INVESTIGATION OF COMMERCIAL FELDSPAR RESOURCE ON THE ASPEN 9, 10, 11, & 12 CLAIMS

FORT STEELE MINING DIVISION
BRITISH COLUMBIA
49°30'N, 115°25'W

FOR
R. H. STANFIELD
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By
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MASTER MINERAL RESOURCE SERVICES LTD.
Calgary, Alberta

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INTRODUCTION:

In 1987, a vertical diamond drill hole (A11-1-87) near the boundary of Aspen #10 and #11 intersected over 480 metres of feldspar porphyry. No metallic mineralisation was observed, and the core was stored. The summary log was reviewed during a preliminary survey for industrial minerals potential of the Stanfield holdings by the author of this report and a ground survey indicated surface outcrops of feldspar porphyry with no apparent quartz.

Feldspar is used in the manufacture of container glass and glass fibre insulation, in ceramic whiteware products and glazes, in wall and floor tile compositions, and as a filler-extender in paints, plastics and foam rubber. In recent years nepheline syenite from Ontario has cornered a considerable portion of the feldspar market in North America, and it is characterised by the absence of quartz mineral. Although other chemical and physical characteristics are important in the product specifications, it was felt that this deposit of feldspar porphyry was worth investigating.

The core from A11-1-87 has been relogged, and representative samples of core were taken for chemical analysis and petrographic examination. In addition, in 1994, two percussion drill holes were completed to determine the extent of and grade variation in the intrusive. These holes are A10-1-94 and A11-1-94 on Aspen 10 and Aspen 11 respectively. Grab samples of the cuttings were collected for every two foot (0.61 metre) interval. Composites of the cuttings were analyzed for major, minor and trace elements after complete fusion of minus 150 mesh pulverised pulps using atomic absorption spectroscopy.

Based on the chemical composition and petrography it is recommended that this deposit has the physical and chemical characteristics of being an excellent source of feldspar for the above mentioned industrial applications. Further work to determine the material characteristics specific to each application is necessary, and it will be also essential to determine and/or develop the market potential for the products from the deposit, including transportation costs.

LOCATION, ACCESSIBILITY & TOPOGRAPHY:

The Aspen claims are located in southeastern British Columbia, approximately 30 kilometres by Highway 3 from Cranbrook, and then by Highway 93 just past the settlement of Bull River. Secondary gravel roads provide access on to Aspen 9, 10 and 11, and the feldspar porphyry is easily accessible by secondary road. Most of the claims area and the outcrops of the feldspar porphyry are in fairly open parkland . Thicker vegetation consists usually of brush along portions of the Bull River banks.

The claims are in the Fort Steele Mining Division in N.T.S. 82G/6 , centred approximately at 49^{0}25'45"N, 115^{0}25'W. Topographic relief ranges from 840 metres to 1030 metres. Refer to Figure 2.

SITE LOCATION

PROPERTY:

Summary from Document No. 3056330 Recorded Aug. 4,1994, Cranbrook,B.C.		
Group	**Assessment applicable to Claims:**	**Record Number**
Aspen 1	Aspen 9, 10, 11, and 12	321708, 322366, 311912, and 311913

OBJECTIVES, SCOPE & DESCRIPTION OF WORK DONE:

The Aspen claims cover a portion of, and form the southern boundary of the Bul River mine. The mine was operated in the 1970's by Placid Oil. Subsequently the mine and the adjacent claims were purchased by R.H. Stanfield of Calgary. Since the 1980's, a program of surface mapping, exploration, airborne geophysics and diamond drilling is in progress to delineate the strike and downdip extensions of several ore shoots of the Bul River mine.

This report is not directly related to the program for exploration of base metal sulphide and quartz lode deposits hosted in the Proterozoic Aldridge and Creston Formations, but deals with portion of the findings from this program. In 1987, during the course of exploration for the strike extension and/or offset of the Bul River shear zone hosted mineralisation, a vertical diamond drill hole (A11-1-87) near the boundary of Aspen #10 and #11 intersected over 480 metres of feldspar porphyry (location of collar shown in Figure 2). No metallic mineralisation was observed, and the core was stored.

In 1993- 1994, during the evaluation of industrial minerals potential on the R. H. Stanfield holdings, the core was relogged and sampled for analysis and evaluation as potential source of feldspar. Initial examination of samples from surface outcrop and core suggested the existence of a quartz-poor feldspar porphyry. This porphyry is a younger (Cretaceous ?) intrusive in fault(?) contact with Palaeozoic rocks to the south . The contact with the Proterozoic formations in the north and eastern edges is not exposed.

Also, in 1994 the approximate areal extent of the feldspar porphyry was determined by mapping of outcrops, and two rotary/percussion drill holes (A10-1/94 and A11-1/94) were completed as shown in Figure 2 to determine depth extension, grade with depth and areal extent of the deposit.

Samples of core were taken with the sample boundaries determined by changes in visual criteria. Cuttings from the percussion drill holes were sampled for every two foot (0.6 metre)

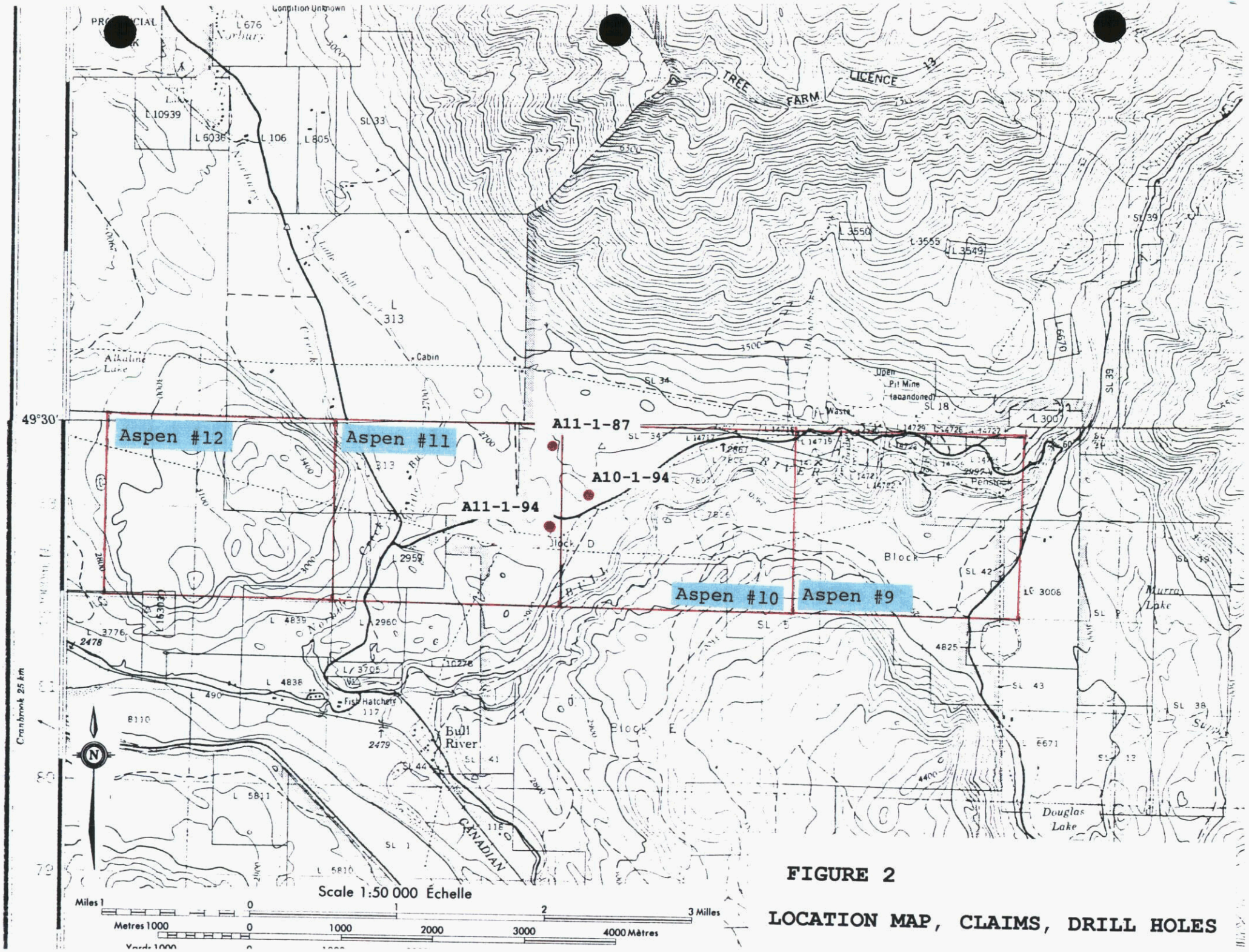

FIGURE 2

LOCATION MAP, CLAIMS, DRILL HOLES

interval. The core samples and the percussion samples were composited for whole rock analysis. Eight core samples were submitted to Vancouver Petrographics Ltd. for petrographic descriptions.

FELDSPAR -- INDUSTRIAL MINERAL:

Feldspar is one of the most abundant mineral. Significant commercial production of feldspar is for usage mainly in ceramics and glass industry, and feldspars of commercial significance are found in pegmatite, alaskite, aplite, granite, feldspathic sand, feldspathic quartzite.

