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# GEOLOGICAL REPORT - ASCOT PROPERTY

Dome Mountain Area, Smithers B.C., Omineca M.D.

Prepared for:

## Alliance Mining Inc.

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Vancouver, B.C., V6E 2E9

by:

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October 25, 1996



*B. J. Price*

from <http://www.weymia.com/projects.htm>

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## Dome Mountain Area, Smithers B.C., Omineca M.D.

### **Alliance Mining Inc.**

Ste. 1100 - 1055 West Hastings Street  
Vancouver, B.C., V6E 2E9

## **SUMMARY**

This report has been prepared at the request of the directors of Alliance Mining Inc. The writer visited the property accompanied by J. Lehtinen, B.Sc., P. Geo. on September 23 and 24, and is familiar with the property, having explored it from 1977 to 1986.

The property is located 32 km due east of Smithers, B.C. at the head waters of Carr (Canyon) Creek, between Dome Mountain and Mt. McKendrick (Figures 1, 2,3). Access to the central part of the claims is by a four wheel drive road which turns off the Babine Lake road near kilometre 21. Driving time from Smithers is approximately one hour. In winter, access is possible by snowmobile. Helicopter charters from Smithers are available all year round with a flying time of only 10 minutes from the Smithers base. Smithers is serviced by daily jet flights from Vancouver. Most services and supplies are available locally. Highway and rail lines also pass through Smithers. Power lines 10 km from the property are sufficient for mining and milling purposes.

The property comprises 5 contiguous claims, totalling 86 units. The claims are in the Omineca Mining Division. An initial 22 claims staked in 1995 were formally absorbed into the later-staked claims early in 1997, prior to the application of assessment work. The claims are registered in the name of Henry Awmack, and are held in trust for Equity Engineering Ltd. Alliance Mining Inc. has an option to acquire 100% interest in the claims, subject to a 1.75% retained NSR, and subject to cash payments totalling \$115,000, share allocations totalling 200,000 shares, and cumulative work commitments (exploration expenditures) totalling \$2 million over a period of four years.

The exploration program funded by Alliance Mining Inc. started late in the season in October 1996, as the initial phase of the work program contemplated in Awmack's 1995 report. A camp was established near the termination of the passable portion of the 1968 Dome Mountain access road, at a point close to the first lake at the origin of Carr Creek. Additional claims were staked. Approximately 1.3 kilometers of baseline was cut using 1987 Line 70+00E oriented at 320 degrees, and 14 kilometers of grid-line marked. On the grid, VLF-EM and Gravity surveys were completed. An early snowfall has delayed completion of the necessary survey component of the gravity survey, and the gravity map is not, as yet, complete. All geophysical surveys were done by SJ Geophysics of Delta B.C. From the grid re-established in 1996, additional work will be done in 1997. Total expenditures in 1994-1996 by Equity are approximately \$105,000.00. This work has now been filed for assessment, advancing the expiry dates of the claims to 2002 and 2003. The total exploration expenditures from 1967 to the present is estimated to exceed \$400,000 in terms of 1996 dollars.

The Ascot property lies within the Intermontane Belt of the Canadian Cordillera, near the eastern edge of the Coast Crystalline Complex. The area is largely underlain by sub-aerial to submarine volcanic, volcanoclastic and sedimentary rocks of the Hazelton Group. The Hazelton Group is an island-arc assemblage that was deposited in the northwest-trending Hazelton trough in early to middle Jurassic time. Three divisions of the Hazelton Group have been mapped in the area. The lowermost is the **Telkwa Formation**, which consists of mixed sub-aerial and subaqueous pyroclastics and flow rocks with lesser intercalated marine sediments. Conformably to disconformably overlying this unit is the **Nilkitkwa Formation** of fine grained clastic and tuffaceous rocks. The Nilkitkwa Formation is in turn disconformably overlain by fossiliferous sandstones, siltstones and intercalated felsic tuffs of the **Smithers Formation**.

Argillite, siltstone and argillaceous limestone, felsic or rhyolitic volcanics, lapilli, breccias, tuffs, limy tuffs and ash tuffs (Nilkitkwa unit 4) underlie much of the Carr Creek upper drainage and the south side of Carr Creek, from the lower meadow and Texasgulf's lower camp at elevation 4,300 ft to the eastern part of the property at the head of Stimson Creek, elevation 5,200 ft. In addition, various massive to vesicular and amygdaloidal basaltic to andesitic units are present. Several types of mineralization found on the Ascot property include: stratiform zinc, lead and barite mineralization in limy tuffaceous units and relatively clean limestone members, mineralization of sphalerite, galena, barite and minor tetrahedrite in secondary carbonate and quartz veins cutting tuffaceous or massive volcanic units, stockwork quartz veining with sulphides in massive rhyolite, disseminated specks and blebs of galena sphalerite and pyrite in siltstone units, ash and lapilli tuffs and tuff-breccias, disseminated pyrite pyrrhotite and chalcopyrite in hornfelsed andesitic volcanics and felsic breccias, and massive pyrite in bleached, altered and silicified fine grained sediments or limestones.

The property has been explored from 1968 to the present by a number of operators, including Texasgulf Inc. from 1968-72, who completed airborne and ground geophysical surveys, geochemical surveys and geological mapping. Petra Gem Explorations and Geostar Mining Corp. from 1977 to 1987 completed a detailed grid-based geochemical and geophysical survey, and trenched a number of showings. The most important showings from east to west are the Eastern showing, the Trench 8 showings, (discovered in 1988, and re-sampled by H.Awmack in 1995), the Texasgulf showing, which was drilled in 1969, the Trench 14 showing, (discovered by Geostar in 1987), the Coswan Showing, (discovered by prospector K.Coswan in 1977, and explored later by the writer), and the Pyrite showing.

**At the Eastern showing,** disseminated chalcopyrite and sphalerite are present in felsic tuffs and andesites that have been hornfelsed.

**At the Trench 8 showing,** Trench 1987-8, now slumped and largely covered, exposed a mineralized horizon of uncertain width. Henry Awmack examined this trench in 1994 and found a float boulder on the side of the trench which assayed 4.38% lead, 4.85 % zinc and 1.2 ppm silver. The mineralized zone is poorly exposed, but may be a tuffaceous bed. About 15% sulphides are present, with pyrite > sphalerite > galena in grey siliceous tuff. Possible barite occurs on fractures. The writers selected samples - No's. AS 96-1 and AS 96-2 assayed as follows:

Sample	Thickness/Type	Zinc	Lead	Silver	Ba
As 96-1	Selected	1.69%	0.24%	<1 ppm	4820 ppm
As 96-2	Selected	1.79%	0.61%	<1 ppm	80 ppm

**The "Texasgulf showing,** centered on Texas Gulfs drillhole No.1, exhibits disseminated galena and sphalerite in a host rock of greenish grey dacitic tuff. Mineralization occurs as *"Very fine emulsion textures of galena in sphalerite seem to indicate deposition of a single phase gel from which these two minerals exsolved. Formation of such a gel indicates deposition under very low temperature conditions in a submarine environment. Disseminated sphalerite in fragments in tuffaceous rocks and also filling interstices suggests the sulphides were deposited before complete lithification of the tuff"*. (Pecatfield, 1972).

The writer logged the 1972 drillhole and took a composite sample amounting to about 1 inch of core per foot. The writers sample assayed 0.67% zinc and 0.12 lead over 48 feet. Just west of the drill Helgason obtained values of 1.40% zinc and 0.35% lead from grab-sample 87-54. At least three horizons are mineralized, albeit at low levels (less than 1% Zn+Pb), but occur over a strike length of about 500 meters. Mineralization at this locality is accompanied by coincident geochemical and geophysical anomalies; the original airborne EM anomalies defined by Texasgulf were corroborated by a number of smaller VLF-EM surveys run by the writer and by P.A. Christopher and Associates in past years.

**The Trench 14 showing** is seen in two trenches (87- 14 and 15) dug by Geostar to evaluate the northern part of a strong zinc soil anomaly.. Zinc values as high as 8% were reported by Helgason, (1988). Over a sampling interval of 17.9 metres, (true thickness approximately 8 m.) zinc averaged 6.3% and silver 1.5 oz./ton. Assays are as follows:

Trench	Sample	Thickness	Zinc	Lead	Silver
87-14	RT 87-73	6 meters	7.2%	0.57%	71.2 ppm
87-14	RT 87-74	5.0 m	8.2%	0.37%	66.1 ppm
87-14	RT 87-75	6.9 m	4.1%	0.09%	23.7 ppm
<b>Average</b>		<b>17.9 m</b>	<b>6.3%</b>	<b>0.33</b>	<b>51.5 ppm</b>

The writer also examined the trench; mapping is now made difficult by slumped overburden. Several selected samples taken assayed up to 7% zinc and 39 g/t silver. This is the best showing so far found on the property. As Helgason noted in 1987, mineralization is somewhat erratic. Additional mapping and trenching is required at this locality in preparation for a drill-program. Excellent outcrop is present in the creek banks nearby. The geochemical soil anomaly suggests some continuity to the folded mineralized limestone or calcareous exhalite.

**The Coswan showing**, near the 1968-69 Base-camp contains disseminated sphalerite in relatively clean limestone. Samples taken by the writer in 1977 and 1978 assayed 0.883% and 1.62 % zinc. The limestone unit is overlain by chloritized andesite and altered (limy) vesicular? andesite and tuff which in one occurrence contains disseminated pyrite and apparently sphalerite. Three packsack (EX size) drill holes were completed by the writer on the lowermost Coswan showing ; the holes were 6 to 12 feet deep and all contained light greenish brown sphalerite. Assays of the core were up to 1.6% zinc over 11 feet. In a nearby locality, large pelecypod shells were noted in the laminated impure (tuffaceous) limestone surrounded by powdery tan to amber sphalerite grains. Two selected samples of this material taken by geologist T. Schroeter of the BC Department of Mines in 1977 assayed 6.50% and 7.50% zinc respectively.

**The Pyrite showing** is a massive pyrite bed or zone exposed in the bank of Carr Creek a short distance below the 1968-69 Texasgulf camp. The pyrite is accompanied by thin folded wisps of chlorite-sericite schist, but little or no other sulphides are present

The comprehensive exploration programs conducted by **Alliance Mining Inc. in 1996-97** and by **Geostar Mining Corp. in 1987** established a number of significant magnetic, VLF-EM and geochemical anomalies. Several new lead-zinc showings discovered by Geostar in 1987 were inspected by Henry Awmack in 1995 and by the writer in 1996; these showings, in addition to the previously known showings, now confirm a broad distribution of stratiform type zinc-lead-silver-barite mineralization within the felsic tuffs and limy tuffaceous units believed to lie within the Nilkitkwa Formation of the Hazelton Group. The showings, none of which as yet are of economic size or grade, are found over a strike-length of at least 4 kilometers, following the trend of a package of felsic breccias, tuffs and limestones along their folded contact with overlying clastic sedimentary units, some of which also contain stratiform mineralization of exhalative origin. The most significant showing found was in a trench near the head of Carr Creek canyon which has exposed tuffaceous limestone with up to 6.5% zinc and 1.5 oz./ton silver associated with barite-rich horizons across a width of eight metres.

The Ascot property has been explored for roughly 28 years, leading to a large amount of surface geochemical and geophysical data. Awmack, (1995) has begun the arduous task of data compilation. Comparing the Texasgulf and Geostar geochemical and geophysical data visually, it appears that the independent surveys have come up with comparable anomalies, spatially and in magnitude. The smaller VLF EM surveys completed by the writer and P.A. Christopher confirm that some of the mineralized horizons are conductive, and outline a number of favorable anomalies under the upper meadows adjacent to the Texasgulf upper camp. In other areas, the mineralized limy tuffs are not conductive and non-magnetic. The gravity survey was not completed because of adverse weather and snow late in the year which prevented the level surveying necessary.

The writer concludes that the property, lying within a strongly mineralized belt of Hazelton volcanics, and comprising a number of zinc-lead-silver-barite showings which conform to the kuroko model, is worthy of additional exploration work.

The work program recommended for the next season will include completion of the geophysical surveys, backhoe trenching and sampling, additional geological mapping, completion of the data compilation now in progress, and diamond drilling several of the geological targets.

The writer has set out a two-staged budget for roughly \$151,000 in Stage I and \$165,000 in stage II. This budget anticipates expansion of the 1996 grid in Stage I, with geological mapping, additional VLF-EM and gravity surveying, possible road improvement, and back-hoe trenching.

respectfully submitted



**Barry James Price, M.Sc., FGAC., P.Geo.**

Consulting Geologist.

March 30, 1997.



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**GEOLOGICAL REPORT - ASCOT PROPERTY**  
Dome Mountain Area, Smithers B.C., Omineca M.D.  
**Alliance Mining Inc.**

## **INTRODUCTION**

This report has been prepared at the request of the directors of Alliance Mining Inc. Much of the historical and geological information has been prepared by Henry J. Awmack, P. Geo., of Equity Engineering Ltd. Excerpts from a report prepared by Awmack have been used with his permission; such material is shown in quotations. Additional information concerning the 1996 work program was provided by Jim Lehtinen, P. Geo. The writer visited the property accompanied by J. Lehtinen, B. Sc., P. Geo. on September 23 and 24, 1996.

## **LOCATION & ACCESS**

The property is located 32 km due east of Smithers, B.C. at the head waters of Carr (Canyon) Creek, between Dome Mountain and Mt. McKendrick (Figures 1, 2,3). Access to the central part of the claims is by a four wheel drive road which turns off the Babine Lake road near kilometre 21. Driving time from Smithers is approximately one hour. In winter, access is possible by snowmobile. Helicopter charters from Smithers are available all year round with a flying time of only 10 minutes from the Smithers base.

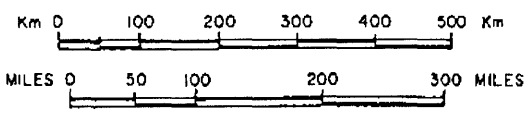
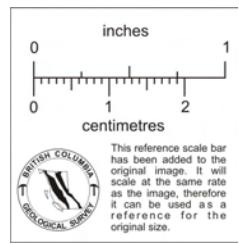
Smithers is serviced by daily jet flights from Vancouver. Most services and supplies are available locally. Highway and rail lines also pass through Smithers. Power lines 10 km from the property are sufficient for mining and milling purposes.

## **PHYSIOGRAPHY & VEGETATION**

The property lies between 1,200 and 1,500 metres elevation. Relief is gentle to moderate; consequently, outcrop is limited to creek banks and sides and tops of numerous low hills. Most of the property is covered with moderate to dense timber on gentle slopes. Several large grassy swamps and meadows occur near main creeks and surrounding several small lakes. Topography of the claim area is shown in Figure 3.

Climate of the area is moderate. The property is free of snow between May and October; geophysical work can be done on snowshoes between February and April, and some of the showings near the creek bank are exposed all year.

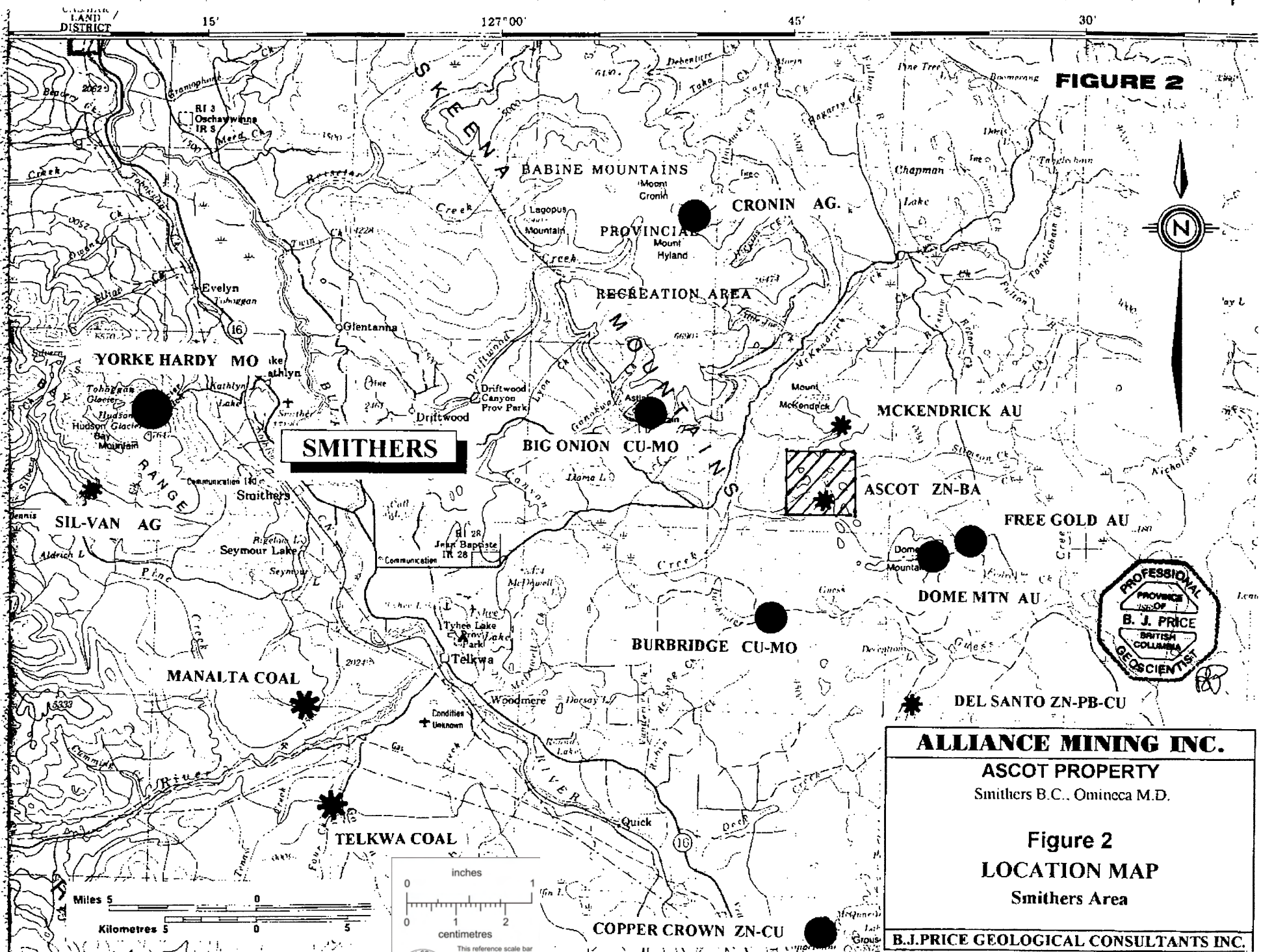
**FIGURE 1**



**ALLIANCE MINING INC.**  
**ASCOT PROPERTY**  
Smithers B.C., Omineca M.D.

Figure 1  
**LOCATION MAP**  
British Columbia

**B.J.PRICE GEOLOGICAL CONSULTANTS INC.**



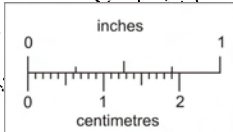
**FIGURE 2**

**ALLIANCE MINING INC.**

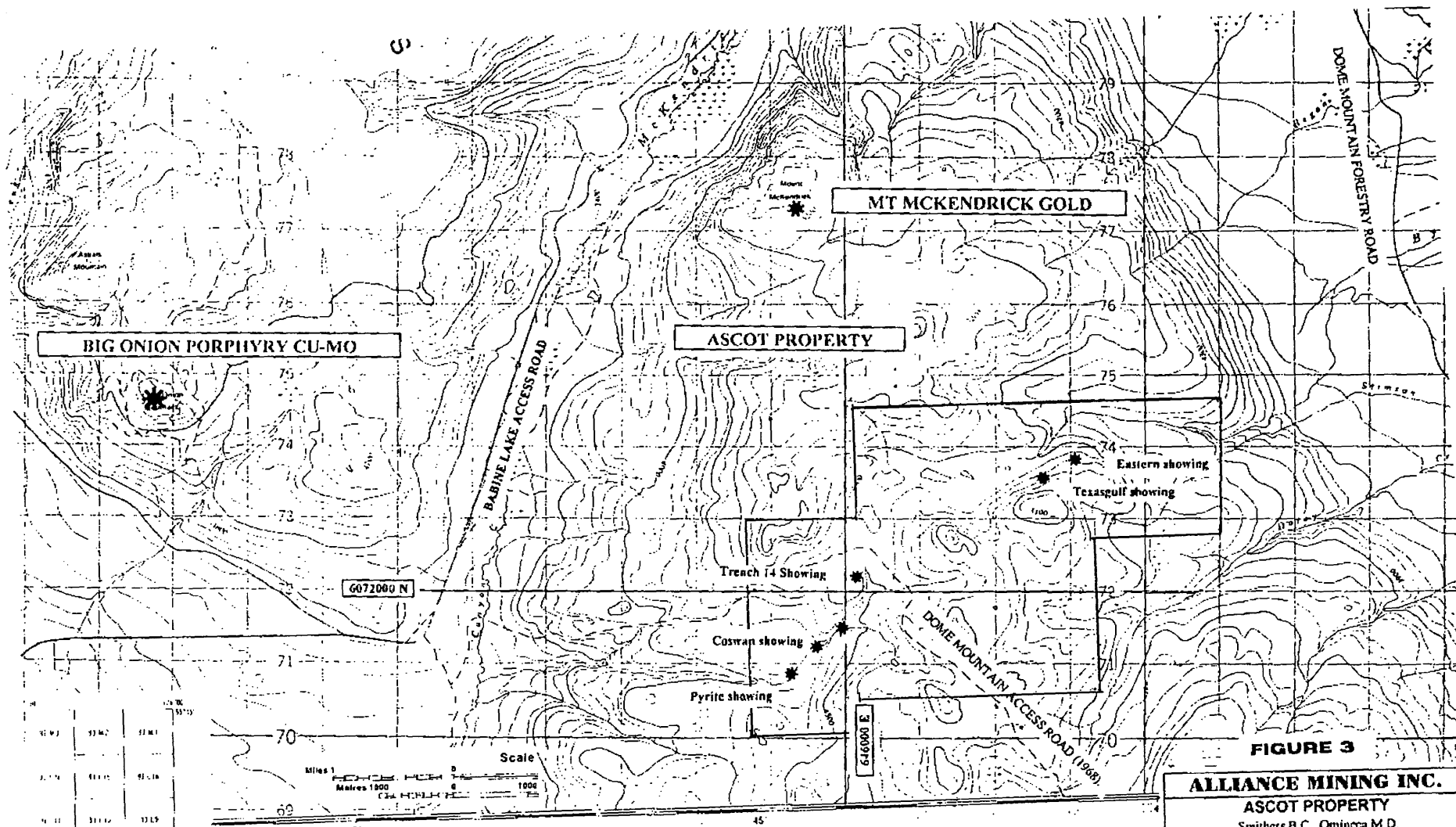
**ASCOT PROPERTY**  
 Smithers B.C., Omineca M.D.

**Figure 2**  
**LOCATION MAP**  
**Smithers Area**

**B.J.PRICE GEOLOGICAL CONSULTANTS INC.**



This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.



**FIGURE 3**

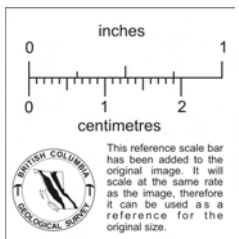
**ALLIANCE MINING INC.**  
**ASCOT PROPERTY**  
 Smithers B.C., Omineca M.D.

**Figure 3**  
**TOPOGRAPHY AND CLAIMS**  
 Ascot Property

**B.J. PRICE GEOLOGICAL CONSULTANTS INC.**

**LEGEND**

MINERALIZED ZONE



10 00	11 00	12 00
10 10	11 10	12 10
10 20	11 20	12 20
10 30	11 30	12 30
10 40	11 40	12 40
10 50	11 50	12 50
11 00	12 00	13 00
11 10	12 10	13 10
11 20	12 20	13 20
11 30	12 30	13 30
11 40	12 40	13 40
11 50	12 50	13 50

DRIFTWOOD CREEK  
 93 U/15  
 1:50,000 2 EDITION

## CLAIMS AND MINERAL TITLE

The property comprises 5 contiguous claims, (as yet un-grouped) for a total of 86 units. The claims are in the Omineca Mining Division. Claim data is listed below:

**Table of claims - Ascot Property**

CLAIM	RECORD #	UNITS	TYPE	EXPIRY*
Bow 1	351201	18	MGS	Sept 29, 2003
Bolo 1	351202	20	MGS	Oct 1, 2002
Bolo 2 **	351203	8	MGS***	Oct 1, 2003
Bolo 3	351204	20	MGS	Oct 1, 2003
Bolo 4	351205	20	MGS	Oct 1, 2002
5 claims		86units****		

\* Subject to approval of the Assessment Report

\*\* Bolo 2 claim covers pre-existing (alien) Bret 1 claim and has been reduced accordingly to 8 units.

