0210 £0. alle di

FILMED

REPORT ON

STEEPLE PROPERTY

## PREPARED FOR:

BUL RIVER MINERAL CORP. LTD.

BY:

Alfred R. Allen, ALLEN GEOLOGICAL ENGINEERING LTD. #514 - 518 Moberley Road Vancouver, B.C. V52 4G3

SUS-RECUSED"	Vanc
Betternerg	1
FED U U 1989	
M.R. # \$	DATED:

February 6, 1989

## GEOLOGICAL BRANCH ASSESSMENT REPORT

## CONTENTS

	TITLE PAGE AND SUMMARY	i
A.	INTRODUCTION	1
в.	PROPERTY	1
c.	LOCATION AND ACCESSIBILITY	2
D.	PHYSIOGRAPHY	2
Ε.	PREVIOUS WORK	3
F.	GEOLOGY	3
G.	THEORY	4
H.	OBJECT OF THE DRILLING PROGRAM	4
Ί.	A. DIAMOND DRILLING	4 4
J.	DRILLING RESULTS	5
K.	DISCUSSION	5
L.	SUMMARY	6

REFERENCES COSTS STATEMENT #1, #2 - #2 Detailed CERTIFICATE

## MAPS:

- 1. Location
- Topography, Claims, Hole Collars
  Claims & Hole Collars Enlarged

.

## A. INTRODUCTION

Diamond and Rotary drilling programmes were conducted over the Steeple 1-35 claims in the Fort Steele Mining Division of southeastern British Columbia, November 10, 1987 -November 15, 1988.

One vertical hole was drilled by the Stanfield crew and the Longyear #44 drill and equipment.

Seven vertical holes were drilled with Cyclone Rotary Air-Mud equipment and crew, contracted by Mr. Stanfield to Zeus Mineral Corporation, October 1 - November 15, 1988.

The writer and Stanfield staff selected and located drilling sites, flagged collar locations, stored core and cuttings in the core building at the Stanfield camp, logged the holes and completed the report February 6, 1989.

The object of the drilling was to acquire bedrock information pertaining to depth to bedrock, geology and mineral content.

#### B. PROPERTY

The northern area of the property includes the following located adjoining mineral claims upon which diamond drilling and cyclone rotary air-mud drilling has been conducted, 1987-88.

<u>Group</u>	<u>Claims</u>	<u>Hole</u>	<u>Record Numbers</u>	Expiration Dates
1A	11 - 14	BR 3-87	361-364	9-11-89
2A	8-10-17-19	S-10-88	1205, 1207, 1210,	22-12-89 and
			1211, 1212	22-12-90
3A	2-4-6-15	S-2-88	352, 1201, 1203, 1208	9-11-90, 22-12-90
4A	16 & 23-26	S-26-88	1209, 1216-1219	22-12-89 and 22-12-90
5A	1,3,5,7,9	S-5-88	351, 1200, 1202, 1204, 1206	9-11-90 and 22-12-89
6A	27-30	S-30-88	1220-1223	22-12-90
7A	21,22,31 33,35	S-21-A S-21-B	1214, 1215, 2343, 2344, 2345	22-12-90 and 28-12-89

## C. LOCATION AND ACCESSIBILITY

The Steeples property is located in southeastern B.C., in the Fort Steele Mining Division.

The drilling programme was conducted over the Steeples 1-35 claims area, latitude  $49^{\circ}-30'$  -  $49^{\circ}-35"-30"$  North and west longitude 115 -17' - 115°-32'.

Access to local towns in the area is via highway #3 and well maintained secondary roads.

Cranbrook	27	Kπ	West
Fernie	22	Κm	East
Galloway	18	Km	South
Kimberley	43	Km	Northwest

The area is serviced by C.P.R. and Air to Cranbrook - Kimberly airport.

#### D. PHYSIOGRAPHY

The Steeles claims extend from the Kootney River in the Rocky Mountain trench, elevation 820 metres above sea level, easterly over the Hughes and Lizard front ranges of the Rocky Mountains.

The property extends farther east across the Bull River Valley at 900 metres above sea level and east to the 1,500 metre elevation.

The Kootenay River flows south. The Bull River flows south-southwest into the Kootenay River.

Tributary creeks are the Little Bull, Dibble and Burnbridge.

The Rockies crest over the Steeples ridge at 2,640 metres above sea level.

This ridge extends from the Bul River mine area to the north boundary of the property.

## - 3 -

#### E. PREVIOUS WORK

The geology of the Stanfield property, including the Steeples claims, includes G.S.C. Paper 58-10 and Map 20.

The publication of the Internationl Geological Congress of Canada, Twenty Fourth Session, 1972, provides detailed information of the area including the Steeples claims.