For commercial applications the quartz present is considered to be a gangue material and requires separation. Deposits where quartz is absent or a very minor constituent are of great importance, but are rare. In recent years nepheline syenite, in which there is little or no quartz, has become a major source of raw material for the ceramic and glass industries, replacing many of the traditional feldspar source deposits in North America.

Initial examination indicated that this deposit of feldspar porphyry has little or no quartz, and could therefore, be of commercial significance if it met other physical and chemical criteria. Most of these criteria are based on nepheline syenite specifications. These specifications are for size ranges between -30 + 200 mesh for the glass industry and -325 mesh for ceramics, which means that some of the chemical impurities are removed during sizing, and for comparison, the chemical analysis shown for the feldspar porphyry in this report are for unsized material.

In the finished products, the alumina content has to be in excess of 23%, alkali content in excess of 14%, and iron oxide less than 0.1%. Most of the samples analyzed from the feldspar porphyry deposit are just below the required alumina content, and the Si:Al ratio can be lowered by sizing out the +30 mesh material (the fines are generally higher in alumina). The analysis also indicate that the samples already exceed the alkali requirements, and the iron content would be lowered by magnetic separation as is commonly done in nepheline syenite production.

The deciding factor is generally, whether at approximately -30 mesh the pure feldspathic material can be separated from its associated impurities. These tests are recommended for future work. Other criteria include the determination of the degree and type of alteration of and/or inclusions within the feldspar grains.

SURFACE MAPPING:

In Figure 3, the outline and location of feldspar porphyry outcrops are shown. South of the A11-1-94 hole collar Palaeozoic carbonate rocks have been mapped in previous surveys. North and east of A11-1-87 drill collar the area is covered by overburden. The contact between the feldspar porphyry and Proterozoic sediments underlies the overburden between

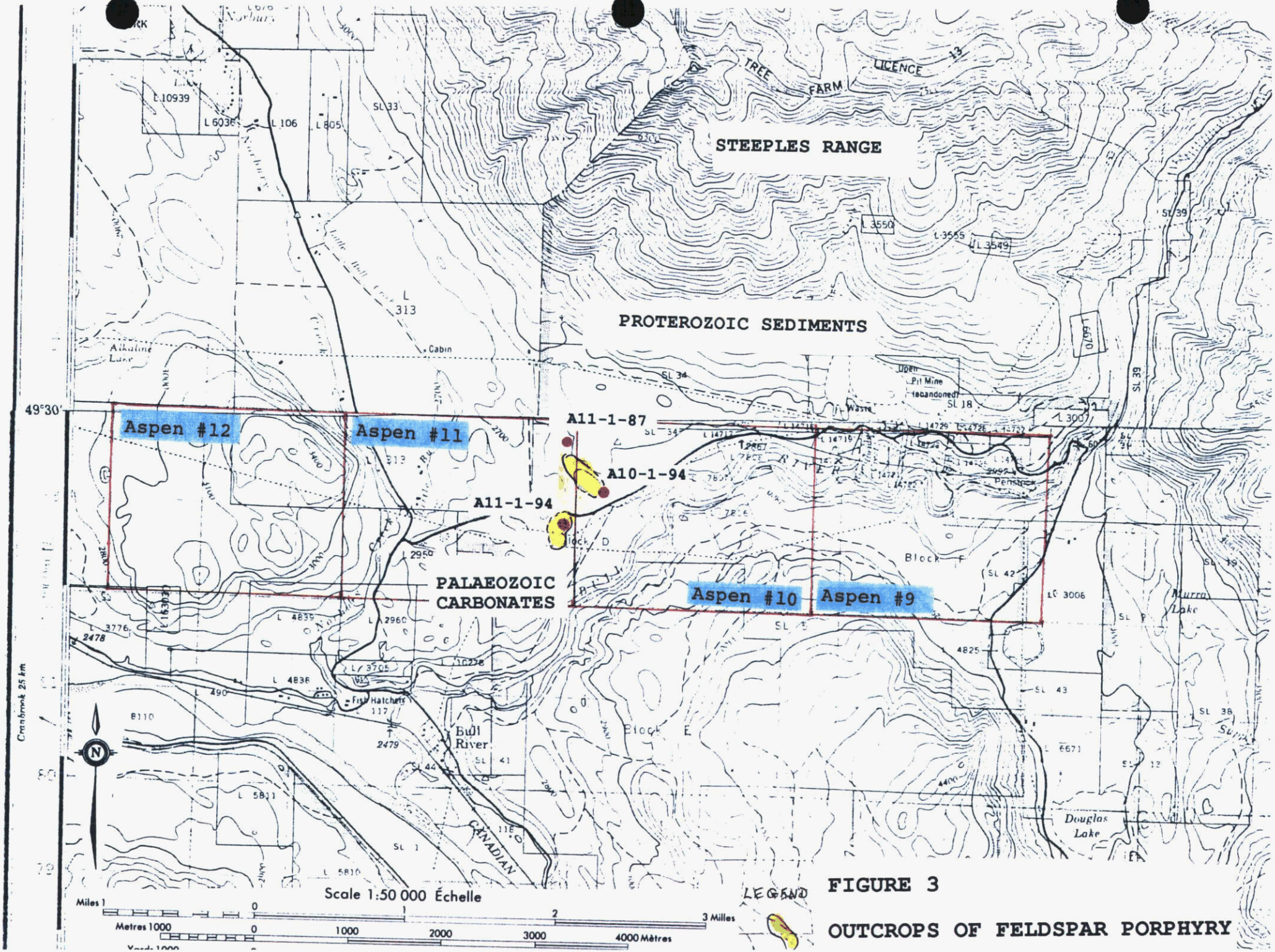

FIGURE 3

OUTCROPS OF FELDSPAR PORPHYRY

the outcrop of feldspar porphyry and the edge of the Steeples Range. The western extension of the feldspar porphyry is yet not determined.

Samples from surface outcrop were not used for determination of physical and chemical properties since less weathered material was available from the core and percussion drill cuttings.

LOG OF DIAMOND DRILL HOLE A11-1-87:

HOLE NO. A11-1-87 **PROPERTY:** Aspen Claim #11
COLLAR ELEV. 833 metres **DIP:** -90° @ collar **DEPTH:** 532 metres
COMMENCED: 29/05/87 **COMPLETED:** 07/08/87 **RIG MODEL:** Longyear 44
DRILLER/HELPER/COMPANY: Frank Thelland/ Liam O'Fee/ R.H. Stanfield
LOGGED BY: P. Master **SAMPLED BY:** P. Master **DATE:** September 13,14, 1994

FROM (metres)	TO	DESCRIPTION	SAMPLE #	From (metres)	To
0	40	Overburden			
40	50	Feldspar Porphyry (FP), pink groundmass, lath shaped white-grey phenocrysts	4901	43.3	43.9
50	57	FP, dark grey groundmass, white-green lath shaped phenocrysts	4902	53.9	54.1
57	66	FP, grey groundmass, larger white lath shaped phenocrysts	4903	61.8	62.0
66	69	FP, same as 57-66, also green phenocrysts			
69	82	FP, purplish groundmass, green and white lath shaped phenocrysts, green-black mafics 76.7 - 78.2, 80.9 - 81.5: gouge/broken core	4904	70.3	70.6
82	137	FP, grey groundmass, white phenocrysts, some irregular CO_3 veinlets 92.4 - 95.8: broken core, few cm gouge 106.7: slightly more altered with few greener phenocrysts	4905	91.7	92.0
137	179	FP, purple groundmass, green lath shaped phenocrysts 145.2 - 146.4: broken core, gouge	4906	141.2	141.5
179	209	FP, same as 137 - 179, except groundmass more grey than purple, pink/green laths 180.3 - 204.8: broken core, gouge in fractures, CO_3 in fractures, pinker groundmass	4907	179.0	179.4
209	214	FP, pink groundmass, green phenocrysts-irregular laths, some phenocrysts darker	4908	210	210.3
214	219	FP, grey groundmass, white to pink phenocrysts (some green)	4909	216.1	216.4
219	227	FP, grey/pink groundmass(interfingered) 221.8 - 227: mostly pink			

FROM (metres)	TO	DESCRIPTION	SAMPLE #	From (metres)	To
227	228	FP, grey matrix, white phenocrysts with green margins			
228	280	FP, pink matrix, white phenocrysts with green margins	4910	236.4	236.7
280	286	FP, pink groundmass, quite fractured, crackle zone through phenocrysts	4911	283.9	284.2
286	296	FP, same as 228 - 286 section			
296	333	FP, grey goundmass (some pink), white-pink phenocrysts, large no. mafic "clots"	4912	301.1	301.5
		313.6 - 333: grey-green matrix, mostly white phenocrysts aligned @75° to CA	4913	314.6	314.9
333	347	FP, grey almost brown matrix, white phenocrysts	4914	334.9	335.2
347	352	FP, pink groundmass, white phenocrysts			
352	353	Carbonate breccia, flow banding(?) approx. @15° to CA			
353	532	Greywacke, dark colour, some CO_3 in matrix and arenaceous portions. Large breccia fragments -- slump block as in turbidites(?)			
		392.4 - 457.9: broken core			
		406.4 - 532: no distinct breccia, partly red almost ferruginous chert.			
	532	END OF HOLE			

PETROGRAPHY:

Eight of the core samples from drill hole A11-1-87 were selected for petrographic examination. These include sample numbers 4901 - 4905, 4907, 4909, and 4914 (see log above). Selection was made on visual criteria that suggested variations in texture and/or alteration. Appendix A is a copy of the report on the petrography of these samples completed by Vancouver Petrographics Ltd.

