

87-242-15891
02/88

1987 EXPLORATION PROGRAM

on the

BONNIE GROUP

(Bonnie, Marwill No. 1 & 2, G and R 5-8, Dale 1-4,
Speculator and Mt. Glen, Mineral Claims)

Omineca Mining Division

93 M/5E

55° 19' N 127° 38' W

(North of Hazelton, B.C.)

FILMED

Owner and Operator: Tri-Con Mining Ltd.

Writer: A.M. Homenuke, P. Eng. (Geol.)

Submitted: May 8, 1987

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

15,891

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I. INTRODUCTORY NOTES

Location and Access

The Bonnie Claim Group covers an area from the southern and western slopes of Mount Glen, adjoining the Silver Standard Mine, to the Skeena River on the West and is centered about 6 km. north-northeast of Hazelton, B.C. (Fig. 1). Access to the west side of the claims is provided by the recently relocated Salmon River Road which branches off the Hazelton-Kispiox Highway. The Silver Standard Mine Road passes through the center of the claim group, and old mining and logging roads provide local, in part 4-wheel drive, access.

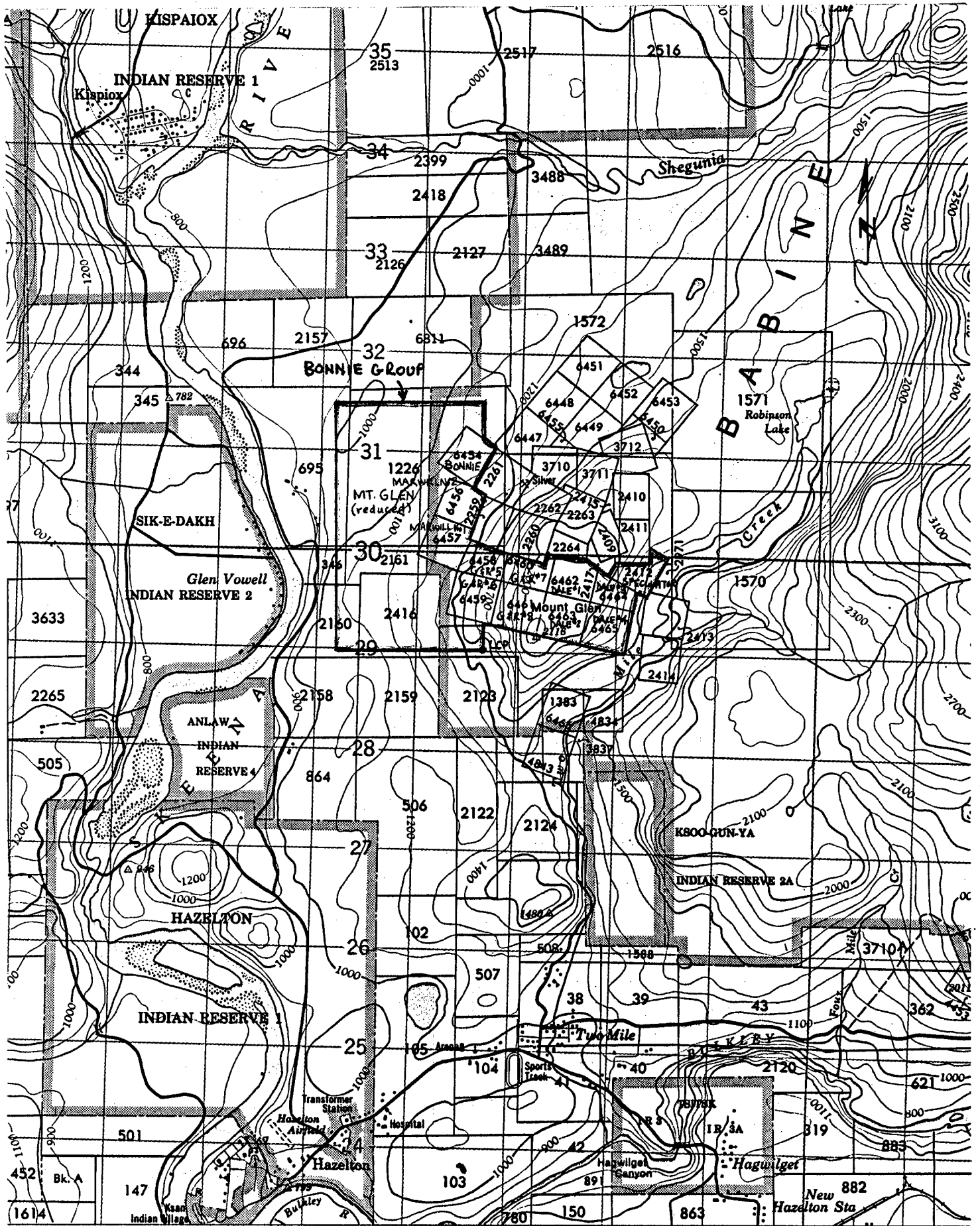
Physical Features

Mount Glen, elevation 645 metres, is located on the southeast portion of the claim group. The mountain has a relatively flat top about 700 metres wide, then drops steeply to Two Mile Creek on the east and the Silver Standard Mine Road on the west. The area between the Mine Road and the Skeena River on the west side of the claims is relatively flat in general aspect, but locally made up of abrupt ridges and gullies with swamps in many of the low areas. The river is at an elevation of 230 metres. Outcrops are scarce to non-existent except along the southern 500 metres of the claims and on the slopes of Mount Glen.

The area is covered by a mixed coniferous-deciduous forest, in part second growth after a fire at the turn of the century, except along the Skeena River where it is cleared for farming. Much of the area was selectively logged for cedar poles and there are marketable stands of cedar and spruce remaining. The deciduous growth consists of birch, poplar and alder and represents about 20% of the forest. Undergrowth is moderate and in general does not impede foot travel, however there are many small and a few large swamps which inhibit access to some degree.

Property Description

