

Prospecting, Rock Geochemistry and  
Grid Construction Reports  
on the  
Bentonite-Diatomaceous Property  
Clinton Mining Division  
British Columbia

N.T.S. 92P 2.

Latitude 51 11 33 North  
Longitude 120 55 38 West

Covering the Bentonite 1-12, Ben 1-5  
ZEE 1-7 and the ZEOBED #2  
(44 units.) located north from the  
confluence of Hamilton and Coal creeks.  
Work performed between Sept. 18, 1994-Nov. 28, 1994.

Owners.

L.C. Marlow, W.T. Hall and Dave Duguay.

By, L.C. Marlow.  
Jan. 26, 1995

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FILMED

**G E O L O G I C A L B R A N C H  
A S S E S S M E N T R E P O R T**

By, L.C. Marlow.  
Jan. 26, 1995

23,785

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## **Summary:**

Between Sept, 18 and Nov, 28 1994, the Bentonite-Diatomaceous Property was prospected and mapped, eight km. of grid constructed, samples taken and then typed in the grid. A total of forty-six man days were spent on the field program and two on the report.

## **Introduction:**

This report outlines the results of the recent prospecting, sampling and grid construction completed on the Bentonite-Diatomaceous Property. The work described in this report was completed by two of the owners with one other person being hired for five days.

A prospecting grant helped fund the work. This report is also intended to satisfy assessment and grant requirements.

A series of maps showing property and claim location as well as grid, sample, locations, geology and prospecting traverses are included in this report. The cost of the work program was \$13,497.58.

## **Location, Access and Physiography:**

The Bentonite-Diatomaceous Property lies at the confluence of Hamilton and Coal creeks within the Clinton Mining Division on N.T.S. 92 P 2W. (Figure 1) The property is also in the Caribou-Chilcotin land use plan and lies in an enhanced resource area. The property can be reached by two routes.

The first and most direct route, is by travelling north on the Caribou Hwy. approx. sixteen km. north of Clinton, then turning right, east, on the Chasm logging road and proceeding onto the thirty-three-hundred road until the forty-eight km. sign. The property starts here. (See Figure 1)

The alternate route is by taking the Loon Lake road north approx. twenty-two km. north of Cache Creek. Travel past Loon Lake until the thirty-three-hundred road then turn east for approx. twelve km. (See Figure 1)

The property covers approx. eleven-hundred hectares and is centered approx. one km. north-northwest of the confluence of Hamilton and Coal creeks. The claim area varies in elevation from the valley floor twenty-nine-hundred feet to thirty-six-hundred feet. The valley is mainly natural meadow with sparse fir trees on the hillside to mature fir on the benches. South of Hamilton Creek there are thick stands of Jack pine and spruce.

Precipitation in the area is low, being comparable to Clinton.

Outcrops are common especially to the south where, Fullers earth, Bentonite can be traced eight-hundred meters east-west. To the north of the road cut slumping predominates with a thin capping and talus of Chilcotin basalt, outcropping on top of the hill at approx. eight-hundred meters south on a control line three + zero, zero west-

Page2

around Small Lake. North of camp, two + zero, zero east, zero + zero, zero north. Slumping is prevalent all the way to where the Bentonite outcrops in the creek.

Basalts along the lower road north of camp although huge and thought to be in place were proven to have slid downhill with the underlying Bentonite. Diatomaceous shale was found at higher elevations.

### **Property and Ownership:**

The ~~prop~~erty consists of twenty-four two-post units and one-twenty unit modified grid claim. (See Figure 2) Details of the claims are as follows are found in Table one.

The claims are grouped together as the Bentonite-Diatomaceous Property (EVENT #3064825 JAN,24/95) . The owners are L.C. Marlow and Dave Duguay of Kamloops B.C., and W.T. Hall of Barrier B.C.

### **History**

Although not much information can be found on the area, where the claims sit, the whole area has been extensively worked over the years because of the proximity of the Vidette gold mine.

### **Regional Geology**

The oldest rocks in the region are Nicola sediments and volcanics. The sediments are greywackes, siltstones, argillites and massive grey limestones. The volcanics are greenstones and are mainly andesites and augite andesite porphys.

There are some leuco-quartz monzonite outcropping north of the claim area. These are part of the Thuya batholith and are of Jurassic age.

There are several mio-channels on the mapsheet and they are known as the Deadman River Formation. These are overlain by basalts known as the Chasm Formation. (See Figure Three + Four)

### **Property Geology:**

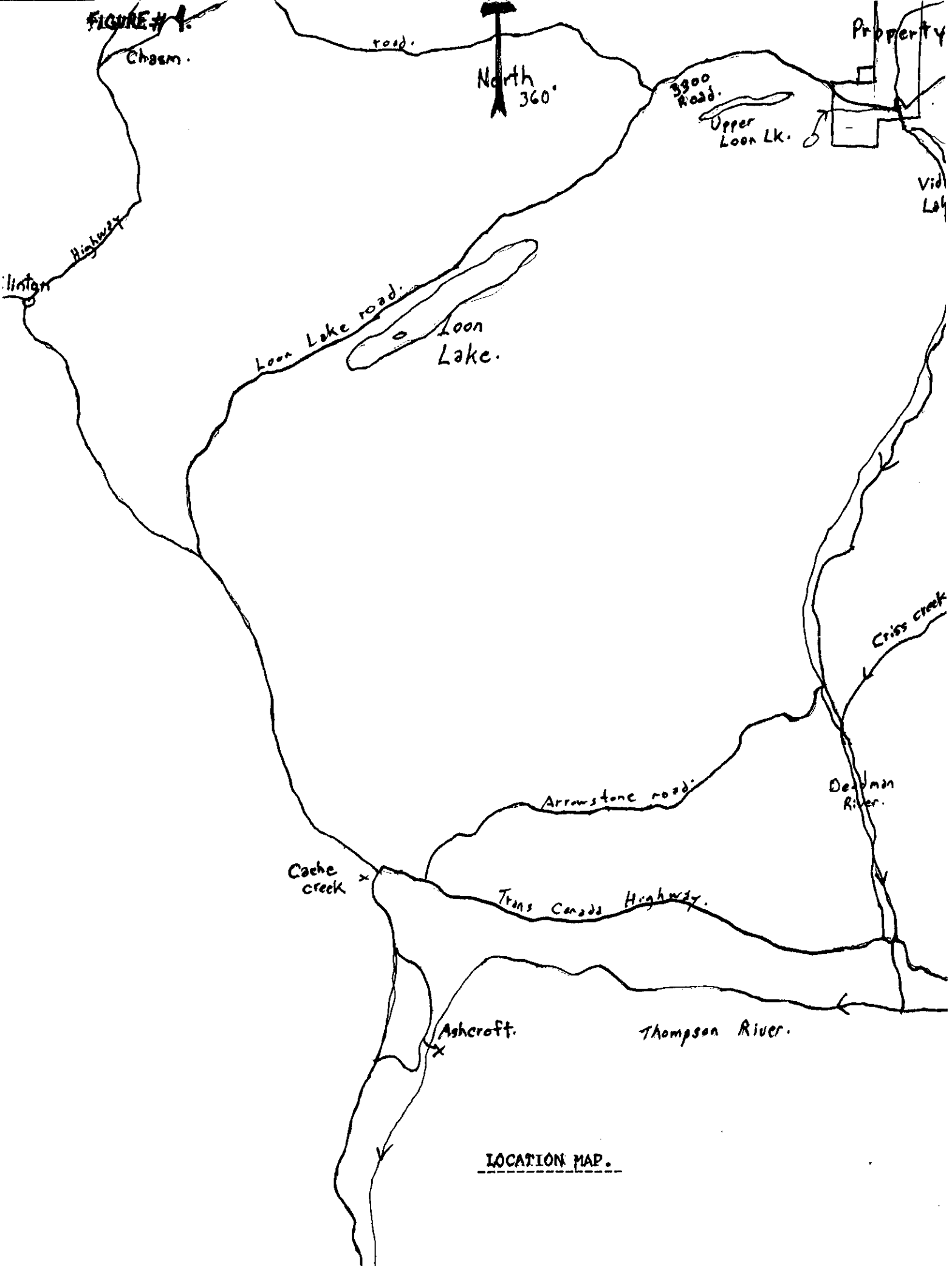
The property consists of Nicola volcanics, some Nicola sediments, contacting on mainly the east side and underneath of the Mio-Hamilton-Mio Coal channels. Both of these are overlain by Chilcotin basalt. The Mio-channels are host to the Diatomaceous shales and Bentonite. What was once silt to boulder size river rock has been completely altered to clay, mainly Montmorillonite.

The Diatomaceous sits on top of the Bentonites and in some places in contact with the Chilcotin basalts that overlie the channels.

**Table #1**

CLAIM NAME	UNITS	RECORD NO	EXPIRY DATE
ZEOBED 2	20	324758	APRIL,20/95
ZEE 1	1	324791	APRIL,21/95
ZEE 2	1	324792	APRIL,21/95
ZEE 3	1	324793	APRIL,21/95
ZEE 4	1	324794	APRIL,21/95
ZEE 5	1	324795	APRIL,21/95
ZEE 6	1	324796	APRIL,21/95
ZEE 7	1	324797	APRIL,21/95
BENTONITE 1	1	324688	APRIL,14/95
BENTONITE 2	1	324689	APRIL,14,95
BENTONITE 3	1	324690	APRIL,14/95
BENTONITE 4	1	324691	APRIL,14,95
BENTONITE 5	1	324692	APRIL,16/95
BENTONITE 6	1	324693	APRIL,16/95
BENTONITE 7	1	324694	APRIL,16/95
BENTONITE 8	1	324695	APRIL,16/95
BENTONITE 9	1	324696	APRIL,16/95
BENTONITE 10	1	324697	APRIL,16/95
BENTONITE 11	1	324698	APRIL,16/95
BENTONITE 12	1	324699	APRIL,16/95
BEN 1	1	325285	APRIL,23/95
BEN 2	1	325215	APRIL,23/95
BEN 3	1	325216	APRIL,23/95
BEN 4	1	325217	APRIL,28/95
BEN 5	1	325218	APRIL,28/95

FIGURE # 1.



LOCATION MAP.



Figure #2

Claim Map.

