

LOG NO: 1209	RD.
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FILE NO: 87-855-16594	

09/88



**TOURNIGAN MINING EXPLORATIONS LTD.**

**Kena Mineral Claims**  
**Nelson, Mining Division**  
 92F6W (Lat. 49°25' 30" N Long. 117°16' W)  
 82F6W 34" 26"

FILMED

**1987 Drilling Project**

**Owned by ~~Otto and Otakar Janout~~ Charles Pittman**

**Operator Tournigan Mining Explorations Ltd.**

**Work Period August 7 to August 28, 1987**

**Consultant P.T. Black**

**Mineral Resource Management Ltd.**

**GEOLOGICAL BRANCH  
 ASSESSMENT REPORT**

**16,594**

**By: P.T. Black, P. Eng.**

NELSON

87-855-16594

SUB-RECORDER RECEIVED

DEC 01 1987

OCCURRENCE



Province of British Columbia

Ministry of Energy, Mines and Petroleum Resources  
M.R. # \_\_\_\_\_ \$ \_\_\_\_\_  
VANCOUVER, B.C.

ASSESSMENT REPORT  
TITLE PAGE AND SUMMARY

TYPE OF REPORT/SURVEY(S)

DRILLING

TOTAL COST

\$ 78068.00

AUTHOR(S) P.T. BLACK

SIGNATURE(S) P.T. Black

DATE STATEMENT OF EXPLORATION AND DEVELOPMENT FILED September 4, 1987 YEAR OF WORK 1987

PROPERTY NAME(S)

KENA, GOLD MTN

COMMODITIES PRESENT

Au

B.C. MINERAL INVENTORY NUMBER(S), IF KNOWN

82F/SW -

MINING DIVISION

NELSON

NTS

82F/6W

LATITUDE

49° 25' 33"

LONGITUDE

117° 16' 26"

NAMES and NUMBERS of all mineral tenures in good standing (when work was done) that form the property [Examples: TAX 1-4, FIRE 2 (12 units); PHOENIX (Lot 1706); Mineral Lease M 123; Mining or Certified Mining Lease ML 12 (claims involved)]:

GOLD MTN, GOLD MTN 1-3, KENA 7, 19

OWNER(S)

(1)

Charles Pittman

(2)

MAILING ADDRESS

1424 Cedar St,  
NELSON, B.C. V1L 2E9

OPERATOR(S) (that is, Company paying for the work)

(1) TOURNIGAN MINING EXPLORATIONS LTD (2)

MAILING ADDRESS

306-535 THURLOW ST  
VANCOUVER BC V6E 3L2

SUMMARY GEOLOGY (lithology, age, structure, alteration, mineralization, size, and attitude):

The claims appear to be underlain by andesitic tuffs, breccias and flows and Silver King Porphyry.

REFERENCES TO PREVIOUS WORK

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## INTRODUCTION

In 1987 Tournigan Mining Explorations, under an option agreement with the owners, conducted a diamond drilling program on the Kena mineral claims. The field program began on August 7 and was completed by August 28, 1987.

During this period an aggregate of 918:93m (3014.86 feet) of drilling was done at seven sites.

The project was undertaken to test certain locations for possible significant gold mineralization. This drill project brings the total drill metrage on the property to approximately 5182m.

This report is submitted in fulfillment of assessment work as registered on the Kena Property dated September 4, 1987.

## Location and Access

The Kena property in southeastern B.C. is in the 82/F/6 W quadrangle, and is seven km south of the City of Nelson. It is situated on the east flank of Toad Mountain, with easterly flowing Gold Creek marking the north boundry (Figure 2).

Access is good, consisting of ten km of logging roads which departs from Highway 6 south of Nelson about 1 km north of Cottonwood Lake.

## Physiography

The terrain is generally rugged with the main area of interest situated on a bench at 1500m elevation. Vegetation is generally thick with forests of hemlock, cedar, and areas of dense undergrowth.

**Mineral Title**

The Kena property consists of 50 2-post, located claims and fractions. All are owned by Otakar and Otto Janout of White Rock, B.C., and are subject to an option agreement with Tournigan Mining Explorations Ltd. 1987.

<b><u>Claim Name</u></b>	<b><u>Record No.</u></b>	<b><u>No. of Units</u></b>	<b><u>Expiry Date</u></b>
KENA 7	15329	1	Nov 1995
KENA 18	15645	1	Nov 1991
KENA 19	15646	1	Nov 1993
KENA 20	15647	1	Nov 1991
KENA 21	15648	1	Nov 1991
KENA 22	15649	1	Nov 1991
KENA 23	15650	1	Nov 1991
KENA 24	15651	1	Nov 1991
KENA 25	15652	1	Nov 1991
MAC 1	1250	20	Sept 1991
GOLD MTN	1028	1	May 1991
GOLD MTN 1	1027	1	May 1991
GOLD MTN 2	1029	1	May 1991
GOLD MTN 3	1030	1	May 1991
GOLD MTN 9 Fr	1049	1	May 1991
GOLD MTN 6	1050	1	May 1991
GOLD MTN 7	1051	1	May 1991
GOLD MTN 8	1052	1	May 1991
LINDE 1	3867	1	May 1991
LINDE 2	3868	1	Aug 1990
KENO	3545	9	Nov 1991
KENA Fr	4014	1	Feb 1991
MAC Fr	3891	1	Sep 1990

**History**

The first mention of mineralization on the Kena claims is a description of the old "Cottonwood Mine" by G.M. Dawson in the 1888-1889 G.S.C. Annual Report. These consist of a number of trenches and short adits around the Main Showing on the Kena 7 claim.

The Kena property was originally staked by the Janouts in 1973. Ducanex Resources (a predecessor Lacana company) in 1974 and 1975 conducted soil geochemistry, mapping and percussion drilling over the Kena 7 claim.

From 1975 to 1981, several companies, including Quintana and Shell, worked the claims, concentrating on a large zone of low-grade copper on the southern part of the property, carrying out mapping and geophysical surveys.

Kerr Addison tested both the gold and copper zones with diamond drilling in 1981. Three holes in the area of the main showing on Kena 7 yielded low but interesting Au values.

Canadian Minerals Joint Venture (1980), with Lacana as operator, acquired the property in late 1984 and carried out a small cat trenching programme and completed a helicopter-borne Dighem III survey over the property.

In 1985 Lacana followed up with trenching and diamond drilling. Fourteen trenches totalling over 1000m were put in, which showed the presence of a large (100 ppb) Au lithogeochem anomaly around the Main showing. This anomaly extends for over 500m along strike and is up to 100m in width.

Twelve diamond drill holes totally 1,226.7m were put in on this anomaly around the main showing. A number of sub-economic but very interesting intersections were obtained, mostly around the Main Showing. A thirteenth hole, drilled a gold in-soil anomaly on the copper zone, did not encounter anomalous Au values.

### Drilling Program

Core drilling was done under contract by Beaupre Diamond Drilling of Princeton, B.C. This company had performed two previous drill programs on the Kena Property and were familiar with access and field conditions. Core recovery averaged in excess of 95% and since all holes were relatively short, no down hole dip-angle tests were taken.

Drill hole sites are shown on Figures 3 and 4, which figures are located on Figure 2. Collar coordinates are tied into the previous Lacana survey grid. Drill hole logs are included in Appendix 1.

It was found that collar elevations were not available from previous drill logs and it was necessary to re-survey all drill sites to establish relative elevations. The survey was undertaken by Intermountain Engineering and Surveying, Box 10 Nelson, B.C. The assumed elevation of 1000m was converted to sea level base level by topographic contours as shown on the Nelson Topographic Map 82F6W, scale 1:50,000.

Drill holes TK-87-45, 46, 47 were located just north of the north border of the Lacana survey grid and were tied in by compass and hip-chain survey. Since this compass traverse closed to within a few metres of the start point on the grid it was taken to be of sufficient accuracy for collar locations.

All collars were marked by identity posts and drill core is stored in racks beside the core shack on the property.

Access drill roads from the main access road followed old logging roads requiring only brushing out using the contractor's bulldozer. All drill sites were leveled and seeded.

