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1999  
ELK PROPERTY

GEOCHEMICAL REPORT

Similkameen Mining Division, B.C.  
Siwash Lake Area, British Columbia  
NTS: 92H-16W; Lat.49° 50'; Long 120° 19'W

March, 2000

By

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GEOLOGICAL SURVEY BRANCH  
GEOCHEMICAL REPORT

26,194

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## APPENDIX

Appendix "A": Analytical Results from Rock and Soil Samples

The Elk property consists of 84 contiguous mineral claims and one mining lease comprising 524 units located 40 kilometres west of Peachland, B.C., in the Similkameen Mining Division (NTS: 92H-16W). Initial staking was undertaken in November 1986 (160 units) with additions in 1987 (60 units), 1988 (32 units) and 1989 (199 units). A block comprising 72 units was optioned from Mr. Donald Agur of Summerland, B.C. in October, 1988. The Siwash North mining lease was surveyed and registered in 1992. Claim acquisition and subsequent work were conducted by Cordilleran Engineering Ltd. for Fairfield Minerals Ltd. until April 1995 when Fairfield assumed operations. Placer Dome Inc. entered into an option agreement on the property in March 1988 and withdrew in March 1991. Fairfield retains 100% interest.

The Elk claims cover forested, gently rolling hills with fair to poor bedrock exposure. The property is accessible by paved highway, 50 kilometres from Westbank, B.C., or 50 kilometres from Merritt, B.C.

Work conducted on the property from 1986 to 1991 consisted of geological mapping, prospecting, linecutting, soil sampling, geophysics, excavator trenching, diamond drilling and road construction. During the 1992 to 1994 field seasons open pit and underground mining extracted 1,600,406 grams (51,460 ounces) of gold from the Siwash North vein system. Reverse circulation drilling, underground diamond drilling, reclamation, road construction, water sampling and aerial photography were also undertaken during this period. Surface and underground diamond drill programs were carried out in the Siwash Mine area in 1995 to define mineable reserves. Exploratory surface drilling was also carried out during the 1995 field season to test trench targets between the Siwash mine-site and the South Showing area 2.5 kilometres to the south. Surface diamond drilling was undertaken during the 1996 season in the Siwash North area. Two new vein systems, the WD and GCW zones, were located and detailed drilling in the area of the proposed Phase 5.5 open pit outlined an open pit resource of 503,820 gm (16,200 oz) Au. Site reclamation was done during 1997 and minor prospecting was carried out during 1997-1998.

The property is underlain by the Triassic Nicola Group volcano-sedimentary assemblage on the west and by granitic rocks of the Jurassic Osprey Lake Batholith on the east. Feldspar porphyry stocks of the Upper Cretaceous Otter Intrusions cut both of these groups. Andesite dykes intrude all of the above units and are interpreted to be of Tertiary Age.

Gold-silver mineralization on the Elk property is hosted by pyritiferous quartz veins and pyritiferous altered granite. The mineralized features generally trend northeasterly and are thought to be Late Cretaceous or Tertiary in age. To date, mineralization has been located in seven areas of the Elk property: Siwash North, South Showing, Discovery Showing, Lake Zone, End Zone, Great Wall Zone and Elusive Creek.

Rock, soil, and auger soil sampling were carried out on the Elk claims during the 1999 field season. New logging roads and clearcuts were prospected and detailed samples were taken from all noted alteration zones. Quartz vein float was found in a clearcut located approximately 1.2km northwest of the Siwash North vein system returning values up to 1163 ppb Au and 13,146ppm As. Soil samples taken in the Siwash North area during 1987 and 1988 were re-analyzed for 30 elements to determine if any elements other than gold could be used as indicators of potential gold bearing alteration zones. Iron/Titanium ratios define an east-west trend that coincides with a weak airphoto linear located about 600m north of the Siwash structure. This may define a hydrothermal alteration zone that could host gold mineralization down dip.

The results of exploration on the Elk Property are extremely encouraging. An indicated resource of and probable reserve totalling 4,132,941 gm (132,892 oz) of gold are presently defined and will likely be expanded by further drilling. 1,600,406 gm (51,460 oz) of gold have been extracted profitably by open pit and underground mining. Potential for the development of additional gold reserves in the immediate mine area remains strong in the WD vein and Gold Creek West structures. Promising vein structures are present in the Siwash Lake area and geophysical and geochemical anomalies in the Elk South area with similar signatures have yet to be tested. Excellent access to services is provided by the Okanagan Connector Highway which passes two km north of the Siwash mine. Continued aggressive exploration is warranted to fully define the extent of this gold resource.

\*\*\*\*

**RECOMMENDATIONS**

The following exploration program is recommended based on the results of work done in 1996 :

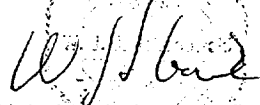
- Drill test the area east of the Deep B zone with 18 widely spaced holes to determine the continuity and grade of the mineralization. Fill-in at closer spacing around significant intercepts.
- Drill five holes in the WD zone to the south and east of 2470E to expand the present indicated resource.
- Drill test the Gold Creek West structure to the east of the existing drilling.
- Test the geochemical anomaly south of the South Showing area by detailed auger overburden sampling with the goal of outlining drill targets.

These additional recommendations are based on the result of the limited work done between 1997 and 1999:

- Fill-in soil sampling and detailed mapping in the area of the Fe/Ti anomaly along the Bullion Creek linear north of the Siwash Mine site.
- Fill-in soil sampling and detailed mapping to the west of the Gold Creek West area.

Respectfully submitted

**FAIRFIELD MINERALS LTD.**

  
Wojtek Jakubowski, B.Sc., P.Geo.  
Geologist

This report describes the results of a rock and soil sampling program conducted on the Elk property during the period June 5 to October 16, 1999. The work was managed by personnel of Fairfield Minerals Ltd. with the intent to evaluate soil geochemical anomalies and mineralized occurrences exposed by new logging road construction.

### **3.1 LOCATION AND ACCESS (Figure 1)**

The Elk property is located 40 kilometres west of Okanagan Lake in southern British Columbia approximately midway between Merritt and Summerland, at latitude 49°50'N and longitude 120°19'W (Figure 1). The claims cover heavily forested rolling terrain of the Trepanege Plateau highlands. Elevations range from 1300 to 1750 metres above sea level. Access to the property is excellent, with the Okanagan Connector Highway passing through the northern claims. Merritt and Kelowna are within one hour driving time from the mine location. Field operations in 1999 were based out of a lodge located on the property.

### **3.2 CLAIM DATA (Figure 2)**

The Elk property consists of 48 two-post claims, 28 four-post claims, eight fractional claims and one mining lease which together comprise 524 units (Table 1). That are owned 100% by Fairfield Minerals Ltd. The Agur Option block (72 units), on the south side of the property, is subject to a 1% NSR royalty from production.

### **3.3 HISTORY**

During the first half of the century the El Paso adit was driven into volcanic rocks in the area currently covered by the ELK31 claim. Quartz vein-hosted lead-zinc-silver-gold mineralization was encountered. No production of ore was achieved.

Over the last forty years Don Agur of Summerland, B.C. prospected and trenched the north and west parts of the present Elk property area, as well as a large region to the south along Siwash Creek.

Phelps Dodge Corporation of Canada Ltd. carried out copper exploration during 1972 which included mapping and soil geochemistry in the area of the present Elk 19, 28, 31, 32, 34, 35, SIWASH50 and ARP claims.

Utah Mines Ltd. conducted mapping, geochemistry, IP geophysics and trenching to evaluate copper mineralization on their Siwash claim group which, in part, covered the present SIWASH 50 and Elk 28 claims.

Brenda Mines Ltd. worked on the Siwash claim group which included the area now comprising the southern part of the Elk property. A rigorous copper exploration program including mapping, soil geochemistry, geophysics, trenching and diamond drilling was undertaken between 1979 and 1981. Work was done on the area currently covered by the ELK 19, 28, 31 to 37, 41, 42, ARP, FERGITO ALLENDO I, II, NANJI P2 and TEPEE claims.

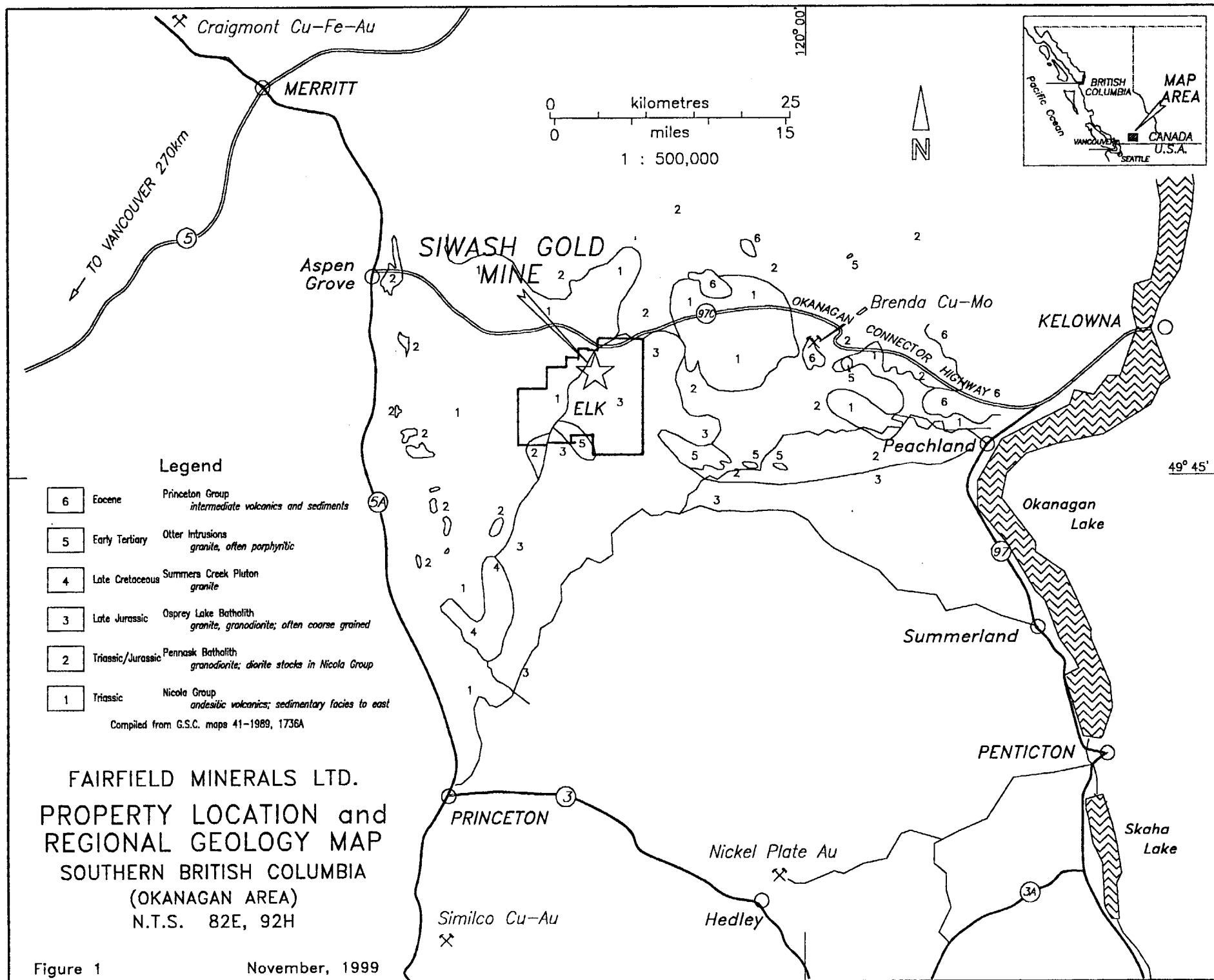


Figure 1

November, 1999

Elk Property Mineral Claims as at Dec. 31, 1999

Table 1

<u>Claim</u>	<u>Type</u>	<u># Units</u>	<u>Record #</u>	<u>Expiry Date</u>	<u>Mining Division</u>	<u>NTS</u>	<u>Prov</u>
<b>ELK</b>							
* ARP	4post	20	248738	13/09/2001	Similkameen	92H/16W	BC
ELK 1	4post	20	249145	28/11/2007	Similkameen	92H/16W	BC
ELK 10	2post	1	249159	28/11/2006	Similkameen	92H/16W	BC
ELK 11	2post	1	249160	28/11/2002	Similkameen	92H/16W	BC
ELK 12	2post	1	249161	28/11/2006	Similkameen	92H/16W	BC
ELK 13	2post	1	249162	28/11/2002	Similkameen	92H/16W	BC
ELK 14	2post	1	249163	28/11/2006	Similkameen	92H/16W	BC
ELK 15	2post	1	249164	28/11/2002	Similkameen	92H/16W	BC
ELK 16	2post	1	249165	28/11/2006	Similkameen	92H/16W	BC
ELK 17	2post	1	249166	28/11/2002	Similkameen	92H/16W	BC
ELK 18	2post	1	249167	28/11/2006	Similkameen	92H/16W	BC
ELK 19	4post	20	249147	28/11/2005	Similkameen	92H/16W	BC
ELK 2	4post	20	249146	28/11/2005	Similkameen	92H/16W	BC
ELK 20	4post	20	307936	05/03/2007	Similkameen	92H/16W	BC
ELK 21	4post	20	307937	05/03/2005	Similkameen	92H/16W	BC
ELK 22	2post	1	249168	28/11/2002	Similkameen	92H/16W	BC
ELK 23	2post	1	249169	28/11/2002	Similkameen	92H/16W	BC
ELK 24	2post	1	249170	28/11/2002	Similkameen	92H/16W	BC
ELK 25	2post	1	249171	28/11/2002	Similkameen	92H/16W	BC
ELK 26	4post	20	249150	28/11/2002	Similkameen	92H/16W	BC
* ELK 27	4post	20	249151	28/11/2001	Similkameen	92H/16W	BC
ELK 28	4post	20	249254	24/09/2002	Similkameen	92H/16W	BC
ELK 29	4post	20	249255	24/09/2002	Similkameen	92H/16W	BC
ELK 3	2post	1	249152	28/11/2006	Similkameen	92H/16W	BC
ELK 30	4post	20	249256	24/09/2002	Similkameen	92H/16W	BC
ELK 31	2post	1	249330	17/08/2007	Similkameen	92H/16W	BC
ELK 32	2post	1	249331	17/08/2007	Similkameen	92H/16W	BC
ELK 33	FR	1	249363	28/09/2007	Similkameen	92H/16W	BC
ELK 34	2post	1	249367	29/09/2007	Similkameen	92H/16W	BC
ELK 35	2post	1	249366	29/09/2007	Similkameen	92H/16W	BC
ELK 36	4post	12	249395	02/11/2002	Similkameen	92H/16W	BC
ELK 37	4post	15	249396	31/10/2002	Similkameen	92H/16W	BC
ELK 38	4post	16	249469	07/05/2002	Similkameen	92H/16W	BC
* ELK 39	4post	16	249470	07/05/2001	Similkameen	92H/16W	BC
ELK 4	2post	1	249153	28/11/2006	Similkameen	92H/16W	BC
* ELK 40	4post	12	249471	07/05/2001	Similkameen	92H/16W	BC
*** ELK 41	4post	20	249473	09/05/2000	Similkameen	92H/16W	BC
*** ELK 42	4post	12	249474	09/05/2000	Similkameen	92H/16W	BC
ELK 43	4post	16	249472	07/05/2002	Similkameen	92H/16W	BC
ELK 44	4post	20	249509	06/06/2002	Similkameen	92H/16W	BC
ELK 45	4post	20	249510	06/06/2002	Similkameen	92H/16W	BC
ELK 46	4post	16	369415	06/06/2003	Similkameen	92H/16W	BC
ELK 47	4post	20	249512	06/06/2002	Similkameen	92H/16W	BC
ELK 48	2post	1	249513	04/06/2002	Similkameen	92H/16W	BC
ELK 49	2post	1	249514	04/06/2002	Similkameen	92H/16W	BC
ELK 5	2post	1	249154	28/11/2002	Similkameen	92H/16W	BC
ELK 50	2post	1	249515	04/06/2002	Similkameen	92H/16W	BC
ELK 51	2post	1	249516	04/06/2002	Similkameen	92H/16W	BC
ELK 52	2post	1	249517	06/06/2002	Similkameen	92H/16W	BC



