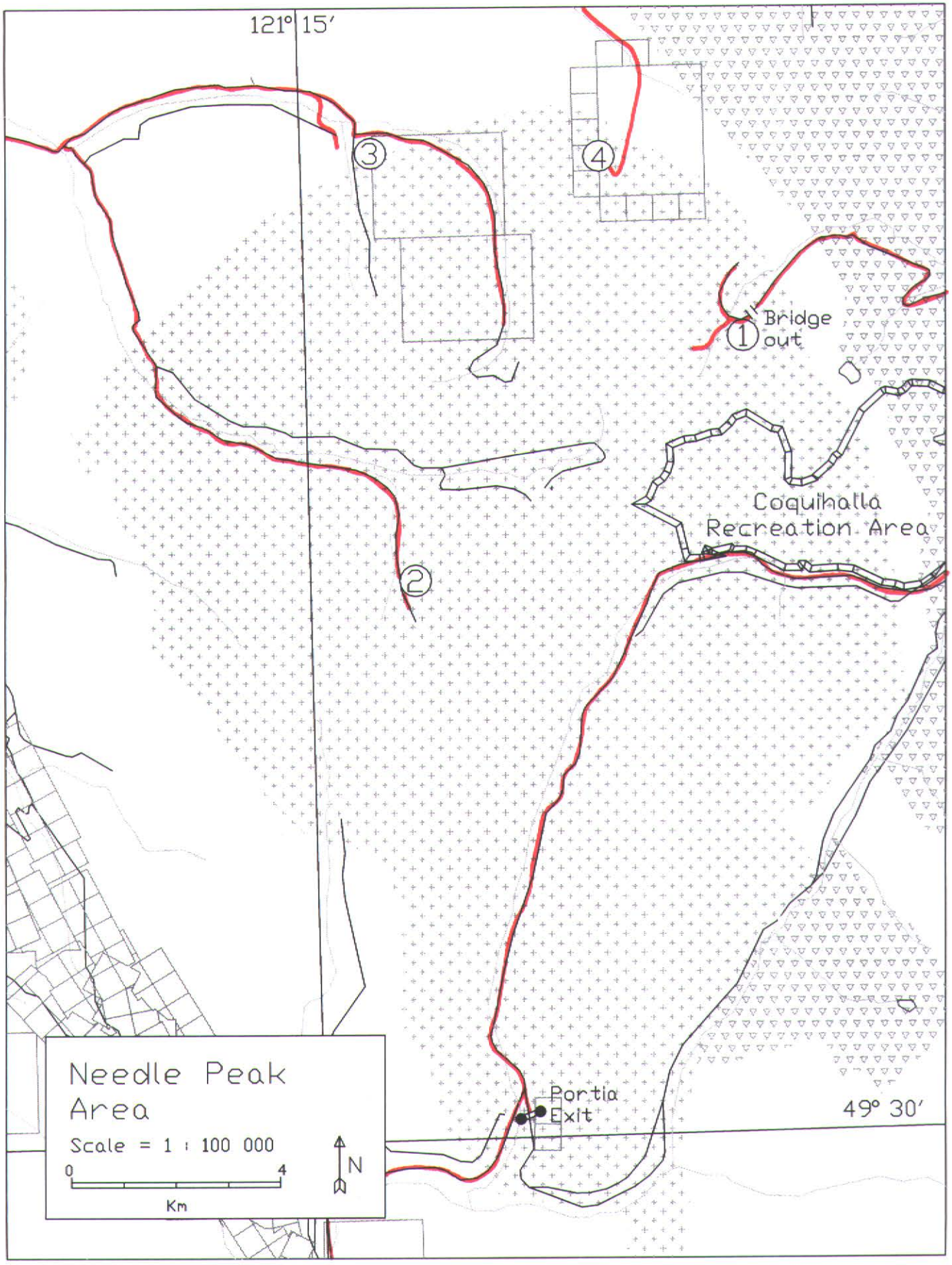
Terrain & Overburden - Only the headwaters of this river are underlain by the Needle Peak Pluton, with it's characteristic large exposures of sheeted rock.

Rock Quality - Widely spaced, moderately dipping exfoliation joints facilitate quarrying at this location (Photo 4.4, Pacific Quarry Industries). The rock is a greenish white, coarse grained granite with no grain apparent.

Photo 4.3 - Large boulders above road at location 4.3.

Photo 4.4 - East Anderson River Quarry

Map 4


121° 15′
3
4
1
Bridge out
Coquihalla Recreation Area
2
Portia Exit
49° 30′
Needle Peak Area
Scale = 1 : 100 000
0
4
Km
N

Project Area - Nicola Valley (Map 5) **Reference Number** - 5

Location of Project Area - NTS: 92I01, 2, 7, 8 **Lat/Long:** See map

Description of Location and Access - See location notes below

Commodity - Dimension Stone (Granite and Basalt)

Known mineral occurrences in the project area - None

Work Performed - Prospecting (1 day)

Significant Results - No prospects found.