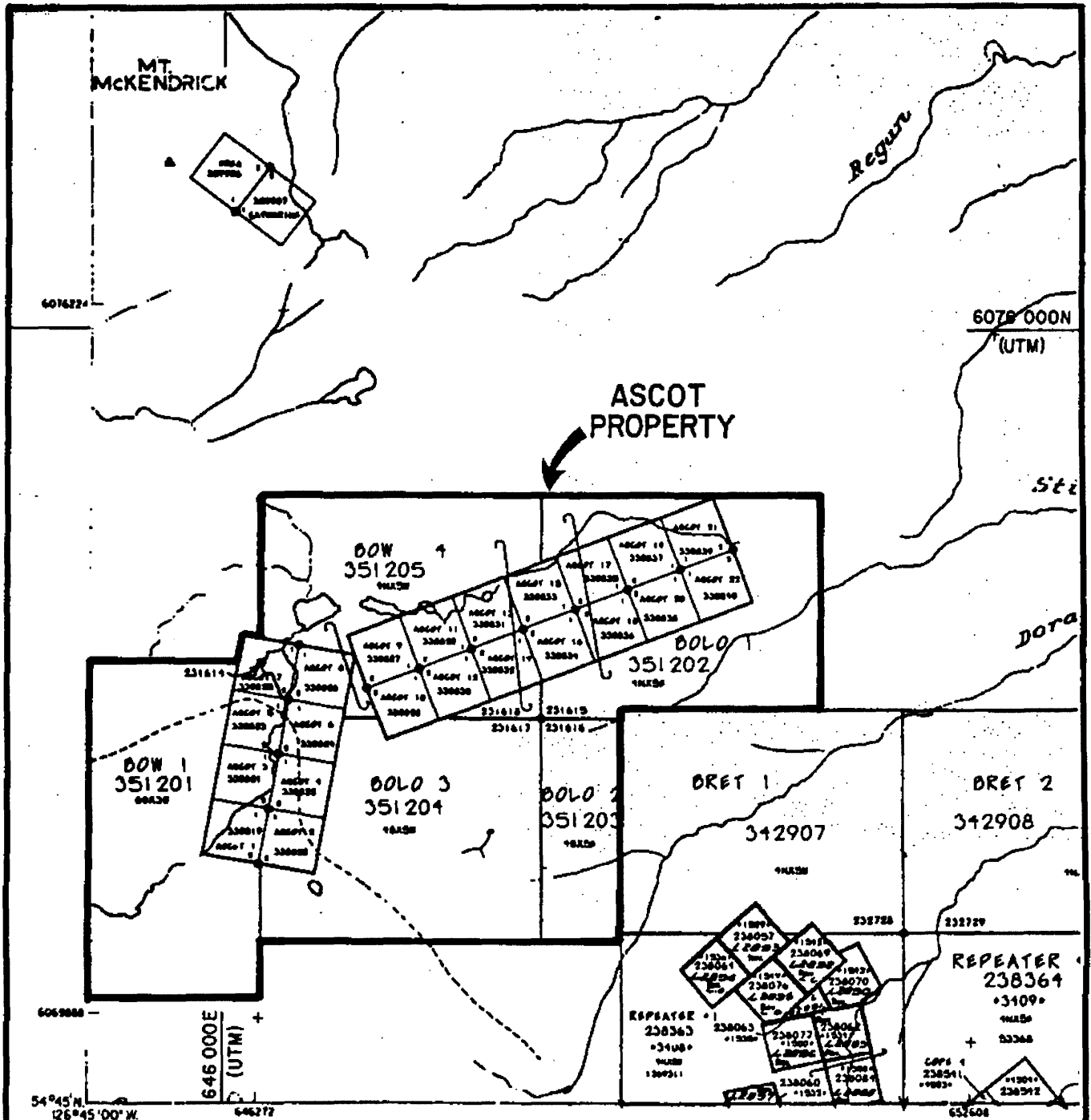
Originally, the Ascot 1-22 "2-post" claims were staked in 1995 by Equity Engineering Ltd. to protect the showings. The writer inspected a number of claim posts and claim lines for the two-post claims; the Bow and Bolo claims were staked after the property inspection. The 2-post claims appear to be staked in accordance with the Mineral Act. These initial 22 claims were formally absorbed into the later-staked claims early in 1997, prior to the application of assessment work. There is no lien or encumbrance known to the writer on the claims.

The claims are registered in the name of Henry Awmack, and are held in trust for Equity Engineering Ltd. Alliance Mining Inc. has an option to acquire 100% interest in the claims, subject to a 1.75% retained NSR, and subject to cash payments totalling \$115,000, share allocations totalling 200,000 shares, and cumulative work commitments (exploration expenditures) totalling \$2 million over a period of four years. All but 0.75% of the NSR may be purchased at any time for \$2 Million. This buy out price is indexed according to the Consumer Price Index. Beginning on the 5th anniversary, annual advance royalty payments of \$50,000 are required, but these may be subtracted from any buy out of the NSR.

In addition to the above requirements, an area of influence of 5 kilometers from the original Ascot 1-22 claims is in effect.

## HISTORY

1951: Central Dome No.1-4 and Western Extension No's 1-4 claims were staked on the central showings in 1951 by W. Silta and Albert Carlson, but no record exists of exploration results from that period.



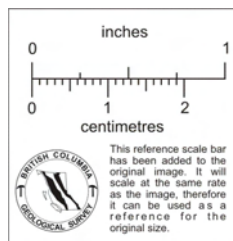
**FIGURE 4**

**ALLIANCE MINING INC.**

**ASCOT PROPERTY**  
 Smithers B.C., Omineca M.D.

**Figure 4**  
**CLAIM MAP**  
 Ascot Property

**B.J.PRICE GEOLOGICAL CONSULTANTS INC.**



**1967:** In 1967, the area was staked by Texasgulf. (now Kidd Creek Mines Ltd) on the basis of strongly anomalous silt samples taken during a regional reconnaissance exploration. From 1969 to 1973, the claims were explored from two base camps, an upper camp near the most easterly of the three lakes forming the headwaters of Carr (Canyon) Creek. The lower camp is 3 kilometers southwest in a meadow area below the canyon of Carr Creek. Considerable work was done, including reconnaissance and detailed soil geochemical surveys, airborne magnetic and electromagnetic surveys, ground EM surveys and geologic mapping. On the basis of the geophysical surveys, three short diamond drill holes were completed in 1972. One of the holes, DDH-1, intersected disseminated lead-zinc mineralization in a limy tuff unit. The other two holes, drilled southwest of the known showings, and on the north bank of Carr creek, intersected unmineralized argillite and dioritic intrusive.

**1977:** The property was dropped by Texasgulf Inc. in 1977, and one area encompassing some of the most interesting showings was re-staked as the MS claim by prospector Kevin Coswan of Smithers.

**1977-83:** Petra Gem Explorations of Canada Ltd., a private company managed by the writer optioned the claims in July 1977. Exploration done during that year included additional staking, cutting of a trail to showings from the lower camp, geological mapping and sampling and, late in the season, drilling of three short "packsack" drill holes. In 1978 Petra Gem completed additional mapping and sampling and a ground magnetometer survey in the vicinity of the mineralized Texasgulf drill holes. Additional claim maintenance was done by the writer from 1978 to 1984; this work was primarily prospecting, mapping and small VLF-EM surveys.

**1985:** The property was sold to Geostar Mining Corp. in early 1985. Peter Christopher and Associates Inc., conducted a geophysical and geochemical exploration program on selected parts of the property. In 1987 Pilot Management Inc., on behalf of Geostar, conducted a comprehensive exploration program which included a large geochemical grid and a substantial amount of trenching. No further work was done after this date.

**1987:** The property was acquired from Geostar by Canadian United Minerals Ltd. and Teeshin Resources Ltd., who completed a small soil-sampling program.

**1994:** The property lapsed and was re-staked by Henry Awmack for Equity Engineering Ltd., who conducted a brief geological and prospecting program in 1995.

**1996:** Alliance Minerals Inc. optioned the property. A comprehensive work program was done in 1996 on behalf of Alliance Minerals Inc. by Equity Engineering Ltd. The program is described in this report.

## **1996 WORK PROGRAM**

The exploration program started late in the season in October 1996, as the initial phase of the work program contemplated in Awmack's 1995 report. A camp was established near the termination of the passable portion of the 1968 Dome Mountain access road, at a point close to the first lake at the origin of Carr Creek. Additional

claims were first staked, as shown in the Claim Map, (Figure 2). Approximately 1.3 kilometers of baseline was cut using 1987 Line 70+00E oriented at 320 degrees, and 14 kilometers of grid-line marked.

On the new part of the grid, VLF-EM and Gravity surveys were completed. An early snowfall has delayed completion of the necessary survey component of the gravity survey, and the gravity map is not, as yet, complete. All geophysical surveys were done by SJ Geophysics of Delta B.C. From the grid re-established in 1996, additional work will be done in 1997. Total expenditures in 1994-1996 by Equity are approximately \$105,000.00, (Awmack, 1996 - personal communication). This work has now been filed for assessment, advancing the expiry dates of the claims.

## TOTAL EXPLORATION EXPENDITURES

A partial tabulation of exploration expenditures in past years is as follows:

1968-72	Texasgulf	>\$100,000.00 estimated
1977	Petra Gem	\$4,222.26
1978	Petra Gem	\$3,640.69
1980	B.J.Price/Rapitan	\$1,221.53
1984	Geostar	\$10,368.66
1985	Geostar	\$8,056.00
1987	Geostar	\$132,798.28
1994-95	Equity Engineering	\$20,521.00 estimated
1996	Alliance Mining Inc.	\$84,479.86

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**Total documented** >\$344,787.28

The total exploration expenditures from 1967 to the present is estimated to exceed \$400,000 in terms of 1996 dollars.

## GEOLOGICAL SETTING OF THE ASCOT PROPERTY

(Figures 5-7)

A great deal of regional geological work has been done by the Geological Branch of the Ministry of Energy Mines and Petroleum Resources, (now the Ministry of Employment and Odd Bits). Much of the following discussion of regional geology is taken from MacIntyre's 1985 paper:

The Ascot property lies within the Intermontane Belt of the Canadian Cordillera, near the eastern edge of the Coast Crystalline Complex. The area is largely underlain by sub-aerial to submarine volcanic, volcanoclastic and sedimentary rocks of the Hazelton Group. The Hazelton Group is an island-arc assemblage that was deposited in the northwest-trending Hazelton trough in early to middle Jurassic time.



The general geology of the Dome Mountain area is described by MacIntyre as follows: (MacIntyre, 1986):

*"The core of Dome Mountain is underlain by a large southwest-verging, southeast-plunging anticlinal structure that has been cut by northeast and northwest-trending high angle faults (Fig. 65). The oldest rocks are well exposed on the crest of the mountain and a good stratigraphic section is exposed on the south slope. A preliminary stratigraphic column (Fig. 66) has been established on the basis of this section. Seven major map units are recognized. Going up section these are: (1) fragmental volcanic unit (+1000 metres?); (2) red volcanoclastic-green flow unit (150-200 metres); (3) volcanic wacke-conglomerate-felsic tuff unit (20-50 metres); (4) rusty argillite or shale unit (50-100 metres); (5) dark grey siltstone unit (250-300 metres); (6) thin-bedded limestone-siltstone-wacke unit (50-100 metres); and (7) greenish grey massive volcanoclastic unit (+500 metres). The ages of these units and their correlations with Hazelton Group formations are not well established. Limestone samples are currently being processed for micro fossils.*

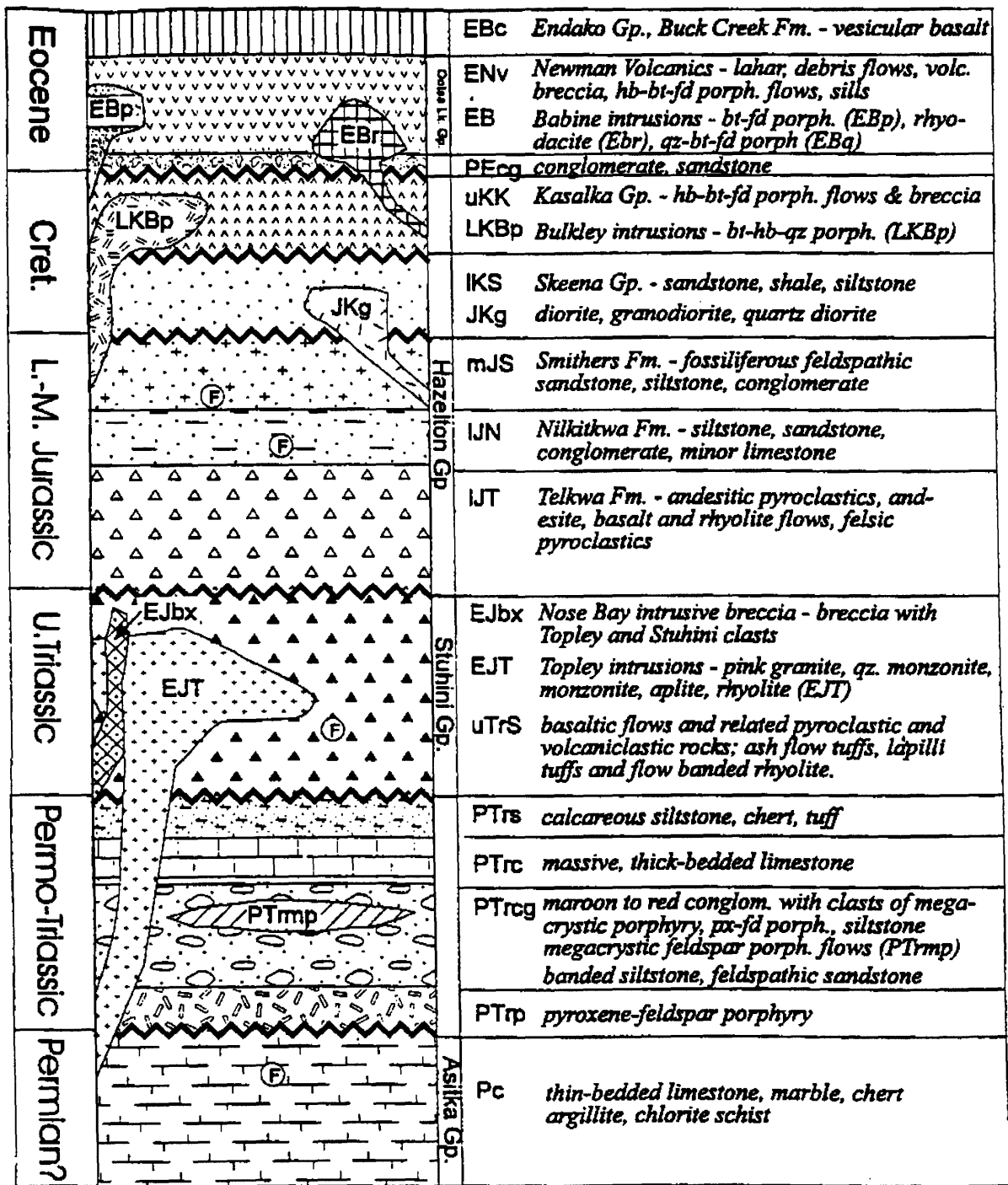
*Several small elongated plugs and dikes of diorite or diabase intrude the Hazelton Group. These bodies are thought to be related to the middle Jurassic Topley Intrusions. Granitic intrusives are also found in the area with dates ranging from 47 Ma to 117 Ma."*

## Stratigraphy

The volcanic-sedimentary sequence that is host to the various stratiform showings at the Ascot property was originally thought by Tipper and Richards, (1977) to be a marine shelf facies of the Telkwa Formation, named the "**Babine Shelf Facies**", and described as follows:

*"Between Bulkley River and Babine Lake, predominant subaqueous and sub-aerial pyroclastic rocks are intercalated with marine sediments and intra volcanic non-marine sediments. In the Dome Mountain area, two volcanic members may be present. A lower assemblage comprises interbedded red, maroon, purple, grey, and green tuff and breccia, with interbeds of shale and greywacke. Discontinuous limestone beds and lenses, in places with a pelecypod and ammonite fauna, are common. This unit is overlain by about 100 m. of black shale, separating it from a second volcanic member, estimated to be 900 m. thick of mainly green aquagene tuff, breccia, and flows at the base, grading upward into a mainly sub-aerial assemblage of reddish colored lapilli tuff and fine to medium-grained (basaltic to rhyolitic) breccia and flows. The transition zone between the Howson sub-aerial facies to the west, and the Babine shelf facies is a broad, (5 km), arcuate belt with limestone reef and reefoid bodies, marine sediments with shell coquinas, and minor aquagene tuff inter-fingered with the prominent reddish-colored volcanics typical of the sub-aerial facies."*

Three divisions of the Hazelton Group have been outlined. The lowermost is the **Telkwa Formation**, which consists of mixed sub-aerial and subaqueous pyroclastics and flow rocks with lesser intercalated marine sediments. Conformably to disconformably overlying this unit is the **Nilkitkwa Formation** of fine grained clastic and tuffaceous rocks. The Nilkitkwa Formation is in turn disconformably overlain by fossiliferous sandstones, siltstones and intercalated felsic tuffs of the **Smithers Formation**.



## STRATIGRAPHIC COLUMN - FULTON LAKE MAPSHEET

After MacIntyre, et. al., (1997).

FIGURE 6

The following stratigraphic columns, (Figures 6 and 7) are reproduced from MacIntyre, 1996 and 1985, respectively)

## **HAZELTON GROUP**

### **Telkwa Formation**

#### **Fragmental volcanic unit (1)**

*"A chaotic assemblage of coarse-grained agglomerate, tuff-breccia and lapilli tuff with lesser intercalations of lithic, crystal and ash tuff, and volcanic derived sedimentary rocks crops out on Dome Mountain. These rocks are purple, mauve, green and grey in colour. Clasts range from less than 1 centimetre to 40 centimetres in diameter and are typically comprised of porphyritic andesite or crystal tuff. The matrix also contains abundant crystal and lithic fragments. In places the clasts are flattened parallel to bedding. Beds comprised of large rounded bombs up to 30 centimetres in diameter floating in a fine-grained ash matrix are common. Finer grained tuff beds within the unit are strongly foliated subparallel to bedding".*

### **Nilkitkwa Formation**

(See Figure 7)

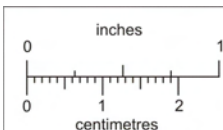
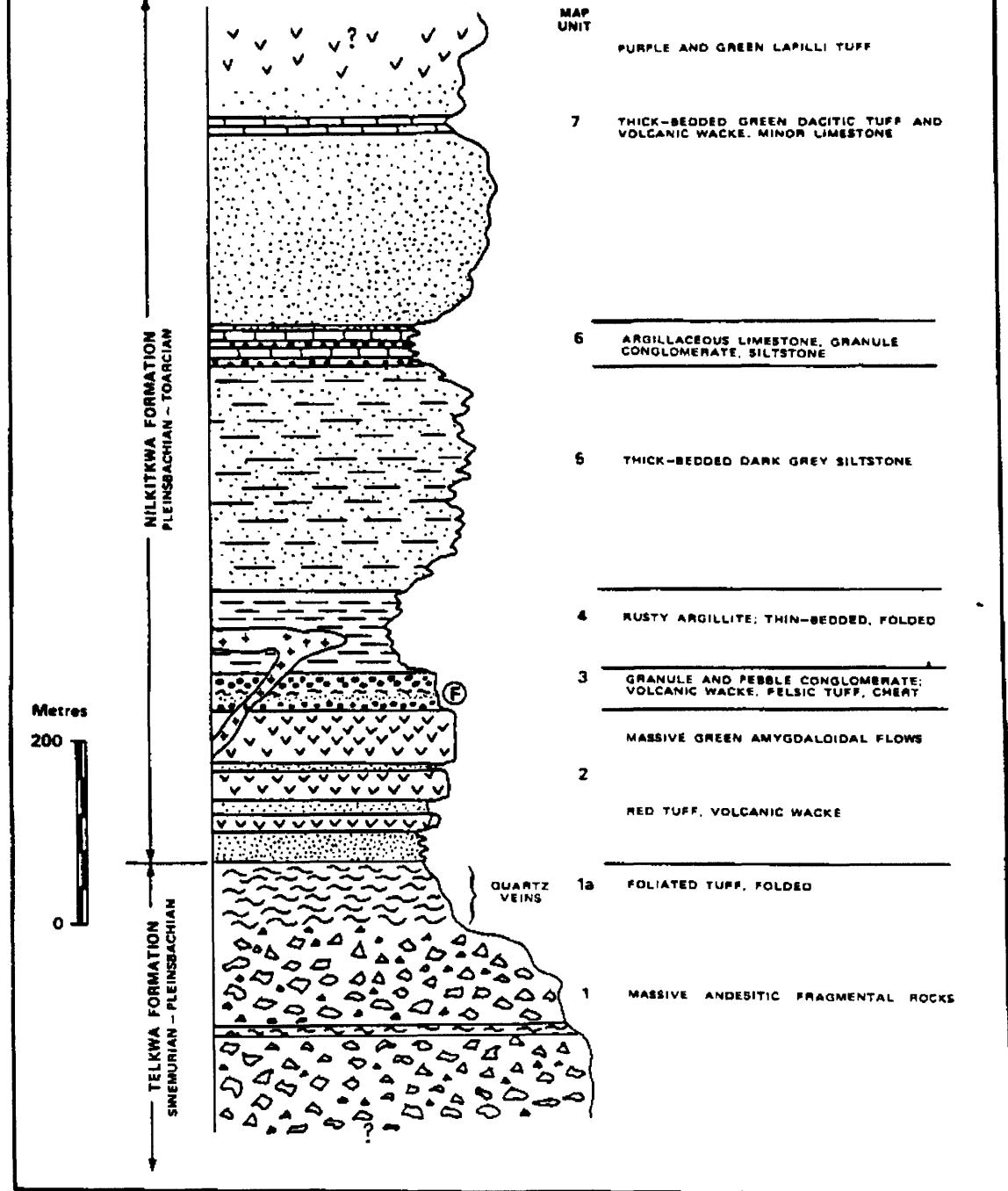
#### **Red volcanoclastic - green flow unit (2)**

*"A distinctive unit of red volcanoclastic rocks and green to mauve amygdaloidal flows overlies the fragmental volcanic unit that forms the core of Dome Mountain. This unit is well exposed on the south slope of Dome Mountain and in Federal Creek above and below the Forks showing. Near the crest of Dome Mountain the basal part of the unit is comprised of thin-bedded brick red lithic tuff, crystal tuff, volcanic wacke, and granule conglomerate that is locally cross-bedded. Interlayered lime green, amygdaloidal basalt or andesite increases in abundance up section and comprises the upper part of the unit. Outcrops of this unit in Federal Creek are thicker bedded and have less reworked volcanic detritus than those near the crest of Dome Mountain, suggesting a facies variation to the east. Here the volcanic part of the unit varies from mauve to green in colour but still contains conspicuous chlorite-filled amygdules and vesicles.*

*The red volcanoclastic-green flow unit is probably the basal member of the Nilkitkwa Formation on Dome Mountain. It represents a period of exposure and erosion of the Telkwa Formation and deposition of sub-aerial pyroclastic rocks. This apparently was followed by a marine transgression and deposition of green submarine basaltic flows.*

*Tipper and Richards (1976) describe a red tuff member of the Nilkitkwa Formation which is lithologically similar to the basal part of the red volcanoclastic-green flow unit on Dome Mountain. However this red tuff member is Toarcian in age and overlies a marine sedimentary unit of the Nilkitkwa Formation. If this relationship is correct then the red volcanoclastic-green flow unit occurs lower down in the section and does not correlate with the red tuff member. Additional evidence supporting this conclusion is the fact that sedimentary rocks that apparently overlie the red volcanoclastic-green flow unit near the Forks showing are*

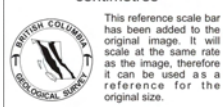
# PRELIMINARY STRATIGRAPHIC COLUMN DOME MOUNTAIN



## STRATIGRAPHIC COLUMN - DOME MTN - ASCOT AREA

After MacIntyre. (1985).

