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FAIRFIELD MINERALS LTD
ELK PROPERTY, OKANAGAN AREA, B.C.
SIWASH NORTH GOLD VEIN
MOTHER SHOOT

PROPOSED UNDERGROUND EXPLORATION PROGRAM

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109
92

CONCLUSIONS

The estimated mean grade of the Mother Shoot quartz vein is 18 grams gold per metric tonne (samples expanded to 2 m true width). The surface sampling and the drill data indicate that a central zone grading 29 grams per tonne may occur within the vein. The next stage in evaluation of the deposit requires underground development and drilling to confirm the central higher grade zone for a mining reserve and feasibility study.

The vein is narrow in width, less than 70 cm, and varies from 100 m to 150 m in strike length. It is in two sections with similar strike but different dip. The upper portion dips about 25 degrees south, extending 100 m from surface to 1600 m elevation, and the lower section dips at 65 degrees south down to 1430 elevation. The ore shoot is open to depth, and other lower grade shoots are indicated by drilling along strike. It occurs in granitic host rocks that are reported to be competent.

The geological mineral inventory is 214 000 tonnes grading 17.4 g/tonne of which 105 000 tonnes grading 29.5 g/tonne is in the central area. About 40% of the reserve is in the upper gently dipping portion, and 60% is in the lower section of the vein.

RECOMMENDATIONS

1. Drive an access decline to the vein from the portal site proposed by Fairfield, drift east and west on the vein to verify the grades indicated by drilling, and continue the decline into the hangingwall to provide access for drilling the lower part of the vein. The proposed layout is shown on the enclosed plan view of the vein.

2. Store the development muck produced while driving on the vein for later bulk sampling if required. The muck piles should be clearly labelled and stored in order so that individual rounds can be identified.

3. Diamond drill the lower part of the vein on 25 m centres from the hanging wall drift. The proposed layout for the drill holes is shown on the enclosed plan view and sections.

INTRODUCTION

The Siwash North area is on the Elk property of Fairfield Minerals Ltd. in southern British Columbia. Surface diamond drilling indicates that part of the structure, called the Mother Shoot, contains high grade gold mineralization. The next stage in exploration of the Mother Shoot should consist of underground development and diamond drilling to confirm the continuity and grade of the mineralization.

This report summarizes the average grade and ore reserve estimates derived from the data forwarded by Fairfield, and presents a proposal for exploration development. The program

was laid out at the request of John Stollery, Fairfield's president.

DATA BASE

Plans and sections at 1:500 scale covering the Mother Shoot part of the Siwash North area were received on October 24, 1991. No geological reports or other descriptive materials were enclosed. Information on assay procedures and results was received by fax on November 12th.

The drawings comprised the following:

1. "Compilation Map" with surface topography and trace of vein.

2. "Topography of Mineralized Zone" with diamond drill hole penetration points, structural contours of the vein, and sample assays expanded to 2 m true width.

3. "Longitudinal Section in the Plane of the Mother Shoot" with drill hole penetration points, average assay values (apparently cut) expanded to 2 m, and computer generated contours of the gold values.

4. "Diamond Drill Section 2040E", also 2090E, 2140E, 2190E, and 2240E, showing the hole traces with lithological units, assays plotted in histogram form, and interpreted vein location on each section.

5. "Diamond drill Section 2040E", also 2090E, 2140E, 2190E, and 2240E, showing the hole traces with

lithological units (undefined), and RQD values shown in histogram form.

GEOLOGY AND VEIN STRUCTURE

The plotted drill hole geology and grade information shows that there is little latitude for error in locating the Mother Shoot vein structure on plan or section. The quartz vein logged in the holes correlates well with the assay values, and the intersections "line up" neatly on section. Correlation from hole to hole and from section to section is straightforward, although the vein does split in a few places. The Mother Shoot quartz vein pinches out to the west at roughly section 2040E, and again to the east in a more ragged fashion near section 2240E. It is open to depth.

The host rock in the Mother Shoot area is granitic (quartz monzonite to granodiorite) in composition. It is reported to be massive and competent except for a narrow zone of clay-carbonate alteration alongside the vein.