Assessment - A possible basalt prospect was noted at 5.3. It was later realized that:
a) there is an immediate and growing demand for basalt.
b) the Merrit-Kamloops-Cache Creek is probably the most prospective area in south-west B.C. for basalt.
Prospecting in the Merrit-Kamloops-Cache Creek area for basalt will resume once the winter snow melts.

Location Notes

5.1 Slopes north-west of Nicola Lake
Access - Monck Park road.
Terrain & Overburden - Steep bluffs of exposed rock (Photo 5.1.a) give way to moderate slopes of patchy outcrop, then to gentle hills with little outcrop.
Rock Quality - Low rounded benches of white, medium grained biotite-hornblende granodiorite (Photo 5.1.b) occur at 5.1 above the large bluff exposures. The benches are defined by flat lying joints spaced 1-2 m apart. A thick weathering rind (~20 cm) and the presence of coarse biotite make this a less attractive target.

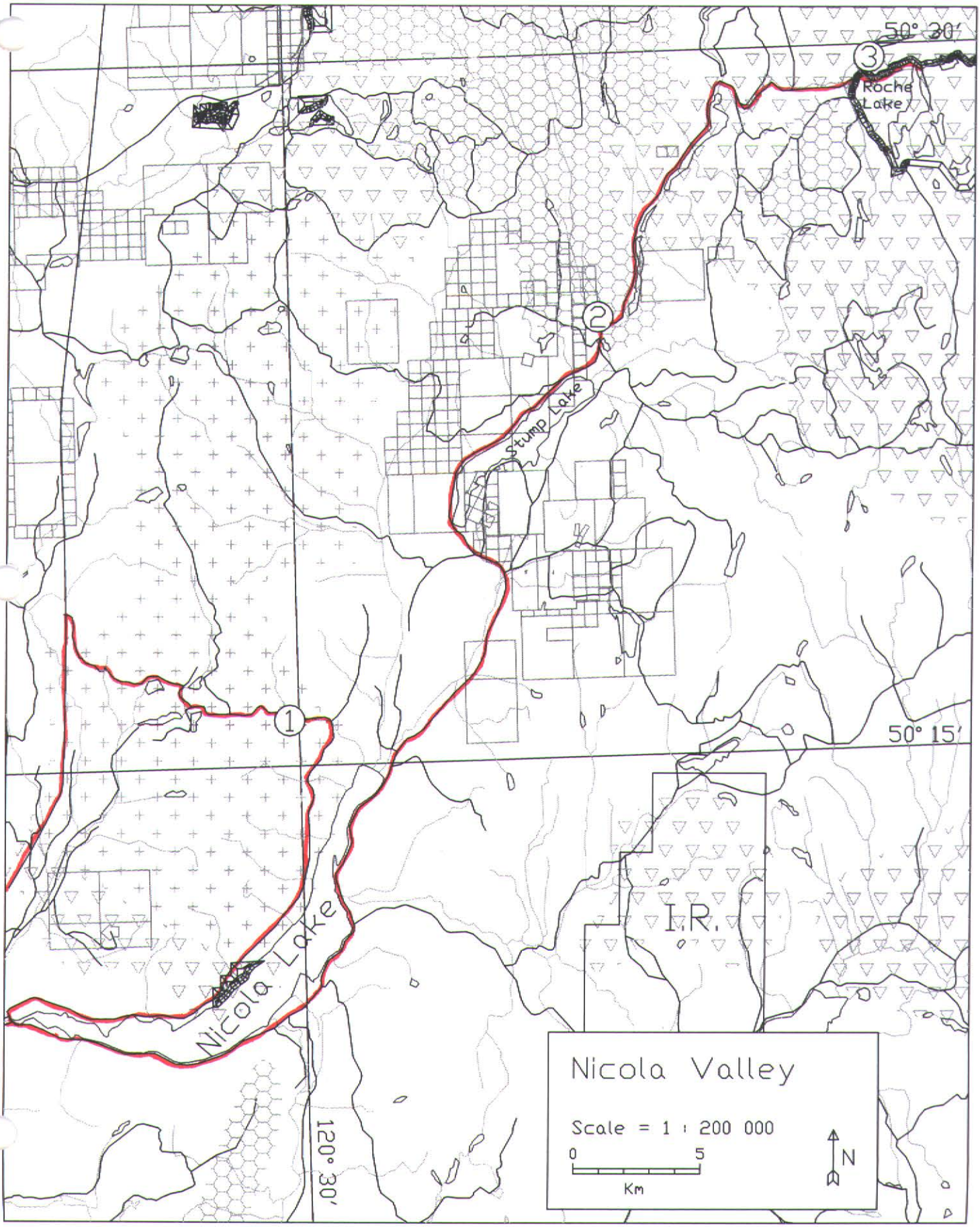
5.2 Columnar Basalts
Access - Highway 5A
Terrain & Overburden - A large outcrop of tertiary columnar basalt occurs at the edge of the low hills surrounding the valley north of Stump Lake. May be on private land.
Rock Quality - Unknown.

