

Gold Commissioner's Office VANCOUVER, B.C. GROUP CENTRE: 609272E, 5488458N, Datum NAD 83, Projection UTM Zone 11

WORK CENTRE: 613044E, 5482941N, Datum NAD 83, Projection UTM Zone 11

FOR R. H. STANFIELD 350 - 4723 1 St. Street S.W. Calgary, Alberta

By Darren G. Anderson, B.Sc (Geology) Bul River Mineral Corporation

March 2000



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INTRODUCTION:

Drilling programs in 1987 and 1994 located a deposit of feldspar porphyry on the Aspen 11 claim. Subsequent surface mapping and airborne geophysical surveys outlined the extension of the deposit. Currently the deposit is recognized as a large intrusive stock of monzonite-diorite composition with feldspar as the main mineral component, and quartz and mica as the other rock forming minerals in relatively small proportion.

The monzonite-diorite stock has intruded Devonian sediments, mostly limestone, and in some places assimilation of large blocks and xenoliths of the host rock alters its composition.

Feldspar is used in the manufacture of container glass and glass fiber insulation, in ceramic whiteware products and glazes, in wall and floor tile compositions, and as a filler-extender in paints, plastics and foam rubber.

Previous work on the deposit indicates that it is relatively uniform in all components, except carbonates, which are mainly calcite and siderite. Iron content is directly correlated to the magnetite and siderite content. Material characterization to date indicates that physical and chemical properties will meet the specifications for the glass and ceramic industry after completion of the current program of process research. In certain portions of the deposit, iron content exceeds the specifications for the ceramic industry, and subsequently the total iron content is used as the primary characteristic for grade determination in drilling and sampling programs.

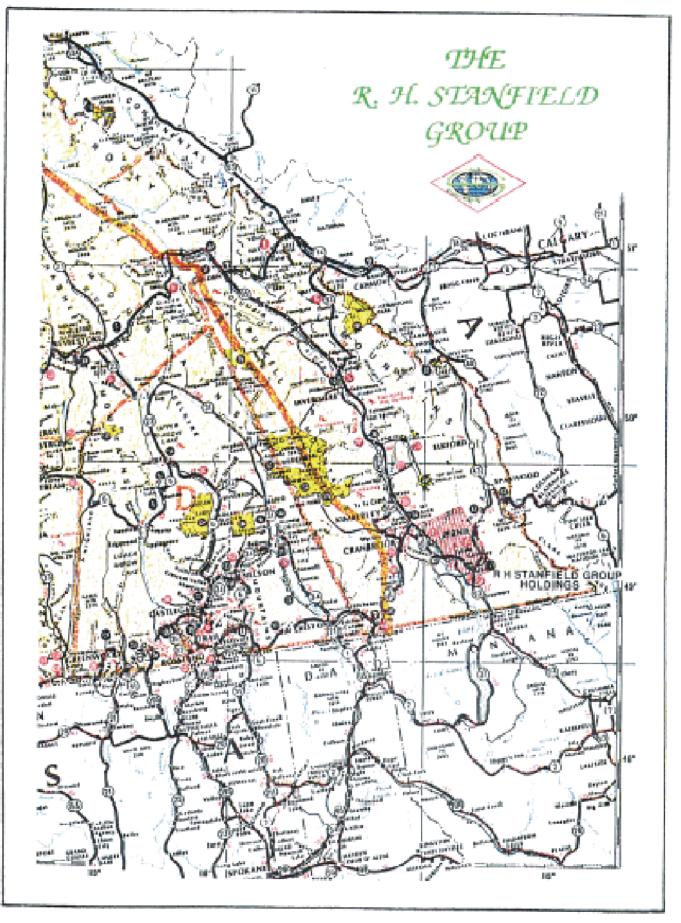
LOCATION, ACCESSIBILITY & TOPOGRAPHY:

The Steeples West claim group is located in southeastern British Columbia (Figure 1), approximately 30 kilometers by Highway 3 from Cranbrook, and then by Highway 93 just past the settlement of Bull River. Secondary gravel roads provide access to Aspen 11 (location of work reported in this assessment report) of the Steeples West Group of claims, while the remaining claims have limited access via non-maintained back roads. Half the claim group, primarily the western extent, is within fairly open parkland while the eastern portion is flanked and within the rugged Steeples mountain range . Thicker vegetation consists usually of brush, and is located in the Bull River valley and subsidiary drainage and dry creek beds, while the remainder is above the tree line.

Topographic relief ranges from 800 meters to 2400 meters, extending from relatively low lying areas proximal to the Rocky Mountain Trench to almost the top of the ridge line on the Steeples Range. The claims are in the Fort Steele Mining Division in N.T.S. 82G/6, 82 G/5, 82G/11 and 82G/12 centered approximately at 609272E, 5488458N (Datum NAD 83, Projection UTM Zone 11).

Figure 2 is a Site Location (red oval southwest of the Bul River Mine) with respect to the southeastern corner of British Columbia, superimposed on a satellite image (using 321 plus 4

Fig. 1



LOCATION

bands). Also, labeled are the location of Cranbrook, the closest urban center and some of the major physiographic and other cultural features.

Figure 3 is a larger scale satellite image outlining the Steeples West Group. Also shown are major physiographic and cultural features in the area. In addition the locations of the latest drilling program, in the southeast corner, are shown as red circles.

Figure 4 is a digitized map showing individual claims within the Steeples West Group. Note location of drill holes for this report.