**FIGURE 7**



*reported to contain a Late Pliensbachian pelecypod."*

#### **Volcanic wacke - conglomerate - felsic tuff unit (3)**

*"A thin unit of brown to buff weathering volcanic wacke, siltstone, granule to pebble conglomerate and fine-grained felsic tuffs or flows overlies green amygdaloidal flows of the red volcanoclastic-green flow unit. The finer-grained clastic rocks typically have a slaty cleavage and contain small angular clasts in a silty matrix. As mentioned above, the unit contains poorly preserved Pliensbachian pelecypods. Adjacent to the Forks shaft on the south slope of Dome Mountain and the north bank of Federal Creek, this unit is pervasively altered and has disseminated pyrite and broken quartz stringers suggestive of an early hydrothermal (exhalative?) event."*

#### **Rusty argillite unit (4)**

*"A recessive, poorly exposed unit of thin-bedded, rusty weathering silty argillite occupies a small depression between the main part of Dome Mountain and its southern spur. The unit typically has a well-developed slaty cleavage and tight small scale fold structures; it lacks carbonate and contains ubiquitous disseminated pyrite. Exploration companies have dug several bulldozer trenches across the unit near the crest of the Dome Mountain ridge but no significant economic mineral concentration has been discovered"*

#### **Thick-bedded siltstone unit (5)**

*"Up to 300 metres of monotonous, medium to thick-bedded, dark grey siltstone overlies the rusty argillite unit. This unit, which is relatively resistant forms the backbone of the south spur of Dome Mountain. The siltstone has a slaty cleavage in places. Lithologically similar rocks that crop out in Federal Creek, below the Forks showing, are probably part of this unit"*

#### **Thin-bedded limestone-siltstone-wacke unit (6)**

*"The thick-bedded siltstone unit grades up section into a relatively thin unit of well-bedded dark grey argillaceous limestone, limy siltstone, and wacke with lesser intercalations of pebble conglomerate and chert. These rocks crop out near the southeast end of Dome Mountain ridge, and in the lower road cuts on the southwest slope above Marjorie Creek. The limestone beds weather in positive relief producing a ribbed appearance on weathered surfaces. Lithologically similar rocks crop out in the lower part of Federal Creek. However, L'Orsa (1982) reports that these rocks contain a poorly preserved ammonite that Tipper identified as probably Sinemurian in age. Therefore, correlation of these rocks with the Nilkitkwa Formation is suspect; they may be a sedimentary member of the Telkwa Formation. A small outcrop of similar lithology occurs in the clear cut southeast of Dome Mountain"*

#### **Green thick-bedded volcanoclastic unit (7)**

*"The south slope of Dome Mountain is underlain by massive, light green, calcareous crystal tuff or volcanic wacke with rare intercalations of argillaceous limestone and shaly siltstone. The unit, which is estimated to*

be at least 500 metres thick, grades up section into a mixed assemblage of mauve, red, and green lithic, crystal and lapilli tuffs. These rocks may correlate with the red tuff member of the Nilkitkwa Formation. Tipper and Richards (1976) describe similar rocks in the upper part of the Nilkitkwa Formation northeast of Dome Mountain. As far as is known, these are the youngest rocks in the Dome Mountain gold camp".

## **Intrusive Rocks**

Several small elongate plugs or dykes of fine to medium-grained diorite or diabase intrude the Telkwa and Nilkitkwa Formations on Dome Mountain. The largest intrusion is exposed on the lower southeast slope of the mountain, just south of Federal Creek. These mafic-rich intrusions cause the prominent aeromagnetic anomaly that is centred on Dome Mountain. The dioritic intrusions are probably Jurassic in age and if so, belong to the Topley Intrusions. Outcrops of altered quartz porphyry and porphyritic quartz monzonite contain quartz vein stockworks that occur east of the Free Gold veins. Additional diorite stocks or plugs are seen in a number of areas on the Ascot property. These have not provided any economic targets. One such body was drilled by Texas Gulf; another outcrops a short distance south of the Texas Gulf drillhole No. 1 at the east end of the Ascot property. In addition, a number of diabasic dykes outcrop in the canyon of Carr Creek; these are well-outlined by the 1996 magnetic survey.

## **Structure**

(after MacIntyre, 1985)

*"Dome Mountain is underlain by a large anticlinal structure that plunges to the southeast. Evidence supporting this conclusion includes the repetition of stratigraphic units on either side of Dome Mountain, the attitude of minor fold axes which plunge gently to the southeast and east, and the general change from southwest to southeast of dips for bedding and foliation about a southeast-trending axial trace. The southwest limbs of minor folds generally dip steeply to the southwest or northeast; the northeast limbs typically dip gently to the northeast. This suggests the large scale fold structures are asymmetric and verge to the southwest.*

*Fine-grained tuffaceous and sedimentary rocks on Dome Mountain have a well-developed, early slaty cleavage. This cleavage, which is subparallel to bedding, is locally folded and cut by a weak crenulation cleavage that is axial planar to the major fold structures. Early quartz veins, which both parallel and cross-cut the slaty cleavage, have been broken and offset by the crenulation cleavage. Locally quartz veins, that parallel the slaty cleavage, are folded; contained sulphides are broken and recrystallized as a result of this folding. Massive fragmental rocks of the Telkwa Formation generally have a poorly defined fracture cleavage that roughly parallels the crenulation cleavage.*

*The most prominent joint set dips steeply to the northwest. This trend is roughly perpendicular to the major fold axes. These joints also parallel prominent air photo linears and several major high angle faults which offset the stratigraphy."*

The writer has observed a number of small scale folds on the Ascot property; these indicate that the same structural regime is present in this area. Sedimentary and volcanic units strike generally northeast and dip

southeast; secondary folding has created a number of southeast plunging structures.

## **MINERAL DEPOSITS IN THE AREA:**

The Ascot property is situated within a strongly mineralized belt of Hazelton Group volcanic and volcanoclastic sedimentary rocks cut by a number of small Cretaceous and Tertiary intrusive stocks. The belt, which includes the Babine Range, extends from about 25 kilometers north of the Ascot property to Houston, approximately 35 kilometers to the south. There are three main types of deposits in this belt:

1. **Porphyry copper-molybdenum deposits**, related to the intrusive stocks; examples are **Big Onion** (Cimbria) 10 kilometers northwest of Ascot and **Burbridge Lake**, 6 kilometers south of Ascot, and the **Moly mine** molybdenite porphyry in an alaskite stock on Mineral Hill, 27 kilometers south of Ascot. The Babine Lake porphyry belt, approximately 30 kilometers east of the Ascot property, includes the Bell and Granisle mines which were productive over a 20 year life span, and a number of lower grade porphyry deposits which are geological resources.

2. **Epigenetic gold-silver polymetallic quartz veins**. Several of these vein deposits have achieved small production and others have geological reserves. The best examples are the **Cronin** silver-lead-zinc veins, 17 kilometers northwest of Ascot and the numerous gold-quartz veins on Dome Mountain, such as the **Free Gold** and **Boulder Veins** 5-10 kilometers southeast of Ascot. These deposits are within Hazelton rocks but may be related to younger intrusive stocks.

3. **Volcanogenic massive sulphide deposits** within the Nilkitkwa Formation of the Hazelton Group, (or in younger sedimentary units). Several examples are the **Fireweed** deposits roughly 30 kilometers north-east of Ascot, the **Del Santo** deposit, 10 kilometers south of Ascot, and the **Copper Crown** (Silver Ridge) massive sulphide deposit on Mineral Hill, 23 kilometers southeast of Ascot.

Production from a number of deposits in the Babine Mountains-Dome Mountain-Grouse Mountain belt are listed on the following page.

**Porphyry Copper Deposits and Prospects**  
Smithers - Babine Lake Area

Mine/Prospect	Category	Production tonnes	Grade Cu %	Grade Au g/t	Grade Mo %
Granisle	1966-1982	52.7 M tonnes	0.47%	0.20 g/t	
Granisle res.	reserves*	119 M tonnes	0.41%	0.15 g/t	
Bell Copper	1972-1992	77.2 M tonnes	0.47%	0.26 g/t	
Bell Copper	reserves*	296 M tonnes	0.46 %	0.20 g/t	
Morrison	reserves	190 M	0.40 %	0.20 g/t	
Hearne Hill	reserves	60 M	0.16%	0.10 g/t	
Hearne Bx	reserves (95)	143,000	1.73%	0.8 g/t	
Dorothy	Resource	45 M	0.25		0.01
Big Onion	Resource (96)	94 M	.42	na	0.02
Mt. Thomlinson	Resource	40.8 M			0.12
Glacier Gulch	Resource	100 M			0.29

Data from CIM Special volume 46, (1995) \* Determined sub-economic in 1992

**Vein and Massive Sulphide Deposits and Prospects**  
Smithers - Houston Area

Deposit	Production Reserves t	Ag g/t	Pb %	Zn %	Au g/t	Cu %
Cronin Mine	P 28,400 t	288			0.31	
	R 317,000 t	354	8	8	1.7	
Free Gold Vein	P ~3000 t	na				
Forks Vein	R 20,000 t				23.6	
Boulder Vein	P 5,079 t	42.7	na	na	26.9	
	R. 200,768	na			14.9	
9800 Vein	P. 56 t	771			30.2	
Fireweed	R 582,400 t	310	1.34	2.22	na	
Copper Crown	R 655,200 t	12.4	na	0.3	na	0.42
Ruby zone	R. 350,000 t	27.4	na	4.23	na	0.38
Ute	R 2630 t	411	14.0	na	2.4	5.0
Tetra	P 275 t	2538	3.91	2.50	1.49	
	R.20,000 t	2948	4.4	2.2	1.19	
Nadina	1.9 M	297	na	6.19	2.49	
Richfield	182,000 t	174	na	na	3.85	
Sil-Van ('51)	61,000	93	na	7.0	9.95	0.7

Data from Minfile, Canadian Mines Handbook.

P = Production, R = Reserves.



## **GEOLOGY OF THE ASCOT PROPERTY:**

*(Figures 8-11)*

The Ascot claim block is underlain primarily by two subdivisions of the Hazelton Group. These are the Smithers formation and the underlying Nilkitkwa formation. The only other rock type seen is diorite to quartz diorite intrusive rocks, although farther north, on McKendrick Mountain, basaltic volcanic rocks which may correlate with the late Triassic-Early Jurassic Takla Group have been mapped.

As noted previously, the Nilkitkwa is a transgressive marine sequence while the disconformably overlying Smithers is a regressive marine sequence. Major rock units found predominantly south of Carr Creek are rhyolite, dacite pyroclastic breccias, tuffs and tuffaceous sandstones, argillites and limestones which vary from clean grey limestones to tan or greenish tuffaceous mineralized limestones which may be exhalites. Cutting both of these units are dioritic intrusions, irregular stocks, sills and dykes of probable Middle Jurassic age, and mafic dykes of probable Cretaceous or Tertiary age. There is abundant evidence that the initial period of intrusion was followed by major folding, leading to folded sills. The dominant unit on the northern side of Carr (Canyon) Creek valley is a volcanic-sedimentary package of volcanic sandstone, siltstone, greywacke, minor shale, limestone, chert and conglomerate belonging to the Smithers formation.

Argillite, siltstone and argillaceous limestone, felsic or rhyolitic volcanics, lapilli, breccias, tuffs, limy tuffs and ash tuffs (Nilkitkwa unit 4) underlie much of the Carr Creek upper drainage and the south side of Carr Creek, from the lower meadow and Texasgulf's lower camp at elevation 4,300 ft to the eastern part of the property at the head of Stimson Creek, elevation 5,200 ft. In addition, various massive to vesicular and amygdaloidal basaltic to andesitic units are present. Along the valley that includes the three lakes at the head of Carr Creek, felsic tuffs subcrop; these vary from coarse to fine and often contain grains of sphalerite and pyrite, and more rarely, chalcopyrite and galena. The sequence has undergone one or more periods of folding, as near-isoclinal folds are seen in Carr Creek canyon, and outcrop patterns as mapped by Peatfield suggest strong folding.

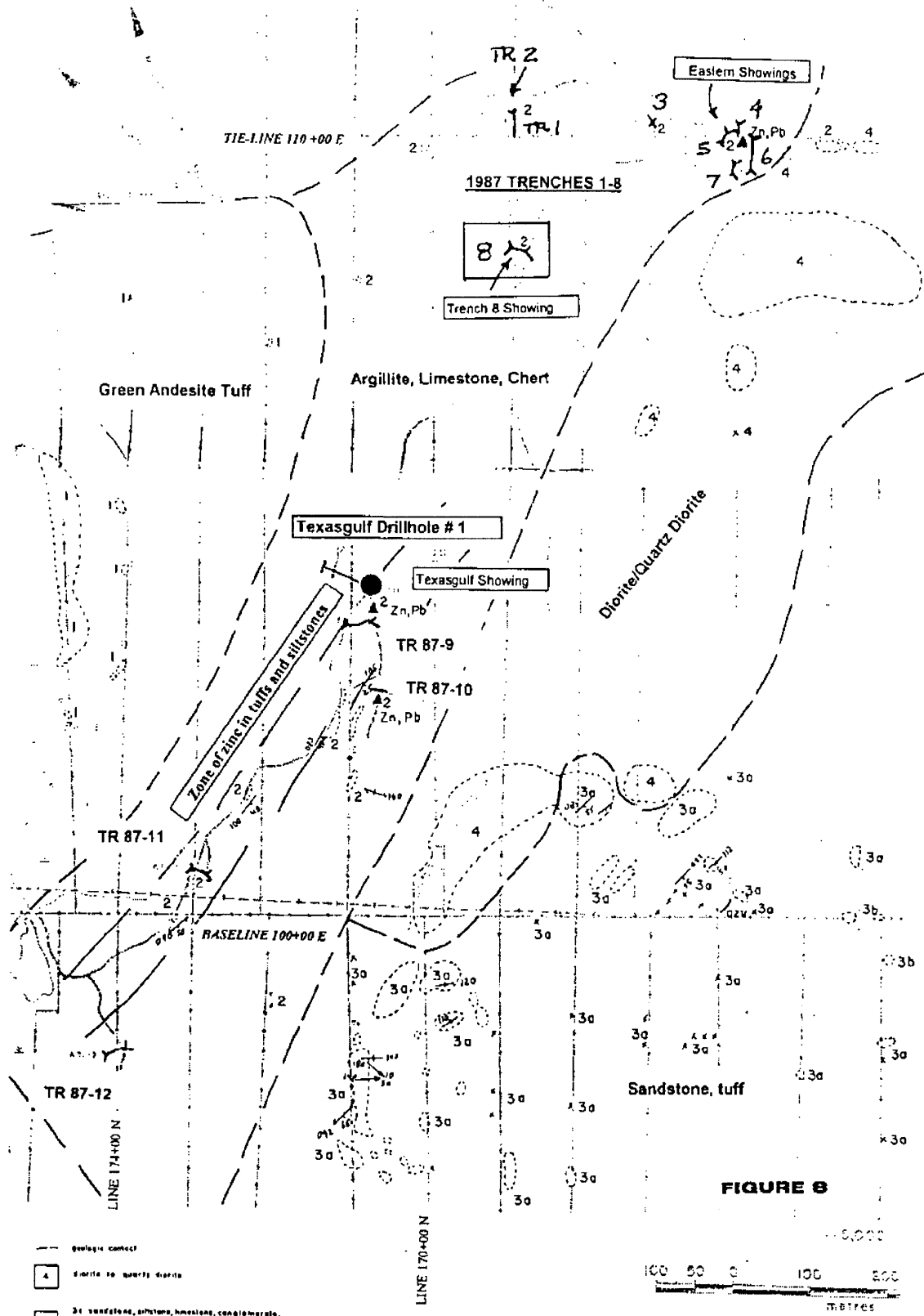
A number of rhyolitic bodies have been mapped, particularly at the east end of the property, on the divide between Carr Creek and Byron Creek. The writer has observed sphalerite and chalcopyrite in quartz veins or stockworks in one or more of the rhyolite bodies. In addition, rhyolite fragments and sulphide grains in the lapilli units suggests explosive destruction of a kuroko style rhyolitic dome within the Nilkitkwa sequence. Mineralization of several types on the property is suggestive of exhalative and kuroko style origins. Other mineral deposits in the belt have been identified as volcanogenic massive sulphide and/or exhalite deposits.

### **Mineralization:**

Several types of mineralization found on the Ascot property include:

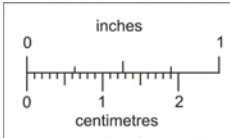
1. Zinc, lead and barite mineralization in limy tuffaceous units and relatively clean limestone members. None of these occurrences are as yet of economic widths or grade, however, they may have potential for an economic sized deposit along the stratigraphic horizon in depositionally thickened sub-basins or areas that are structurally thickened by folding. The





**FIGURE 8**

- ④ geologic contact
- ④ diorite to quartz diorite
- ③ 3a sandstone, siltstone, limestone, conglomerate, shale, minor tuff
- ③ 3b green andesite, microscopically amygdaloid
- ③ 3c talus, phyllite tuff
- ② rusty argillite, grey siltstone, chert, argillaceous limestone, limestone
- ① green chlorite andesite tuff, minor lignite tuff



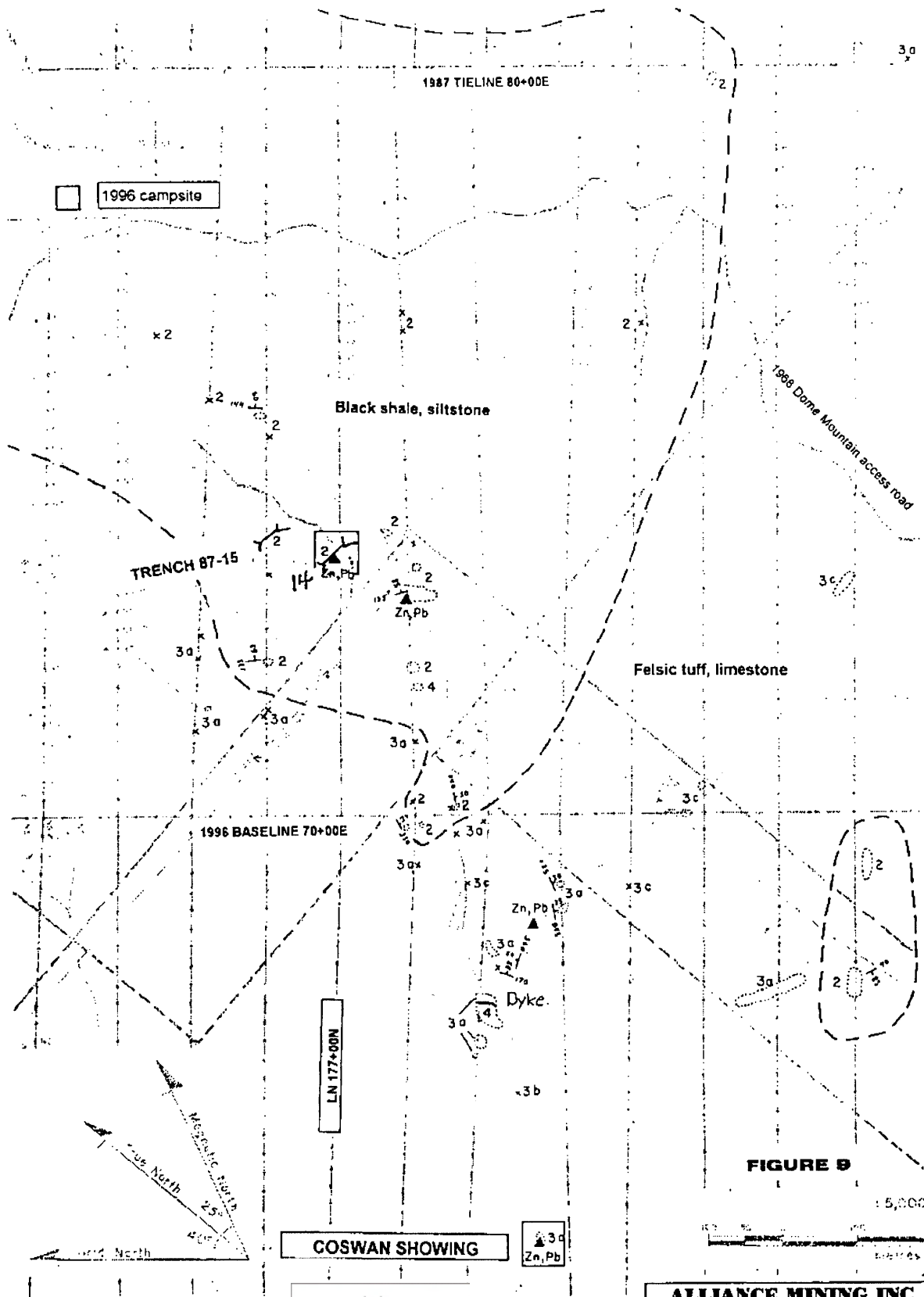
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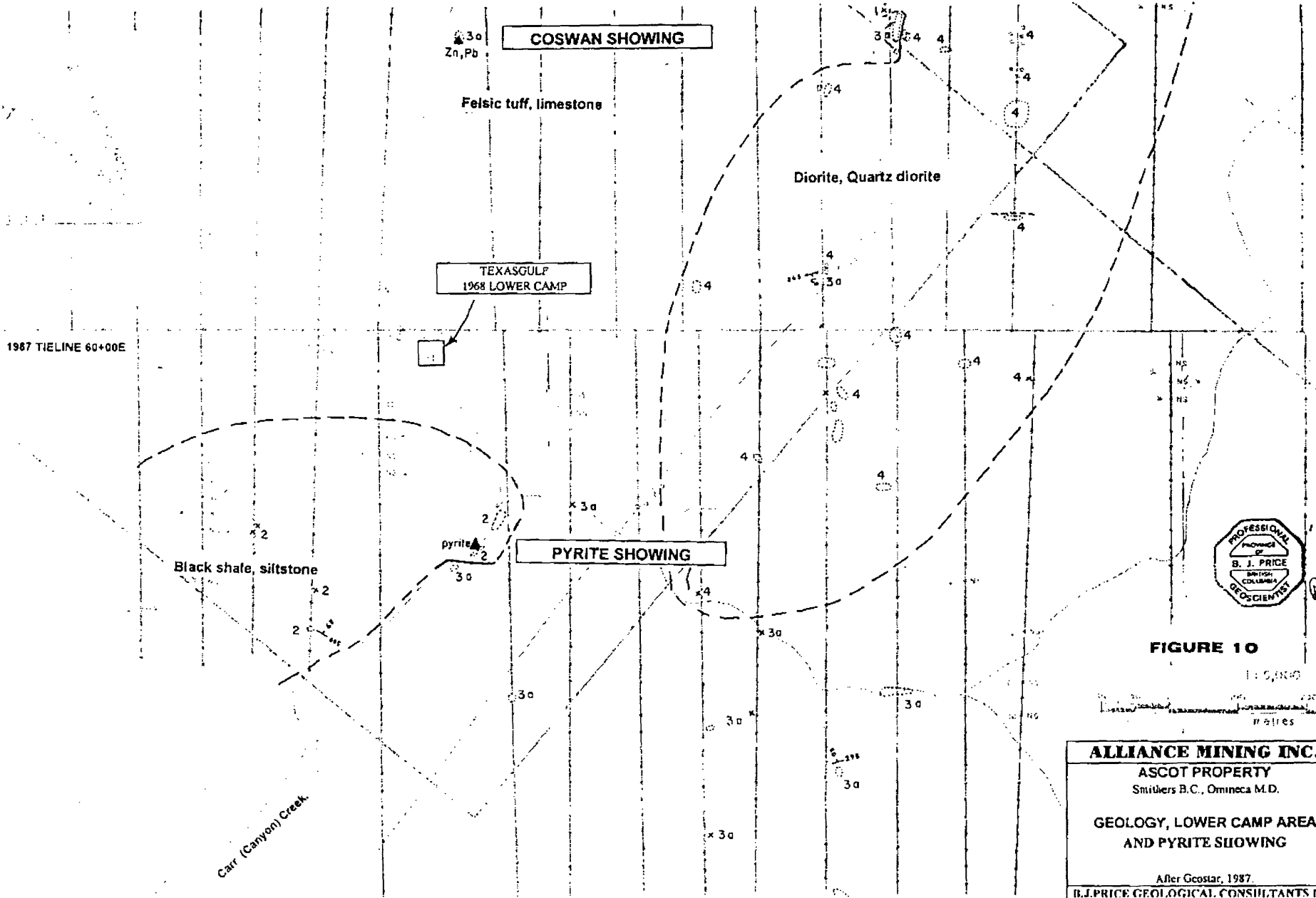


**ALLIANCE MINING INC.**  
 ASCOT PROPERTY  
 Smithers B.C., Omineca M.D.

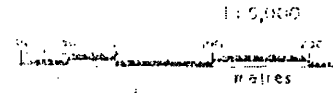
**GEOLOGY AND TRENCHES**  
 Ascot Property - Upper showings

B.J.PRICE GEOLOGICAL CONSULTANTS INC

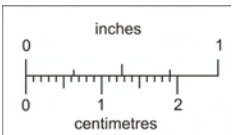




**FIGURE 10**


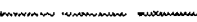


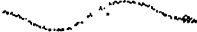
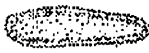






**ALLIANCE MINING INC.**  
 ASCOT PROPERTY  
 Smithers B.C., Omineca M.D.  
**GEOLOGY, LOWER CAMP AREA  
 AND PYRITE SHOWING**  
 After Geostar, 1987.  
 B.J. PRICE GEOLOGICAL CONSULTANTS INC.