All the samples represent rocks that are *quartz free*. feldspar-rich porphyry intrusives. The plagioclase phenocrysts show mild pervasive alteration with sericite, epidote or carbonate and occasional clinozoisite, and the groundmass feldspars are fresh.

Samples 4901, 4902 and 4914 are classified as ***monzonite***, while the remaining samples have been classified as ***diorites.*** During the logging of the drill core and the drill cuttings the samples were identified as ***syenite.*** It is this author's opinion that in most of the deposit the proportion of potash feldspar to plagioclase is higher than in some of the samples examined

for petrography, and therefore, the *feldspar porphyry deposit is mainly a syenite/ monzonite* with portions that are more dioritic.

Iron contamination sources are minor disseminated magnetite, sometimes partially hematized, plus traces of pyrite. The magnetite will be removable by magnetic separation, and if the remnant pyrite also has to be removed, then flotation will have to be added to the process stream.

Detail descriptions of each sample are in Appendix A.

CHEMICAL CHARACTERISTICS:

In Appendix C are reports on major, minor and trace element analysis. Job 94 - 144 deals with 14 core samples taken from the 1987 diamond drill hole A11-1-87, and Job 94 - 159 deals with 13 composite samples of drill cuttings from the 1994 percussion drilling program A10-1-94 and A11-1-94. The location of the diamond drill hole samples are in the log in an earlier section of this report, while the location of the composite samples are in the logs in Appendix B. The following table lists the major element analysis, and compares the average for each element with the specifications of selected glass and ceramic specifications.

From the major element analysis it is determined that there is no great variability in the deposit, both in area and depth. The silica to alumina ratio is only slightly higher than the specifications for finished feldspar products for the glass and ceramic industries, and the silica is reducible by sizing (down to minus 20 or minus 30 mesh). The sodium and potassium contents are lower than the specifications, but sodium oxide to potassium oxide ratio is almost 2/1 as in most commercial nepheline syenite products. The removal of calcium and magnesium carbonates by acid leaching/attrition scrubbing during beneficiation could reduce the calcium + magnesium and increase the proportion of sodium and potassium. The iron content is higher than specified for these industries, but beneficiation using magnetic separation and possibly flotation would reduce the iron to close to specified levels.

COMPARISON OF CHEMICAL CHARACTERISTICS WITH TYPICAL PRODUCT SPECIFICATIONS.]
--- GLASS GRADES & CERAMIC GRADES

SAMPLE #	SiO_2	Al_2O_3	CaO	MgO	Na_2O	K_2O	Fe_2O_3	LOI
4901	60.700	17.600	2.938	1.330	6.106	4.567	3.990	2.280
4902	61.000	17.900	3.525	1.224	5.769	5.302	3.300	1.080
4903	62.200	18.100	3.819	0.726	9.166	0.192	2.120	0.049
4904	62.000	17.600	2.532	0.950	6.700	4.037	3.520	1.680
4905	60.500	17.800	4.980	1.096	8.371	0.624	2.700	3.440
4906	60.700	17.800	3.511	1.121	5.190	5.748	3.850	1.320
4907	61.000	17.900	4.225	1.197	8.762	0.290	2.890	3.080
4908	60.300	17.600	3.903	1.298	4.880	6.097	3.520	1.800
4909	60.300	17.200	4.687	1.316	7.616	1.229	3.420	3.360
4910	60.100	17.200	4.141	1.321	4.961	5.615	3.960	2.080
4911	59.700	17.200	4.421	0.696	4.489	5.712	3.430	2.880
4912	59.500	17.200	4.952	1.162	4.260	5.471	3.780	3.120
4913	60.700	17.800	3.987	1.331	4.583	5.133	4.420	1.240
4914	60.700	17.400	4.337	1.268	4.839	4.603	4.280	1.800
4866	62.900	18.300	3.414	0.643	8.101	2.663	1.400	2.200
4867	63.100	19.800	2.910	0.267	9.813	1.112	0.800	1.800
4868	64.400	18.700	1.483	0.811	8.883	1.711	2.070	1.400
4869	60.700	17.900	3.637	0.962	6.713	3.916	3.320	1.400
4870	60.100	18.500	4.295	1.003	6.416	4.555	3.230	1.200
4871	60.500	18.900	3.903	0.962	6.430	4.121	3.060	1.200
4872	63.500	19.100	1.847	0.431	7.724	2.796	2.000	1.200
4873	61.000	19.500	2.476	0.338	8.223	3.928	2.290	1.200
4874	59.700	19.600	3.819	0.831	6.740	4.338	3.150	1.000
4875	60.300	18.900	3.707	0.579	7.441	3.639	2.830	1.800
4876	61.200	18.500	3.456	0.406	6.201	5.133	2.930	1.400
4877	59.700	18.300	3.693	0.454	6.268	4.868	3.270	1.800
4878	61.600	18.500	3.344	0.552	8.128	2.482	2.760	1.400
Mean Measured	61.041	18.178	3.627	0.899	6.769	3.699	3.048	1.786
Glass specifications	60.000	23.400	0.700	0.100	9.900	4.800	0.350	0.700
Ceramic specs.	60.700	23.300	0.700	0.100	9.800	4.600	0.070	0.700

Ref.: Industrial Minerals and Rocks, AIME, 1983

CONCLUSIONS AND RECOMMENDATIONS:

The initial examination of the physical and chemical characteristics of the feldspar porphyry indicates that it has potential for commercial production of commercial grades of feldspar rock for the glass and ceramic industries , and subsequently for extender pigment and mineral filler applications. The degree and type of beneficiation, and hence the economics of the project, will be determine by more detailed material characterization and process/product research.

In addition, a more extensive program of drilling is recommended to determine the extent and reserves, including tonnage and grade, and if variations in grade --particularly quartz content- will affect mining and product recoveries. Market development should proceed during the next phase of investigation, including identification of potential customers and transport costs to these customers.

COSTS STATEMENT:

Drill Costs:			
Mob and demob.	$	2,000.00	
664 ft @ $30/ft	$	19,920.00	
34'7"+18'7"casing @$8.95/ft	$	463.79	
Supply /accom 8x2x$65	$	1,040.00	
Foreman 96 hrs x $20/hr	$	1,920.00	
F250 4x4, 8daysx$50/day	$	400.00	
			$25,743.79
Geology:			
Pilsum Master,P.Geol. Sept. 12-16:			
logging/sampling,			
5 days @$400/day	$	2,000.00	
Room/board,5 days x $65	$	325.00	
Helper:Tim Hewison/Stan Muglich			
50 hrs x $12/hr	$	600.00	
Room/board,5 days x $65	$	325.00	
Foreman, Ross Stanfield:			
Room/board, 4 days x $65	$	260.00	
F250 4x4, 5days x $50/day	$	250.00	
			$ 3,760.00
Chemical Analysis:			
Terramin Research Labs Ltd.			$ 1,604.00
Petrography:			
Vancouver Petrographics Ltd.			$ 1,033.62
Report, drafting, shipping:			
Master Mineral Resource Services Ltd.			$ 2,782.19
TOTAL			**$34,923.60**

STATEMENT OF WORK, AUG 4, 1994: $ 15,151.10
STATEMENT OF WORK, OCT 19,1994: $ 19,772.50

TOTAL $ 34,923.60

Respectfully submitted
MASTER MINERAL RESOURCE SERVICES LTD.

November 18, 1994
Calgary, Alberta

Pilsum P. Master, M.Sc., P.Geol.

REFERENCES:

HOY, T.; VAN DER HEYDEN, P.; 1988; Geochemistry, Geochronology, and Tectonic Implications of two Quartz Monzonite Intrusions, Purcell Mountains, Southeastern British Columbia; Canadian Journal of Earth Science, *vol.25*, pp. 106-115.

LAMB, A.T., SMITH, D.W.; 1962; Refraction Profiles Over the Southern Rocky Mountain Trench Area of B.C.; Journal of the Alberta Society of Petroleum Geologists, *vol.10, no.7*, pp. 428-437.

LEECH, G.B., 1962; Structure of the Bull River Valley near Latitude 49° 35'; Journal of the Alberta Society of Petroleum Geologists; *vol.10, no.7*, pp. 396-407.

LEECH, G.B., 1960; Map 11 - 1960; Geology, Fernie (West Half), British Columbia; Geological Survey of Canada.

LEECH, G.B., 1958; Fernie, Map-Area, West Half, British Columbia; Geological Survey of Canada, Paper 58-10.

LEFOND, S.J., 1983; Industrial Minerals and Rocks, 5th Edition, Society of Mining Engineers, AIME.

MASTER, P. P., 1991; Dighem Airborne Survey on the Steeples Claim Block and portion of the Aspen Claim Block, Assessment report filed for R.H. Stanfield.

McMECHAN, M.E., 1981; The Middle Proterozoic Purcell Supergroup in the Southwestern Rocky and Southeastern Purcell Mountains, B.C. and the Initiation of the Cordilleran Miogeosyncline, Southern Canada and adjacent United States; Bulletin of Canadian Petroleum Geology, *vol.29, no.4*, pp. 583-621.