PROPERTY:

Table 1: Work applied to Claims in Steeples West Group:

		MAR GARAN	Cale Constant	i andre	
Steeples 22	209853 20	Dec 22, 2000	12,000	3	Dec 22, 2003
Steeples 24	209855 20	Dec 22, 2000	12,000	3	Dec 22, 2003
Steeples 26	209857 20	Dec 22, 2000	12,000	3	Dec 22, 2003
Steeples 28	209859 20	Dec 22, 2000	16,000	4	Dec 22, 2004
Steeples 29	209860 20	Dec 22, 2000	16,000	4	Dec 22, 2005
Steeples 30	209861 20	Dec 22, 2000	16,000	4	Dec 22, 2004
OK 1	344128 20	Mar 15, 2000	12,000	3	Mar 15, 2003
EC 9	335717 20	May 16, 2000	12,000	3	May 16, 2003
EC 7	336433 20	June 04, 2000	12,000	3	June 04, 2003
April 2	344720 20	April 02, 2000	8,000	2	April 02, 2002
April 3	344721 20	April 01, 2000	8,000	2	April 01, 2002
Aspen 10A	210194 2	Feb 20, 2000	1,600	4	Feb 20, 2004

OBJECTIVES, SCOPE AND DESCRIPTION OF WORK DONE:

The Aspen claims, in which Aspen 11 is located, are adjacent to the block of claims on which the Bul River Mine is located. The mine-mill was operated in the 1970s by Placid Oil and was primarily a producer of copper concentrates. During the course of step-out drilling in 1987, one diamond drill hole intersected a significant section of feldspar porphyry intrusion. Pilsum Master of Master Mineral Resource Services Ltd (see November 1994 assessment report) examined the core and the value of the deposit as a source of feldspar industrial commodity was recognized. In 1994 two percussion drill holes were completed and sampled to extend the reserves on the deposit.

In the early 1990's a portion of the Aspen Claim group was covered by a DIGHEM airborne geophysical survey and a large magnetic anomaly was discovered to cover the area over the

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STEEPLES WEST GROUP OF CLAIMS

Bul River Mineral Corporation

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Location of Steeples West Group of Claims Red Circles Mark Location of 1999 Drill Holes Satellite imagery

EAR 1970 Mr. Darres Ancienze P.AH 90 BOAR 1.75 000 MP. Figure 3 reserves recognized from the 1987 and 1994 drilling program. This same magnetic anomaly extends for a considerable distance south and southwest of the initially drilled (discovery) area.

In 1996 eleven percussion drill holes were completed to investigate the area to the south of the discovery area. One percussion hole (F1-96) was completed to the west of the original discovery area to determine if the feldspar intrusive extended west of the boundary indicated by the aeromagnetic anomaly. A total of twelve drill holes were completed. An assessment report covering the first four of the twelve holes was filed in October 1996. Another drilling report filed for assessment in October 1997 covers the remaining eight holes (F5-96 to F12-96).

In 1991 and 1993 two assessment reports were filed to cover assessment costs on DIGHEM airborne surveys that includes the area covered by this claim group and adjacent claims. Another report filed in February of this year covers follow up ground surveys to investigate some of the geophysical anomalies on the Steeples claims

Previous drilling programs on the Feldspar deposit used percussion drilling and the cuttings from the 1996 drill program were sampled every 1.52 meters (five feet), equivalent to anticipated bench width in open shelf mining of the deposit. The cuttings were examined, and initially in the program, the lithology logged using visual criteria like mineralogy, grain size proportion, and colour - specifically attributable to secondary iron. Subsequently however, it was determined that chemical grade criteria using specific elements useful for determining product specifications, was a more reliable method for determining "grade". Samples from the 1996 program were cut and analyzed for total iron (as % Fe_2O_3) and for alkalis generally at 1.52 meter interval.

A drilling campaign in 1998 extracted core rather than percussion chip samples (see February 1999 assessment report). This was done partly to get a better understanding of the alteration of the deposit (particularly the argillic to propyllitic alteration versus concentration of alkalis), and to have the core available for future examination and physical testing for products such as building stone

Drilling in 1999 concentrated on the western portion of the monzonite-diorite intrusive body – to correlate with the geophysical anomaly and to test the continuity of the alteration zones, both critical in assessing the commercial potential of this deposit. A new technique for a quick and cost effective method for testing chemical grade criteria (correlating visual criteria with a KT-9 Kappameter-magnetic susceptibility metre) was employed.

FELDSPAR -- INDUSTRIAL MINERAL PRODUCT SPECIFICATIONS VS. CHEMICAL COMPOSITION (GRADE CRITERIA):

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Although feldspar is a common rock-forming mineral, commercial concentration of feldspars are found in pegmatite, alaskite, aplite, feldspathic sand and feldspathic quartzite. Where concentrations are high the tonnage is relatively low, except in secondary deposits like feldspathic sand and in intrusive rocks. Intrusives of batholithic proportions that are almost mono-minerallic feldspar are rare. The Aspen claim deposit is one of these rare types with a potential for large tonnage and low impurities like quartz, mica and secondary minerals such as magnetite.

Feldspar is used mainly in the glass and ceramic group of industries. In both industries there is considerable overlap of chemical specifications, with higher tolerance for iron in the glass industry. Only the grain/particle size range specifications vary from -30 to about +140 mesh for the glass industry, and -140 mesh to as fine as -325 mesh for the ceramic industries. This allows the same source material to undergo primary processing to produce glass grade, with subsequent processing to increase purity and reduce particle size for the ceramic grade.

DESCRIPTION OF 1999 DRILLING PROGRAM (F1-99 to F4-99):

Between October 25/99 and December 11/99, four diamond drill holes, F1-99 to F4-99, were cored for R. H. Stanfield on Aspen 11. The following table summarizes the location of the drill collars.

Drill Hole #	UTM (NAD	(NAD 83 Datum) Dip		Length	Collar Elev.
	<u>North</u>	East			
F1-99	5482793.11	612891.84	-90	107.90m	864.30 m
F2-99	5482791.96	612896.03	-50	151.80m	864.35 m
F3-99	5483055.66	613105.63	-60	250.60m	846.32 m
F4-99	5483054.69	613103.39	-90	291.28m	846.319

Drill collars were surveyed by Mel Kearney, mine surveyor at the Bul River Mine, and were tied in to base stations established a few years ago at the adjacent Bul River Mine site and the Aspen claims. Tim Hewison and the author of this report supervised the drilling program.

