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PROSPECTUS  
Sept 14, 1987.  
062277

PRELIMINARY GEOLOGICAL REPORT

ON THE

McKINNON CREEK PROPERTY  
INDIAN RIVER AREA  
DAWSON MINING DISTRICT  
YUKON TERRITORY

FOR

VOLCANO RESOURCES CORP.  
VANCOUVER, BRITISH COLUMBIA

February 28, 1987  
Vancouver, B.C.

Thomas R. Tough, P.Eng.  
Consulting Geologist

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(i)

Preliminary Geological Report  
on the  
McKinnon Creek Property  
Indian River Area  
Dawson Mining District  
Yukon Territory

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Part A

Summary

Volcano Resources Corp. holds 123 contiguous mineral claims under option.

The claims are situated some 40 kilometres (25 miles) southeast of Dawson City, west-central Yukon Territory.

For the prevailing conditions in the Yukon, the logistics involved with the exploration and development of the property are good.

The auriferous McKinnon Creek conglomerates were first discovered and staked around 1899.

(ii)

During the early years of exploration a total of three shafts were sunk to depths of 30 metres (100 feet) and numerous trenches were cut along both sides of McKinnon Creek. A couple of short adits were also driven.

Sampling of the conglomerates of the years gave assay results varying from a trace to 0.100 ounces of gold per ton to a high of 48 ounces of gold per ton with good silver values.

Through the late 1960's to 1986 a number of companies carried out geological mapping, limited surface sampling (rock and soil), percussion and diamond drilling and an airborne magnetometer survey.

On December 5, 1986, Volcano Resources Corp. acquired an option on 36 claims along McKinnon Creek and during January and February staked an additional 87 claims.

A combined magnetic and electromagnetic survey was carried out over 50 kilometres (31.2 miles) of grid lines during January and February of 1987.

Anomalous zones were encountered along the west side of McKinnon Creek and generally parallel the creek, suggestive of parallel stream channels or andesite dykes and/or zones of silicification.

(iii)

The old workings tend to coincide with the anomalous zones.

The property is underlain by McKinnon Creek conglomerates, a member of the Indian River formation of Lower Cretaceous age, which is comprised of quartz pebble conglomerate intercalated with units of sandstone, siltstone, shale and minor coal. A black colour is imparted to the unit by the presence of finely crystalline graphite in the matrix.

Volcanic rocks of the Carmacks group intrude and overlie the conglomerates which are of fluvial origin and host to the known gold occurrences on the property.

The gold occurs as very fine-grained particles and appears to be disseminated throughout the matrix of the conglomerate.

### Conclusions

Sampling of the conglomerates over the past 85 years indicates that gold values do occur within the McKinnon conglomerate member of the Indian River formation.

Previous sampling has resulted in assay values between a trace to 0.100 ounces of gold per ton with some erratic highs.

The property warrants further detailed exploration to locate areas within the conglomerates where the gold may be concentrated

(iv)

in economic quantities.

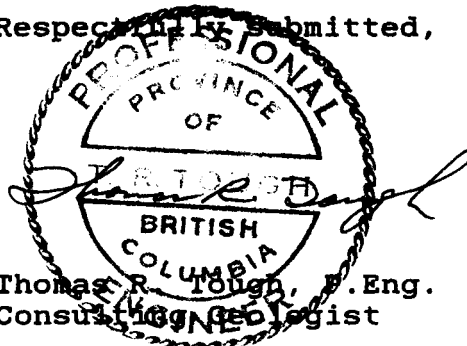
Recommendations

It is recommended that the property be tested by a two-phased diamond drill program to explore the black auriferous McKinnon conglomerates specifically along McKinnon Creek where gold has been previously found. Areas of magnetic and electromagnetic anomalies along the McKinnon Creek area should be drilled first.

Contingent upon the results of the initial phase of drilling, a second phase consisting of additional drilling should be undertaken.

It is further recommended that Volcano Resources Corp. allocate the sum of \$ 95,400.00 to implement and execute Phase I of the recommended exploration program.

Respectfully submitted,



Thomas R. Tough, P.Eng.  
Consulting Geologist

February 28, 1987  
Vancouver, B.C.

Preliminary Geological Report  
on the  
McKinnon Creek Property  
Indian River Area  
Dawson Mining District  
Yukon Territory