<u>Claim</u>	<u>Type</u>	<u># Units</u>	<u>Record #</u>	<u>Expiry Date</u>	<u>Mining Division</u>	<u>NTS</u>	<u>Prov</u>
ELK 53	2post	1	249518	06/06/2002	Similkameen	92H/16W	BC
ELK 54	FR	1	249519	06/06/2002	Similkameen	92H/16W	BC
ELK 55	2post	1	249547	05/07/2002	Similkameen	92H/16W	BC
ELK 56	2post	1	249548	05/07/2006	Similkameen	92H/16W	BC
ELK 57	2post	1	249549	05/07/2006	Similkameen	92H/16W	BC
ELK 58	2post	1	249550	05/07/2006	Similkameen	92H/16W	BC
ELK 59	2post	1	249551	05/07/2006	Similkameen	92H/16W	BC
ELK 6	2post	1	249155	28/11/2006	Similkameen	92H/16W	BC
ELK 60	2post	1	249552	05/07/2006	Similkameen	92H/16W	BC
ELK 61	2post	1	249553	05/07/2006	Similkameen	92H/16W	BC
ELK 62	2post	1	249554	06/07/2002	Similkameen	92H/16W	BC
ELK 63	2post	1	249555	06/07/2002	Similkameen	92H/16W	BC
ELK 64	2post	1	249556	06/07/2007	Similkameen	92H/16W	BC
ELK 65	FR	1	249557	06/07/2002	Similkameen	92H/16W	BC
ELK 66	2post	1	249558	07/07/2002	Similkameen	92H/16W	BC
ELK 67	FR	1	249559	07/07/2002	Similkameen	92H/16W	BC
ELK 68	FR	1	249560	07/07/2002	Similkameen	92H/16W	BC
ELK 69	2post	1	249561	07/07/2002	Similkameen	92H/16W	BC
ELK 7	2post	1	249156	28/11/2002	Similkameen	92H/16W	BC
ELK 70	FR	1	249562	07/07/2002	Similkameen	92H/16W	BC
* ELK 71	2post	1	249563	07/07/2001	Similkameen	92H/16W	BC
ELK 72	FR	1	249564	07/07/2002	Similkameen	92H/16W	BC
ELK 73	FR	1	249885	20/08/2002	Similkameen	92H/16W	BC
ELK 8	2post	1	249157	28/11/2006	Similkameen	92H/16W	BC
ELK 9	2post	1	249158	28/11/2002	Similkameen	92H/16W	BC
FERGITO ALLENDO	4post	20	248739	13/09/2006	Similkameen	92H/16W	BC
FERGITO ALLENDO	4post	18	248740	13/09/2006	Similkameen	92H/16W	BC
* GAVIN 1	2post	1	249659	26/09/2001	Similkameen	92H/16W	BC
* GAVIN 2	2post	1	249660	26/09/2001	Similkameen	92H/16W	BC
* GAVIN 3	2post	1	249661	26/09/2001	Similkameen	92H/16W	BC
* GAVIN 4	2post	1	249662	27/09/2001	Similkameen	92H/16W	BC
* GAVIN 5	2post	1	249663	27/09/2001	Similkameen	92H/16W	BC
* NANCI P2	4post	10	248732	13/08/2001	Similkameen	92H/16W	BC
SIWASH #50	4post	2	248927	10/11/2002	Similkameen	92H/16W	BC
*** SIWASH NORTH	lease	1	1308695	14/09/2000	Similkameen	92H/16W	BC
* TEEPEE	4post	2	248735	13/08/2001	Similkameen	92H/16W	BC
85	# Units:	524					

MIN/MAX Expiry Dates: 09/05/2000 28/11/2007

Exploration for molybdenum was undertaken by Cominco Ltd. during 1980 on what is now the ELK 26, 27, 29, 43 to 45, 71 and 72 claims. Work included geological mapping and soil geochemistry.

No significant discoveries resulted from any of the above programs.

The ELK 1 to 27 claims were staked in November 1986 by Cordilleran Engineering Ltd. for Fairfield Minerals Ltd. to cover new showings of gold-silver mineralization hosted in pyritic quartz veins cutting a granite batholith and andesite dykes. Preliminary hand trenching and soil sampling were conducted.

During 1987, widespread and detailed grid soil sampling programs were undertaken to define areas anomalous in gold. Nine trenches, totaling 1528m were excavated in two areas (Discovery and South Showings) to test soil geochemical targets, exposed quartz veins and altered breccias hosted in granite. IP, magnetometer and VLF-EM geophysical surveys were carried out over the trenched areas. The EL 28 to 30 claims were staked in September 1987 to acquire ground along projections of favourable geochemical trends.

The 1988 program included collection of 2246 soil samples on the claims acquired in 1987 and trenching in Siwash North and Elusive Creek areas. Four kilometres of road was constructed for access and eleven trenches totaling 2884 metres which exposed quartz vein-hosted gold mineralization were mapped and sampled. The ELK 31 to 37 claims were staked to cover adjacent favourable areas.

During the 1989 field season, the ELK 38 to 73 claims were staked to cover projections of anomalous soil geochemical trends. Fifty line-km of VLF-EM and magnetometer surveys were carried out in the Siwash Lake and Siwash North areas and 4865 soil samples were collected on the new claims. A total of 56.25 km of baseline was cut to provide control for soil sampling and geophysical surveys. Trenches were excavated in the South Showing, Siwash North and Siwash Lake areas for a total of 2223 linear metres of bedrock exposure in 25 trenches and stripped areas. The high grade gold bearing quartz vein system in the Siwash North area was further delineated over a strike length of 750m. Twelve diamond drill holes totaling 752m tested the down dip continuity of this system.

During 1990 a total of 5168.34m of HQ diamond drilling in 58 holes was carried out in the Siwash North area on a 50m grid spacing. Quartz vein hosted gold mineralization in the Siwash North area was further exposed by seven trenches and three stripped areas totaling 544 linear metres. Diamond drilling in the Siwash Lake area consisted of 259.08m of HQ core in four drill holes (SLD90-56 to 59). Six trenches and one stripped area totaling 607 linear metres of bedrock exposure were excavated in the Siwash Lake area. Soil sampling on the northern Elk claims was concentrated in the Siwash Lake area where 250 fill-in samples were collected around anomalous coarse grid stations. One thousand two hundred and fifty-four grid samples were collected on the southern Elk claims. Magnetometer and VLF-EM surveys were carried out on the Agur Option area on flagged lines 100m apart for a total of 50 line km.

Exploration on the Elk claims during the 1991 field season consisted of diamond drilling, trenching and aerial photography. Thirty seven new holes were drilled and two were deepened for a total of 6608.38m in the Siwash North area to test down dip and on strike continuity of quartz vein hosted gold mineralization discovered during previous work. The drill core was logged at 1:50 and 1:100 scales, photographed and sampled. All core is stored on site. Five hundred and ninety eight samples were taken and sent to Acme Analytical Labs for gold assay and analysis.

One trench was dug in the End Zone, 200m southwest of Siwash Lake, to further expose a quartz vein discovered by trenching in 1990. This vein is continuous across the entire length of the 45m trench. Thirty two rock chip samples were collected and sent to Acme for gold assay and analysis.

An area four by eight kilometres, centered over the Siwash North area, was aerially photographed in colour and black and white at 1:8,000 and 1:15,000 scales.

During 1992, a bulk sample was extracted from an open pit on the Siwash vein in the Siwash North area. It totalled 2,040 tonnes (2240 tons) grading 137.7 gm/t (4.016 oz/t) gold. A small crushing/sampling plant was installed for ore grade control. Ore was shipped to Noranda's Horne smelter in Rouyn-Noranda, PQ for metallurgical testing and smelting.

A total of 79 reverse-circulation holes were drilled in September and October to test for further open pitable reserves. A total of 223 reverse circulation chip samples were shipped to Acme Analytical Labs for assay and analysis.

In 1993, open pit mining continued, with extraction of 3,387 tonnes (3733 tons) of bulk sample material grading 105.6 gm/t (3.080 oz/t) Au. Eleven reverse-circulation drill holes totaling 942 metres tested the vein to the south and east of the open pit.

Ore was crushed on site to minus 6 inches and then shipped to ASARCO's smelter in Helena, Montana.

A portal was collared on June 28, and 480 metres of decline was driven at -15 percent to access high-grade ore shoots. Two vein drifts were developed for test mining, the 1570 level on the steeply dipping limb of the vein, and the 1611 level on the flat dipping limb, immediately downdip from the central core of the open pit. Drifting on the 1570 level produced about 140 tonnes (154 tons) of ore grading 38 gm/t (1.108oz/t), whereupon the drift was abandoned and refilled due to poor ground conditions. Three raises at 5 metre centres, totaling 36 metres in length were driven up dip off the 1611 level drift. Following development of the raises, the quartz vein was stoped from the pillars producing about 315 tonnes (347 tons) of ore grading approximately 70 gm/t (2.042 oz/t ) Au.

In 1994, the Company received a mining permit, the open pit was expanded and 9,180 tonnes (10,119 tons) of ore grading 91.5 gm/t (2.669 oz/t) were extracted.

Underground, the 1611 level drift was extended to the west. Five raises were added and the existing ones lengthened to 1620m elevation. Approximately 1,200 tonnes (1323 tons) of quartz vein material grading about 78 gm/ton (2.275 oz/t) Au was extracted.

An underground diamond drilling program was carried out between April 7 and May 31, with 5,011m of core drilled in 84 holes from the existing decline to define ore reserves. A total of 448 core samples were collected.

Further underground development was undertaken on completion of the open pit, with the main decline being extended 330 metres. A second decline branched east from the main ramp, for a length of 185 metres. Test mining was carried out on two levels. A longhole stoping test on the 1584 level produced 95 tonnes (105 tons) at 16.5 gm/t (0.481oz/t) from drifting on the ore. Longhole blasting produced excessive dilution and the most of the material remains in the stope. On the 1589 level, a shrinkage stope test was undertaken. Stopping proceeded about 6 metres up dip along the 30 metre length of the drift. About 105 tonnes (116 tons) at 15 gm/t (0.438 oz/t) Au were hauled to surface, however, the remainder of the material remains in the stope.

Exploration on the Elk claims in 1995 consisted almost entirely of diamond drilling. Two hundred and seventeen underground diamond drill holes totaling 7,612 m were drilled from the decline ramp in the vein footwall, between April 13 and August 12, to test grade and continuity of the mineralized zone. The core was logged, photographed and sampled, and is stored on site. A

total of 918 core samples were collected from underground holes and sent to Acme Analytical Laboratories for gold assay and analysis.

Surface diamond drilling was undertaken between June 21 and September 22. In the Siwash North area, 70 holes were drilled totaling 4,645 metres. In the Lake Zone area, 7 holes totaling 477m were completed. Two holes (102m) were drilled on the Great Wall Zone, and four holes on the End Zone (187m). Six holes were drilled on Discovery Showing and nine holes on the South Showing areas, totaling 397m and 481m respectively. In all, 6289 metres were drilled in 98 surface holes. A total of 581 core samples were collected and sent to Acme Analytical Labs for assay and analysis.

A small trench measuring about 10m along strike and 4m wide was dug at the Great Wall Zone to explore a quartz vein encountered during road construction. A ten centimetre vein trending 55 degrees and dipping 60 degrees to the south was exposed. Two 0.5m square panel samples were taken across the vein and returned grades of 0.51gm/t (0.015 oz/t) and 0.99 gm/t (0.029 oz/t) Au.

A total of 38 soil geochemical samples were taken to the east of the clear-cut in the Siwash North area. Prospecting in areas of anomalous samples uncovered quartz vein float which assayed 47.35 gm/t (1.381 oz/t) Au.

Two test pits were dug in the southern South Showing area. Ten trench wall soil profile samples taken.