Drilling was completed using a company owned GMC Bridadeer Truck-mounted Longyear 38 diamond drill, powered by a 353 Detroit Diesel engine. Casing (NW - 54.7mm) was first advanced through the overburden, after which, NQ- and BQ-sized rods were used for coring. Water for this program was supplied via water holes drilled from previous years.

Core was logged at the company's exploration camp near Galloway, British Columbia. Based on the examination of cuttings from previous drilling programs and the correlation of visible criteria with some of the analysis done on the cuttings, a classification of the monzonite-diorite into Types A to E was set up to facilitate subsequent logging and correlation. The classification is included in Appendix 1, and is open to revision as and when new data requires, and as yet the core logging has shown that it is quite valid. It is based on colour of alteration products, e.g. purple associated with intense argillic alteration. One hole, F4-99, was selected for chemical analysis to test for uniformity of the alteration assemblages (refer to Certificate of Analysis in Appendix 2). Core from the remaining 3 holes will be kept intact for future analysis, i.e. magnetic susceptibility tests, compression tests and laboratory analysis. Subsequent to a visual subdivision of the core, based on the above classification system, a magnetic susceptibility survey was preformed (utilizing a KT-9 Kappameter) on sections of core to correlate any distinguishing magnetic variances each classification type may possess (refer to drill logs in Appendix 1).

All four holes were collared outside (to the west) of the aeromagnetic anomaly (refer to Figure 5).

SPECIFICATION OF THE KT-9 KAPPAMETER

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The KT-9 Kappameter is a hand-held device capable of measuring magnetic susceptibility of objects. It works on the principal of Ampere's law, which states that if a current (moving electrical charge) generates a magnetic field then it would be correct to say that a magnetic field influences an electric charge. Inside the KT-9 is a 10KHz LC oscillator and inductive coil, which acts as an electric charge, making it possible for measuring the magnetic susceptibility of objects to a maximum sensitivity of 1 x 10^{-5} SI units.

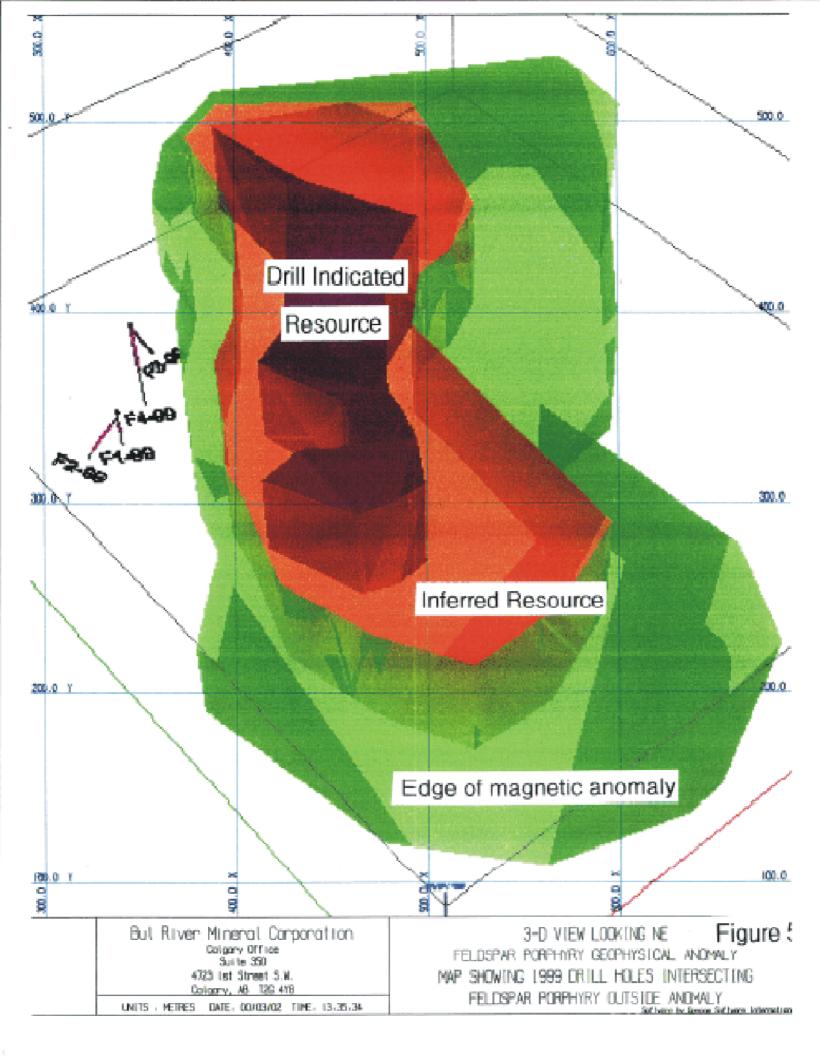
OVERVIEW OF 1999 DIAMOND DRILL HOLES

F1-99: This hole was drilled vertically from a previous drill hole location (F3-98). While attempting to drill a water hole last year for supplying water to a diamond drill, F3-98 was shut down after the ground conditions threatened continuation. This hole was located outside the aeromagnetic anomaly associated with the feldspar porphyry intrusion. Circulated chip samples from the water hole showed feldspar material. Unfortunately, the hole was shutdown before exiting the feldspar porphyry. Hole F1-99 was cored from the same location and managed to drill through the feldspar porphyry material. Refer to drill log in Appendix 1 and Figure 4 for hole location.

F2-99: This hole was drilled from the same location as F1-99 with an inclination to the west to delineate the western boundary of the feldspar porphyry aeromagnetic anomaly. Refer to drill log in Appendix 1 and Figure 4 for hole location.

F3-99: This hole was drilled with an inclination towards the northeast in an attempt to delineate the northwestern section of the feldspar porphyry geophysical anomaly. Refer to drill log in Appendix 1 and Figure 4 for hole location.

F4-99: This hole was drilled vertically from the same location as F3-99 to test for uniformity of the alteration zones and to test the depth of the feldspar porphyry outside the geophysical anomaly. Selected intersections were sent for chemical analysis. Refer to drill log in Appendix 1, Figure 4 for hole location and Figure 2 for Certificate of Analysis.