McMECHAN, M.E.; 1978; Geology of the Mount Fisher-Sand Creek Area, Southeastern B.C.; Notes and Preliminary Map 34; Ministry of Energy, Mines and Petroleum Resources, B.C.

McMECHAN, M.E., PRICE, R.A.; 1982; Transverse Folding and Superimposed Deformation, Mount Fisher Area, Southern Canadian Rocky Mountain Thrust and Fold Belt; Canadian Journal of Earth Sciences; *vol.19, no.5;* pp.1011-1024.

THOMPSON, T.L.; 1962; Origin of the Rocky Mountain Trench in Southeastern British Columbia by Cenozoic Block Faulting; Journal of the Alberta Society of Petroleum Geologists; *vol.10, no.7*, pp.408-427.

STATEMENT OF QUALIFICATION:

I Pilsum Master of 32 Midpark Gardens S.E., Calgary, Alberta certify that:

I am a graduate of the University of Bombay, India, and a graduate of the University of New Mexico, U.S.A., and hold the following degrees therefrom:

B.Sc., 1963, Geology/Chemistry
M.Sc., 1965, Geology
M.Sc., 1968, Geology/Mineralogy

I am a registered Professional Geologist (Association of Professional Engineers, Geologists and Geophysicists of Alberta), and a member of the American Institute of Mining, Metallurgical and Processing Engineers.

I have practised my profession for the past twenty five years, including ten years in the geology, material characterization, process and product research of a range of industrial minerals.

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 covering report on the feldspar potential is based on my direct involvement in the research, planning, examination of drill core, drill cuttings, outcrops, planning and choice of determining chemical properties and petrographic analysis, and subsequent compilation and analysis of the data.

PERMIT TO PRACTICE
MASTER MINERAL RESOURCE SERVICES LTD.
Signature _____
Date Nov 22, 94
PERMIT NUMBER: P 5336
The Association of Professional Engineers, Geologists and Geophysicists of Alberta

Pilsum Master M.Sc., P.Geol.

CERTIFICATE

November 21, 1994

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 provinces of Alberta, British Columbia and Ontario, Canada and have been practising my profession for the past thirty years.

This Report by Mr. P. Master P.Geol. (Alb), entitled "Investigation of Commercial Feldspar Resource on the Aspen #9, #10, #11 and #12 Claims" of the R.H. Stanfield Group, Fort Steele Mining Division, British Columbia, has been reviewed by me and results from my direct project involvement for 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.

Phil D. de Souza, A.C.S.M., P.Eng.
Mining Engineer

APPENDIX A

PETROGRAPHY
VANCOUVER PETROGRAPHICS LTD.

Vancouver Petrographics Ltd.

8080 GLOVER ROAD, LANGLEY, B.C. V3A 4P9
PHONE (604) 888-1323 • FAX (604) 888-3642

Report for: Pilsum Master,
Master Mineral Resource Services Ltd.,
32 Midpark Gardens S.E.,
CALGARY, Alberta
T2X 1N7

Job 9430529

October 31st, 1994

SAMPLES:

8 core samples, numbered 4901 - 05, 4907, 4909 and 4914, were submitted by Terramin Research Labs with a request for petrographic descriptions. Typical portions of each sample were prepared for examination as polished thin sections.

SUMMARY:

These rocks are quartz-free, feldspar-rich porphyries of intrusive aspect. They are made up of euhedral phenocrysts of andesine in a relatively coarse, granular/interlocking groundmass of feldspar and accessory mafics (hornblende and/or pyroxene). The latter show varying degrees of alteration to epidote, carbonate and chlorite. The plagioclase phenocrysts typically show mild pervasive alteration (flecking with sericite, epidote or carbonate, and occasional ore replacement by possible clinozoisite), but the groundmass feldspars are fresh.

Two rock types are represented. Samples 4901, 4902 and 4914 have strongly potassic groundmasses, and are classifiable as monzonites. The remaining samples contain only very minor K-feldspar, and have the composition of diorites. Sample 4904 is somewhat transitional in type. Apart from the variation in K-spar content, and the fact that the mafics in the diorites are essentially totally altered to epidote and carbonate, all the rocks of the suite are strikingly similar.

In response to your specific queries:

a) No nepheline or other feldspathoids were recognized

b) Plagioclase phenocrysts are andesine. Groundmass K-spar (where present) is orthoclase. For proportions see individual descriptions.

c) All the samples are devoid of quartz.

d) Matrix material consists of fresh feldspars plus pyroxene and/or hornblende - the mafics often being strongly altered. The groundmasses are holocrystalline and relatively coarsely granular - hence the question of devitrification is not applicable.

e) Opaques consist of minor disseminated magnetite, sometimes partially hematized, plus traces of pyrite.

f) Inclusions in feldspar phenocrysts? Flecking by various alteration minerals is prevalent; also sometimes traces of included chlorite.

g) Carbonate occurs in abundances of 1 - 8%. It shows minimal reaction with dilute acid, and appears to be mainly dolomite or ankerite.

Individual petrographic descriptions are attached.

J.F. Harris Ph.D.

(929-5867)

SAMPLE 4901 **MONZONITE PORPHYRY**

Estimated mode

Plagioclase	48
K-feldspar	37
Sericite	2
Clinozoisite	1
Amphibole	3
Pyroxene	4
Biotite)	1
Chlorite)	
Epidote	1
Sphene	trace
Apatite	trace
Zeolite	1
Carbonate	1
Fe oxides)	1
Rutile)	

This is a strongly porphyritic feldspathic rock, consisting of prismatic phenocrysts of plagioclase, 1.0 - 10.0mm in size, scattered through a K-rich groundmass (see stained off-cut).

The plagioclase phenocrysts make up an estimated 35% of the rock. They have a composition (based on twinning extinction angles and R.I.) of andesine. They show mild pervasive alteration, in the form of disseminations of tiny flecks of sericite and occasional epidote and, in a few cases, by a distinctive development of patches and core replacements of a bladed mineral of uncertain identity, tentatively identified as clinozoisite.

The groundmass consists dominantly of a granular intergrowth of blocky, euhedral-subhedral plagioclase and K-feldspar, of grain size 50 - 500 microns. The K-spar tends to be the coarser of the two components, and sometimes incorporates small prisms of the plagioclase. The groundmass feldspars are fresh, except for a mild overall turbidity.

Mafics appear to consist of amphibole and pyroxene. The amphibole occurs as a few microgranular clumps, up to several mm in size, and as occasional individual, elongate/prismatic phenocrysts to 1mm. The pyroxene occurs as smaller, stumpy to elongate grains, 0.1 - 0. 5mm in size, as an accessory in the groundmass. Both mafic silicates show partial alteration to olive-brown secondary products (chlorite/biotite) and epidote.

Other accessory constituents are tiny euhedra of apatite, irregular to subhedral grains of sphene, and evenly disseminated, small, equant euhedra, 20 - 100 microns in size, of Fe oxides. The latter appear mainly to be partially hematized magnetite, but a little rutile is often associated.

The remaining components of the rock are one or two irregular pockets of sparry carbonate (rimmed by thin zones of clinozoisite alteration in the bounding feldspar), and others infilled by zeolite.

SAMPLE 4902 **MONZONITE PORPHYRY**

Estimated mode

Plagioclase	38
K-feldspar	42
Sericite	4
Clinozoisite	trace
Hornblende	8
Pyroxene	6
Epidote	0.5
Carbonate	0.5
Apatite	trace
Sphene	trace
Fe oxides	1
Pyrite	trace

The macroscopic appearance of this sample in the stained off-cut is essentially identical to that of 4901. Thin section examination confirms the similarity.

Phenocrysts make up about 35% of the rock. They consist mainly of euhedral-subhedral plagioclase, 1 - 5mm in size. They show mild pervasive alteration in the form of evenly disseminated, tiny flakes of sericite. Rare examples are also seen of the development of irregular patches of probable clinozoisite in the plagioclase.

The groundmass is a blocky intergrowth of K-feldspar (orthoclase, occasionally somewhat perthitic) as turbid subhedral grains to 0.5mm in size. Plagioclase occurs as an intergrown accessory component of smaller euhedra, often wholly or partly incorporated within the K-spar.

Mafics are again amphibole (olive green hornblende) and colourless pyroxene. These occur as occasional small phenocrysts, to 1.5mm in size, often skeletal in habit, and as one elongate glomero-phenocryst, 15mm in size, made up of a cluster of small euhedra of hornblende and pyroxene. This is readily seen in the off-cut block as a prominent elongate greenish area. Pyroxene also occurs as an accessory component of the groundmass, in the form of smaller, prismatic to irregular grains.

Both hornblende and pyroxene are notably fresh in this sample.

Randomly scattered trace accessories are euhedral apatite, sphene, and disseminated, tiny (10 - 80 micron) equant grains of partially hematized magnetite. Rare traces of similar-sized pyrite are also seen.

SAMPLE 4903 **DIORITE PORPHYRY**

Estimated mode

Plagioclase	80
K-feldspar	2
Sericite	2
Epidote	5
Clinozoisite	1
Carbonate	6
Chlorite	4
Apatite	trace
Sphene	trace
Pyrite	trace

This rock is clearly differentiated from the previous two samples by the non-potassic character of its groundmass (white etched rather than yellow stained in the off-cut).

