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# **REPORT ON**

# THE STEEPLES PROPERTY

# GROUPS 1A - 8A

49°30'30" 115°23'00"

826 IIW

# PREPARED FOR: BUL RIVER MINERAL CORP. LTD.

BY:

# ALFRED R. ALLEN P.ENG.

### ALLEN GEOLOGICAL ENGINEERING LTD. 827 West Pender Street Vancouver, B.C. V6C 3G8

DATED: JANUARY 1990

# GEOLOGICAL BRANCH ASSESSMENT REPORT

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# A. <u>INTRODUCTION</u>

The 1989 field program included diamond drilling one hole on the Steeples 1-A Group, and 15 holes on the Steeples 2-8A Groups.

The BR5-89 hole was drilled 69.1m vertical by the Stanfield crew using the Longyear Super 38 drill.

Fifteen holes were drilled vertical with Cyclone Rotary Air-Mud equipment, and crew contracted by Mr. Stanfield to Zeus Mineral Corporation, August 22-25, 1989.

## B. PROPERTY

<u>Group</u>	<u>Claims</u>	<u>Hole</u>	Record Number	Expiration Dates
1A	S 11-14	Br 5/89	361-364	9/11/90
2A	8,10,17,18,19	S 8/89 S 10/89	1205 1207	22/12/91 22/12/90
3A	2,4,6,15	S 2/89	352	9/11/91
4A	16.23-26	S 4/89 S 26/89	1201 1219	22/12/89
~ .	10,20 20	S 26A/89	9 1219	22/12/89
5A	1,3,5,7,9	S 5/89 S 5A/89	1202 1202	22/12/90
		S 7/89	1204	22/12/90
6A	S 27-30	S 30/89	1223	22/12/91
7A	21,22,31,33,35	S 21A/89	9 1214	22/12/91
8A	S 36-40	S 21B/89 S 39	2393	13/05/92
U2 x		S 39A	2393	13/05/92
		S 39B	2393	13/05/92

# C. LOCATION AND ACCESSIBILITY

The Steeples property is located in the Fort Steeple Mining Division of southeastern British Columbia.

A drilling program was conducted over the Steeples 1-40 claims, bounded by latitudes  $49^{\circ}-30' - 49^{\circ}-35'-30''$  north and west longitude  $115^{\circ}-17' - 115^{\circ}-32'$ .



R.H. STANFIELD LOCATION MAP

ALLEN GEOLOGICAL ENGINEERING LTD. Drawn by Date Scale ARA Jan. 90 1"=136 mi.

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Local access to the towns of the area is via Highway #3 as follows: Cranbrook 27 km west Fernie 22 km east Galloway 18 km south Kimberley 43 km northwest

# D. <u>PHYSIOGRAPHY</u>

The Steeples Group of mineral claims range in location from the low relief of the Rocky Mountain Trench and Kootenay River valley, easterly up to and over the rugged ridges and peaks of the Rocky Mountains. Elevations range from 900 metres above sea level to 2,600 metres above sea level. The Bul River heads in the northeast area of the Steeples group and flows southerly into the southeasterly flowing Kootenay River. The main tributaries are Dibble Creek from the west, lime, iron and Overson from the east.

## E. <u>PREVIOUS WORK</u>

The geology of the area, including the Stanfield properties, was reported G.S.C. Paper 58-10 and May 20, 1958, authored by G.B. Leeck, as well as T CIMM VLXII paper "The Southern Rocky Mountain Trench" pp 154-174 and International Geological Congress A03 and C03, Twenty-fourth Session, Canada, 1972.

M.C. Chiang provided geological reports and maps for Placid Oil company on the development and production of the Bull River area and mine, 1973-76.

Reports by the writer on the Bull River Copper, Gold, Silver Mine, June 1976, and annual Assessment Reports, 1967-1988.

### F. <u>GEOLOGY</u>

The Steeples Groups of 40, 20-unit claims are located over Precambrian sediments of the Aldridge, Creston, Kitchener-Siyek formations.

On the southwest and northeast, the Precambrian formations are in faulted contact with Palaeozoic Upper Devonian, Mississippian and Pennsylvanian formations.

The Aldridge formation is composed of laminated black argillite, banded grey and dark grey rusty weathering argillaceous quartzite and light grey quartzite.