CONCLUSIONS AND RECOMMENDATIONS:

It has been possible to divide the major portion of the deposit based on chemical grade criteria. However, for grade control during step-out drilling, mine development and mining it will be necessary to rely almost solely on visual criteria, since results of chemical analysis are not immediately available.

In addition to using the visual criteria it is also useful to employ a magnetic susceptibility metre when logging core to correlate the visual criteria with actual inherent properties of the rock, i.e. the magnetic properties found within the alteration zones as outlined in Appendix 1.

Step-out drilling has confirmed that the monzonite-diorite body extends westwards further than the aeromagnetic anomaly suggests.

It is recommended that the classification method be used in conjunction with a magnetic susceptibility survey when logging core in order to determine, with sufficient accuracy, the total iron content within the alteration assemblages. In addition, the underlying principle of correlating alkali and iron content with colour and nature and extent of hydrothermal alteration be continually refined by chemical analysis of selected drill core.

Also, continual step-out drilling should continue to ascertain the size of the monzonite-diorite body.

COST STATEMENTS

General Information on F1-99, F2-99, F3-99, F4-99

A:) Diamond Drilling

	October 25/99 to December 11/9	9						
Dates Drilled								
	Drillers- Farren Billey, Rick The	llend						
Crew	Helpers- John Borger, Gary Jonasson, Kirk Halwas, Joel Cummins,							
	David Fanning							
	Manager- Ross Stanfield	Box 94, Galloway BC						
Site Crew	Supervisor- Tim Hewison	510 6 th Street South Cranbrook, BC						
	Geologist- Darren Anderson							
	GMC Brigadeer Truck-mounted	38 Diamond Drill w/353 Detroit						
Equipment	Diesel engine, 3 cyl. Kabota w/ 435 FMC Hydraulic Pump (Pressure							
	Pump), F600 Rod Truck, 3-4x4 I	Drill Trucks, Case 580D Backhoe, 1						
	HP Electric Pump (Supply Pump							

B:) Claim Information

Claim Group	Steeples West
Claims	Aspen #10A, #11, #12, Steeples #21, #22, #24, #26, #28, #29, #30,
	OK 1, EC #7, #9, April 2, 3

Drill Holes - F1-99 to F4-99

Itemized Breakdown of Costs

Direct Drilling Costs

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Owning and Operating Cost for M/c and Bits	\$13.958/ft
Moving, Aligning, Surveying, Pumping, etc.	\$0.938/ft
Ancillary Charges @ 50% Industry Average (.5965 of Above)	\$8.885/ft
Contingency Allowance(8% of Above)	\$1.903/ft
Total Cost/ft Drilling	\$25.684
multiplied by the Total Hole Depths F1-F4 in footage	2629

Direct Diamond Drilling Cost for Holes F1-F4/99

\$67,523.24

Indirect Drilling Costs

Driller's Wages paid out	\$25,944.41	
Helper's Wages paid out	\$12,280.75	
Supervisor's Wages x \$200.00/day	\$9,200.00	
Driller's and Helpers R&B \$65.00/man/day	\$11,050.00	
Supervisor's R&B \$65.00/day	\$2,990.00	
Driller's 4x4 vehicle x\$50.00/day	\$2,300.00	
Supervisor's 4x4 vehicle x \$50.00/day	\$2,300.00	
Support Crew Wage (Equipment Operators, etc) @ \$20/hr	\$620.00	
Geologist Wage, Logging of Core, Mapping and Report	\$2,000.00	
Geologist R&B x \$65.00/day	\$325.00	
Geologist 4x4 vehicle x \$50.00/day	\$250.00	
Sample Preparation \$4.50/Sample	\$148.50	
Analysis of Samples @\$30.00/Sample	\$990.00	
Case 580D Backhoe x \$42.00/hr	\$1,344.00	
Drill Pipe Truck x \$50.00/day	\$400.00	
Pilot Truck 4x4x \$50.00/day	\$100.00	
Indirect Diamond Drilling Cost for Holes F1-F4/99	_	\$72,242.66

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REFERENCES:

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Master, P.; 1993; DIGHEM Airborne Survey on the West Steeples Claim Block and Portion of the Aspen Claim Block; Report filed for assessment work. Report in company files.

Master, P.; 1993; I-Power Vision Imaging of Geophysical Data from DIGHEM Airborne Survey on the East Steeples Claim Block; Report filed for assessment work. Report in company files.

Master, P.; 1999; Rock and Stream Sediment Geochemistry and Petrographic Analysis on Steeples Claims #2 to 10, 12 to 19 and 21 to 30; Assessment Report filed for R. H. Stanfield.

STATEMENT OF QUALIFICATION:

CERTIFICATE

I, Darren G. Anderson of 729 Queenston Terrace S.E. Calgary, Alberta certify that:

I am a graduate of the University of Regina, Regina, Saskatchewan at which I hold or am entitled to a Bachelor of Science Degree in Geology

I have practiced my profession within the exploration and mining industry for the past five years and I am member of The Society for Geology Applied to Mineral Deposits.

This report on the feldspar deposit is based on my direct involvement in the planning and examination of core and geochemical analysis.

I certify that I do not hold any interest in the properties of R. H. Stanfield, or affiliates thereof, nor do I expect to receive any directly or indirectly.

Darren G. Anderson, B.Sc. (Geology)

CERTIFICATE

March 20, 2000

I, Phil D. de Souza, certify that:

I am a graduate of the Camborne School of Mines, Cornwall, England and that I hold the degree of ACSM First Class in Mining Engineering therefrom.

I am a member of the Canadian Institute of Mining and Metallurgy and a member of the American Institute of Mining, Metallurgical and Processing Engineers.

I am a licensed Professional Engineer of the Province of Alberta, British Columbia and Ontario, Canada, and have been practicing my profession for the past thirty-three years.

This report by Darren Anderson, B. Sc. entitled:

DRILLING REPORT ON STEEPLES WEST, for R. H. Stanfield has been reviewed by me and results from my direct involvement in the Stanfield Group since 1987.