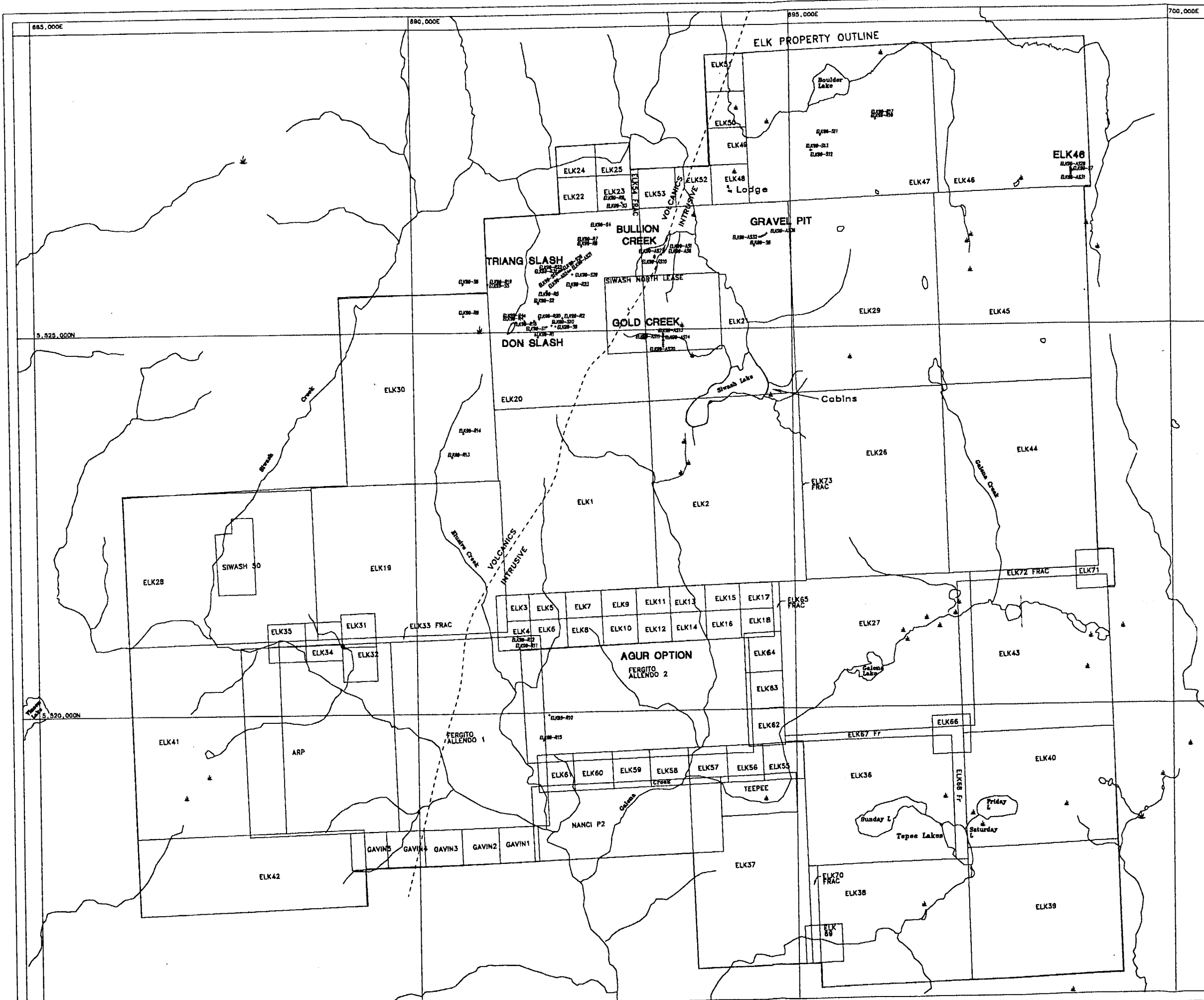
The 1996 program consisted of 6,946.34m of NQ diamond drilling in 88 holes.

The core was logged, photographed, sampled, and is stored on site. Five holes were drilled in the Siwash North Deep B area for a total of 1120.14m. The mineralized structure was intersected in all holes. The proposed Phase 5.5 open pit, east of the existing pit, was detail drilled with 1997.02m of NQ core in 38 holes. This allowed the definition of an indicated resource of 503,000gm Au (16,200 oz) for the area of the proposed pit. The WD zone, located 200m north of the Siwash B zone structure, was tested with 25 holes in 2308.84m resulting in another indicated resource block of 569,000 gm Au (18,290 oz). The source of the anomalous soil geochemistry in the East Slope area was evaluated by 564.39m of drilling in nine holes, with poor results. Four holes totalling 399.08m were drilled to test the source of the anomalous soil geochemistry and VLF conductor in the Gold Creek East area. Numerous small veins with poor to moderate values (Figure 1) were intersected. The source of the anomalous soil geochemistry in the Gold Creek West area was evaluated with 7 holes totalling 556.87m of NQ core. A mineralized quartz vein was intersected with 11.8 gm/t (0.381 oz) over a true width of 0.5m. A total of 1161 core samples were sent to Acme Analytical Laboratories for gold analysis. The area immediately to the south and east of the drill grid was detail soil sampled at 25 X 50m spacing for a total of 367 samples.

Reclamation and site cleanup was undertaken during 1997. The overburden cover was completed on the East waste dump and much of the mine equipment was transported to Savona B.C. for storage or sale. Limited prospecting and sampling were carried out during 1997 and 1998 on the Elk property.

### **3.4 1999 EXPLORATION PROGRAM (Figure 2)**

The 1999 exploration program on the Elk claims consisted of rock, soil and auger soil sampling using the new access provided by logging roads. Soil samples collected during 1987 and 1988 in the Siwash North area were originally analyzed only for Au. Pulps from the coarse grid sampling (50m sample intervals on 200m lines) were re-analyzed for 30 elements by ICP to help outline possible gold bearing alteration zones. A total of 15 man-days were spent collecting 24 rock samples, 36 auger soil samples and 61 soil samples. Sample locations are illustrated on Figures 2 to 5.



- LEGEND**
- Geological Contact
  - Creek
  - TRIANG SLASH 1999 Work Area Name
  - ▲ ELK39-31 1999 Sample Location and Number
  - ELK2 Claim Name



**FAIRFIELD MINERALS LTD.**  
 1480 - 700 West Georgia Street Vancouver, British Columbia V7Y 1B4

**ELK PROPERTY**  
 Simikameen Mining Division  
 NTS 92H/16W, B.C.

**CLAIM AND WORK AREA LOCATION MAP**  
 SCALE 1 : 50,000

Drawn by WJ  
 Nov, 1999

Figure 2

## **4.0 GEOLOGY**

### **4.1 REGIONAL GEOLOGY (Figure 1)**

The Elk property is located in the Intermontane tectonic belt of south central B.C. Hope 92H Geological Map 41-1989 by J.W.H.Monger (1989) shows the area to be underlain by Upper Triassic volcanics and sediments of the Nicola Group and by Jurassic granites and granodiorites of the Osprey Lake Batholith. The contact between these units trends northeasterly across the property. Early Tertiary feldspar porphyry stocks and dykes of the Otter Intrusions occur throughout the claims and a large body to the south is spatially associated with many known showings of copper, lead, zinc and silver.

### **4.2 PROPERTY GEOLOGY**

The western claims area is underlain by steeply west-dipping andesitic to basaltic flows, agglomerates, tuffs and minor siltstone and limestone units of the Upper Triassic Nicola Group. The eastern half of the property is underlain by Jurassic granitic rocks of the Osprey Lake Batholith. The contact between these two assemblages trends approximately north-northeast. Upper Cretaceous to Tertiary feldspar porphyry and quartz-feldspar porphyry stocks and dykes of the Otter Intrusions cut both of the above. Breccias containing rounded volcanic, dioritic and granitic fragments in a granitic matrix crosscut Nicola Group rocks, Osprey Lake and Otter Intrusions. Andesite dykes are the youngest units mapped, post dating all of the above. Mineralization appears to be spatially associated with these (Tertiary?) andesite dykes which are locally cut by quartz veins.

The Nicola Group lithologies mapped on the Elk property consist of dark greyish green, massive basaltic andesite; in part porphyritic containing pyroxene and/or amphibole phenocrysts; some containing 0.5 mm laminae of sand-sized black grains; pale grey-green siliceous laminated tuff, and brownish-green to pale green agglomerates containing fragments from 5 to 50 cm in size. Nicola Group rocks are occasionally silicified, carbonatized or epidote-altered. Iron oxide staining and finely disseminated pyrite are common.

The Osprey Lake granitic rocks on the Elk property are pinkish grey, medium- to coarse-grained, equigranular, and contain quartz, orthoclase, plagioclase and biotite. Petrographic analyses indicate the composition varies from quartz monzonite to granodiorite. Pink, sugary textured, aplite and pegmatite dykes cut the quartz monzonite and were probably a late phase of the intrusive event. Quartz diorite related to the batholith is far less common and occurs as stocks. It is pale grey, generally medium to fine grained and contains visible quartz, plagioclase, biotite and amphiboles. Dykes of quartz monzonite and hornblende-biotite quartz monzonite have also been mapped. They are medium greenish-grey, medium grained and contain feldspar and occasionally hornblende phenocrysts. Alteration assemblages include weak to strong propylitic, argillic, phyllic and silicic, noted predominantly with vein structures in the trenched areas where these recessively weathering features have been exposed.

The Otter Intrusions comprise quartz-feldspar porphyry, feldspar porphyry and quartz-biotite-feldspar porphyry dykes and stocks. Quartz-feldspar porphyry is extensively clay altered and contains feldspar phenocrysts up to five cm, averaging about five mm. The altered groundmass is beige in colour and extremely friable. Feldspar porphyry rocks range from medium grey to red and contain feldspar phenocrysts 2 to 5 mm in size that vary in quantity from 3 to 40 percent. Petrographic examination of the red, medium packed feldspar porphyry indicated that it is syenitic in composition. Quartz-biotite-feldspar porphyry is greyish beige and is typified by small biotite grains with equal quantities of fine quartz and feldspar phenocrysts.

The breccias noted on the property have granitic matrices and contain rounded to sub-rounded granite, diorite and andesite clasts varying in size from 5 to 25 cm. The elongate breccia bodies vary in width from 5 to 30 metres and trend northeasterly. These zones may be portions of major fault structures, but displacement, if any, is not readily apparent.

Andesite dykes are dark greyish-green, fine grained and vary in thickness from 30 cm to 5 metres. They are commonly muscovite altered and brown weathering. Strong orange and blue clay alteration has also been noted in these rocks.

#### **4.3 STRUCTURAL GEOLOGY**

Nicola Group rocks on the west side of the property dip approximately 60 degrees to the west forming the east limb of a syncline mapped by Rice (GSC 1947). The syncline trends roughly north-south and its axis passes about five km west of the claims.

The Elk property topography reflects several linear structures, the most prominent being the north to northeast trending features occupied by Siwash Creek, Elusive Creek and a parallel creek 2.5 kilometres to the east. Subtle east-northeast trends are evident on aerial photographs and are commonly associated with mineralization.

Structural deformation in the area appears to be minimal.

#### **4.4 MINERALIZATION**

Gold mineralization on the Elk property is hosted primarily by quartz veins and stringers in altered granitic and, less frequently, volcanic rocks. Cross-cutting relationships indicate that the veins are Tertiary in age; they may be related to Tertiary Otter intrusive events.

In the Siwash North area, gold occurs in veins measuring 5cm to 70cm thick, hosted by a zone of strongly sericitic- to phyllic-altered granitic and, in the west, volcanic rocks. In general, the mineralized zone trends ENE with southerly dips from 20° to 80° (from east to west), and appears to be related to minor shearing. In the eastern parts of the area, up to six sub-parallel zones occur. Five of these zones are consistent enough to be labeled the A to E zones. Mineralization in the west has been identified in up to three main zones (B, C, and PC). The B zone is locally divided into several subzones, with each one locally auriferous.

From surface to a depth of several metres, oxidizing groundwater has leached out most of the sulfides with some pyrite and chalcopyrite remaining. Mineralization occurs primarily as native gold, occasionally as spectacular aggregates of coarse flakes, in frothy quartz (strong pyrite boxwork) or in fractures in the vein. Electrum was noted in one area as very coarse-grained flakes associated with strong manganese staining. Gold was seen rarely in boxworks in phyllic alteration.

In drill core, mineralization has not been affected by supergene processes. Gold is strongly associated with pyrite and with a blue-grey mineral. Photomicrographs show the gold commonly in contact with this mineral, which may be an Au-Bi alloy (maldonite?) or a Cu-Bi-Sb sulfosalt. Au-Cu, Au-Bi, and Cu-Bi relationships have been shown by statistical determinations (Cordilleran Engineering Ltd. 1990). Metallic minerals in the core include pyrite, chalcopyrite, sphalerite, galena, tetrahedrite, maldonite(?), pyrrhotite, and native gold (in order of decreasing abundance).

Gangue mineralogy consists primarily of quartz and altered wall-rock fragments. Ankerite is commonly present, with lesser amounts of calcite. Minor barite is also present. Fluorite was noted in one vein as very small (<1mm) zoned purple cubes scattered in the quartz.

In the northern Lake Zone, mineralization occurs mainly in quartz stringers and veins up to 35cm thick, hosted by strongly argillic- to phyllic-altered granitic rocks, closely associated with an andesite dyke. The zone trends easterly and dips about 60° to the south. At surface and in drill core, the gold is associated with pyrite, chalcopyrite, and locally high concentrations of galena and sphalerite. Tetrahedrite and maldonite(?) are also locally present. Silver values are much higher than in Siwash North, probably associated with the greater galena content of the veins. The gangue mineralogy is similar to Siwash North.

Mineralization in the End Zone area is similar to that in Siwash north, but trends approximately northeast and dips about 70° to the south. The quartz veins are 1 to 20cm in thickness and are hosted in strongly to moderately altered quartz monzonite as seen in trenches. The dominant sulphide minerals noted in the quartz veins were pyrite, galena, sphalerite, chalcopyrite, tetrahedrite and arsenopyrite. Silver to gold ratios are also elevated, similar to the Lake Zone.

In the Discovery Showing area (previously called the North Showing), pyritic quartz veining occurs within a package of altered quartz monzonite, intruded by numerous feldspar, quartz-feldspar porphyry and andesite dykes, with local diatreme breccia bodies.