The veins occur in gently curving fractures that can be traced from hole to hole using the alteration even where the quartz vein is absent. The vein system strikes east-west in the Mother Shoot area and swings northeasterly farther to the east. It forms a weakly curving planar structure and is comprised of two south dipping portions, an upper gently dipping (20 to 25 degrees) section and a lower more steeply dipping (65 degree) section. It is not yet clear whether the two sections meet in a sharp knuckle or in a smooth curve as interpreted by Fairfield. The ore shoot varies in strike length between 100 m and 150 m and plunges almost due south down the dip of the vein.

The quartz vein is narrow in width and varies up to a maximum of 70 cm. Locally it carries spectacular grade such as in hole 97 where it assayed 26.7 ounces per ton.

GRADE ESTIMATES

Data

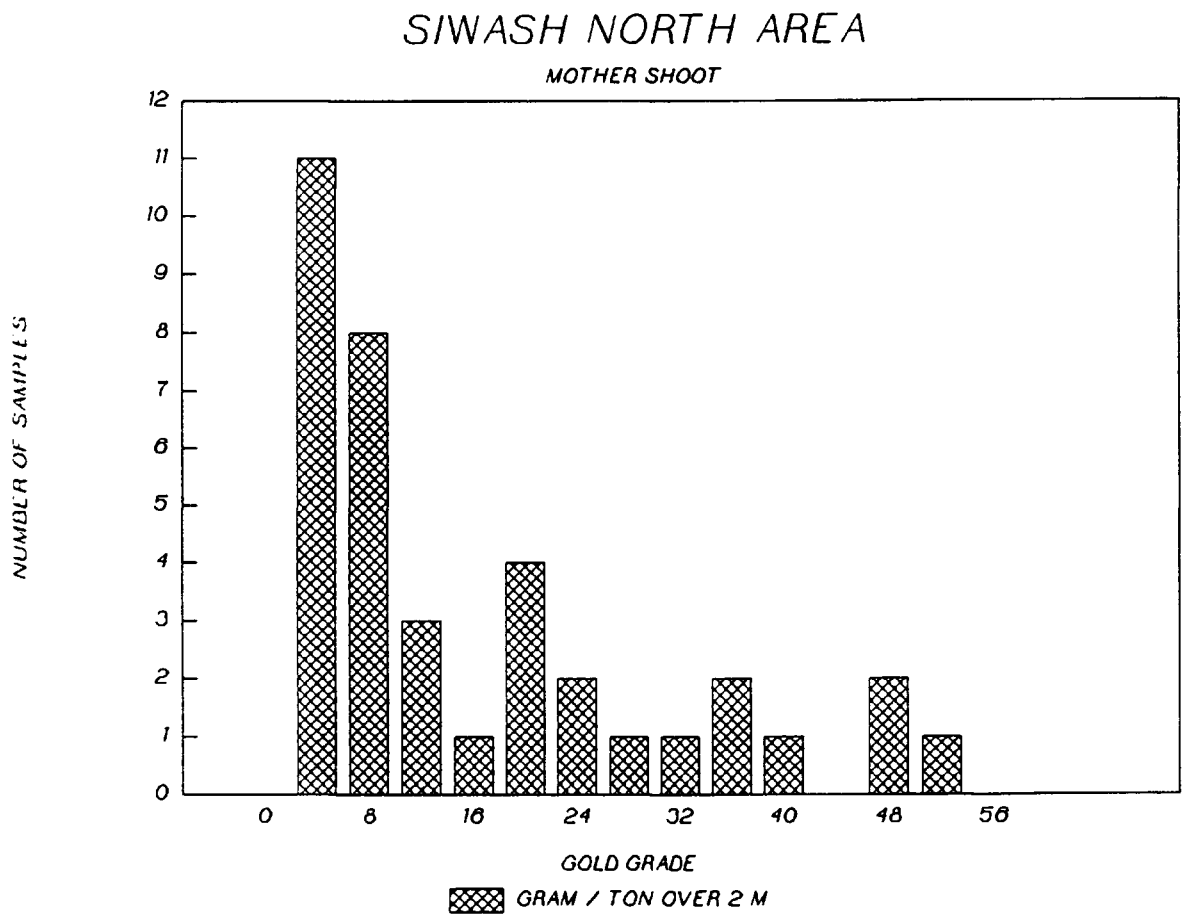
The grades shown on Fairfield's "Longitudinal Section in the Plane of the Mother Shoot" represent the sample assays expanded to a width of 2.0 m. Sample lengths are adjusted to the true width perpendicular to the interpreted structural trend of the vein. High assays are cut but the method used is not apparent. The surface trace of the vein was "panel" sampled at 5 m intervals, with individual samples measuring 0.5 m wide, 0.5 to 1.5 m long, and 2 cm thick. Drill holes 1 through 74 were drilled HQ size and holes 75 through 111 were NQ.