92 P-2 W.

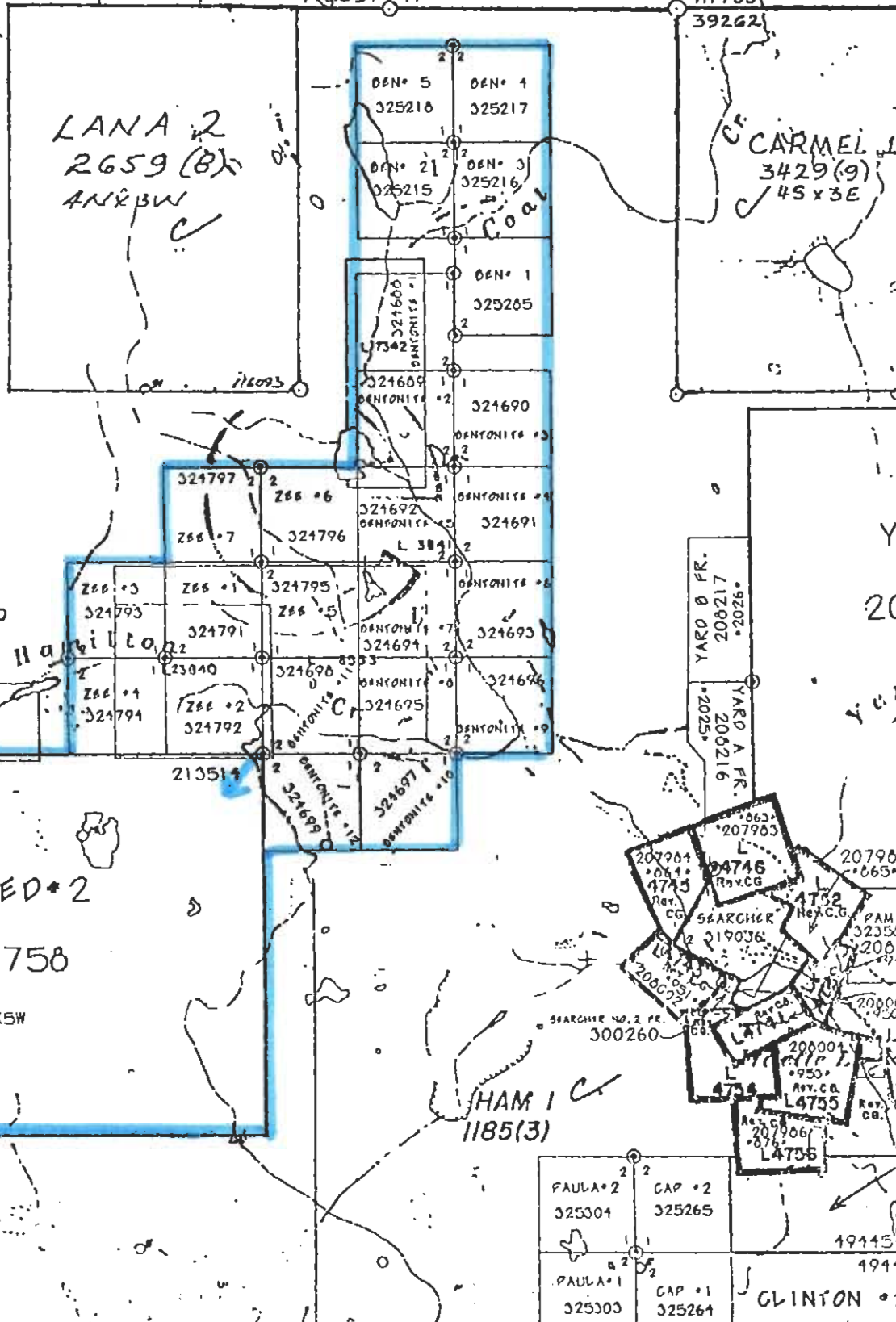
LANA 3  
2660 (8)  
#NR3W

LANA 4  
2661 (8)  
#NX3E

CARMEL 2  
3442 (10)  
#NX3E

LANA 2  
2659 (8)  
#NR3W

CARMEL 1  
3429 (9)  
#S3E



# Figure #3.

the new protected areas, while existing activities such as hunting, recreation, and backcountry tourism will be allowed. Cattle grazing will continue to be permitted in the new protected areas, with the exception of the Junction Sheep Range.

## A REGIONAL RESOURCE BOARD

A Regional Resource Board—covering the Cariboo Forest Region—will be established to provide local input on implementation of this land-use plan. The Cariboo Economic Action Forum will continue to provide advice to government on the development of regional economic strategies, priorities and action plans.

## A CARIBOO-CHILCOTIN JOBS STRATEGY:

### *Ensuring Worker And Community Security*

The government has committed that jobs will not be lost as a result of major land-use decisions. The Cariboo-Chilcotin Land-Use Plan fulfils that promise, and

goes further by creating new jobs:

- ^ The Forest Renewal Plan has invested \$3 million in the Cariboo-Chilcotin, creating more than 150 jobs in the region's forests.
- ^ With this plan, a new Grazing Enhancement Program is being created: the Cariboo-Chilcotin ranching industry will receive \$2.5 million per year to maintain or enhance cattle grazing opportunities in the region and meet conservation needs.
- ^ The Cariboo-Chilcotin Jobs Strategy—being introduced with this land-use plan—will see about 1,000 jobs created over the next three years. Economic initiatives included in this strategy will be unveiled in the days and weeks following release of the land-use plan.
- ^ A new, full-time Resources Jobs Commissioner will be appointed to work with companies, workers, communities and government to secure stable resource jobs now and in the future.
- ^ Under the government's Skills Now training plan, two Community Skills Centres will be established, and five small business partnerships and at least two sectoral training partnerships created.

## THE CARIBOO-CHILCOTIN LAND-USE PLAN



Figure # 4.

BRITISH  
GEOLOGICAL

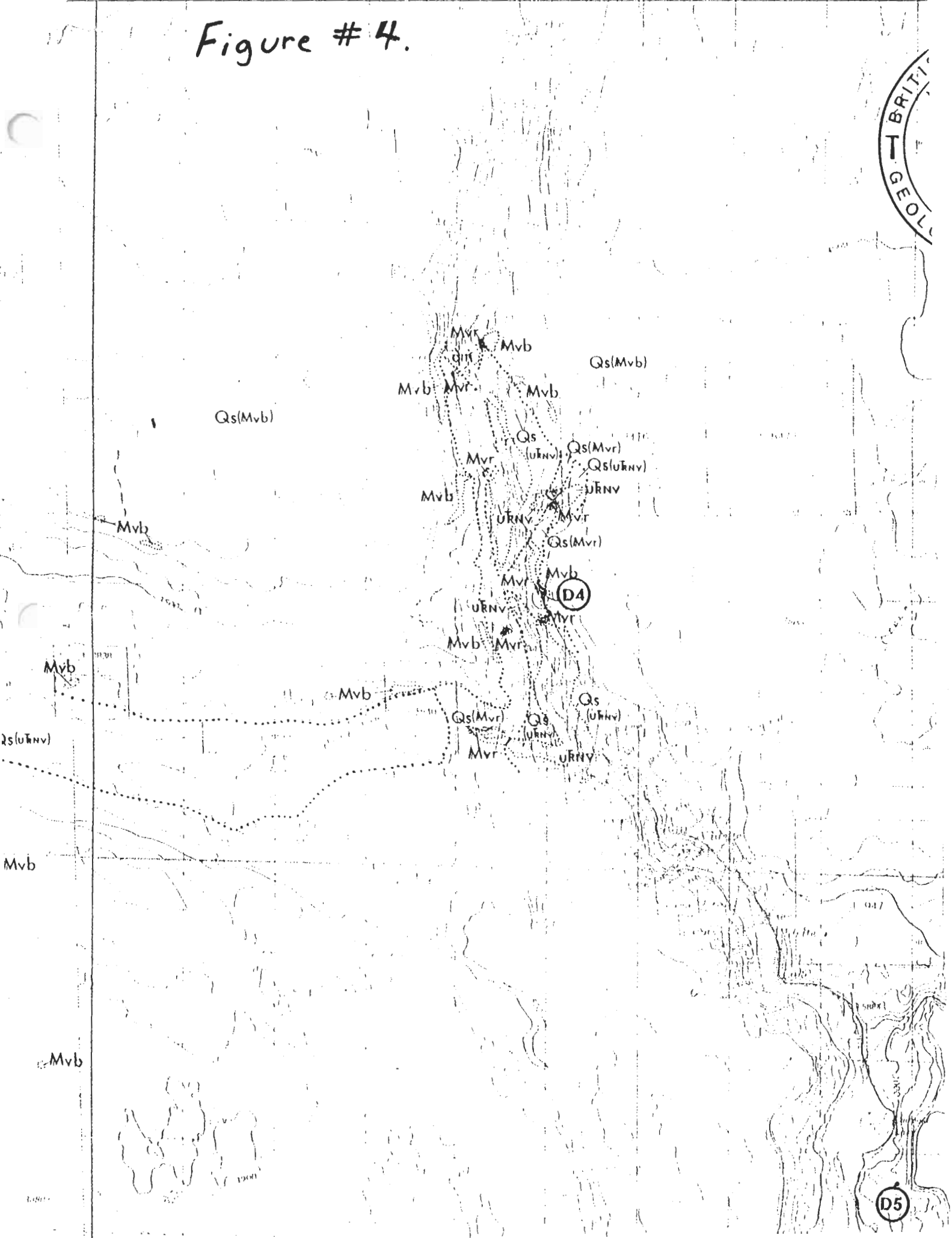


Figure # 5



92P/3

Province of British Columbia  
Ministry of Energy, Mines and Petroleum Resources

OPEN FILE 1989-21

# TERTIARY STRATIGRAPHY AND INDUSTRIAL MINERALS, BONAPARTE TO DEADMAN RIVERS

NTS 92P/2, 3

GEOLOGY BY P. B. READ

QUATERNARY  
PLEISTOCENE AND RECENT

**Qs(Evd)** Unconsolidated sediments; glacial deposits, colluvium and alluvium; few if any crops; probable subcrop unit within parentheses

TERTIARY

MIOCENE

CHILCOTIN GROUP

**Mvb** Chasm Formation  
Vesicular and amygdaloidal basalt flows; very rare basalt breccia *Cap Rock*

**Mvr** Deadman River Formation  
Rhyolite ash, white to buff tuffaceous sandstone, siltstone and shale; minor pe conglomerate, and carbonaceous siltstone and shale; local diatomaceous shale siltstone  
*Host Rock.*

MIDDLE EOCENE

KAMLOOPS GROUP

**Evd** Light to dark grey, aphanitic andesite flows

Light grey porphyritic (hornblende) andesite flows

Medium to dark grey porphyritic (plagioclase) andesite breccia; minor flows

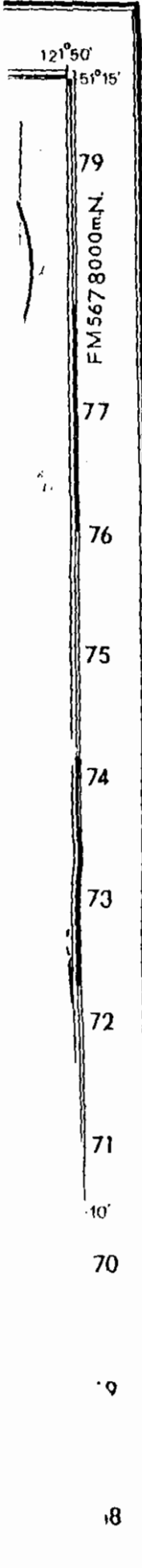
**Evdx** Light to dark grey aphanitic andesite breccia

Dark grey vesicular and amygdaloidal, aphanitic basalt flows and breccia

Cream-weathering rhyodacite breccia, brown-weathering andesite breccia; minor intercalated lithic tuff

Cream weathering shale, siltstone, carbonaceous shale; zeolitized, bedded rhyolite tuff and tuffaceous sandstone lenses

Volcanic pebble to boulder conglomerate; minor layered lithic tuff



Everything is slumped toward the main valleys and perhaps this has thrown people off to the size potential of the Diatomaceous materials. No Diatomaceous has been found west of Coal creek but there is good potential in the upper strata of channel around eight + zero, zero south C.L. three + zero, zero west.

The known Diatomite outcrops at zero + five, zero south L. two + zero, zero east and as far as eight + zero, zero north-one + zero, zero east for at least eight hundred-fifty meters strike and at least fifty meters width. The Diatomite is four-five meters thick and a meter weighs almost two tons, Diatomite is found in slumps even in the valley floor where it has slumped down. By the camp and north of camp taking dips is useless as everything is dipping downhill.

On the thirty-three-hundred road the channel is striking west-southwest, not south as previously supposed and is up to eighthundred meters wide.

The channel is very homogeneous as seen by the whole rock analysis and C.E.C. analysis which were taken over a large area.

### **1994 Field Program**

#### **Introduction:**

The objectives of the program were to prove the size and consistency of the Bentonites and to try and get enough tonnage of the Diatomaceous to prove a viable deposit that could be brought into production in a short while. Both of these objectives have been met with successful results. Because of the steep side hills and the late start, snow became a problem and slowed us down, especially the grid construction.

#### **Prospecting**

The whole claim area was prospected and any showings or contacts were typed into the grid.(See Figures) On the traverses to the north along the upper side of the lower road more Diatomaceous sections were found using a bar and shovel, but were unable to tie the showings into the grid because of steep terrain and just enough snow to make conditions impossibly treacherous.

#### **Grid Construction:**

The grid was constructed so that sample outcrops and contacts and stratigraphy could be mapped.

The grid was cut out and blazed with axes, chained, pickets placed at twenty-five meter intervals. Orange paint was used on blazes and pickets. The line was marked with orange flaggings and stations marked with orange and blue.

### **Sampling:**

The main exposer by camp was sampled in detail as it offers the greatest vertical stratigraphy. Nine chip samples were taken for a total distance across stratigraphy of twenty-eight meters. (See Figure 5-inset a) The samples were all chipped across one meter or wider widths. Four duplicate sets of samples were taken for testing at home and over eight-hundred-fifty meters strike length while the Bentonite was sampled over three km. long over one-half km. wide, and twenty-eight meters thick.

### **Analytical Methods:**

Four samples were X-Ray Diffracted at X-Ral in Toronto and scanned for specific minerals, excluding clays. (No Zeolites)

Twelve samples were analysed for oil + water retention, nine samples were analysed for specific gravity, seven samples were done for Ph. and eighteen samples done for Cat Ion Exchange Capacity. **Three samples were X-rayed at U.B.C. (Appendix 5)**

In addition samples have been tested at home and thirty-three-zero, one exhibits enhanced properties leached in citric acid, lemon juice. The Diatomite also has a eight % better absorption of water and a nineteen % better absorption of oil than the best of what is being sold on the market. Also we have successfully made Pozzolon cement without calcining the Bentonite. This is a continuously ongoing process.