A total of 89 split core sample for an aggregate length of 134.61m were analysed from Gold (PPB), silver (PPM) and copper PPM at the Bondar Clegg Laboratories in North Vancouver, B.C. Copies of geochemical lab reports are included in appendix 2.

### **Purpose and Results**

Drill hole TK-87-42 was located between previous holes KK-81-12 and LK-85-12 in order to cross a soil geochemistry anomalous for gold and copper (Figure 3) and where there appeared to be a gap in the drill coverage. An intersection from 85.04 to 94.76 (9.72m) averaging about 1750PPM Cu in the only relatively significant copper zone. The highest gold content at 730PPB, (0.02 oz Au/ton) was located above the highest copper from 68.21 to 69.71 (1.5m). It was concluded that the geochemical zone did not reflect economic grades for gold or copper.

The locations of holes TK-87-43 through to TK-87-47 are shown on Figure 4 covering the north part of the Lacana grid.

TK-87-43 was drilled vertically to test geological interpretations as shown on Section 48+50N drill hole geology and mineralization Kena project Nov. 1985 of the Lacana report.

The highest gold content sections in drill hole TK-87-43 are as follow:

<u>From</u>	<u>To</u>	<u>Length</u>	<u>Au/PPB</u>	<u>Au/oz/ton</u>
18.93	20.43	1.5	1300	.04
20.43	21.93	1.5	1450	.04
102.52	104.02	1.5	1750	.05
117.2	119.2	2.0	1700	.05
125.96	127.46	1.5	1500	.04

These grades suggest continuation in depth of narrow zones intercepted in hole LK-85-14 of the 1985 Lacana drilling program.

The next four drill holes TK-84-44 to and including TK-87-47 were located to intersect a possible southerly extension of a mineralized fracture zone approximately 500m north of the property industry.

No structure or mineralized fracture zone was recognized which could be integrated as the southerly continuation.

The increasing abundance of Silver King Porphyry to the northwest, notably in hole TK-87-47, was accompanied by related silicification and possibly epidote alteration of the auesitic flows. There did not appear to an increase in gold content related to abundance of Silver King Porphyry, however this may be due to sample selection.



STATEMENT OF COSTS

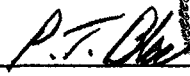
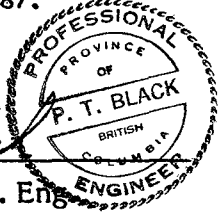
Drilling (Beaupre Drilling Ltd.)	\$ 55,729
Analyser (Bondar Clegg)	1,079
Labour	
Dennis Currie	1,460
Otto Janout	1,995
Geological Supervision	11,200
Travel, lodging, board (3 persons)	4,667
Field Supplies (Core Rocks etc.)	988
Vehicle rental	<u>950</u>
	<u>\$ 78,068</u>

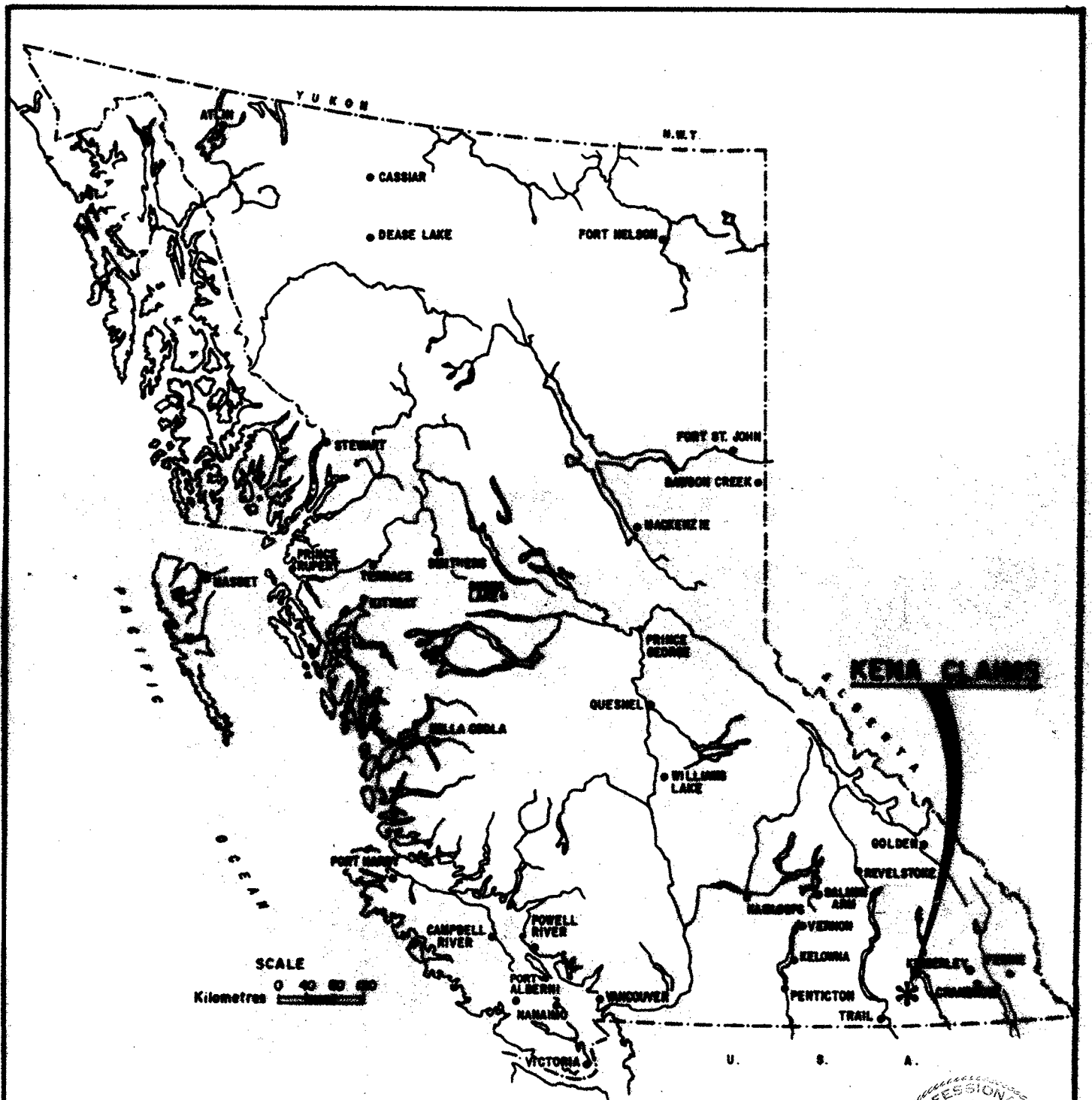
STATEMENT OF QUALIFICATIONS

I, Philip T. Black, of the City of Richmond, Province of British Columbia hereby certify as follows:

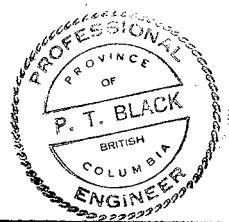
1. I am a consulting geologist with an office in Suite 507, 470 Granville Street, Vancouver, British Columbia.
2. I am a registered Professional Engineer in the Province of British Columbia (4533).
3. I have graduated with a B.Sc. (Honors Geology), M. Sc. Geology and Ph. D. Geology McGill University, 1954).
4. I have practiced my profession continuously for thirty-five years, mainly in Canada.
5. I supervised the drilling program in the Kena Property on behalf of Tournigan Mining Exploration Ltd. during the period August 7 to August 28, 1987.
6. I am the author of this report.
7. The statement of costs were supplied by Tournigan Mining Explorations Ltd.

Dated at Vancouver, B.C. this 30 day of November, 1987.

