

# **GEOLOGICAL AND PROSPECTING REPORT**

**on the**

## **WAHLEACH 1 - 12 MINERAL CLAIMS (Including the POPKUM LIMESTONE QUARRY)**

**BRIDAL FALLS - CHEAM PEAK AREA**

**NEW WESTMINSTER MINING DIVISION, B.C.**

**NTS 92 H / 4E**

**49° 13'N Latitude / 121° 42' W Longitude**

**for**

**STEELHEAD AGGREGATES LTD.**

**103-2776 Bouquin Cres.**

**PO Box 178**

**Abbotsford, BC**

**V2S 4N8**

**Phone: 530-3990**

**(Owner)**

**RECEIVED**

**NOV 30 1999**

**Gold Commissioner's Office  
VANCOUVER, B.C.**

**by**

**J.T. SHEARER, M.Sc., P.Geo.**

**HOMEGOLD RESOURCES LTD.**

**#5-2330 Tyner St.**

**Port Coquitlam, BC**

**V3C 2Z1**

**Fieldwork completed between August 5, 1999 and August 25, 1999**

**GEOLOGICAL SURVEY BRANCH  
ASSESSMENT REPORT**

**Dated at Port Coquitlam, August 31, 1999**

**26,091**

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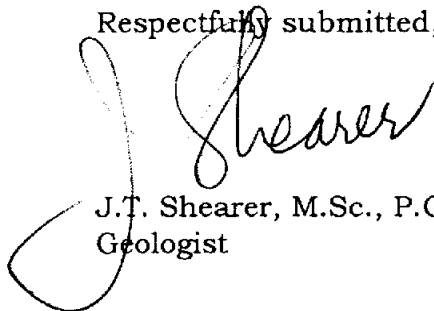
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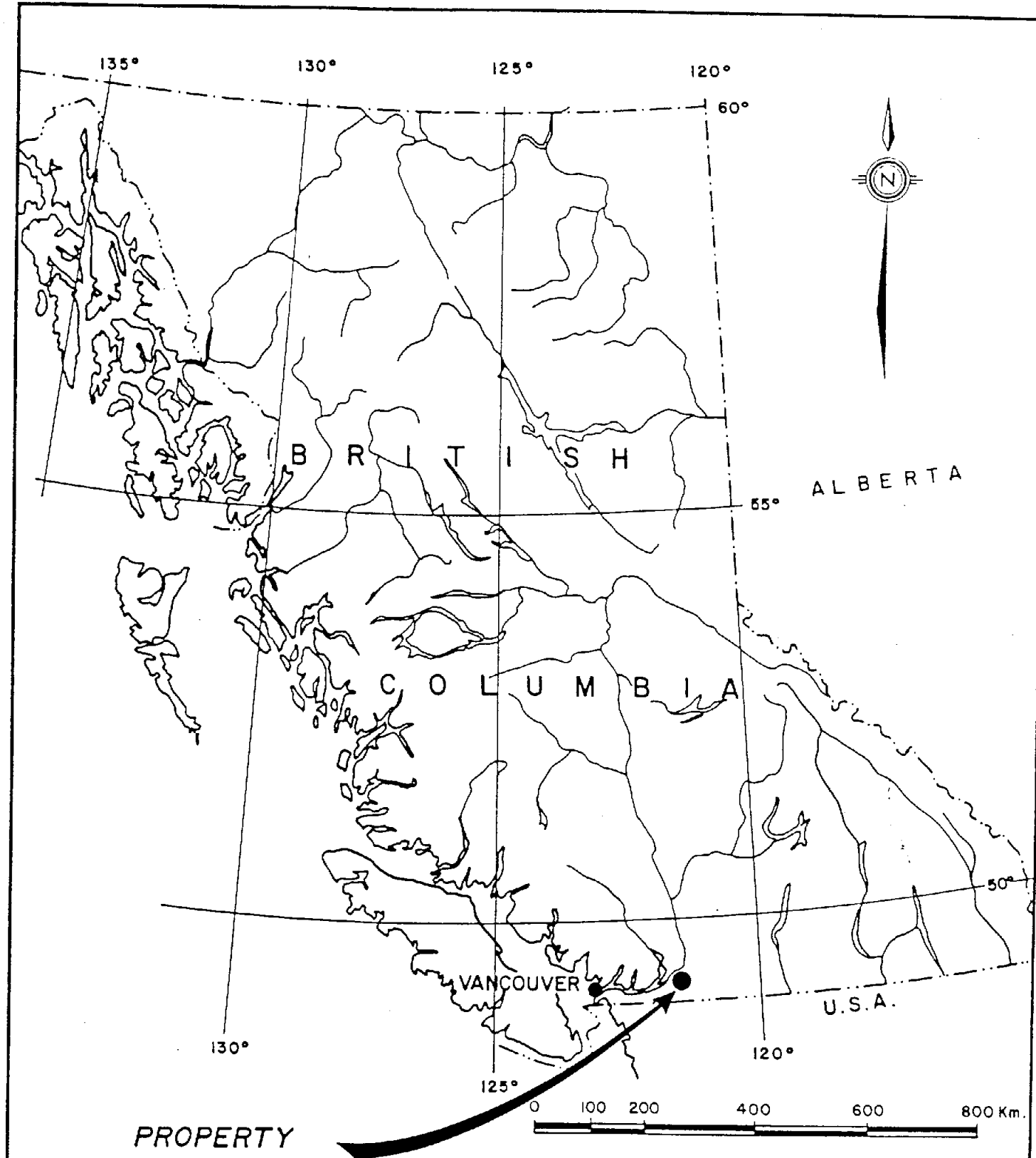
## SUMMARY