## F. GEOLOGY

Forty 20 unit Steeples claims are underlain by Precambrian Aldridge, Creston, and Kitchener - Siyeh formations.

On the southwest and northeast, the Precambrian formations are in fault 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 composed of banded light grey and grey-green argillite and grey, white and purple quartzite.

The Kitchener-Siyeh formations are composed of grey and green argillited, dolomitic argillite and sandy dolomite weathering grey and brown.

The overlaying Siyeh strata are mostly laminated grey argillite, with purple colouration, topped by andestic 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.

The Pennsylvanian Rocky Mountain formation is composed of dolomite, sandstone, limestone, chert and siltstone.

Attitudes are irregular but in general northerly with easterly dips.

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

#### G. THEORY

The drilling programme was conducted between the Bull River and Dibble Creek fault zones within Precambrian formations, and chiefly in areas known to be underlain by the Aldridge formation.

The Bul River mine and most of the numerous minerlized exposures on the extensive hldings originally acquired by Mr. Stanfield, occur within the Aldridge formation, which is considered the prime target area for on going exploration plans.

#### H. OBJECT OF THE DRILLING PROGRAMME

Diamond drill hole BR 3-87 is collared 500 metres east of the Bul River mine workings.

Three rotary holes are located near the east boundary and four near the west boundary of the Precambrian - Palaeozoic faulted contacts in order to acquire stratigraphic structural and mineralogical information.

#### I. A - DIAMOND DRILLING

From August 4-6, 1987 the writer and Stanfield staff planned and located the diamond drill hole collar at 1100 feet elevation. Using a longyear #44 drill and equipment the hole was drilled to a depth of 1119.2 metre.

The sections of this vertical hole from 739.7 metres to 1119.2 metres was drilled November 10, 1987 - November 8, 1988 and is the basis for this report.

## I. B. - CYCLONE ROTARY AIR-MUD DRILLING

On August 4-6, 1977 the Stanfiel staff and the writer planned and located 4 holes on the west and 3 holes on the

eastern projected boundaries of the Precambrian formations which are in fault contact with Palaeozoic formations.

The seven vertical holes were drilled with Cyclone Rotary Air-Mud equipment October 1 to November 15, 1988

## J. DRILLING RESULTS

## A. Diamond Drilling

Group	<u>Claim</u>	<u>Hole Number</u>	<u>Depth</u>	Log
1A	#11	BR 3-87	379.4 m	page 11

## B. Cyclone Rotary Air-Mud Drilling

Group	<u>Claim</u>	<u>Hole Number</u>	<u>Depth</u>	Log
2A	#10	S10-88	128.9 m	Dark grey impure limestone 51.3-73m, same 100-128 m
3A	#2	S2-88	61.8 m	Black Argillite 51-61.8 m
4A	#26	S26-88	120.7 m	Overburden
5A	#5	<b>S</b> 5~88	121.9 m	Overburden
бA	#30	\$30-88	120.9 m	Overburden
7 <b>A</b>	#21	S21-88A S21-88B	80.7 m <u>44.1</u> m	Overburden Overburden
		<u>Total</u>	<u>679.0 m</u>	

#### **K. DISCUSSION**

Within a thirty three kilometer radius from Cranbrook, the Aldridge formation hosts the Sullivan, Estella, Kootenay King, St. Eugene and Bull River mineral deposits.

The copper, gold, silver and lead mineralization, within the Middle-Upper Aldridge strata, produced to date, from the Bul River mine, occurs within an area intruded by meta diorite dykes with associated sulphides, and irregular limited granitic intrusives. This geological environment is reasonably similar to that of the other four mines noted above. On the Steeples property, therefore, the first priority is the exploration of areas underlain by the Aldridge formation.

#### L. SUMMARY

A diamond drill hole was collared 400 m northeast of #1 Open Pit, elevation 1097 m A.S.L., and cored vertical to a depth of 1192 m.

The bottom 379.4 m has been charged to this report.

Seven holes were drilled using Cyclone Rotary Air-Mud equipment. Three were drilled on the east - holes 2, 5 and 10 - and four on the west. Two holes on claim 21 and one on claim 26 and one on claim 30.