The drill hole spacing is roughly 50 m which is sparse considering the bonanza grades of some of the intersections and the relatively short strike length of the ore shoot. Reliable estimates of the true average grade of the vein or of the continuity of gold distribution in the vein require more closely spaced samples than are available from the present drilling.

Estimates

The sample values for the Mother Shoot quartz vein given on the "Longitudinal Section", including the low grade values, were entered in a worksheet and the grade distribution was

FIGURE 1
FREQUENCY DISTRIBUTION OF GOLD GRADE



plotted in histogram form (Figure 1). This reveals a roughly lognormal grade distribution, which may in fact be made up of two or more populations superimposed by repeated mineralizing events. The graph can be interpreted as a low grade lognormal population which tails out at about 15 g/tonne with a high grade population superimposed on it. Note that the values plotted are the sample assays expanded to 2 m width, with the high values cut, rather than the actual gold values of the vein.

The mean value of the sample set, caloulated using Sichels t-estimator (as described by David, see appendix), is 18 g/tonne. The method assumes a lognormal distribution, and is sensitive to irregularities resulting from too few samples. Thus the mean grade of the Mother Shoot quartz vein as a whole is indicated to be 18 g/tonne. The surface sampling indicates good continuity of the gold values along strike, but these may not be representative because of weathering along the trace of the vein. The drill holes are too widely spaced to estimate the statistical variability of the gold distribution. Underground exploration development is needed to confirm the continuity and average grade of the mineralization.

ORE RESERVE

The "Longitudinal Section" is an equal area projection of the vein showing Fairfield's contours of equal gold grade in the Mother Shoot interpreted from the plotted drill hole intersections. The 4 g/tonne contour was arbitrarily chosen to outline the low grade mineralization on the long section, and the 15 g/tonne contour was used for the high grade shoot. These areas were then divided into blocks according to the

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TABLE 1
SIWASH NORTH AREA
MOTHER SHOOT

ORE RESERVE ESTIMATE
OCTOBER 30, 1991

BLOCK	AREA	ASSAYS	GRADE g/T	TONNES	GRAMS
1	3 662.5	44.95 33.22 16.05 20.20 34.94 18.86 27.50	27.96	19 778	552 979
2	412.5	10.11	10.11	2 228	22 520
3	3 775.0	38.43 28.42	33.43	20 385	681 369
4	4 755.0	47.31 16.46	31.89	25 677	818 711
5	937.5		15.00	5 063	75 938
6	5 925.0	21.39 51.43 16.18	29.67	31 995	949 185
	SUBTOTAL		29.50	105 125	3 100 701
7	2 442.5	4.66 6.45 6.31	5.81	13 190	76 587
8	2 777.5	6.10 9.22 8.96 14.88 5.79	8.99	14 999	134 837
9	1 565.0		4.70	8 451	39 720
10	1 022.5		8.50	5 522	46 933
11	2 072.5	4.77	4.77	11 192	53 383
12	1 472.5		4.50	7 952	35 782
13	3 060.0	4.63	4.63	16 524	76 506
14	3 220.0		4.60	17 388	79 985
15	2 530.0	5.66	5.66	13 662	77 327
	SUBTOTAL		5.70	108 878	621 059
	TOTAL		17.39	214 002	3 721 760