I certify that neither I nor my Associates or Partners hold any interest or securities in any of the four corporations owning an interest in the properties, nor do I, or we expect to receive any directly or indirectly.

12/20/00 Phil D. de Souza, A.C/S.M., P.Eng. Mining Engineer

APPENDIX 1

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DRILL LOGS CLASSIFICATION OF MONZONITE-DIORITE

	1					1	[
			PORATION			R. H. STAN	IFIELD			
ROJECT:				5482793.11N 612891.84E Elevation - 864.3m						
	Steeples W		11)							
RILL HOI	LE NO:	F1-99		DRILLED BY: R.H. Stanfield	DIP:	-90	AT:	0.0 ft		
				DATES DRILLED:		-89		354.0 ft	1	
				LOGGED BY: Darren G. Anderson						
				DATES LOGGED:						
					TOTAL	LENGTH:	354.0 ft			
ROM (Ft)			ТО	DESCRIPTION	SAMPLE #	TOTAL Fe %	1			_
	(Metres)		(Metres)		<u> </u>	ļ	%			
0.00	0.00	91.00	27.58	Overburden; an assortment of sedimentary						
				boulders, cobbles, and pebbles.						
91.00	27.58	113.00	34.24	Type B feldspar porphyry with a pinkish						_
				coloured matrix and epidote altered (green eyes)						
				plagioclase feldspar phenocrysts; phenocrysts up						
				to 0.5 cm x 0.5 cm; subhedral to euhedral; large				-		
				brownish purple, subhedral to euhedral k-spar						
				phenocrysts; incompetent core.						
113.00	34.24	178.00	53,94	Type D Feldspar porphyry; incompetent interval						
				with a very low r.q.d.; purple, argillically altered						
				matrix with epidote (green) and sericitically (white)				-		
				altered plagioclase phenocrysts.						
178.00	53.94	190.30	57.67	Type C feldspar porphyry; unaltered to weakly						
				altered feldspar material; white to pinkish white;					· · · · · · · · · · · · · · · · · · ·	
190.30	57.67	354.00		Strained calcareous argillite with quartzite - E.O.H at 354.0 ft.						

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						R. H. STAN			
			PORATION			R. H. STAN			
PROJECT:				5482791.96N 612896.03E Elevation 864.3 m					
	Steeples W		11)		AZIMUTH/DIP:	206 / 50 (TNI)	@	collar	
DRILL HOL	E NO:	F2-99		DRILLED BY: R.H. Stanfield	AZIMUTH/DIP:			498.0 FT	
				DATES DRILLED:		302 / 52 (TN)	@	490.0 F1	
				LOGGED BY: Darren G. Anderson					
				DATES LOGGED:		LEVOTU	400.0.4		
					TOTAL	LENGTH:	498.0 ft		
	EDOM.	TO (Ft)	то	DESCRIPTION	SAMPLE #	TOTAL Fe %	Fe ₂ O ₃	Magnetic	
FROM (Ft)		10 (FI)	(Metres)				%	Susceptibility	
	(Metres)	101.00		Querturden eemi eeneelideted te upeeneelideted			,,,		
0.00	0.00	101.00	30.01	Overburden; semi-consolidated to unconsolidated,					
				subangular to subrounded clasts.					
101.00	30.61	208.00	62.02	Type D feldspar porphyry; brownish to purplish				7.23	
101.00	30.01	208.00	03.03	matrix with abundant small (1-2mm) euhedral to	·			1.20	
				subhedral plagioclase feldspars					
				101.0-131.0 ft unconsolidated material					
208.00	63.03	290.00	87.88	Type C / Type B feldspar porphyry; variably				0.04	
0.4 00000 000000000000000000000000000000				competent core; groundmass is fleshy to a light					
				pinkish green; small plagioclase feldspars are					
nauro,				altered slightly to a green colour (epidote); large					
				k-spar phenocrysts, up to 1.5cm x 1cm; euhedral					
				in shape; light brownish colour					
290.00	87.88	410.40	124.36	Type D feldspar porphyry; brownish to purplish				0.89	
				matrix with abundant small (1-2mm) euhedral to			ļ		
				subhedral plagioclase feldspars; magnetic			ļ		
	1			susceptibility is lower than previous Type					
				D interval; slightly more competent with an RQD					
				ratio of ~ 70 percent; 370.0 - 410.4 ft the					

				interval is reduced to gravel sixed fragments.			
410.40	124.36	490.00	148.48	Dolomitic limestone interbedded with argillite.			
				E.O.H @ 498.0 ft	i		

							<u> </u>		
			PORATION			R. H. STAN	IFIELD		
PROJECT:				5483055.66N 613105.63E Elevation 846.3 m					
		Vest (Aspen	11)						
DRILL HOL	E NO:	F3-99		DRILLED BY: R.H. StANFIELD	AZIMUTH / DIP:	054 / 60	AT:	Collar	
				DATES DRILLED:					
				LOGGED BY: Darren G. Anderson					
				DATES LOGGED:					
					TOTAL	LENGTH:	822.0 FT		
	EDON			DESCRIPTION				MACNETIC	
ROM (Ft)			TO	DESCRIPTION	SAMPLE #	TOTAL Fe %	<u> </u>	MAGNETIC	
	(Metres)		(Metres)			<u> </u>	%	SUSCEPTIBILITY	
0.00	0.00	11.00	3.33	Overburden an assortment of sedimentary					
				boulders, cobbles, and pebbles.					
11.00	3.33	115.00	34.85	Type B feldspar porphyry; competent core with a				12.5	
				90% RQD ratio; pinkish to light orange pink					
				matrix; dark green to light green altered					
				plagioclase feldspars; phenocrysts are small, up					
				to 0.5 cm and are subhedral to euhedral in shape.					
115.00	34.85	144.00	43.64	Type B feldspar porphyry; competent core with a				8.72	
				90% RQD ratio; pinkish to light orange pink					
				matrix; dark green to light green altered					
				plagioclase feldspars; phenocrysts are small, up					
				to 0.5 cm and are subhedral to euhedral in shape;					
				different from previous interval in that there are					
				large, up to 2.5 x 2.0 cm, subhedral to euhedral					
				k-spar phenocryts					
144.00	43.64	270.00	81.82	Type D feldspar porphyry; dark brown to purplish		1		13.8	
				matrix; abundant small, subhedral to euhedral,					
				plagioclase phenocrysts					