In other respects it shows striking similarity to 4901 and 4902. It is a feldspar-rich rock in which phenocrysts make up about 40%. They consist of subhedral-euhedral plagioclase (of andesine composition), 1 - 5mm in size. They show mild alteration in the form of light fleckings of sericite, epidote and carbonate.

The stained off-cut suggests that a few of the phenocrysts show minor modification to flecks or zonal areas of K-feldspar, but this effect is not recognizable in the thin section. However, one or two of the phenocrysts show strong development of irregular cores of the material tentatively identified as clinozoisite in earlier samples.

The groundmass is a blocky aggregate of interlocking subhedral-anhedral grains of fresh plagioclase, 100 - 700 microns in size. It originally contained about 10% accessory mafics, of comparable grain size to the feldspar, but these are now totally altered to ragged clumps of carbonate, epidote and chlorite (in various proportions).

The rock contains traces of apatite and sphene, but is notably devoid of the disseminated oxides seen in the monzonites. Extremely rare pyrite occurs as scattered, tiny (10 - 50 micron) grains.

A few discrete pockets of radiate epidote and/or sparry carbonate are present.

SAMPLE 4905 **DIORITE PORPHYRY**

Estimated mode

Plagioclase	80
K-feldspar	2
Sericite	trace
Clinozoisite	1
Epidote	6
Carbonate	7
Chlorite	3
Sphene	0.5
Apatite	trace
Pyrite	trace

This is a rock of similar type to 4903.

Examination of the off-cut shows that the plagioclase phenocrysts are substantially less abundant (estimated 25%) than in most rocks of the suite, though of a similar size range. They tend to be delineated in the off-cut by dustings or rims of more potassic (yellow stained) composition.

In thin section the phenocrysts are found to exhibit varying degrees of pervasive alteration, mainly in the form of flecks of epidote. In a few cases these are abundant. Some phenocrysts also show ragged core replacement by probable clinozoisite, as noted in other samples of the suite.

The groundmass is a blocky, interlocking aggregate of subhedral plagioclase, 0.05 - 0.6mm in size. This contains a relatively high proportion of accessory mafics, now totally altered to intergrowths of carbonate, epidote and chlorite.

Trace accessories are sphene (relatively coarse and abundant), apatite, and rare tiny euhedra of pyrite. As in 4903, disseminated oxides are absent.

The rock is cut by a few hairline veinlets of carbonate and minor epidote, and carbonate is also seen as a few network patches of intergranular impregnation in the groundmass.

This sample shows a somewhat higher degree of alteration than most rocks of the suite.

SAMPLE 4907 **DIORITE PORPHYRY**

Estimated mode

Plagioclase	80
K-feldspar	2
Sericite	trace
Epidote	11
Pyroxene	1
Carbonate	4
Chlorite	1
Sphene	0.5
Fe oxides	0.5
Pyrite	trace

Examination of the off-cut shows that this rock is very similar to 4903 and 4905, consisting of mildly potassic-flecked phenocrysts of plagioclase in a plagioclase groundmass. The latter appears to have a higher content, and/or coarser development, of altered mafics than the earlier samples.

Plagioclase phenocrysts make up about 30% of the rock, and range up to about 6mm in size. Thin section examination show that they are of andesine composition, and exhibit a similar level of mild pervasive alteration (c. 5 - 10% overall) to those in previous samples. This is expressed as an even flecking of small discrete grains of epidote and chlorite. The virtual absence of sericite alteration is notable.

The groundmass is a blocky/interlocking, saccharoidal aggregate of subhedral-anhedral plagioclase, of grain size 0.1 - 0. 7mm. Accessory mafics are almost totally altered to intergrowths of epidote and lesser carbonate. Traces of relict pyroxene are occasionally distinguishable, indicating the original mineralogic form of the mafics. The rock contains rather abundant epidote, including scattered, irregular/elongate concentrations of coarsely bladed material (with intergrown carbonate) up to 3mm in size, which possibly represent totally altered mafic phenocrysts.

Trace accessories are sphene, as subhedral grains to 0.5mm, and sparsely disseminated, fine-grained, hematized magnetite and rare pyrite, as grains 10 - 50 microns in size.

SAMPLE 4909 **DIORITE PORPHYRY**

Estimated mode

Plagioclase	77
K-feldspar	trace
Pyroxene	1
Epidote	12
Clinozoisite	trace
Carbonate	7
Chlorite	0.5
Sphene	1
Apatite	trace
Magnetite	1

This sample is another of the non-potassic feldspar porphyries which are the dominant lithotype in the suite.

In all essential respects it is identical to samples 4903, 4905 and 4907. It consists predominantly of randomly oriented plagioclase phenocrysts, 1 - 5mm in size, in a groundmass of the same mineral. Phenocrysts make up about 25-30% of the rock.

The plagioclase phenocrysts show only very mild pervasive alteration - in the form of a sparse flecking (estimated c. 2% overall) of tiny grains of epidote. They sometimes also contain tiny included flecks of chlorite. A few examples were seen of patchy core replacement by probable clinozoisite.

The groundmass is a blocky/interlocking aggregate of subhedral-anhedral grains of plagioclase, 50 - 500 microns in size. Incorporation of tiny, better formed grains within larger ones is a common textural feature. 10-20% of the groundmass consists of elongate/irregular and skeletal grains of accessory mafics. These are largely altered to mixtures of epidote and carbonate, but remnants of original pyroxene are occasionally recognizable. Rare pockety segregations of radiate epidote and sparry carbonate are present.

Sphene is a relatively abundant minor accessory. This sample also contains sparse, evenly disseminated, tiny, equant grains of magnetite, 10 - 70 microns in size.

SAMPLE 4914 **MONZONITE PORPHYRY**

Estimated mode

Plagioclase	38
K-feldspar	50
Hornblende	5
Pyroxene	4
Chlorite	0.5
Epidote	trace
Carbonate	0.5
Sphene	trace
Apatite	trace
Magnetite	2
Pyrite	trace

The strong yellow cobaltinitrite stain developed in the groundmass of this sample (see off-cut block) indicates that it is of potassic composition. The prominently porphyritic character of the rock suggests a close similarity to Samples 4901 and 4902.

Euhedral phenocrysts of plagioclase (andesine), 1 - 5mm in size, make up an estimated 25-30% of the rock. These often show incipient modification to K-feldspar, as irregular, semi-coalescent flecks and networks.

The plagioclase phenocrysts show only very mild alteration (less than in 4901 and 4902), manifested as a sparse dusting of tiny flecks of sericite and carbonate.

The groundmass is similar to that of the other two monzonites, consisting of a blocky intergrowth of subhedral K-feldspar, up to 0.5mm in size, with intergrown accessory plagioclase as smaller euhedral grains.

Mafics consist of hornblende and pyroxene. Fresh hornblende occurs as rare skeletal phenocrysts to 2mm in size. The pyroxene forms smaller prismatic grains scattered throughout the groundmass.

The pyroxene is partially altered to chlorite, epidote or carbonate. Small pockets of chlorite in the groundmass may represent the total alteration of a minor component of hornblende.

Apatite, sphene and Fe oxides are trace to minor constituents, as in the other rocks of this type in the suite. Fe oxides (equant euhedra 20 -80 microns in size) tend to be rather more abundant in this sample than in the other monzonites; they consist of fresh (unhematized) magnetite.

SAMPLE 4904 **DIORITE PORPHYRY**

Estimated mode

Plagioclase	76
K-feldspar	10
Sericite	trace
Clinozoisite	trace
Pyroxene	6
Epidote	4
Biotite)	2
Cchlorite)	
Carbonate	1
Sphene	trace
Apatite	trace
Fe oxides	0.5
Pyrite	trace

This sample is a feldspathic porphyry of generally similar type to the rest of the suite. It does not have the K-rich groundmass which distinguishes the monzonite sub-group (see off-cut), but it does contain a signficantly higher proportion of dispersed K-spar than the other rocks of the diorite sub-group, and may represent a transitional variety.

Phenocrysts of euhedral plagioclase made up about 25% of the rock. They appear to be of slightly smaller average size than in most of the samples, mainly being between 1 and 4mm. They show the usual sparse speckling of fine-grained epidote, plus traces of sericite. A few have patchy core replacements by the possible clinozoisite.

The plagioclase phenocrysts often incorporate recognizable fine-grained, patchy/mottled intergrowths of K-feldspar - probably representing a late magmatic modification (recognizable as dustings of yellow stain on the off-cut block) .

The groundmass is the usual blocky/interlocking aggregate of subhedral-anhedral plagioclase grains, 100 - 500 microns in size. The presence of dispersed accessory K-spar, with a tendency to concentrate marginal to the phenocrysts (see stained off-cut), is not clearly recognizable in thin section. However, a few of the larger plagioclase grains do show incipient perthitic texture (micro-scale intergrowths of K-spar).

Mafic accessories in the groundmass amount to about 10%. They occur as small granules and elongate prismatic crystals, 0.1 - 0. 5mm in size (rarely to 1.0mm). They consist of colourless pyroxene, more or less strongly altered to epidote and brown ferruginous material (chlorite/biotite). Carbonate is less abundant than in other diorite samples.

Opaques consist of sparse disseminations of tiny equant grains of partially hematized magnetite, plus rare traces of pyrite.