In the South Showing area, mineralization occurs mainly in quartz stringers in altered granitic rocks, in association with breccia or with intensely argillized andesite dykes. Gold is rarely visible, and is associated with pyrite and base-metal sulfides. The highest grade sample is from a zone of quartz stringers paralleling the breccia, accompanied by weak sericitic alteration.

#### **4.4.1 Alteration**

On the Elk property, stronger alteration generally accompanies higher grade gold mineralization.

Seven main types of alteration are recognized throughout the property: propylitic, argillic, sericitic, K-spar stable phyllic, phyllic, advanced argillic and silicic. Locally, potassic alteration, skarnification and silicification occur, but are relatively minor and do not appear to be related to mineralization. The following descriptions refer to granitic rocks except as noted.

##### **propylitic:**

Generally light green with biotite and hornblende altered to chlorite and saussuritization of plagioclase. In volcanics, colour is generally olive-green, and rock is soft.

##### **argillic:**

Rock is bleached, with plagioclase white and clay-altered; K-spar is slightly altered. Volcanics are bleached to light green or grey.

##### **sericitic:**

Typically pale green with a micaceous sheen, with plagioclase altered to sericite; trace disseminated pyrite may be present. Often associated with quartz veins, and appears to be the lowest grade alteration associated with gold mineralization. Not recognized in volcanics.

##### **K-spar stable phyllic:**

Light pink, green, or yellowish with K-spar fresh, pink and blocky. Plagioclase and mafic minerals are altered to fine-grained quartz-sericite-pyrite. Often occurs with veins and associated with gold mineralization. Not recognized in volcanics.

##### **phyllic:**



Generally grey, fine-grained quartz-sericite-pyrite alteration. Usually associated with veins often gradational to quartz and often auriferous.

**advanced argillic:**

Most or all of feldspar is destroyed, quartz is "free-floating"; often sheared, white in colour. Volcanics are white or blue coloured. Often associated with quartz veins.

**silicic:**

Quartz veining or replacement. Hard with moderate conchoidal fracture. Textures may be blurred.

There is a strong symmetrical zoning of alteration around the quartz veins:

VEIN - ADVANCED - PHYLIC - K-SPAR STABLE - ARGILLIC - PROPYLITIC  
ARGILLIC PHYLIC

Secondary bands and zones of alteration may be present, and any of the alterations may be missing.

At surface, the alteration may produce a striking "rainbow" effect with the rock colour grading from white (vein) through grey, yellow, orange, rust, brown, and green (propylitic). In drill core, the effect is less striking and extensive, but the general pattern is still present.

#### **4.4.2 Genetic Considerations**

Gold mineralization on the Elk property appears to be related to Tertiary tectonic and intrusive events as inferred from crosscutting relationships.

At various locations on the property, quartz veins have been mapped cutting Tertiary(?) andesite dykes which have intruded Late Cretaceous to Tertiary Otter intrusions, Jurassic Osprey Lake Batholith and Triassic Nicola volcanics. In the Siwash North area one quartz vein was found crosscut by an andesite dyke. Cataclastic textures in the quartz veins mapped in the Siwash North and Discovery Showing areas suggest reactivation of the structures hosting the veins. Late stage Otter intrusive activity may have acted as the "heat pump" for the mineralizing fluids. Petrographic analysis indicates that the deposition of gold mineralization was a late-stage event in the hydrothermal system, with native gold and associated sulphide minerals filling fractures in pyrite.

During the mineralizing events hydrothermal fluids permeated fractures in the host rock, depositing quartz and sulphides in the fractures and causing alteration of the wall rocks. These fluids probably had temperatures of about 300°C during the initial stages of mineralization as indicated by sulphide and alteration mineralogy (Panteleyev, 1986).

Briefly, the genetic model for the deposits is thought to be as follows:

- 1) Deposition of the Nicola volcanics.
- 2) Emplacement of the Osprey Lake Batholith.
- 3) Emplacement of the Otter syenitic intrusions.
- 4) Fracturing possibly during the Osprey Lake and/or Otter intrusive events.
- 5) Intrusion of andesite dykes.
- 6) Precipitation of quartz veins with pyrite, base metal sulphides and late stage gold mineralization, with associated hydrothermal alteration.
- 7) Erosion to present level.

## 5.0 GEOCHEMISTRY

### 5.1 INTRODUCTION

Totals of 24 reconnaissance rock samples, 36 auger soil samples and 61 reconnaissance and grid soil samples were collected on the Elk claims during the 1999 field season. Pulps from soil samples collected in 1987 and 1988 in the Siwash North area were analyzed for 30 elements by ICP to help outline hydrothermal alteration zones that may host gold.

### 5.2 ROCK GEOCHEMISTRY

All samples were shipped to Acme Analytical Laboratories in Vancouver for analysis. Rock samples, usually 2 to 5 kg, were collected and placed into plastic sample bags. Tyvex tags with the sample number were attached to stable vegetation close to the sample site. Sites were located by GPS and tied into the local soil sample grid where possible. At the lab, rock was crushed to -10 mesh of which 250gm was pulverized to -100 mesh. A 0.5 gm sub-sample was digested with 3ml 2-2-2 HCL-HNO<sub>3</sub>-H<sub>2</sub>O at 95 deg C for one hour and diluted with 10ml water and then analyzed for 30 elements by ICP (Inductively Coupled Plasma). Gold analysis was done by Fire Assay/ICP from a 30gm sub-sample. Sample locations are plotted on Figures 2 to 5 and sample descriptions can be found in Table 2. Raw assay data is presented in Appendix A.

Rock samples of silicified volcanic and quartz vein material collected in the Elk West areas of Don Slash (Figure 3) and Triang Slash (Figure 4) respectively returned anomalous gold values. The mineralized feature in Don Slash cuts andesites and is spatially associated with a feldspar porphyry intrusive and a magnetic low. Both have roughly east-west trends.

### 5.3 SOIL GEOCHEMISTRY

Reconnaissance soil samples were collected from the "B" soil horizon and placed in kraft paper bags numbered with the location identification number. The location was marked with coloured ribbon and a tyvex tag labelled with the identification number. Auger soil samples were collected by excavating an eight cm diameter hole with a hand held one man power auger to varying depths depending upon rock obstacles encountered by the auger bit. Typical depths were one metre with a maximum of 1.4m. The soil sample was collected from the bottom portion of the auger on penetration to the maximum depth and placed into a paper sample bag. The results of the auger sampling are presented as vertical sections in figures 6 to 10. Results were marginal.

Samples were partially dried at the site and shipped to Acme Analytical Laboratories in Vancouver for gold analysis. At the lab, soils were dried and sieved to obtain 20 grams of minus 80 mesh size fraction. A 0.5 gm sub-sample was digested with 3ml 2-2-2 HCL-HNO<sub>3</sub>-H<sub>2</sub>O at 95 deg C for one hour and diluted with 10ml water and then analyzed for 5 or 30 elements by ICP (Inductively Coupled Plasma). A 20 gram sub-sample of the -80 mesh material was digested by Aqua Regia / MIBK (methyl isobutyl ketone) and the solution analyzed for gold by graphite furnace atomic absorption. Grid soils were analyzed for five elements and the reconnaissance soils were analyzed for 30 elements. Sample locations are plotted on Figures 2 to 5 and sample descriptions can be found in Table 2. Raw assay data is listed in Appendix A.

Coarse grid soil samples collected from 1987 to 1996 in the Siwash North area were originally analyzed for gold only. Pulps from some of these samples were re-analyzed for 30 elements by ICP in 1999 to determine if Iron/ Titanium ratios could be used to highlight hydrothermal alteration zones in the volcanics as described in a paper by Madeisky and Chemavska (1997). The Fe/Ti ratios with associated gold values are plotted on Figure 5. Elevated Fe/Ti values define three trends in the Siwash area. An irregular east-west trend occurs in rough coincidence with the Siwash North mineralized vein systems. A north-south trend follows a linear through the center of the deposit area that probably corresponds with an andesite dyke. The third trend is coincident with an east west trending linear in the Bullion creek area.

Table 2		SAMPLE DESCRIPTIONS AND LOCATIONS										
SAMPLE NO	Easting	Northing	MO ppm	CU ppm	PB ppm	ZN ppm	AG ppm	AS ppm	BI ppm	Au ppb	Rock Type	Sample Type
ELK99-R18	691608	5525150	6	227	16	13	3.9	216	3	69	Volc	Recce grab
ELK99-R19	691006	5525637	5	50	20	27	0.9	1399	3	275	Qtz carb vein	Recce grab
ELK99-R2	691978	5525175	2	125	288	156	0.3	34	4	5	Volcanic pyroclastic	Recce grab
ELK99-R20	691675	5525170	1	120	263	445	20.2	141	3	20	Qtz carb vein	Recce grab
ELK99-R21	691973	5525808	4	167	11	102	0.3	51	3	9	Felsic? dyke	Recce chan
ELK99-R22	691946	5525802	1	27	7	28	0.3	340	3	27	Felsic? intrusive	Recce grab
ELK99-R23	692094	5525580	5	13	53	16	5.4	6194	12	1163	Qtz vein	Recce grab
ELK99-R3	691905	5525808	5	23	14	23	0.5	13146	3	621	Qtz vein? float	Recce grab
ELK99-R4	691481	5525151	5	419	441	3810	79.7	769	3	679	Silicified Volc	Recce grab
ELK99-R4a	691481	5525151	1	973	15	153	1.7	83	3	30	Andesite	Recce chip
ELK99-R5	691778	5525538	3	106	16	59	1.2	190	9	80	Silicified sheared Volc	Recce grab
ELK99-R6	692239	5526113	2	236	24	130	1.3	233	3	42	Andesite dyke?	Recce grab
ELK99-R7	692239	5526113	3	260	16	180	1.8	581	10	16	Qtz vein	Recce grab
ELK99-R8	692820	5526720	3	269	6	28	0.4	7	7	8	Andesite volcanic	Recce grab
ELK99-R9	690676	5525217	3	22	3	10	0.3	7	3	2	Qtz vein	Recce grab
ELK99-S1	691770	5525067	4	122	8	57	0.6	142	5	27	Patchy sheared/alt volc	Recce soil
ELK99-S10	691835	5525083	205		3	58	0.3	3		4	Andesite	Recce soil
ELK99-S11	695401	5527525	16		8	19	0.3	3		56	QM	Recce Soil
ELK99-S12	695283	5527328	20		3	13	0.3	2		1	QM?	Recce Soil
ELK99-S13	695273	5527328	31		4	23	0.3	2		6	QM?	Recce Soil
ELK99-S14	691928	5525777	141		4	50	0.3	64		14	And	Recce Soil
ELK99-S15	691932	5525780	298		7	67	0.3	237		30	And	Recce Soil
ELK99-S16	691936	5525783	273		10	71	0.3	548		44	And	Recce Soil
ELK99-S17	691940	5525786	83		6	66	0.3	427		29	And	Recce Soil
ELK99-S18	691944	5525788	307		11	91	0.3	315		44	And	Recce Soil
ELK99-S19	691948	5525792	273		5	83	0.3	128		14	And	Recce Soil
ELK99-S2	691662	5525373	1	119	18	251	0.3	32	3	4	Patchy sheared/alt volc	Recce grab
ELK99-S20	691953	5525794	86		3	61	0.3	28		5	And	Recce Soil
ELK99-S21	691957	5525796	148		3	61	0.3	18		9	And	Recce Soil
ELK99-S22	691961	5525799	147		6	57	0.3	61		11	And	Recce Soil
ELK99-S23	691965	5525802	203		3	54	0.3	43		8	And	Recce Soil
ELK99-S24	691970	5525804	202		3	63	0.3	48		6	And	Recce Soil
ELK99-S25	691974	5525807	170		5	55	0.3	23		8	And	Recce Soil
ELK99-S26	691978	5525809	162		6	56	0.3	22		8	And	Recce Soil
ELK99-S27	691982	5525812	153		5	49	0.3	16		7	And	Recce Soil
ELK99-S28	691987	5525815	109		4	50	0.3	14		17	And	Recce Soil
ELK99-S29	692113	5525750	109		51	446	0.3	452		2	And dyke?	Recce soil
ELK99-S3	692778	5526680	2	259	23	198	1.5	167	6	189	Andesite volcanics	Recce soil
ELK99-S4	692432	5526336	1	107	6	57	0.6	2	3	3	Andesite volcanics	Recce soil
ELK99-S5	691006	5525637	3	216	21	88	1.2	482	7	86	Sheared felds porph volc (xyl tuff?)	Recce soil
ELK99-S6	690677	5525640	2	83	6	53	0.7	2	6	8	Sheared And volc	Recce soil
ELK99-S7	698718	5527014	1	24	14	56	0.6	2	3	338	QM	Grab
ELK99-S8	694519	5526084	23		1026	167	0.3	3		19	QM	Recce soil
ELK99-S9	691885	5525070	74		6	35	0.3	11		8	Volcanic	Recce soil