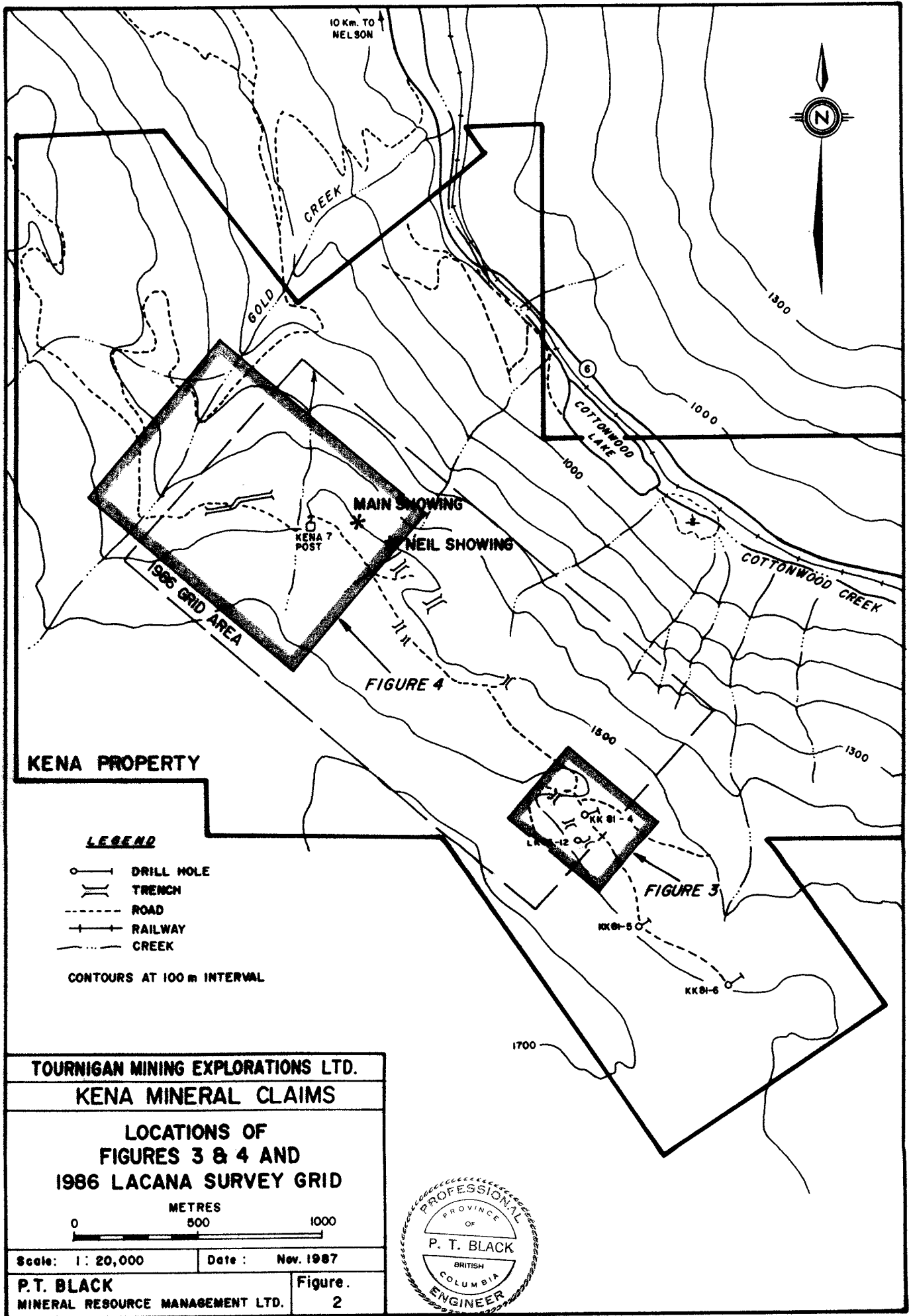
  
  
P.T. Black, Ph.D., P. Eng  
P.T. Black Mineral Resource  
Management Ltd.

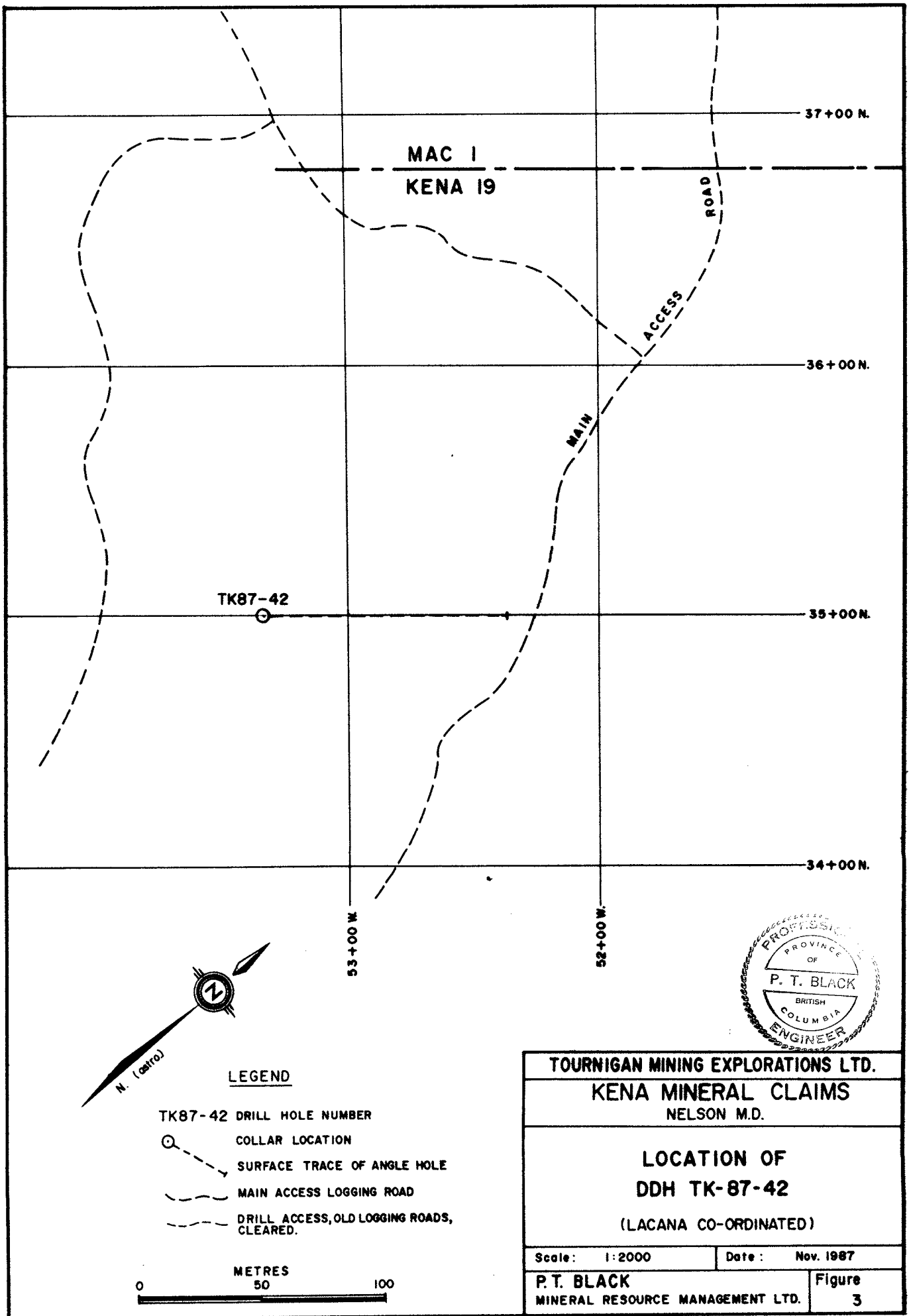


SCALE  
 0 40 80 120  
 Kilometres



<b>TOURNIGAN MINING EXPLORATIONS LTD.</b>	
<b>KENA MINERAL CLAIMS</b> NELSON M.D.	
<b>GENERAL LOCATION</b>	
NTS. 82 F 6	
Scale: 1:8,000,000	Date: Nov. 1987
<b>P. T. BLACK</b> MINERAL RESOURCE MANAGEMENT LTD.	Figure 1





MAC 1  
KENA 19

37+00 N.

36+00 N.

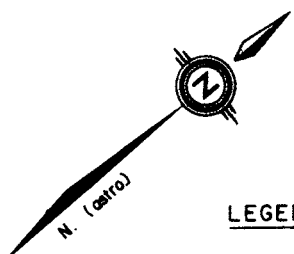
35+00 N.