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UPPER VEIN			
1	27.96	19 778	552 979
2	10.11	2 228	22 520
3	33.43	20 385	681 369
SUBTOTAL	29.65	42 390	1 256 868
7	5.81	13 190	76 587
8	8.99	14 999	134 837
9	4.70	8 451	39 720
10	8.50	5 522	46 933
SUBTOTAL	7.07	42 161	298 076
TOTAL	18.39	84 551	1 554 944
LOWER VEIN			
4	31.89	25 677	818 711
5	15.00	5 063	75 938
6	29.67	31 995	949 185
SUBTOTAL	29.39	62 735	1 843 834
11	4.77	11 192	53 383
12	4.50	7 952	35 782
13	4.63	16 524	76 506
14	4.60	17 388	79 985
15	5.66	13 662	77 327
SUBTOTAL	4.84	66 717	322 983
TOTAL	16.74	129 452	2 166 817
UPPER AND LOWER VEINS	17.39	214 002	3 721 760

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SUMMARY
SIWASH NORTH AREA
MOTHER SHOOT

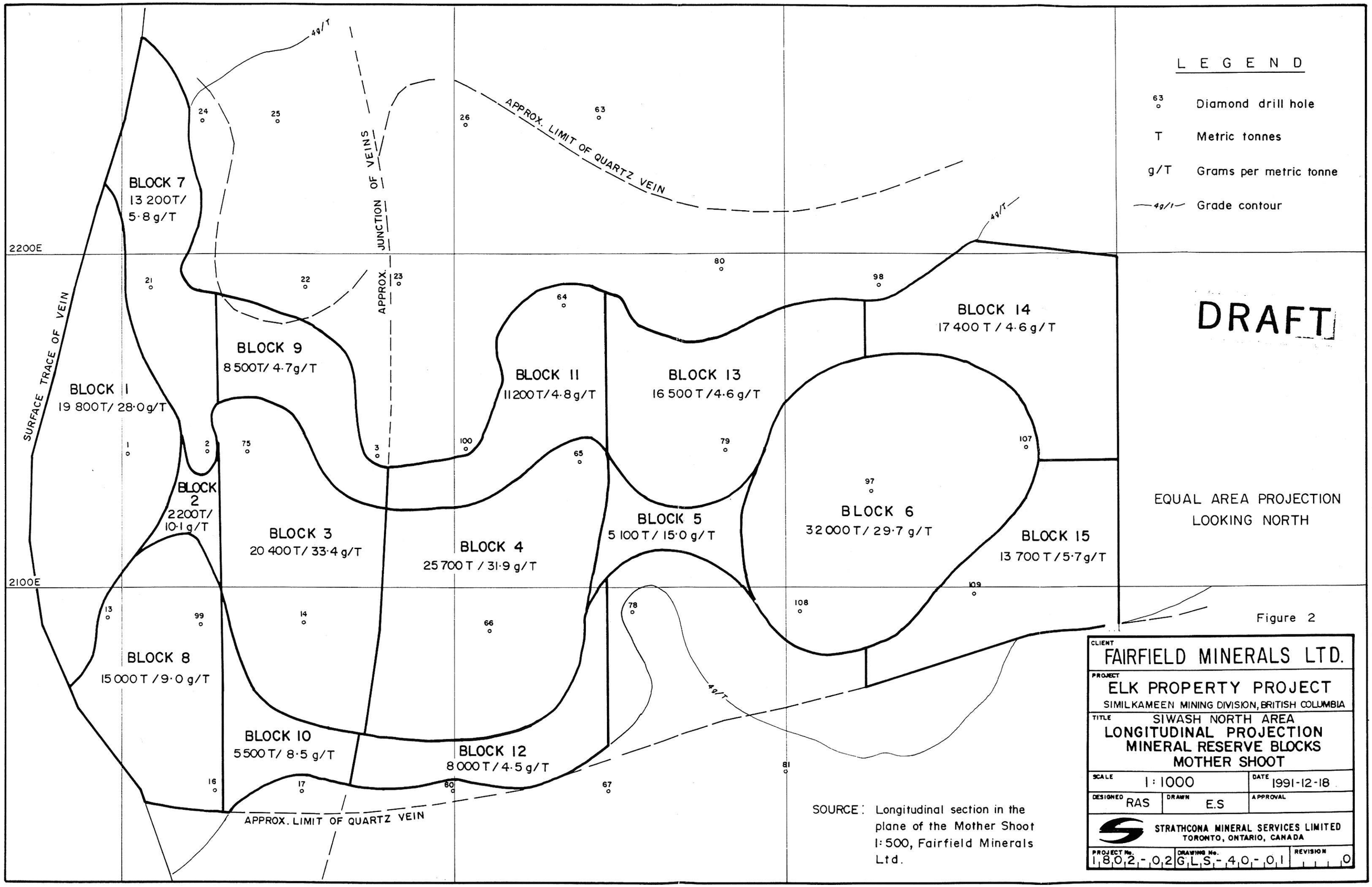
	GRADE	TONNES	GRAMS
HIGH GRADE CORE			
UPPER VEIN	29.65	42 390	1 256 868
LOWER VEIN	29.39	62 735	1 843 834
	29.50	105 125	3 100 701
LOW GRADE MARGIN			
UPPER VEIN	7.07	42 161	298 076
LOWER VEIN	4.84	66 717	322 983
	5.70	108 878	621 059
TOTAL	17.39	214 002	3 721 760