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# LEGEND

-  Grid Lines / Stations
-  Claim Line
-  Claim Post
-  Swamp
-  Creek
-  Lake
-  Car Road
-  Claim Boundary — existing
-  Claim Boundary — overlapping
-  geologic contact
- 4

 diorite to quartz diorite
- 3

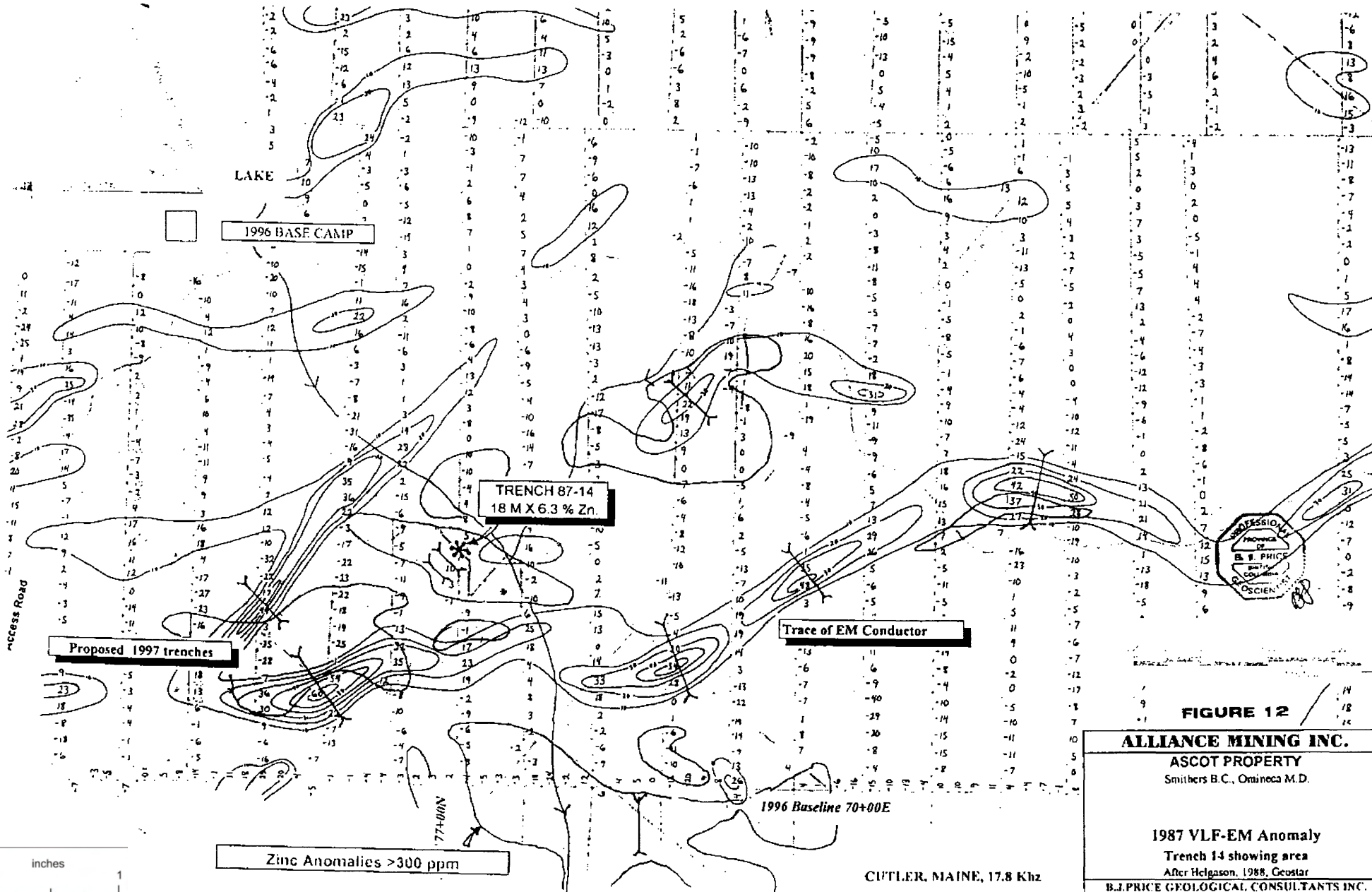
 3a sandstone, siltstone, limestone, conglomerate, shale, minor tuff  
3b green andesite, occasionally amygdaloidal  
3c felsic, phyllitic tuff
- 2

 rusty argillite, limy siltstone, chert, argillaceous limestone, limestone
- 1

 green chloritic andesitic tuff, minor lapilli tuff



**LEGEND FOR FIGURES 8, 9, 10. GEOLOGICAL MAPS**



**FIGURE 12**

**ALLIANCE MINING INC.**

**ASCOT PROPERTY**

Smithers B.C., Omineca M.D.

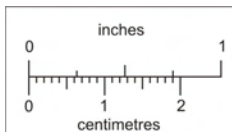
**1987 VLF-EM Anomaly**

**Trench 14 showing area**

After Helgason, 1988, Geostar

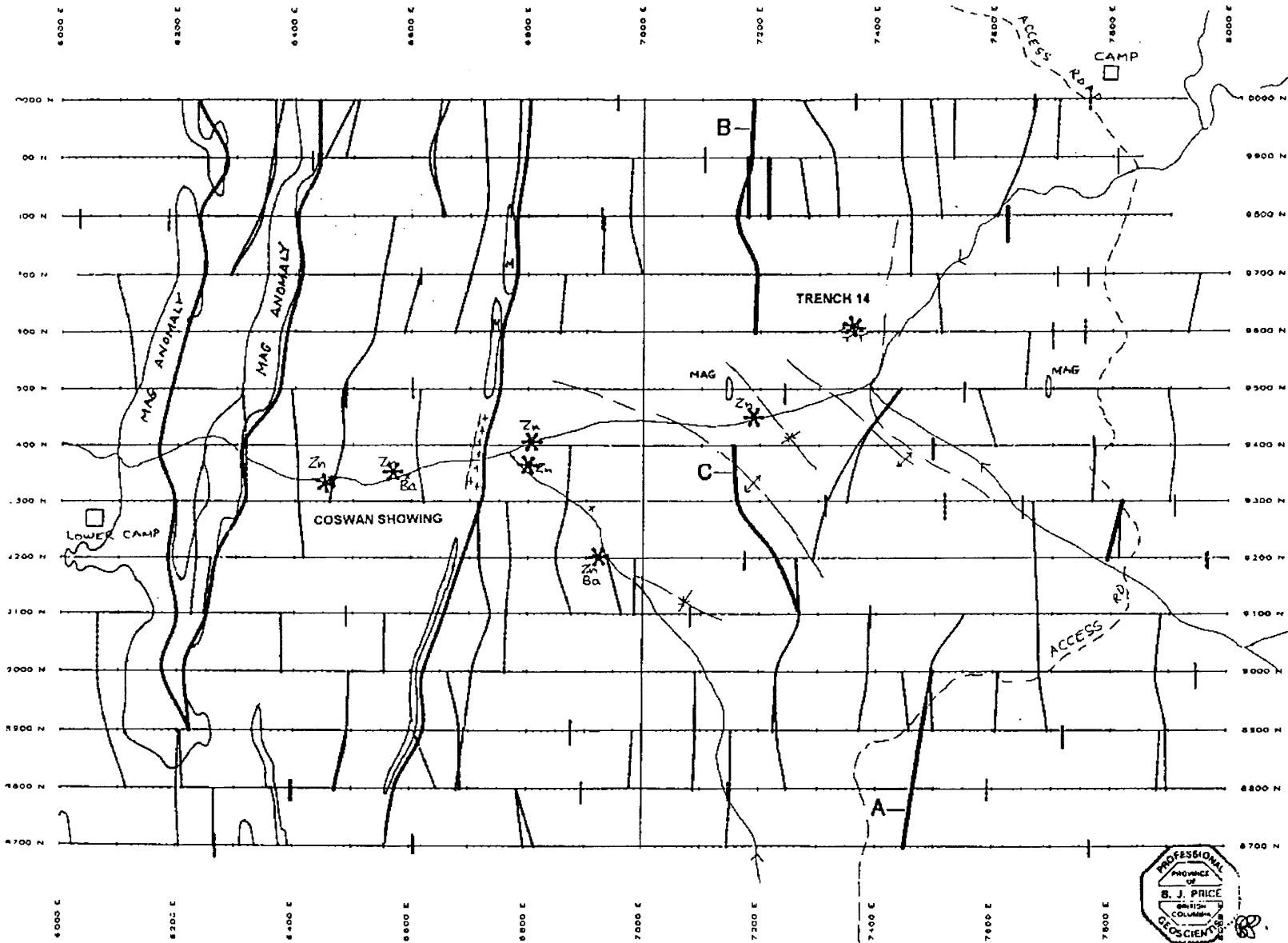
**B.J. PRICE GEOLOGICAL CONSULTANTS INC.**

CITLER, MAINE, 17.8 Khz



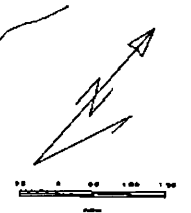
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**INSTRUMENTATION:**  
 Base and Field: EDA OUNI-PLUS Combined Total Field  
 Proton Magnetometer and VLF-EM Recr  
 Magnetics, VLF-EM In-Phase and Total Field Strength  
 are Base Corrected

- LEGEND**
- VLF-EM CONDUCTORS**
- Short Conductor - Trace
  - Medium Conductor - Stream
  - Long Conductor - Stream
  - Short Conductor - Trace
  - Medium Conductor - Stream
  - Long Conductor - Stream
  - Short Conductor - Trace
  - Medium Conductor - Stream
  - Long Conductor - Stream
- MAGNETIC BACKGROUND IN nT**
- MAGNETIC ANOMALY



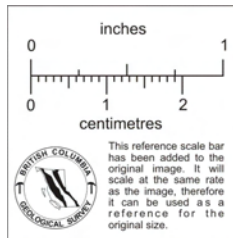
**ALLIANCE MINING INC**  
**ASCOT 1 - 22 CLAIMS**  
**COMPIATION MAP**

Omineca Mining Division, Smithers area, British Columbia  
 N.T.S. : 93L/15a Surveyed : October, 1998  
 Drawn by : JRA Surveyed by : JRA, RA  
 December, 1998 Plate G5  
 S.J. Geophysics Ltd./Equity Engineering Ltd



After Dujakovic and Pezzoli, 1997.

**FIGURE 13**





sphalerite may be very light colored to amber, and the barite is often fine-grained and not easily recognized. Fine powdery sphalerite has been seen surrounding large re-crystallized pelecypod shells in one area.

2. Mineralization of sphalerite, galena, barite and minor tetrahedrite in secondary carbonate and quartz veins cutting tuffaceous or massive volcanic units. Stockwork quartz veining with sulphides in massive rhyolite was also seen at the east end of the property.
3. Disseminated specks and blebs of galena sphalerite and pyrite in siltstone units, ash and lapilli tuffs and tuff-breccias. At the eastern end of the property, chalcopryrite disseminations are more common.
4. Disseminated pyrite pyrrhotite and chalcopryrite in hornfelsed andesitic volcanics and felsic breccias. This style of mineralization, resembling the outer margin of a porphyry copper system, is found only at the easternmost trenched area.
5. A massive pyrite horizon hosted in bleached, altered and silicified fine grained sediments or limestones, near Texasgulf's lower camp.

## **SUMMARY OF WORK DONE TO DATE**

### ***Base Maps***

A number of useful base maps have been used for the property. Texasgulf contracted Lockwood Surveys in 1968 to produce a new regional base map for the Ascot-Dome Mountain area at a scale of 1 inch to 1000 feet., (1:12,000). Later, Petragem produced a 1:5000 scale base map by expanding a portion of the 1:50,000 topographic map for the area.

### ***Grid work:***

Since 1968, several large and numerous small exploration programs have been carried out on the property. Initially, a large well-cut grid was done by Texasgulf. This comprised 43 line kilometers with line spacing 200 ft (61 meters). During the 1970's and 1980's this grid remained visible and was used to some extent by the writer for small programs of geological mapping, geochemistry and geophysics.

In 1987, a flagged grid was laid out on the property by Geostar with two major cut baselines, Ln 70+00 E and 100+00 E, oriented at 320 degrees, (grid North) and a number of Tie-lines at 50+00E, 60+00 E, 80+00 E, 87+00 E, 90+00 E, and 110+00 E. Cross lines spaced at 100 meters over the showings and 200 meters elsewhere are oriented at 050 degrees, with stations marked at 25 metre intervals. A total of 186.3 line kilometers were marked and completed. Geological mapping was done along the grid lines and creek traverses.

Alliance has now used this grid system for their 1996 exploration program. Baseline 70+00 E was selected as a major baseline for the current work, and re-cut and marked for 1.3 km. Cross-lines totalling 14 km were marked, along the same orientation and numbering system as the 1987 grid, for continuity and correlation.

The 1996 Alliance grid is shown in Figure 13

## **Geological Mapping**

To date, the best geological mapping done on the property was the work of Peatfield and Loudon, (1968). The author mapped several showings in detail, as shown in the accompanying sketches. Additional reconnaissance style mapping was done by Geostar personnel, and Jim Lehtinen, (1996) has initiated a program of detailed mapping along Carr Creek. Compilation of the several mapping programs is in progress, on a common topographic base.

## **Geophysical Surveys**

Texas Gulf carried out a regional airborne magnetic and electromagnetic survey over the Ascot property and surrounding areas in 1969 (Crosby and Hillman, 1969), but lack of topographic reference makes their data difficult to locate. (There is said to be an error of unknown magnitude in the positioning of the Texasgulf conductors, (John Fraser, personal communication). However, in a general sense, the survey showed a number of strong EM conductors trending along the upper Carr creek valley. The writer interpreted these anomalies as graphitic sedimentary units. The portion of the survey for the Coswan and Pyrite showings in lower Carr Creek is shown in the accompanying sketch. Several ground electromagnetic surveys were subsequently carried out, using McPhar IREM and Crone JEM over restricted areas.

## **Magnetic Surveys**

The government airborne magnetic map for the Ascot area, (Driftwood Creek, Map 5318G), shows a relatively flat response, reflecting the predominantly sedimentary and felsic pyroclastic assemblage of rocks in the area, lacking in magnetic minerals, and the lack of large intrusive bodies or areas of basic to intermediate extrusive flows.

The writer completed a short ground magnetic survey in 1978 over the grid near Drillhole 1 (Texasgulf Showing). A weak magnetic anomaly near the mineralized drillhole probably results from the weakly magnetic dioritic intrusive exposed on the summit directly to the south. One or more hematitic bands were mapped in the pyroclastic sequence which may cause some of the weak associated magnetic highs.

In 1996, Alliance completed a magnetic survey over the upper canyon grid area. A number of narrow positive magnetic anomalies correlate well from line to line, and are believed to be caused by three diabasic dykes trending northward across the canyon, (Figure 13). The writer has seen two of these dykes, and they were mapped in some detail by Jim Lehtinen. They appear to be later than the enclosing Hazelton Group rocks and

are barren of mineralization.

The magnetic surveys are useful in defining the dykes, but the dykes are likely unrelated to the stratiform zinc mineralization in the Nilkitkwa Formation. Further magnetic surveys would seem to be of limited value.

## **VLF - EM Surveys**

*(Figures 12-14)*

Prior to 1987, a number of small VLF-EM surveys had been done in the vicinity of the "Texasgulf" showing at drillhole no. 1. The accompanying profile, (Figure 12), illustrates a good correlation between the mineralized ash tuff in DDH No. 1 with VLF conductors. A similar profile near the upper Texasgulf camp, (Figure 13), shows one major conductor and two minor conductors. The major conductor appears to correlate with a major Airborne EM conductor obtained by Texasgulf in 1969, and soil samples in the area are anomalous in lead and zinc, suggesting proximity to a mineralized horizon.

An extensive property-wide VLF-EM survey was carried out by Geostar, covering most of the Ascot 1-22 claims and extending to the southeast. Geostar surveyed 137 line-kilometres of their grid with VLF-EM tuned to the Cutler Maine frequency (Helgason, 1988). Figure 12 shows a contoured plan of Fraser filtered values for the best conductor from this survey. As the 1987 grid survey was large with many anomalies, the entire map will not be reproduced with this report. The conductor, which does not correspond with the known mineralized horizons, is thought to represent a bedded graphitic zone or fault contact of volcanics with black argillites.

The very strong, well-defined conductor in Figure 12 trends southeast for 1,600 metres across the Ascot claims and extends a further 900 metres southeasterly off the property. This conductor has no topographic expression and outcrop has only been mapped along its trace in Canyon Creek, where it appears to correlate with argillaceous sediments (Unit 6) and felsic breccia (Unit 10). However, its trend parallels stratigraphy and it probably represents a conductive stratigraphic unit, possibly graphitic. An apparent tight kink marked by the arms of the conductor would fit with the repetition of stratigraphy in Canyon Creek. Anomalous arsenic, zinc and lead soil geochemistry lies within the fold nose suggested by the pattern of conductors. Trench 14 with abundant barite and 6.3% zinc across eight metres of tuffaceous limestone, also lies within this nose, approximately 150 metres northeast of its southwest limb. The correlation of VLF, geochemistry and outcrop pattern at this locality suggests that this geophysical technique may be useful in outlining areas for trenching and drilling.

A separate conductor is well-defined for 800 metres east-west on the (previous) Ascot 15 claim, lying parallel to stratigraphy. Texas Gulf drill hole DDH-1, with 14.6 metres grading 0.67% zinc, was collared 150 metres east of the eastern end of conductor V3 and along strike. Soil geochemistry is not anomalous above this conductor, but no outcrop has been mapped and much of its length is covered by marshy ground around the chain of lakes. The writers diagrammatic illustration of geology in the area, and a 1986 VLF-line indicates the potential for massive sulphide mineralization topographically and stratigraphically below this drill hole.

Another strong VLF conductor (V4), trends east for 700 metres from the Ascot 18 claim. Peatfield and Loudon (1968) mapped argillaceous sediments coincident with the western end of V4 and they probably continue along

VLF-EM TRAVERSE 650 M EAST OF TEXASGULF UPPER CAMP  
 1984 VLF-DATA, B.J.PRICE

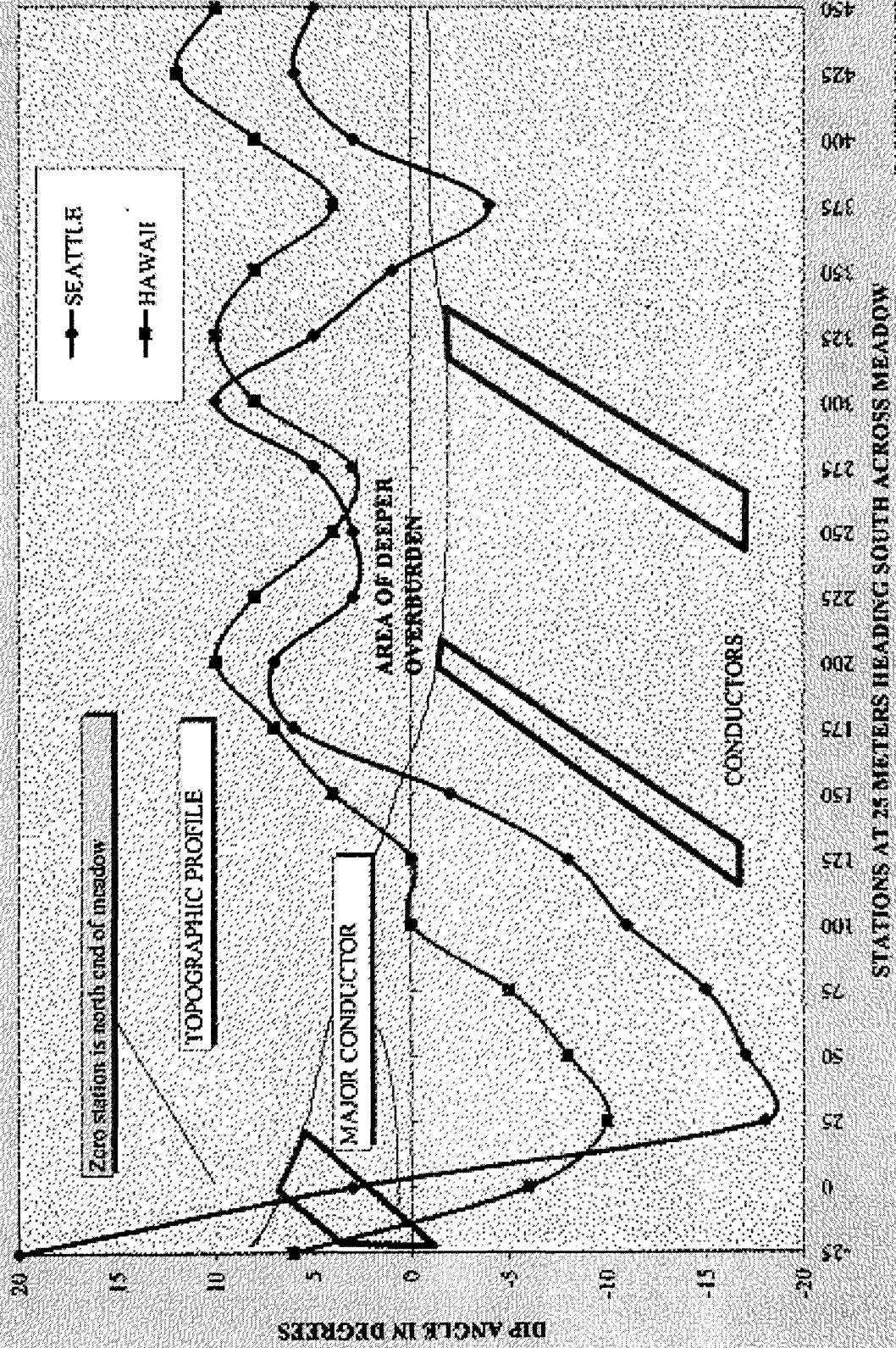


FIGURE 14

its length. Another strong conductor lies 250 metres to the north and parallels V4 for 500 metres. The diorite/sediment contact lies somewhere in this area; conductor V5 could reflect it or a second conductive horizon. Unexplained soil geochemical anomalies, with up to 5322 ppm Zn and 2421 ppm Pb, overlie this conductive anomaly.

The 1996 survey showed three major conductors, labelled A, B, and C. (See Figure 13). Anomaly "A" lies along the access road to Dome Mountain, in an area where outcrop is scarce, and is unexplained. Anomalies "B" and "C" are strong anomalies which lie along the trace of a narrow diabasic dyke exposed in Carr Creek. As yet there appears to be little or no correlation between the zinc-barium rich limestones or limy tuffs and the conductors obtained in the 1996 survey. Sphalerite and barite are non-conductive, and the conductors are more probably related to faults, argillic or graphitic sedimentary units, and dyke margins. In the eastern part of the property, (not covered by the 1996 work) VLF-EM methods appear to have more potential, in that conductors have outlined the strike -trace of graphitic sedimentary units, thus providing some assistance in geological mapping.

### **Geochemistry:**

*(Figures 15-19)*

Several programs of soil geochemical sampling have been carried out on the Ascot property from 1968 to the present time. The early surveys were limited to a few elements (Texasgulf) or to small areas, (Petra Gem). Texasgulf used "cold-extractable" techniques for Copper and zinc, as well as conventional geochemical analyses. In 1985, Noranda collected **313 soil samples** from what is now the Ascot 21 and 22 claims (Myers and Seal, 1985). Samples were analyzed for Au, Ag, Cu, Pb, Zn and As; none of these exceeded 30 ppb Au. Holland (1986) for Geostar Mining Corp. further defined the Noranda anomalies by re-sampling this area with **1449 samples** on cross lines 250 metres apart, oriented at 0500. Given the low gold values obtained in the Noranda survey, Geostar only analyzed their soil samples for Ag, As, Cu, Pb and Zn. In 1987, Geostar extended their earlier grid to the southwest over the current Ascot claims, taking **5,473 soil samples** at 25 metre intervals along lines 100 metres apart. Analysis was again limited to Ag, As, Cu, Pb and Zn, with **no gold or barium analyses**.

The accompanying Figures 15-19 compiled and drawn by Helgason in 1988, show soil response for **zinc, lead and arsenic**, based upon the Geostar work.

Threshold levels chosen by Helgason were as follows:

<b>ELEMENT</b>	<b>BACKGROUND</b>	<b>ANOMALOUS</b>	<b>STRONGLY ANOMALOUS</b>
Copper	0-60 ppm	61-120 ppm	>100 ppm
Lead	0-35 ppm	36-60 ppm	>60 ppm
Zinc	0-300 ppm	301-500 ppm	>500 ppm
Silver	0-1.0 ppm	1.1-2.0 ppm	> 2.0 ppm
Arsenic	0-50 ppm	51-100 ppm	>100 ppm

Values from Helgason, (1987) Analyses done by Acme Analytical Lab, Vancouver B.C.

The apparent trend of some geochemical anomalies may not reflect geology, but may be an artifact of contouring values on a grid with unequal sample spacing along lines and between lines, and the effect of irregular distribution of overburden in the meadow areas where sampling is not always effective. The spotty pattern to the anomalies may reflect pockets of poor geochemical response in areas underlain by local glacial till or poor drainage; the anomalies trend generally along the base of slope, below the mineralized outcrop and suspected trace of the sub-cropping exhalative zones.

**Zinc Geochemistry:** The bulk of anomalous zinc soil geochemistry lies within the overall trend of the valley of Carr Creek, forming two main belts separated by the swampy meadows around the chain of lakes (Figures 16 and 17). **The highest zinc value (9116 ppm)** was returned from the head of Carr Creek canyon; backhoe trenching at this location (Geostar Trench 87-14), returned an **apparent width of 17.9 metres of carbonate-sphalerite-barite exhalite grading 6.3 % zinc. \*(True Width 8 meters)** Anomalous zinc geochemistry extends 200 metres north from the trenched area; till appears to cover the meadow further north, masking the true soil response. High zinc values are scattered across the Ascot 1-4 claims south of this anomaly. associated -with several known zinc-lead+barite occurrences.