34+00 N.

53+00 W.

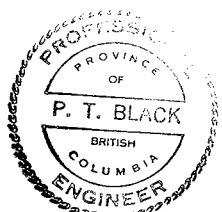
52+00 W.

TK87-42



**LEGEND**

- TK87-42 DRILL HOLE NUMBER
- COLLAR LOCATION
- SURFACE TRACE OF ANGLE HOLE
- MAIN ACCESS LOGGING ROAD
- DRILL ACCESS, OLD LOGGING ROADS, CLEARED.



<b>TOURNIGAN MINING EXPLORATIONS LTD.</b>	
<b>KENA MINERAL CLAIMS</b>	
NELSON M.D.	
 <b>LOCATION OF</b> <b>DDH TK-87-42</b>  (LACANA CO-ORDINATED)	
Scale: 1:2000	Date: Nov. 1987
<b>P. T. BLACK</b> MINERAL RESOURCE MANAGEMENT LTD.	Figure <b>3</b>



**Appendix 1**

**Diamond Drill Hole Logs**

**TK87-42, 43, 44, 45, 46, 47**

CLAIM NO.....

**DIAMOND DRILL RECORD**

PROPERTY KENA (NELSON M.D.)

HOLE NO TK-87-42  
Page 1 OF 2

LATITUDE 35+00N (LACANA GRID) ELEVATION 1552.69(ASL) BEARING 040 DEPTH 168.86 STARTED August 13, 1987 COMPLETED August 15, 1987

DEPARTURE 53+38W (82/F/6-W) CORE SECTION NO DIP 45 DRILLED BY BEAUPRE LOGGED BY P. T. BLACK

DEPTH METRES	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	PPB		PPM ASSAYS PPM	
						Au	Ag	Cu	
0/ 6.4	CASING								
6.4/11.05	TUFF DK GREY FINE BANDED REGULAR C/A 20 - very sparse Py Carb. stringers c/a 20-40, .5m apart. Oxidized to 10.15 m								
11.05/13.6	TUFF BRECCIA COARSE (CRACKE BRECCIA?) LIGHT GREY SILICIFIED Mottled qtz section cut by carb 12.6-13.6, 3% Py diss.	5611	19.8	21.3	1.5	35	0.2	164	
13.6/16.87	DK GREY TUFF THICK BANDS C/A 70 TURBIDITY FEATURES 14.8 - 16.87 FINE BANDING NOTE: COARSE TO FINE BEDDING GRADATION Up to 2.5 mm PY - 5% Disse. and lenses Lesser Py in fine banding	5612	25.02	26.52	1.0	300	0.4	295	
16.87/24.71	AGGLOMERATE-ANDESITIC VARIABLE DK GREY - Py -5% dissem. and assoc. with qtz At 18.12 ladder vein of chlorite and qtz C/A 20	5613	31.7	33.2	1.5	65	0.4	615	
24.71/26.90	RHYOLITIC BRECCIA LIGHT GREY CLASTS UP TO 4 cm SLIGHT CHLO- RITE-at 26.3 ladder vein C/A .35 at 25.18 cm qtz C/A Py less than 1.0%	5614	44.56	46.6	2.04	80	0.3	406	
26.90/34.5	24.71-25.41 layering grading to coarse clasts AGGLOMERATE MED GREY some sections of breccia Py 6% vari- ably scattered and a few coarse clots	5615	48.63	50.13	1.5	80	0.2	210	
34.5/35.6	ANDESITE TUFF MASSIVE evenly dissem Py-8%	5616	50.13	51.63	1.5	110	0.3	210	
35.6/48.64	COARSE TUFF DK GREY Py -5% coarse clusters	5617	51.63	53.13	1.5	130	0.3	240	
		5618	53.13	55.01	1.88	95	0.2	230	
48.64/54.91	TUFF BRECCIA LIGHT GREY Py-3-6% even dissem 2 qtz stringers with border Py	40526	60.71	62.21	1.5	220	0.6	870	
		40527	62.21	63.71	1.5	150	0.5	745	
54.91/60.71	DK GREY TUFF - ABUNDANT CARB STRINGERS Py-3% mainly in stringers	40528	63.71	65.21	1.5	120	0.4	405	
		40529	65.21	66.71	1.5	300	0.6	830	
		40530	66.71	68.21	1.5	280	0.5	545	

CLAIM NO. ....

**DIAMOND DRILL RECORD**

PROPERTY KENA (NELSON M.D.)

HOLE NO. TK-87-42

Page 2 OF 2

LATITUDE 35+00N (LACANA GRID) ELEVATION 1552.69 (ASL) BEARING 040 DEPTH 168.86 STARTED August 13, 1987 COMPLETED August 15, 1987

DEPARTURE 53+38W (82/F/6-W) CORE SECTION NQ DIP 45 DRILLED BY BEAUPRE LOGGED BY P.T. BLACK

DEPTH METRES	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	PPM ASSAYS PPM		
						Au	Ag	Cu
60.71/74.15	MOTTLED LIGHT GREY TUFF BRECCIA SECTIONS 66.91-71.19 Py 3% in patches and stringers							
	DARK MASSIVE SECTIONS 61.88-63.21, 72.87-73.50	40531	68.21	69.71	1.5	730	0.7	240
74.15/80.17	MOD. BANDED TUFF LIGHT GREY SIMILAR TO ABOVE 75.97-76.40 slightly magnetic	40532	69.71	71.21	1.5	240	0.8	950
80.17/87.88	RHYOLITE BRECCIA, SILICIFIED 81.47/87.88 PALE GREY Py irregular - 3% chalco sparse Mos2 at 87.40	40533	71.21	72.71	1.5	220	0.8	990
87.88/110.28	DK GREY TUFF ANDESITIC POORLY BANDED C/A 70 chalco - small blebs up to 85.00 Py 1%	40534	72.71	74.15	1.44	140	0.5	465
110.28/114.84	FINE BANDED DK GREY TUFF C/A 80 Py greater than 1%	40535	83.54	85.04	1.5	110	0.8	870
114.84/120.69	DK GREY ANDESITE TUFF PARTLY MASSIVE	40536		85.04	1.5	130	1.4	1050
		40537		88.09	1.5	170	1.5	1550
		40538		89.59	1.5	150	1.2	1650
120.09/129.34	MED GREY ANDESITE GRADATIONAL TO ABOVE TUFF at 125.9 -5% Py in stringers at 126.98-10% Py for 15 cm	40539		91.09	1.5	220	2.6	2600
129.34/129.98	TRAP DYKE CHILLED BORDERS SHARP CNTCTS C/A 60 central part distinctly grey mottled (poikilitic?)	40540	93.26	94.76	1.5	150	1.2	1950
129.98/132.38	DK GREY TUFF MODERATE BANDING Py 10% at 129.89							
132.38/134.59	MED GREY SILICIFIED BRECCIA Py 10% at 133.69	40541	158.21	159.71	1.5	45	0.6	850
134.59/138.68	FINE BANDED TUFF MED. GREY Py greater than 1%	40542	166.86	168.06	2.0	160	1.4	2800
138.68/155.17	DK AND MED GREY BANDED TUFF Py greater than 2%							
155.17/168.86	LIGHT GREY RHYOLITE MASSIVE SILICIFIED spotted texture 158.81-162.31, dk grey 163.66-167.37, coarse breccia 167.37-167.87							
	168.86 END OF HOLE							



CLAIM NO. ....

**DIAMOND DRILL RECORD**

PROPERTY KENA (NELSON M.D.)