The Creston formation is made up of banded light grey and grey-green argillite and grey, white and purple quartzite.

The Kitchener-Siyek formations are composed of grey and green argillite, dolomitic argillite and sandy dolomite, weathering grey and brown. The overlying Siyek strata are laminated grey argillite with purple coloration, topped by andesitic lava and tuff.

Upper Devonian Palliser and Elexo formations are composed of sandstone, sandy limestone and argillaceous limestone.

The Mississippian Rundel Group is composed of fetid fine-grained dark grey limestone, chert and siltstone.

Attitudes are irregular but in general striking northerly and dipping easterly.

The contacts between Precambrian and Palaeozoic formations on the southwest and northeast are with the Bull River and Dibble Creek faults.

Limited granitic and ultrabasic dykes have been exposed throughout the claims area. Detailed geological mapping has been completed only in the Bull River Mine area.

# G. <u>THEORY</u>

Drilling programs have been conducted between the Dibble Creek and Bull River faults, chiefly in areas of Aldridge exposures and surface showings of sulphide mineralization.

The Bul River mine and most of the numerous exposures of sulphides over the extensive area of the Stanfield property occur within the Aldridge formation, which is considered the prime target area for ongoing exploration plans.

# H. OBJECT OF THE DRILLING PROGRAM

One hole was diamond drilled in the vicinity of the Bull River mine open pits, seven holes were drilled in the Bull River valley from the Steeples 2 to the Steeples 10 claims, and eight holes from the Little Bull River area on the Steeples 21 claim, northwesterly to the Horseshoe Creek Valley in the northeast area of the Steeples 39 claim. The 15 holes were drilled with Cyclone Rotary air-mud equipment.

The west line of drill holes is located on the east side of the Rocky Mountain Trench where the middle Aldridge formation is evident, and traversed by the major Bull River fault on the west and Dibble fault on the east in the Upper Aldridge strata. The east line of drill holes is located in the Bull River Valley in Upper Aldridge strata traversed by a southerly trending major fault and northerly striking cross faults.

The Aldridge formation is the most favourable host rock for mineral deposition, similar to the Cominco and other mines of the area.

#### I. **DRILLING RESULTS**

### I-A Diamond Drilling

The BR5-89 drill hole on the grass-covered slopes, above the open pit mine workings and below the upper-level outcrops, is on the southwest face of the Rocky Mountains.

At the collar level of the hole there is a cover of coarser talus-like rock fragments mixed with the sand and gravel of the Rocky Mountain Trench level.

Hole BR-5 was drilled and cased through this overburden for 34.6 metres to bedrock and drilled to a depth of 68.5 metres with good core recovery.

#### Metres Log BR5-89

- Overburden, composed of coarse fragments of brown to 0-36.4 black argillaceous quartzite, argillite and quartzite, sand and gravel
- 36.4-46.7 Black argillite sheared and altered
- Argillaceous quartzite, penetrated by two narrow quartz-46.7-50.9 siderite veins containing stringers and blebs of pyrite and chalcopyrite
- Argillaceous quartzite cut by one 2-cm vein containing 50.9-55.15 blebs of chalcopyrite
- 55.15-55.45 Argillaceous quartzite and 5-cm zone of chalcopyrite
- 55.45-62.4 Argillaceous quartzite with veinlets of chalcopyrite and pyrite Light grey quartzite with veinlets of chalcopyrite
- 62.4-67
- Light grey quartzite with siderite veins and chalco-67-68.5 pyrite

No samples were acquired for assaying.

The cuttings and core are stored at the Stanfield camp.

The core is classified as typical Aldridge formation.

Group	<u>Claim</u>	Hole No.	Depth-m	Log
2A 3A 4A 5A	S8 & S10 S2 & S4 S26 S5 & S7	S8-89 & S10-89 S2-89 & S4-89 S26-89 & S26A-89 S5-89, S5A-89 * S7 80	30.4 & 18.2 40.2 & 35.0 51.8 & 51.8 36.5, 51.8	Overburden Overburden Both Overburden Overburden
6A 7A 8A	S30 S21 S39	& 37-89 S30-89 S21A-89 & S21B-89 S39-89, S39A-89 S39B-89.	30.5, 51.8 & 9.1 27.4 38.1 & 39.6 33.5, 42.6, 6.0	Overburden Overburden Both Overburden Both Overburden
			Total 512.0 m	

# I-B Cyclone Rotary Air-Mud Drilling

### J. <u>DISCUSSION</u>

The 1989 drilling program was designed to locate a series of vertical percussion drill holes from the south boundary of the Steeples group of claims to the north boundary along diverging lines, but within the areas of the exposed Aldridge formation and disturbed geological and topographic zones.