### **Diary:**

**Sept, 18.-** Drove to property and cut out road to camp. Prospected to east of camp then drove home by myself.

**Oct,10.-** Drove to property and set up camp. Cut firewood and put up no hunting signs on access roads.

**Oct,11.-** Prospected east of north fork road to creek and back to the main road on east side. No outcrop.

**Oct,12.-** Did control line two-east from zero + zero, zero - four + zero, zero north, then did L. four north to zero + fifty, zero

**Oct,13-** Prospected south of camp along bench for possible Diatomaceous layer, to the west of the main road.

**Oct,14.-** Prospected from the main road west of camp road, took sample SYN-1. Red clay with feldspar lath textures that are partly intact. Then I drove home.

**Oct,18.-** Drove to camp. Prospected north of camp west of the road to the creek. All overburden or basalt. Went back to main logging road and then back to camp on the east side of the road to the camp. I was alone from Oct,18.-Oct,20.

**Oct,19.-** Prospected north of creek approx. two km. along top of ridge. Followed bentonite for approx. three hundred meters north of creek. Prospected the lower road on the way back to camp.

**Oct,20.-** Prospected north of camp above lower road and then went back to camp on lower road. I then found D-five sample location.

**Oct,22.-** Drove to camp late. Cut firewood and dried out gear. Accompanied by W.T. Hall. Oct. 22- Oct.29.

**Oct,23.-** Cut line four north to base-line, then ran base-line out to eight north. Ran line six + five, zero north - two+seven, five west accross creek to edge of hill.(Nicola volcanics)

**Oct,24.-** Ran line one-five to one+ zero, zero east. Then ran line zero+ zero, zero to B.L. then ran base line south to four+ five, zero south. Then ran line zero+ five, zero from two+zero, zero east - five+ two, five east.

**Oct,25.-** Ran line zero+ zero, zero from two+ zero, zero east - four+ seven, five east, then ran line two+ five, zero south - three+ zero, zero west. Then ran control line three west - fourteen+ two, five south.

**Oct,26.-** Tyed in, marked and sampled cliff showing B-series samples, took four bags for each sample.

**Oct,27-** Finished sampling and carrying out samples. Took samples out the bottom. Prospected Nicola-Bentonite contact, took sample WB01.

**Oct,28-** Prospected to first lake up the valley to the north. The ice was not thick enough for us to cross it and there was not enough snow to hold us on the steep ground around the lake. Ran line three+ five, zero - two+ zero, zero west.

**Oct,29-** Prospected south of road, then traversed up gulley by one south id. post, then I went west below rim-rock. It was all basalt.

**Nov,1-** Drove to property and worked alone from Nov,1. - Nov,3.

**Nov,2-** Prospected west up Hamilton creek and then down the main valley. I then found Zb01 sample site.

**Nov,3-**Prospected north of road and west of control line three+ zero, zero west. There was lots of slumping.

**Nov,23-** Did lines north of camp on D2, D3 and D4 samples and line eight north. I then took samples D5 and R60 W. I was accompanied by W.T.Hall from Nov,23 - Nov,28.

**Nov,24-** I dug accross strata on D2-D3 and D4 and then sampled those three sample sites and R-380 N.

**Nov,25-** Prospected from camp to eight+ zero, zero north with bar and shovel on steep slopes, I then found more Diatomaceous but it was too steep and slippery to try and tie into grid.

**Nov,26-** Ran lines on road cut and to the west, then I took sample ZB01. I tryed out the Magnetometer over contact on main road. There was no contrast.

**Nov,27-** Marked in and sampled road cut and showings south of Hamilton creek.

**Nov,28-** Loaded up camp and gear and then drove home.

### **Conclusions and Recomendations:**

The program was very successful. Although the CEC's were lower than hoped, the Bentonites still exhibit properties, and there is a lot more Diatomite than was expected.



Page 7

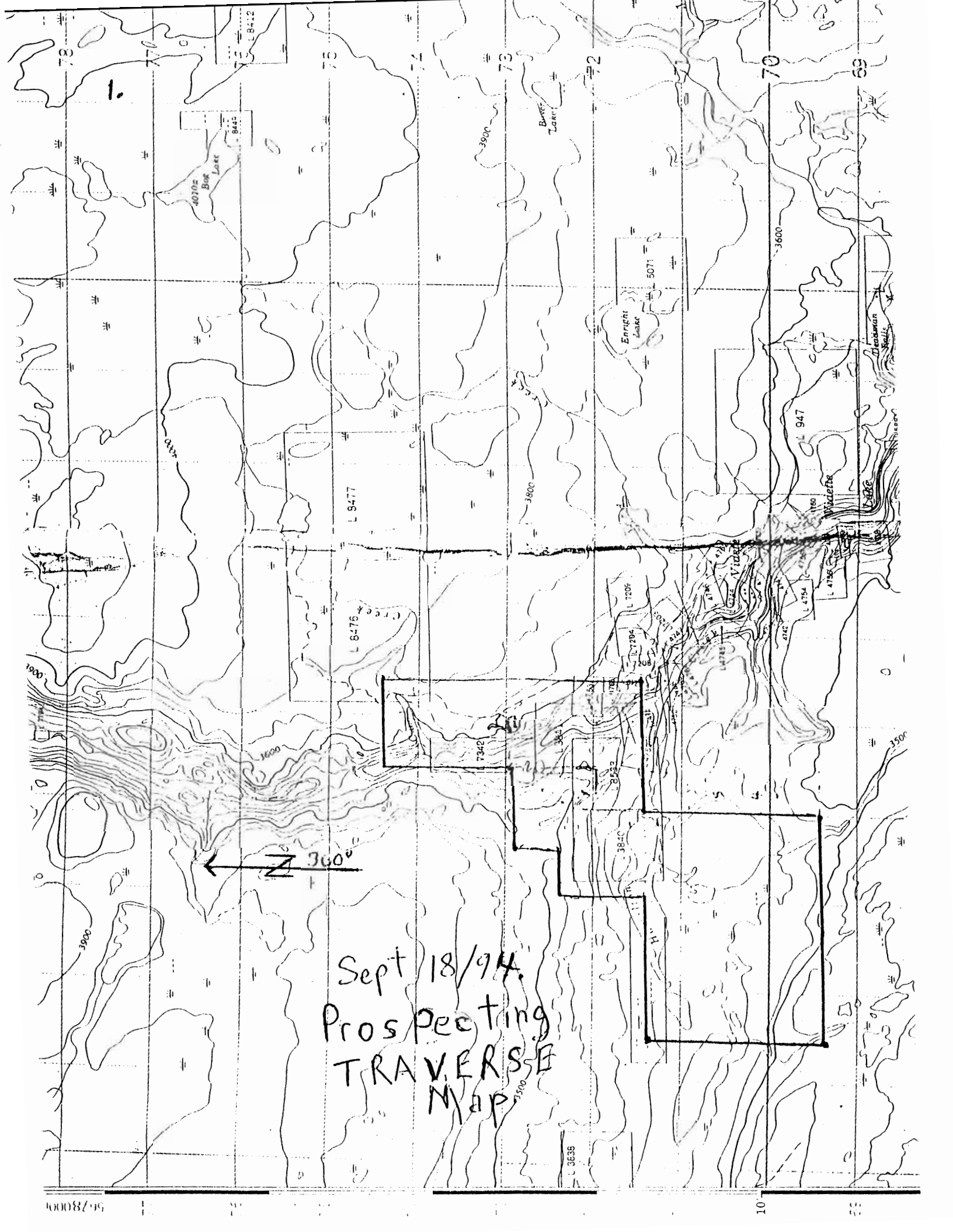
The owners have formed a registered company and are applying for trademarks for kitty litter, floor dry and pozzolon cement products.

A bulk sample will hopefully be extracted early in the summer of 1995.

**References:**

Open file: 1989-21.

## **Appendix i**



1.