HOLE NO. TK-87-43

1 OF 3

LATITUDE 48+55N (LACANA GRID) ELEVATION 1478.97 (ASL) BEARING N/A DEPTH 139.6 STARTED August 16, 1987 COMPLETED August 17, 1987

DEPARTURE 49+75W (82/F/6-W)

CORE SECTION NQ

DIP VERT

DRILLED BY BEAUPRE

LOGGED BY P. T. BEACK

DEPTH METRES	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	PPB		PPM	
						Al	Ag	As	SPM
0-3.65	CASING								
3.65/11.43	SILVER KING PORPHYRY-OXIDIZED SURFACE WEATHERING	40550	11.43	12.93	1.5	360	0.6	168	
11.43/15.64	DK. GREY TUFF IN PAT X TAL TUFF WELL BANDED C/A 55	40551		14.43	1.5	380	0.9	325	
15.64/20.37	LIGHT GREY TUFF-POORLY BANDED SEMI-MASSIVE-MAYBE SK PORP.	40552		15.93	1.5	360	0.6	75	
20.37/29.42	DK. GREY ANDESITE FLOW	40553		17.43	1.5	440	0.5	69	
29.42/30.04	BANDED DK. GREY TUFF C/A 40	40554		18.93	1.5	800	1.3	285	
30.04/33.95	DK. GREY ANDESITE - MASSIVE	40555		20.43	1.5	1300	1.2	655	
33.95/37.95	MED. GREY TUFF- BANDED AND FRACTURED CALCITE STRINGERS, PY. 1-2%	40556		21.93	1.5	1450	3.3	615	
37.95/41.69	STRONGLY SILICIFIED BRECCIA, Py IN BANDS AND DISSEMINATED C/A 35 AVERAGE 5%	40557		22.43	1.5	320	0.9	205	
41.69/47.28	DK. GREY TUFF- BANDED C/A 30-45 Py 2%, COULD BE A DRAGFOLD	40558		23.93	1.5	820	1.6	645	
47.28/49.43	MED. GREEN GREY FLOW (ANDESITE) CARBONATE BRECCIA ZONE AT 48.83 1% PY SUB PARALLEL TO CORE AXIS 5CM THICK								
49.43/55.97	MED. GREY MASSIVE FLOW Py 2%	40565	37.95	39.45	1.5	440	0.9	295	
55.97/70.68	DK. GREEN GREY BANDED TUFF, C/A 30-40 PATCHES OF EPIDOTE CHALCO @ 57.8	40566		40.95	1.5	920	1.6	765	
70.68/73.54	LIGHT GREY MASSIVE FLOW Py 2%	40567		42.45	1.5	580	1.2	182	
73.54/86.53	MED. GREY MASSIVE TUFF OR FLOW C/A 30 @ 82.1								
86.53/109.55	LIGHT TO MED. GREY MASSIVE FLOW A FINE QTZ. CARB. VEINS WITH 3% PY FROM 80.19 to 86.53 BORDERING Py C/A 30	40568		43.95	1.5	160	0.6	325	
109.55/112.0	LIGHT GREY PORPHYRITIC XTAL TUFF SHEARED C/A 45	40569	50.38	51.88	1.5	480	1.2	740	
112.0/117.2	DK. GREY ANDESITE - VAGUE BANDING PATCHES OF COARSE PY	40570		53.38	1.5	380	0.9	505	

ESTERN MINER PRESS LTD.  
STANDARD FORM NO. 502

CLAIM NO. ....

**DIAMOND DRILL RECORD**

PROPERTY KENA (NELSON M.D)

HOLE NO. TK-87-43

2 OF 3

LATITUDE 48+55N (LACANA GRID)

ELEVATION 1478.97

BEARING N/A

DEPTH 139.6

STARTED August 16, 1987 COMPLETED August 17, 1987

DEPARTURE 49+75W (82/F/6-W)

CORE SECTION NQ

DIP VERT

DRILLED BY BEAUPRE

LOGGED BY P. T. BLACK

DEPTH METRES	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAYS PPM		
						PPB Au	PPM Ag	PPM Cu
117.2/119.44	LIGHT GREY SILICIFIED ANDESITE (?) A FEW VEINS OF 100% Py							
119.44/125.55	DK. GREY ANDESITE - BANDED SEPARATED BY MASSIVE SECTIONS OR THICK BANDS	40571	57.3	58.8	1.5	400	1.3	600
	AT 127-30CM MASSIVE Py AND QTZ C/A 45							
	AT 125.55-15CM BANDED QTZ AND Py	40572	58.8	60.3	1.5	760	1.3	290
125.55/139.6	MED GREY ANDESITE MASSIVE, 2% Py WITH 6% WITH QTZ VEINS							
		40573	80.19	81.69	1.5	500	1.4	675
139.6	END OF HOLE							
		40574	85.03	86.53	1.5	840	1.2	520
		40575	96.01	97.51	1.5	380	1.3	605
		40576	102.52	104.02	1.5	1750	1.5	645
		40577		105.52	1.5	940	1.0	375
		40578	112.0	113.5	1.5	1150	2.0	645
		40579	115.7	117.2	1.5	800	2.0	1150
		40580		119.2	2.0	1700	2.2	625

CLAIM NO. ....

# DIAMOND DRILL RECORD

PROPERTY KENA (NELSON M.D)

HOLE NO TK-87-43  
3 OF 3

LATITUDE 48+55N (LACANA GRID)

ELEVATION 1478.97

BEARING N/A

DEPTH 139.6

STARTED August 16, 1987 COMPLETED August 17, 1987

DEPARTURE 49+75W (82/F/6-W)

CORE SECTION NQ

DIP VERT

DRILLED BY BEAUPRE

LOGGED BY P. T. BLACK

DEPTH METRES	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	PPB	PPM	ASSAY	PPM
						Au	Ag	Cu	Cu
		40581	125.96	127.46	1.5	1500	7.4	880	
		40582	128.85	130.35	1.5	540	2.7	460	
		40583		131.85	1.5	1000	4.0	720	
		40584	131.85	132.35	1.5	360	4.0	330	
		40585	138.1	139.6	1.5	820	0.6	395	

ESTERN MINER PRESS LTD.  
STANDARD FORM NO. 902

CLAIM NO. ....

**DIAMOND DRILL RECORD**

PROPERTY KENA (NELSON M.D.)

HOLE NOTK-87-44

1 OF 2

LATITUDE 53 + 12N (LACANA GRID) ELEVATION 1466.7 (ASL) BEARING 070 DEPTH 153.6 STARTED August 18, 1987 COMPLETED August 20, 1987

DEPARTURE 53.07 W (82/F/6-W)

CORE SECTION N.Q.

DIP -45

DRILLED BY BEAUPRE

LOGGED BY P. T.

BLACK

DEPTH METRES	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	PPM ASSAY		
						Au	Ag	Cu
0-2.74	CASING							
2.74/15.59	GREEN ANDESITE TUFF - irregular banding average 2 cm thick C/A 60 at 8.4 purple calcite stringers cut jointing - NON MAGNETIC	40543	10.89	11.94	1.5	240	1.3	166
15.59/36.97	COARSE CRYSTAL TUFF - banded dark grey - Darker bands magnetic from 19.5 to 22.4 (well banded) darker color due to biotite and magnetite	40544	19.5	21.0	1.5	20	0.5	139
36.97/56.70	DK GREY COARSE PYROCLASTIC - andesitic, variable minor chlorite clay alteration buff coloured to CO <sub>2</sub> veins at 38.3 42.80-43.66 - 5% coarse Py 55.95-56.20 - carbonate zone.	40545	37.79	39.29	1.5	60	0.9	101
56.70/77.00	GREEN - DK GREY TUFF - andesitic vaguely banded mottled light green patches weak CO <sub>2</sub> 67.16-69.41, 73.66-73.86 74.87-75.27 magnetic from 71.67 to 72.00	40546	42.80	43.60	0.8	25	0.8	157
77.00/81.15	MASSIVE COARSE PYROCLASTIC - andesitic with sections mottled	40547	55.05	56.20	1.15	160	2.4	255
81.15/93.43	ANDESITE FLOW - epidote alteration of carb fragments							
93.43/109.05	MOTTLED GREEN COARSE PYROCLASTIC	40548	71.57	73.57	2.0	130	0.8	152
109.05/125.78	SILVER KING PORPHYRY - contact C/A60 - broken appears to be discomformable intrusive White feldspar phenocrysts borders merge with matrix	40549	132.64	133.74	1.1	340	1.5	95
125.78/132.64	ANDESITE FLOW - epidote alteration							
132.64/133.80	SILICIFIED TUFF - light grey							
133.80/134.60	GREEN CHLORITIC TUFF							
134.60/135.23	LIGHT GREY TUFF							

CLAIM NO. ....