- 1) Geological mapping and prospecting and G.P.S. surveying was carried out in August 1999 on the Wahleach 1-12 claims. The Wahleach claims were located to cover a favourable geological environment consisting of hornfelsed and skarnified lower Permian limestone intruded by granodiorite which contains the past producer Popkum Limestone Quarry. Unfortunately the G.P.S. data could not be used due to machine and processing errors.
- 2) Low-grade gold-bearing arsenopyrite float was previously discovered to the east of the claim boundaries and stream sediment samples previously collected were also anomalous in arsenic and gold ( up to 950 ppb Au). A chip sample taken in 1947 across 24 meters of the western Limestone band averaged 45.75% CaO.
- 3) The general geological setting, composed mainly of Permian limestone intruded by Miocene granodiorite is similar to that of several other interesting copper-gold properties in the general area. The suitability of the limestone unit for cement manufacture requires additional study. Past production from the Popkum Quarry is reported to be 107,000 tones in the period 1917 to 1970.
- 4) Samples taken from the Popkum Quarry in 1995 averaged 8.28% SiO<sub>2</sub>, 0.75% Al<sub>2</sub>O<sub>3</sub>, 49.44% CaO and 0.04 % total Alkali.
- 5) The initial stage of the proposed program of test excavations would cost about \$25,000 and, with success in target definition of a calcium carbonate resource, a follow-up program involving shallow trenching and exploratory drilling would be required with a considerably larger budget.

Respectfully submitted,



J.T. Shearer, M.Sc., P.Geo.  
Geologist



PROPERTY  
LOCATION

GENERAL LOCATION  
MAP

PROJECT : WAHLECH MINERAL CLAIMS

ENG. :

DWG. NUMBER :

Figure 1

## INTRODUCTION

The Wahleach 1-12 two-post mineral claims are located in Cheam Mountain area of the New Westminster Mining Division of British Columbia adjacent to the Trans Canada Highway. This report describes the geological setting and mineral potential found on the Wahleach 1-12 mineral claims and contains recommendations for further exploration work. The area is underlain by a clastic and carbonate sequence of the Chilliwack Group intruded by the Miocene Mount Barr Batholith (Richards and McTaggart, 1976).

The Wahleach 1-12 claims are drained by several steep, west flowing creeks. The steepness of the terrain coupled with the thick underbrush has hampered evaluations in the past. Two lower Permian carbonate units of the Devonian Permian Chilliwack Group are exposed as two north trending bands 300 metres apart along the base of Mount Cheam for at least 600 metres. The western band is at least 24 meters thick while the eastern band is at least 60 metres thick. This section is orientated  $150^{\circ}/30^{\circ}\text{NE}$ .

Present work, together with work in 1995 (Shearer, 1995) has defined the general carbonate environment which has not been evaluated in detail in the past, despite the relative ease of access.



## LOCATION AND ACCESS

The property is reached via the Trans Canada Highway (Hwy. No.1), which parallels the steep northwesterly facing slope of Cheam Mountain in the vicinity of Bridal Falls, a road distance of approximately 90 km east of Vancouver, B.C., Figure 1. A power line service and gas pipeline road traverses the west side of the Wahleach 1-12 mineral claims and provides access from the Trans Canada Highway, approximately 2,000 metres west of the village of Popkum, B.C. The gate is usually kept locked by Trans Mountain Pipeline Ltd. (for information phone: Vancouver 876-6711 or Hope 869-5993). This service road is 1.7 km east of the overpass at Exit No. 138 and opposite Julseth road. This junction turn-off is also 4 km west of the Jones Lake Power Station. An old overgrown logging road provides easy access to the western side of the claims. This road could be brushed out by a bulldozer in short order if more advanced exploration is required. Cheam Peak is a prominent geographical feature along the southeast boundary of the Wahleach mineral claims.

The Wahleach 1-12 mineral claims are centred at latitude  $49^{\circ} 13'N$ , longitude  $121^{\circ} 42'W$  at an elevation that ranges from 60 metres in the northwest to 450 metres in the southeastern portion of the claims, (Figure 2).