4070  
Box Lake  
9445

L 8412

L 9477

L 6476

7342

3840

8033

L 3638

5071

Enright Lake

L 7205

L 7204

L 4754

L 4754

L 4754

L 4754

L 4754

L 4754

L 4754

L 947

Wardle

L 4754

L 4754

L 4754

L 4754

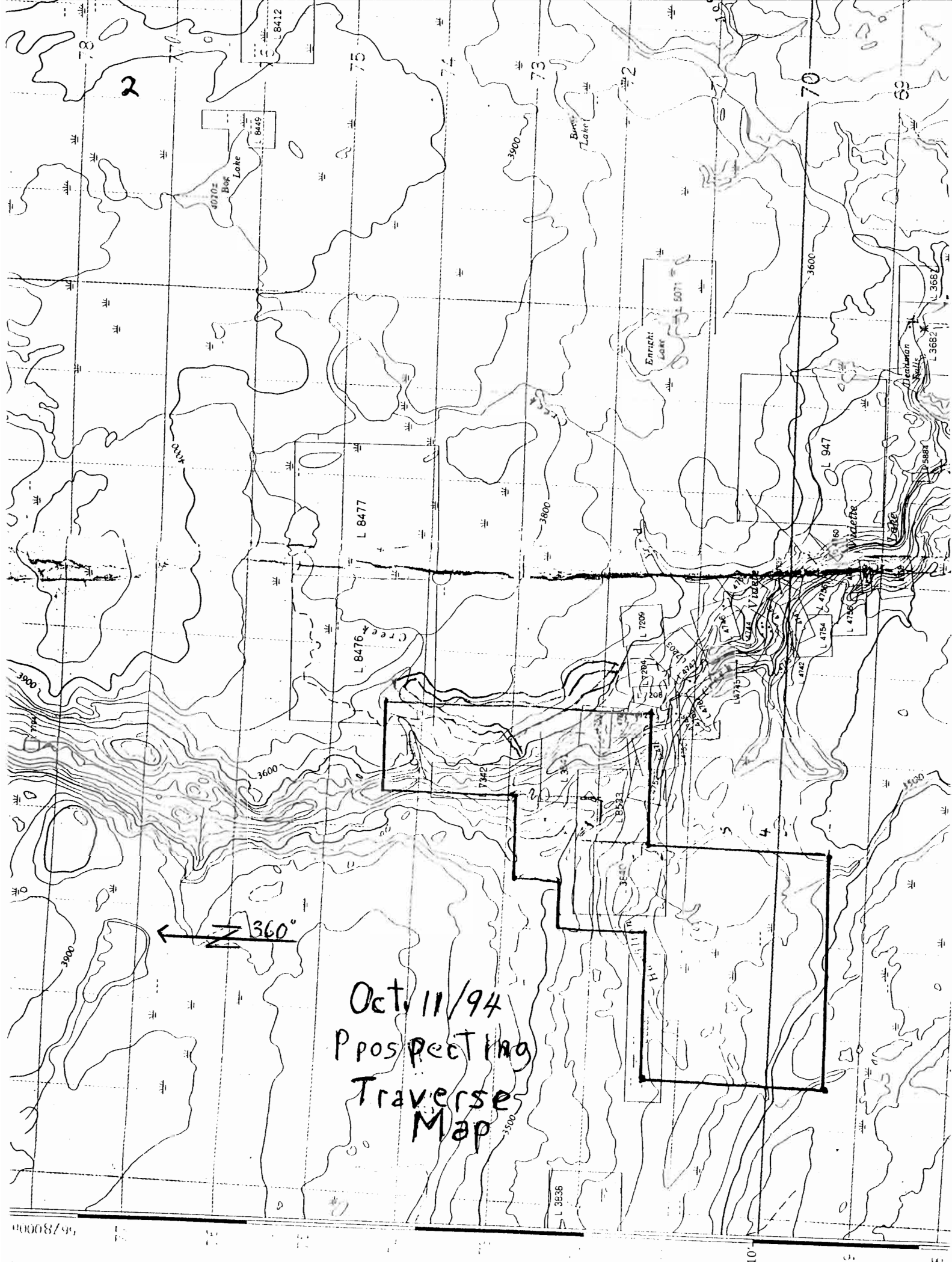
L 4754

L 4754

L 4754

N 360°

Sept 18/94.  
Prospecting  
TRAVERSE  
MAP



2

Box Lake  
4070 =  
L 8445

75

73

70

69

L 8477

L 8476

L 8475

Enright Lake  
5071 =  
L 5071

L 947

Widacette

Deadman  
Saddle  
L 3662

L 3662

L 7009

L 7204

L 7208

L 7209

L 7210

L 7211

L 7212

L 7213

L 7214

L 7215

L 7216

L 7217

L 7218

L 7219

L 7220

3900

3600

3800

3900

3600

3500

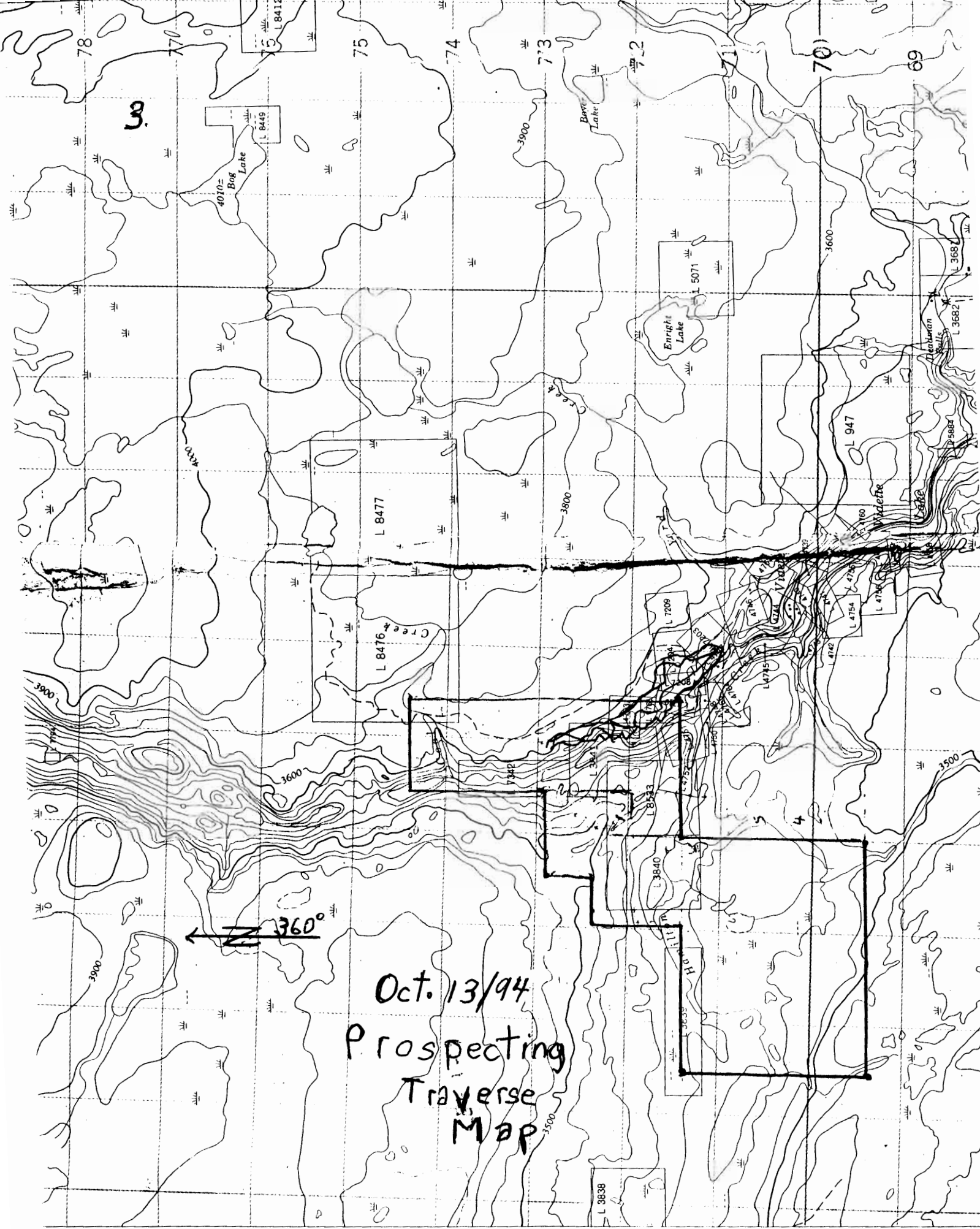
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Oct. 11/94  
Prospecting  
Traverse  
Map

L 3636

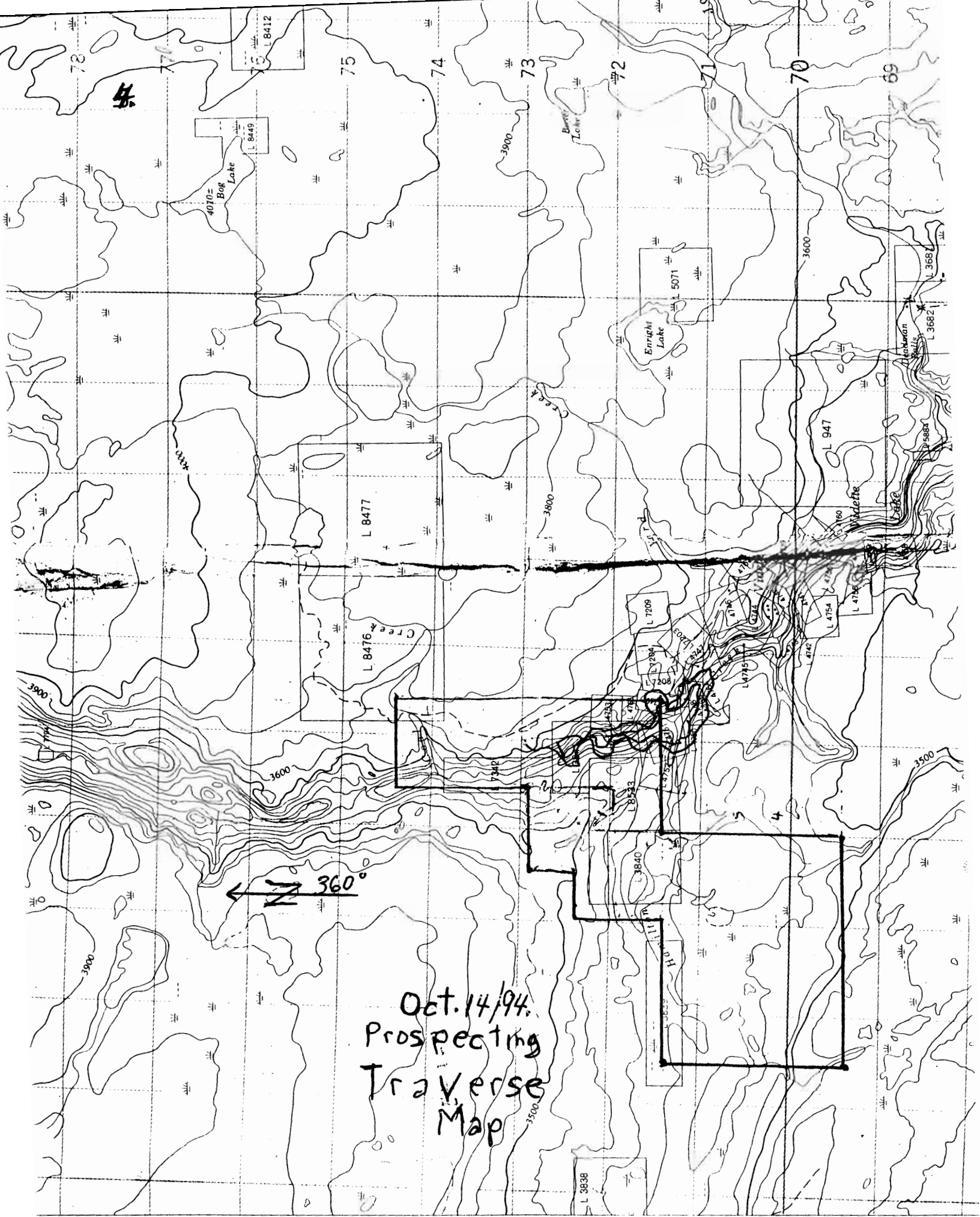
16/80000

10



Oct. 13/94  
Prospecting  
Traverse  
Map

360°



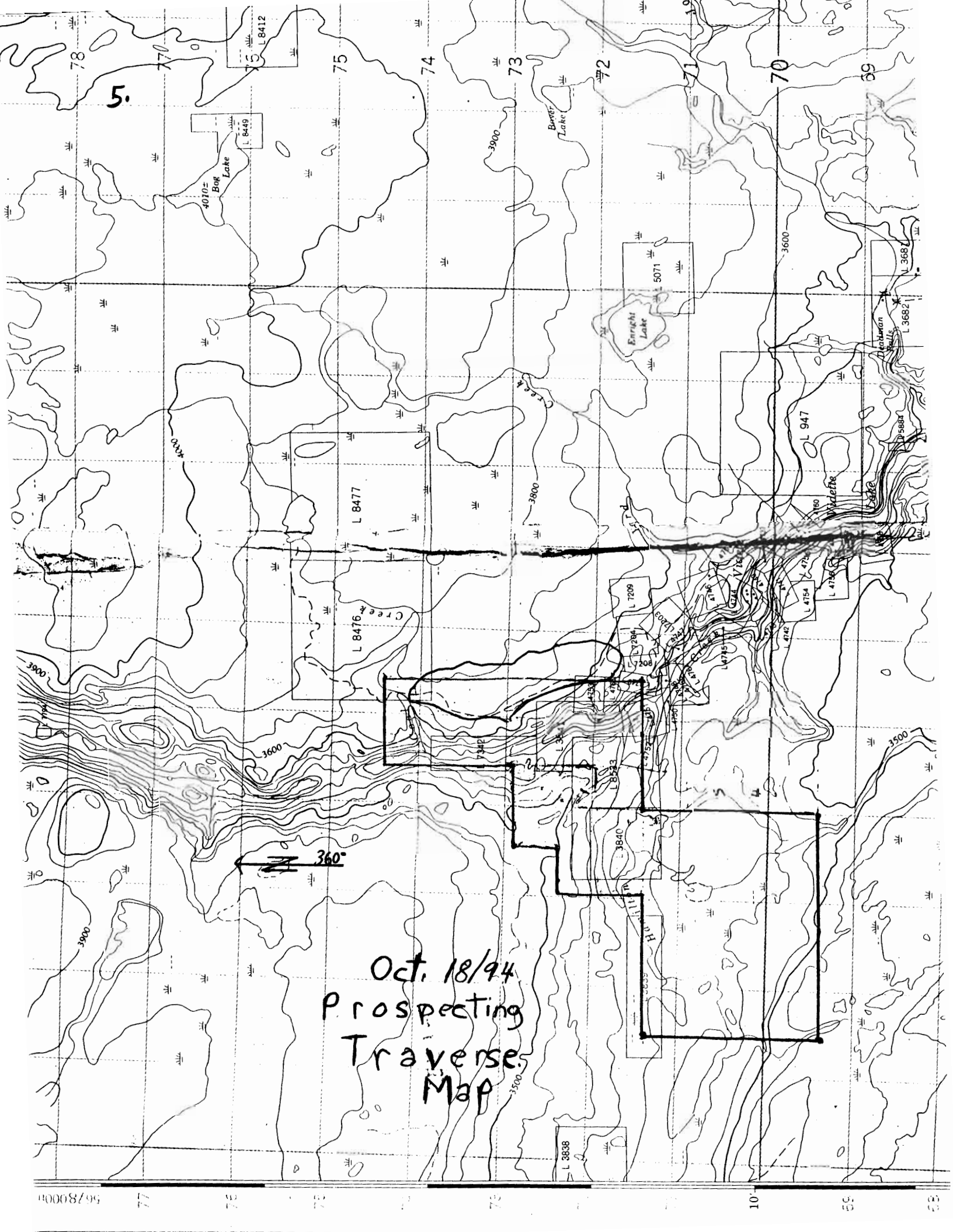
Oct. 14/94  
Prospecting  
Traverse  
Map