The Bonnie Group consists of 13 reverted crown grants, which were formerly part of the Silver Standard Mine Holdings, and one located claim. (Fig. 1.) Table I below summarizes the claim data.



Part of 93M/SE



TRI-CON MINING LTD.
 BONNIE PROPERTY
 CLAIM & INDEX MAP

FIG. 1

TABLE I. BONNIE GROUP

Name	Lot No.	Record No.	Units	Year Acquired	Record Date
Bonnie	6454	305	1	1976	June 3
Marwill No. 1	6457	306	1	1976	June 3
Marwill No. 2	6456	307	1	1976	June 3
G & R No. 5	6458	2468	1	1980	Feb. 15
G & R No. 6	6459	2469	1	1980	Feb. 15
G & R No. 7	6460	2470	1	1980	Feb. 15
G & R No. 8	6461	2471	1	1980	Feb. 15
Dale No. 1	6462	2472	1	1980	Feb. 15
Dale No. 2	6463	2473	1	1980	Feb. 15
Dale No. 3	6464	2474	1	1980	Feb. 15
Dale No. 4	6465	2475	1	1980	Feb. 15
Speculator	2412	2476	1	1980	Feb. 15
Mt. Glen (reduced) -		2490	15	1980	Feb. 25

Owner and Operator is Tri-Con Mining Ltd., of Vancouver, B.C.

History

The adjoining Silver Standard Mine has been in operation since 1910, with major production during the period 1918 - 1922 and 1948 - 1958. It is presently being operated by a lessee, shipping a few railcar loads of ore per year.

Total production was about 200,000 tons yielding over 7.5 million ounces of silver plus gold, lead, zinc, copper and cadmium.

The Bonnie Group consists partially of reverted Crown - granted mineral claims which were once part of the Silver Standard Mine holdings. Old cat trenches and cut lines are present, but no records of work are available. A quartz vein with minor sulfides has been exposed on the southwest part of the claim group (National Ex Area). This was explored around 1950 by National Exploration Ltd. Tri-Con did limited work on this area in 1978 and 1980 and a more extensive exploration program in 1981.

On the Bonnie - Marwill Area, immediately west of the Silver Standard Mine, Tri-Con has been exploring for a parallel continuation of the sequence of veins at the mine. VLF-EM surveying has been the primary tool; followed by backhoe trenching and, in 1981, & 1985, by diamond drilling.

The claim group was expanded to the north in 1983 to cover an intrusive on the south side of the Shegunia River and some small sulfide bearing quartz veins on the north side of the river. This area was explored by geochemical and VLF-EM surveys and allowed to lapse due to disappointing results. During 1983-1986, geochemical and VLF-EM surveys were continued on the present claim area.