Topography is steep and covered by dense second growth except in cliff or talus zones. Snowfall is rare at lower levels but heavy near the upper limits, although present for only a few winter months. Water is available in small creeks year-round. The property is far enough removed from the Highway and power and gas lines to allow medium-scale mining.

Surface rights appear to be held by Mr. Chuck M<sup>C</sup>Kay, who operates a small sawmill and other enterprises. When the Trans Canada Highway was widened in the mid 1980's Mr. M<sup>C</sup>Kay moved this sawmill from across from Harling Island to his present location. Recently, Mr. M<sup>C</sup>Kay indicated that Maris Transport produced from the Popkum Quarry in the near past. He is concerned about slope stability associated with mining. Mr. M<sup>C</sup>Kay apparently has the rights to a transportation corridor along an abandoned rail spur which came into the old quarry during the 1930's. He also claims to control the "docking" rights into the Fraser River just west of Popkum Village.



## CLAIM STATUS

The principal area of interest is covered by the Wahleach 1-12 mineral claims staked under the two-post system and registered in the name of J.T. Shearer. The claims are being transferred to Steelhead Aggregates Ltd., 103-2776 Bourquin Crescent, PO Box 187, Abbotsford, BC V2Z 4N8. Figure 3 shows the recorded claim block. The claims are located within the New Westminster Mining Division.

<b>List of Claims</b>				
Claim Name	Record No.	Units	Location Date	Expiry Date
Wahleach 1	365244	1	Sept. 3, 1998	Sept. 3, 2000
Wahleach 2	365245	1	Sept. 3, 1998	Sept. 3, 2000
Wahleach 3	365246	1	Sept. 3, 1998	Sept. 3, 2000
Wahleach 4	365247	1	Sept. 3, 1998	Sept. 3, 2000
Wahleach 5	365248	1	Sept. 3, 1998	Sept. 3, 2000
Wahleach 6	365249	1	Sept. 3, 1998	Sept. 3, 2000
Wahleach 7	365250	1	Sept. 3, 1998	Sept. 3, 2000
Wahleach 8	365251	1	Sept. 3, 1998	Sept. 3, 2000
Wahleach 9	365252	1	Sept. 3, 1998	Sept. 3, 2000
Wahleach 10	365253	1	Sept. 3, 1998	Sept. 3, 2000
Wahleach 11	368780	1	April 27, 1999	April 27, 2001
Wahleach 12	368781	1	April 27, 1999	April 27, 2001

Total 12

\* with application of assessment work documented in this report.

Under the present status of mineral claims in British Columbia, the consideration of industrial minerals requires careful designation of the product's end use. An industrial mineral is a rock or naturally occurring substance that can be mined and processed for its unique qualities and used for industrial purposes (as defined in the *Mineral Tenure Act*). It does not include "Quarry Resources". Quarry Resources includes earth, soil, marl, peat, sand and gravel, and rock, rip-rap and stone products that are used for construction purposes (as defined in the *Land Act*). Construction means the use of rock or other natural substances for roads, buildings, berms, breakwaters, runways, rip-rap and fills and includes crushed rock. Dimension stone means any rock or stone product that is cut or split on two or more sides, but does not include crushed rock.

The expected end use of the CaCO<sub>3</sub> resource (that of supporting the cement plant) from the Wahleach Project of Steelhead Aggregates Ltd. comes within the Industrial Use definition and therefore can be considered under the *Mineral Tenure Act*. Claims require \$100 of assessment work per unit (or cash-in-lieu) each of the first three years and \$200 per unit each year after.



## PROPERTY GEOLOGY AND MINERALIZATION

There has been some detailed mapping of the property in 1995 (Shearer, 1995) and only reconnaissance geochemical sampling and float prospecting has been carried out within the area of the Wahleach 1-12 mineral claims (Figure 7) until the work by the present owner in 1990, 1991 and 1995. Float specimens containing arsenopyrite, pyrrhotite and minor chalcopyrite within a brecciated siliceous hornfels were located to the east of Wahleach 6 & 8 mineral claims. Other float samples containing weakly mineralized garnetiferous skarn, biotite hornfels and intrusive lithologies have been collected but the actual contact areas have yet to be located and explored.

The Wahleach 1-12 claims are mainly underlain by late Paleozoic Chilliwack Group and Triassic-Jurassic Cultus Formation. To the northeast, the claims are intruded by Conway Phase granodiorite (ca. 18Ma) of the Mount Barr Batholith (Richards & McTaggart, 1976). The upper part of Cheam Peak consists of a thrust sheet of Chilliwack Group Rocks.