**DIAMOND DRILL RECORD**

PROPERTY KENA ( NELSON M.D. )

HOLE NOTK-87-44

2 OF 2

LATITUDE 53+12N (LACANA GRID)

ELEVATION 1466.7 (ASL)

BEARING 070

DEPTH 153.6

STARTED August 8, 1987

COMPLETED August 20, 1987

DEPARTURE 53.07 W(82/F/6-W)

CORE SECTION

N.O.

DIP -45

DRILLED BY BEAUPRE

LOGGED BY P. T. BLACK

DEPTH METRES	FORMATION 40543-49	SAMPLE NO.	FROM	TO	WIDTH	PPB ASSAYS		PPM
						Au	Ag	
135.23/141.10	GREEN ANDESITE TUFF - with patchy epidote							
141.10/145.12	MED. GREY BANDED TUFF							
145.12/145.98	SILVER KING PORPHYRY - appears to be conformable with <sup>YR</sup> popo-clostics							
145.98/153.60	DK GREY TUFF - thinly banded C/A 55 - probably ash flow at 153.02 - black lamprophyre dyke .15m thick cntct C/A 045 cuts bedding at 10° degree angle.							
	153.6 END OF HOLE							

ESTERN MINER PRESS LTD.  
STANDARD FORM NO. 502

CLAIM NO.....

## DIAMOND DRILL RECORD

PROPERTY KENA (NELSON M.D.)

HOLE NO. TK-87-45

LATITUDE 53+87N (LACANA GRID)

ELEVATION 1418.01 ASL BEARING 040

DEPTH 153.0

STARTED August 20, 1987

COMPLETED August 22, 1987

DEPARTURE 50+48W (82/F/6-W)

SECTION

DIP -45

DRILLED BY BEAUPRE

LOGGED BY

P. T. BLACK

DEPTH METRES	FORMATION 50486-90	SAMPLE NO.	FROM	TO	WIDTH	PPB	PPM	ASSAYS PPM
						Au	Ag	Cu
0-7.62	Casing							
7.62-18.73	DK GREY TUFF - andesitic banded C/A70 10.4-12.47 - 2-3% Py fine grained disseminated 12.47-13.37 - greenish grey thinly banded 13.37-18.02 - magnetic in darker bands - due to magnetite 17.23-18.73 - qtz-carb veins - no conc. of Py	40586	10.4	12.4	2.0	200	0.2	143
18.73-39.63	MED GREY BANDED TUFF - fine grained C/A 80 magnetic - especially in darker bands 27.43-.5m greenish cast (chloritic) 34.36-37.8 - epidote in twisted stringers and veins- on spec of malachite 39.23-39.63 - very thinly banded - light buff	40587	17.23	18.73	1.5	130	0.4	215
39.63-55.02	CRYSTAL TUFF (S.K. PORP?)-med grey white clasts of feldspar 43.89 - twisted veins but by a few qtz veins Lower cntct grades into tuff	40588	65.96	67.46	1.5	480	4.1	580
55.02-105.95	DARK GREY ANDESITE TUFF - fine to moderate banding C/A 80, Py less than 1% at 65.96, 67.46 - qtz vein with Py From 74.1-74.73 - light grey, at 80.92-40cm of 5% Py at 82.53 -40cm of black ash bed, swells in water, highly magnetic 91.15 to 92.65 - 2% Py along qtz veins sub parallel to core 97.75 to 105.95- chloritic with patches of epidote	40589	91.15	92.85	1.7	40	0.2	152
105.95-110.94	MED GREY BANDED TUFF - a few 1 cm seams of Py 110.0-110.94 light grey banded C/A 80	40590	106.17	107.67	1.5	240	3.2	635
110.94-120.04	DR GREEN GREY COARSE TUFF - thick bands have weaker epidote alteration							
120.04-124.5	MASSIVE ANDESITE - grading downwards to thick banding, epidote alteration							
124.5-135.13	MED GREY TUFF - finely banded							
135.13-153	DK GREEN GREY COARSE TUFF- grading to moderate banding at 136. 143-144.27 light grey to buff - thickly banded							
	END OF HOLE 153.0							

WESTERN MINER PRESS LTD.  
STANDARD FORM NO. 502

CLAIM NO.....

## DIAMOND DRILL RECORD

PROPERTY KENA (NELSON M.D.).....

HOLE NO. TR-87-46...

LATITUDE 54+24N (LACANA GRID) ELEVATION 1418.01 ASL BEARING 040 DEPTH 126.18 STARTED August 23, 1987 COMPLETED August 24, 1987

DEPARTURE 51+40W (82/F/6-W) SECTION ..... DIP 45 DRILLED BY BEAUPRE LOGGED BY P.T. BLACK

DEPTH METRES	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	PPB	PPM	ASSAYS PPM	
						Au	Ag	Cu	d
0-11.27	CASING								
11.27-22.65	CRYSTAL TUFF (SILVER KING PORPHYRY) light grey with feldspar clasts 20.5 - 2 cm massive pyrite band in non crystal section of 10 cm CA 75	40592	21.82	23.32	1.5	380	1.2	176	
22.65-90.05	COARSE ANDESITE TUFF - greenish dark grey chlorite epidote alteration moderately banded 24.88 to 26.95 - light grey massive silicified 3% Py dis- minated	40591	25.02	26.52	1.5	300	1.3	26	
	28.25 to 29.75 - banded and silicified a few lenses of Py 38.75 to 10 cm massive epidote cut by calcite stringer	40593	28.25	29.75	1.5	260	0.3	150	
	44.2 to 13 cm buff silicification CA 40 64.16 to 65.51 - silicified - 2% Py	40594	64.16	65.56	1.5	1650	0.7	220	
90.05-96.67	ANDESITE TUFF - well banded dark grey CA 70	40595	98.12	99.62	1.5	110	0.4	80	
96.67-101.44	RHYOLITIC TUFF-well banded grey-may be border of xtal tuff	40596		101.12	1.5	320	1.4	194	
101.44-104.54	SILICIFIED TUFF-light grey Py less than 2%								
104.54-118.04	ANDESITE TUFF - dark grey banded CA 70 105.39 to 107.34 - white qtz vein parallel to core - a few specs. of chalcop White quartz cuts mottled grey quartz vein	40597	101.44	102.94	1.5	80	0.4	33	
118.04-124.9	RHYOLITIC TUFF - light grey banded	40598	105.84	107.34	1.5	1050	1.7	90	
124.9-126.18	CRYSTAL TUFF - less than 10% clasts	40599	124.68	126.18	1.5	10	0.3	142	
	END OF HOLE 126.18								

CLAIM NO. ....

**DIAMOND DRILL RECORD**

PROPERTY KENA (NELSON M.D.) .....

HOLE NO. TK-87-47 .....

LATITUDE 54+78N (LACANA GRID)

ELEVATION 1418.01 ASL

BEARING 070

DEPTH 177.69

STARTED August 25, 1987

COMPLETED August 27, 1987

DEPARTURE 52.87N (82/F/6-W)