The EM survey was extended to cover a portion of the Silver Standard veins to aid interpretation of the results.

Economic Assessment

The historic production of the Silver Standard Mine at present metal prices, would be over 100 million dollars. The westerly limit of the known veins is also the point at which glacial overburden becomes substantially deeper.

None of the old Silver Standard cat trenches in this area reached bedrock. Previous VLF-EM surveying indicated possible vein structures. Recent drilling of such EM targets showed the presence of two veins, one of which, though narrow where intersected, was identical to the production veins on the adjoining mine. The results of this drilling greatly enhance the geologic potential of at least this part of the Bonnie property.

Present Work and Distribution

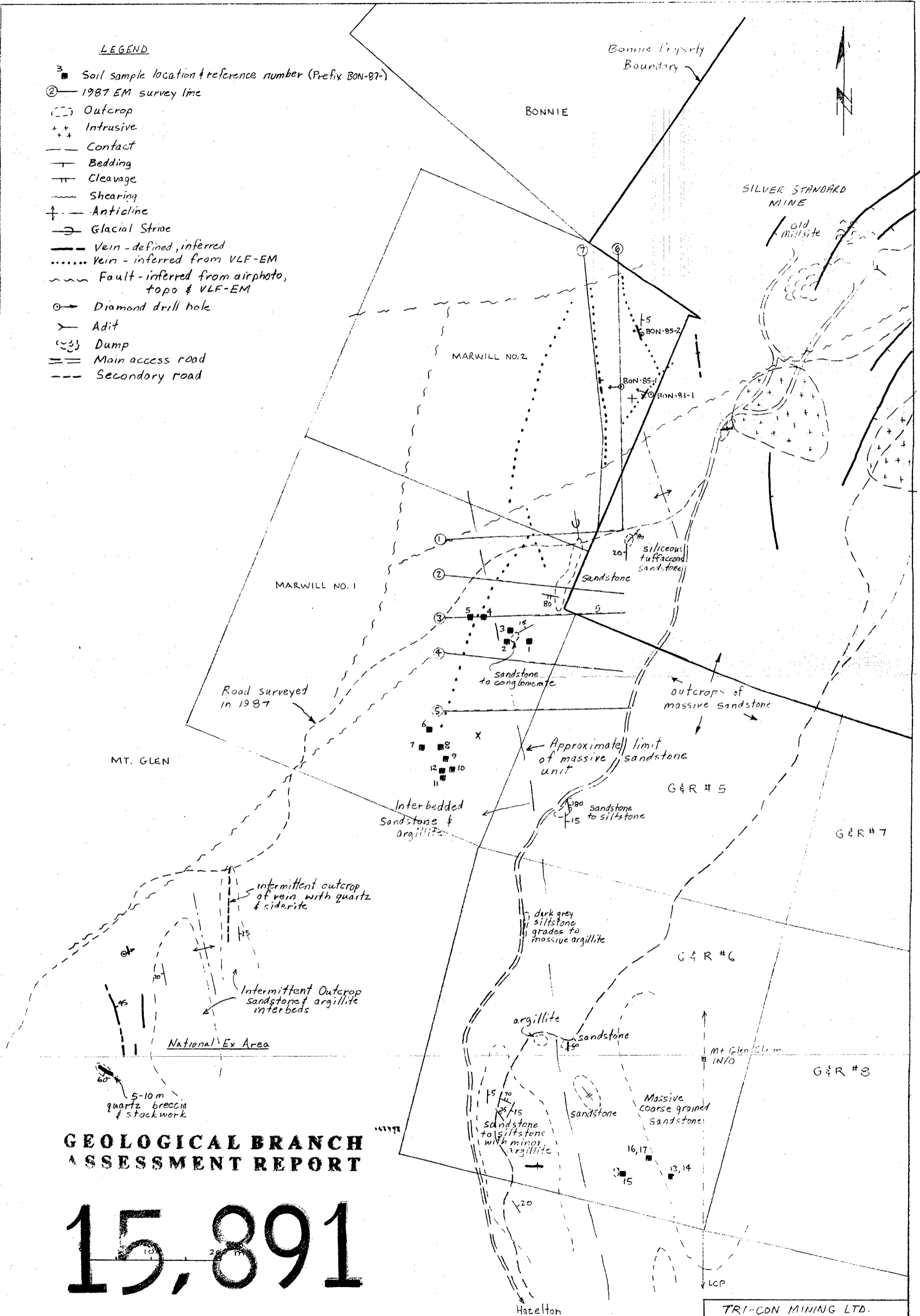
Work on the Bonnie Property in 1986-87 consisted of 2100 m. of VLF-EM surveying on the Marwill No. 1, No. 2 and G and R No. 5 claims, 2500 km. of tape and compass surveying on the above plus the G and R No. 6 and Mt. Glen claims, 17 geochemical check samples on the Marwill No. 1 and G and R No. 6 claims and geological mapping enhanced by airphoto interpretation on all of the above claims.