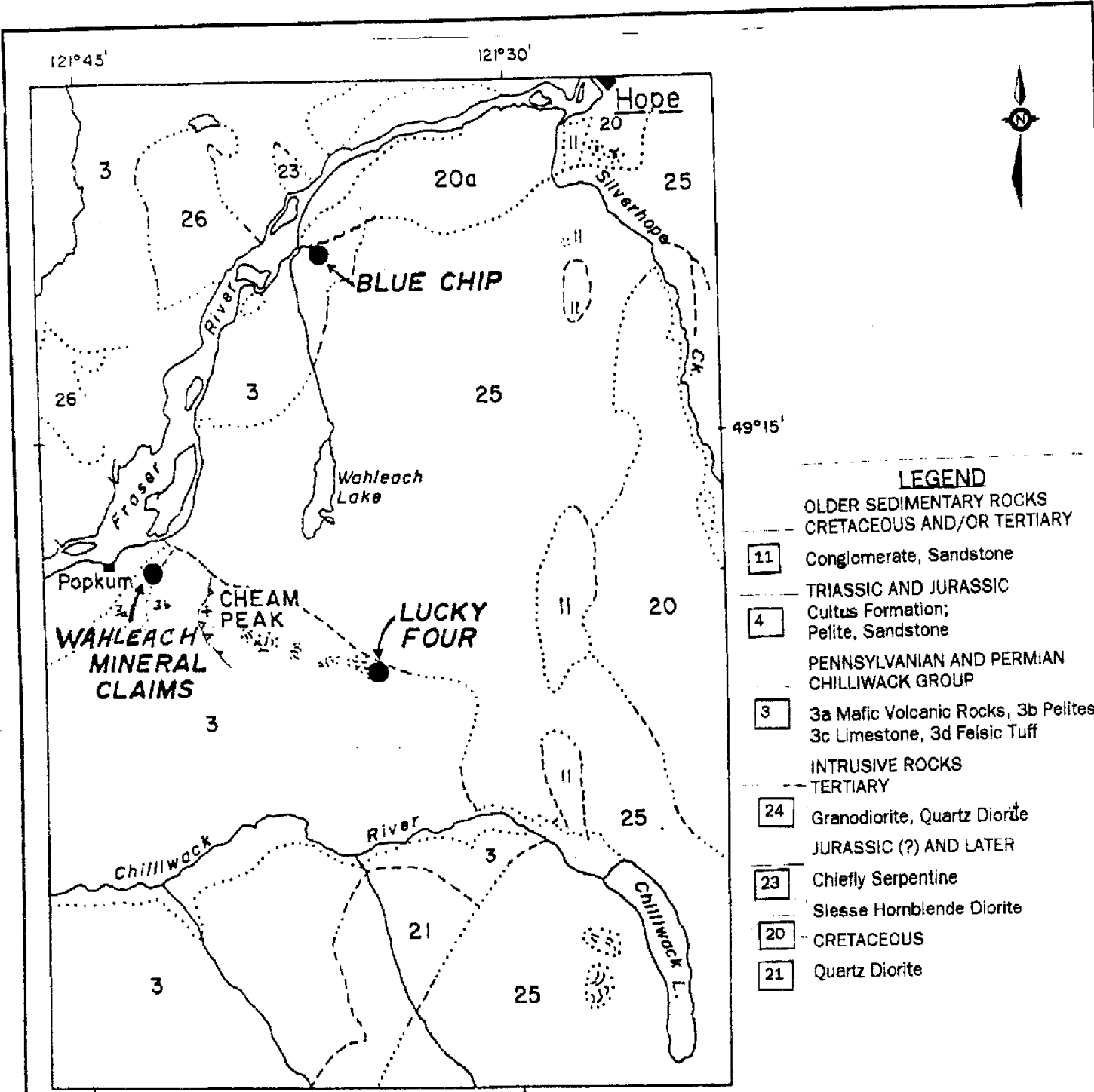
The structure of the area (Monger, 1970) is that of northwesterly overturned and recumbent folds, which gently plunge to the northeast (at approximately 30°). Within The Wahleach 1-12 Claims Permian Chilliwack Group limestone is duplicated at least twice (unit 2d).

The Mount Barr Batholith is exposed at the north edge of the property at the entrance to "Cheam" Creek canyon. These outcrops are composed of coarsely crystalline biotite granodiorite (Figure 7). The Cultus Formation consists mainly of black slate to cherty black hornfels.

The Chilliwack Group is composed mainly of Permian marble which has been altered to varying degrees to calc-silicate assemblages. Diopside and epidote altered carbonates are common within the talus of Cheam Creek.

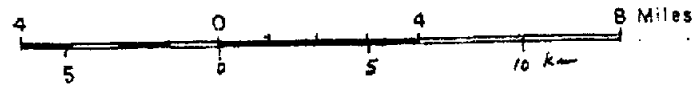
Garnet-actinolite-epidote skarn containing minor pyrite was observed in several localities. A similar skarn occurrence at the contact Chilliwack Group limestone and Conway phase granodiorite of the Mount Barr Batholith is the Lucky Four Property which is located 5 miles east of the Wahleach claims. Although the Lucky Four Group has been investigated by considerable diamond drilling and underground drifting between 1918 and 1955 (Cairnes, 1923), its location at 6,400 ft. elevation in a very rugged part of the Cheam Range has hampered definition of ore.