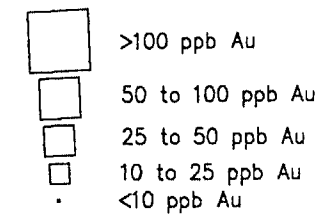
Table 2		SAMPLE DESCRIPTIONS AND LOCATIONS										
SAMPLE_NO	Easting	Northing	MO ppm	CU ppm	PB ppm	ZN ppm	AG ppm	AS ppm	BI ppm	Au ppb	Rock Type	Sample Type
ELK99-AS1	693320	5526071	1	29	13	63	0.3	8	3	9	Quartz Monzonite (QM)	Auger soil
ELK99-AS10	693197	5525946	1	29	27	106	0.3	19	3	14	Andesite	Auger soil
ELK99-AS11	693434	5524924	22	32	16	135	0.3	29	3	39	Granodiorite (GDR)	Auger soil
ELK99-AS12	693434	5524939	5	36	16	131	0.3	10	3	35	GDR	Auger soil
ELK99-AS13	693434	5524949	11	33	24	77	0.3	17	3	32	GDR	Auger soil
ELK99-AS14	693434	5524900	1	12	3	4	0.3	2	3	3	GDR	Auger soil
ELK99-AS15	693434	5524875	1	38	15	56	0.5	12	3	28	GDR	Auger soil
ELK99-AS16	693434	5524862	1	56	21	63	0.4	13	3	19	GDR	Auger soil
ELK99-AS17	693434	5524850	1	14	7	43	0.3	4	3	5	GDR	Auger soil
ELK99-AS18	693434	5524825	1	18	7	64	0.3	5	3	14	GDR	Auger soil
ELK99-AS19	693434	5524800	1	28	11	54	0.3	9	3	40	GDR	Auger soil
ELK99-AS2	693320	5526061	1	39	18	82	0.4	14	3	12	QM?	Auger soil
ELK99-AS20	693434	5524775	1	49	14	41	0.3	10	3	7	GDR	Auger soil
ELK99-AS21	692091	5525810	1	71	21	188	0.3	188	3	4	Andesite (And)	Auger soil
ELK99-AS22	692088	5525806	1	68	5	295	0.3	34	3	11	And	Auger soil
ELK99-AS23	692084	5525802	1	52	6	90	0.3	32	3	10	And	Auger soil
ELK99-AS24	692081	5525798	1	42	5	51	0.3	6	3	2	And	Auger soil
ELK99-AS25	698695	5527008	1	14	9	54	0.3	2	3	1	QM	Auger soil
ELK99-AS26	698695	5527023	1	19	4	45	0.3	2	3	3	QM	Auger soil
ELK99-AS27	698695	5527038	1	18	5	37	0.3	2	3	4	QM	Auger soil
ELK99-AS28	698695	5527053	1	10	7	27	0.3	2	3	3	QM	Auger soil
ELK99-AS29	698695	5526993	1	14	6	26	0.3	2	3	1	QM	Auger soil
ELK99-AS3	693320	5526051	1	60	18	61	1.9	13	3	11	QM?	Auger soil
ELK99-AS30	698695	5526978	1	7	5	24	0.3	2	3	2	QM	Auger soil
ELK99-AS31	698695	5526963	3	40	3	88	0.3	2	3	1	QM	Auger soil
ELK99-AS32	694591	5526200	2	40	113	238	1.5	7	3	7	QM	Auger soil
ELK99-AS33	694616	5526203	2	46	163	389	0.3	9	3	14	QM	Auger soil
ELK99-AS34	694638	5526215	2	41	113	233	0.6	5	3	7	QM	Auger soil
ELK99-AS35	694660	5526227	2	34	101	157	0.4	7	3	3	QM	Auger soil
ELK99-AS36	694678	5526244	1	29	29	192	0.3	2	3	4	QM	Auger soil
ELK99-AS4	693320	5526041	1	42	38	94	3.8	16	3	9	QM?	Auger soil
ELK99-AS5	693320	5526031	1	29	12	43	0.3	8	3	4	QM?	Auger soil
ELK99-AS6	693320	5526021	1	51	19	66	0.5	10	3	14	QM?	Auger soil
ELK99-AS7	693197	5525976	2	26	32	117	0.3	14	3	21	Andesite	Auger soil
ELK99-AS8	693197	5525966	2	33	34	122	0.3	20	3	31	Andesite	Auger soil
ELK99-AS9	693197	5525956	2	33	27	159	0.3	17	3	12	Andesite	Auger soil
ELK99-R1	691656	5524932	4	18	99	22	1.4	4435	5	382	Qtz vein	Grab
ELK99-R10	691731	5519968	2	98	3	39	0.7	11	6	37	Sheared Andesite	Recce grab
ELK99-R11	691353	5520842	8	38	558	2814	1.7	12	3	8	GDR	Recce grab
ELK99-R12	691333	5521001	7	33	9	67	0.5	2	3	14	GDR	Recce grab
ELK99-R13	690500	5523367	4	145	41	141	0.5	54	3	12	Altered bleached dyke	Recce grab
ELK99-R14	690655	5523680	14	51	3	120	1.7	229	8	57	Qtz veins?	Recce grab
ELK99-R15	691653	5519635	8	23	32	186	0.4	32	3	10	Diorite?	Recce grab
ELK99-R16	696124	5527726	15	11	11	3	2	3	9	106	QM	Recce grab
ELK99-R17	696124	5527726	3	7	4	5	0.6	5	3	4	QM	Recce grab

SAMPLE#	CU ppm	PB ppm	ZN ppm	AG ppm	AS ppm	AU ppb	Rock Type	Sample Type
ELK99-AS21	71	21	188	0.3	188	4	Andesite	Auger Soil 0.5m
ELK99-AS22	68	5	295	0.3	34	11	Andesite	Auger Soil 0.5m
ELK99-AS23	52	6	90	0.3	32	10	Andesite	Auger Soil 0.5m
ELK99-AS24	42	5	51	0.3	6	2	Andesite	Auger Soil 0.35m
ELK99-R21	167	11	102	0.3	51	9	Felsic? dyke	Recce Channel
ELK99-R22	27	7	28	0.3	340	27	Felsic? intrusive	Recce Grab
ELK99-R23	13	53	16	5.4	6194	1163	Qtz vein	Recce Grab
ELK99-R3	23	14	23	0.5	13146	621	Qtz vein? float	Recce Grab
ELK99-R5	106	16	59	1.2	190	80	Sil sheared Volc	Recce chip 2.5m
ELK99-S14	141	4	50	0.3	64	14	Andesite	Recce Soil
ELK99-S15	298	7	67	0.3	237	30	Andesite	Recce Soil
ELK99-S16	273	10	71	0.3	548	44	Andesite	Recce Soil
ELK99-S17	83	6	66	0.3	427	29	Andesite	Recce Soil
ELK99-S18	307	11	91	0.3	315	44	Andesite	Recce Soil
ELK99-S19	273	5	83	0.3	128	14	Andesite	Recce Soil
ELK99-S20	86	3	61	0.3	28	5	Andesite	Recce Soil
ELK99-S21	148	3	61	0.3	18	9	Andesite	Recce Soil
ELK99-S22	147	6	57	0.3	61	11	Andesite	Recce Soil
ELK99-S23	203	3	54	0.3	43	8	Andesite	Recce Soil
ELK99-S24	202	3	63	0.3	48	6	Andesite	Recce Soil
ELK99-S25	170	5	55	0.3	23	8	Andesite	Recce Soil
ELK99-S26	162	6	56	0.3	22	8	Andesite	Recce Soil
ELK99-S27	153	5	49	0.3	16	7	Andesite	Recce Soil
ELK99-S28	109	4	50	0.3	14	17	Andesite	Recce Soil
ELK99-S29	109	51	446	0.3	452	2	Andesite dyke?	Recce Soil

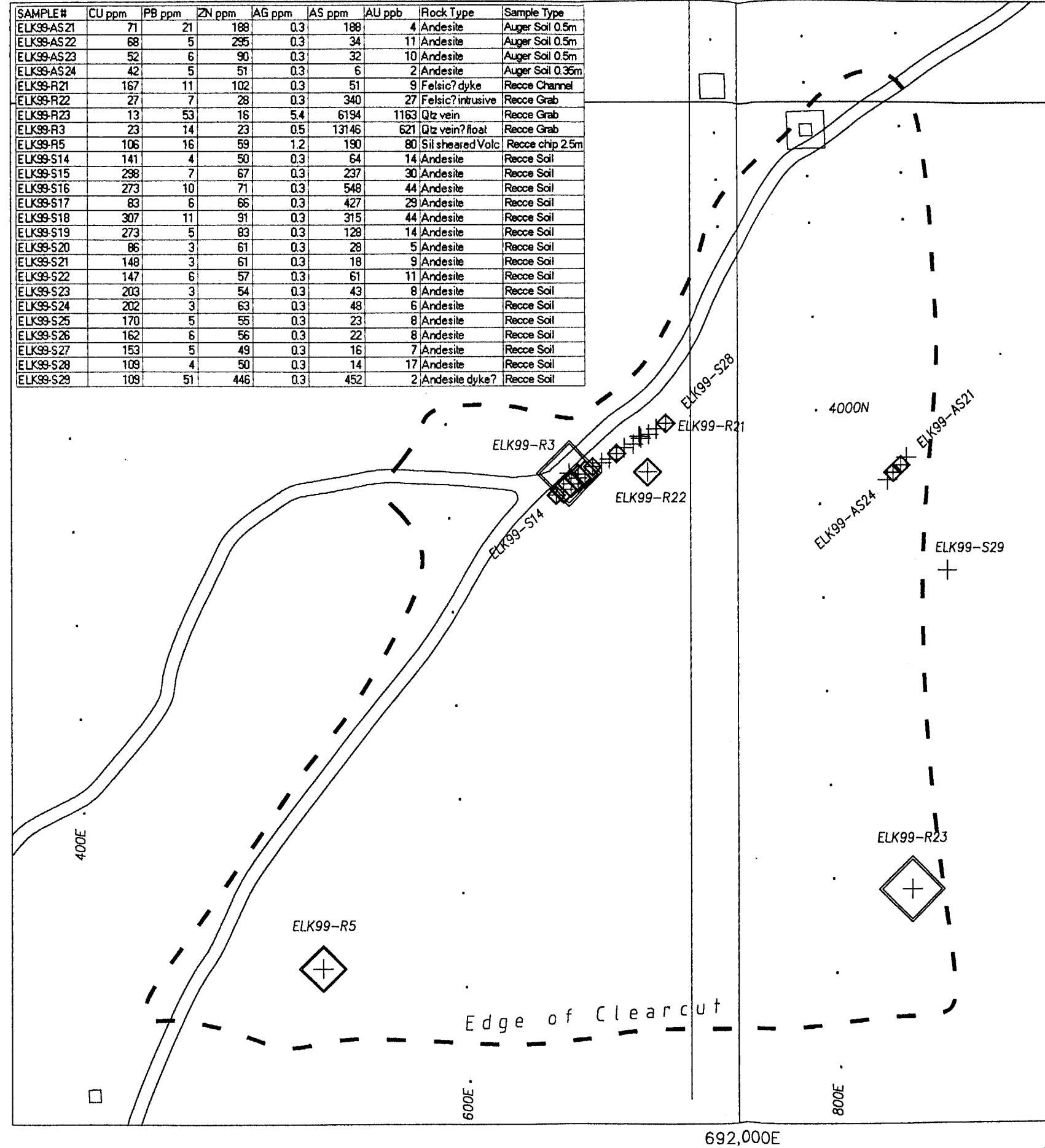
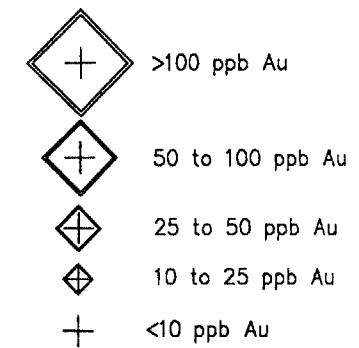
5,526,000N



**1987-1990 Grid Soil Samples**

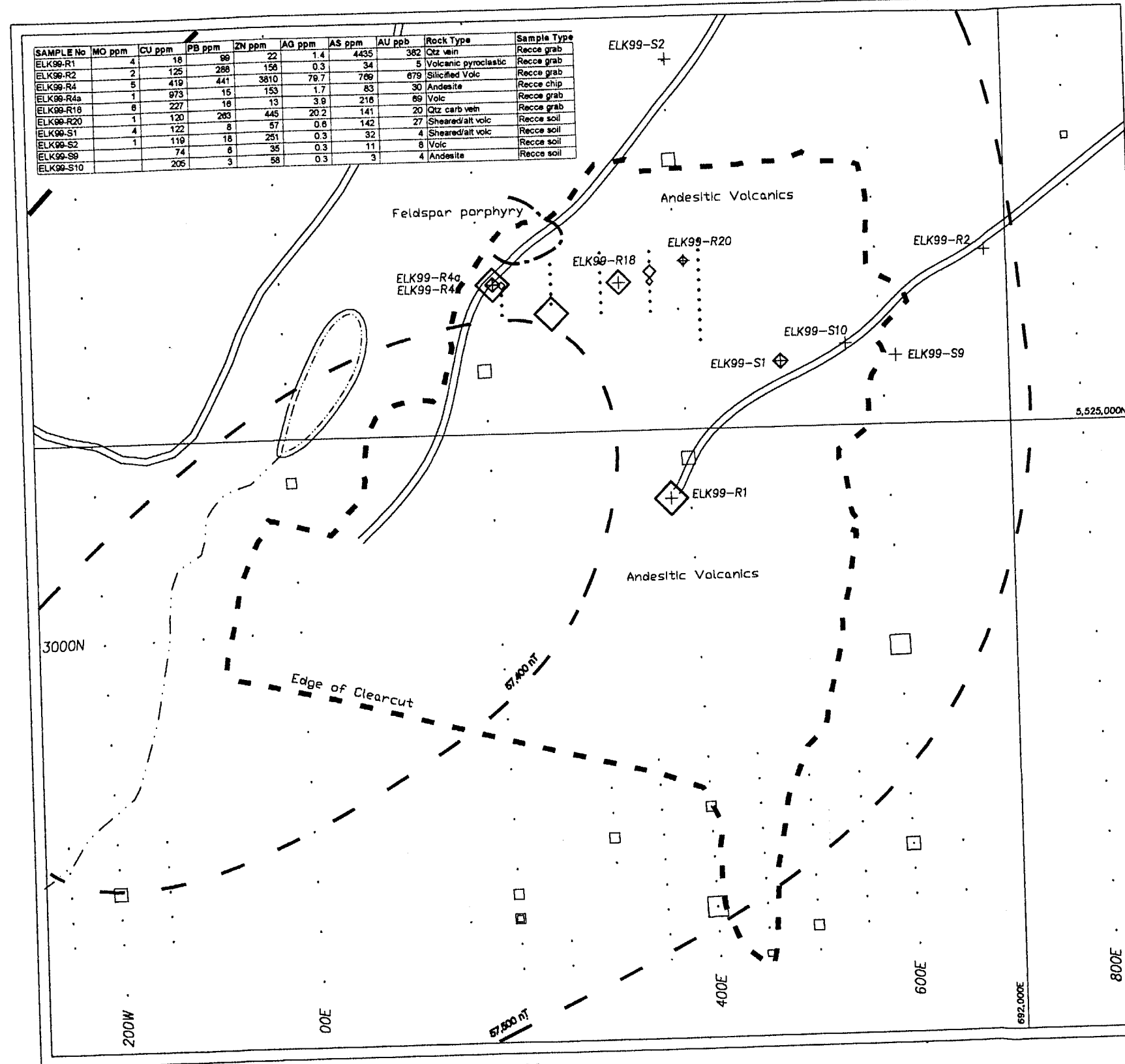


**1989 Reconnaissance Samples**



<b>FAIRFIELD MINERALS LTD.</b> <small>1420 - 700 West Georgia Street Vancouver, British Columbia V7Y 1S8</small>	
<b>ELK PROPERTY</b> <small>Watson Lake Mining District          NTS 92H 16W, B.C.</small>	
<b>TRIANG SLASH          GOLD GEOCHEM          SCALE 1 : 2,500</b>	
<small>Drawn by WJ          Nov, 1999</small>	<b>Figure 3</b>