II. GEOLOGY

Richards (1980) shows the Mt. Glen area to be underlain by undivided deltaic sandstone, siltstone and shale of the Jurassic-Cretaceous Bowser Lake Group. The area is shown to be block-faulted with major faults trending northeasterly, northwesterly and northerly. Mt. Glen itself is probably a horst. An intrusive at the Silver Standard Mine is indicated to be a Babine Intrusion of Eocene Age.

LEGEND

- Soil sample location & reference number (Prefix BON-87-)
- ② 1987 EM survey line
- Outcrop
- ++ Intrusive
- Contact
- Bedding
- Cleavage
- Shearing
- ⊕ Anticline
- ⊖ Glacial Striae
- Vein - defined, inferred
- Vein - inferred from VLF-EM
- Fault - inferred from airphoto, topo & VLF-EM
- ⊙ Diamond drill hole
- Y Adit
- ⊖ Dump
- == Main access road
- Secondary road



**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

15,891

Prepared by: A. M. Homenuke, P. Eng
Mar. 1987

TRI-CON MINING LTD.
BONNIE PROPERTY
GEOLOGY, INDEX
&
INTERPRETATION
FIG. 2

Black (1950), Kindle (1954) and Smith (1956) have reported on the geology of the Silver Standard Mine and Mt. Glen area. The host rock for the veins at the mine is a 250 meter thick sequence of massive tuffaceous sandstones with minor argillite overlain and underlain by much more thinly interbedded and less tuffaceous sandstone and argillite. The beds are broadly folded into a domal shape which roughly conforms to the present shape of Mt. Glen, with local tighter folds on northerly trending axes. There are over twenty known veins on the Silver Standard Mine and adjoining Bonnie properties. They strike north to northeast and dip from vertical to 35° east. Known strike lengths range from 100 meters to over 500 meters and widths average from 0.3 to 1 meter with occasional vein sections to 4 meters wide. Most of the known veins are on the north side of two E-W elongate intrusives bodies and the main ore shoots parallel this trend. The bulk of the previously mined ore was from within the bounds of the thicker bedded tuffaceous sandstone and above a 40-degree west dipping fault with 80 meters of normal throw. On the footwall side of this fault, the veins appear to be less continuous with more ore control by intersections with cross-faults. Quartz accompanied by siderite and calcite forms the gangue. Sphalerite, galena, tetrahedrite and chalcopyrite are the main ore minerals and pyrite, arsenopyrite and pyrrhotite are accessory minerals with higher gold values accompanying the arsenopyrite. Gouge is also present in the veins though there is little evidence for significant shearing.

Most of the structure, including folding, is probably related to extensional processes which created the major regional block faults. Some earlier compression may have been involved in some of the folding and may have initiated some of the faulting.

The veins were probably formed during and following the extensional event. Ore minerals were likely derived from the host rocks by circulating meteoric waters driven by the heat of a larger intrusive at depth which could have been emplaced due to extension.

When Tri-Con acquired the claims adjacent to the Silver Standard Mine, the limit of the known veins to the west was the start of deeper glacial overburden. Tri-Con discovered further veins to the west by drilling VLF-EM anomalies. The current geologic mapping, covering an area 500 meters by 1000 meters (Fig. 2), was undertaken to assist in interpreting VLF-EM survey data and to continue developing a model for ongoing exploration. The recent work combined with previous Tri-Con work over a wider area suggests that a much more complex structural setting than indicated by previous writers may be present in the Mt. Glen area. The regional block faults indicated by Richards to bound the area appear to be much more numerous on the smaller scale of the Bonnie Property. This premise is derived from interpretation of geology, topography, VLF-EM data and airphotos. Due to the scarcity of outcrop, the primary structural tool will be VLF-EM surveying. To this end continued geologic mapping and locally more detailed EM surveying will be required.