SAMPLE DATA FROM LONGITUDINAL SECTION

AVERAGE GRADE OVER 2.0 m TRUE WIDTH - g/T (HIGH VALUES CUT)

ESTIMATED BULK DENSITY 2.7 TONNES/ CUBIC METRE

AREAS MEASURED ON LONGITUDINAL SECTION


LEGEND
63 Diamond drill hole
T Metric tonnes
g/T Grams per metric tonne
4g/T Grade contour
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EQUAL AREA PROJECTION
LOOKING NORTH
2200E
2100E
BLOCK 1
19 800T/ 28·0g/T
BLOCK 2
2200T/
10·1g/T
BLOCK 3
20 400T/ 33·4 g/T
BLOCK 4
25 700T / 31·9 g/T
BLOCK 5
5 100T / 15·0 g/T
BLOCK 6
32 000T/ 29·7 g/T
BLOCK 7
13 200T/
5·8 g/T
BLOCK 8
15 000T /9·0 g/T
BLOCK 9
8 500T/ 4·7g/T
BLOCK 10
5500T/ 8·5 g/T
BLOCK 11
11200T/4·8g/T
BLOCK 12
8 000T/4·5 g/T
BLOCK 13
16 500T /4·6 g/T
BLOCK 14
17 400T / 4·6 g/T
BLOCK 15
13 700T/5·7g/T
APPROX. LIMIT OF QUARTZ VEIN
APPROX. JUNCTION OF VEINS
SURFACE TRACE OF VEIN
APPROX. LIMIT OF QUARTZ VEIN
4g/T
4g/T
4g/T
SOURCE: Longitudinal section in the plane of the Mother Shoot 1:500, Fairfield Minerals Ltd.
Figure 2
CLIENT
FAIRFIELD MINERALS LTD.
PROJECT
ELK PROPERTY PROJECT
SIMILKAMEEN MINING DIVISION, BRITISH COLUMBIA
TITLE
SIWASH NORTH AREA
LONGITUDINAL PROJECTION
MINERAL RESERVE BLOCKS
MOTHER SHOOT
SCALE 1:1000
DATE 1991-12-18
DESIGNED RAS
DRAWN E.S
APPROVAL
STRATHCONA MINERAL SERVICES LIMITED
TORONTO, ONTARIO, CANADA
PROJECT No. 1802-02
DRAWING No. GLS-40-01
REVISION 0

spacing of the data points. The volume of each 2 m thick block was estimated by measuring the area with planimeter. The bulk density used was 2.7 tonnes/cubic metre, which is possibly a few per cent high. The block outlines are shown on Figure 2, which is a 1:1000 scale reduction of the original Fairfield long section.

The geological mineral inventory including both high grade and low grade mineralization is 214 000 tonnes at a grade of 17.4 grams gold per tonne (Table 1).

The higher grade core of the shoot outlined on the long section contains 105 000 tonnes at a grade of 29.5 grams gold per tonne. The existence of this high grade area must be confirmed by development sampling or closer spaced drilling before it can be classed as anything but "Possible" ore.

PROPOSED DEVELOPMENT

The next stage in developing the project is underground development to establish the average grade and continuity of the mineralization. A decline on section E 2115, collared in the footwall, provides access for drifting east and west on the vein and for a hangingwall drill decline. The drifts are laid out to intersect drill holes 89-14 and 90-75 to allow direct comparison of the core sample assays with development sample assays. The hangingwall decline provides access for drilling the lower vein on 25 m centres, the minimum spacing required to establish a mining reserve.