SAMPLE No	MO ppm	CU ppm	PB ppm	ZN ppm	AG ppm	AS ppm	AU ppb	Rock Type	Sample Type
ELK99-R1	4	18	99	22	1.4	4435	382	Qtz vein	Recce grab
ELK99-R2	2	125	288	158	0.3	34	5	Volcanic pyroclastic	Recce grab
ELK99-R4	5	419	441	3810	79.7	789	679	Silicified Volc	Recce grab
ELK99-R4a	1	973	15	153	1.7	83	30	Andesite	Recce chip
ELK99-R18	6	227	18	13	3.8	218	69	Volc	Recce grab
ELK99-R20	1	120	263	445	20.2	141	20	Qtz carb vein	Recce grab
ELK99-S1	4	122	8	57	0.6	142	27	Sheared/alt volc	Recce soil
ELK99-S2	1	119	18	251	0.3	32	4	Sheared/alt volc	Recce soil
ELK99-S9		74	6	35	0.3	11	8	Volc	Recce soil
ELK99-S10		205	3	58	0.3	3	4	Andesite	Recce soil



Geological Contact  
 57,500 nT  
 Magnetic Field Intensity (nanoTeslas)

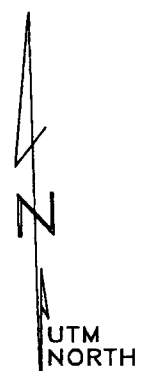
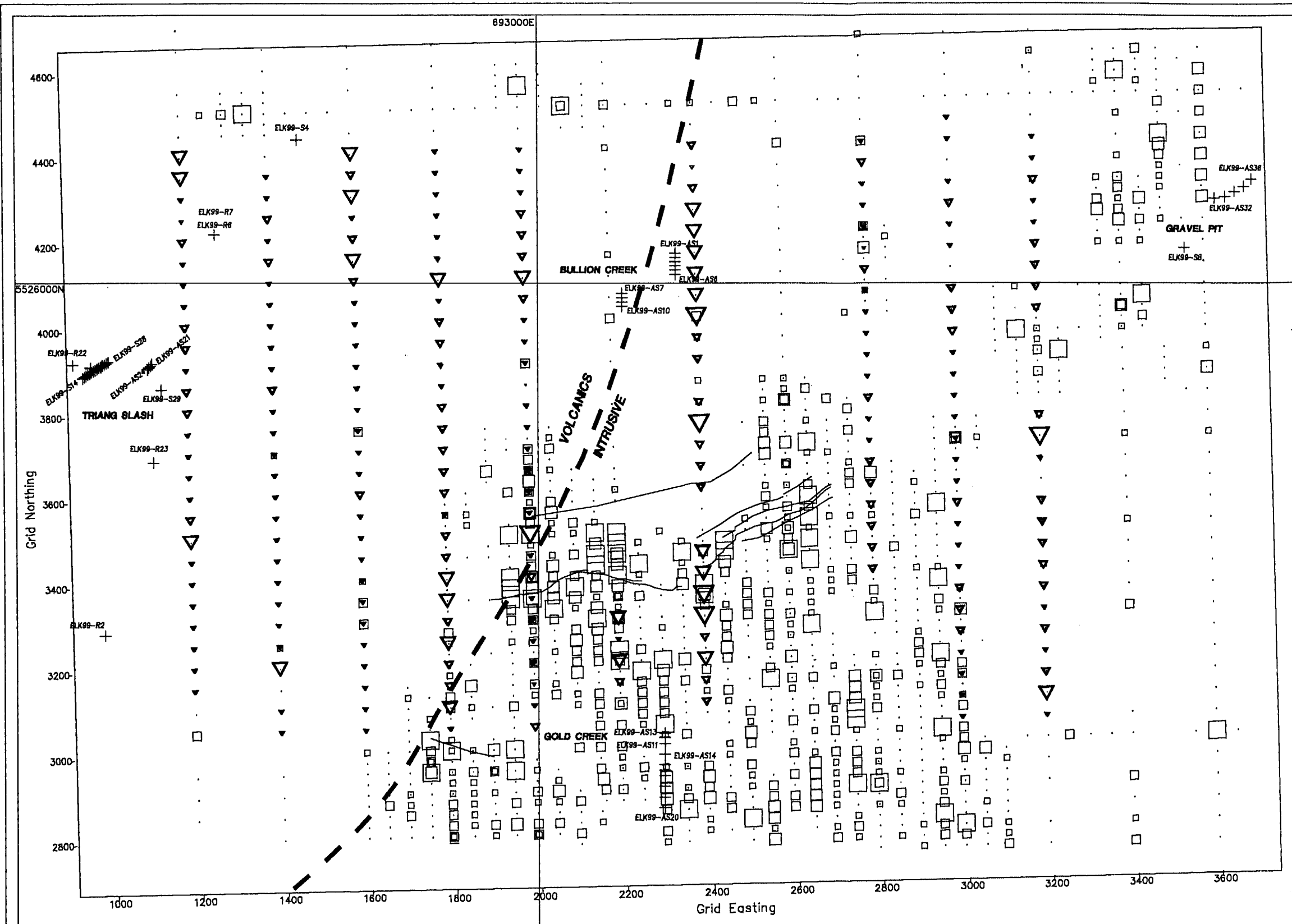
**1987-1990 Grid Soil Samples**

- >100 ppb Au
- ◻ 50 to 100 ppb Au
- ◻ 25 to 50 ppb Au
- ◻ 10 to 25 ppb Au
- ◻ <10 ppb Au

**1999 Reconnaissance Samples**

- ◇ >100 ppb Au
- ◇ 50 to 100 ppb Au
- ◇ 25 to 50 ppb Au
- ◇ 10 to 25 ppb Au
- ◇ <10 ppb Au

<b>FAIRFIELD MINERALS LTD.</b> <small>1420 - 700 West George Street Vancouver, British Columbia V7Y 2E4</small>	
<b>ELK PROPERTY</b> <small>Simikameen Mining Division                  NTS 92H 16W, B.C.</small>	
<b>DON SLASH</b> <b>SAMPLE LOCATIONS &amp; RESULTS</b> <b>SCALE 1 : 5,000</b>	
Drawn by WJ Nov, 1999	Figure 4



Surface Trace of Mineralized Vein System

**1999 Reconnaissance Samples**

- ELK99-S8 + Soil Sample
- ELK99-AS36 + Auger Soil Sample
- ELK99-R23 + Rock Sample

**1987 - 1996 Grid Soil Samples**

Fe/Ti Ratio		Au ppb	
▽	35 to 100	□	>100 ppb
▽	25 to 35	□	90 - 100 ppb
▽	20 to 25	□	25 - 90 ppb
▽	10 to 20	□	10 - 25 ppb
▽	< 10	□	< 10 ppb

<b>FAIRFIELD MINERALS LTD.</b> <small>1480 - 700 West Georgia Street Vancouver, British Columbia V7Y 1M8</small>	
<b>ELK PROPERTY</b> <small>Stratagem Mining Division                  NTS 021/18W, B.C.</small>	
<b>SIWASH NORTH AREA                  SOIL GEOCHEMISTRY</b> <b>SCALE 1 : 10,000</b>	
Drawn by WJ Nov. 1999	<b>Figure 5</b>

D:\G\yord\siwash\map\siwash5.dwg

5526025N

5526050N

 **Fairfield  
Minerals Ltd.**

*Bullion Creek*

**ELK99-AS6**

14, 0.5

**ELK99-AS5**

4, 0.3

**ELK99-AS4**

9, 3.8

**ELK99-AS3**

11, 1.9

**ELK99-AS2**

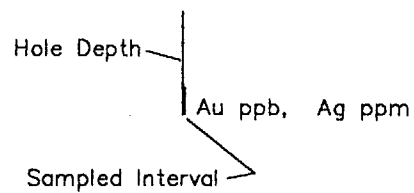
12, 0.4

**ELK99-AS1**

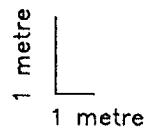
9, <0.3

**EXPLANATION**

**Auger Hole Number**



**SCALE**



Vertical Distance 2 Times Horizontal  
SECTION UTM EASTING 693320E, LOOKING WEST

<b>FAIRFIELD MINERALS LTD.</b> <small>140 - 700 West Georgia Street Vancouver, British Columbia V7Y 0E6</small>	
<b>ELK PROPERTY</b> <small>Smilkameen Mining Division          NTS 921/16W, S.C.</small>	
<b>BULLION CREEK EAST          SOIL AUGER SECTION          HORIZ. SCALE 1 : 100</b>	
<small>Drawn by WJ          Nov, 1999</small>	<b>Figure 8</b>



5525975N

5526025N

 **Fairfield  
Minerals Ltd.**

*Bullion Creek*

**ELK99-AS10**

|  
14, <0.3

**ELK99-AS9**

|  
12, <0.3

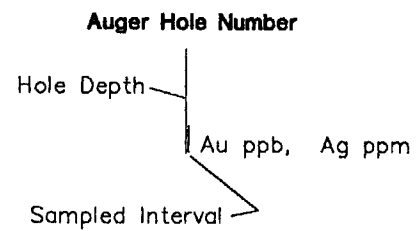
**ELK99-AS8**

|  
31, <0.3

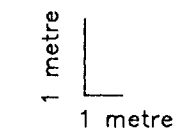
**ELK99-AS7**

|  
21, <0.3

**EXPLANATION**

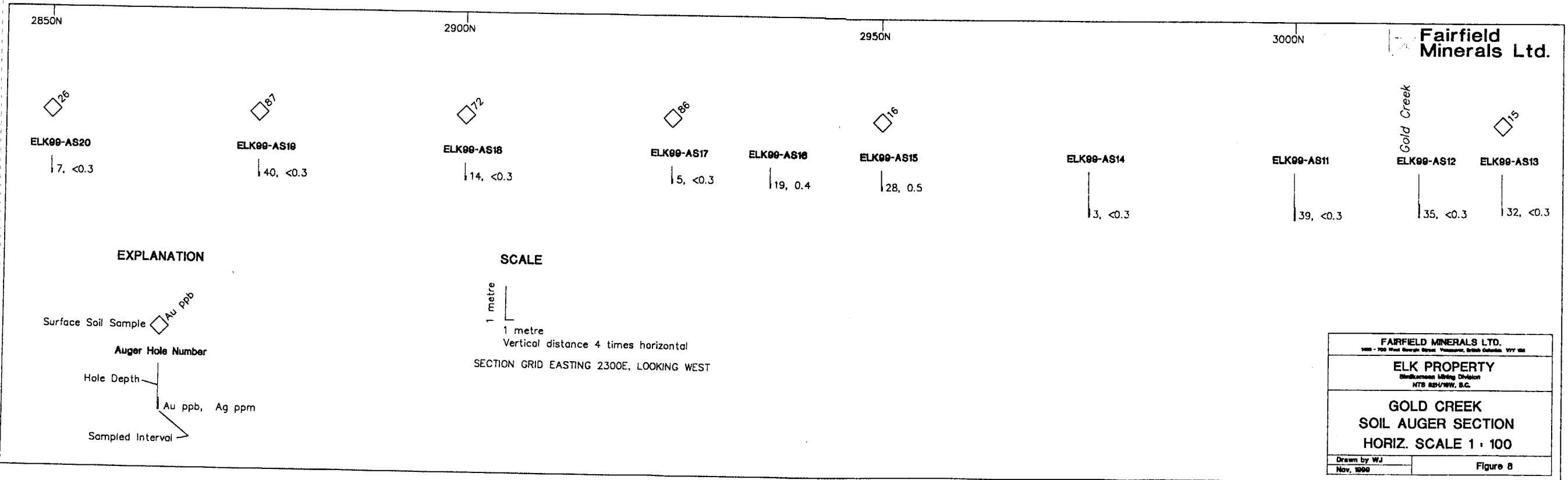


**SCALE**



Vertical Distance 2 Times Horizontal  
SECTION UTM EASTING 693197E, LOOKING WEST

FAIRFIELD MINERALS LTD. <small>1480 - 700 West Georgia Street Vancouver, British Columbia V7Y 1B6</small>	
<b>ELK PROPERTY</b> <small>Similkameen Mining Division          NTS 92H/10W, B.C.</small>	
<b>BULLION CREEK EAST          SOIL AUGER SECTION          HORIZ. SCALE 1 : 100</b>	
<small>Drawn by WJ          Nov, 1998</small>	<b>Figure 7</b>



**ELK99-AS32**

7, <1.5

**ELK99-AS33**

14, <0.3

**ELK99-AS34**

7, 0.6

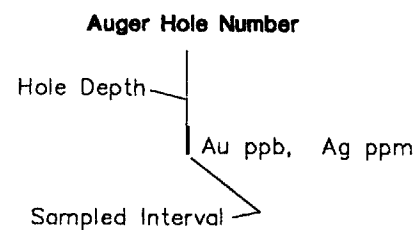
**ELK99-AS35**

3, 0.4

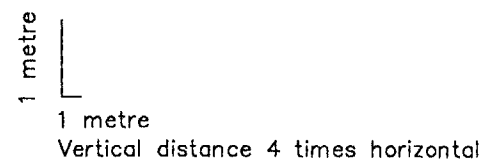
**ELK99-AS36**

4, 0.3

**EXPLANATION**



**SCALE**



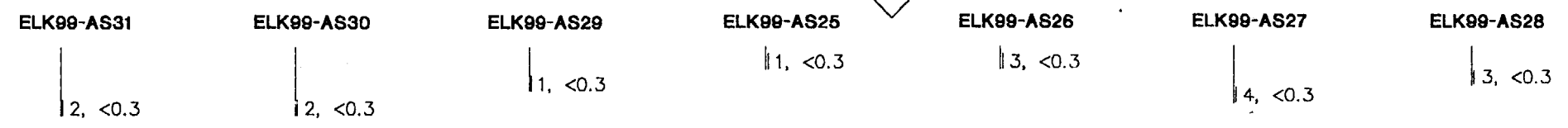
SOIL GRID LOC 3830E - 3920E 4250N, LOOKING NORTHWEST