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Part B

Introduction

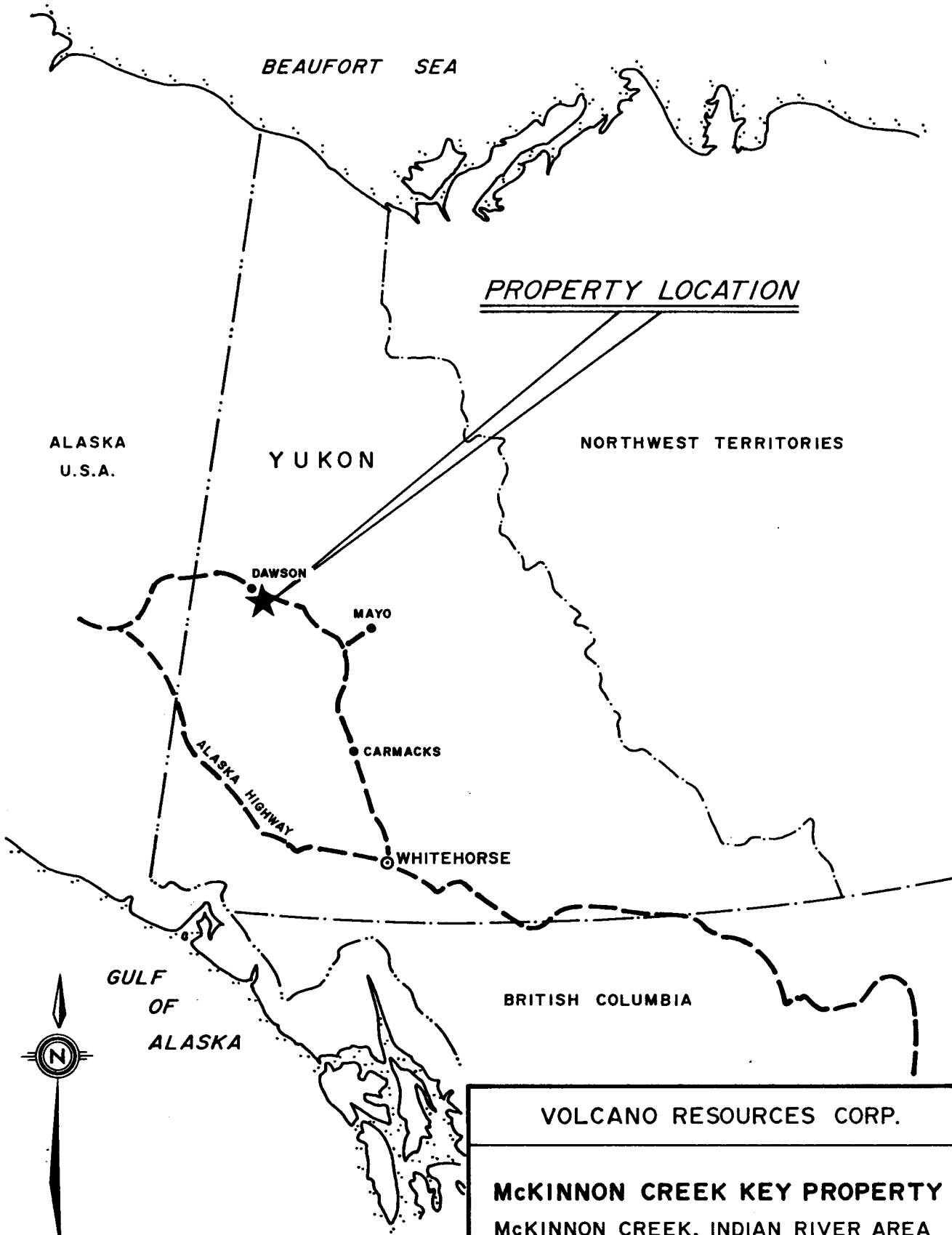
At the request of William A. Jackson, President, Volcano Resources Corp., the writer visited the McKinnon Creek property on February 6, 1987 and studied available data on previous and recent exploration programs carried out over portions of the property. The purpose of the examination and study was to evaluate the results and propose an exploration program that would best assess the economic potential of the property.

Property

The property consists of 123 contiguous mineral claims held by location. They are as follows:

<u>Claim Number</u>	<u>Record Number</u>	<u>Expiry Date</u>
Key 1-12 incl.	YA 87792 - 803 incl.	4 Oct 1987
Key 13 fr.	YA 88703	3 Feb 1988
Key 14	YA 87804	4 Oct 1987
Key 15 fr.	YA 88704	3 Feb 1988
Key 16	YA 87805	4 Oct 1987
Key 17,18	YA 87818 - 819 incl.	7 Oct 1987
Key 19-28 incl.	YA 87808 - 817 incl.	7 Oct 1987