APPENDIX B

LOGS OF PERCUSSION DRILL HOLES A10-1-94 & A11-1-94:

HOLE NO. A10-1-94 PROPERTY: Aspen Claim #10
COLLAR ELEV. 833 metres DIP: -90^0 @ collar DEPTH: 91.meters
COMMENCED: 28/07/94 COMPLETED: 29/07/94
RIG MODEL: Ingersoll Rand truck mounted Rotary/Percussion Drill Rig
DRILLER/HELPER/COMPANY: Darcy Schmidt/Bruce Watt/Wayne Giesenger/
Schmidt Drilling Ltd., P.O. Box 98, Tees,Alberta T0C 2N0
LOGGED BY: P. Master SAMPLED BY: P. Master DATE: September 14,15, 1994

DRILL HOLE: A10-1-94

CUTTINGS FROM	CUTTINGS TO(METRES)	WIDTH	DESCRIPTION	COMPOSITE SAMPLE #	FROM	TO (METRES)
0.00	10.48	10.48	Casing			
10.48	10.91	0.43	Syenite			
10.91	11.52	0.61	Syenite			
11.52	12.12	0.61	Syenite			
12.12	12.73	0.61	Syenite			
12.73	13.33	0.61	Syenite			
13.33	13.94	0.61	Syenite			
13.94	14.55	0.61	Syenite			
14.55	15.15	0.61	Syenite			
15.15	15.76	0.61	Syenite			
15.76	16.36	0.61	Syenite			
16.36	16.97	0.61	Syenite			
16.97	17.58	0.61	Syenite			
17.58	18.18	0.61	Syenite			
18.18	18.79	0.61	Syenite			
18.79	19.39	0.61	Syenite			
19.39	20.00	0.61	Syenite			
20.00	20.61	0.61	Syenite			
20.61	21.21	0.61	Syenite			
21.21	21.82	0.61	Syenite			
21.82	22.42	0.61	Syenite	4866	10.48	22.42
22.43	23.03	0.61	Syenite,green feldspar phenocrysts			
23.03	23.64	0.61	Syenite,green feldspar phenocrysts			
23.64	24.24	0.61	Syenite,green feldspar phenocrysts			
24.24	24.85	0.61	Syenite,green feldspar phenocrysts			
24.85	25.45	0.61	Syenite,green feldspar phenocrysts			
25.46	26.06	0.61	Syenite,green feldspar phenocrysts			
26.06	26.67	0.61	Syenite,green feldspar phenocrysts			
26.67	27.27	0.61	Syenite,green feldspar phenocrysts			
27.27	27.88	0.61	Syenite,green feldspar phenocrysts			
27.88	28.48	0.61	Syenite,green feldspar phenocrysts			
28.49	29.09	0.61	Syenite,green feldspar phenocrysts			
29.09	29.70	0.61	Syenite,green feldspar phenocrysts			
29.70	30.30	0.61	Syenite,green feldspar phenocrysts			
30.30	30.91	0.61	Syenite,green feldspar phenocrysts			
30.91	31.52	0.61	Syenite,green feldspar phenocrysts			
31.52	32.12	0.61	Syenite,green feldspar phenocrysts			
32.12	32.73	0.61	Syenite,green feldspar phenocrysts			
32.73	33.33	0.61	Syenite,green feldspar phenocrysts			
33.33	33.94	0.61	Syenite,green feldspar phenocrysts			
33.94	34.55	0.61	Syenite,green feldspar phenocrysts	4867	22.42	34.55
34.55	35.15	0.61	Syenite,blue-green			
35.15	35.76	0.61	Syenite,blue-green			
35.76	36.36	0.61	Syenite,blue-green			
36.36	36.97	0.61	Syenite,blue-green			
36.97	37.58	0.61	Syenite,blue-green			
37.58	38.18	0.61	Syenite,blue-green			
38.18	38.79	0.61	Syenite,blue-green			
38.79	39.39	0.61	Syenite,blue-green			
39.39	40.00	0.61	Syenite,blue-green	4868	34.55	40.00
40.00	40.61	0.61	Syeno-diorite, bluish			
40.61	41.21	0.61	Syeno-diorite, bluish			
41.21	41.82	0.61	Syeno-diorite, bluish			
41.82	42.42	0.61	Syeno-diorite, bluish			
42.43	43.03	0.61	Syenite			
43.03	43.64	0.61	Syenite			

CUTTINGS FROM	CUTTINGS TO(METRES)	WIDTH	DESCRIPTION	COMPOSITE SAMPLE #	FROM	TO (METRES)
43.64	44.24	0.61	Syenite			
44.24	44.85	0.61	Syenite			
44.85	45.45	0.61	Syenite			
45.46	46.06	0.61	Syenite			
46.06	46.67	0.61	Syenite			
46.67	47.27	0.61	Syenite			
47.27	47.88	0.61	Syenite			
47.88	48.48	0.61	Syenite			
48.49	49.09	0.61	Syenite			
49.09	49.70	0.61	Syenite			
49.70	50.30	0.61	Syenite			
50.30	50.91	0.61	Syenite			
50.91	51.52	0.61	Syenite			
51.52	52.12	0.61	Syenite	4869	40.00	52.12
52.12	52.73	0.61	Syenite			
52.73	53.33	0.61	Syenite,partly blue			
53.33	53.94	0.61	Syenite,partly blue			
53.94	54.55	0.61	Syenite,partly blue			
54.55	55.15	0.61	Syenite,partly blue			
55.15	55.76	0.61	Syenite,partly blue			
55.76	56.36	0.61	Syenite,partly blue			
56.36	56.97	0.61	Syenite,partly blue			
56.97	57.58	0.61	Syenite,partly blue			
57.58	58.18	0.61	Syenite,partly blue			
58.18	58.79	0.61	Syenite, partly green			
58.79	59.39	0.61	Syenite, partly green			
59.39	60.00	0.61	Syenite, partly green			
60.00	60.61	0.61	Syenite, partly green			
60.61	61.21	0.61	Syenite, partly green			
61.21	61.82	0.61	Syenite, partly green			
61.82	62.42	0.61	Syenite, partly green			
62.43	63.03	0.61	Syenite, partly green			
63.03	63.64	0.61	Syenite, partly green			
63.64	64.24	0.61	Syenite, partly green			
64.24	64.85	0.61	Syenite, partly green			
64.85	65.45	0.61	Syenite, partly green			
65.46	66.06	0.61	Syenite, partly green			
66.06	66.67	0.61	Syenite, partly green			
66.67	67.27	0.61	Syenite, partly green			
67.27	67.88	0.61	Syenite, partly green			
67.88	68.48	0.61	Syenite, partly green			
68.49	69.09	0.61	Syenite, partly green			
69.09	69.70	0.61	Syenite, partly green			
69.70	70.30	0.61	Syenite, partly green			
70.30	70.91	0.61	Syenite, partly green	4870	52.12	70.91
70.91	71.52	0.61	Syenite, partly green			
71.52	72.12	0.61	Syenite, partly green			
72.12	72.73	0.61	Syenite, partly green			
72.73	73.33	0.61	Syenite, partly green			
73.33	73.94	0.61	Syenite, partly green			
73.94	74.55	0.61	Syenite, partly green			
74.55	75.15	0.61	Syenite, partly green			
75.15	75.76	0.61	Syenite, partly green			
75.76	76.36	0.61	Syenite, partly green			
76.36	76.97	0.61	Syenite,red + dark frags			
76.97	77.58	0.61	Syenite,red + dark frags			
77.58	78.18	0.61	Syenite,red + dark frags			
78.18	78.79	0.61	Syenite,red + dark frags			
78.79	79.39	0.61	Syenite,red + dark frags			
79.39	80.00	0.61	Syenite,red + dark frags			

CUTTINGS FROM	CUTTINGS TO(METRES)	WIDTH	DESCRIPTION	COMPOSITE SAMPLE #	FROM	TO (METRES)
80.00	80.61	0.61	Syenite,red + dark frags			
80.61	81.21	0.61	Syenite,red + dark frags			
81.21	81.82	0.61	Syenite, partly green			
81.82	82.42	0.61	Syenite, partly green			
82.43	83.03	0.61	Syenite, partly green			
83.03	83.64	0.61	Syenite, partly green			
83.64	84.24	0.61	Syenite, partly green			
84.24	84.85	0.61	Syenite, partly green			
84.85	85.45	0.61	Syenite, partly green			
85.46	86.06	0.61	Syenite, partly green			
86.06	86.67	0.61	Syenite, partly green			
86.67	87.27	0.61	Syenite, partly green			
87.27	87.88	0.61	Syenite, partly green			
87.88	88.48	0.61	Syenite			
88.49	89.09	0.61	Syenite			
89.09	89.70	0.61	Syenite			
89.70	90.30	0.61	Syenite			
90.30	90.91	0.61	Syenite			
90.91	91.52	0.61	Syenite, partly green END OF HOLE (WATERED OUT)	4871	70.91	91.52