Previous work to the east of Wahleach 1-12 claims area is recorded in the Minister of Mines Annual Report 1966, page 61. The Cheam No.2 claim had been held since 1957 and the main showing was 0.6 miles south of the power line crossing of the highway at the elevation of 1,700 ft. (515m) above the highway. Access was via the overgrown logging road for 1.5 miles and then 800 feet southeast through the bush. The main showing consisted of two



- LEGEND**
- OLDER SEDIMENTARY ROCKS  
CRETACEOUS AND/OR TERTIARY
- 11 Conglomerate, Sandstone
- TRIASSIC AND JURASSIC
- 4 Cultus Formation; Pelite, Sandstone
- PENNSYLVANIAN AND PERMIAN  
CHILLIWACK GROUP
- 3 3a Mafic Volcanic Rocks, 3b Pelites, 3c Limestone, 3d Felsic Tuff
- INTRUSIVE ROCKS  
TERTIARY
- 24 Granodiorite, Quartz Diorite
- JURASSIC (?) AND LATER
- 23 Chiefly Serpentine
  - 20 Slesse Hornblende Diorite
- CRETACEOUS
- 21 Quartz Diorite

after G.S.C Map 737A  
and G.S.C. Map 12 - 1969



SCALE = 1:250,000

STEELHEAD AGGREGATES LTD.		
WAHLEACH CLAIMS		
<b>REGIONAL GEOLOGY</b>		
NTS : 92H/4E	DATE: FEB., 1997	SCALE: 1:250,000
WORK BY: JO SHEARER, M.Sc., P.Geo.		FIGURE 4

irregular, parallel, vertical vuggy quartz "veins" (probably a quartz phase of the skarn assemblage), 7 feet wide and 50 feet apart. They can be traced southward up the face of a limestone bluff. Mineralization consists of scattered veinlets of chalcopyrite and irregular masses of pyrrhotite. Some sulfides were noted to extend into the limestone wall rocks (MMAR 1966) and the limestone is altered to garnet in spots. A pit 20 feet wide and 5 feet deep was excavated on the west "vein". Samples taken by government personnel are as follows (MMAR 1966):

		<b>Copper%</b>	<b>Gold</b>	<b>Silver</b>	<b>WO3</b>
(1)	7 foot channel on east vein	0.08	trace	nil	--
(2)	7 foot channel on west vein	0.11	nil	nil	--
(3)	grab of massive sulfide west vein	0.025	trace	trace	--
(4)	grab of sulfides, west vein	0.17	nil	trace	trace

There is a series of topographic benches (faults?) at the 700-800m elevation which result in 10 to 15 meter high bluffs of limestone just above the uppermost old logging road. The pit dug in 1966 was not relocated.