The largest ore shoots at the Silver Standard Mine are within the thick bedded sandstone unit, probably due to internal structural integrity. The current mapping has indicated that a large portion of this unit underlies the Bonnie Property, and the western limit of the unit on surface is probably a block fault with the west side down-dropped. Therefore, it will be important to determine the depth to the thick bedded unit west of the fault to define the larger targets likely to occur within this unit. This will allow the determination of the viability of deeper drilling on veins which have been located in the formations above the thick-bedded unit, such as those on the National Ex area shown on Fig. 2.

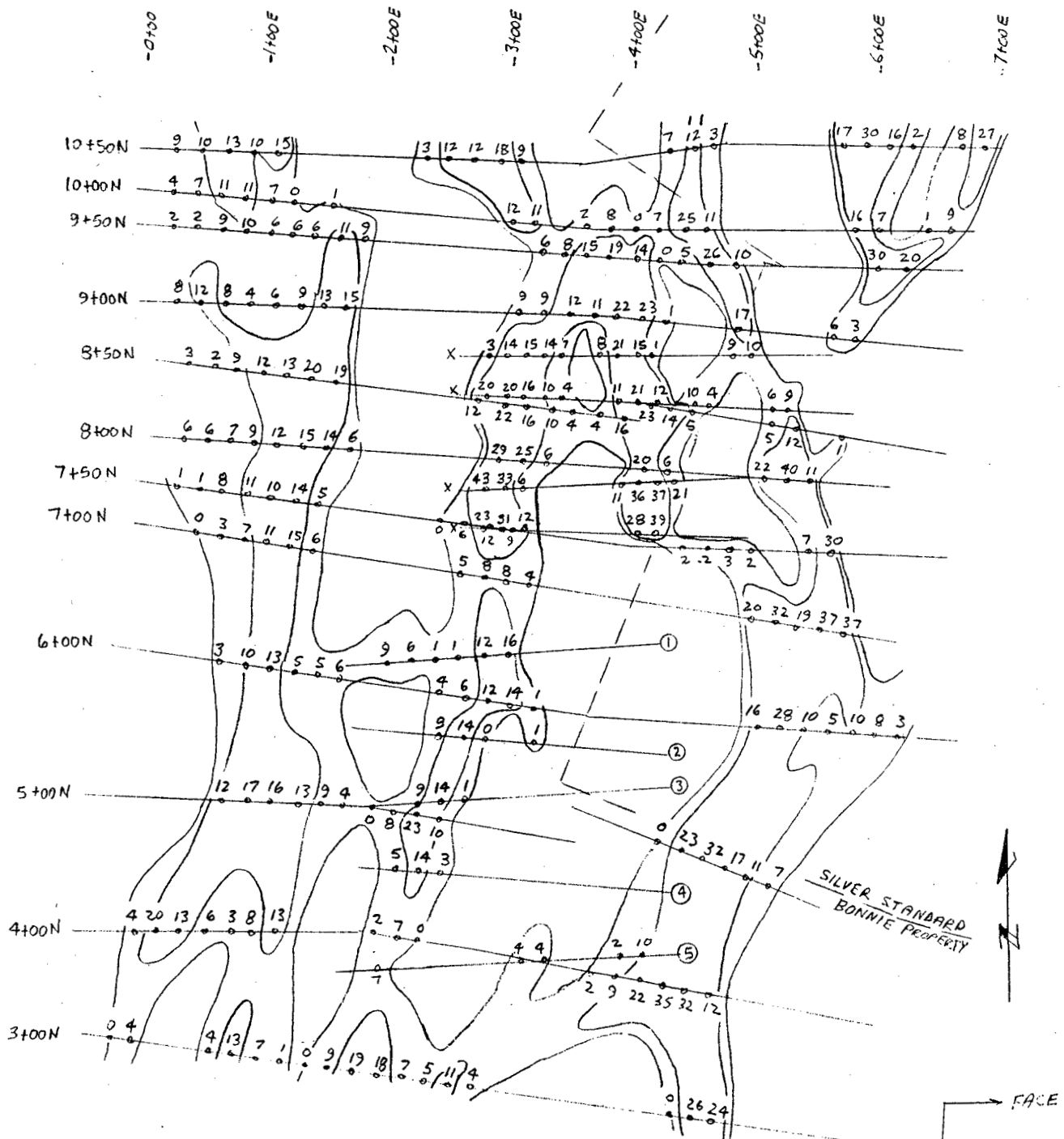
III. SURVEYING

Grid lines for previous EM and geochemical surveys were put in by chain and compass and flagging. Considerable difficulty was experienced by the operators in following the intended course. This is partially due to vegetation and topography, but some of the local line deviation may be due to some magnetic features such as the presence of pyrrhotite in veins. As final interpretation of VLF-EM data requires careful control of the grid, 2500 meters of chain and compass surveying was done to better establish the locations of previous surveys. The results of this surveying are shown on Fig. 2 and Fig. 3. Additional notes on locations of previous surveys were taken during the course of EM surveying discussed in the next section.

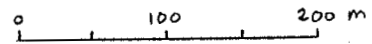
IV. VLF-EM SURVEYS

On parts of the Bonnie Property VLF-EM surveying has been completed at a line spacing of 100 meters. To enhance interpretation in areas of interest closer spaced lines are required. To this end, 5 lines totalling 1300 meters were run over an area south of the known veins. These and previous surveys were on E-W lines. Contouring of the data has shown a number of interruptions of conductive trends. As these may be faults which would