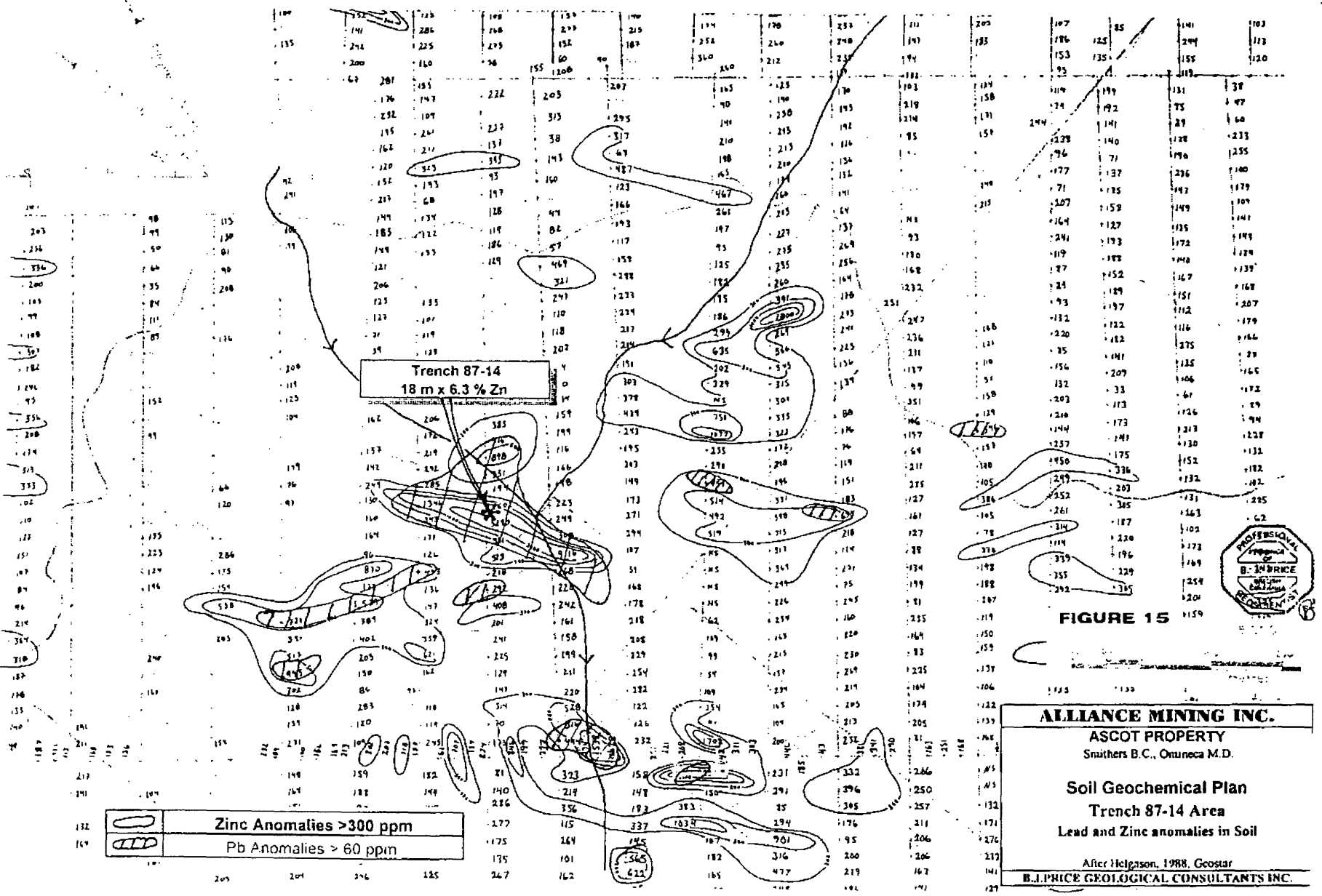
Anomalous zinc soil geochemistry also forms a broad arc for 2,500 metres across the east end of the property, and extends southeasterly for a further 500 metres before terminating in the large swamp between Stimson and Doray Creeks. The northern portion of this arc, with six soil samples above 2000 ppm Zn, follows the general trend of stratigraphy and covers stratiform zinc-lead mineralization in showings along the drill and trench access roads, (numbered Showings 13-17 by Awmack). These showings are hosted by dacitic or andesitic tuffs and breccias. The highest values, up to 7586 ppm Zn, are further southeast in the vicinity of Occurrence 18, where trenching exposed scattered zinc-lead mineralization, for example in Trench 8, where mineralized tuffs and lapilli units are associated with the contact area of a diorite plug. A 300 metre wide break in the zinc soil anomaly overlies the diorite intrusion, but high values continue southerly from its southern contact.

This portion of the zinc soil anomaly, extending southeast from the Ascot 20 claim, returned values up to 5322 ppm Zn, but has not been trenched and no mineralization has been reported. However, an untested Texasgulf strong zinc-lead-silver in soil anomaly exists at the head of Stimson Creek, (A.L'Orsa, 1984, personal communication).

**Lead Soil geochemical anomalies:** form a very similar pattern to those described above for zinc, although values are an order of magnitude lower. This relationship would be expected, given the observed association of sparse flecks of galena with the laminated sphalerite mineralization on the property.

The accompanying geochemical profile, (Figure 19, illustrates the strong zinc-lead response obtained by the writer, in a covered area 700 meters east of Texasgulf's DDH-1. This corresponds roughly with the easternmost 1987 trench.

**Arsenic Geochemistry:** The distribution of arsenic in the Ascot soils is more complex. (Figures 16-18). A triangle of anomalous arsenic, up to 474 ppm, accompanies the high zinc-lead values around Trench 87-14. Reflecting this association in outcrop, sample 626979, from the trench, returned 376 ppm As with 7.65% Zn.

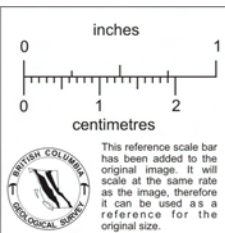


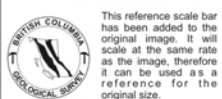
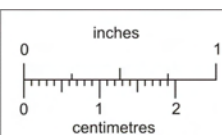
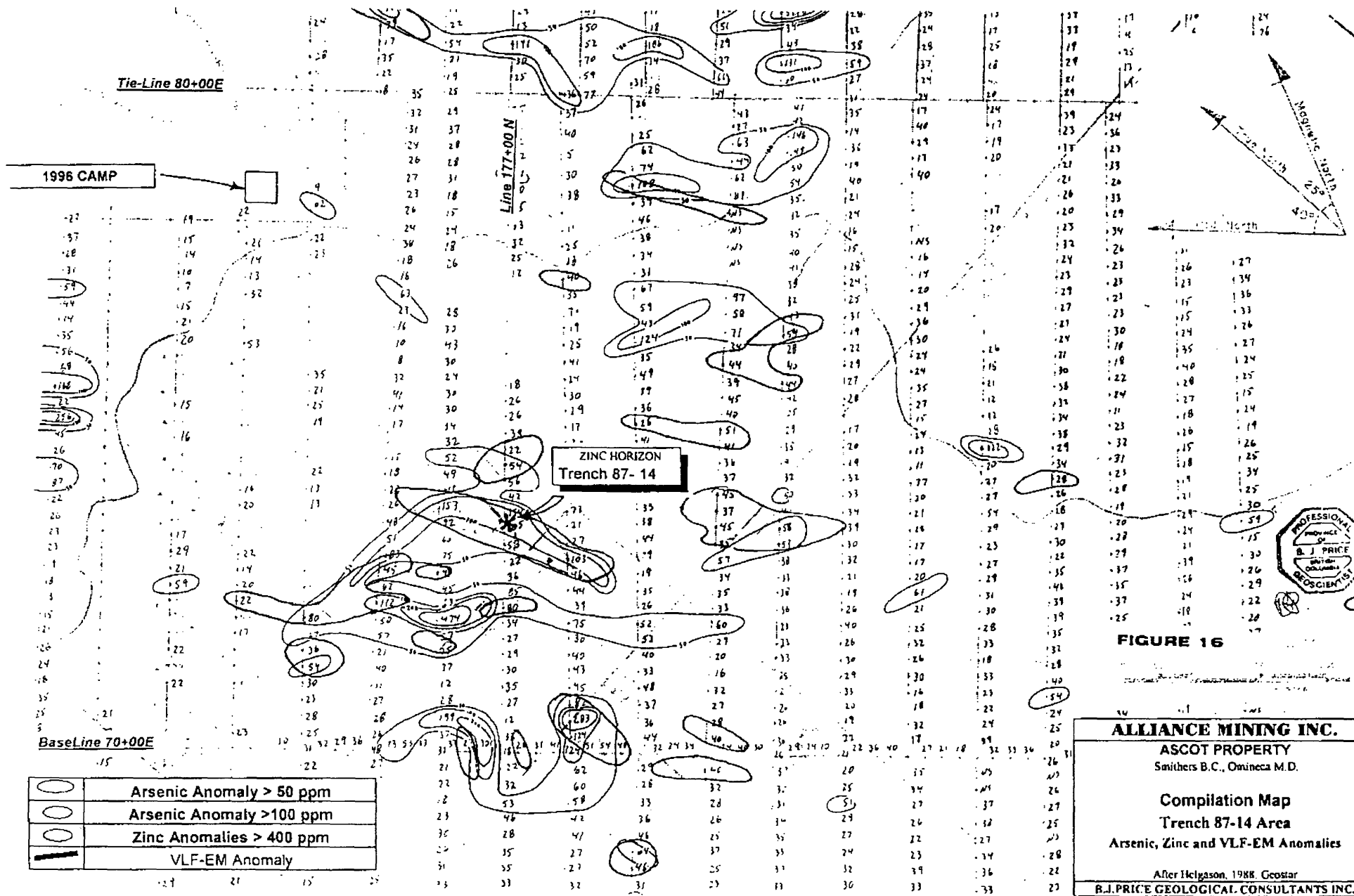
**FIGURE 15**

**ALLIANCE MINING INC.**  
 ASCOT PROPERTY  
 Smithers B.C., Ontario M.D.

**Soil Geochemical Plan  
 Trench 87-14 Area  
 Lead and Zinc anomalies in Soil**

After Helgason, 1988, Geostar  
**B.J. PRICE GEOLOGICAL CONSULTANTS INC.**





This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.



Line 182+00

Tie-Line B7+00E

As

Swampy Meadows

LAKE

Tie-Line 80+00E

1996 CAMP

LEGEND

	Arsenic Anomaly > 50 ppm
	Arsenic Anomaly > 100 ppm
	Zinc Anomalies > 300 ppm
	VLF-EM Anomaly

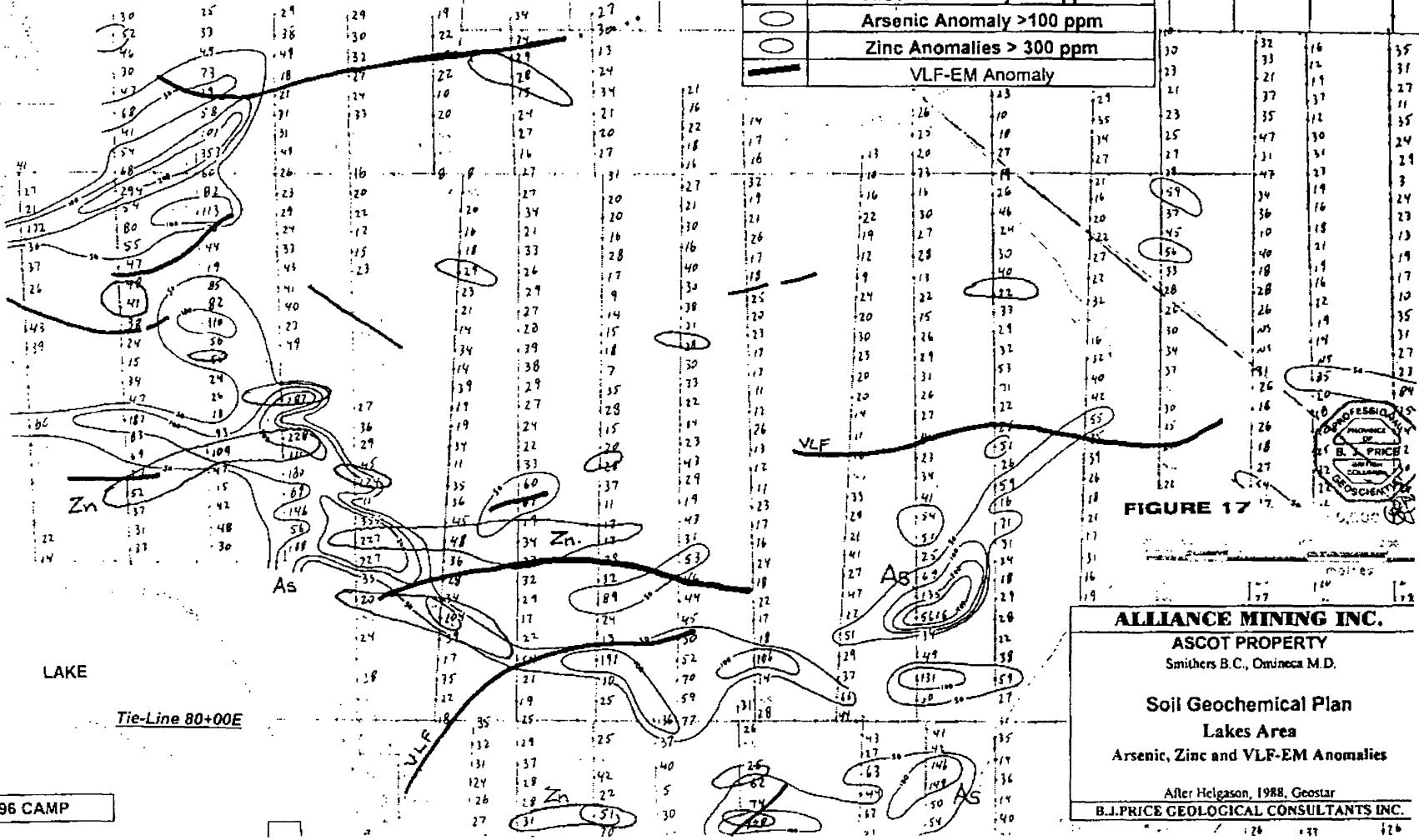


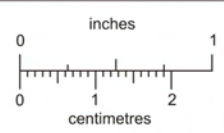
FIGURE 17

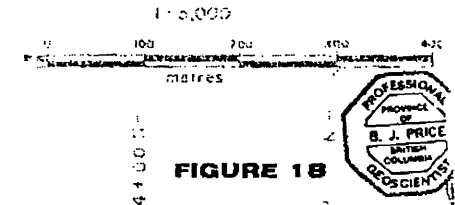
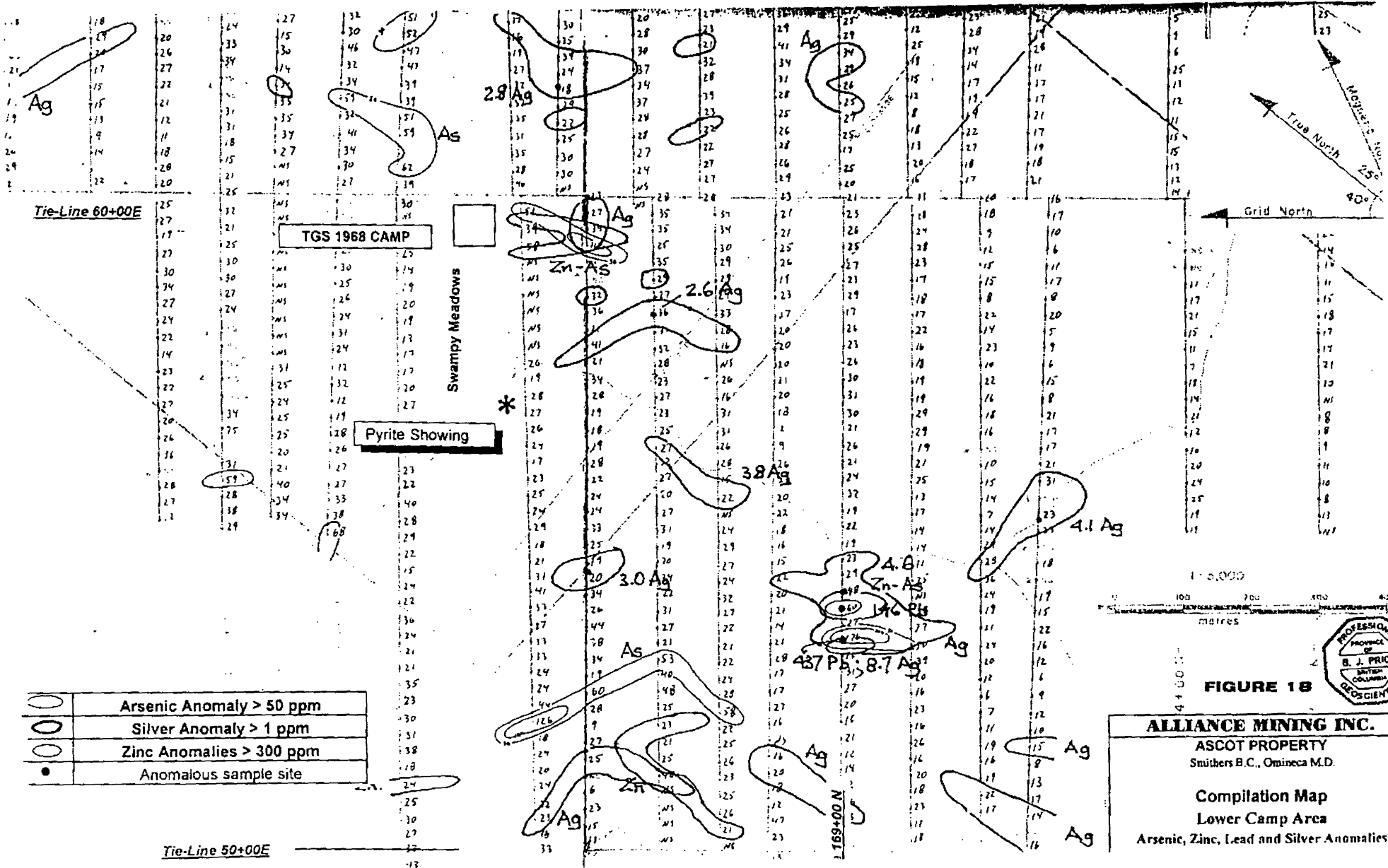
ALLIANCE MINING INC.

ASCOT PROPERTY  
Smithers B.C., Orineca M.D.

Soil Geochemical Plan  
Lakes Area  
Arsenic, Zinc and VLF-EM Anomalies

After Helgason, 1988, Geostar  
B.J. PRICE GEOLOGICAL CONSULTANTS INC.

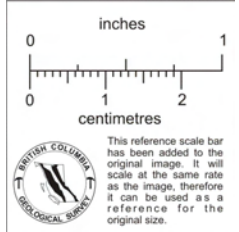




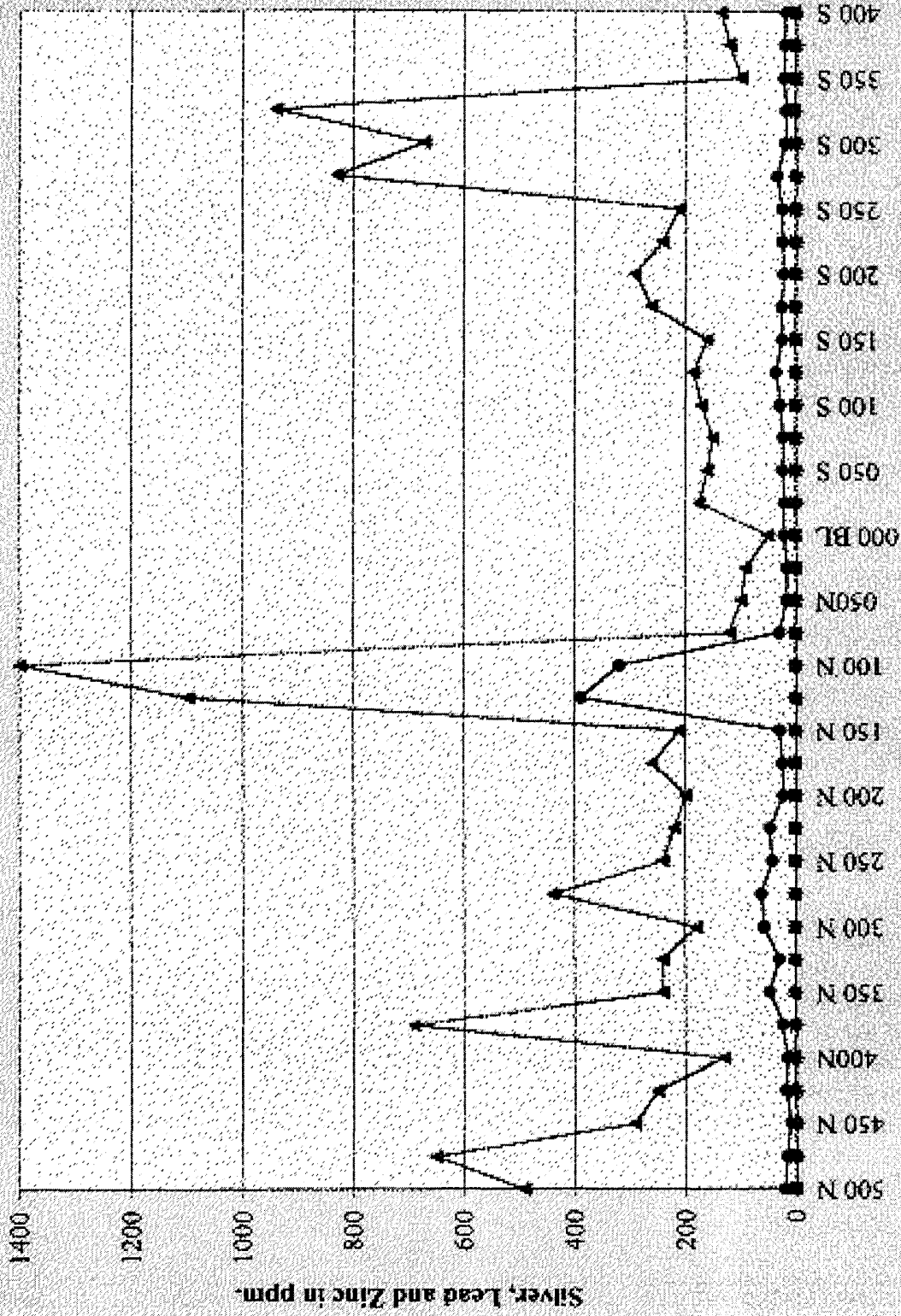
**FIGURE 18**

**ALLIANCE MINING INC.**  
ASCOT PROPERTY  
Smithers B.C., Omineca M.D.

Compilation Map  
Lower Camp Area  
Arsenic, Zinc, Lead and Silver Anomalies



Geochemical Traverse - Ascot property



Line 2+00E 1986, 700 m east of DDH-1.

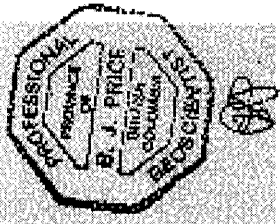


FIGURE 19

Arsenopyrite has been observed in lapilli tuff in a number of localities along Carr Creek, and fine grins of tetrahedrite are also present in places. The pattern of anomalous arsenic follows the fold nose defined or suggested by VLF-EM conductors V1 and V2, as shown in Figure 9). A few scattered high arsenic soils values, up to 448 ppm, are also associated with the broad arc of zinc-lead soil anomalies on the Ascot 15-22 claims.

Three areas of anomalous arsenic geochemistry are accompanied by only spotty zinc and lead soil values;- no mineralization has yet been found to explain them. A 1200 metre long anomaly trends northerly through the Ascot 9 and 10 claims, including one sample with 5616 ppm As. This area is on the east side of the meadow area where outcrop is scanty. A separate group of arsenic anomalies covers an area roughly 600 x 800 metres immediately northwest of the Ascot 15-22 zinc-lead soil anomaly near and on trend with it. A number of arsenic anomalies off the present claims should be investigated and staked if worthwhile. One linear string of anomalous arsenic values on Line 172N appears to be an artifact and should be re-sampled.

No gold analysis was performed on arsenic-bearing samples, with the exception of this last-mentioned anomaly and several arsenic-rich samples around Occurrence 18. **The strong arsenic anomalies present an intriguing target for potential gold-bearing massive sulphide mineralization.**

**Other Elements:** Silver values are generally low and erratically distributed. The highest values, 5.2 and 6.9 ppm Ag, occur with anomalous zinc, lead and arsenic in the vicinity of Geostar Trench 14 showing. Copper values are generally low, with only a few samples exceeding 100 ppm. The highest, 641 ppm, is located at Occurrence 18, where chalcopyrite was noted within andesitic lapilli tuff.

A number of small but relatively strong anomalies for silver (up to 8.7 ppm), copper, (138 ppm), zinc, (845 ppm), and lead (432 ppm) are clustered at the west end of the grid near a small un-named lake. These are in an area reported by L'Orsa, (personal communication) to have a strong untested Texasgulf soil anomaly. The anomalies are shown in Figure 18. The strongest of these should be followed up by prospecting, VLF-EM, and trenching.