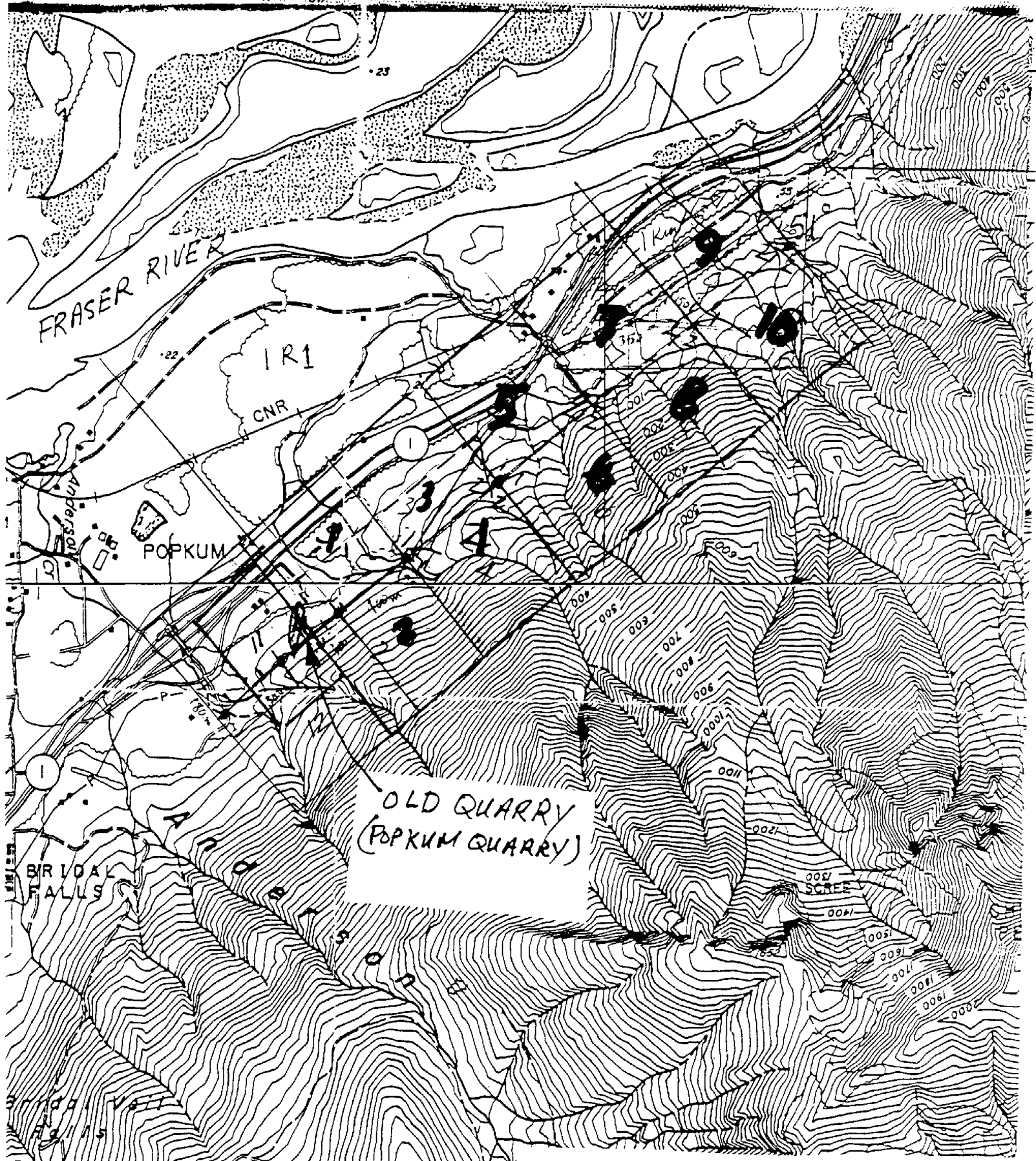
The Popkum Quarry on Wahleach 9, and 11 occurs in the western unit of the Lower Permian Limestone. This unit has been dated by Fusilinids. Two north-trending bands 300 metres apart along the base of Mount Cheam for at least 600 metres. The western band is at least 24 meters thick while the eastern band is at least 60 metres thick. This section is orientated 150°/30°NE.

Both bands are generally composed of dark grey to black, medium-grained limestone containing some chert lenses and a few veinlets and masses of quartz and calcite. In the Popkum Quarry, Figure 7, displays lenses and thin beds of fine grained siliceous limestone. Chip samples taken in 1947, (Bulletin 40, page 42) across 24.3 meters averaged 45.75% CaO. Results of samples taken in 1995 are shown below:

	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	Fe <sub>2</sub> O <sub>3</sub>	CaO	MgO	Na <sub>2</sub> O	K <sub>2</sub> O	SO <sub>3</sub>	P <sub>2</sub> O <sub>5</sub>	TiO <sub>2</sub>	Total Alkali	Total
No.1	8.35	1.15	0.42	49.51	0.46	0.02	0.04	0.02	0.03	0.05	0.05	60.05
No.2	1.08	0.21	0.14	54.47	0.53	0.00	0.01	0.05	0.04	0.01	0.01	56.54
No.3	22.19	1.33	0.53	40.70	0.62	0.05	0.06	0.17	0.09	0.05	0.09	65.79
No.4	1.49	0.30	0.15	54.07	0.55	0.01	0.01	0.05	0.03	0.01	0.02	56.67

\*loss on ignition - undetermined

Production as detailed in Minfile amounted to over 107,000 tons of Limestone in the period 1917 to 1970. Most of the limestone was quarried by Fraser Valley Lime between 1949 and 1970.



WAHLEACH CLAIMS  
DETAIL TOPOGRAPHIC  
MAP  
SCALE 1:20,000.  
0 200 400 600 m.  
FIG. 6

Geological mapping on Wahleach 11 & 12 Mineral Claims, which is outside the claim area which was reported on in Shearer (1995), consists of white fine grained limestone with occasional sparry sections interbedded with fine grained black shale which has been metamorphosed in places to a dark grey hard hornfels (figure 7 in pocket).

## **GEOCHEMISTRY (From Previous Work)**

The following data are included in this report for completeness. Reconnaissance stream sediment geochemical results in 1983 and 1984 confirm the presence of moderately anomalous concentrations of arsenic (to 127 ppm) within the southern portion of the Wahleach mineral claims (see Figure 5) where float contains up to 418 ppm As. Gold in several of the silts are distinctly anomalous at 60, 90 and 950 ppb while a few rock chip samples showed anomalous gold results up to 270 ppb Au. A few zinc and copper silt values recorded are low but of interest while silver and lead results show no anomalous values.

Geochemical results are in Table 2.