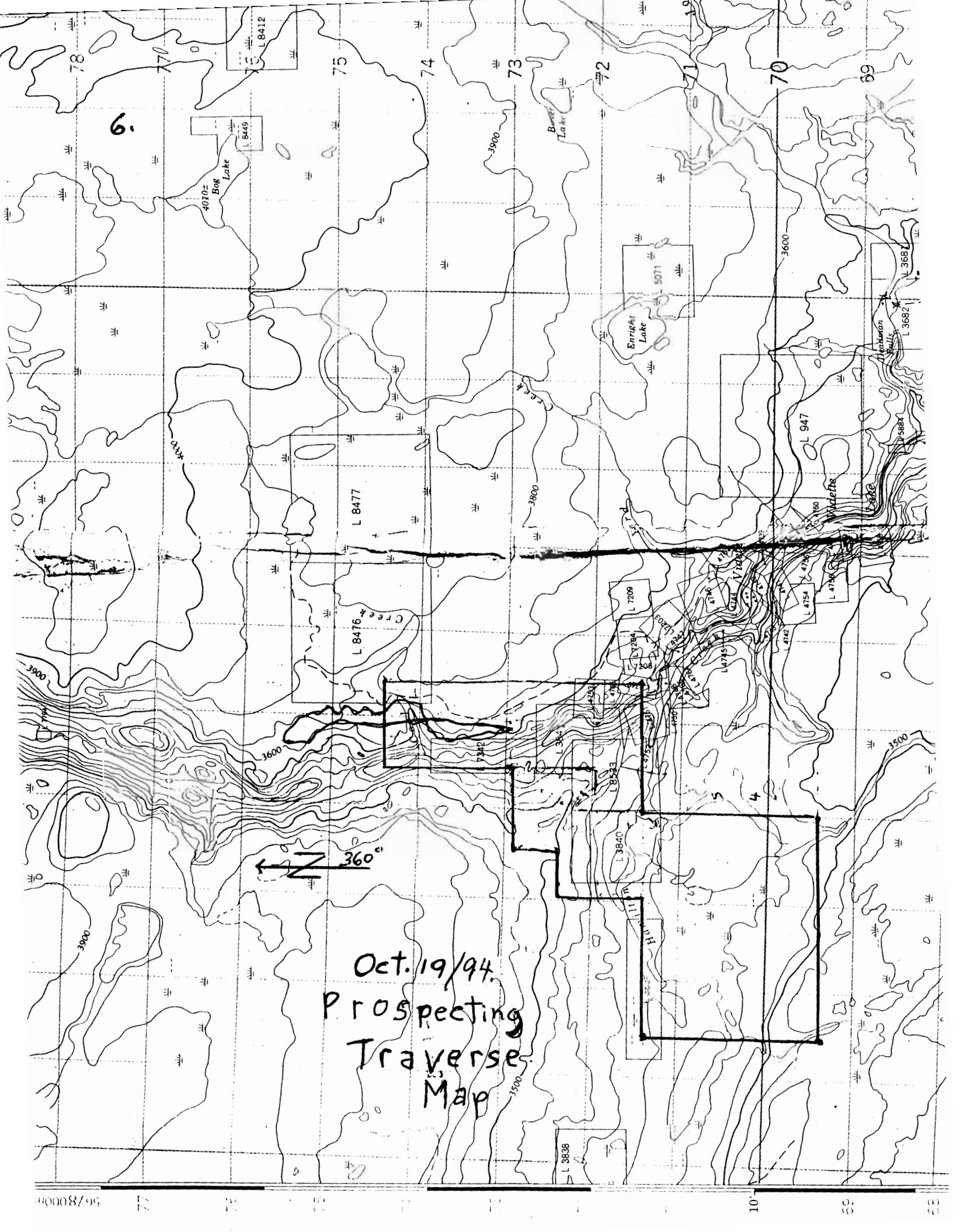
360°

5.

Oct. 18/94  
Prospecting  
Traverse  
Map

360°





6.

360°

Oct. 19/94.  
Prospecting  
Traverse  
Map

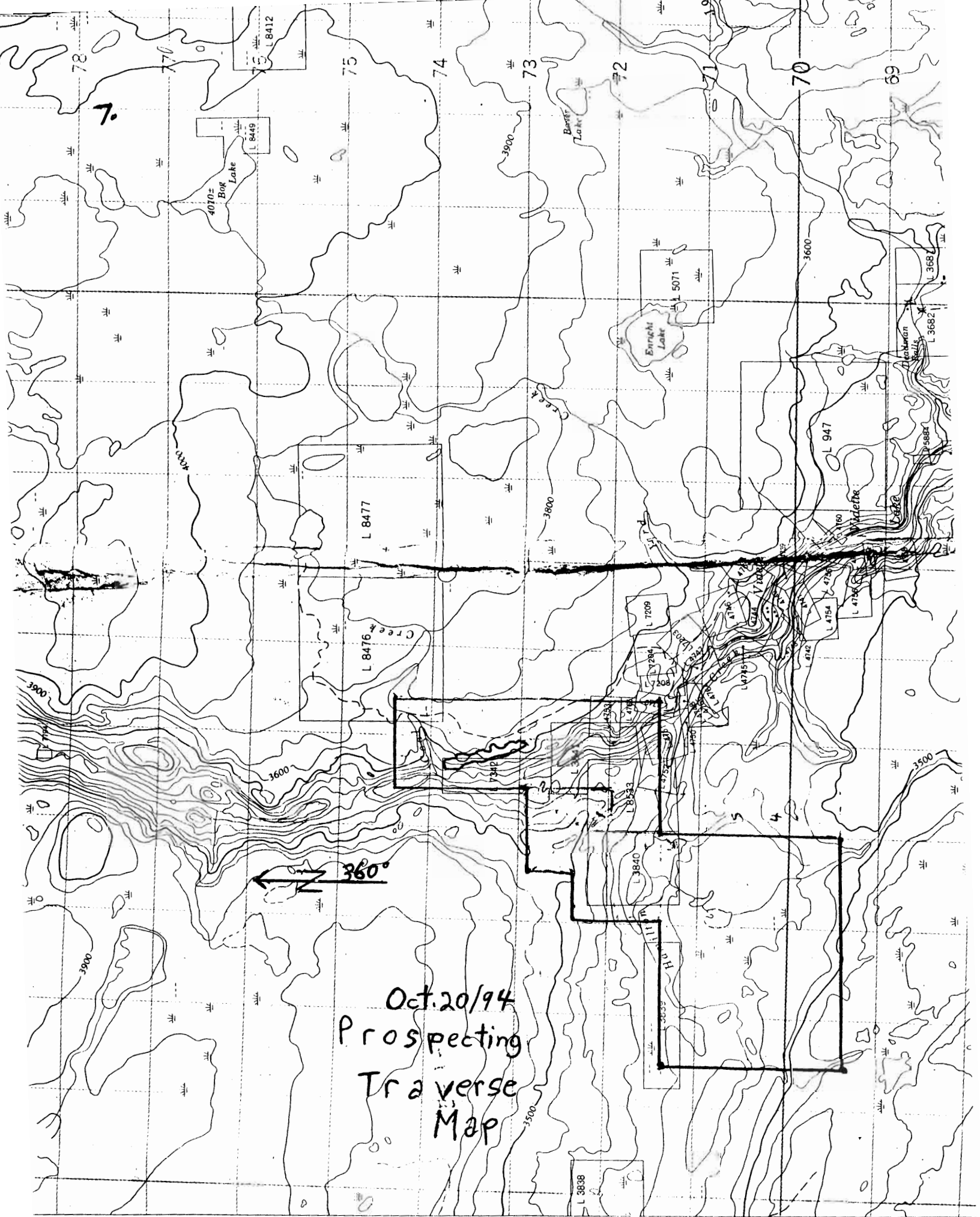
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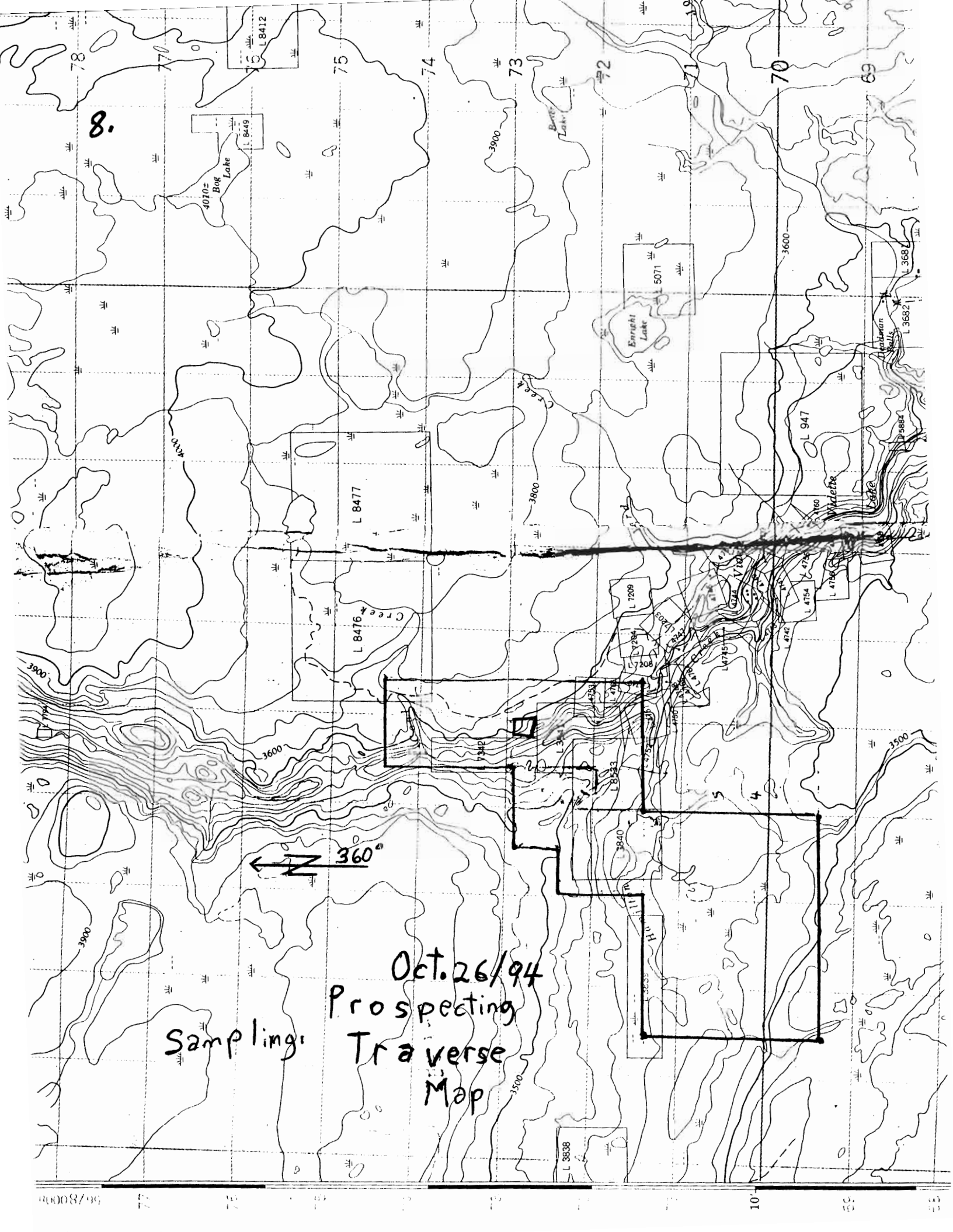
55





Oct. 20/94  
Prospecting  
Traverse  
Map

360°



8.