### ***Trenching and road-work:***

The initial 1968 drill road to Texas gulfs DDH-1 exposed a number of sedimentary and ash-tuff units with disseminated lead-zinc mineralization. Most of these exposures are now grass-covered. In August and September, 1987, a D6 bulldozer and John Deere skidder -backhoe were used by Geostar to build about 2 kilometers access roads and dig 15 trenches across several geochemical anomalies. Most trenches (1-13) were cut in an area of mineralized shales and felsic tuffs in the eastern part of the property, adjacent and east of the Kidd Creek Drillhole No.1. One trench was dug above Carr Creek canyon in a significant lead-zinc-arsenic-silver geochemical anomaly; this exposed a well-mineralized limy tuff with sphalerite and barite.. The trench results are discussed in a subsequent section.

### ***Petrographic Work:***

As early as 1968, geologists had recognized the possible exhalative origin of zinc-lead mineralization at the Ascot property. Recent petrographic work on a number of samples by Dr. J.F Harris, Ph.D verified that syngenetic mineralization is present.

Sample 10275 taken at occurrence 17 in Trench AT 87-8 by Awmack in 1994 assayed 4.38% lead and 4.85% zinc. It is variously described as a tuff with interbedded argillite or a "wacke" Harris comments that **"The most remarkable feature of the rock is the occurrence of fine-grained sulphides, (dominantly sphalerite) as an even, pervasive impregnation"**. The sulphides occur as ragged grains from 5-50 microns in size. **"As well as the minute disseminated dustings of sulphides, scattered pockety segregations up to 100 or 200 microns are present. A few of these are essentially pure sphalerite, but the majority are intimate fine-grained intergrowths of sphalerite, pyrrhotite and galena. Pyrite and rare chalcopyrite (of similar grain size) are occasional accessories"**.

**"The sulphides show no structural control, and apparently have no associated introduced gangue. Their paragenesis is uncertain. They could be an authigenic component deposited in the micro-porosity of the altered glass clasts by subsequent circulation of metal-bearing solutions; or the tuff may have accumulated in an exhalative basin of syngenetic sulphide deposition"**.

Sample 626979 was collected from a mineralized limestone in Trench At 87-14. The sample assayed 7.65% zinc, and up to 8% barite is present, (although ICP analysis does not reflect this amount, as barite is largely insoluble). Harris describes the rock as a **"Carbonate Exhalite with sphalerite and barite"**. The rock is mainly micritic carbonate with clasts of plagioclase crystals, quartz, and altered andesite.

**"Sphalerite and an opaque phase.....occur closely associated, as sinuous wisps, networks, small disseminated clumps, and occasional discrete laminae. The sulphides occur as grains, 5-50 microns in size, with sphalerite locally showing coalescence to irregular pockets of up to 300 microns or more. The laminar segregations of sphalerite.....are zones up to 1 millimeter in thickness in which sphalerite makes up 50-100% of the rock"**.

**"The origin of this rock is uncertain. It has the appearance of a bedded sequence, (chemical sediment) of dominant carbonate with wispy intercalations of syngenetic barite and sulphides. The scattered plagioclase crystals and more or less carbonated lithic clasts, presumably represent a minor, contemporaneous tuffaceous contribution to a basin of exhalative chemical deposition."**

## **ASCOT SHOWINGS**

The more important showings on the Ascot property are described below in sequence from west to east. All the separate showings are described in detail by Awmack, (1995); but for the sake of brevity, only the more significant showings will be described here.

### ***Pyrite showing:***

*(Figure 10)*

A massive pyrite lens is exposed in the bank of Carr Creek a short distance below the 1968-69 Texasgulf camp. The pyrite is accompanied by thin folded wisps of chlorite-sericite schist. No other sulphides were seen by the writer in polished section, and minor element content of the pyrite is low (Price, 1972). In 1977, when the writer examined this showing, the rock previously described as rhyolite, may in fact be silicified limestone. Strongly contorted argillite outcrops nearby.

According to Peatfield, a few small quartz veins containing sphalerite and galena occur nearby. It may be significant that the showing coincides with one of the strongest airborne EM anomalies. Cold spring "pots" occur on the creek bank here, with obviously ferrous iron deposits, and cold springs are up welling in the creek. A major fault may be present in close proximity to the showing, providing a channel way for the iron rich spring waters. Of interest also are a number of low amplitude geochemical anomalies, lying mainly in swampy level terrain to the west of the pyrite showing on the north and south side of Carr Creek, as shown in the accompanying sketch.

### ***Coswan Showing:***

*(Figure 20)*

Disseminated sphalerite in limestone was discovered by prospector Kevin Coswan in 1977. It had not been described previously by Texasgulf, although the showings are near the 1968-69 Base-camp. The showings occur approximately 1500 feet northeast of the main camp on what was staked by Coswan as the M.S. claim. The writer cleared a trail to the showings in 1977 and explored the showings in more detail. This showing was referred to by Awmack as "Occurrence No. 3".

A limestone unit outcrops for 200 feet along the bank of Carr Creek, and although strongly contorted, appears to dip generally southward. Minor fold axes plunge southward at a shallow angle. Sheared blocks of amygdaloidal andesite are included in the limestone, which is partly recrystallized. The galena and sphalerite, because of their fine-grained disseminated texture and light color are difficult to see. Samples 19888 and 19892, taken by the writer as large "grab" samples assayed 0.883% and 1.62 % zinc. The limestone unit is overlain by chloritized andesite and altered (limy) vesicular? andesite and tuff which in one occurrence contains disseminated pyrite and apparently sphalerite, (assay sample 19889 contained 1.20% zinc). Barite also occurs at this locality adjacent to a minor cross fault.

Contact. gn-limy volcs  
and rhyolite pyroclastic  
pyritic. Breccia.

Lt. gn-limy volcs

Gn. chloritic  
tuff?

Massive limy  
volcs.

Barite vein - narrow  
Zn in Volcanics

Sheared limy volcs.

Sheared limy volcs.

Limy volcs.

GREEN TUFF

Green chloritic  
tuff.

Green chl.  
tuff.

Carr (Canyon) Creek

SPHALERITE - GALENA  
IN LIMESTONE

Green chl. tuff.

Vesicular volcanics - dark.

55  
140  
60  
175

Sheared + dragfolded limestone.  
Lenses of amygdaloidal + massive volcanics.

LOCATION OF  
1977 PACKSACK DRILLING

LIMESTONE

No. outcrop below this  
point.

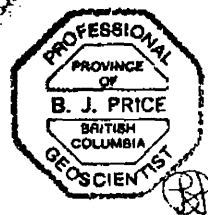
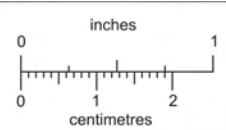
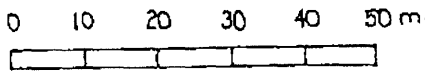


FIGURE 20

<b>ALLIANCE MINING INC.</b>
ASCOT PROPERTY Smithers B.C., Omineca M.D.
<b>GEOLOGICAL SKETCH</b> COSWAN SHOWING AREA
After Price, (1978)
<b>B.J.PRICE GEOLOGICAL CONSULTANTS INC.</b>



BRITISH COLUMBIA  
GEOLOGICAL SURVEY

This reference scale bar  
has been added to the  
original image. It will  
scale at the same rate  
as the image, therefore  
it can be used as a  
reference for the  
original size.

Three packsack (EX size) drill holes were completed by the writer on the lowermost Coswan showing ; the holes were 6 to 12 feet deep and all contained light greenish brown sphalerite. Assays of the core gave the following values:

Table of 1977 Drill results

DDH	Sample	Width	Rock	Zinc %	Lead %	Silver opt
1	78-1-1	1 ft	Limestone	1.46	0.13	0.38
1	78-1-2	2 ft	Volcanic	0.03	0.01	0.12
1	78-1-3	3.5 ft	Lst and Voles	0.03	0.01	0.09
2	78-2-1	11.5 ft	Lst, volc frags	1.60	0.02	0.35
3	78-3-1	5.5 ft	Mixed Lst and volcs.	0.21	0.03	0.06

Sampled by B.Price, P.Geo. in 1977. Analysed by Vangeochem Labs Ltd.

A short distance, perhaps 100 meters upstream, on the north bank of the creek, mineralized limestone fragments are seen in heavy soil cover. In this locality, large pelecypod shells were noted in the laminated impure (tuffaceous) limestone surrounded by powdery tan to amber sphalerite grains. Two selected samples of this material taken by geologist T. Schroeter of the BC Department of Mines in 1977 assayed **6.50% and 7.50% zinc respectively**. This showing was not inspected by Awmack and is un-numbered.

From this point to the Geostar trench at the head of the Carr Creek canyon, several showings of disseminated and vein-hosted sulphides occur. A number of quartz-carbonate-barite zones occupy minor faults or fractures in andesitic volcanics. In addition to this type of occurrence, the folded sequence of limestone and tuff hosts other zones of apparent exhalite mineralization similar in nature to the Coswan showing. These have been described in detail by Holland, (1989) and Awmack, (1995). Several significant outcrops in this section of the creek demonstrate the juxtaposition of mineralized limestones with coarse rhyolitic to dacitic breccias and lapilli tuffs which may represent "vent" lithologies in a classic kuroko setting. Fragments of sphalerite and other sulphides are seen in the breccias, (albeit small clasts up to 3 millimetres in size), and the same sulphides are also present in the matrix as fine grains. A prominent waterfall in the canyon displays a close (almost isoclinal) fold of the mineralized unit. A short distance above the waterfall is the westernmost Geostar trench.

### **Geostar Trench-14 Showing**

*(Figure 23)*

The southern part of the strong polymetallic soil geochemical anomaly in Canyon creek coincides with disseminated lead and zinc in calcareous sediments, - limestones and impure (tuffaceous) limestones. Two trenches (87- 14 and 15) were dug by Geostar to evaluate the northern part of the anomaly. Zinc values as high as 8% were reported by Helgason, (1988). Over a sampling interval of 17.9 metres, (true thickness approximately 8 m.) zinc averaged 6.3 % and silver 1.5 oz./ton. Helgason's assays are as follows:



Trench	Sample	Thickness	Zinc	Lead	Silver
87-14	RT 87-73	6 meters	7.2%	0.57%	71.2 ppm
87-14	RT 87-74	5.0 m	8.2%	0.37%	66.1 ppm
87-14	RT 87-75	6.9 m	4.1%	0.09%	23.7 ppm
<b>Average</b>		<b>17.9 m</b>	<b>6.3%</b>	<b>0.33</b>	<b>51.5 ppm</b>

The mineralized limestone is laminated and strongly folded, with obvious minor fold structures. Sphalerite is very light colored and not readily identified. Likewise, barite is present but is not obvious. The arsenic anomaly in soils is likely caused by fine grains of arsenopyrite or tetrahedrite. This mineralization is obviously stratiform in origin, as verified by thin and polished-section work done by Dr. J.F.Harris.

The showing was examined by Awmack in 1994, who identified the barite, and confirmed this with an assay, given below:

Trench	Sample	Thickness	Zinc	Lead	Silver	Barium
87-14	626979	2.8m	7.65%	1865 ppm	39.4 ppm	10.6%

The writer also examined the trench; mapping is now made difficult by slumped overburden. Several selected samples were analysed as follows:

SAMPLE NO.	ZN %	PB %	CU PPM	AG PPM	BA* PPM	CD PPM
AS 96-7	7.10	0.12	20	39	2200	405
AS 96-8	2.41	0.06	30	14	5060	150
AS 96-9	2.61	0.047	20	12	4220	170
AS 96-10	1.60	0.015	10	11	10740	180
NO TAG**	0.145	0.006	20	1	11520	5

Samples were analysed by Chemex Labs Ltd., North Vancouver

\* Only partial digestion for Ba. Additional Barium assays are pending.

\*\* This sample may be AS 96-6

This is the best showing so far found on the property. As Helgason noted in 1988, mineralization is somewhat erratic. Additional mapping and trenching is required at this locality in preparation for a drill-program. Excellent outcrop is present in the creek banks nearby. The geochemical soil anomaly suggests some continuity to the folded mineralized limestone or calcareous exhalite.

**Texasgulf Showing:***(Figure 21, 21a, 22)*

In Texas Gulfs drillhole No.1, disseminated galena and sphalerite occur in the uppermost 48 feet of core. the host rock is a greenish grey dacitic tuff. Mineralization is described by Peatfield as follows:

**“Very fine emulsion textures of galena in sphalerite seem to indicate deposition of a single phase gel from which these two minerals exsolved, Formation of such a gel indicates deposition under very low temperature conditions in a submarine environment. Disseminated sphalerite in fragments in tuffaceous rocks and also filling interstices suggests the sulphides were deposited before complete lithification of the tuff”.**

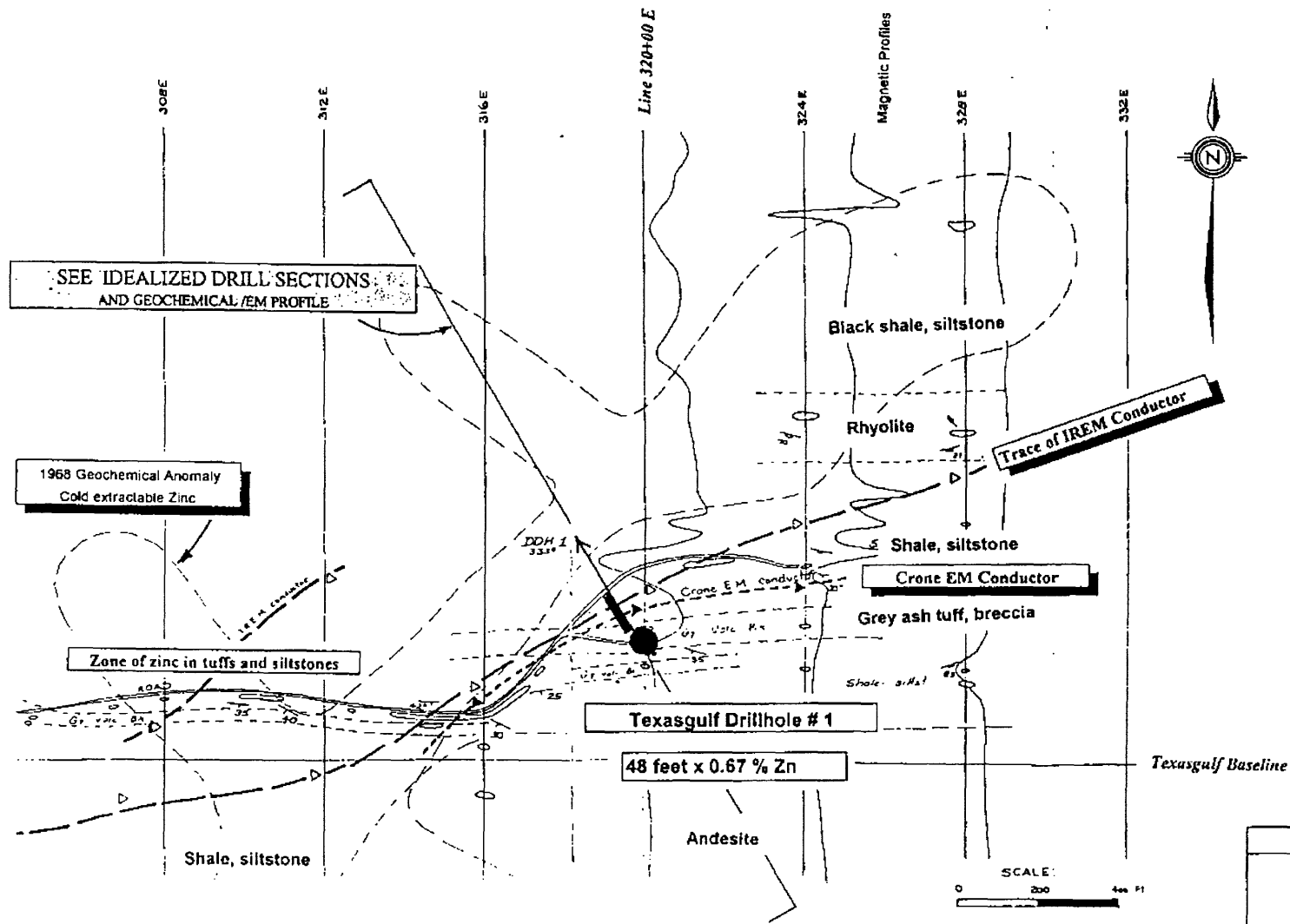
The writer logged the 1972 drillhole and took a composite sample amounting to about 1 inch of core per foot. The hole has an apparent azimuth of 333 degrees and probable -60 degree inclination, (writers estimate). Mineralization is present in a 48 ft section in the top of the drillhole in a grey to greenish dacitic ? ash tuff. The writers 1977 sample assayed **0.67% zinc and 0.12 lead over 48 feet**. The black phyllitic argillite and siltstone lying underneath, to the hole limit at 289 feet, did have a few specks of galena and sphalerite, but is relatively sparsely mineralized. A similar grab sample taken between 105 and 130 ft by the writer in 1977 contained only 230 ppm Zinc and 100 ppm lead.

The accompanying sketches by the writer, from his report in 1978, illustrate the general geology of the drilled area.

During Geostar's soil sampling program, this area was found to be anomalous in zinc and lead. The area trenched is parallel to (1987 geochem line) 171+100N from 103+75E to 102+50 E. Lead and zinc mineralization was found on surface in several locations. Just west of the drill hole a dark, graphitic, weakly-silicified argillite outcrop with disseminated pyrite, galena and sphalerite was found by Helgason, who obtained values of 1.40% zinc and 0.35% lead from grab-sample 87-54. Further west along the access road several small lead and zinc showings were discovered by the writer in 1978, hosted in shales and sandstones. At least three horizons are mineralized, albeit at low levels (less than 1% Zn+Pb), but occur over a strike length of about 500 meters. These are showings 13 and 14 described by Awmack. Mineralization at this locality is accompanied by coincident geochemical and geophysical anomalies; the original airborne EM anomalies defined by Texasgulf were corroborated by a number of smaller VLF-EM surveys run by the writer and by P.A. Christopher and Associates in past years.

**Trench 8 showing:***(Figure 24)*

Trench TR87-8 was dug on a smaller geochemical lead-zinc anomaly at L169N, 108+50E and exposed minor galena and sphalerite, and possible barite in rocks that are now mapped as tuffs, argillites and siltstones. Geostar did not sample the trench formally but collected the following grab samples:

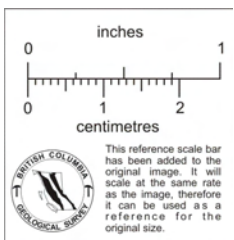


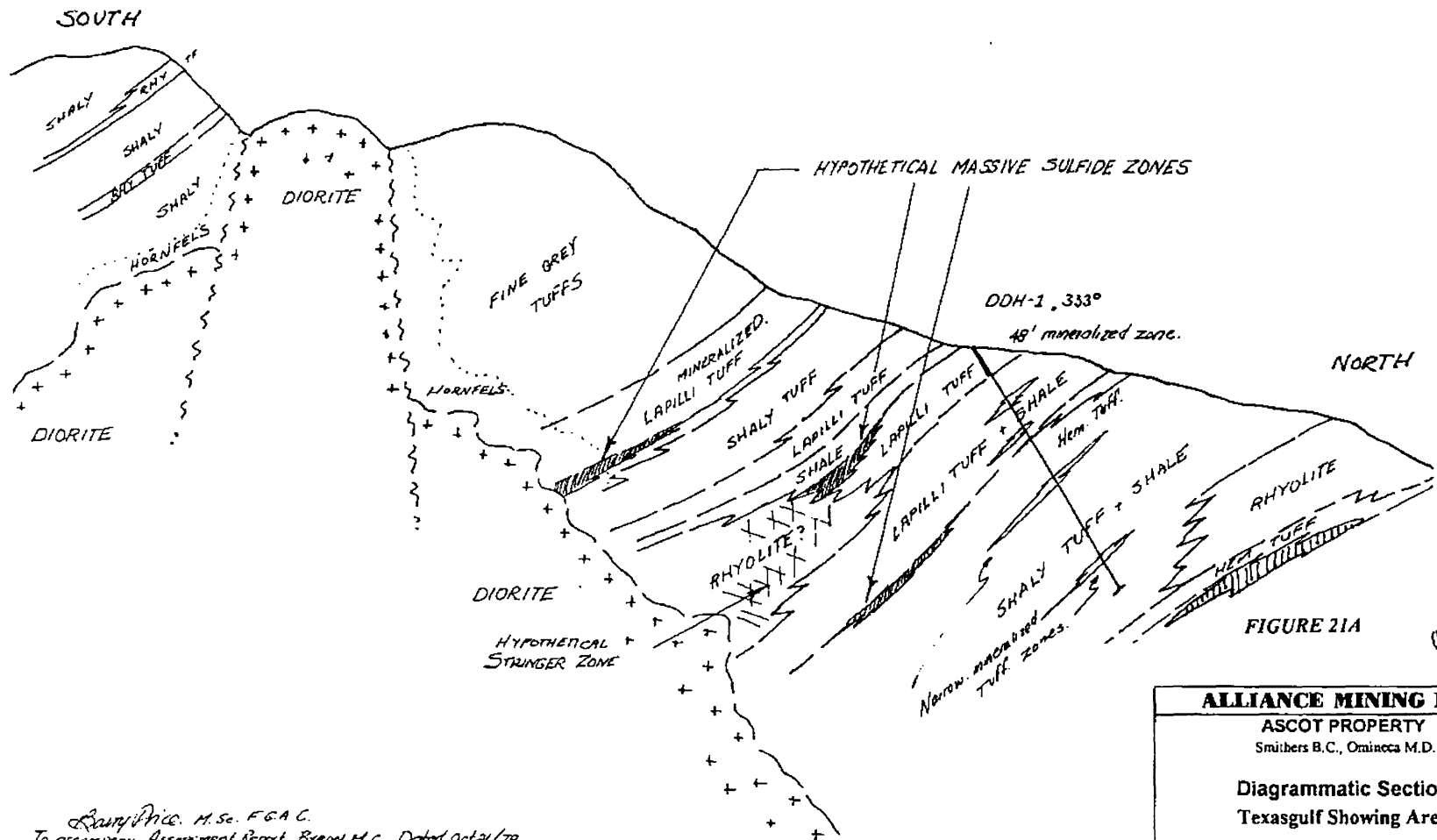
**FIGURE 21**

**ALLIANCE MINING INC.**  
 ASCOT PROPERTY  
 Smithers B.C., Omineca M.D.

**COMPILATION MAP**  
 Texasgulf Showing  
 EM, Magnetic and Zinc Geochem anomaly

After Price, 1987, and Schmidt, 1969.  
**B.J.PRICE GEOLOGICAL CONSULTANTS INC.**



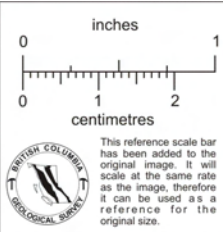


*D.J. Price, M.Sc. F.G.A.C.*  
 To accompany Assessment Report: Brown, H.C. Dated Oct 21/70

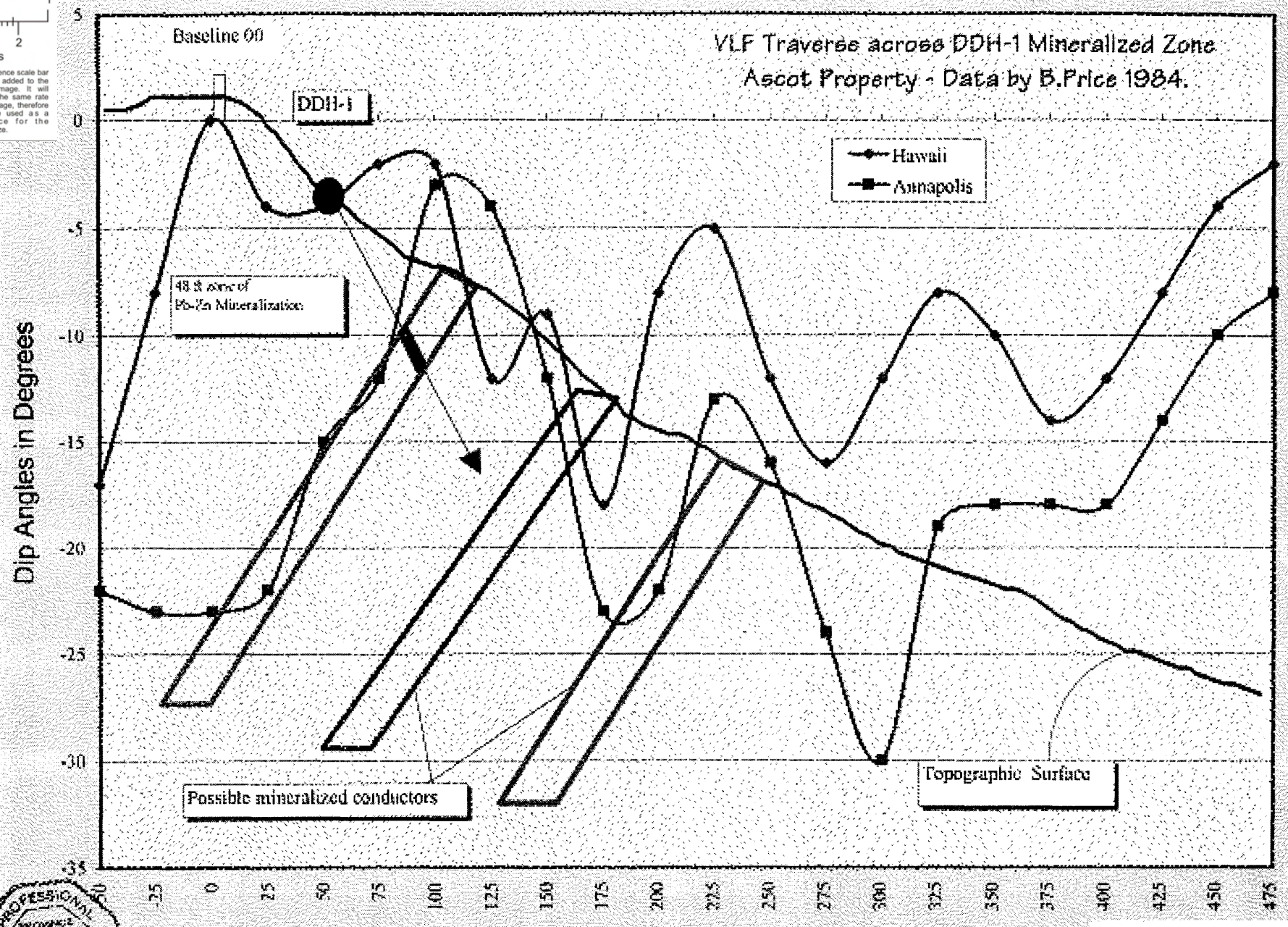
FIGURE 21A



<p><b>ALLIANCE MINING INC.</b>          ASCOT PROPERTY          Smithers B.C., Omineca M.D.</p> <p><b>Diagrammatic Section</b>          Texasgulf Showing Area</p> <p>After Price, 1987  <b>D.J. PRICE GEOLOGICAL CONSULTANTS INC.</b></p>
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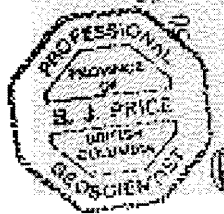
VLF Traverses across DDH-1 Mineralized Zone  
Ascot Property - Data by B. Price 1984.