Each development face should be carefully sampled once the vein is intersected. Each sample taken should be restricted to one type of material, that is, to vein or to altered or

fresh wall rock. Each sample should contain as large a quantity of rock as possible, say 10 or 20 kilograms, in order to reduce the sampling error. Adequate time for good sampling must be allowed for in the mining cycle.

The proposed decline and diamond drilling is shown on the plan and sections included with this report. In all, 340 m of development, including 105 m on the vein, and 1835 m of diamond drilling are proposed.

The decline is intended to provide access for evaluation of the zone and should be driven at a small cross-sectional area, say 3 by 3 m, to minimize the exploration cost. The actual size will be governed by the equipment used by the mining contractor.

Once the vein is intersected the muck from each round should be stored individually on surface for possible crushing and bulk sampling. Each muck pile should be individually tagged and the rounds from each underground heading should be stored in order on a flat, preferably gravelled and compacted, laydown area.

REFERENCES

David, M. 1977 Geostatistical Ore Reserve Estimation
Elsevier Scientific Publishing Company

Jakubowski, W. Personal Communication.

December 17, 1991 R.A. Sutherland

APPENDIX

SAMPLE ASSAY DATA

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FAIRFIELD MINERALS LTD
ELK PROPERTY
SIWASH NORTH AREA
MOTHER SHOOT

SAMPLE DATA FROM LONGITUDINAL SECTION

QUARTZ VEIN GRADE EXPANDED TO 2.0 m TRUE WIDTH - g/T (HIGH VALUES CUT)

		Au g/T	SORT		LOG g/T	SORT		(LOG g/T)2
TRENCH	12	3.00	51.43		0.477	1.711		2.92826199
		14.88	47.31		1.173	1.675		2.80546737
		8.96	44.95		0.952	1.653		2.73151544
		44.95	38.43		1.653	1.585		2.51118022
		33.22	34.94		1.521	1.543		2.38184557
		16.05	33.22		1.205	1.521		2.31465682
	13	20.20	28.42		1.305	1.454		2.11302294
		34.94	27.50		1.543	1.439		2.07167860
		18.86	21.39		1.276	1.330		1.76946073
	3	6.45	20.20		0.810	1.305		1.70394219
	2	6.31	18.86		0.800	1.276		1.62700659
DDH	16	5.79	16.46		0.763	1.216		1.47970153
	17	1.20	16.18		0.079	1.209		1.46162905
	60	1.03	16.05		0.013	1.205		1.45317006
	13	9.22	14.88		0.965	1.173		1.37499763
	99	6.10	10.11		0.785	1.005		1.00952488
	14	38.43	9.22		1.585	0.965		0.93070575
	66	47.31	8.96		1.675	0.952		0.90689054
	78	0.74	6.45	MEDIAN	(0.131)	0.810	MEDIAN	0.65538693
	108	21.39	6.31		1.330	0.800		0.64004697
	109	5.66	6.10		0.753	0.785		0.61674294
	1	27.50	5.79		1.439	0.763		0.58167859
	2	10.11	5.66		1.005	0.753		0.56673257
	75	28.42	4.77		1.454	0.679		0.46038719
	3	0.99	4.66		(0.004)	0.668		0.44673973
	100	2.43	4.63		0.386	0.666		0.44299805
	65	16.46	3.94		1.216	0.595		0.35461575
	79	4.63	3.36		0.666	0.526		0.27703303
	97	51.43	3.00		1.711	0.477		0.22764469
	107	16.18	2.43		1.209	0.386		0.14869219
	21	4.66	1.31		0.668	0.117		0.01375255
	23	0.62	1.20		(0.208)	0.079		0.00626966
	64	4.77	1.03		0.679	0.013		0.00016479
	80	0.13	0.99		(0.903)	(0.004)		0.00001905
	98	1.31	0.74		0.117	(0.131)		0.01710034
	24	3.36	0.62		0.526	(0.208)		0.04310121
	26	3.94	0.13		0.595	(0.903)		0.81557152
		AVERAGE	14.10		AVERAGE	0.840		1.07809015