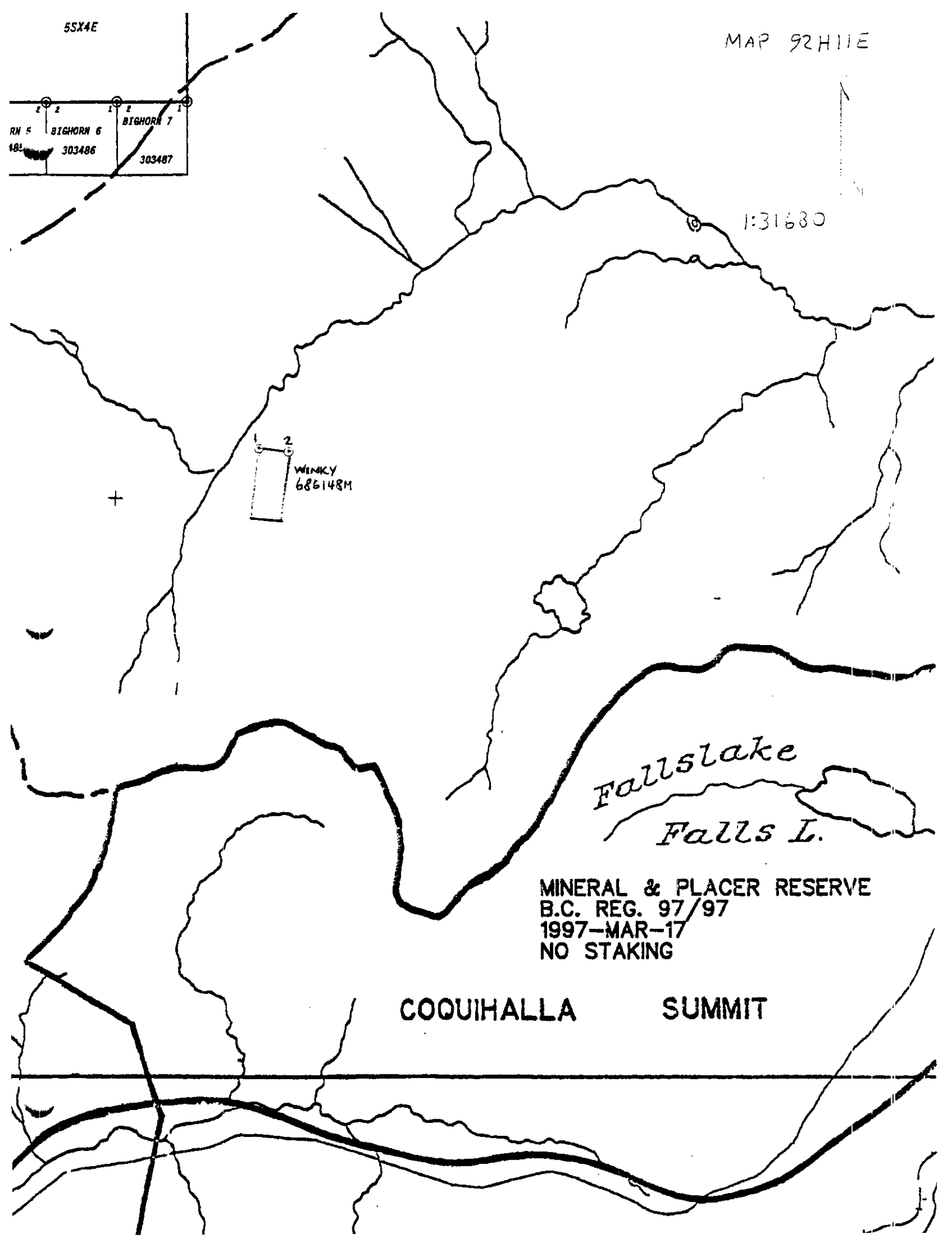
5.3 Roche Lake
Access - Roche Lake road
Terrain & Overburden - Low, heavily forested hills.
Rock Quality - Rock climbing reports indicate that bluffs of unfractured granite occur in this area (Roche Rock). Snow, together with a lack of clear directions or signs, prevented the locating of these bluffs.

Photo 5.1.a - Granodiorite bluffs on west side of Nicola Lake.

Photo 5.1.b - Low granodiorite benches at location 5.1.

Map 5


50° 30'
3
Roche Lake
2
Stump Lake
1
50° 15'
I.R.
Nicola Lake
120° 30'
Nicola Valley
Scale = 1 : 200 000
0
5
Km
N


5SX4E
MAP 92H11E
1:31680
BIGHORN 6
303486
BIGHORN 7
303487
WINKY
686148M
Fallslake
Falls L.
MINERAL & PLACER RESERVE
B.C. REG. 97/97
1997-MAR-17
NO STAKING
COQUIHALLA
SUMMIT