HOLE NO. A11-1-94 PROPERTY: Aspen Claim #11
COLLAR ELEV. 833 metres DIP: -90° @ collar DEPTH: 109.metres
COMMENCED: 26/07/94 COMPLETED: 27/07/94
RIG MODEL: Ingersoll Rand truck mounted Rotary/Percussion Drill Rig
DRILLER/HELPER/COMPANY: Darcy Schmidt/Bruce Watt/Wayne Giesenger/
Schmidt Drilling Ltd., P.O. Box 98, Tees,Alberta T0C 2N0
LOGGED BY: P. Master SAMPLED BY: P. Master DATE: September 15, 16, 1994

DRILL LOG A11-1-94

CUTTINGS FROM	CUTTINGS TO(METRES)	WIDTH	DESCRIPTION	COMPOSITE SAMPLE #	FROM	TO (METRES)
0.00	5.63	5.63	Casing			
5.63	7.27	1.64	Syenite			
7.27	7.88	0.61	Syenite			
7.88	8.48	0.61	Syenite			
8.48	9.09	0.61	Syenite			
9.09	9.70	0.61	Syenite			
9.70	10.30	0.61	Syenite			
10.30	10.91	0.61	Syenite			
10.91	11.52	0.61	Syenite			
11.52	12.12	0.61	Syenite			
12.12	12.73	0.61	Syenite			
12.73	13.33	0.61	Syenite			
13.33	13.94	0.61	Syenite			
13.94	14.55	0.61	Syenite			
14.55	15.15	0.61	Syenite			
15.15	15.76	0.61	Syenite			
15.76	16.36	0.61	Syenite			
16.36	16.97	0.61	Syenite			
16.97	17.58	0.61	Syenite			
17.58	18.18	0.61	Syenite			
18.18	18.79	0.61	Syenite			
18.79	19.39	0.61	Syenite			
19.39	20.00	0.61	Syenite			
20.00	20.61	0.61	Syenite			
20.61	21.21	0.61	Syenite			
21.21	21.82	0.61	Syenite			
21.82	22.42	0.61	Syenite			
22.42	23.03	0.61	Syenite			
23.03	23.64	0.61	Syenite			
23.64	24.24	0.61	Syenite	4872	5.63	24.24
24.24	24.85	0.61	Syenite, slightly Fe stained			
24.85	25.45	0.61	Syenite, slightly Fe stained			
25.45	26.06	0.61	Syenite, slightly Fe stained			
26.06	26.67	0.61	Syenite, slightly Fe stained			
26.67	27.27	0.61	Syenite, slightly Fe stained			
27.27	27.88	0.61	Syenite, slightly Fe stained			
27.88	28.48	0.61	Syenite, slightly Fe stained			
28.48	29.09	0.61	Syenite, slightly Fe stained			
29.09	29.70	0.61	Syenite, slightly Fe stained			
29.70	30.30	0.61	Syenite, slightly Fe stained			
30.30	30.91	0.61	Syenite, slightly Fe stained			
30.91	31.52	0.61	Syenite, slightly Fe stained			
31.52	32.12	0.61	Syenite, slightly Fe stained			
32.12	32.73	0.61	Syenite, slightly Fe stained			
32.73	33.33	0.61	Syenite, blue			
33.33	33.94	0.61	Syenite, blue			
33.94	34.55	0.61	Syenite, blue			
34.55	35.15	0.61	Syenite, blue			
35.15	35.76	0.61	Syenite, blue			
35.76	36.36	0.61	Syenite, blue			
36.36	36.97	0.61	Syenite, blue			
36.97	37.58	0.61	Syenite, blue			
37.58	38.18	0.61	Syenite, blue			
38.18	38.79	0.61	Syenite, blue			
38.79	39.39	0.61	Syenite, blue			
39.39	40.00	0.61	Syenite, blue			

DRILL LOG A11-1-94

CUTTINGS FROM	CUTTINGS TO(METRES)	WIDTH	DESCRIPTION	COMPOSITE SAMPLE #	FROM	TO (METRES)
40.00	40.61	0.61	Syenite, blue			
40.61	41.21	0.61	Syenite, blue			
41.21	41.82	0.61	Syenite, blue			
41.82	42.42	0.61	Syenite, blue	4873	24.24	42.42
42.42	43.03	0.61	Syenite, slightly blue			
43.03	43.64	0.61	Syenite, slightly blue			
43.64	44.24	0.61	Syenite, slightly blue			
44.24	44.85	0.61	Syenite, slightly blue			
44.85	45.45	0.61	Syenite, slightly blue			
45.45	46.06	0.61	Syenite, slightly blue			
46.06	46.67	0.61	Syenite, slightly blue			
46.67	47.27	0.61	Syenite, slightly blue			
47.27	47.88	0.61	Syenite, slightly blue			
47.88	48.48	0.61	Syenite, slightly blue			
48.48	49.09	0.61	Syenite, slightly blue			
49.09	49.70	0.61	Syenite, slightly blue			
49.70	50.30	0.61	Syenite, slightly blue			
50.30	50.91	0.61	Syenite, slightly blue			
50.91	51.52	0.61	Syenite, slightly blue			
51.52	52.12	0.61	Syenite, slightly blue			
52.12	52.73	0.61	Syenite, slightly blue			
52.73	53.33	0.61	Syenite, slightly blue			
53.33	53.94	0.61	Syenite, slightly blue			
53.94	54.55	0.61	Syenite, slightly blue			
54.55	55.15	0.61	Syenite, slightly blue	4874	42.42	55.15
55.15	55.76	0.61	Syenite, slightly blue			
55.76	56.36	0.61	Syenite, slightly blue			
56.36	56.97	0.61	Syenite, slightly blue			
56.97	57.58	0.61	Syenite, slightly blue			
57.58	58.18	0.61	Syenite, slightly blue			
58.18	58.79	0.61	Syenite, slightly blue			
58.79	59.39	0.61	Syenite, slightly blue			
59.39	60.00	0.61	Syenite, slightly blue			
60.00	60.61	0.61	Syenite, slightly blue			
60.61	61.21	0.61	Syenite, slightly blue			
61.21	61.82	0.61	Syenite, slightly blue			
61.82	62.42	0.61	Syenite, slightly blue			
62.42	63.03	0.61	Syenite, slightly blue			
63.03	63.64	0.61	Syenite, slightly blue			
63.64	64.24	0.61	Syenite, slightly blue			
64.24	64.85	0.61	Syenite, slightly blue			
64.85	65.45	0.61	Syenite, slightly blue			
65.45	66.06	0.61	Syenite, slightly blue			
66.06	66.67	0.61	Syenite, slightly blue			
66.67	67.27	0.61	Syenite, slightly green			
67.27	67.88	0.61	Syenite, slightly green			
67.88	68.48	0.61	Syenite, slightly green			
68.48	69.09	0.61	Syenite, slightly green			
69.09	69.70	0.61	Syenite, slightly green			
69.70	70.30	0.61	Syenite, slightly green			
70.30	70.91	0.61	Syenite, slightly green			
70.91	71.52	0.61	Syenite, slightly green			
71.52	72.12	0.61	Syenite, slightly green			
72.12	72.73	0.61	Syenite, slightly green			
72.73	73.33	0.61	Syenite, slightly green			
73.33	73.94	0.61	Syenite, slightly green			
73.94	74.55	0.61	Syenite, slightly green			
74.55	75.15	0.61	Syenite, slightly green			
75.15	75.76	0.61	Syenite, slightly green			
75.76	76.36	0.61	Syenite, slightly green	4878	55.15	76.36

DRILL LOG A11-1-94

CUTTINGS FROM	CUTTINGS TO(METRES)	WIDTH	DESCRIPTION	COMPOSITE SAMPLE #	FROM	TO (METRES)
76.36	76.97	0.61	Syenite,blue-green			
76.97	77.58	0.61	Syenite,blue-green			
77.58	78.18	0.61	Syenite,blue-green			
78.18	78.79	0.61	Syenite,blue-green			
78.79	79.39	0.61	Syenite,blue-green			
79.39	80.00	0.61	Syenite			
80.00	80.61	0.61	Syenite			
80.61	81.21	0.61	Syenite			
81.21	81.82	0.61	Syenite			
81.82	82.42	0.61	Syenite			
82.42	83.03	0.61	Syenite, some quartz(?)			
83.03	83.64	0.61	Syenite, some quartz(?)			
83.64	84.24	0.61	Syenite, some green			
84.24	84.85	0.61	Syenite, some green			
84.85	85.45	0.61	Syenite, some green			
85.45	86.06	0.61	Syenite, some green			
86.06	86.67	0.61	Syenite, some green			
86.67	87.27	0.61	Syenite, some green			
87.27	87.88	0.61	Syenite, some green			
87.88	88.48	0.61	Syenite, some Fe staining			
88.48	89.09	0.61	Syenite, some Fe staining			
89.09	89.70	0.61	Syenite, some Fe staining			
89.70	90.30	0.61	Syenite, some Fe staining			
90.30	90.91	0.61	Syenite, some Fe staining			
90.91	91.52	0.61	Syenite, some Fe staining			
91.52	92.12	0.61	Syenite, some Fe staining			
92.12	92.73	0.61	Syenite, some Fe staining	4875	76.36	92.73
92.73	93.33	0.61	Syenite, buff coloured			
93.33	93.94	0.61	Syenite, buff coloured			
93.94	94.55	0.61	Syenite, buff coloured			
94.55	95.15	0.61	Syenite, buff coloured			
95.15	95.76	0.61	Syenite, buff coloured			
95.76	96.36	0.61	Syenite, buff coloured			
96.36	96.97	0.61	Syenite, buff coloured			
96.97	97.58	0.61	Syenite, buff coloured			
97.58	98.18	0.61	Syenite, buff coloured			
98.18	98.79	0.61	Syenite, buff coloured			
98.79	99.39	0.61	Syenite, buff coloured			
99.39	100.00	0.61	Syenite, buff coloured			
100.00	100.61	0.61	Syenite, buff coloured			
100.61	101.21	0.61	Syenite, buff coloured			
101.21	101.82	0.61	Syenite, buff coloured			
101.82	102.42	0.61	Syenite, buff coloured			
102.42	103.03	0.61	Syenite, buff coloured			
103.03	103.64	0.61	Syenite, buff coloured	4876	92.73	103.64
103.64	104.24	0.61	Syenite, some green, generally buff			
104.24	104.85	0.61	Syenite, some green, generally buff			
104.85	105.45	0.61	Syenite, some green, generally buff			
105.45	106.06	0.61	Syenite, some green, generally buff			
106.06	106.67	0.61	Syenite, some green, generally buff			
106.67	107.27	0.61	Syenite, some green, generally buff			
107.27	107.88	0.61	Syenite, some green, generally buff			
107.88	108.48	0.61	Syenite, some green, generally buff			
108.48	109.09	0.61	Syenite, some green, generally buff			
109.09	109.70	0.61	Syenite, some green, generally buff	4877	103.64	109.70
			END OF HOLE (WATERED OUT)			