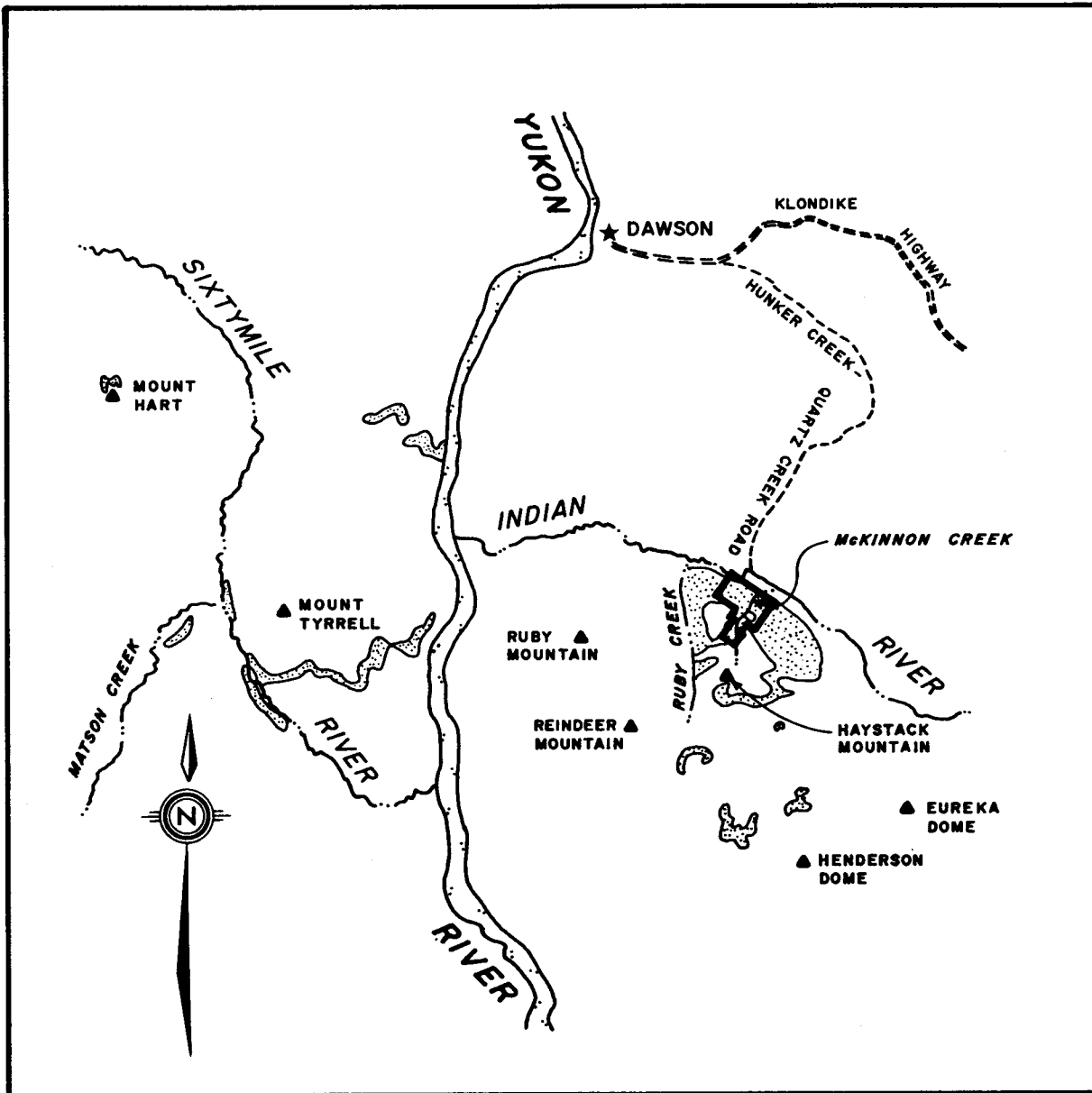




VOLCANO RESOURCES CORP.			
<b>McKINNON CREEK KEY PROPERTY</b> McKINNON CREEK, INDIAN RIVER AREA DAWSON MINING DISTRICT, YUKON			
<b>LOCATION MAP</b>			
SCALE: 1: 7,603,200	DATE: FEB_87	FIGURE: 1	DRAFTED BY: B.D.S.

140°00'

139°00'



64°00'

63°30'



DISTRIBUTION OF CLASTIC  
SEDIMENTARY ROCKS

FROM: G.W. LOWEY, 1984



VOLCANO RESOURCES CORP.

**McKINNON CREEK KEY PROPERTY**

McKINNON CREEK, INDIAN RIVER AREA

DAWSON MINING DISTRICT, YUKON

**CLAIM LOCATION MAP**

SCALE: 1:250,000	DATE: FEB. 87	MAP SHEET: 115-0-11	FIGURE: 2	DRAFTED BY: B.D.S.
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D.H. WAUGH, CONTRACT GEOLOGICAL SERVICES

**BLOCK "A"**

(KEY 40-75)

KEY 40-43 Staked 1/28/87

KEY 44-51 Staked 1/29/87

KEY 52-63 Staked 1/30/87

KEY 64-75 Staked 1/31/87

**BLOCK "B"**

(KEY 76-109)

KEY 76-85 Staked 1/31/87

KEY 86-109 Staked 2/1/87

**BLOCK "C"**

(KEY 110-123)

KEY 110-123 Staked 2/9/87

KEY 13 Fr., 15 Fr., 39 Fr.  
Staked 1/31/87

VOLCANO RESOURCES CORP.