360°

Sampling  
Prospecting  
Traverse  
Map

4070 Bog Lake

L 8412

75

74

73

72

70

69

L 8477

L 8476

L 5071

L 7209

L 7204

L 7203

L 7184

L 7178

L 7175

L 7170

L 7165

L 7160

L 7155

L 7150

L 7145

L 7140

L 947

L 4760

L 4754

L 4748

L 4742

L 4736

L 4730

L 4724

L 4718

L 4712

L 4706

L 4700

L 4694

L 4688

L 4682

L 3684

L 3678

L 3672

L 3666

L 3660

L 3654

L 3648

L 3642

L 3636

L 3630

L 3624

L 3618

L 3612

L 3606

L 3600

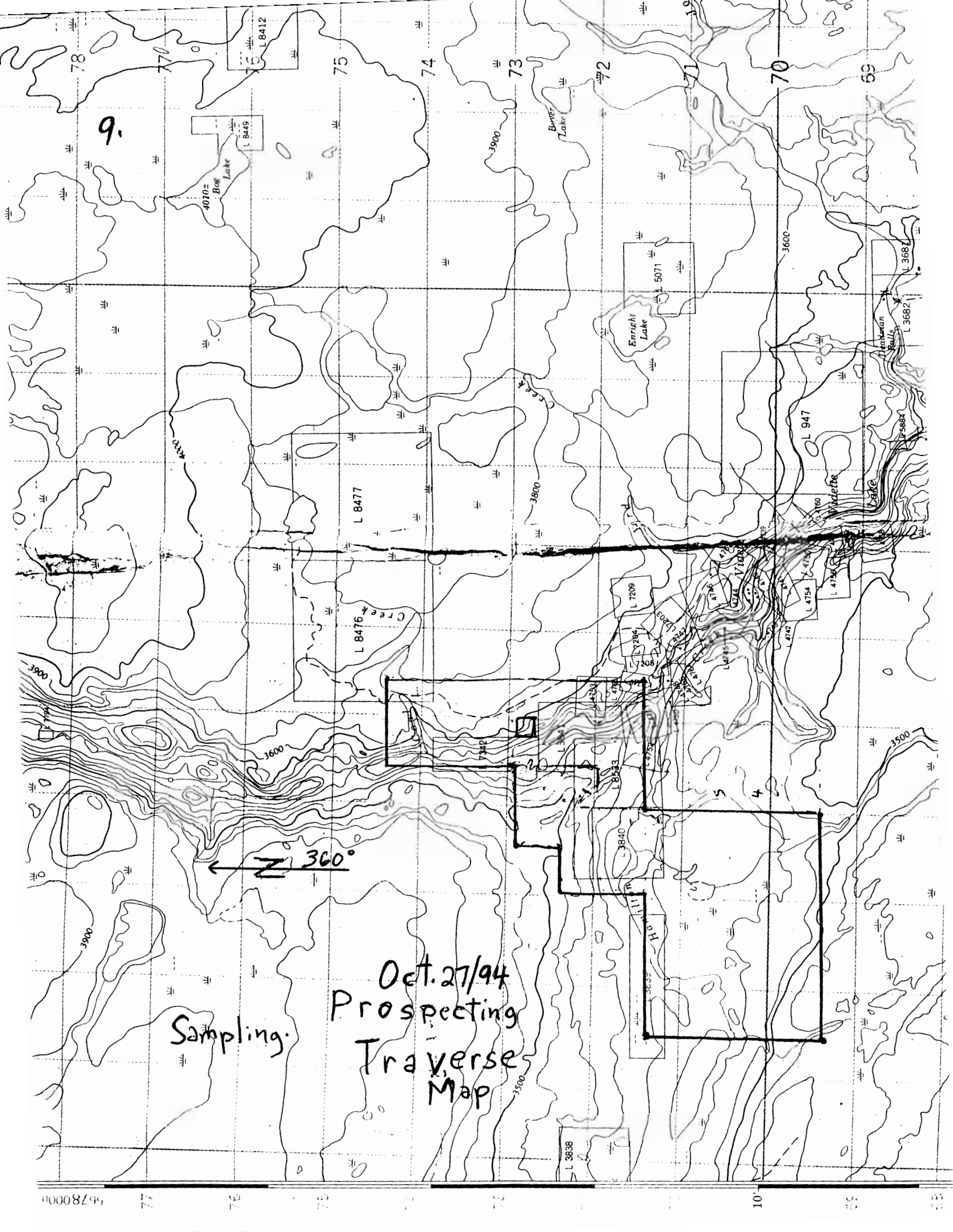
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L 3588

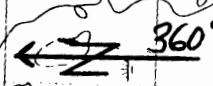
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L 3576

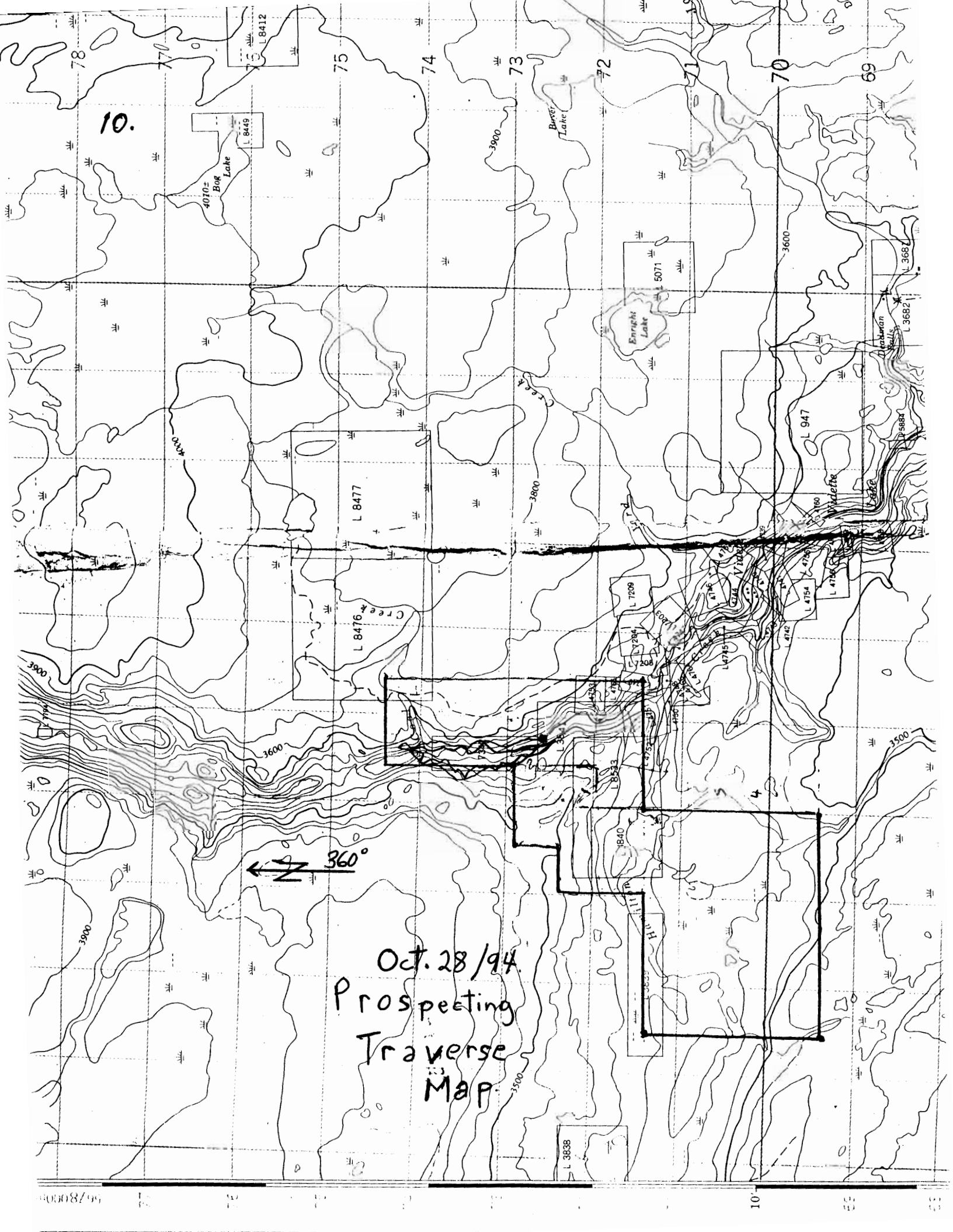
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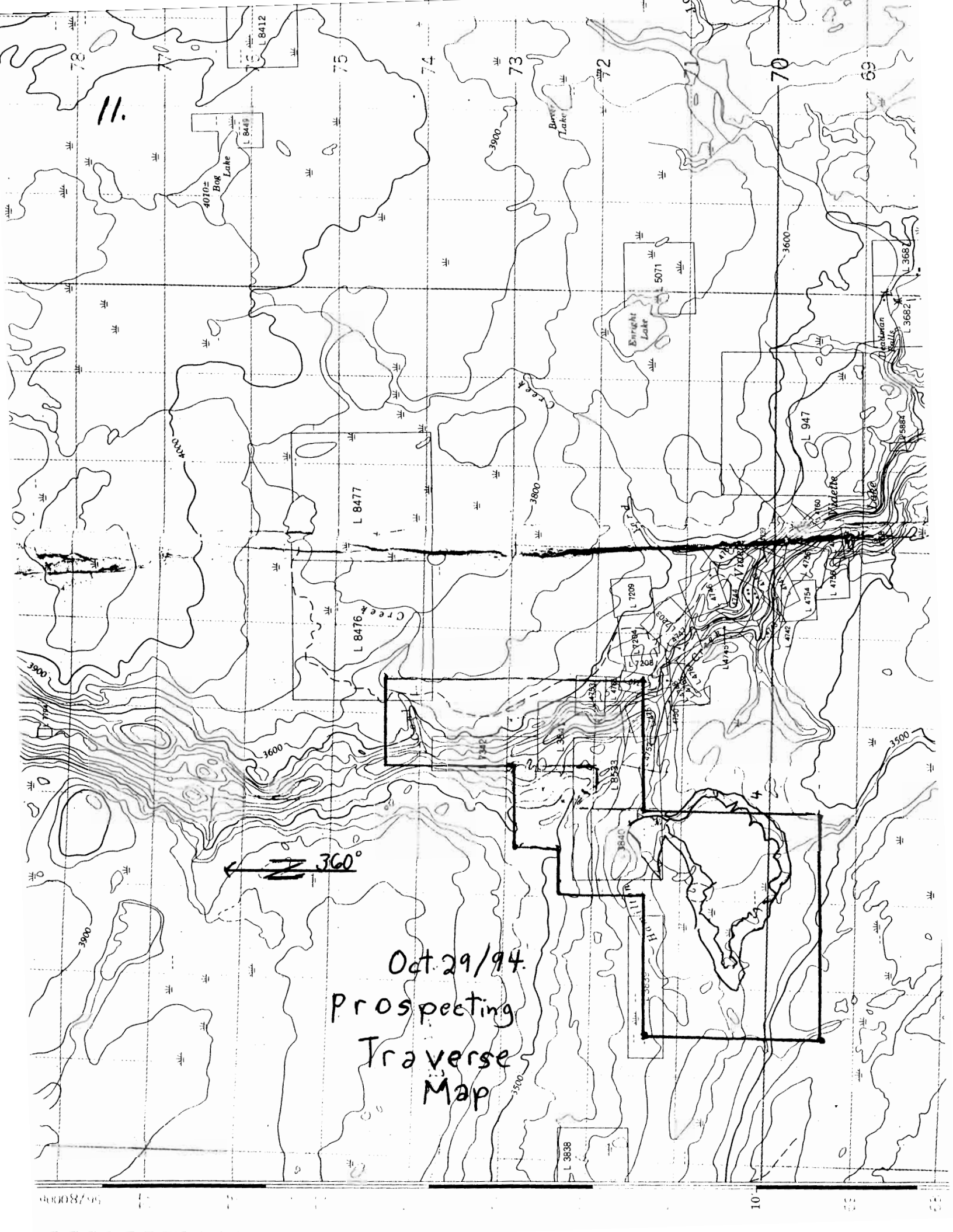


10.