Hole	<b>S</b> -2	collared at cored black	elevation 1030 m Aldridge argillite,	51.8-61.8 m
Hole	S-5	collared at	900 m - overburden,	121.9 m
Hole	S-10	collared at	1128 m - Kitchener limestone, Kitchener limestone,	51-73 m 100-129 m
Hole	S-21A S-21B	collared at collared at	2700 m - overburden, 2800 m - overburden,	80.7 m 44.1 m
Hole	S-26	collared at	2800 m - overburden,	120.7 m
Hole	S-30	collared at	3000 m - overburden,	<u>120.9 m</u>
			Total	549.3 m

Respectfully Submitted by,

## ALLEN GEOLOGICAL ENGINEERING LTD.

Alfred R. Allen P.Eng. Per:

- 6 -

## 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 CIMM V LXII pp 154-174 Souther Rocky Mountain Trench
Allen A.R.,	The Bul River Copper, Silver, Gold Mine June 1976
Allen A.R.,	R.H. Stanfield, Rotary Drilling Bull River Property, March 1985
Chiang, M.C.	Placid Oil Company Reports 1973-1976

- \_\_

\_

## FORT STEELE MINERAL CORPORATION

## COSTS STATEMENT #1

## DIAMOND DRILLING, HOLE BR 3-87

R.H. STANFIELD	Steeles #11 of Steeles 1A Group
by contract	1087 m A.S.L.
-	Vertical 379.4 m
	BR 3-87
	November 10 - December 15, 1987

## CREWS:

- Drill Crew: Liam O'Fee, Driller, Kamloops B.C. Brent Skene, Helper, Galloway B.C. Ross Stanfield Jr., Foreman, Galloway B.C.
- Equipment: Longyear #44 diamond drill and accessories Ford 3/4 T., 4x4, F250

Costs:	Drilling 379.4m @ \$163.43/m	\$62,005.34
	Supply 3 men, 31 days @ \$65/day	6,045.00
	Truck, 3/4 Ton 4x4 @ \$50/day	1,550.00
	Foreman, 248 hours @ \$15/hour	3,720.00
	Total Drilling Costs Steeples 11-14 Assesment Costs	\$73,320.34 16,000.00
	Balance Credited P.A.C account	\$57,320.34

alpea R. allen

## FORT STEELE MINERAL CORPORATION

#### COSTS STATEMENT #2

#### CYCLONE ROTARY AIR-MUD DRILLING

R.H. STANFIELD by contract

Locations:	Steeples Groups: 2A, 3A, 4A, 5A, 6A, 7A:	28 claims
	all vertical, 679 metres	
	November 10, 1987 - November 15, 1988	

#### CREWS:

- Drill Crew: Don Murrary, Driller, Strathmore Alberta Randy Miller, Helper, Strathmore Alberta Jason Raber, Helper, Strathmore Alberta Ross Stanfield Jr., Co-Ordinator, Galloway B.C.
- Equipment: C.C.C. Truch with TH-60 I.R. Drill and accessories 1 Mack Tandem Water Truck 1 Ford 750 Casing Truck 1 Toyota Crew Truck Stanfield's Ford 250, 3/4 Ton Truck

TOTAL DRILLING COSTS: Draw from P.A.C. account \$117,624.71 <u>18,375.29</u>

Total payment-Assessment Remaining P.A.C. Credit \$136,000.00 \$38,945.05

allfred R. allen

## COSTS STATEMENT #2 DETAILED

## CYCLONE ROTARY AIR-MUD DRILLING

Mob & Demob	Group	Bed & Meals	Truck & Coordinator	Site Prepare & Clean	Consulting	Drilling	Total Costs
1,000.00	2A	520.00	250.00	155.00	830.00	19,588.31	22,343.31
1,000.00	3A	520.00	220.00	155.00	790.00	9,099.30	11,784.30
100.00	4A	520.00	310.00	155.00	810.00	17,742.80	20,537.90
1,000.00	5A	780.00	510.00	155.00	810.00	17,919.30	21,174.30
1,000.00	6A	520.00	280.00	155.00	835.00	19,874.30	20,709.30
1,000.00	7A	520.00	250.00	155.00	805.00	11,862.40 6,482.70	21,075.60
6,000.00		3,380.00	1,870.00	930.00	4,880.00	102,569.71	\$117,624.71

# LOCATION MAP 1

\* PROPERTY (SOUTHEAST AREA)





## DIAMOND DRILL RECORD

COMPANY Bul River Mineral Corp. Ltd.

COLLAR NORTH EAST FLEVATION 739.8 m AZIMUTH DIPS Vertical

PROPERTY Steeples Group 1-A

LOCATION Steeples 11 Claim

HOLE BR 3-87 STARTED NOV. 10. 1987 FINISHED NOV. 8, 1988 DEPTH 379.4 M PURPOSE Geological Data LOGGED BY Alfred R. Allen CUMMER R. CUMMT

% Core Recovery		To		Samples			Assays				Averages			
	RT.	m.		Sample No.	From	Te	Width	An	Ag	Cu				
	739.7	747	Thin irregular bedding argillite grey to blac	*										
		754.	Narrow vertical fractures - Aldridge Dip 10 <sup>0</sup>											
		761.7	Thin veinlets, pyrite & chalco pyrite											
		768.7	Dark banded argillite - pyrite blebs											
		783.6	Dark banded argillited fine grained, nearly f	lat										
	ſ	790.5	Dark grey argillite pyrite in thin seams											
		798.5	Same											
		805.6	Same, thin fractures - pyrite - chalco pyrite											
		815	Same											
		834	Black argillite 2cm vein quartz, pyrite		İ					L				ļ
		842	Black argillite							L	[ 			
		850	Same					[		1				
		857	Same, fractures with pyrite & pyrrhotite											
		864	Dark banded argillite - dip flat, pyrite											
		871	Same											