**McKINNON CREEK KEY PROPERTY**

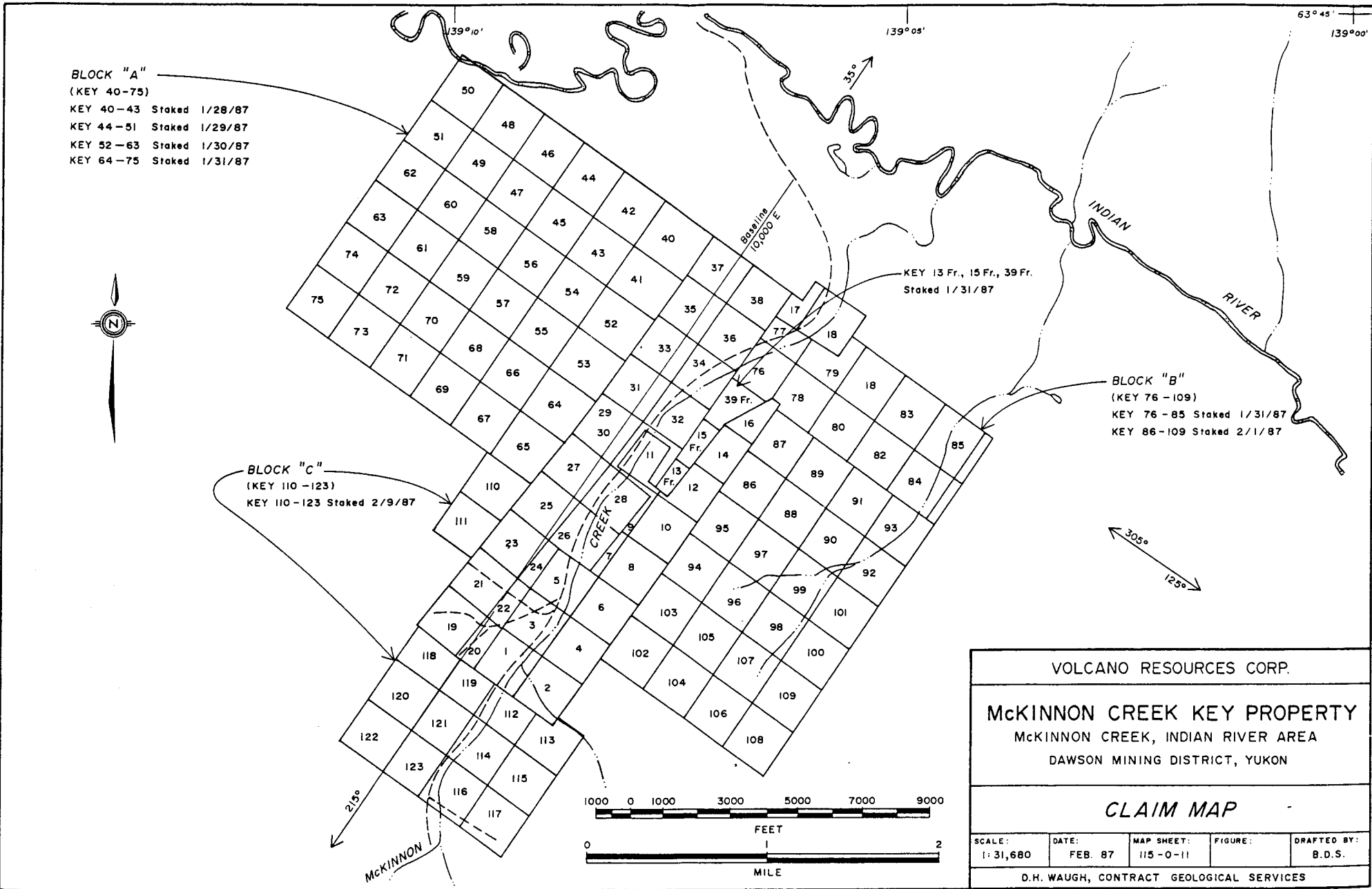
McKINNON CREEK, INDIAN RIVER AREA

DAWSON MINING DISTRICT, YUKON

**CLAIM MAP**

SCALE: 1:31,680	DATE: FEB. 87	MAP SHEET: 115-0-11	FIGURE:	DRAFTED BY: B. D. S.
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D.H. WAUGH, CONTRACT GEOLOGICAL SERVICES



<u>Claim Number</u>	<u>Record Number</u>	<u>Expiry Date</u>
Key 29-38 incl.	YA 87820 - 829 incl.	7 Oct 1987
Key 39 fr.	YA 88705	3 Feb 1988
Key 40-109 incl.	YA 88706 - 775 incl.	3 Feb 1988
Key 110-123 incl.	YA 88798 - 811 incl.	10 Feb 1988

The claims are currently in good standing and are shown on the Yukon Government Claim Sheet # 115-0-11.

#### Ownership

The claims are held under option by Volcano Resources Corp. of Vancouver, British Columbia.

#### Location (63N - 140W)

The claims are located along McKinnon Creek, near its confluence with the Indian River, some 40 kilometres (25 miles) southeasterly from Dawson City, Dawson Mining District, Yukon Territory.

#### Access

The property is accessible by 4 X 4 vehicles along a dirt road which leads south from Dawson City to the Indian River which is fordable at low water levels. The road then follows along McKinnon Creek through the property to the camp and field offices. Helicopter service is also available from Dawson City.

### Topography

The elevation on the claims varies between 518 metres (1,700 feet) and 610 metres (2,000 feet) above sea level resulting in a gentle northward slope towards the Indian River.

### Timber

The claims are sparsely covered with secondary growth consisting primarily of poplar and spruce. Finished lumber would have to be purchased in Dawson City or Whitehorse, Y.T..

### Water and Power

Water is available for all phases of exploration and development, and diesel-electric power will be required for all phases of exploration, development and production.

### Climate

Winters are relatively cold with moderate to light snowfall. The summer months have temperatures which range from 7 degrees C. to 21 degrees C. with light rainfall.

### Transportation and Supplies

The Yukon Territory is serviced by good trucking facilities based out of Whitehorse. A deep sea port is situated at Skagway, Alaska. Whitehorse is serviced by major airlines and a local airline services Dawson City. Most supplies are obtainable from Dawson City or Whitehorse which is provided with good daily express services.

### History

Auriferous McKinnon Creek conglomerates were first discovered and staked by the McKinnon brothers around 1899. At least three shafts, the Britannia, Winchester, and Arctic were sunk in the vicinity of McKinnon Creek to depths of 18 to 30 metres (60 to 100 feet).

A small test mill was erected to extract gold from material taken from the 18 metre (60 ft.) level of the Britannia shaft, located on the Britannia Crown granted Lease ( now covered by the current claims). Some 2.5 tons were processed and the recovery is stated to have been 0.02 ounces of gold per ton collected on amalgam plates. Cyanidation was used as a check method on similar material and two tests gave values of 0.160 and 0.350 ounces of gold per ton.

Assaying by various assayers gave values varying from a trace to a high of 48 ounces of gold per ton.

During the late 1960's through to 1976, Yukon Revenue Mines Limited, Cominco Limited and Andac Resources Ltd. carried out exploration of the auriferous conglomerates located along the McKinnon Creek valley.

The exploration consisted of an airborne magnetometer survey, four rotary drill holes and three diamond drill holes. Low gold values were encountered.

The area was also drilled to test the known coal deposits on the property by Cyprus Anvil Mining Corporation in 1980. Poor quality coal was encountered in one of three diamond drill holes.

Esso Minerals Canada took a number of rock and soil samples in August of 1986.