Oct. 28/94  
Prospecting  
Traverse  
Map





11

360°

Oct 29/94  
Prospecting  
Traverse  
Map

L 8412

L 8449

4010 Bog Lake

L 8477

L 8476

L 5071

Enright Lake

L 947

L 4736

L 4754

L 4736

L 3682

L 3688

L 7209

L 7203

L 7203

L 7203

L 7203

L 7203

L 7203

L 7203

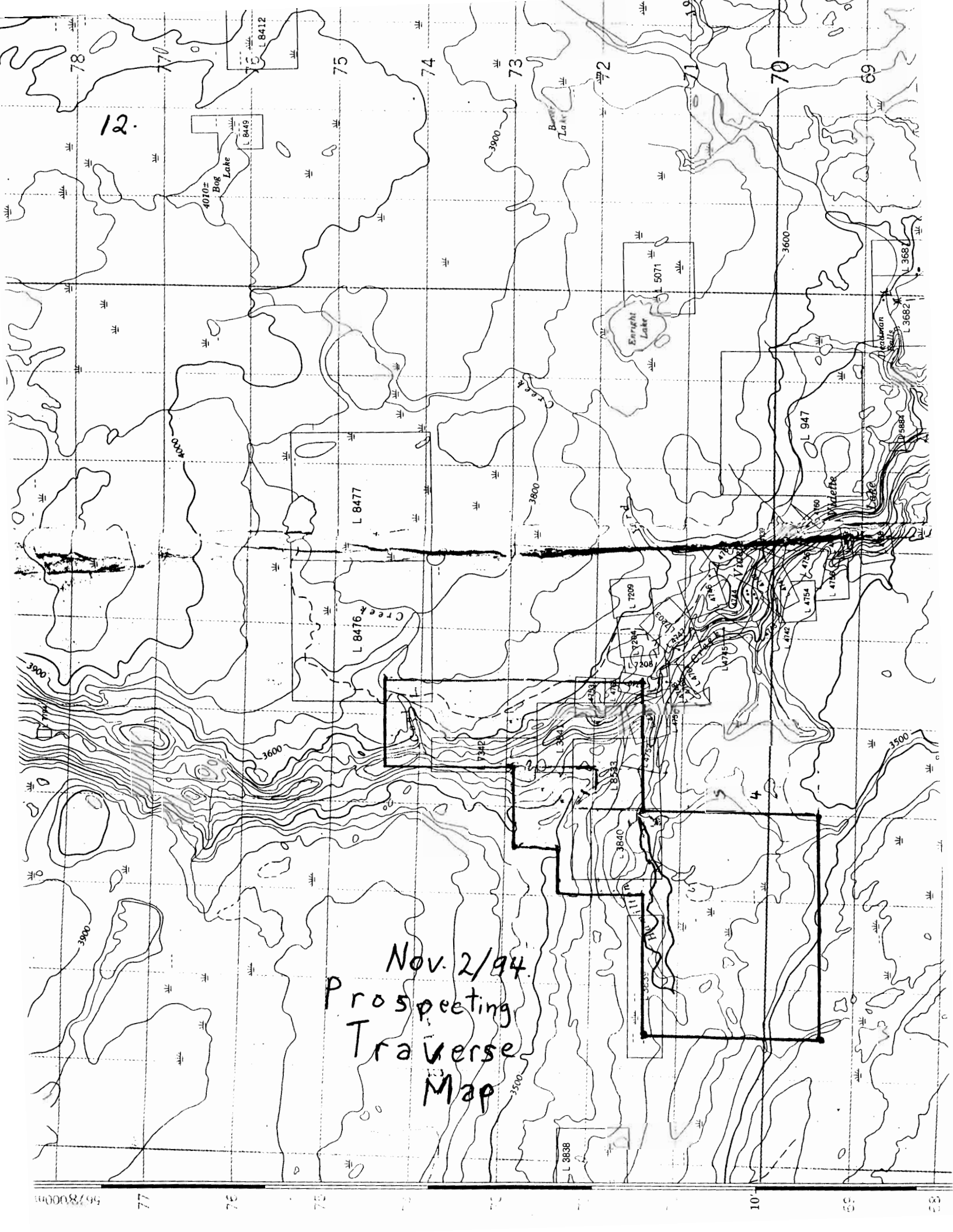
L 7203

L 7203

L 7203

L 7203

L 3838



12.

Nov. 2/94  
Prospecting  
Traverse  
Map

Bog Lake  
4070  
L 8449

Enright Lake  
L 5071

L 8477

L 8476

L 7209

L 7204

L 7203

L 7202

L 7201

L 7200

L 7199

L 7198

L 7197

L 7196

L 7195

L 7194

L 7193

L 7192

L 7191

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L 3672

L 3671

L 3670

L 3669

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L 3667

L 3666

L 3665

L 3664

L 3663

L 3662

L 3661

L 3660

L 3659

L 3658

L 3838

567800m

77

76

75

10

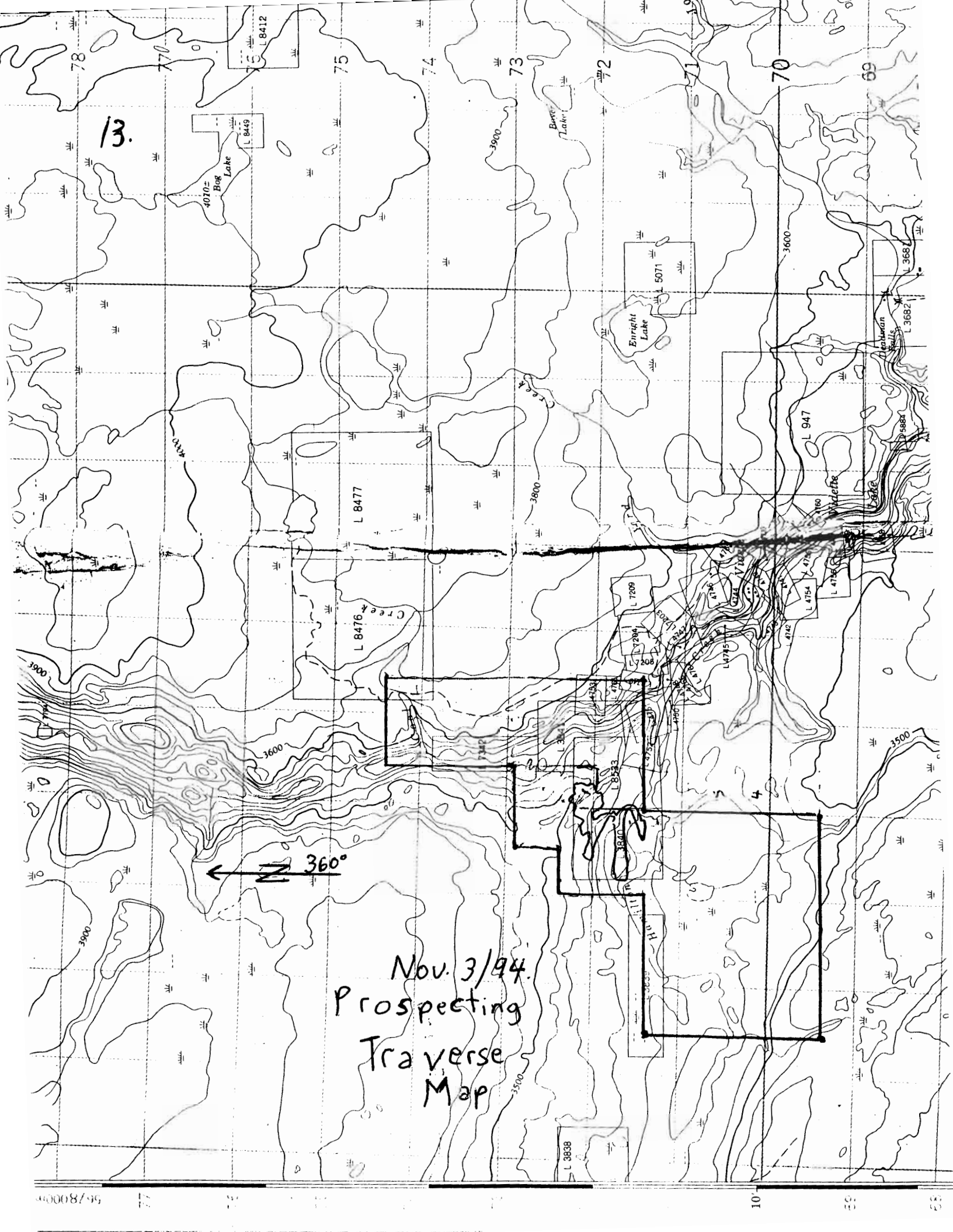
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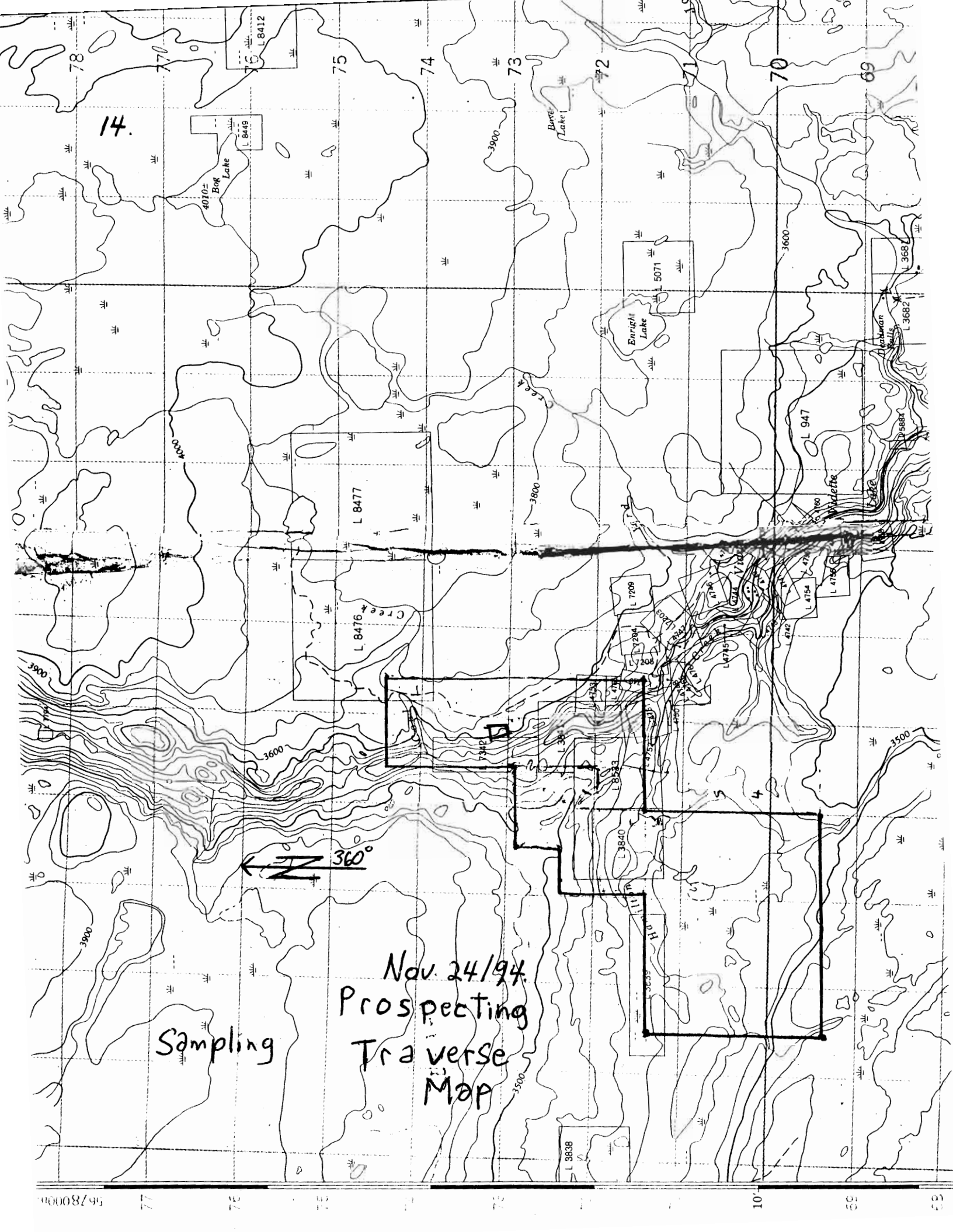
12

13.

360°

Nov. 3/94  
Prospecting  
Tra verse  
Map





14.