Grid Stations referenced to Baseline 0 - Texasgulf Grid.

**FIGURE 22**

B. PRICE GEOLOGICAL



Trench	Thickness	Zinc	Lead	Silver
87-8	Grab	1.51%	654 ppm	0.1 ppm
87-8	Grab	1.26%	687 ppm	0.1 ppm
87-8	Grab	1.64%	3344 ppm	0.1 ppm

Compiled from Helgason, 1987.

Henry Awmack examined this trench in 1994 and found a float boulder on the side of the trench which assayed 4.38% lead, 4.85 % zinc and 1.2 ppm silver. The writer found no remains of this boulder but did find a mineralized zone in the west arm of this trench, with a potential width of a meter. The trench is Y-shaped; the east arm trends 170 degrees and west arm trends 210 degrees. Grey laminated argillite and siltstone well-exposed in the trench strike 038/ degrees and dip 20 degrees southeast. Glacial striae trend 095 degrees. The mineralized zone is poorly exposed, but may be a tuffaceous bed. About 15% sulphides are present, with pyrite> sphalerite> galena in grey siliceous tuff. Possible barite occurs on fractures. The writers selected samples - No's. AS 96-1 and AS 96-2 assayed as follows:

Sample	Thickness/Type	Zinc	Lead	Silver	Ba
As 96-1	Selected	1.69%	0.24%	<1 ppm	4820 ppm
As 96-2	Selected	1.79%	0.61%	<1 ppm	80 ppm

Analyses by Chemex Labs Ltd., North Vancouver.

### Eastern Showing:

Due to high geochemical values at the (grid) east end of Geostar Line 166 N, this anomaly was the top priority trenching target in 1987. An access road based on the 1972 drill-access road to the Texasgulf DDH-1 was extended 900 meters to the east. Trenching uncovered lead and zinc mineralization in several spots at the end of the road; the highest values obtained by Geostar at this locality were as follows:

Trench	Thickness	Zinc	Lead	Silver
87-3	1 meter	1.15%	1118 ppm	0.1 ppm
87-4	1.3 m	0.34%	288 ppm	0.2 ppm
87-6	0.9 m	1.25%	1468 ppm	1.1 ppm
87-7	1.7 m	0.52%	57 ppm	0.2 ppm

Compiled from Helgason, 1987.

The mineralization consists of small specks of sphalerite, pyrrhotite, pyrite, galena, chalcopyrite, and probably arsenopyrite in fine to coarse felsic tuffs that have been chloritized and, to some extent hornfelsed by the large dioritic body to the south. The felsic tuffs are identical to some of the units seen elsewhere on the property,

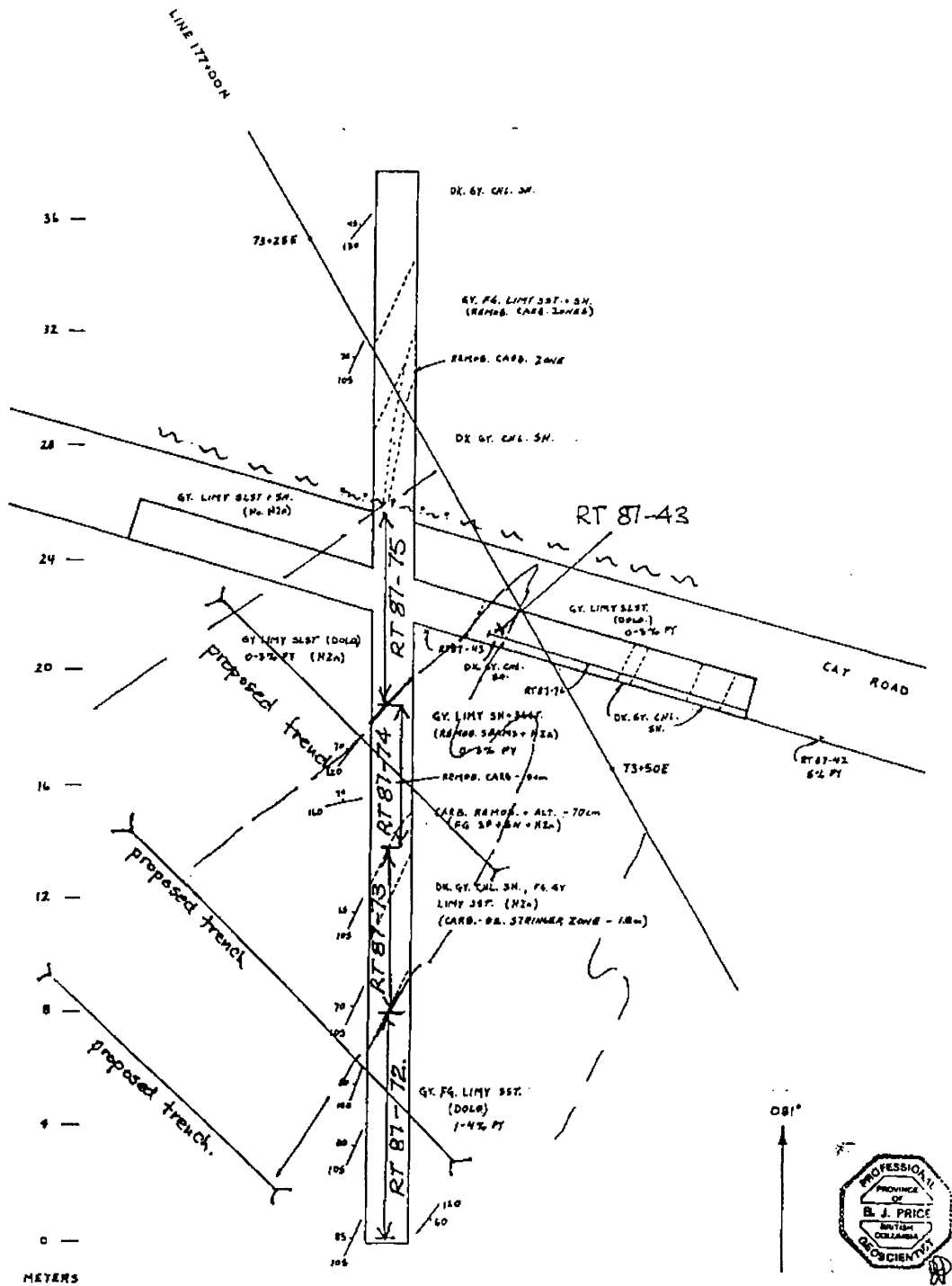


FIGURE 23

ASCOT PROPERTY  
1988 GEOSTAR ASSAYS - TR 87-14

SAMPLE	LOCATION	WIDTH m	ZN PPM	PB PPM	CU PPM	AG PPM
RT 87-42	ROAD	Grab	na	423	450	3.10
RT 87-43	ROAD	Grab	10,474	1,173	19	4.30
RT 87-72	0 - 8.0 m	8	350	25	11	0.30
RT 87-73	8 - 14 m	6	72,734	3,794	40	71.20
RT 87-74	14 - 19 m	5	81,879	3,726	53	66.10
RT 87-75	19 - 25.9 m	6.9	40,830	988	40	23.70
	wt avg.		17.9	62,990	3364	51.5

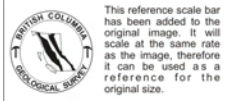
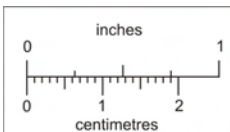
RT 87-76	Cross Trench	11.0 m	715	98	26	0.6
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ALLIANCE MINING INC.

ASCOT PROPERTY  
Smithers B.C., Omineca M.D.

1987 TRENCH NO. 14  
GEOLOGY AND ASSAYS

After Helgason, Geostar, 1988.  
B.J. PRICE GEOLOGICAL CONSULTANTS INC.



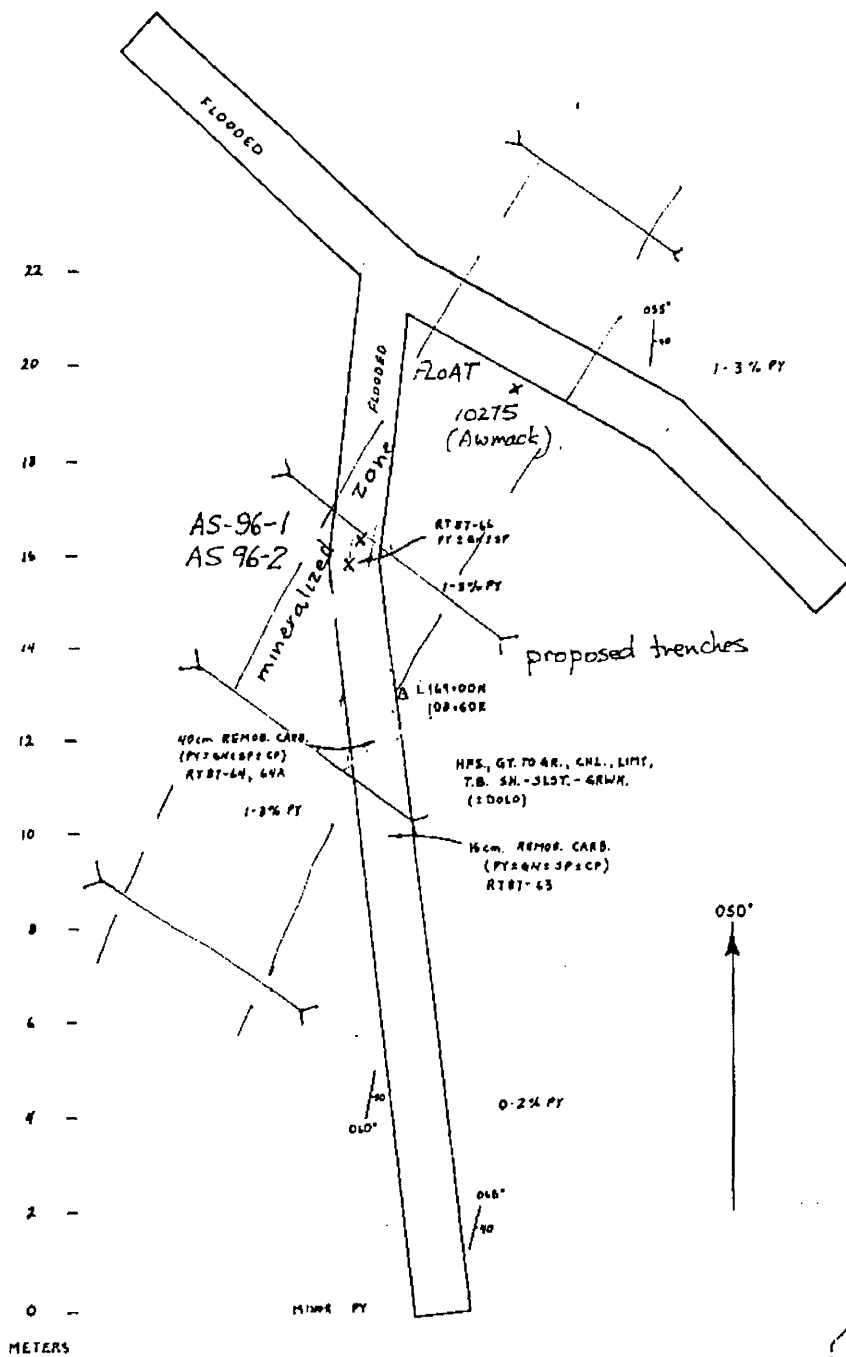


FIGURE 24

ASCOT PROPERTY						
1988 GEOSTAR ASSAYS - TR 87-14						
SAMPLE	SAMPLER	WIDTH	ZN PPM	PB PPM	CU PPM	AG PPM
TYPE						
RT 87-63	Geostar	GRAB	1,303	310	66	0.10
RT 87-64	Geostar	GRAB	13,136	654	84	0.10
RT 87-64A	Geostar	GRAB	12,601	687	61	0.10
RT 87-66	Geostar	GRAB	16,417	3,144	73	0.10
1994 and 1996 Assays						
10275	Awmack	boulder	4.85 %	4.38 %	69 ppm	1.2 ppm
AS 96-1	Price	selected	1.69 %	0.24 %	na	<1.0 ppm
AS 96-2	Price	selected	1.79 %	0.61 %	na	<1.0 ppm

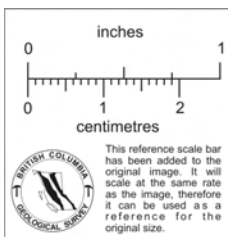
**ALLIANCE MINING INC.**

ASCOT PROPERTY  
Smithers B.C., Omineca M.D.

1987 TRENCH NO. 8  
GEOLOGY AND ASSAYS

After Helgason, Geostar, 1988.

**B.J. PRICE GEOLOGICAL CONSULTANTS INC.**





particularly in Carr Creek canyon, where large clasts imply proximity to the volcanic source.

Several additional trenches between the Trench 8 showing and the easternmost trenches have weakly anomalous values of zinc and lead, but generally less than 1% combined zinc plus lead, in dark colored argillites and siltstones with tuffaceous interbeds.

Numerous other showings have been described in detail by Awmack. For the most part these are similar in style to the showings described above, and need not be further mentioned, except to say that they fit with the exhalite model. Mineralization has now been found over a distance of at least 5 kilometers along the drainage of Carr Creek, and crossing into the drainage of Byron and Stimson Creeks.

## DISCUSSION

As early as 1972, the mineralization at the Ascot property had been identified as syngenetic, or "exhalative". The description by Giles Peatfield geologist at the time for Texasgulf states:

**" Very fine emulsion textures of galena in sphalerite seem to indicate deposition of a single phase gel from which these two minerals exsolved, Formation of such a gel indicates deposition under very low temperature conditions in a submarine environment. Disseminated sphalerite in fragments in tuffaceous rocks and also filling interstices suggests the sulphides were deposited before complete lithification of the tuff".**

Additional confirmation was gained when the writer identified syngenetic sphalerite and galena in outcrop drill core from the Coswan showing in 1977. Pelecypod fossils surrounded by fine powdery sphalerite were observed by the writer and A.O. Birkeland to occur in similar material, and syngenetic sulphides were observed in sedimentary units near DDH-1 in 1978. Further confirmation has been the petrographic work done by J.F.Harris, Ph.D., P. Geo for Equity Engineering Ltd in 1995, which suggested the mineralization, present in microscopic grains, associated with layers of finely-crystalline barite, as being formed in a "carbonate exhalite".

A review of the essential characteristics of Kuroko (volcanogenic massive sulphide-sulphate-oxide deposits modelled after a group of Japanese deposits) is given below:

**A "Kuroko" deposit is a stratabound polymetallic mineral deposit genetically related to submarine acid volcanic activity.** The deposits are generally zoned massive. base-metal deposits which are largely stratiform in volcano-sedimentary sequences dominated by felsic tuffs, lavas and shallow intrusives. Typical characteristics are:

- 1) Each mine consists of a number of closely-clustered ore deposits. Each deposit may be from 6 to 190 meters thick and range in surface area from 40m x 50 m to 350 m x 700 m. Typical North American deposits average 10-12 m thick and 350 m. in strike-length. Deposits are most often on edge, and present small targets for exploration.

- 2) Zoned, massive, stratiform ore typically oval-shaped in plan grades down into less economically-important stockwork ore (siliceous ore) which generally has a funnel shape and occurs in silicified felsic volcanics.
- 3) Thin beds or lenses of ferruginous chert are commonly present either directly overlying the stratiform ore body or within hanging-wall tuffs. Lenticular or irregular masses of gypsum and/or anhydrite are also present in most cases.
- 4) The boundary between hangingwall rocks and ore is sharp.
- 5) Orebodies are generally vertically zoned with **black ore**, (sphalerite - galena rich) at the top and **yellow ore**, (chalcopyrite rich) at the bottom above stringer ore. Areas of massive gypsum~ anhydrite or barite may be present.
- 6) Ore in stringer zones is generally coarse, and in veins, with quartz, barite, etc., while massive ore is generally fine-grained, with banded or brecciated texture. Colloform textures are common in massive ore.
- 7) Each deposit is generally associated with a felsic "domal" center built up in a single short eruptive cycle.
- 8) Deposits are generally underlain by coarse felsic tuff breccias.
- 9) There are gradations between stratiform orebodies, stockwork ore, and fissure-filling veins: these are formed penecontemporaneously from similar hydrothermal or~ solutions.
- 10) Deposits are surrounded by clay-rich alteration zones, the stockwork (stringer) ore is associated with quartz, sericite and Mg-chlorite. The stratiform ore is surrounded by sericite, sericite-montmorillonite, and kaolinite alteration, which grades outward to chlorite-rich and zeolitic alteration zones.
- 11) Deposits are generally aligned along faults or directions of elongation of lava flows.
- 12) Minor disseminations of pyrite may occur in hangingwall rocks. Vein deposits can be found at varying distances from stratiform deposits but tend to be at stratigraphically~lower levels.

The Ascot property demonstrates excellent potential for hosting a volcanogenic massive sulphide (VMS) deposit. Relatively small kuroko style mineral deposits have been discovered already within this belt; the Del Santo and Copper Crown deposits occur in the same stratigraphic interval from 5 to 25 kilometers to the south. The Seneca massive sulphide deposit near Harrison Lake is one of the better known kuroko type deposits; this is present in Harrison Lake volcanics, correlative with the Hazelton Group.

Perhaps the most economic kuroko deposit in BC currently being mined is the Eskay Creek gold-rich VMS deposit, situated approximately 300 kilometres to the northwest, in a similar geological setting at the margin of the same sedimentary basin. The Eskay deposit is hosted at a rhyolite/argillite contact within the Hazelton Group, at a similar stratigraphic level to the Ascot claims.

Factors considered favorable for the application of the Kuroko model at Ascot are:

1. The presence of massive pyrite at the contact between rhyolite and graphitic argillite, (Occurrence #2) Other massive sulphide boulders have been found on the south flank of Dome Mountain.
2. Coarse felsic breccias, mapped by Peatfield, are in contact with mineralized carbonate exhalites, typified by the Coswan and Trench 14 showings in Carr Creek canyon.
3. Two belts of syngenetic zinc+lead+barite occurrences have been outlined on the Ascot claims; each of these belts is of sufficient size to host a significant VMS deposit. On the Ascot claims, sphalerite, galena and barite occur within rock unit 4, which varies from tuffaceous limestone to a calcareous volcanic. These showings have been mapped along 1,000 metres of Carr Creek. With the isoclinal folding present in this area, this length of exposures could represent several thousand metres of poorly-exposed strike length. The spatially separate exhalative mineralization in Drillhole 1 at the eastern end of the property consists of fine specks and clots of sphalerite, galena, pyrrhotite, pyrite and chalcopyrite in fine to medium grained dacitic to andesitic tuffs.
4. Petrographic work shows that sphalerite, galena and barite form fine-grained lamina parallel to bedding within the tuffaceous limestone, suggesting a syngenetic origin. A sphalerite-bearing pyritic felsic breccia lies adjacent to the tuffaceous limestone in the middle of these showings and could represent footwall mineralization. It has been reported that the tuffaceous limestone shows flowage and thickening within the crests of folds. If so, increased widths of mineralization could be expected to the northwest of the Trench 14 (Geostar) showing, which has eight metres of mineralization grading 6.5% Zn and several percent barite, within the fold nose defined by VLF-EM conductors V1 and V2.

As yet, the exhalative horizons at Ascot have been zinc-rich; none of the showings as yet have shown economic grades over economic widths. The writer believes that there is a spectrum of mineralogy demonstrated in the VMS type deposits in the Hazelton rocks, from Au-Ag rich (Eskay) to zinc-rich (Silver Lake and Ascot) to Copper-rich (with Mn at Del Santo and Co at Copper Crown) and Barite-rich at Seneca. Alternatively, the Ascot showings may be distal, with copper, and possibly gold-rich portions elsewhere in the Hazelton, (or Nilkitkwa) package. The Dome Mountain area, with its myriad of stratiform showings, provides a frustrating, but tantalizing environment for further discoveries.

In addition to the Nilkitkwa Formation, older (Telkwa Formation) and younger (Smithers Fm or Skeena Group) rocks may hold similar potential for discovery. The Fireweed deposits, situated about 25 kilometers to the northeast of Ascot, are illustrative of stratiform mineralization in Skeena Group sedimentary rocks. The key may be the presence of inter-fingering volcanic and sedimentary, particularly marine horizons at the margin of the Skeena-Sustut sedimentary Basin.

It has been noted by Awmack, that among the >6000 soil samples taken by Geostar in 1987 and probably 2000

taken by Texasgulf in 1968-72, not one sample was analysed for gold. The Ascot showings are situated in a somewhat transverse belt between the gold-quartz vein camp of Dome Mountain, and the gold vein occurrences on Mt. McKendrick. Although there has been no gold showings found to date, perhaps this is a factor of lack of gold sampling.

## **CONCLUSIONS**

The comprehensive exploration programs conducted by Alliance Mining Inc. in 1996-97 and by Geostar Mining Corp. in 1987 established a number of significant magnetic, VLF-EM and geochemical anomalies. Several new lead-zinc showings discovered by Geostar in 1987 were inspected by Henry Awmack in 1995 and by the writer in 1996; these showings, in addition to the previously known showings, now confirm a broad distribution of stratiform type zinc-lead-silver-barite mineralization within the felsic tuffs and limy tuffaceous units believed to lie within the Nilkitkwa Formation of the Hazelton Group. The showings, none of which as yet are of economic size or grade, are found over a strike-length of at least 4 kilometers, following the trend of a package of felsic breccias, tuffs and limestones along their folded contact with overlying clastic sedimentary units, some of which also contain stratiform mineralization of exhalative origin. The most significant showing found was in a trench near the head of Carr Creek canyon which has exposed tuffaceous limestone with up to 6.5% zinc and 1.5 oz./ton silver associated with barite-rich horizons across a width of eight metres.

The Ascot property has been explored for roughly 28 years, leading to a large amount of surface geochemical and geophysical data. Not all data sets are comparable directly as some are plotted without topography and some plots are at differing scales. However, Awmack, (1995) has begun the arduous task of data compilation, and has derived some presentable maps at a convenient scale. Comparing the Texasgulf and Geostar geochemical and geophysical data visually, it appears that the independent surveys have come up with comparable anomalies, spatially and in magnitude. The smaller VLF EM surveys completed by the writer and P.A. Christopher confirm that some of the mineralized horizons are conductive, and outline a number of favorable anomalies under the upper meadows adjacent to the Texasgulf upper camp. In other areas, the mineralized limy tuffs are not conductive and non-magnetic. The gravity survey was not completed because of adverse weather and snow late in the year which prevented the level surveying necessary.

The writer concludes that the property, lying within a strongly mineralized belt of Hazelton volcanics, and comprising a number of zinc-lead-silver-barite showings which conform to the kuroko model, is worthy of additional exploration work. The work program recommended for the next season will include completion of the geophysical surveys, backhoe trenching and sampling, additional geological mapping, completion of the data compilation now in progress, and diamond drilling several of the geological targets.