The program was started on the Bull River Mine area with a diamond drill hole, close to the open pits, and following the Bull River Valley to the Steeples Mine and ten claims area, with a total of 7 percussin drill holes, all within the Upper Aldridge formation. The second string of holes was started from the same diamond drill hole and directed westerly to the Little Bul Creek area where 2 vertical holes were drilled on the Steeples 21 claim.

Further northerly to the Peckham Lake area, 2 more holes were drilled on the north central are of the Steeples 26 claim. The next 2 holes were drilled in the Sunken Creek Valley at the northwest corner of the Steeples 30 claim.

The last 3 holes were drilled near the north boundary of the Steeples Group 2, in the Horseshoe Creek Valley, near the northeast area of the Steeples 39 claim, near a cross fault, from the Dibble Creek fault to the Bull River fault and the third in the southeast corner of the claim.

The eight holes were drilled in a coarse rocky overburden. The last holes were drilled in a small area of complicated stratigraphy and structure including upper middle basic Aldridge, Creston, Kitchener and Devonian. Bedrock was not penetrated.

#### Κ. **SUMMARY**

Exploration in 1989 on the Stanfield property included a drilling program on the Steeples mineral claims.

Once vertical diamond drill hole BR5-89 is located on the Steeples 11 claim adjacent to the open pits, to provide an indication of the local geology of the production area.

From this location, seven holes were drilled, with Cyclone Rotary Air-Mud Equipment from the mine area northerly up the Bull River Valley to the northeast area of the Steeples Group, and 8 holes drilled northwesterly from the Little Bul Valley northwesterly to the north boundary of the Steeples Groups.

### **Diamond Drilling**

1A S11

E1 Aldridge

Cyclone Rotary Air-Mud Drilling

2A S8 & S10 3A S2 & S4 4A S26 5A S5 & S7 6A S30 7A S21A & S21B 8A S39 & S39A

E2 Unmapped Kitchener E2 Creston & Kitchener W2 Aldridge E3 Kitchener Devonian W2 Aldridge Devonian W2 Aldridge W2 Aldridge

There are 8 holes to the east and 8 holes to the west.

Respectfully submitted,

ALLEN GEOLOGICAL ENGINEERING LTD.

Per Alfred R. Allen, P.Eng.

# FORT STEELE MINERAL CORPORATION

# COSTS STATEMENT #1 **DIAMOND DRILL HOLE BR5-89**

# R.H. Stanfield By Contract

Steeples 11 Group 1A 1,200 m A.S.L. Vertical 69.1 m Aug. 22-26, 1989

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Drilling 69.1 @ \$163.43/m	\$ 11,293.01
Truck, 3/4-ton 4x4, 4 days @ \$50/day	200.00
Foreman, 34 hours @ \$15/hr	510.00
Supply Costs, 3 men, 4 days @ \$65/day	780.00
Consulting and reporting, Alfred R. Allen, P.Eng.	<u> </u>
Consulting and reporting, Alfred R. Allen, P.Eng.	

\$ 13,533.01

Crew

Robert Thellend, driller, Kamloops, B.C. Rick Thellend, helper, Kamloops, B.C. Ross Stanfield, Jr., Foreman/Co-ordinator, 24 Galloway, B.C.