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270.00	81.82	353.00		Type D feldspar porphyry; dark brown to purplish	6.18	
				matrix; abundant small, subhedral to euhedral,		
				plagioclase phenocrysts; interval has a slightly		
				lower magnetic susceptibility than previous interval		
				and lesser amounts of altered plagioclase phenos.	 	
353.00	106.97	388.00	117.58	Type B feldspar porphyry; lower mag. Susceptibility		
				than previous Type B interval; pinkish matrix with		
				epidote altered plagioclase feldspars- up to 0.5x0.5		
				cm; euhedral to subhedral; large purplish brown		
				subhedral to euhedral k-spar phenocrysts.		
388.00	117.58	792.00	240.00	Type D feldspar porphyry; dark brown to purplish	6.44	
				matrix; abundant small, subhedral to euhedral,		
				plagioclase phenocrysts.		
792.00	240.00	797.00	241.52	Type C feldspar porphyry; unaltered white to	0	
				pinkish white feldspar material; looks somewhat		
				massive.		
797.00	241.52	822.00	249.09	Highly itinuated argillite with quartzite; feldspar		
				stringers (injection features) within the unit.		
				EOH @ 822.0 ft		
				Could not take a Pajari measurement at the end of		
				hole because of the hole instability.		

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BUL RIVE			PORATION				R. H. STAN			
PROJECT:				5483054.69N 613103.39E Elevation - 846.3			IX. 11. 01/AP			
	LAIMS: Steeples West (Aspen 11)									
DRILL HOL		F4-99	· · · · ·	DRILLED BY: R.H. Stanfield	DIP:	90		AT:	collar	
				DATES DRILLED:		133/89		AI.	450 ft	
				LOGGED BY: Darren Anderson		133/03			43V IL	
				DATES LOGGED:						
				DATES LOGGED.	TOTAL	LENGTH:	955.0 ft			
ROM (Ft)	FROM	TO (Ft)	то	DESCRIPTION	SAMPLE #	SAMPLE	TOTAL Fe %	Fe ₂ O ₃	MAGNETIC	
	(Metres)		(Metres)	1		INTERVAL		%	SUSCEPTIBILITY	
0.00	0.00	13.00	3.94	Ovb - an assortment of sedimentary boulders,						
				cobbles and pebbles.						
13.00	13.00 3.94 20.50 6.2	6.21	Type"D" feldspar porhyry (?); brown - brownish	2688.00	16-206		3.26	0.48		
			green matrix; dark purplish to brownish k-spar				0.20	0.10		
				phenocrysts.						
20.50	6.21	97.00	29.39	Type D/ Type B feldspar porhyry (?); pinkish-	2689.00	33-38		3.6		
			· · · · · · · · · · · · · · · · · · ·	brown matrix with dark green to light green,	2690.00	56-61		3.54	12.10	
				subhedral to euhedral k-spar phenocrysts	2691.00	74-79		3.07		
97.00	29.39	110.00	33.33	Type C feldspar porphyry; fleshy-coloured						
				groundmass with large euhedral to subhedral						
				k-spar phenocrysts	2692.00	103-108		1.16	0.09	
110.00	33.33	129.00	39.09	Type B feldspar porphyry; pinkish brown	2693.00	113-118		2.18	8.51	
-	_			groundmass with varying sizes of k-spar						
				phenocrysts; phenocrysts are pinkish-white to						
				pink.						
129.00	39.09	207.00		Type D feldspar porphyry; purple matrix with	2694.00	133-138		2.07	14.00	

				abundant small euhedral to subhedral, white to	2695.00	169-174	1.82	14.00	
				greenish white and pink phenocrysts.					
207.00	62.73	209.20	63.39	Type C feldspar porphyry; fleshy-coloured	2696.00	207-209.2	1.28	0.01	
				groundmass with large euhedral to subhedral				- <u>6, , , , ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>	
				k-spar phenocrysts					
209.20	63.39	222.20	67.33	Type D feldspar porphyry; purple matrix with	2697.00	213-218	1.69		
				abundant small euhedral to subhedral, white to					
				greenish white and pink phenocrysts.					
222.20	67.33	226.00	68.48	Type C feldspar porphyry; fleshy-coloured	2698.00	222.2-226	0.99		
				groundmass with large euhedral to subhedral					
				k-spar phenocrysts				· · · · · · · · · · · · · · · · · · ·	
226.00	68.48	261.00	79.09	Type D feldspar porphyry; purple matrix with	2699.00	228-233.5	1.5		
				abundant small euhedral to subhedral, white to	2700.00	256-261	1.43		
				greenish white and pink phenocrysts.					
261.00	79.09	277.30	84.03	Type C feldspar porphyry; fleshy-coloured	2701.00	261-266	1.17		
				groundmass with large euhedral to subhedral	2702.00	270-275	1.21		
				k-spar phenocrysts		- · ·			
277.30	84.03	287.00	86.97	Type D feldspar porphyry; purple matrix with	2703.00	278-283	1.5		
				abundant small euhedral to subhedral, white to					
				greenish white and pink phenocrysts.					
287.00	86.97	303.00	91.82	Type C feldspar porphyry; fleshy-coloured					
				groundmass with large euhedral to subhedral					
				k-spar phenocrysts; little alteration	2704.00	287-292	1.32		
303.00	91.82	306.00	92.73	Type D feldspar porphyry; purple matrix with	2705.00	303-306	1.46		
				abundant small euhedral to subhedral, white to				- Hz	
				greenish white and pink phenocrysts.					