Page #1

## DIAMOND DRILL RECORD

COLLAR	COMPANY	H0LE
NORTH		STARTED
EAST	PROPERTY	PINISHED
ELEVATION		DEPTH
AZIMUTH	LOCATION	PURPOSE
DIPS		LOGGED BY Chifarding Willie
		0

% Core Recovery	-	To m.	Description	Samples				Assays				Averages		
	From			Sample No.	From	Te	Width	Au	Ag	Cu				
	<b> </b>	.879	Banded black and grey argillite											
	ļ	886	Same											
		894	Black and grey argillite											
		900	Black argillite, thin fractures - pyrite								ļ			
		908	Black argillite, thin fractures - pyrrhotite	······										
	ľ	916	Light grey banded argillaceous quartzite											
		923	Same, quartz-siderite veinlets											
		930	Same – dip 20 <sup>0</sup>											
		945	Black argillite, vertical fractures, pyrrhoti	te									5	
		952	Same											
		959	Same			i							]	
		967	Light grey argillaceous quartzite									]		
		974	Same with thin vertical veinlets - pyrite										[ <u> </u>	
		989	Light argillite - cross bedding											
		996	Thin bedded argillite, vertical fractures											   

Page #2

## DIAMOND DRILL RECORD

\_\_\_

- - -

÷ .

... ..

-

Page #3

COLLAR	COMPANY	HOLZ
NORTH		STARTED
FAST	PROPERTY	FINISHED
BLEVATION		DEPTH
AZIMUTH	LOCATION	PURPOSE
DIPS		LOGGED BY Literarth Libbian

% Core Becovery		To m.	Description	Samples				Азакуз				Averages		
	From			Sample No.	From	To	Width	Az	Ag	Cu				
		1000	Thin banded argillite grey & black bedding										L	
		1010	Light grey argillaceous quartzite, dib 10 <sup>0</sup>											
		1018	Grey and black argillaceous quartzite											
		.025	Same crossbedding											
		1033	Grey banded argillaceous quartzite										ļ	
		040	Black argillite broken zone - calcite matrix										1	
		1050	Black banded argillite quartz stringers, pyr	ite						<u> </u>				
		062	Grey banded argillite, fine pyrrhotite, pyrit	e	-					 				
•		1069	Black argillite thin veins pyrite											
	1	1077	Black argillite cross bedding guartz-pyrite	veinlets										<u> </u>
		1084	Black argillite disseminated pyrite									[		
		1091	Same - cross bedding											
	T	1098	Dark argillite, blebs of pyrite, cross beddi	ng										
		1112	8 Dark argillite, disseminated pyrite blebs											
		1119.	2 Dark grey argillite, cross bedding, pyrite											



R.H. STANFIELD Steeples 2 Claim Hole S2-88

No. Alfred R. Allen. Feb/89





R.H. STANFIELD Steeples 5 Claim Hole S5-88

No. Feb/89

alfred R. allen

Alfred R. Allen, P.Eng.





R.H. STANFIELD Steeples 10 Claim Hole S10-88

No. Feb/89

<u>Alpr</u> allen-

Alfred R. Allen, P.Eng.



 $(\mathbf{k})$ 



<u>R.H. STANFIELD</u> Steeples 11 Claim

No.

Hole BR3-87

Alfred R. Allen D. D. M. Feb/8g

500 18,00 ¥ 0 ¢ Ð METRES



R.H. STANFIELD Steeples 21 Claim Holes S21-88A & S21-88B

No. Feb/89

<u>Alfred R. Allen, P.Eng</u>.



 $( \mathbf{N} )$ 

T





<u>R.H. STANFIELD</u> Steeples 30 Claim <u>Hole S30-88</u>

No. Feb/89

alfred R alleri

Alfred R. Allen, P.Eng.



#514 - 518 Moberley Road Vancouver, B.C. V52 4G3

## CERTIFICATE

January 24, 1989

I, Alfred R. Allen, certify that:

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

> BASc Geological Engineering 1939 MASc Geological Engineering 1941

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

I have practiced my profession for the past 47 years.

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

The report on the drilling programme on the Steeples claim groups 1A-7A, Fort Steele M.D., B.C. - is based on consulting by the writer August 4-6, 1987 - December 21, 1988.

<u>Alfred R. Allen</u>