#### Recent Work

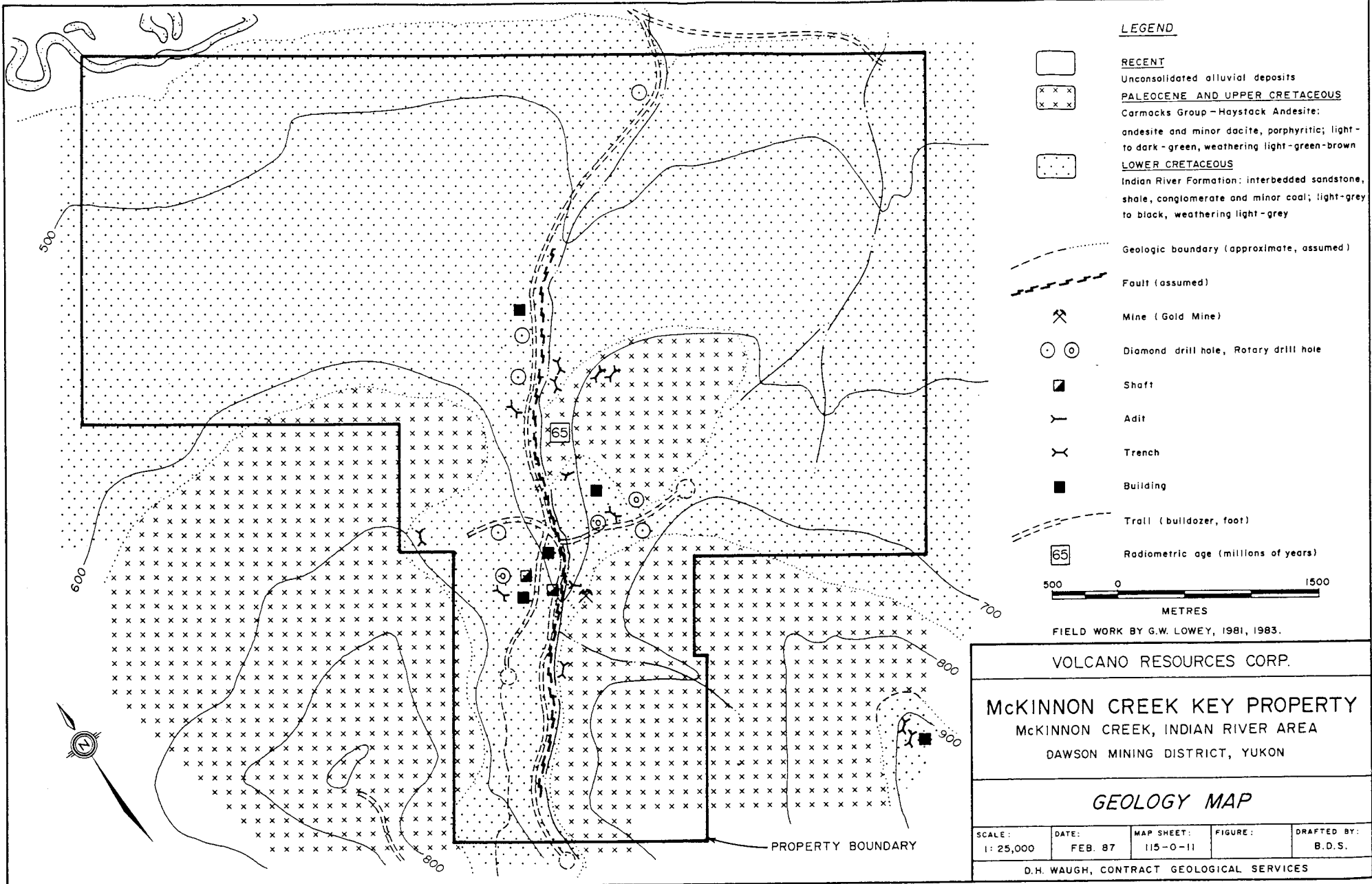
During January and February of 1987, Volcano Resources Corp. carried out a combined ground magnetometer and electromagnetic survey on the property at a cost of approximately \$ 83,000.00.

#### Regional Geology




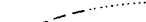
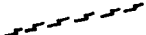






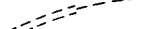

The claims lie within an area mapped by H.S. Bostock between 1935 and 1937 and published in 1942 as Map 711A, OGILVIE. The area is underlain by Precambrian gneiss, schist, quartzite, slate and limestone of the Yukon group along with gneissic granite and ultrabasic units. Younger conglomerates and volcanics of the Carmacks group overlie the Precambrian units.

#### Local Geology

The claims are underlain by the Lower Cretaceous Indian River formation which is comprised of quartz pebble conglomerate intercalated with units of sandstone, siltstone, shale and minor coal. The formation is light-grey to dark grey-green and black and is poorly indurated.



**LEGEND**

-  **RECENT**  
Unconsolidated alluvial deposits
-  **PALEOCENE AND UPPER CRETACEOUS**  
Carmacks Group - Haystack Andesite:  
andesite and minor dacite, porphyritic; light - to dark - green, weathering light - green - brown
-  **LOWER CRETACEOUS**  
Indian River Formation: interbedded sandstone, shale, conglomerate and minor coal; light - grey to black, weathering light - grey
-  Geologic boundary (approximate, assumed)
-  Fault (assumed)
-  Mine (Gold Mine)
-  Diamond drill hole, Rotary drill hole
-  Shaft
-  Adit
-  Trench
-  Building
-  Trail (bulldozer, foot)
-  Radiometric age (millions of years)



FIELD WORK BY G.W. LOWEY, 1981, 1983.

VOLCANO RESOURCES CORP.

**McKINNON CREEK KEY PROPERTY**  
McKINNON CREEK, INDIAN RIVER AREA  
DAWSON MINING DISTRICT, YUKON

**GEOLOGY MAP**

SCALE: 1: 25,000	DATE: FEB. 87	MAP SHEET: 115-0-11	FIGURE:	DRAFTED BY: B.D.S.
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D.H. WAUGH, CONTRACT GEOLOGICAL SERVICES



The McKinnon conglomerate exhibits silicification in areas of close proximity to McKinnon Creek which appears to occupy a shear zone or fault along its course. The color of the conglomerate is black, caused by a matrix of finely-crystalline graphite. The unit tends to thin to both the east and west of McKinnon Creek and is enclosed within the fluvial-deltaic fan of the Ruby Quartz conglomerate member. The McKinnon conglomerate unit appears to be entirely fluvial in origin and is the host to the gold occurrences on the property.