## RECOMMENDATIONS

The writer has set out a two-staged budget for roughly \$151,000 in Stage I and \$165,000 in stage II. This budget anticipates expansion of the 1996 grid in Stage I, with geological mapping, additional VLF-EM and gravity surveying, possible road improvement, and back-hoe trenching.

Mineralized lapilli tuff float can be traced along the valley occupied by the three lakes in the upper source of Carr Creek. The best mineralized outcrops occur at each end of this meadow area. At the east end, mineralized sedimentary and tuffaceous horizons are accompanied by VLF-EM and geochemical anomalies, as is the case with the trenched carbonate exhalite at the head of Carr Creek canyon. The extensive covered meadow has provided a number of airborne geophysical targets, validated, in part, by limited VLF-EM surveys. Geochemical surveys in this area can not be relied on, as overburden depth and glacial transport may have obliterated any valid anomalies. For these reasons, the writer recommends that the gravity survey initiated in 1996 be continued northward and eastward to include the covered areas.

Back-hoe trenching may not be allowed in the flat, swamp-covered areas near the lakes, and in fact may not be practical in these areas. However, at the two important showing areas; the Geostar Trench 14 showing and the Texasgulf showing at DDH-1, backhoe trenching has previously been done, and with the access roads available, additional trenching will likely be approved, and should be done to aid in mapping and understanding the trends of the mineralized horizons.

Once the geometry of the exhalites in these localities is well understood and mapped, diamond drilling should test each of the areas with 2 or more short drill holes. Ideally, one or more deep drill holes should be completed in areas where stratigraphic information is critical. This however will be dependant on the amount of funding available.

The budget presented may be modified by field personnel based on new information, and should be regarded as a guide. Costs should be estimated more closely by company personnel when bids for various services are received. Because of the risks involved in exploration and field activities, the contingency of 10% should be regarded as a minimum, but the writer believes that a sensible and worthwhile program can be executed for the amounts stated.

respectfully submitted

**Barry James Price, M.Sc., FGAC., P.Geo.**  
Consulting Geologist.  
*March 30, 1997.*

**SUGGESTED EXPLORATION BUDGET****Phase I**

Geological mapping, supervision, 1 man x 30 days x \$400/day	\$12,000
Geological assistants, 2 x 30 days x \$200/day	12,000
Mobilization and demobilization, wages and expenses	2,000
Grid refurbishment, line cutting, 2 men x 30 days x \$200/day	12,000
Back-hoe, road repair and trenching, 15 days x \$1500/day, (all inclusive)	22,500
Completion of geophysical surveys and levelling	10,000
Camp construction	2,000
Camp costs, food, fuel etc. 6 men x 30 days x \$50/day	9,000
Expendable field supplies	1,000
Soil, rock sampling, 1000 samples x \$20	20,000
Vehicles, 2 x 30 days x \$120/day, fuel and maintainance	7,200
Map preparation, air-photos	2,000
Geological reporting	5,000
Environmental bond	7,500
<hr/>	
Subtotal	\$124,200
Contingency, 10%	12,000
Management Fee	15,000
<b>TOTAL PHASE I</b>	<b>\$151,200.00</b>

**Phase II, (contingent on success in Phase I)**

1000 meters NQ diamond drilling in 6-10 drillholes	\$100,000
Geology, supervision, food lodging and support costs	50,000
<hr/>	
Subtotal	\$150,000
Contingency, 10%	15,000
<b>TOTAL PHASE II</b>	<b>\$165,000.00</b>

respectfully submitted

*Barry James Price*  
 Barry James Price, M.Sc., FGAC., P. Geol.  
 Consulting Geologist.  
 March 30, 1997.



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***CERTIFICATE: - B.J. PRICE, M.Sc., P.Geo.******I, Barry James Price, M.Sc., hereby certify that:***

I am an independent Consulting Geologist and Professional Geoscientist residing at 820 East 14th Street, North Vancouver B.C., with my office at Ste. 600 - 700 West Pender St, Vancouver, B.C. (Telephone: (682-4488)

I graduated from University of British Columbia, Vancouver B.C., in 1965 with a Bachelors Degree in Science (B.Sc.) Honours, in the field of Geology, and received a further Degree of Master of Science (M.Sc.) in Economic Geology from the same University in 1972.

I have practised my profession as a Geologist for the past 30 years since graduation, in the fields of Mining Exploration, Oil and Gas Exploration, and Geological Consulting.

I have worked in Canada, the United States of America, in Mexico, in The Republic of the Phillipines, In Indonesia, Nicaragua, Ecuador, Cuba, and in The Republic of Panama.

I am a Fellow of the Geological Association of Canada, and registered as a Professional Geoscientist (P.Geo.) in the Province of British Columbia, (No. 19810), and I am entitled to use the Seal, which has been affixed to this report. I am a member of the Canadian Institute of Mining, and Society of Mining Engineers.

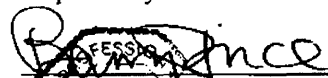

I have based this report on a review of data for the Ascot property and on visits to the property accompanied by company geologist J.Lehtinen, B.Sc., P.Geo on September 23 and 24, 1996.

At one time I held title to the subject property, in trust, for Petra Gem Explorations of Canada Ltd., of which company I was a 45% share-holder. I no longer have any direct or indirect interest in the property which is the subject of this report. I do not hold, directly or indirectly, any shares in Alliance Mining Inc. or any related company, nor do I intend to acquire any such shares. I do not hold any interests in mineral claims within 25 kilometers of the subject property.

I will receive only normal consulting fees for the preparation of this report.

Dated at Vancouver B.C. this 30th day of March 1997.

respectfully submitted

  
Barry James Price, M.Sc., FGAC., P.Geo.  
Consulting Geologist.  


**LETTER OF AUTHORIZATION****B.J. PRICE GEOLOGICAL CONSULTANTS INC.**

Ste 600 - 700 West Pender Street  
Vancouver B.C., V6C 1G8

TEL: 604-682-4488

Home 987-8950

FAX: 604-682-8728

---

27 March 1997

Directors,

**Alliance Mining Inc.**

Ste. 1100 - 1055 West Hastings Street  
Vancouver, B.C., V6E 2E9

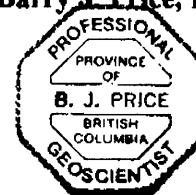
Gentlemen,

With this letter is transmitted your signed and stamped copies of my report entitled "Geological Report - Ascot property, Smithers Area, B.C."

You are authorized to use this report for a Prospectus, Statement of Material Facts or any other corporate purpose, subject to keeping excerpts from the report in their proper context.

Yours sincerely,

  
Barry J. Price, P. Geo.



**APPENDIX I - 1996 SAMPLE DESCRIPTIONS AND ASSAYS**

SAMPLE	DESCRIPTION
	EASTERN END OF PROPERTY, 1977 TRENCH AREA
AS 96-1	<b>Trench 8</b> , west fork of trench. Grey laminated argillite and siltstone strike 038/ Dip 20 degrees southeast. Glacial striae trend 095 degrees. Trench access road above heads roughly east. Y-shaped trench, east arm trends 170 degrees and west arm trends 210 degrees. 1995 high grade (float) sample was found on wall of this trench. About 15% sulphides, pyrite > sphalerite > galena in grey siliceous tuff. Possible barite on fractures. Selected sample. 1977 sample 10275F nearby. <u>Zinc assay 1.69%</u>
AS 96-2	<b>Trench 8</b> . Similar mineralization to No AS 96-1 but 1 meter to the south, <u>Zinc assay 1.78%</u>
AS 96-3	Farther east on access road before final trenches. Possible barite ? with pyrrhotite, sphalerite and galena ? Evidently not barite, as Ba content only 140 ppm. <u>Geochemically anomalous in zinc - 755 ppm</u>
AS 96-4	Close to end of access road. Minor chalcopyrite in felsic breccia enclosed in black argillite. <u>Geochemically anomalous in zinc - 815 ppm and copper - 510 ppm</u>
AS 96-5	Same area, rhyolite or dacite lapilli tuff with small fragments or clots of chalcopyrite and sphalerite. Several chips selected over 20 m x 5 m area. <u>Geochemically anomalous in zinc - 2750 ppm and copper - 325 ppm</u> . Samples 4 and 5 are close to Henry Awmack sample 752. (1995).
AS 96-6	. Sample results missing.

**CENTRAL AREA ABOVE CANYON - 1987 TRENCH 14 AREA**

- AS 96-7 Limestone, relatively clean, minor sphalerite Re-sample of previous sample 626979. **Sample has 7.10% zinc and 39 g/t silver.** (Note, the writers field description indicates only "minor sphalerite". However, the sphalerite is very light colored and concealed by the color of the limestone.
- AS 96-8 Selected sample from 400-500 lb boulder, banded limestone and sulphides. **This sample has 2.41% zinc, 14 g/t silver and at least 0.5% barium**
- AS 96-9 Selected sample of barite-rich boulder. **This sample has 2.61% zinc, 12 g/t silver and 0.42% Ba**
- AS 96-10 Selected specimen of barite-rich outcrop. **This sample has 1.6% zinc, 11 g/t silver and at least 1% Barium**

SAMPLE No.	ZN %	PB %	CU PPM	AG PPM	BA* PPM	CD PPM
AS 96-1	1.69	0.24	75	<1	4820	50
AS 96-2	1.78	0.61	65	<1	180	80
AS 96-3	0.075	0.003	55	<1	140	<5
AS 96-4	0.081	0.004	510	<1	500	5
AS 96-5	0.275	<0.0005	325	<1	100	15
AS 96-6	SAMPLE MISSING					
AS 96-7	7.10	0.12	20	39	2200	405
AS 96-8	2.41	0.06	30	14	5060	150
AS 96-9	2.61	0.047	20	12	4220	170
AS 96-10	1.60	0.015	10	11	10740	180
NO TAG**	0.145	0.0065	20	1	11520	5

\* Only partial digestion for Ba. \*\* This sample is believed to be AS 96-6

Samples were analysed by Chemex Labs Ltd., North Vancouver

Samples with >4000 ppm Ba are being re-assayed more accurately.

APPENDIX II  
ANALYTICAL CERTIFICATES



# Chemex Labs Ltd.

Analytical Chemists \* Geochemists \* Registered Assayers  
212 Brooksbank Ave., North Vancouver  
British Columbia, Canada V7J 2C1  
PHONE: 604-984-0221 FAX: 604-984-0218

To: PRICE, B. J. GEOLOGICAL CONSULTANTS INC.

600 - 700 W. PENDER ST.  
VANCOUVER, BC  
V6C 1G8

A9637077

Comments: ATTN:BARRY PRICE

CERTIFICATE

A9637077

(NKT) - PRICE, B. J. GEOLOGICAL CONSULTANTS INC.

Project: ASCOT  
P.O. #:

Samples submitted to our lab in Vancouver, BC.  
This report was printed on 27-OCT-96.

## SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
208	10	Assay ring to approx 150 mesh
294	10	4-7 Kg crush and split
3202	10	Rock - save entire reject
233	10	Assay AQ ICP digestion charge
* NOTE	1:	

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

## ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
4001	10	Ag ppm: A30 ICP package	ICP-AES	1	200
4002	10	Al %: A30 ICP package	ICP-AES	0.01	15.00
4003	10	As ppm: A30 ICP package	ICP-AES	10	50000
4004	10	Ba ppm: A30 ICP package	ICP-AES	20	200000
4005	10	Be ppm: A30 ICP package	ICP-AES	5	100
4006	10	Bi ppm: A30 ICP package	ICP-AES	10	50000
4007	10	Ca %: A30 ICP package	ICP-AES	0.01	30.0
4008	10	Cd ppm: A30 ICP package	ICP-AES	5	1000
4009	10	Co ppm: A30 ICP package	ICP-AES	5	50000
4010	10	Cr ppm: A30 ICP package	ICP-AES	10	20000
4011	10	Cu ppm: A30 ICP package	ICP-AES	5	50000
4012	10	Fe %: A30 ICP package	ICP-AES	0.01	30.0
4013	10	Hg ppm: A30 ICP package	ICP-AES	10	10000
4014	10	K %: A30 ICP package	ICP-AES	0.01	20.0
4015	10	Mg %: A30 ICP package	ICP-AES	0.01	30.0
4016	10	Mn ppm: A30 ICP package	ICP-AES	10	50000
4017	10	Mo ppm: A30 ICP package	ICP-AES	5	50000
4018	10	Na %: A30 ICP package	ICP-AES	0.01	20.0
4019	10	Ni ppm: A30 ICP package	ICP-AES	5	50000
4020	10	P ppm: A30 ICP package	ICP-AES	100	10000
4021	10	Pb ppm: A30 ICP package	ICP-AES	5	50000
4022	10	Sb ppm: A30 ICP package	ICP-AES	10	10000
4023	10	Sc ppm: A30 ICP package	ICP-AES	5	10000
4024	10	Sr ppm: A30 ICP package	ICP-AES	5	10000
4025	10	Ti %: A30 ICP package	ICP-AES	0.01	10.00
4026	10	Tl ppm: A30 ICP package	ICP-AES	20	10000
4027	10	U ppm: A30 ICP package	ICP-AES	20	10000
4028	10	V ppm: A30 ICP package	ICP-AES	20	50000
4029	10	W ppm: A30 ICP package	ICP-AES	20	10000
4030	10	Zn ppm: A30 ICP package	ICP-AES	5	50000



# Chemex Labs Ltd.

Analytical Chemists \* Geochemists \* Registered Assayers  
 212 Brooksbank Ave., North Vancouver  
 British Columbia, Canada V7J 2C1  
 PHONE: 604-984-0221 FAX: 604-984-0218

To: PRICE, B. J. GEOLOGICAL CONSULTANTS INC.

600 - 700 W. PENDER ST.  
 VANCOUVER, BC  
 V6C 1G8

Project: ASCOT  
 Comments: ATTN: BARRY PRICE

Page Number : 1-A  
 Total Pages : 1  
 Certificate Date: 27-OCT-96  
 Invoice No. : 19637077  
 P.O. Number :  
 Account : NKT

## CERTIFICATE OF ANALYSIS A9637077

SAMPLE	PREP CODE	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Hg ppm	K %	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm
AS-96-1	208 294	< 1	0.50	150	4820	< 5	< 10	8.99	50	20	10	75	3.49	< 10	0.03	0.44	1220	10	0.02	5
AS-96-2	208 294	< 1	0.48	110	80	< 5	< 10	9.67	80	20	10	65	3.05	< 10	0.02	0.42	1280	5	0.01	5
AS-96-3	208 294	< 1	3.52	< 10	140	< 5	< 10	6.01	< 5	15	20	55	4.95	< 10	0.01	4.83	2800	< 5	< 0.01	20
AS-96-4	208 294	< 1	3.53	30	500	< 5	< 10	0.45	5	45	20	510	11.15	< 10	0.04	2.14	2750	< 5	< 0.01	15
AS-96-5	208 294	< 1	3.89	30	100	< 5	< 10	0.24	15	35	30	325	11.55	< 10	0.06	2.55	2880	< 5	< 0.01	15
AS-96-7	208 294	39	0.14	420	2200	< 5	< 10	10.25	405	5	< 10	20	2.62	< 10	0.07	0.07	2780	65	< 0.01	5
AS-96-8	208 294	14	0.12	180	5060	< 5	< 10	6.67	150	5	< 10	30	1.22	< 10	0.06	0.04	1460	15	< 0.01	10
AS-96-9	208 294	12	0.08	250	4220	< 5	< 10	11.25	170	5	< 10	20	1.56	< 10	0.06	0.04	2290	5	< 0.01	< 5
AS-96-10	208 294	11	0.05	60	10740	< 5	< 10	1.80	180	< 5	< 10	10	0.42	< 10	0.01	0.01	940	5	< 0.01	< 5
NO TAG	208 294	1	0.96	30	11520	< 5	< 10	0.55	5	25	10	20	2.95	< 10	0.02	0.84	1310	5	0.05	5

CERTIFICATION:

*Hart Bickler*



# Chemex Labs Ltd.

Analytical Chemists \* Geochemists \* Registered Assayers  
 212 Brooksbank Ave., North Vancouver  
 British Columbia, Canada V7J 2C1  
 PHONE: 604-984-0221 FAX: 604-984-0218

To: PRICE, B. J. GEOLOGICAL CONSULTANTS INC. \*\*

600 - 700 W. PENDER ST.  
 VANCOUVER, BC  
 V6C 1G8

Project : ASCOT  
 Comments: ATTN: BARRY PRICE

Page Number : 1-B  
 Total Pages : 1  
 Certificate Date: 27-OCT-96  
 Invoice No. : 19637077  
 P.O. Number :  
 Account : NKT

## CERTIFICATE OF ANALYSIS

### A9637077

SAMPLE	PREP		P	Pb	Sb	Sc	Sr	Ti	Tl	U	V	W	Zn
	CODE		ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
AS-96-1	208	294	600	2410	< 10	15	175	0.31	< 20	< 20	180	< 20	16890
AS-96-2	208	294	600	6160	10	15	65	0.30	< 20	< 20	180	< 20	17860
AS-96-3	208	294	900	30	10	15	90	0.18	< 20	< 20	120	< 20	755
AS-96-4	208	294	700	40	< 10	20	15	0.18	< 20	< 20	220	< 20	815
AS-96-5	208	294	700	< 5	10	20	5	0.06	< 20	< 20	240	< 20	2750
AS-96-7	208	294	500	1175	90	5	885	< 0.01	< 20	< 20	< 20	< 20	>50000
AS-96-8	208	294	300	600	40	5	990	< 0.01	< 20	< 20	< 20	< 20	24100
AS-96-9	208	294	500	475	40	5	1020	< 0.01	< 20	< 20	< 20	< 20	26100
AS-96-10	208	294	100	150	40	< 5	1135	< 0.01	< 20	< 20	< 20	< 20	15960
NO TAG	208	294	800	65	< 10	20	245	< 0.01	< 20	< 20	160	< 20	1455

CERTIFICATION:

*Harry Buchler*





# Chemex Labs Ltd.

Analytical Chemists \* Geochemists \* Registered Assayers

212 Brooksbank Ave., North Vancouver  
British Columbia, Canada V7J 2C1  
PHONE: 604-984-0221 FAX: 604-984-0218

To: PRICE, B. J. GEOLOGICAL CONSULTANTS INC. \*\*

600 - 700 W. PENDER ST.  
VANCOUVER, BC  
V6C 1G8

Project : ASCOT  
Comments: ATTN:BARRY PRICE

Page Number : 1  
Total Pages : 1  
Certificate Date: 04-NOV-96  
Invoice No. : 19638130  
P.O. Number :  
Account : NKT

## CERTIFICATE OF ANALYSIS

A9638130

SAMPLE	PREP CODE	Zn %										
AS-96-7	244 --	7.10										

CERTIFICATION:

**B.J. PRICE GEOLOGICAL CONSULTANTS INC.**

BARRY JAMES PRICE, M.SC., F.G.A.C., P.GEO.

Consulting Geologist

600 - 700 West Pender Street,

Vancouver B.C., V6C 1G8

TEL: 604-682-4488

Home 987-8950

FAX: 604-682-8728

e-mail: bpricegeol@msn.com

---

14 July 1998

**Alliance Mining Inc.**

Ste 1100, 1055 West Hastings St.

Vancouver B.C., V6E 2E9

Tel: 688-6900, Fax 443-7000

Dear Sirs

**ADDENDUM - GEOLOGICAL REPORT, ASCOT PROPERTY**

*This letter report will outline minor corrections and additions to the above noted report, which should be attached to the report filed with the regulatory bodies.*

1. *An additional references which should have been provided in the Bibliography are as follows:*

*Helgason, R. (1988); Geochemical, Geological, Geophysical & Trenching Report on the Ascot 1 and 2 Claim Groups, NTS 93L/15 for Geostar Mining Corporation. Private Report for Pilot Management Inc. dated January 12, 1988.*

*The reference to Holland, (1989) was for information reviewed by Henry Awmac, P.Eng.; in his 1995 report. This report is believed to be an Assessment Report filed in 1989, but this report is not in my possession and I do not have an exact reference.*

2. *With respect to Helgason's samples for Trench 14, the values reported in my report are exactly as stated by Helgason. As the other samples in the series are described as "Grab" and as the RT87-73 to 75 samples have widths attached to them, I assume they are chips. The exact quote from Helgason is as follows:*

*"The strongest geochemical anomaly found is located between lines 176 to 178N, 73+00 to 74+00E. This local is anomalous in zinc (5900 ppm), lead (154 ppm), silver (6.9 ppm) and arsenic (118 ppm). The southern part of the anomaly in Canyon creek coincides with disseminated lead and zinc in calcareous sediments. Two trenches (TR 14 & 15) were dug to evaluate the northern part of the anomaly. Zinc values as high as 8% were found in trench 14 in a dolomitic sandstone, siltstone and shaleunit containing hydrozincite and disseminated sphalerite. Over a sampling interval of 18 metres (true thickness approximately 8 m.) zinc averaged 6.5% and silver 1.5 oz./ton. However, values appear erratic as no significant mineralization or assays were found a few meters along apparent strike. More trenching is warranted to further assess this zone."*

This is the only information regarding this trench supplied by Helgason, aside from the Trench Map.

In my report I repeat Helgson's comment that the mineralization is somewhat erratic, and that further mapping and trenching are required.

In various pages Helgason's report is referenced as Helgason (1987). This is in error; although the field work was done in 1987, the report was finalized in 1988.

3. Paragraph 2 on Page 16 states that Trench 87-14 returned "a true width of 18 meters of carbonate-sphalerite-barite exhalite grading 6.5% zinc". This should have read "an apparent width". The true width should be (as stated on Page 20) as "true thickness approximately 8 meters".

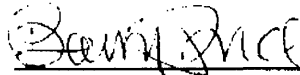
A replacement page 16 is provided so this error will not be misleading. In my reading of the Preliminary Prospectus dated June 9, 1998 the true width is stated correctly.

4. At the center of Page 21, Sample 626979 is incorrectly referenced to Trench 87-8; this should read 87-14.

5. In the original report, reference was made a number of times to a report by Price, (1987). This should read Price (1978).

I trust this will correct any misunderstandings which may have resulted from mistakes and typographic errors in the original report.

yours sincerely



**"Barry Price, M.Sc., P.Ge."**



**B.J. PRICE GEOLOGICAL CONSULTANTS INC.**

BARRY JAMES PRICE, M.SC., F.G.A.C., P.GEO.

Consulting Geologist

600 - 700 West Pender Street,

Vancouver B.C., V6C 1G8

TEL: 604-682-4488

Home 987-8950

FAX: 604-682-8728

e-mail: bpricegeol@msn.com

November 10, 1998

**Alliance Mining Inc.**

Ste 1100, 1055 West Hastings St.

Vancouver B.C., V6E 2E9

Tel: 688-6900, Fax 443-7000

Dear Sirs

**ADDENDUM - GEOLOGICAL REPORT, ASCOT PROPERTY**

This letter report will outline minor corrections and additions to the above noted report, which should be attached to the report filed with the regulatory bodies.

1. An additional references which should have been provided in the Bibliography are as follows:

Helgason, R. (1988); Geochemical, Geological, Geophysical & Trenching Report on the Ascot 1 and 2 Claim Groups, NTS 93L/15 for Geostar Mining Corporation. Private Report for Pilot Management Inc. dated January 12, 1988. BCMEMPR Assessment Report No. 16928.

Holland, R. (1989 ) Geological and Geochemical Report on the Ascot Mineral Claim Group. British Columbia Ministry of Energy Mines and Petroleum Resources Assessment Report No. 19588.

2. With respect to Helgason's samples for Trench 14, the values reported in my report are exactly as stated by Helgason. As the other samples in the series are described as "Grab" and as the RT 87-73 to 75 samples have widths attached to them, I assume they are chips. The exact quote from Helgason is as follows:

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*metres (true thickness approximately 8 m.) zinc averaged 6.5% and silver 1.5 oz./ton. However, values appear erratic as no significant mineralization or assays were found a few meters along apparent strike. More trenching is warranted to further assess this zone."*

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In various pages Helgason's report is referenced as Helgason (1987). This is in error; although the field work was done in 1987, the report was finalized in 1988.

3. Paragraph 2 on Page 16 states that Trench 87-14 returned "a true width of 18 meters of carbonate-sphalerite-barite exhalite grading 6.5% zinc". This should have read "an apparent width". The true width should be (as stated on Page 20) as "true thickness approximately 8 meters".

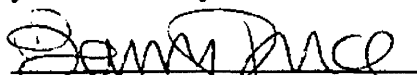
A replacement page 16 is provided so this error will not be misleading. In my reading of the Preliminary Prospectus dated June 9, 1998 the true width is stated correctly.

4. At the center of Page 21, Sample 626979 is incorrectly referenced to Trench 87-8; this should read 87-14.

5. In the original report, reference was made a number of times to a report by Price, (1987). This should read Price (1978).

I trust this will correct any misunderstandings which may have resulted from mistakes and typographic errors in the original report.

yours sincerely

  
"Barry Price, M.Sc., P. Geo."