play a significant role in mineralization, two preliminary N-S lines totalling 800 meters were also run. The instrument used in these surveys was a Sabre EM-27. Stations received were Seattle for the E-W lines and Cutler for the the N-S lines. Readings were taken at intervals of 20 meters and filtered by the "Fraser Method" for contouring.

The results of the E-W survey are shown on Fig. 3 including reinterpretation of earlier surveys on the corrected grid.



x — 1980 Survey Line
 ② — 1987 Survey Line
 all others 1983

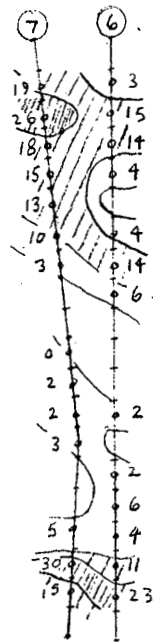


FACE
 TRANSMITTER (SEATTLE)

12 16 Filtered data location & value
 Contour intervals
 — 10
 — 0

Instrument 1987 Sabre EM-27
 1980, 83 Geonics EM-16

TRI-CON MINING LTD.
 BONNIE PROPERTY
 VLF-EM SURVEY
 FILTERED DATA
 E-W LINES
 Prepared by: A. M. Homenuke, P. Eng.
 MAR. 1987 FIG. 3



FACE
 ↑
 → TRANSMITTER
 (Cutler, Maine)

Inst. Sabre EM-27

46 — Filtered data location & value

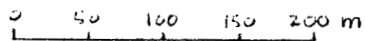
Contour Interval

||||| 20

||||| 10

———— 0

Location of lines on Fig. 2



VLF-EM SURVEY
 N-S LINES (Filtered Data)

Prepared by: A. M. Homenuke, P. Eng
 MAR. 1987

FIG. 4

V. GEOCHEMICAL SAMPLING

Previous geochemical surveys have shown a number of weak anomalous areas which require further investigation. Two such areas were checked this year by taking a total of 17 soil samples within the broad anomalous areas. The locations of the samples are shown on Fig. 2. The results of the analysis are in the following table.

SAMPLE#	CU PPM	PB PPM	ZN PPM	AG PPM	AS PPM	Soil Horizon
BON 87-1	18	6	188	.1	13	B
BON 87-2	6	9	94	.2	6	
BON 87-3	9	4	93	.2	6	
BON 87-4	8	5	129	.1	9	
BON 87-5	17	7	66	.1	14	
BON 87-6	12	5	122	.1	7	
BON 87-7	14	4	195	.3	9	
BON 87-8	15	6	110	.2	8	
BON 87-9	14	7	164	.1	12	
BON 87-10	13	8	122	.1	6	
BON 87-11	14	5	81	.1	12	Ah B B
BON 87-12	9	10	110	.3	7	
BON 87-13	12	10	82	.4	2	
BON 87-14	9	8	103	.1	11	
BON 87-15	14	8	134	.1	16	
BON 87-16	8	14	132	.6	3	Ah
BON 87-17	4	6	78	.2	8	B