SECTION

DIP 45

DRILLED BY BEAUPRE

LOGGED BY

P.T. BLACK

DEPTH METRES	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY PPM		
						PPB Au	PPM Ag	PPM Cu
0-4.9	CASING	40600	6.7	8.2	1.5	10	0.7	103
4.9-30.5	MASSIVE RHYOLITE FLOW - light grey-highly silicious but not silicified, a few carb veins -weak chloritic alteration, Py 5% evenly disseminated							
	4.9 to 16.45 oxidation along fractures	40126	19.5	21.0	1.5	25	0.7	200
30.5-57.6	28.05 to 30.5 - becoming banded ANDESITE FLOW-med greenish grey-moderate epidote CA50							
57.6-83.51	45.68 to 47.18-banded CA55 Py 3% BANDED ANDESITE -dark greenish grey thick bands-non magnetic	40127	19.0	30.5	1.5	15	0.6	165
	74.93 to 80.46- coarse clasts of epidote and chlorite							
83.51-88.80	CRYSTAL TUFF (SILVER KING PORPHYRY?) dark grey variably porphyritic slightly magnetic-probably top of S.K. porphyry	40128		32.0	1.5	20	0.6	126
88.80-145.5	SILVER KING PORPHYRY (XTAL TUFF) variable med to light grey Phenocrysts or clasts are white feldspar with re-sorbed margins, some section slightly chloritic, sections of crowded phenocrysts usually contains licotite.	40129	45.68	47.18	1.5	190	0.9	174
	Less porphyritic sections are: 91.18 to 92.53, 93.85 to 96.07, 99.40 to 99.48, 103.21 to 104.75, 116.02 to 120.34, 122.37 to 123.17, 140.57 to 141.43 and 144.80 to 145.5							
145.5-156.05	ANDESITE TUFF - dark greenish grey CA 60, Py 5%	40130	88.0	89.5	1.5	30	0.2	37
156.05-158.80	SILVER KING PORPHYRY							
158.80-164.59	ANDESITE TUFF-dark greenish grey CA 60, Py 5% 159.17 to 160.67 strong epidote alteration	40131	97.7	99.2	1.5	130	0.3	4
164.59-177.69	SILVER KING PORPHYRY 166.15 to 166.75-non porphyritic CA 45	40132	112.5	114.0	1.5	130	0.3	10
		40133	122.48	123.98	1.5	1200	1.3	34
	END OF HOLE 177.69	40134	136.78	138.28	1.5	220	0.7	50
		40135	151.53	153.03	1.5	200	0.6	185
		40136	158.8	160.3	1.5	560	1.3	370
		40137	161.42	162.92	1.5	720	0.7	220





**Appendix 2**

**Geochemical Lab Report**

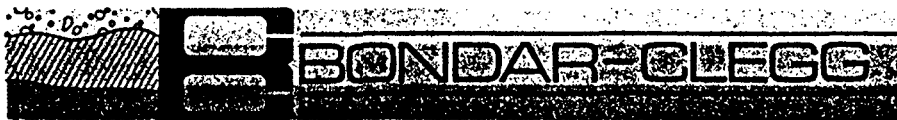
**Bondar Clegg  
130 Pemberton Avenue  
North Vancouver, B.C. V7P 2R5**

**Sample Numbers**

**5611 to 5618 inclusive  
40526 to 40558 inclusive  
40565 to 40600 inclusive  
40126 to 40137 inclusive**

**Total 89 Samples**

ondar-Clegg & Company Ltd.  
 130 Pemberton Ave.  
 North Vancouver, B.C.  
 Canada V7P 2R5  
 Phone: (604) 963-0681  
 Telex: 04-352667



Geochemical  
 Lab Report

REPORT: 127-6867 ( COMPLETE )

REFERENCE INFO:

CLIENT: TOURNIGAN MINING & EXPLORATION LTD.  
 PROJECT: NONE GIVEN

SUBMITTED BY: UNKNOWN  
 DATE PRINTED: 17-SEP-87

ORDER	ELEMENT	NUMBER OF ANALYSES	LOWER DETECTION LIMIT	EXTRACTION	METHOD
1	Cu Copper	47	1 PPM	HN03-HCL HOT EXTR	Atomic Absorption
2	Ag Silver	47	0.1 PPM	HN03-HCL HOT EXTR	Atomic Absorption
3	Au Gold - Fire Assay	47	5 PPB	FIRE-ASSAY	Fire Assay AA

SAMPLE TYPES	NUMBER	SIZE FRACTIONS	NUMBER	SAMPLE PREPARATIONS	NUMBER
R ROCK OR BED ROCK	47	2 150	47	CRUSH,PULVERIZE	150 47

REMARKS: ASSAY OF HIGH Au,Ag TO FOLLOW ON 627-6867.

REPORT COPIES TO: TOURNIGAN MINING EXPL LTD

INVOICE TO: TOURNIGAN MINING EXPL LTD

REPORT: 127-6867

PROJECT: NONE GIVEN

PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Ag PPM	Au PPB	SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Ag PPM	Au PPB
R2 5611		164	0.2	35	OK II	R2 40558	645	1.6	820
R2 5612		295	0.4	300					
R2 5613		615	0.4	65					
R2 5614		400	0.3	80					
R2 5615		210	0.2	80					
R2 5616		210	0.3	110					
R2 5617		240	0.3	130					
R2 5618		230	0.2	95					
R2 40526		870	0.6	220					
R2 40527		745	0.5	150					
R2 40528		405	0.4	120					
R2 40529		830	0.6	300					
R2 40530		545	0.5	280					
R2 40531		730	0.7	240					
R2 40532		950	0.8	240					
R2 40533		990	0.8	220					
R2 40534		465	0.5	140					
R2 40535		870	0.8	110					
R2 40536		1050	1.4	130					
R2 40537		1550	1.5	170					
R2 40538		1650	1.2	150					
R2 40539		2600	2.6	220					
R2 40540		1950	1.2	150					
R2 40541		850	0.6	45					
R2 40542		2800	1.4	160					
R2 40543		166	1.3	240					
R2 40544		139	0.5	20					
R2 40545		101	0.9	60					
R2 40546		157	0.8	25					
R2 40547		255	2.4	160					
R2 40548		152	0.8	130					
R2 40549		95	1.5	340					
R2 40550		168	0.6	360					
R2 40551		325	0.9	380					
R2 40552		75	0.6	360					
R2 40553		69	0.5	440					
R2 40554		285	1.3	800					
R2 40555		655	1.2	1300					
R2 40556		615	3.3	1450					
R2 40557		205	0.9	320					

42

42

OK I

44

43

OK II



REPORT: 127-6923

PROJECT: NONE GIVEN

PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Ag PPM	Au PPB
---------------	---------------	--------	--------	--------

R2 40565		295	0.9	440
R2 40566		765	1.6	920
R2 40567		182	1.2	580
R2 40568		325	0.6	160
R2 40569		740	1.2	480

R2 40570		505	0.9	380
R2 40571		600	1.3	400
R2 40572		290	1.3	760
R2 40573		675	1.4	500
R2 40574		520	1.2	840

R2 40575		605	1.3	380
R2 40576		645	1.5	1750
R2 40577		375	1.0	940
R2 40578		645	2.0	1150
R2 40579		1150	2.0	800

R2 40580		625	2.2	1700
R2 40581		880	3.4	1500
R2 40582		460	2.7	540
R2 40583		720	4.0	1000
R2 40584		330	4.0	360

R2 40585		395	0.4	820
R2 40586		143	0.2	200
R2 40587		215	0.4	130
R2 40588		580	4.1	480
R2 40589		152	0.2	40

R2 40590		635	3.2	240
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REPORT: 127-7042

PROJECT: NONE GIVEN

PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Ag PPM	Au PPB
---------------	---------------	--------	--------	--------

D2 40126		200	0.7	25
D2 40127		165	0.6	15
D2 40128		126	0.6	20
D2 40129		174	0.9	190
D2 40130		37	0.2	30

47

D2 40131		4	0.3	130
D2 40132		10	0.3	130
D2 40133		34	1.3	1200
D2 40134		50	0.7	220
D2 40135		185	0.6	200

D2 40136		370	1.3	560
D2 40137		220	0.7	720
D2 40591		26	1.3	300
D2 40592		176	1.2	380
D2 40593		150	0.3	260

TR 40

D2 40594		220	0.7	1650
D2 40595		80	0.4	110
D2 40596		194	1.4	320
D2 40597		33	0.4	80
D2 40598		1050	1.7	90

47

D2 40599		142	0.3	10
D2 40600		103	0.7	10

49°30'