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306.00	92.73	328.00	99.39	Type C feldspar porphyry; fleshy-coloured	2706.00	310-315	1.15	
				groundmass with large euhedral to subhedral	2707.00	320-325	1.07	
				k-spar phenocrysts; little alteration				
328.00	99.39	345.70	104.76	Type D feldspar porphyry; purple matrix with	2708.00	333.5-339	1.66	
				abundant small euhedral to subhedral, white to	2700.00		1.00	
				greenish white and pink phenocrysts.				
345.70	104.76	356.40	108.00	Type C feldspar porphyry; fleshy-coloured	2709.00	345.7-350	1.2	
040.70	104.70	000.40	100.00	groundmass with large euhedral to subhedral	2710.00	350-356.4	1.11	
				k-spar phenocrysts; little alteration	2710.00	330-330.4	1.11	
356.40	108.00	358.30	108 58	Type D feldspar porphyry; purple matrix with	2711.00	356.4-358.3	1.47	
000.40	100.00	000.00	100.00	abundant small euhedral to subhedral, white to	2711.00	550.4-550.5		
				greenish white and pink phenocrysts.				
358.00	108.48	408.00	123 64	Type C feldspar porphyry; fleshy-coloured	2712.00	361.5-367	1.12	
000.00	100.10	400.00	120.04	groundmass with large euhedral to subhedral	2713.00	373-378	1.07	
				k-spar phenocrysts; little alteration	2714.00	393-398	0.99	
408.00	123.64	479.60	145 33	Type D feldspar porphyry; purple matrix with	2715.00	419-424	1.02	
				abundant small euhedral to subhedral, white to	2716.00	432-438	1.58	
				greenish white and pink phenocrysts.	2717.00	451-456	1.77	
				5	2718.00	465-470	1.84	
479.60	145.33	491.00	148.79	Type C feldspar porphyry; fleshy-coloured	2719.00	479.6-485	0.62	
				groundmass with large euhedral to subhedral	2720.00	485-491	0.62	
		······································		k-spar phenocrysts; little alteration				
491.00	148.79	955.00	291.16	Core is composed of moderately competent				
				argillite interbedded with iron stained sandstone.				
				E.O.H at 955.0 ft				

TYPE E: TOTAL ARGILLIC

"Brick Colour" Little Contrast between Phenocrysts and Groundmass
High K₂O, lower LOI, lower CaO
Very High Fe as MAGNETITE + HEMATITE (Fe₂O₃)
Phenocrysts: <u>Argillic</u>: Sericitic to Kaolin: Orange
Groundmass: <u>Argillic</u> Sericitic : Purple cast

TYPE D: MOSTLY ARGILLIC

"Green Eyes" in Purple Matrix High K₂O, lower LOI, lower CaO Very High Fe as MAGNETITE + HEMATITE (Fe₂O₃) <u>Propyllitic</u>: Epidote : Green Phenocrysts: <u>Argillic:</u>: Kaolin + Sericite: Purple Cast

Groundmass: Argillic: Sericite: Purple Cast

TYPE C: UNALTERED

"Flesh Colour" No Purple or Green in Phenocrysts or Groundmass Low Fe Phenocrysts: <u>Unaltered Plagioclase</u> Groundmass: <u>Unaltered Plagioclase</u>

TYPE B: MOSTLY PROPYLLITIC SOME ARGILLIC

(Groundmass Only) "Green Eyes" in Pinkish to White to Greenish Matrix ("FLESH COLOUR") High Fe as MAGNETITE + SIDERITE Phenocrysts: Unaltered or Propyllitic: Epidote: White or Green Propyllitic: Epidote + Carbonate : Green Groundmass:

Argillic: Sericite: Pink

TYPE A: TOTAL PROPYLLITIC

"Green Eyes" in White to Grey Matrix "Bleached " look High Fe as MAGNETITE + SIDERITE Phenocrysts: <u>Unaltered</u> or <u>Propyllitic:</u> Epidote: White or Green Groundmass: Propyllitic: Epidote + Carbonate : Green

TYPES OF ALTERATION

ARGILLIC : OR CLAY

SOURCE MINERALS: K-SPAR, MICA, PLAGIOCLASE (in order of preference) MINERAL PRODUCTS: SERICITE, KAOLIN, HEMATITE

PROPYLLITIC:

SOURCE MINERALS: PLAGIOCLASE MINERAL PRODUCTS: EPIDOTE, CARBONATE (CALCITE AND/OR SIDERITE)

CHEMICAL CLUES TO ALTERATION

FOR UNALTERED:

 K_2O / Na_2O : close to 1:1

LOI: between those for Argillic and Propyllitic types (see below) Fe content: lower than for Argillic and Propyllitic types (see below)

FOR ARGILLIC:

 $K_2O / Na_2O: >1:1$

- LOI : lower than Unaltered and Propyllitic types
- CaO: lower than Unaltered and Propyllitic types
- Fe content: highest of all types. Also Fe is tied up as Magnetite and Hematite, not much Siderite. Therefore, acid leaching not of much help --use Magnetic and Dithionite leaching

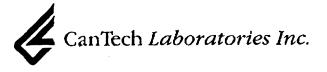
For Propyllitic:

K₂O / Na₂O: lower than Unaltered and Argillic types (generally <1%) LOI: highest LOI of all, due to presence of carbonates as alteration products

CaO + MgO : highest of all particularly if carbonate alteration is to calcite /dolomite rather than siderite

APPENDIX 2 CERTIFICATE OF ANALYSIS

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Buil River Mineral Corporation 3 Fir, 4723 1St. S.W. Calgary, Alberta T2G 4Y8 Attention: Darren Anderson

Final Report

January 12, 2000

Certificate of Analysis Work Order: 99319

42008 - 10 Street N.E. Calgary, Alberia Canada T2E 6K3 Tel (403) 250-1901 Fac (403) 250-8265