<b>FAIRFIELD MINERALS LTD.</b> <small>1430 - 700 West Georgia Street Vancouver, British Columbia V7Y 2B6</small>	
<b>ELK PROPERTY</b> <small>Sewikamoon Mining Division          NTS 92H/18W, B.C.</small>	
<b>GRAVEL PIT STRUCTURE          SOIL AUGER SECTION          HORIZ. SCALE 1 : 100</b>	
<small>Drawn by WJ          Nov, 1999</small>	<b>Figure 9</b>

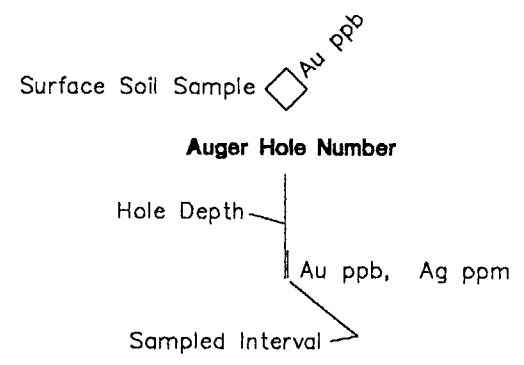
4900N

4950N

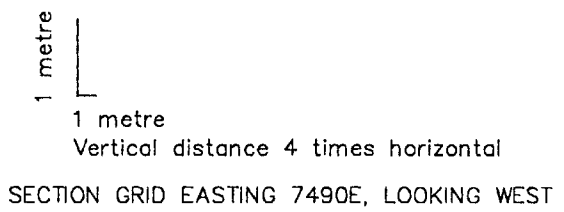
Sample ELK99-S7 15 E of section line



**EXPLANATION**



**SCALE**



<b>FAIRFIELD MINERALS LTD.</b> <small>1480 - 700 West Georgia Street Vancouver, British Columbia V7Y 1S0</small>	
<b>ELK PROPERTY</b> <small>Bimikameen Mining Division          NTB 62H/16W, B.C.</small>	
<b>ELK 46 CLAIM</b> <b>SOIL AUGER SECTION</b> <b>HORIZ. SCALE 1 : 150</b>	
<small>Drawn by WJ          Nov, 1999</small>	<b>Figure 10</b>

**6.0 STATEMENT OF COSTS**

SALARIES (Field)		
W. Jakubowski	Geologist	7 days
E. A. Balon	Prospector	8 days
Salaries / Benefits	.....	3,000
TRANSPORTATION		
Truck Rental	.....	700
ACCOMODATION	.....	560
AUGER RENTAL	.....	218
GEOCHEMICAL ANALYSIS		
43 Auger & Soil Samples 30 el ICP MIBK Au	@\$13.05 .....	560
57 Grid & Recce Soil Samples 5 el ICP MIBK Au	@\$5.53 .....	315
24 Rock Samples 30 el ICP Au FA ICP	@\$16.67 .....	400
235 Soil Sample Re-analyses 30 el ICP	@\$5.61.....	1318
TOTAL EXPENDITURES		<b><u>\$7,071</u></b>

7.0

**WRITERS' CERTIFICATE**

I, Wojtek Jakubowski of Vancouver, British Columbia, hereby certify that:

1. I am a professional geoscientist residing at #303 639 West 14th Avenue and employed by Fairfield Minerals Ltd. of 1420 - 700 West Georgia Street, Vancouver, B.C.
2. I received a B.Sc. degree in Geological Sciences from McGill University, Montreal, Quebec in 1979.
3. I have practiced my profession for 20 years in Quebec, Northwest Territories, Yukon Territory, British Columbia and Mexico.
4. I am the author of this report and the supervisor of the field work conducted on the Elk claim group by Fairfield Minerals Ltd. during the period June 6 to October 15, 1999.

**FAIRFIELD MINERALS LTD.**

A circular professional seal for a geologist. The outer ring contains the text "PROFESSIONAL" at the top and "P. GEOLOGIST" at the bottom. Inside the ring, the name "W. J. Jakubowski" is printed. A handwritten signature in black ink is written over the seal.

**Wojtek Jakubowski, B.Sc., P. Geo  
Geologist**

## 8.0

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**APPENDIX A**

Analytical Results from Rock and Soil Samples





GEOCHEMICAL ANALYSIS CERTIFICATE



Fairfield Minerals Ltd. PROJECT ELK File # 9901961  
1420 - 700 W. Georgia St., Vancouver BC V7Y 1B6 Submitted by: ED BALON

SAMPLE#	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Au**
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%	ppm	%	%	%	%	%	ppm	ppb
ELK 99-R1	4	18	99	22	1.4	14	1	78	1.16	4435	16	<2	<2	3	.3	10	5	1	.07	<.001	<1	37	.03	8	<.01	<3	.01	.03	.01	16	382
ELK 99-R2	2	125	288	156	<.3	112	50	945	4.99	34	<8	<2	2	97	1.2	10	4	133	1.00	.187	10	152	1.05	61	.03	9	2.23	.03	.21	<2	5
ELK 99-R3	5	23	14	23	.5	64	14	6159	6.15	13146	18	<2	2	8	<.2	22	<3	20	.16	.021	5	35	.12	72	.01	6	.23	.02	.11	12	621
ELK 99-R4	5	419	441	3810	79.7	62	24	1162	5.27	769	<8	<2	2	7	27.4	149	<3	22	.26	.073	4	36	.07	24	<.01	6	.34	<.01	.20	10	679
ELK 99-R5	3	106	16	59	1.2	20	10	298	2.72	190	10	<2	6	21	<.2	5	9	48	.15	.054	10	11	.15	31	.02	3	.63	.08	.09	3	80
ELK 99-R6	2	236	24	130	1.3	22	12	332	7.67	233	<8	<2	6	59	.2	6	<3	60	.64	.379	53	7	.09	247	.01	3	.93	.03	.39	<2	42
RE ELK 99-R6	2	234	22	127	1.5	22	12	328	7.51	232	<8	<2	6	58	.4	9	4	58	.63	.370	52	7	.08	254	.01	8	.92	.04	.37	<2	42
ELK 99-R7	3	260	16	180	1.8	338	55	1743	19.66	581	13	<2	3	8	2.0	7	10	110	.26	.086	11	62	.09	25	.01	4	.50	.03	.24	5	16
ELK 99-R8	3	269	6	28	.4	29	15	353	2.83	7	<8	<2	3	22	<.2	3	7	106	5.05	.111	4	27	.67	25	.11	13	4.24	.07	.07	<2	8
ELK 99-R9	3	22	<3	10	<.3	9	3	545	.96	7	<8	<2	2	7	<.2	<3	3	6	.22	.018	6	37	.09	35	.01	<3	.21	.02	.05	9	2
ELK 99-R10	2	98	<3	39	.7	6	18	4018	6.41	11	12	<2	4	65	.3	4	6	39	15.00	.056	8	7	3.46	321	<.01	3	.35	.02	.17	<2	37
ELK 99-R11	8	38	558	2814	1.7	7	16	1219	4.91	12	<8	<2	9	18	3.2	8	<3	81	.51	.113	20	10	.18	224	.01	7	.94	.02	.20	2	8
ELK 99-R12	7	33	9	67	.5	7	10	1029	3.40	2	<8	<2	8	34	<.2	4	<3	55	1.12	.113	19	9	.41	408	.01	7	.97	.06	.26	2	14
ELK 99-R13	4	145	41	141	.5	66	35	1500	4.31	54	<8	<2	5	45	.5	6	3	107	.98	.138	34	72	.62	67	.02	3	1.89	.05	.12	<2	12
ELK 99-R14	14	51	3	120	1.7	23	16	1672	12.40	229	<8	<2	4	12	1.5	3	8	137	.15	.097	37	13	.08	45	.01	8	.77	.01	.26	4	57
ELK 99-R15	8	23	32	186	.4	11	24	3035	6.23	32	<8	<2	7	22	<.2	5	3	77	.50	.102	22	5	.23	123	.01	<3	.79	.03	.23	<2	10
ELK 99-R16	15	11	11	3	2.0	4	1	71	2.08	3	<8	<2	8	10	<.2	<3	9	2	.02	.018	25	14	.02	595	<.01	3	.35	.03	.19	8	106
ELK 99-R17	3	7	4	5	.6	4	1	88	.46	5	<8	<2	3	3	<.2	<3	<3	2	.02	.001	7	34	.01	12	<.01	<3	.15	.01	.08	8	4
STANDARD C3/AU-R	26	63	37	165	5.8	37	11	779	3.38	58	24	3	21	28	23.5	21	22	82	.57	.088	18	168	.61	141	.08	17	1.86	.04	.16	13	481
STANDARD G-2	2	4	3	42	.3	10	3	541	2.05	4	<8	<2	5	74	<.2	4	4	42	.65	.092	8	74	.60	230	.13	<3	.98	.09	.48	2	<2

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.  
THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND MASSIVE SULFIDE AND LIMITED FOR NA K AND AL.  
ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB  
- SAMPLE TYPE: ROCK AU\*\* ANALYSIS BY FA/ICP FROM 30 GM SAMPLE.  
Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: JUN 29 1999 DATE REPORT MAILED: *Jul 5/99* SIGNED BY *[Signature]* D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

RECEIVED  
*07/12/99*



GEOCHEMICAL ANALYSIS CERTIFICATE



Fairfield Minerals Ltd. PROJECT ELK File # 9901962  
1420 - 700 W. Georgia St., Vancouver BC V7Y 1B6 Submitted by: ED BALON

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au* ppb
ELK99-S1	4	122	8	57	.6	89	28	1191	9.17	142	<8	<2	4	31	1.0	10	5	118	.69	.153	7	64	.55	91	.02	<3	1.51	.02	.21	<2	27
ELK99-S2	1	119	18	251	<.3	117	29	1012	4.78	32	<8	<2	2	49	.2	16	<3	103	.86	.149	7	151	1.34	180	.04	5	2.42	.02	.47	<2	4
ELK99-S3	2	259	23	198	1.5	92	32	849	6.62	167	<8	<2	4	49	.3	16	6	153	.68	.158	15	112	1.37	117	.11	7	2.61	.04	.17	<2	189
ELK99-S4	1	107	6	57	.6	110	30	952	6.27	<2	<8	<2	3	57	<.2	13	<3	182	.78	.173	18	128	2.29	199	.06	7	3.32	.05	.40	<2	3
ELK99-S5	3	216	21	88	1.2	31	38	1947	7.71	482	<8	<2	5	32	<.2	20	7	52	1.23	.253	52	<1	.58	290	<.01	6	1.95	.02	.22	<2	86
RE ELK99-S5	2	211	21	87	1.3	27	37	1887	7.59	488	<8	<2	5	31	<.2	22	<3	51	1.20	.249	51	<1	.56	285	<.01	5	1.89	.01	.22	<2	86
ELK99-S6	2	83	6	53	.7	12	14	1473	4.31	<2	<8	<2	3	37	<.2	14	6	72	.68	.137	29	4	.45	203	.06	3	1.69	.02	.11	<2	8
ELK99-S7	1	24	14	56	.6	8	6	678	3.73	<2	<8	<2	16	22	<.2	13	3	63	.16	.038	54	<1	.28	127	.09	<3	1.44	.01	.14	2	338
STANDARD C3/AU-S	27	67	37	171	5.8	37	13	789	3.41	58	13	2	19	29	23.5	20	23	81	.59	.087	19	170	.62	157	.10	17	1.90	.04	.16	15	52
STANDARD G-2	2	5	6	45	<.3	8	5	545	2.08	<2	<8	<2	4	74	<.2	<3	8	41	.67	.094	8	75	.61	221	.15	4	1.00	.09	.48	2	<1

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.  
THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND MASSIVE SULFIDE AND LIMITED FOR NA K AND AL.  
- SAMPLE TYPE: SOIL AU\* - AQUA-REGIA/MIBK EXTRACT, GF/AA FINISHED. (20 gm)  
Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: JUN 29 1999 DATE REPORT MAILED: *July 8/99* SIGNED BY: *C. Leong* D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

















SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm
2800E 4000N	1	16	43	60	<.3	10	5	201	1.86	4	<8	<2	2	15	.8	3	<3	52	.17	.104	7	14	.18	48	.09	5	1.41	.02	.03	<2
2800E 4050N	1	12	72	76	<.3	9	4	293	1.87	7	<8	<2	4	14	1.1	3	<3	49	.16	.094	10	13	.18	68	.09	7	1.61	.02	.04	<2
2800E 4150N	1	22	131	60	.4	9	2	76	.55	2	<8	<2	<2	32	.6	<3	<3	21	.34	.064	30	13	.17	104	.03	<3	1.09	.02	.03	<2
2800E 4200N	1	9	33	65	<.3	9	2	83	.63	2	<8	<2	<2	22	.3	<3	<3	22	.22	.045	16	12	.14	91	.04	7	.95	.02	.03	<2
RE 2800E 4200N	1	9	31	62	<.3	6	2	76	.62	<2	<8	<2	<2	21	<.2	<3	<3	22	.21	.045	15	11	.14	94	.04	3	.92	.02	.02	<2
2800E 4250N	1	11	30	69	<.3	7	2	113	.74	<2	<8	<2	<2	31	.6	<3	<3	22	.32	.073	22	12	.13	124	.03	3	1.09	.02	.03	<2
2800E 4300N	<1	8	30	61	<.3	7	2	129	.60	<2	<8	<2	<2	21	.3	<3	<3	23	.25	.043	13	12	.16	97	.04	<3	1.01	.01	.02	<2
2800E 4400N	1	13	44	57	<.3	7	2	79	.69	6	<8	<2	<2	22	.2	<3	<3	22	.21	.040	14	13	.16	97	.05	3	1.09	.01	.02	<2
2800E 4450N	1	8	105	90	<.3	7	3	201	1.05	<2	<8	<2	<2	21	.3	<3	<3	36	.23	.048	6	11	.13	80	.06	5	.97	.01	.02	<2
3000E 3050N	1	9	13	38	.5	5	2	92	.60	<2	<8	<2	<2	23	<.2	<3	<3	16	.20	.016	12	4	.08	63	.05	3	.59	.03	.03	<2
3000E 3100N	1	10	37	93	.4	6	2	148	1.79	7	<8	<2	8	12	.6	<3	<3	43	.11	.057	10	10	.11	50	.06	3	1.10	.01	.03	<2
3000E 3150N	1	11	22	76	.4	8	4	233	1.91	4	<8	<2	4	16	.4	<3	<3	53	.17	.075	12	13	.17	56	.09	3	1.46	.02	.03	<2
3000E 3200N	1	9	29	90	.3	7	3	159	1.71	2	<8	<2	3	18	<.2	3	<3	43	.15	.050	10	10	.15	107	.09	5	1.33	.02	.03	<2
3000E 3250N	1	14	22	71	<.3	9	4	240	1.85	<2	<8	<2	4	14	<.2	<3	<3	52	.16	.070	10	14	.17	60	.08	<3	1.35	.02	.03	<2
3000E 3300N	1	14	14	84	<.3	11	5	403	1.66	<2	<8	<2	3	29	.4	<3	<3	50	.26	.039	9	16	.23	77	.09	5	1.40	.03	.03	<2
3000E 3350N	1	15	21	83	<.3	9	4	315	1.84	3	<8	<2	2	17	.4	<3	<3	52	.20	.112	8	15	.21	66	.08	4	1.33	.02	.04	<2
3000E 3400N	<1	11	23	66	<.3	8	4	217	1.76	4	<8	<2	3	16	.3	<3	<3	52	.18	.075	8	14	.17	63	.08	6	1.14	.01	.03	<2
3000E 3450N	1	16	13	61	<.3	10	6	204	1.89	3	<8	<2	4	18	.3	<3	<3	56	.20	.106	7	16	.22	59	.09	4	1.64	.02	.03	<2
3000E 3500N	1	18	32	69	<.3	9	5	341	1.81	8	<8	<2	2	15	.5	<3	<3	53	.18	.092	6	16	.22	59	.08	4	1.38	.01	.03	<2
3000E 3550N	<1	14	19	59	<.3	6	4	188	1.71	3	<8	<2	2	21	.2	<3	<3	51	.23	.088	6	13	.20	52	.08	3	1.10	.01	.03	<2
3000E 3650N	1	24	24	44	<.3	9	6	261	1.19	4	<8	<2	<2	33	.4	<3	4	36	.32	.052	13	12	.21	59	.06	<3	1.12	.03	.04	<2
3000E 3700N	1	25	48	51	.4	9	6	240	1.18	4	<8	<2	<2	48	.5	<3	<3	36	.48	.076	17	13	.19	69	.03	4	1.27	.02	.03	<2
3000E 3750N	<1	8	21	44	<.3	8	3	256	1.34	5	<8	<2	2	16	.3	<3	<3	40	.22	.096	8	14	.15	52	.06	3	1.25	.01	.03	<2
3000E 4000N	<1	11	67	86	<.3	9	4	396	1.67	7	<8	<2	3	23	1.6	<3	<3	49	.23	.053	12	17	.17	103	.07	<3	1.29	.01	.03	<2
3000E 4050N	1	11	57	139	<.3	8	3	337	1.45	7	<8	<2	2	31	.4	<3	<3	42	.29	.041	10	17	.19	204	.06	3	1.12	.02	.04	<2
3000E 4100N	1	7	48	73	<.3	5	3	409	1.70	5	<8	<2	3	9	.3	3	<3	42	.11	.105	6	9	.13	41	.08	3	1.17	.01	.03	<2
3000E 4150N	1	11	44	55	<.3	8	3	224	1.46	5	<8	<2	3	15	.8	<3	<3	42	.18	.090	8	14	.15	52	.07	<3	1.27	.02	.03	<2
3000E 4200N	2	13	162	146	<.3	8	5	956	1.46	6	<8	<2	2	29	.7	<3	<3	43	.24	.036	8	12	.17	198	.08	<3	1.11	.02	.03	<2
3000E 4250N	1	13	71	126	<.3	9	4	133	1.66	2	<8	<2	2	14	<.2	<3	<3	49	.17	.061	8	14	.17	55	.09	3	1.45	.02	.03	<2
3000E 4300N	1	15	45	149	<.3	8	5	295	1.70	4	<8	<2	<2	16	.5	<3	<3	52	.18	.091	6	15	.17	65	.08	<3	1.31	.02	.02	<2
3000E 4350N	1	18	154	298	<.3	11	5	222	1.59	5	<8	<2	<2	23	.5	<3	<3	48	.23	.047	7	14	.20	266	.09	<3	1.55	.02	.03	<2
3000E 4400N	<1	17	23	76	<.3	9	4	133	1.61	3	<8	<2	<2	16	.2	<3	<3	48	.19	.093	7	15	.21	64	.09	<3	1.36	.02	.04	<2
STANDARD C3	26	62	35	165	5.2	37	11	781	3.30	58	14	3	19	29	23.5	16	17	82	.55	.085	19	170	.60	141	.08	20	1.73	.03	.15	15
STANDARD G-2	2	6	6	46	<.3	8	5	585	2.09	<2	<8	<2	3	86	.2	<3	<3	45	.69	.096	9	85	.64	240	.13	4	1.01	.10	.51	2

Sample type: PULP. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

GEOCHEMICAL ANALYSIS CERTIFICATE



Fairfield Minerals Ltd. PROJECT ELK/ELK99-3 File # 9903963

1420 - 700 W. Georgia St., Vancouver BC V7Y 1B6 Submitted by: E.A. Balon

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au** ppb
ELK99-R4a	<1	973	15	153	1.7	122	48	4223	9.53	83	<8	<2	<2	40	.4	13	<3	80	.65	.191	10	101	.56	133	.02	<3	1.47	.02	.51	2	30
ELK99-R18	6	227	16	13	3.9	20	7	126	2.47	216	<8	<2	<2	32	<.2	11	<3	17	.17	.106	5	24	.04	141	<.01	<3	.42	.01	.32	<2	69
ELK99-R19	5	50	20	27	.9	13	19	985	6.85	1399	8	<2	<2	14	<.2	3	3	16	.21	.085	11	10	.05	247	<.01	<3	.37	.01	.21	2	275
ELK99-R20	1	120	263	445	20.2	25	10	684	1.46	141	<8	<2	<2	17	6.2	67	<3	6	1.40	.022	3	24	.57	52	<.01	<3	.14	.01	.09	3	20
ELK99-R21	4	167	11	102	<.3	406	58	6124	8.52	51	<8	<2	<2	33	.2	<3	<3	98	.50	.151	8	168	1.25	180	<.01	<3	2.11	.01	.29	2	9
ELK99-R22	1	27	7	28	<.3	41	10	2888	3.34	340	<8	<2	<2	16	<.2	<3	<3	26	.40	.068	2	33	.13	51	<.01	<3	.30	<.01	.17	<2	27
ELK99-R23	5	13	53	16	5.4	84	11	73	1.27	6194	<8	2	<2	3	<.2	29	12	8	.02	.003	1	25	.01	54	<.01	<3	.07	<.01	.04	10	1163
RE ELK99-R23	5	14	52	16	5.2	85	11	71	1.26	6207	<8	<2	<2	3	<.2	28	10	8	.02	.003	1	36	.01	55	<.01	<3	.08	<.01	.04	10	1124
STANDARD C3/AU-R	26	67	37	164	5.9	38	13	840	3.46	55	26	<2	21	32	24.9	20	25	83	.67	.091	20	179	.65	152	.10	21	1.99	.04	.18	19	457

GROUP 1D - 0.50 GM SAMPLE LEACHED WITH 3 ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR, DILUTED TO 10 ML, ANALYSED BY ICP-ES.  
 UPPER LIMITS - AG, AU, HG, W = 100 PPM; MO, CO, CD, SB, BI, TH, U & B = 2,000 PPM; CU, PB, ZN, NI, MN, AS, V, LA, CR = 10,000 PPM.  
 ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB  
 - SAMPLE TYPE: ROCK AU\*\* GROUP 3B - 30.00 GM SAMPLE ANALYSIS BY FA/ICP.  
 Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: OCT 15 1999

DATE REPORT MAILED: Oct 26/99

SIGNED BY: *C. Leong*

D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS





SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au* ppb
ELK99-AS35	2	34	101	157	.4	13	10	706	1.61	7	<8	<2	2	43	.3	<3	<3	56	.35	.057	43	21	.20	244	.09	<3	2.86	.03	.05	<2	3
ELK99-AS36	1	29	29	192	.3	16	4	127	1.59	2	<8	<2	3	45	.3	<3	<3	42	.27	.026	21	19	.20	302	.11	<3	2.71	.04	.04	<2	4
RE ELK99-AS36	<1	27	28	178	<.3	15	3	119	1.48	2	<8	<2	5	43	<.2	<3	<3	39	.25	.026	20	18	.18	283	.11	<3	2.55	.03	.04	<2	5

Sample type: SOIL. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

GEOCHEMICAL ANALYSIS CERTIFICATE



Fairfield Minerals Ltd. PROJECT ELK/ELK99-3 File # 9903965 Page 1  
 1420 - 700 W. Georgia St., Vancouver BC V7Y 1B6 Submitted by: E.A. Balon

SAMPLE#	Cu ppm	Pb ppm	Zn ppm	Ag ppm	As ppm	Au* ppb
ELK99-S8	23	1026	167	<.3	3	19
ELK99-S9	74	6	35	<.3	11	8
ELK99-S10	205	<3	58	<.3	3	4
ELK99-S11	16	8	19	<.3	3	56
ELK99-S12	20	3	13	<.3	2	1
ELK99-S13	31	4	23	<.3	<2	6
ELK99-S14	141	4	50	<.3	64	14
ELK99-S15	298	7	67	<.3	237	30
ELK99-S16	273	10	71	<.3	548	44
ELK99-S17	83	6	66	.3	427	29
ELK99-S18	307	11	91	<.3	315	44
ELK99-S19	273	5	83	<.3	128	14
ELK99-S20	86	3	61	<.3	28	5
ELK99-S21	148	<3	61	<.3	18	9
ELK99-S22	147	6	57	<.3	61	11
ELK99-S23	203	3	54	<.3	43	8
RE ELK99-S23	205	4	55	<.3	44	10
ELK99-S24	202	<3	63	<.3	48	6
ELK99-S25	170	5	55	<.3	23	8
ELK99-S26	162	6	56	<.3	22	8
ELK99-S27	153	5	49	<.3	16	7
ELK99-S28	109	4	50	<.3	14	17
ELK99-S29	109	51	446	<.3	452	2
L500E 3270N	23	5	21	<.3	2	5
L500E 3280N	24	4	32	<.3	2	5
L500E 3290N	97	7	52	<.3	2	2
L500E 3300N	32	<3	53	<.3	<2	14
L550E 3270N	30	5	33	<.3	<2	275
L550E 3280N	47	4	48	<.3	<2	3
L550E 3290N	75	<3	65	<.3	<2	3
L550E 3300N	42	4	40	<.3	<2	2
L550E 3310N	40	3	39	<.3	<2	3
L550E 3320N	42	5	40	<.3	<2	2
L600E 3270N	70	5	68	<.3	<2	2
L600E 3280N	65	5	66	<.3	2	2
STANDARD C3/AU-S	68	37	173	6.0	54	49
STANDARD G-2	3	3	43	<.3	<2	<1

GROUP 1D - 0.50 GM SAMPLE LEACHED WITH 3 ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR, DILUTED TO 10 ML, ANALYSED BY ICP-ES.  
 UPPER LIMITS - AG, AU, HG, W = 100 PPM; MO, CO, CD, SB, BI, TH, U & B = 2,000 PPM; CU, PB, ZN, NI, MN, AS, V, LA, CR = 10,000 PPM.  
 - SAMPLE TYPE: SOIL AU\* GROUP 3A - 20.00 GM SAMPLE, AQUA-REGIA, MIBK EXTRACT, ANALYSIS BY GF/AA.  
 Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: OCT 15 1999 DATE REPORT MAILED: *Oct 26/99* SIGNED BY: *C.L.* D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS



SAMPLE#	Cu ppm	Pb ppm	Zn ppm	Ag ppm	As ppm	Au* ppb
L600E 3290N	54	5	62	<.3	<2	<1
L600E 3300N	92	<3	52	<.3	<2	1
L600E 3310N	66	3	54	<.3	3	2
L600E 3320N	26	4	68	<.3	3	<1
L600E 3330N	38	<3	59	<.3	5	<1
L650E 3270N	27	<3	67	<.3	<2	2
L650E 3280N	26	<3	78	<.3	<2	<1
L650E 3290N	58	3	54	<.3	5	2
L650E 3300N	21	4	59	<.3	<2	13
L650E 3310N	32	3	67	<.3	<2	47
L650E 3320N	32	<3	56	<.3	3	2
L650E 3330N	65	<3	52	<.3	2	2
L700E 3240N	35	<3	94	<.3	<2	<1
L700E 3250N	31	<3	111	<.3	8	<1
L700E 3260N	23	3	91	<.3	3	<1
L700E 3270N	27	<3	72	<.3	5	1
L700E 3280N	26	3	67	<.3	3	1
L700E 3290N	27	3	65	<.3	<2	<1
L700E 3300N	31	<3	57	<.3	<2	1
L700E 3310N	45	<3	59	<.3	2	<1
RE L700E 3310N	44	<3	58	<.3	<2	5
L700E 3320N	45	3	54	<.3	<2	3
L700E 3330N	30	5	66	<.3	2	5
L700E 3340N	28	<3	50	<.3	<2	<1
STANDARD C3/AU-S	67	33	168	5.7	54	53
STANDARD G-2	3	<3	44	<.3	<2	<1

Sample type: SOIL. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.