Samples BON 87-1 to 12 were taken from the "B" horizon in an area where the "Ah" horizon had been sampled. The samples were subjected to ICP analysis at Acme Labs for the same 5 elements as before. The closest previous samples ranged as follows:

Copper 7-15 ppm
 Lead 8-32 ppm
 Zinc 176-506 ppm
 Silver 0.5-1.2 ppm
 Arsenic 2 ppm

Of these, some of the lead, zinc and silver values were anomalous. From the current sampling, only BON 87-1, 7 and 10 showed elevated zinc values. Interpretation of geochemical data in the area is complicated by contamination from wind blown concentrates off of trucks, changes in soil chemistry by forest fires, irregular dispersion and thicknesses of glacial cover and possibly differing background values due to changes in lithology. Although surficial geology maps show a southwesterly glacial movement, mapping has shown a 170° direction. The above elevated and anomalous values may have been derived from a source to the north. The much higher values of lead, zinc and silver in the "Ah" horizon may be in part due to concentrate contamination, although the anomalous area is separated from the haul road by an area of low geochemical values. Some additional soil profiling would aid interpretation.

Samples BON 87-13 to 17 were taken in an area where previous sampling from the "B" horizon showed values as follows:

Copper	7-304 ppm
Lead	8-24 ppm
Zinc	68-217 ppm
Silver	0.2-1.3 ppm
Arsenic	7-68 ppm

None of the current samples, taken from both the "Ah" and "B" horizons, support the highest values shown above. As these highest values were all from one sample, it may have been naturally or artificially contaminated. However, as quartz veining has been noted in this vicinity, the area deserves further examination.

VI. Conclusions

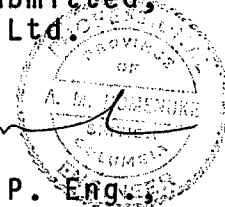
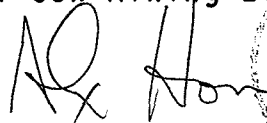
Geological mapping enhanced by VLF-EM interpretation suggests that the Silver Standard Mine and part of the adjoining Bonnie property are in a horst. There are known veins and geochemical anomalies in the downdropped block to the west, but due to difficulties in geochemical interpretation VLF-EM surveying appears to be the best tool for locating drill targets.

Detail VLF-EM in N-S and EW directions has provided a number of drill targets in addition to veins already identified.

VII. Recommendations

1. Continue drilling of known veins.
2. Continue detailed fill-in VLF-EM surveying in areas of interest on E-W lines and complete a VLF-EM survey on a N-S grid.
3. Continue mapping geology enhanced by VLF-EM and airphoto interpretation to complete the structural analysis of the area for better definition of drill targets.

Respectfully submitted,
Tri-Con Mining Ltd.



A.M. Homenuke, P. Eng.
Senior Vice President

COST STATEMENT

August 8, 1986, Jan. 9, 12, 13, Feb. 5-14, 1987

Geologist/Operator	6 days @ \$300/day	\$1800.00
A. Homenuke, P. Eng.	3 days @ \$400/day	1200.00
	incl. maps, interpretation and report.	
VLF-EM Rental		150.00
Vehicle & gas	6 days @ \$70/day	420.00
Room & Board	6 man-days @ \$40/day	240.00
Analysis	17 soils @ \$6.00	102.00
	Cu, Pb, Zn, Ag, As	
Return air fare	Smithers/Vancouver	356.00
Misc. supplies & Secretarial		150.00
		<u>\$4418.00</u>
		=====

REFERENCES

Black, J.M., 1950, Glen and Nine Mile Mountains area, B.C., B.C.
Mine of Mines Ann. Rept.

Homenuke, A.M., 1978-1986, Various assessment reports.

Kindle, E.D., 1954, Hazelton and Smithers Area, G.S.C. Mem.223

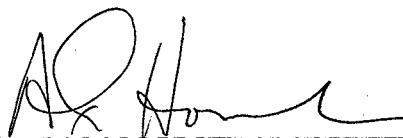
Richards, T.A., 1980, G.S.C. Open File Map No. 720

CERTIFICATE OF QUALIFICATION

I, Alexander M. Homenuke, do hereby certify:

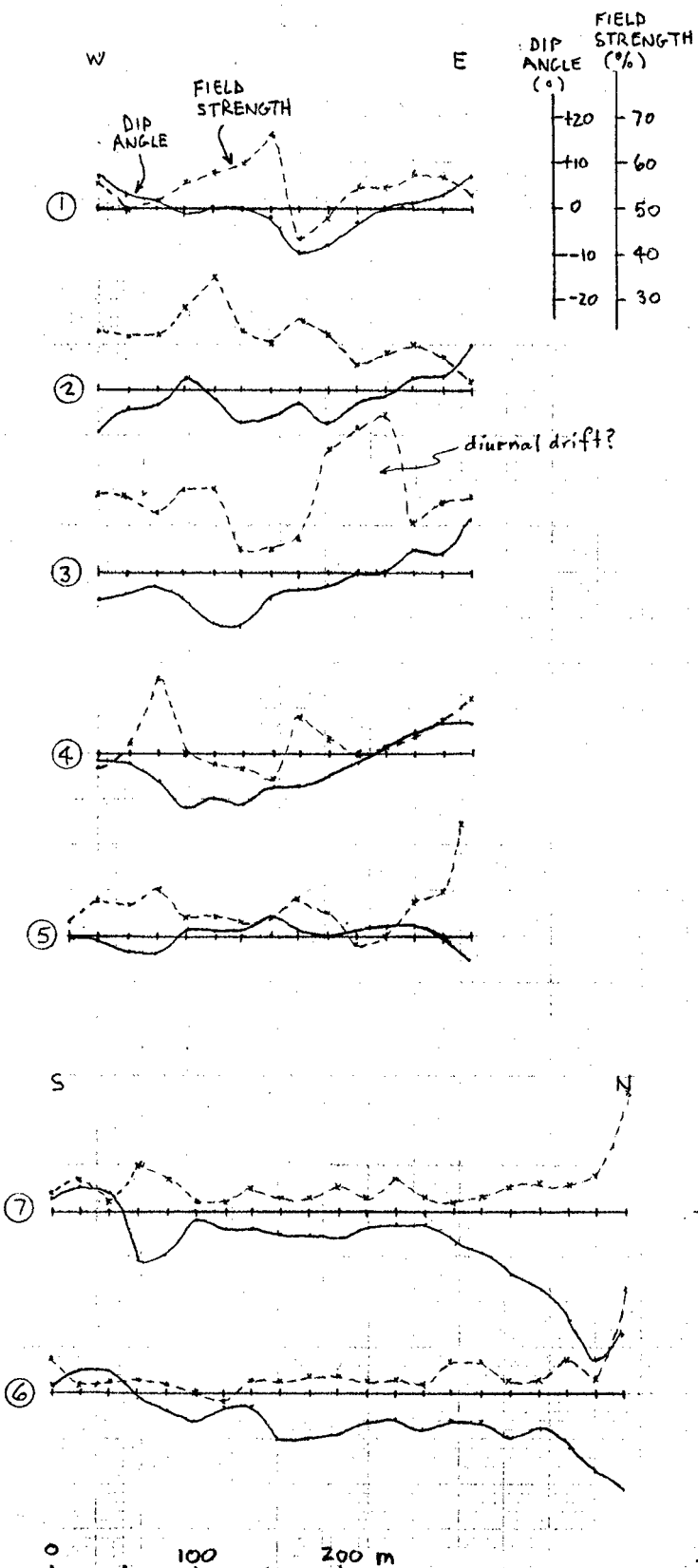
1. THAT I am a member in good standing of the Association of Professional Engineers of British Columbia.
2. THAT I received the Degree of Bachelor of Science in Geological Engineering from the Colorado School of Mines in 1974.
3. THAT I received a Diploma of Technology in Mining from the B.C. Institute of Technology in 1969.
4. THAT I have been employed in various aspects of mining exploration for 18 years and am presently employed by Tri-Con Mining Ltd., of Suite 2580, 1066 West Hastings Street, Vancouver, British Columbia.
5. THAT I presently reside at 29825 Harris Road, Mt. Lehman, British Columbia.
6. THAT this Report is based on work supervised or conducted by myself.

DATED at Vancouver, British Columbia, this 8th day of May
1987.



A.M. Homenuke, P. Eng.
Geological Engineer

APPENDIX
VLf-EM RAW DATA PROFILES



TRI-CON MINING LTD.
 BONNIE PROPERTY
 VLF-EM SURVEY
 RAW DATA PROFILES

FEB. 1987