Cample id	SiO2	AI203	Fe2O3	MnO	MgO	CaO	Na2O	K2O	TiO2	P2O5	LOI	Cr2O3	TOTAL
Sample id.	%	%	%	%	%	%	%	%	%	%	%	%	%
2688	60.75	18.73	3.26	0.063	1.42	4,86	8.43	1.15	0.34	<0.001	3,1	<0.001	102.10
2689	60.44	18.31	3.60	0,050	1.15	3.83	5.84	5.59	0.33	<0.001	2.9	<0.001	102.04
2690	60.38	18.33	3.54	0.047	1.19	2.77	5.79	5.48	0.32	<0.001	2.9	<0.001	100.75
2691	59.53	18.04	3.07	0.063	1.06	4.44	8.13	1.15	0.33	<0.001	3.3	<0.001	99.11
2692	64.99	18.98	1.16	0.021	0.42	1.93	8.54	2.21	0.16	<0.001	1.4	<0.001	99.81
2693	63.61	18.95	2.18	0.027	0.54	2.52	6.29	4.91	0.18	<0.001	1.7	<0.001	100.91
2694	63,41	18,69	2.07	0.035	0,61	3.23	5.24	4.27	0.17	<0.001	1.6	<0.001	99.33
2695	64.08	18.77	1.82	0.055	0.52	3.64	5,50	4.31	0.18	<0.001	1.4	<0.001	100.28
2696	65.84	19.28	1.28	0.035	0.72	3.30	8.26	0.90	0.19	<0.001	2.0	<0.001	101.81
2697	63.87	18.69	1.69	0.033	0.66	3.17	5.63	4.45	0.18	<0.001	1.4	<0.001	8 9.77
2698	63.54	19.01	0.99	0.028	0.66	2.81	8.61	0.59	0.17	<0.001	2.6	<0.001	99.01
2699	61,95	18.11	1.50	0.031	0.74	3.04	6.72	2.53	0.17	<0.001	2.6	<0.001	97.39
2700	64.45	18.86	1.43	0.027	0.75	2.55	6.74	3.25	0.17	<0.001	2.0	<0.001	100.23
2701	64.02	18.65	1.17	0.027	0.72	2.77	7.75	1,35	0.17	<0.001	2.6	<0.001	99.23
2702	64.55	18.55	1.21	0.024	0.74	2.35	7.57	1.73	0.17	<0.001	2.8	<0.001	89.69
2703	64.16	18.74	1.50	0.028	0.62	3.48	5.88	4.16	0.18	<0.001	2.6	<0.001	101.35
2704	64.54	18.90	1.32	0.030	0.69	2.71	7.13	2.22	0.16	<0.001	3.6	<0.001	101.30
2705	63.71	18.34	1.46	0.029	0.62	2.85	6.11	3.48	0.17	<0.001	3.4	<0.001	100.17

CanTech La		<i>ies 11n</i>		_				Final Report						
Bull River Mineral Co. 3 Fir, 4723 1St. S.W. Calgary, Alberta T2G 4Y8		ttention: [)arren And	erson	Certificate of Analysis Work Order: 99319 January 12, 2000							Tet (403) 250-1901 Fax (403) 250-8265		
		41200	5-202	MnO	MaQ	CaO	Na2O	K20	TiO2	P205	LOI	Cr203	TOTAL	
Sample id.	SiO2 %	AI2O3 %	Fe2O3 %	1////O %	MgO %	%	%	%	%	%	%	%	%	
2706	65.80	19.23	1.15	0.029	0.67	2.76	7.88	1.74	0.16	<0.001	3.7	<0.001	103.12	
2707	65.66	19.18	1.07	0.031	0.74	2.78	7.69	1.64	0.17	<0.001	3.5	<0.001	102.46	
2708	64.08	18.59	1.66	0.028	0.60	3,30	5.90	3.76	0,18	<0.001	3.3	<0.001	101.40	
2700	60.93	17.72	1.20	0.039	0.66	4.30	6.87	2.07	0.16	<0,001	5.1	<0.001	99.05	

2706	65.80	19.23	1.15	0.029	0.67	2.76	7.88	1.74	0,16	<0.001	3.7	<0.001	103.12
2703	65.66	19.18	1.07	0.031	0.74	2.78	7.69	1.64	0.17	<0.001	3.5	<0.001	102.46
2708	64.08	18.59	1.66	0.028	0.60	3,30	5.90	3.76	0.18	<0.001	3.3	<0.001	101.40
	60.93	17.72	1.20	0.039	0.66	4.30	6.87	2.07	0.16	<0,001	5.1	<0.001	99.05
2709	60.62	17.69	1.11	0.034	0.65	4.05	7.04	1.78	0.16	<0.001	4.9	<0.001	98.03
2710	63.71	18.46	1.47	0.022	0.58	2.55	5.58	4.38	0.16	<0.001	3.4	<0.001	100.31
2711	62.41	17.92	1.12	0.040	0.61	4.78	7.17	1.76	0.15	<0.001	4.9	<0.001	100.86
2712	62.61	18.05	1.07	0.031	0.59	3.56	7.10	1.88	0.15	<0.001	4.3	<0.001	99,34
2713		17.95	0.99	0.033	0.57	3.65	7.71	1.17	0.15	<0.001	4,3	<0,001	98.97
2714	62.45			0.039	0.67	4.81	6.55	1.34	0.15	< 0.001	5.4	<0.001	97.29
2715	60.08	17.25	1.02		0.76	4.04	4.36	4.17	0.15	<0,001	5.9	<0.001	99,74
2716	61.08	17.66	1.58	0.041		4.04	4.50	4.47	0,15	<0.001	4.8	<0.001	101.79
2717	63.05	18.29	1.77	0.049	0.63		4.04	4,41	0.17	<0.001	4.9	<0.001	99.07
2718	61.51	17.98	1.84	0.048	0.78	3.39			0.14	<0.001	10.0	0.030	100.11
2719	53.59	16.97	0.62	0.035	0.44	10.54	6.26	1.48		<0.001	14.3	<0.001	99,34
2720	46.34	14.91	0.62	0.044	0.55	15.85	5.27	1.33	0.13	~0.001	14,0	-0.001	00.04

Prepared by Ted Dylong

J. Dylan

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