Volcanic rocks of the Carmacks group intrude and overlie the conglomerate. They vary from andesite to rhyodacitic in composition, are porphyritic and light to dark green.

#### Mineralization

The gold occurs as very fine-grained (silt size) particles and appears to be disseminated throughout the matrix of the massive conglomerates which are exposed along portions of McKinnon Creek. The gold in the conglomerates varies from a trace to 0.100 ounces per ton.

The auriferous conglomerates have previously been interpreted as a paleoplacer deposit and to be similar to the Witwatersrand gold field in South Africa. (Minter, 1978, Pretorius, 1975)

The gold may have also been introduced by the intrusion of andesite and rhyodacite dykes and sills or remobilized from the

original conglomerates and redeposited therein. Gold does have an affinity for graphitic units and hence the resultant concentration of fine gold within the McKinnon conglomerate. The auriferous conglomerates along McKinnon Creek display the characteristics of both a placer deposit and a hydrothermal disseminated deposit with extensive alteration and a spatial relationship to felsic intrusions.

#### Geophysical Surveys

A total of 50 kilometres (31.2 miles) of lines were established on the property using a small bulldozer. A combined electromagnetic and magnetic survey was carried out over the grid during January and February, 1987.

#### (a) Electromagnetic Survey

A VLF-EM-16 (GEONICS) survey was conducted over the established grid by Gary Lee, P.Eng.. Readings were taken every 25 metres (82 feet).

The VLF-EM-16 instrument is a sensitive radio receiver which encompasses the frequency bands of very low frequency (V.L.F.) transmitting stations with a patented method of measuring the in-phase and quadrature components of the vertical electromagnetic field at right angles to the direction of transmission. The main transmitter used for the survey was N.P.G. located at Jim Creek near Seattle, Washington, U.S.A.. Transmitters in Hawaii

and Cutler, Maine were also used.

The data was processed by the Fraser-filter method and plotted on a scale of 1:2,500.

Linear anomalous conditions were encountered parallel to and west of McKinnon Creek suggesting the presence of older stream channels of McKinnon Creek. Some of the old workings are within the anomalous zones.

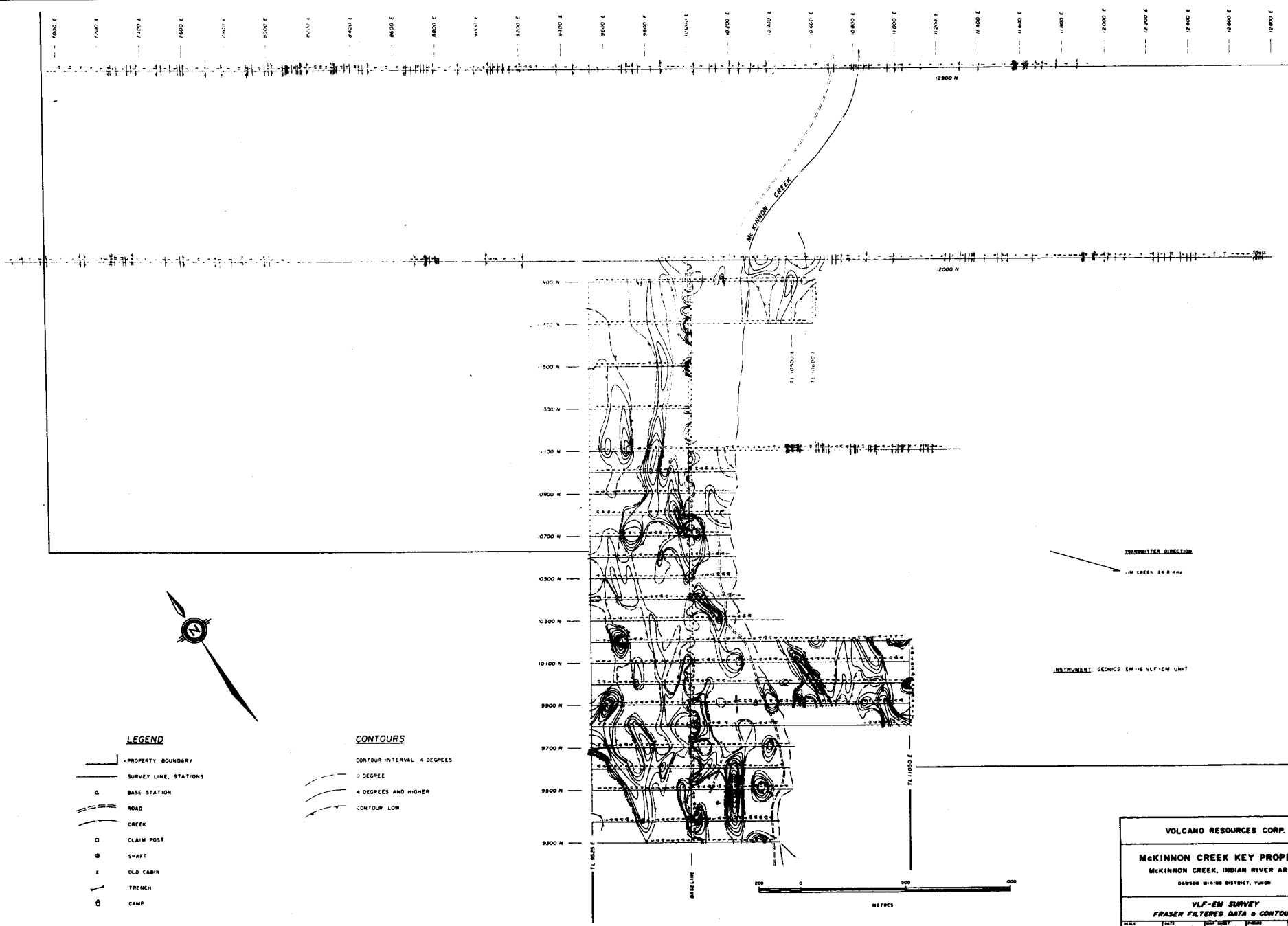
The anomalies may also reflect volcanic dykes and/or zones of silicification.