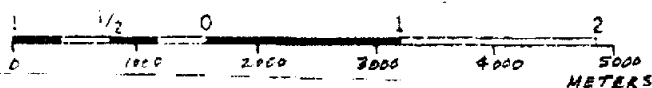
**TABLE 2**  
**Geochemical Results**

<b>Type</b>	<b>Number</b>	<b>Gold Range (ppb)</b>	<b>Arsenic Range (ppm)</b>	<b>Copper Range (ppm)</b>	<b>Zinc Range (ppm)</b>	<b>Lead Range (ppm)</b>	<b>Silver Range (ppm)</b>
Silts	37	5 to 950	3 to 113	14 to 86	12 to 175	2 to 16	0.1 to 0.5
Soils	14	5 to 35	15 to 127	24 to 103	41 to 167	3 to 22	0.1 to 0.6
Rocks	7	5 to 270	2 to 418	3 to 1528	2 to 104	2 to 14	0.1 to 0.8

Due to the steepness of the terrain, stream sediment is not distributed evenly throughout the course of the creek. Reconnaissance soil sampling has demonstrated a close correlation of anomalous values to nearby silt samples with elevated Au and As content.



Scale: One Inch to One Mile =  $\frac{1}{63,360}$   
Miles



CONTOUR LINES IN GAMMAS

STEELHEAD AGGREGATES LTD.  
WAHLEACH CLAIMS

AREOMAGNETIC MAP

NTS: 92H/4E DATE: FEB., 1997 SCALE: 1:63,360  
WORK BY: JO SHEARER, M.Sc., P.Geo. FIGURE



## **GEOPHYSICS (From Previous Work)**

An airborne magnetic survey was completed in 1972 and published as Map 8536G (Chilliwack) a portion of which is shown as Figure 6. The Wahleach 1-12 claims are situated on the southwest margin of a highly complex pattern which reflects the area underlain by the Mount Barr Batholith.

The Cultus Formation and Chilliwack Group appear to have similar magnetic signatures and any subtleties are overshadowed by the strong anomalies from the Mount Barr Intrusions. The intrusive contact appears to trend northeast off the north end of the claims.

The results of the airborne survey suggests that a comprehensive ground magnetic survey would be useful in defining the complex intrusive contact observed during the mapping.

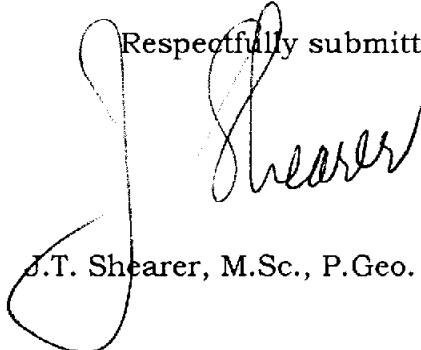
## CONCLUSIONS AND RECOMMENDATIONS

A systematic exploration program is required to properly assess the mineral potential of The Wahleach 1-12 mineral claims. Previous production from the Popkum Quarry amounted to over 107,000 tons during the period 1917 and 1970.

A continuing exploration program is recommended to locate and evaluate the cement grade limestone potential of The Wahleach 1-12 mineral claims. Samples taken from the Popkum Quarry in 1995 averaged 8.28% SiO<sub>2</sub>, 0.75% Al<sub>2</sub>O<sub>3</sub>, 49.44% CaO and 0.04 % total Alkali.

The exploration program recommended consists of hoe excavations of the old quarry to take a bulk sample for crushing and processing and establish chemical parameters. A control baseline should be established running approximately north-south through the central southern portion of the property, and a number of flagged east-west (approximately contour) lines run from 100 metre intervals along it. Detailed geological mapping should be keyed to gridlines.

Respectfully submitted,



J.T. Shearer, M.Sc., P.Geo.

## **COST ESTIMATE FOR FUTURE WORK**

A follow-up program of Hoe work in the old quarry to determine the quality of the limestone unit.

An estimate of the costs is as follows:

1)	Excavation and Bulk sample old Quarry (Cat 225 Hoe)	\$ 10,500.00
2)	Geologist (mapping) 7 days at \$300 per day	2,100.00
3)	Field Supplies	
	a) chain, flagging, base map	1,100.00
	b) trenching supplies	1,500.00
4)	Assays 50 samples for Major elements and minor contaminants	2,000.00
5)	Engineering and Supervision, Office Overhead, Permit Application	3,800.00
	Consulting Reports	<u>2,500.00</u>
	Subtotal	21,000.00
6)	Contingency at approximately 20%	<u>4,000.00</u>
	<b>Total</b>	<b><u>\$ 25,000.00</u></b>

Exploratory drilling as a follow-up stage to define reserves, would probably require some road building support with estimated cost of \$75,000.000 minimum.