TO NORTH SEE MAP 82F/11W

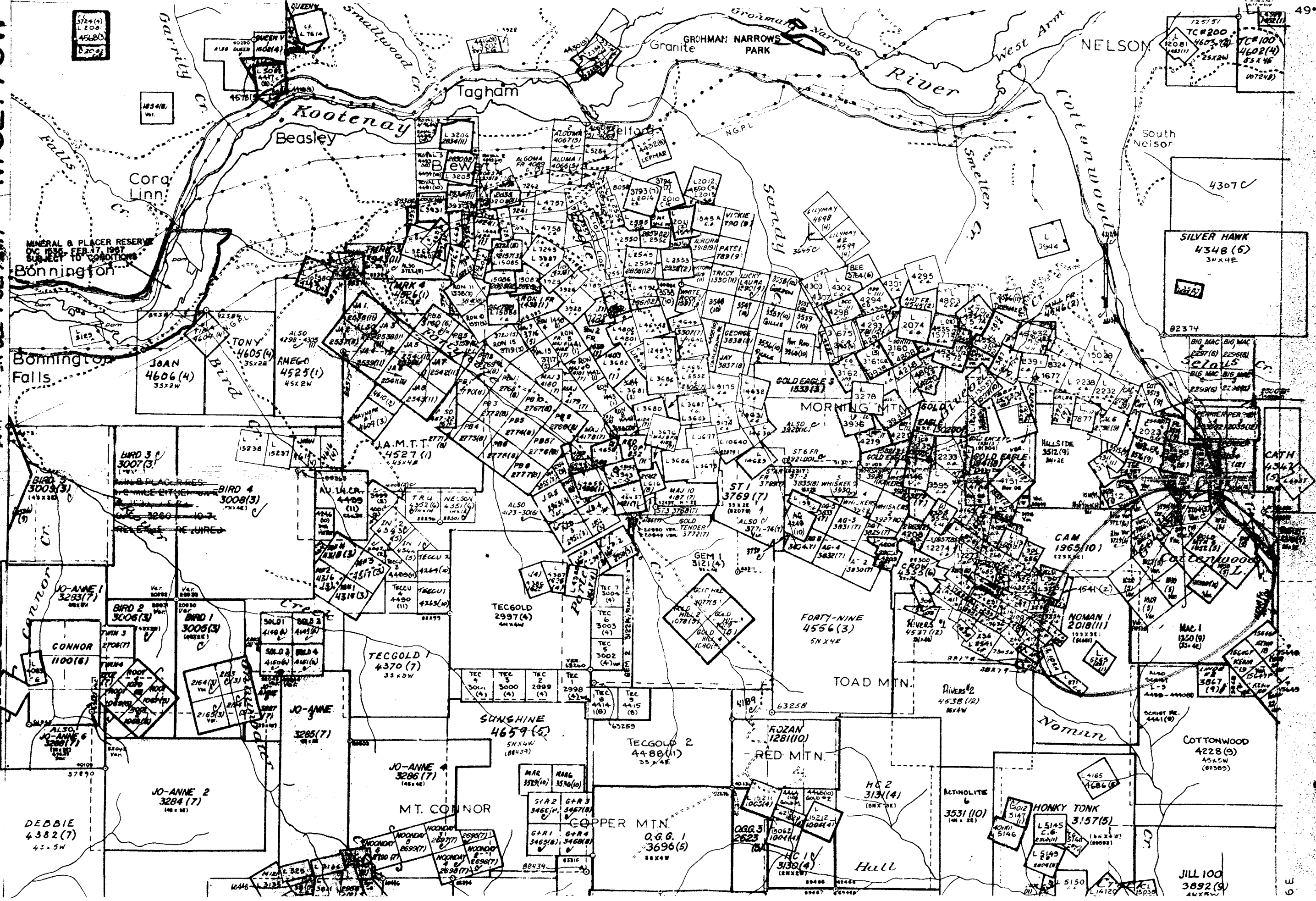
117°15'

49°30'

M 82F/W

1 FT. ACER SEE P 82F/6W

15 E

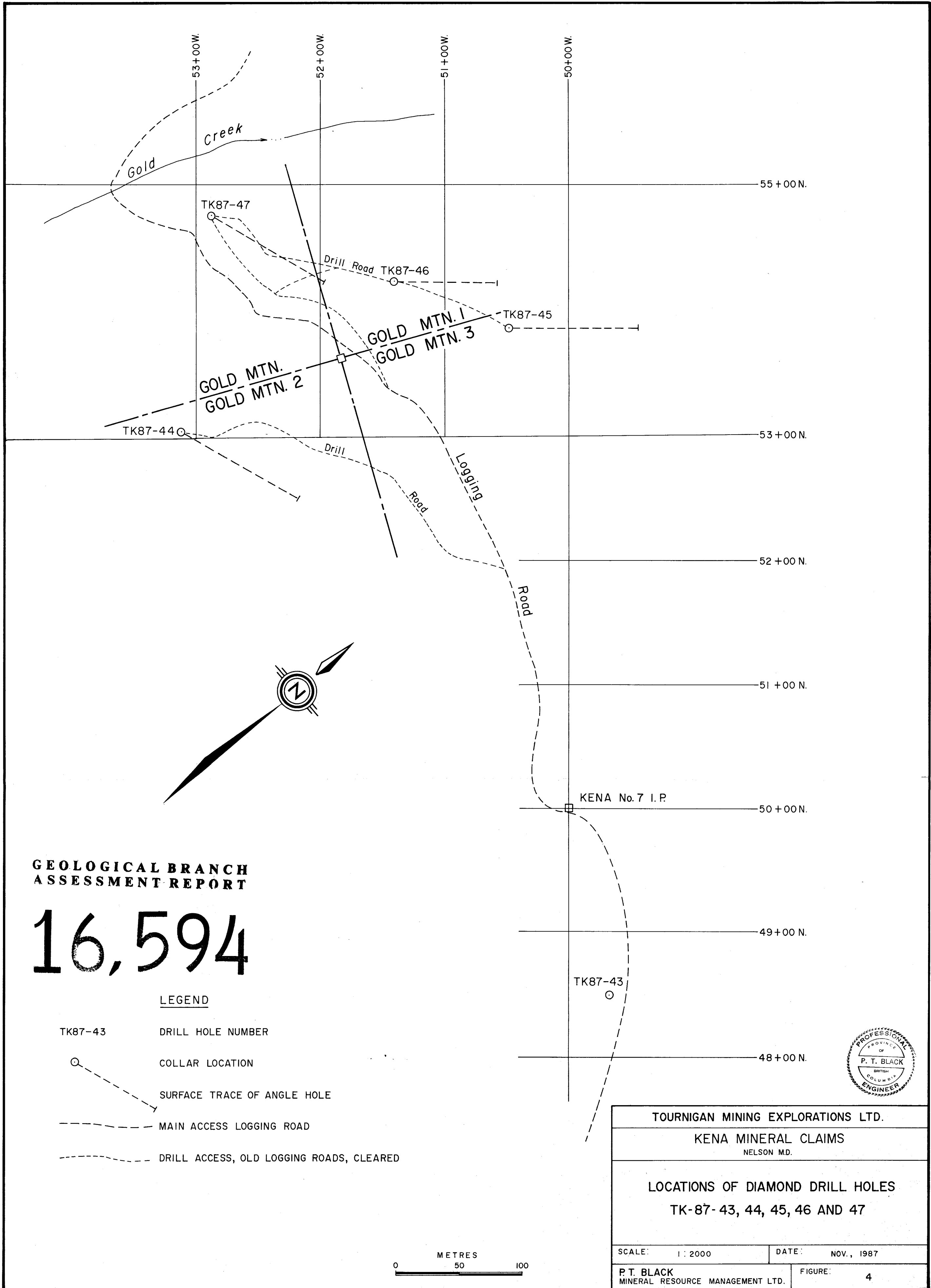


6

W

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**





**16,594<sup>0</sup>**



**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**16,594**

**LEGEND**

- TK87-43      DRILL HOLE NUMBER
-       COLLAR LOCATION
-       SURFACE TRACE OF ANGLE HOLE
-       MAIN ACCESS LOGGING ROAD
-       DRILL ACCESS, OLD LOGGING ROADS, CLEARED



TOURNIGAN MINING EXPLORATIONS LTD.	
KENA MINERAL CLAIMS NELSON M.D.	
LOCATIONS OF DIAMOND DRILL HOLES TK-87- 43, 44, 45, 46 AND 47	
SCALE: 1 : 2000	DATE: NOV., 1987
P. T. BLACK MINERAL RESOURCE MANAGEMENT LTD.	FIGURE: 4