Equipment

Longyear Super Super "38" Diamond Drill Truck, Ford F600 Rod Truck Truck, Ford F250 Pickup

# COSTS STATEMENT #2 DETAILED 1A DIAMOND DRILLING 2A-8A CYCLONE ROTARY AIR-MUD DRILLING

Mob. & <u>Demob.</u>	Gro	Bed & up <u>Meals</u>	Truck & <u>Coordina</u>	Site Prep. ator <u>Cleanup</u>	Casing	Consulting	<u>Drilling</u>	Total <u>Costs</u>
	1 <b>A</b>	780.00	710.00			750.00	11,293.01	13,533.01
1,000.00	2A	390.00	400.00	155.00		710.00	7,144.20	9,799.20
1,000.00	3 <b>A</b>	585.00	600.00	155.00		800.00	11,054.40	14,194.40
1,000.00	4A	780.00	800.00	155.00		730.00	15,229.20	19,637.20
1,000.00	5A	1,170.00	1,020.00	155.00	180.07	810.00	14,317.80	18,652.87
1,000.00	6A	390.00	400.00	155.00		700.00	4,027.80	6,672.80
1,000.00	7A	585.00	510.00	155.00		750.00	11,421.90	14,421.90
<u>1,000.00</u>	8A	<u>780.00</u>	800.00	<u>155.00</u>	<b>-</b>	<u>780.00</u>	<u>12,068.70</u>	<u>15,583.70</u>
7,000.00		5,460.00	<u>5,240.00</u>	<u>1,085.00</u>	<u>180.07</u>	<u>6,030.00</u>	<u>86,557.01</u>	<u>112,495.08</u>

# COSTS STATEMENT #3 PRELIMINARY ROADS, SITE AND EROSION CONTROL

D7 Caterpillar, 70 hr. @ \$60/hr.	\$ 4,200.00
HD16 Allis Chalmers, 30 hr. @ \$70/hr.	2,100.00
Truck, 3/4-ton 4x4, 9 days @ \$50/day	450.00
Foreman, 70 hr. @ \$15/hr.	1,050.00
Supply and Accommodation, 3 men, 9 days @ \$65/day	1,755.00

<u>\$ 9,555.00</u>

## REFERENCES

- Leech, G.B. Fernie Map Area, West Half, G.S.C. Paper 58-10, Map 20, 1958
- Leech, G.B. International Geological Congress, AO3, CO3 Twenty-Fourth Session, Canada, 1972
- Leech, G.B. T CIMMVLXII, Southern Rocky Mountain Trench
- Allen, A.R. The Bul River Copper Silver Gold Mine, June 1976
- Allen, A.R. R.H. Stanfield Rotary Drilling, Bul River Property March 1985
- Chiang, M.C. Placid Oil Co. Reports, 1973-76
- Allen, A.R. Assessment Reports, Stanfield Properties, 1970-1989

### CERTIFICATE

2 - 730 West 7th Avenue Vancouver, B.C. V5Z 1B9

January 1990

I, Alfred R. Allen, certify that:

I am a graduate of the University of British Columbia and hold the following degrees therefrom:

B.A.Sc., Geological Engineering, 1939 M.A.Sc., Geological Engineering, 1941

I am a Life Member of the Association of Professional Engineers of the Province of British Columbia.

I have practised my profession for the past 47 years.

I hold no interest in the properties or securities of R.H. Stanfield or affiliates thereof, nor to I expect to receive any directly or indirectly.

My report on the Steeples property, Groups 1A-8A, dated January 1990, is based on my position as Consulting Engineer and my last examination of the Steeples area of the property on November 21-22, 1989.

Alfred R. Allen, P.Eng.



ALLEN GEOLOGICAL ENGINEERING LID. Per: <u>Alfred R. allen</u>, P.Eng.



No. R.H. STANFIELD STEEPLES 2 CLAIM HOLE S2-89					
Drawn by A.R.A.	Date 90	Scale As shown			
ALLEN GEOLOGICAL ENGINEERING LID. Per: <u>Alfred R. Allen</u> , P.Eng.					

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No. R.H. STANFIELD STEEPLES 4 CLAIM HOLE S4-89					
Drawn by A.R.A.	Date 90	Scale As shown			
ALLEN GEOLOGICAL ENGINEERING LITD. Per: <u>Alfred R. Allen</u> . Alfred R. Allen, P.Eng.					

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<u>R.H. STANFIELD</u> Steeples 30 Claim







No. R.H. STANFIELD STEEPLES 21 CLAIM HOLES S21A-99, S21B-89				
Drawn by A.R.A.	Date 90	Scale As shown		
ALLEN GEOLOGICAL ENGINEERING LID. Per: <u>Alfred R. Allen</u> Alfred R. Allen, P.Eng.				

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