(b) Magnetic Survey

A Fluxgate MF-1 magnetometer was used to survey the grid established on the property. The results were plotted and contoured at 100 gamma intervals. Readings were taken every 25 metres ( 82 feet).

A number of magnetic anomalous conditions occur within the survey area, some of high intensity and others much lower.

The lower intensity magnetic anomalies coincide well with the strongest electromagnetic anomalies, with higher gamma readings occasionally coincident or nearly so.



**LEGEND**

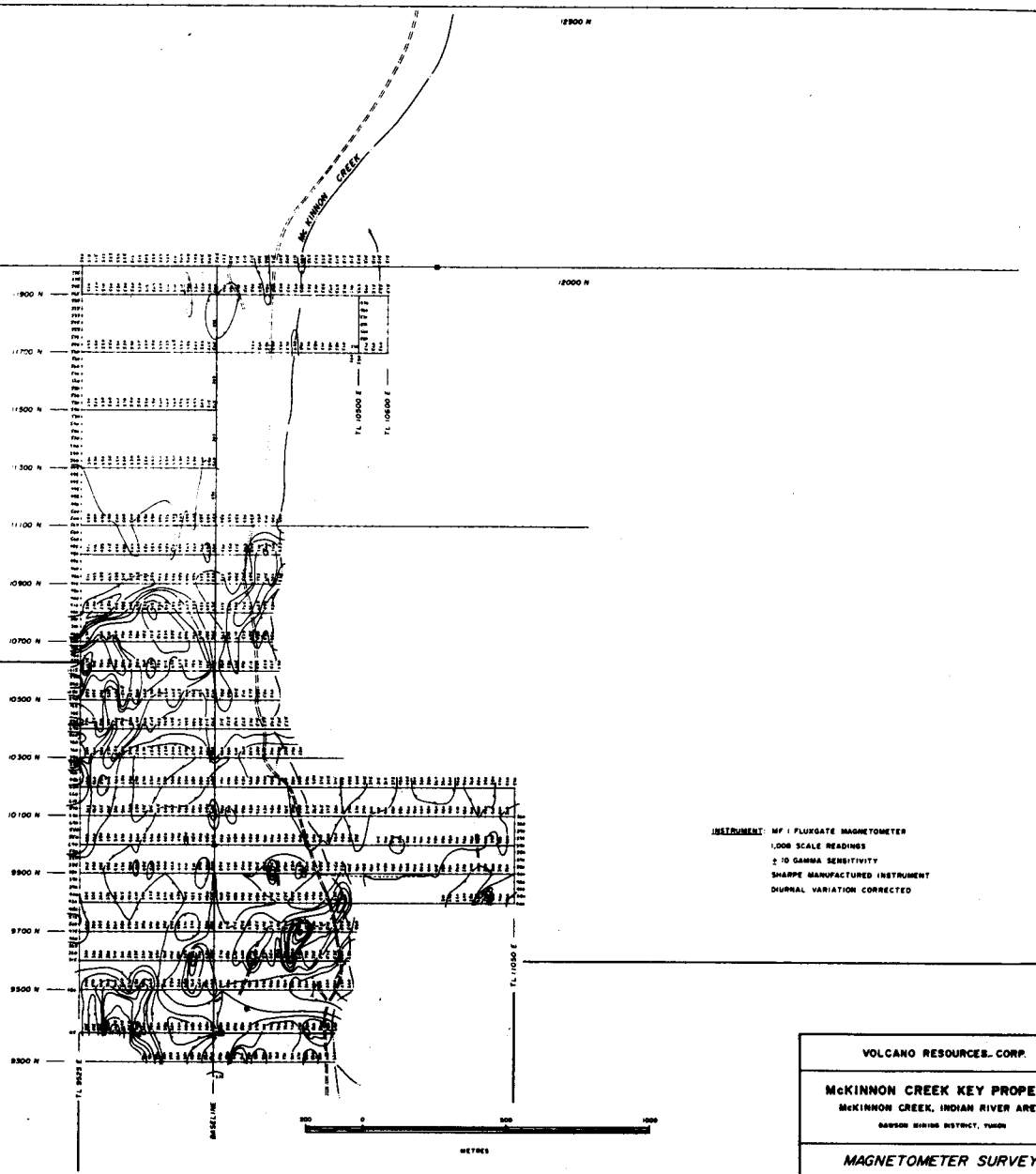
- - - - - PROPERTY BOUNDARY
- SURVEY LINE, STATIONS
- △ BASE STATION
- ROAD
- CREEK
- CLAIM POST
- SHAFT
- × OLD CABIN
- TRENCH
- CAMP

**CONTOURS**

- CONTOUR INTERVAL 4 DEGREES
- 3 DEGREE
- 4 DEGREES AND HIGHER
- CONTOUR LOW

<b>VOLCANO RESOURCES CORP.</b>			
<b>McKINNON CREEK KEY PROPERTY</b>			
McKINNON CREEK, INDIAN RIVER AREA			
DANBORN MINING DISTRICT, YUKON			
<b>VLF-EM SURVEY</b>			
<b>FRASER FILTERED DATA @ CONTOURS</b>			
DATE	BY	APP'D BY	ISSUED BY
1980	TEG	AT	1980-04
S. H. GARDNER, CONTRACT GEOLOGICAL SERVICES			