## REFERENCES

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# **APPENDIX I**

## **STATEMENT OF QUALIFICATIONS**

**August 31, 1999**

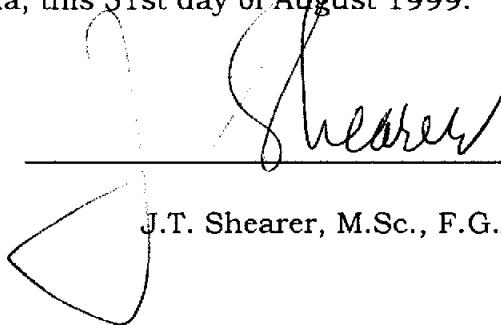
## Appendix I

### STATEMENT OF QUALIFICATIONS

I, JOHAN T. SHEARER, of 1817 Greenmount Avenue, in the City of Port Coquitlam, in the Province of British Columbia, do hereby certify:

1. I am a graduate of the University of British Columbia (B.Sc., 1973) in Honours Geology, and the University of London, Imperial College (M.Sc., 1977).
2. I have over 25 years experience in exploration for base and precious metals and industrial mineral commodities in the Cordillera of Western North America with such companies as McIntyre Mines Ltd., J. C. Stephen Explorations Ltd., Carolin Mines Ltd. and TRM Engineering Ltd.
3. I am a fellow in good standing of the Geological Association of Canada (Fellow No. F439) and I am a member in good standing with the Association of Professional Engineers and Geoscientists of British Columbia (Member No. 19,279).
4. I am an independent consulting geologist employed since December 1986 by Homegold Resources Ltd. at #5-2330 Tyner St., Port Coquitlam, B.C.
5. I am the author of a report entitled "Geological, Prospecting Report on the Wahleach 1-12 Claims, Bridal Falls Area, British Columbia" dated August 31, 1999.
6. I have visited the property on April 28 to May 10, 1995, August 9 & 10, 1999 and numerous times in previous years. I have carried out mapping and sample collection and am familiar with the regional geology and geology of nearby properties. I have become familiar with the previous work conducted on The Wahleach 1-12 claims by examining in detail the available reports and maps and have discussed previous work with persons knowledgeable of the area.

Dated at Vancouver, British Columbia, this 31st day of August 1999.



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J.T. Shearer, M.Sc., F.G.A.C., P.Geo.

# **APPENDIX II**

## **STATEMENT OF COSTS**

**August 31, 1999**

**APPENDIX II**

**Statement of Costs  
Wahleach 1-12 Claims  
August 1999**

**Wages and Benefits**

J.T. Shearer, M.Sc., P.Geo., Geologist 2 days @ \$350/day, August 9 & 10, 1999	\$ 700.00
W. B. Lennan, B.Sc., P.Geo., Geologist 1 day @ \$250/day, August 10, 1999	<u>250.00</u>
	\$ 950.00
GST	<u>66.50</u>
Subtotal	\$ 1,016.50

**Expenses**

Transportation 2 days 4x4 rental @ \$53.50/day	107.00
Gas	54.50
Meals	24.95
Field Supplies (flagging, topo chain)	36.25
G.P.S. Rental (Neville Crosby)	175.00
Computer Data Processing	250.00
Drafting	320.00
Word Processing	175.00
Report Preparation	<u>350.00</u>

**GRAND TOTAL** \$ 2,509.20

#1309  
*Shearer*

Note: Only one years assessment is being applied due to the failure of the G.P.S. units and processing errors.



FRASER RIVER

CANADIAN NATIONAL RAILWAY

POPKUM VILLAGE

HIGHWAY 1

OLD QUARRY (POPKUM QUARRY)

SANMILL

FREWAY OVERPASS

TRANSCANADA HIGHWAY

ANDERSON CREEK

BRIDAL FALLS COMMUNITY

### LEGEND

- MIOCENE**
- 24 MOUNT BARR BATHOLITH  
biotite granodiorite
- TRIASSIC + JURASSIC**
- 4a CULTUS FORMATION  
rusty weathering black slate, pelite, sandstone
- PENNSYLVANIAN & PERMIAN**
- CHILLIWACK GROUP**
- 3a mafic-rich volcanic rocks, ribbon chert
- 3b Pelites and slate
- LOWER PERMIAN**
- 3c Limestone, minor shales
- 3d felsic tuffs, red tuffaceous jasperoid
- Geological contact
- OUTCROP AREA
- STRIKE & DIP
- CLAIM POST

SCALE  
0 50 100 150 200 250  
METRES  
SCALE 1:5,000

TO ACCOMPANY REPORT ENTITLED  
GEOLOGICAL REPORT + PROSPECTING  
ON THE WAHLEACH 1-12 CLAIMS  
DATED AUGUST 31 1999 BY J. T. SHEARER, M.Sc., P.GEO

STEELHEAD AGGREGATES LTD  
WAHLEACH CLAIMS

GEOLOGICAL SURVEY BRANCH  
AGGREGATES REPORT  
**DETAILED GEOLOGY**

**26,091**

NTS: 92H/4E DATE: FEB. 1999 FIGURE 7