(6.92 g/T)

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FAIRFIELD MINERALS LTD
ELK PROPERTY
SIWASH NORTH AREA
MOTHER SHOOT

MEAN VALUE USING SICHEL'S t-ESTIMATOR

See M. DAVID, Geostatistical Ore Reserve Estimation, p 18

ASSUMES A LOGNORMAL DISTRIBUTION

median of the samples = antilog 0.840 = 6.92

logarithmic variance V = 5.3019 [mean(log squared) - (mean log)squared]

= 5.3019 [1.078090 - (0.840231 squared)]

= 1.973

for n = 37, median = 6.92, variance = 1.973,

then gamma = 2.608, interpolated from table, p 20

Sichel's t-estimator, t = median * gamma

t = 6.92 * 2.608

t = 18.04

Therefore, the estimated mean value of the samples is 18.04 g/T

LOWER CONFIDENCE LIMIT

see M> DAVID, p 35

for t = 18.04, V = 1.973, n = 37

then phi = 0.6957, interpolated from table, p 38

At 90% confidence limit, mean > 0.6957 * 18.04

> 12.55

Therefore, there is a 90% probability that the mean exceeds 12.6 g/T

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SIWASH NORTH PROPERTY

ASSAY CHECKS AND RE-RUNS

SAMPLE NO.	ASSAY oz/t ACME	ASSAY oz/t CHEMEX	DIFF. %	ASSAY g/T ACME	ASSAY g/T CHEMEX	DIFF. g/T
SND90 16- 8	0.519	0.548	6	17.794	18.789	0.994
SND90 20-10	0.909	0.959	6	31.166	32.880	1.714
11	0.619	0.763	23	21.223	26.160	4.937
SND90 69-13	2.457	1.974	20	84.240	67.680	16.560
SND90 66-12	0.101	0.072	29	3.463	2.469	0.994
13	7.974	9.796	23	273.394	335.863	62.469
SND90 65-14	1.411	1.798	27	48.377	61.646	13.269
SND90 21- 6	0.386	0.346	10	13.234	11.863	1.371
7	0.047	0.046	2	1.611	1.577	0.034
SND90 64-11	0.454	0.172	62	15.566	5.897	9.669
SND90 24- 4	0.080	0.058	28	2.743	1.989	0.754
5	0.207	0.233	13	7.097	7.989	0.891
SND90 26- 6	0.516	1.252	143	17.691	42.926	25.234
SND90 27- 8	1.555	1.862	20	53.314	63.840	10.526
SND90 29- 7	1.752	1.613	8	60.069	55.303	4.766
8	0.242	0.205	15	8.297	7.029	1.269
9	0.072	0.056	22	2.469	1.920	0.549
SND90 62- 7	0.293	0.165	44	10.046	5.657	4.389
SND90 31-13	0.048	0.042	12	1.646	1.440	0.206
14	0.471	0.547	16	16.149	18.754	2.606
16	0.077	0.071	8	2.640	2.434	0.206
SND90 33- 5	5.117	4.665	9	175.440	159.943	15.497
SND90 61-17	0.232	0.051	78	7.954	1.749	6.206
18	1.178	0.901	24	40.389	30.891	9.497
26	0.262	0.052	80	8.983	1.783	7.200
SND90 37-24	1.523	1.622	7	52.217	55.611	3.394
SND90 44-16	1.291	0.444	66	44.263	15.223	29.040
22	1.050	1.678	60	36.000	57.531	21.531
SND90 47-14	0.985	1.932	96	33.771	66.240	32.469
SND90 48-20	0.489	0.280	43	16.766	9.600	7.166
SND90 49- 6	0.056	0.058	4	1.920	1.989	0.069
7	3.809	2.033	47	130.594	69.703	60.891
SND90 50-19	0.904	1.168	29	30.994	40.046	9.051
MEAN			33	38.531	38.922	11.073
VARIANCE						238.333
STD. DEV'N.						15.438
NOT INCLUDED						
SND90 31-15	0.024	0.077	221	0.823	2.640	1.817
SND90 71- 1	0.001	0.012	1100	0.034	0.411	0.377