7000 E 7100 E 7200 E 7300 E 7400 E 7500 E 7600 E 7700 E 7800 E 7900 E 8000 E 8100 E 8200 E 8300 E 8400 E 8500 E 8600 E 8700 E 8800 E 8900 E 9000 E 9100 E 9200 E 9300 E 9400 E 9500 E 9600 E 9700 E 9800 E 9900 E 10000 E 10100 E 10200 E 10300 E 10400 E 10500 E 10600 E 10700 E 10800 E 10900 E 11000 E 11100 E 11200 E 11300 E 11400 E 11500 E 11600 E 11700 E 11800 E 11900 E 12000 E



INSTRUMENT: MF 1 FLUXGATE MAGNETOMETER  
 1.008 SCALE READINGS  
 ± 10 GAMMA SENSITIVITY  
 SHARPE MANUFACTURED INSTRUMENT  
 DIURNAL VARIATION CORRECTED

**LEGEND**

- PROPERTY BOUNDARY
- SURVEY LINE, STATIONS
- △ BASE STATION
- == ROAD
- ~ CREEK
- CLAIM POST
- SHAFT
- × OLD CABIN
- TRENCH
- ⊙ CAMP

**CONTOURS**

- 100 GAMMA
- CONTOUR LOW



**VOLCANO RESOURCES CORP.**

**McKINNON CREEK KEY PROPERTY**  
 McKINNON CREEK, INDIAN RIVER AREA  
BARBER BIRING DISTRICT, FLORIDA

**MAGNETOMETER SURVEY**

DATE	SITE	REP. NO.	NO.	PROJECT NO.
7-1-80	SEE GP	MC-11	1	215
<small>S. H. BRON, CONTRACT GEOLOGICAL SERVICES</small>				

Exploration Program

The property should be diamond drilled to test the auriferous conglomerates for concentrations of gold along the favourable fault or shear which is followed by McKinnon Creek.

Anomalous magnetic and electromagnetic areas related to the McKinnon conglomerates should be primary drill targets.

A second phase of diamond drilling should be undertaken if the the results of the first phase are encouraging.

Estimate of Costs of Exploration Program

Phase I:

Mobilization & Demobilization	\$ 6,000
Site Preparation	7,500
Diamond Drilling - 1,500 ft NQ @ \$30/ft	45,000
Assaying	4,000
Engineering & Supervision	10,000
Geologist & Helper	7,000
Contingency @ 20%	<u>15,900</u>
TOTAL - PHASE I	\$ 95,400

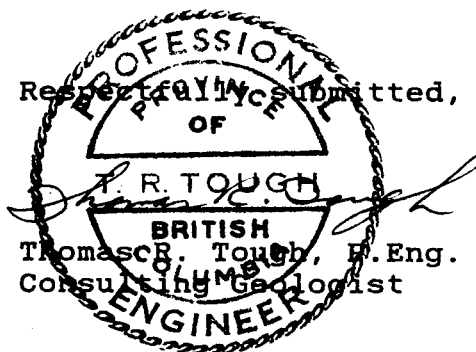
Contingent upon the results of Phase I, a second phase should be undertaken and consist of additional drilling.

Phase II:

Mobilization & Demobilization	\$ 6,000
Site Preparation	7,500
Diamond Drilling - 2,000 ft NQ @ \$30/ft	60,000
Assaying	5,000
Engineering & Supervision	10,000
Geologist & Helper	7,000
Contingency @ 20%	<u>18,900</u>
TOTAL - PHASE II	\$114,400

It is estimated that Phase I should take approximately one and one half months to complete.

February 28, 1987  
Vancouver, B.C.



CERTIFICATE


I, Thomas R. Tough, of the Municipality of Richmond, in the Province of British Columbia, do hereby certify:

That I am a consulting geologist and Principal of T.R. Tough and Associates Ltd. with offices at 500 - 890 West Pender Street, Vancouver, British Columbia, V6C 1J9.

I further certify that:

1. I am a graduate of the University of British Columbia (1965) and hold a B.Sc. degree in Geology.
2. I have been practicing my profession for the past twenty-two years.
3. I am registered with the Association of Professional Engineers of the Province of British Columbia.
4. The information for the accompanying report was compiled from a personal examination of the property on February 6, 1987, and from a study of available government and private reports on the McKinnon Creek area.
5. I have no direct or indirect interest whatsoever in the property described herein, nor in the share capital or securities of Volcano Resources Corp. and do not expect to receive any interest therein.

Dated in Vancouver, B.C., this 28th day of February, 1987.

A circular seal for a Professional Engineer in the Province of British Columbia. The outer ring contains the text "PROFESSIONAL ENGINEER" at the top and "BRITISH COLUMBIA" at the bottom. Inside the ring, it says "PROVINCE OF" above a horizontal line, and "BRITISH COLUMBIA" below another horizontal line. In the center, the name "T. R. TOUGH" is written in a stylized font, with a signature over it. Below the seal, the text "Thomas R. Tough P. Eng. Consulting Geologist" is printed.

Thomas R. Tough P. Eng.  
Consulting Geologist



Bibliography

- Bostock, H.S., 1936; Carmacks District, Yukon; Geol. Survey. Can., Mem. 189
- Bostock, H.S., 1942; Ogilvie, Yukon Territory; G.S.C. Map 711A
- Tully, D.W., P.Eng. 1974; "KIN No. 1-16 Claim Group, McKinnon Creek, Indian River Area, Dawson Mining District, Yukon Territory"
- Armstrong, W.P., 1969; "Geological Report on Mac Group 1-16 for Cominco Ltd."
- Adamson, J.A., 1980; "Drilling Report, Coal License 101, Cyprus Anvil Mining Corporation."
- Lowey, G.Wm., 1984; "The Stratigraphy and Sedimentology of Siliciclastic Rocks, West-Central Yukon, and Their Tectonic Implications" PhD Thesis.