APPENDIX C

ANALYTICAL REPORT

WHOLE ROCK ANALYSIS

TERRAMIN RESEARCH LABS LTD.

TERRAMIN RESEARCH LABS LTD.

ANALYTICAL REPORT

Ross H. Stanfield

Ross Stanfield

cc: Pilsum Master

Date: September 21, 1994

Job No: 94-144

Project:

P.O. No:

14 Core

Signed: _____

14-2235 30th Avenue N.E., Calgary, Alberta,T2E 7C7
Phone (403) 250-9460 Fax (403) 291-7064

TERRAMIN RESEARCH LABS Ltd.

Job#: 94-144

Project:

Sample Number	SiO2 %	Al2O3 %	CaO %	MgO %	Na2O %	K2O %	Fe2O3 %	MnO %	TiO2 %	LOI %	Total %
4901	60.7	17.6	2.938	1.330	6.106	4.567	3.99	0.054	0.23	2.28	99.81
4902	61.0	17.9	3.525	1.224	5.769	5.302	3.30	0.062	0.23	1.08	99.41
4903	62.2	18.1	3.819	0.726	9.166	0.192	2.12	0.049	0.23	3.04	99.72
4904	62.0	17.6	2.532	0.950	6.700	4.037	3.52	0.041	0.23	1.68	99.29
4905	60.5	17.8	4.980	1.096	8.371	0.624	2.70	0.061	0.27	3.44	99.83
4906	60.7	17.8	3.511	1.121	5.190	5.748	3.85	0.052	0.27	1.32	99.56
4907	61.0	17.9	4.225	1.197	8.762	0.290	2.89	0.050	0.25	3.08	99.65
4908	60.3	17.6	3.903	1.298	4.880	6.097	3.52	0.053	0.25	1.80	99.69
4909	60.3	17.2	4.687	1.316	7.616	1.229	3.42	0.061	0.27	3.36	99.46
4910	60.1	17.2	4.141	1.321	4.961	5.615	3.96	0.067	0.27	2.08	99.71
4911	59.7	17.2	4.421	0.696	4.489	5.712	3.43	0.056	0.25	2.88	98.80
4912	59.5	17.2	4.952	1.162	4.260	5.471	3.78	0.063	0.25	3.12	99.71
4913	60.7	17.8	3.987	1.331	4.583	5.133	4.42	0.074	0.23	1.24	99.51
4914	60.7	17.4	4.337	1.268	4.839	4.603	4.28	0.065	0.25	1.80	99.56

Job#: 94-144

Project:

Sample Number	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Cd ppm	Mo ppm
4901	5	3	15	4	4	0	4
4902	9	9	28	3	3	0	4
4903	5	3	11	2	2	0	4
4904	4	5	11	3	4	0	4
4905	2	2	13	2	3	0	3
4906	4	3	12	3	4	0	2
4907	3	3	12	2	3	0	2
4908	5	9	17	4	7	0	3
4909	4	9	17	3	3	0	3
4910	3	7	18	2	5	0	3
4911	5	7	18	2	4	0	3
4912	4	7	18	1	5	0	3
4913	12	9	18	2	6	0	3
4914	5	10	19	1	6	0	4

Sample Number	Ag ppm	Cr ppm	V ppm	Be ppm	Li ppm	Ba ppm	Sr ppm	Rb ppm
4901	0	57	90	3.2	4	1580	626	106
4902	0	50	80	3.1	3	2010	711	135
4903	0	44	60	2.8	10	330	1390	6
4904	0	53	90	4.1	6	1400	697	94
4905	0	46	80	3.1	10	580	1260	16
4906	0	46	90	3.1	7	2800	1310	153
4907	0	46	70	3.2	10	140	1560	9
4908	0	53	90	3.2	8	3030	1770	165
4909	0	68	90	3.4	11	510	1480	29
4910	0	69	90	3	10	2910	1810	159
4911	0	68	90	3.2	8	3520	1580	160
4912	0	53	90	3.2	10	2820	1700	151
4913	0	68	90	3.1	16	2860	1930	146
4914	0	78	80	3.2	12	2360	1830	162

TERRAMIN RESEARCH LABS LTD.

ANALYTICAL REPORT

Ross H. Stanfield

cc: Pilsum Master

Date: October 18, 1994

Job No: 94-159

Project:

P.O. No:

13 Composites

Signed: _____

14-2235 30th Avenue N.E., Calgary, Alberta,T2E 7C7
Phone (403) 250-9460 Fax (403) 291-7064

TERRAMIN RESEARCH LABS Ltd.

Job#: 94-159

Project:

Sample Number	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Cd ppm	Mo ppm
4866	3	4	14	1	2	0.1	2
4867	2	9	5	0	1	0	2
4868	2	3	8	0	3	0	2
4869	7	4	15	1	5	0	2
4870	3	1	16	1	5	0	2
4871	3	2	11	1	5	0	3
4872	7	2	17	0	2	0.2	3
4873	5	2	22	1	5	0	2
4874	5	3	42	1	5	0	2
4875	9	5	13	1	4	0	3
4876	3	3	11	1	4	0	2
4877	3	2	9	1	6	0	3
4878	3	2	18	1	3	0	3

Sample Number	Ag ppm	Cr ppm	V ppm	Be ppm	Li ppm	Ba ppm	Sr ppm	Rb ppm
4866	0.1	44	30	3.0	3	1090	688	56
4867	0.0	33	20	2.9	3	330	265	29
4868	0.1	42	30	3.6	9	650	468	42
4869	0.2	48	70	3.5	6	1800	990	108
4870	0.0	49	80	3.5	6	1800	886	115
4871	0.0	51	70	3.3	5	1690	798	0.95
4872	3.7	49	30	3.1	5	940	555	59
4873	0.8	39	50	3.0	4	1100	536	60
4874	0.7	40	70	3.3	4	1790	722	102
4875	1.1	40	70	2.9	5	1340	1290	72
4876	1.0	40	70	3.1	5	1920	1250	103
4877	0.0	58	70	3.1	6	1930	824	102
4878	0.0	40	70	3.4	5	980	736	51

TERRAMIN RESEARCH LABS Ltd.

Job#: 94-159

Project:

Sample Number	SiO2 %	Al2O3 %	CaO %	MgO %	Na2O %	K2O %	Fe2O3 %	MnO %	TiO2 %	LOI %	Total %
4866	62.9	18.3	3.414	0.643	8.101	2.663	1.40	0.030	0.15	2.20	99.81
4867	63.1	19.8	2.910	0.267	9.813	1.112	0.80	0.012	0.15	1.80	99.80
4868	64.4	18.7	1.483	0.811	8.883	1.711	2.07	0.013	0.15	1.40	99.61
4869	60.7	17.9	3.637	0.962	6.713	3.916	3.32	0.054	0.23	1.40	98.93
4870	60.1	18.5	4.295	1.003	6.416	4.555	3.23	0.066	0.27	1.20	99.65
4871	60.5	18.9	3.903	0.962	6.430	4.121	3.06	0.048	0.27	1.20	99.41
4872	63.5	19.1	1.847	0.431	7.724	2.796	2.00	0.027	0.15	1.20	98.78
4873	61.0	19.5	2.476	0.338	8.223	3.928	2.29	0.040	0.20	1.20	99.11
4874	59.7	19.6	3.819	0.831	6.740	4.338	3.15	0.068	0.23	1.00	99.50
4875	60.3	18.9	3.707	0.579	7.441	3.639	2.83	0.039	0.23	1.80	99.48
4876	61.2	18.5	3.456	0.406	6.201	5.133	2.93	0.037	0.25	1.40	99.50
4877	59.7	18.3	3.693	0.454	6.268	4.868	3.27	0.036	0.23	1.80	98.63
4878	61.6	18.5	3.344	0.552	8.128	2.482	2.76	0.037	0.23	1.40	99.05