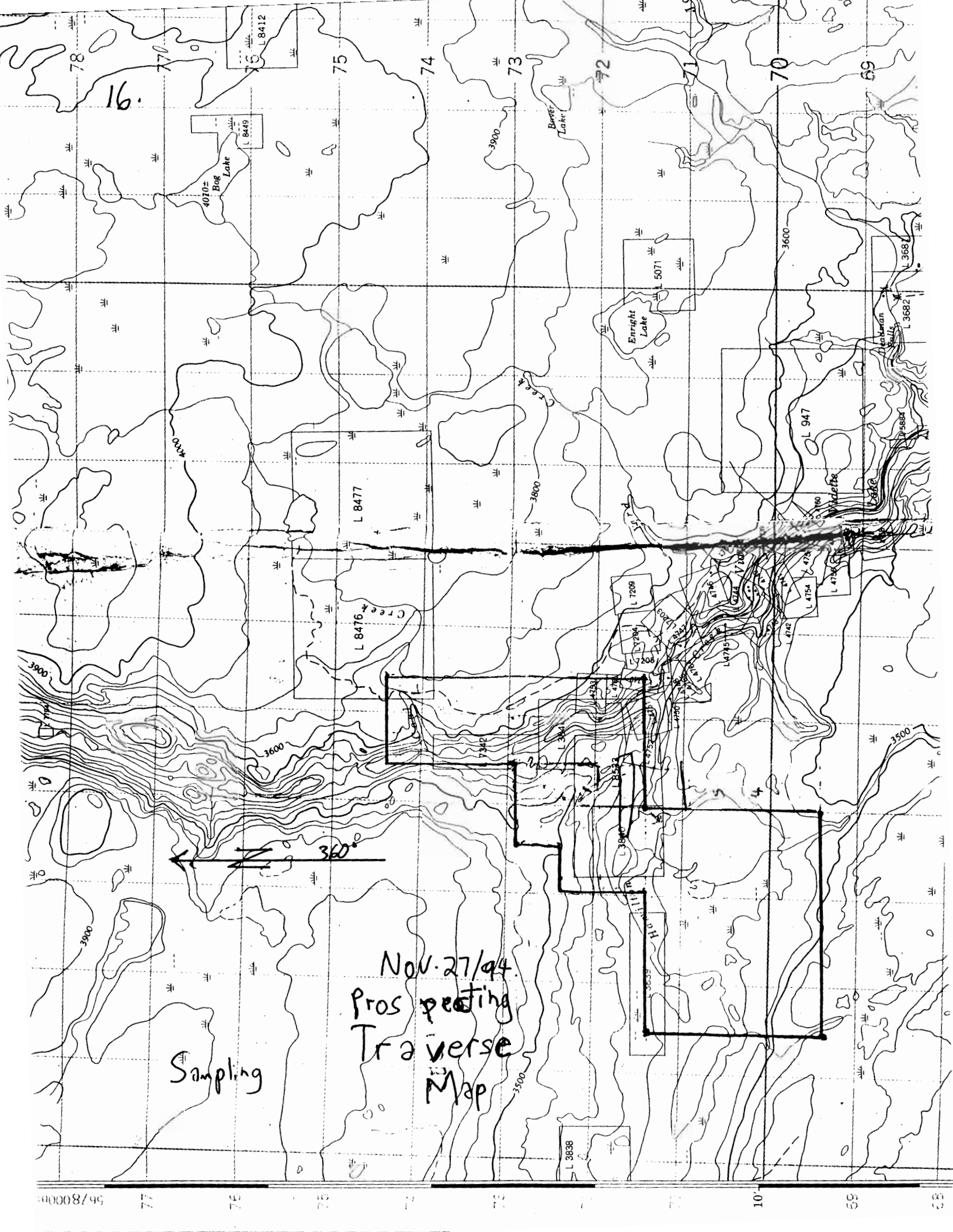
Sampling

360°

Nov 24/94.  
 Prospecting  
 Traverse  
 Map



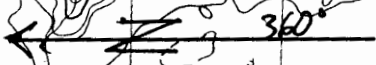




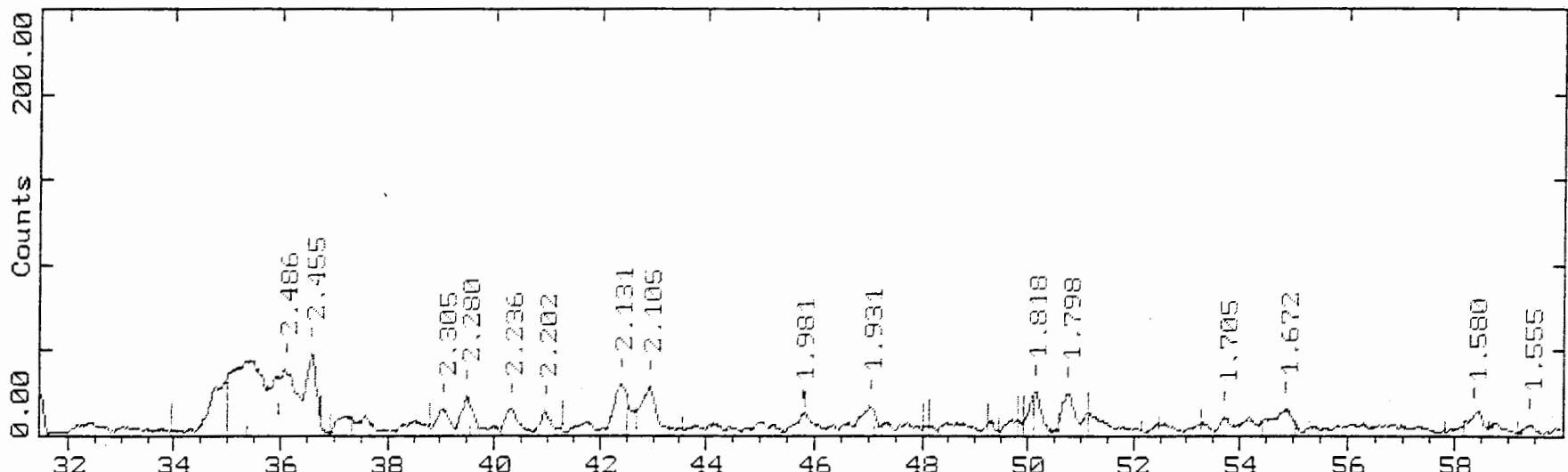
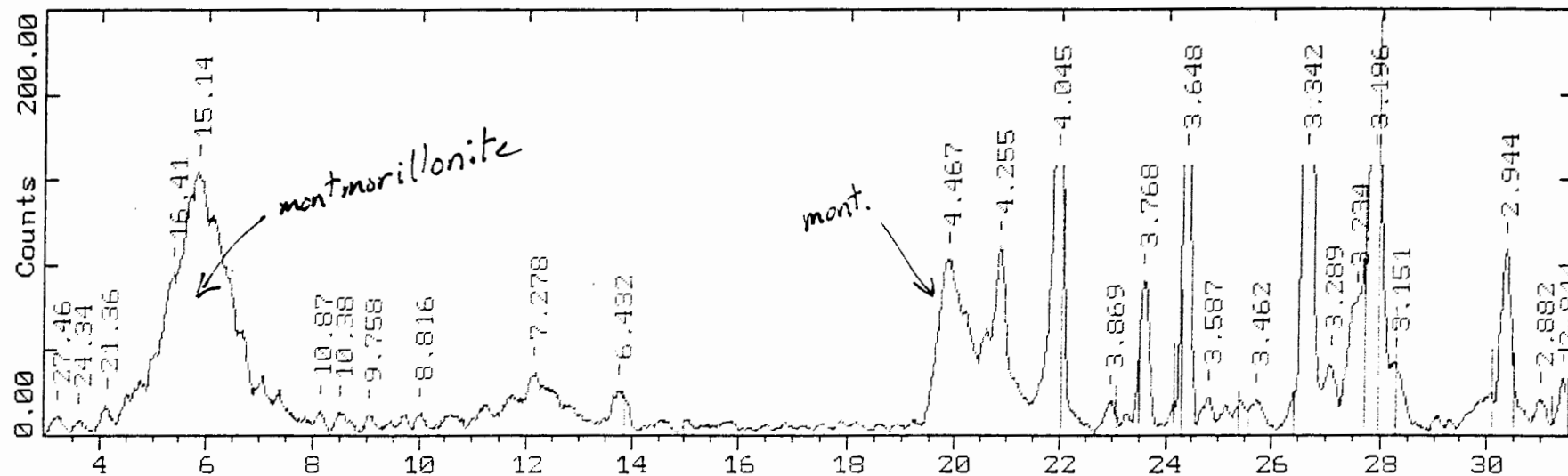
16.

Sampling

Nov. 27/94  
Prospecting  
Traverse  
Map



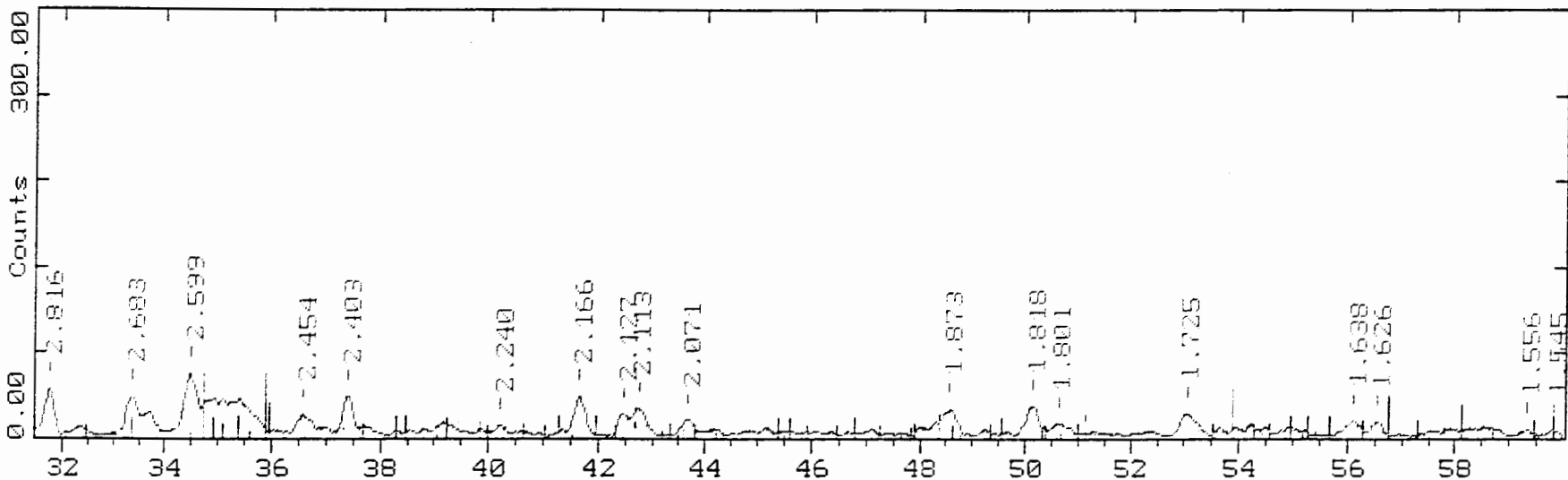
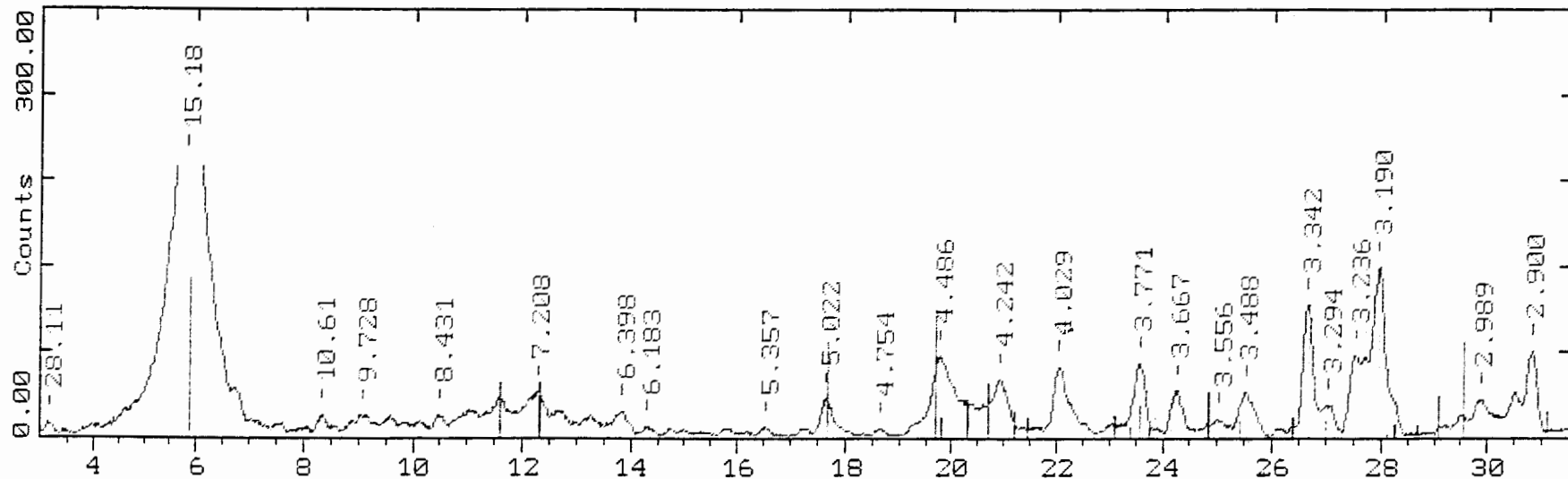
**Appendix ii**



C:\D5000\DATA\CM2.RAW CM2 (CT: 0.8s, SS:0.020dg, WL: 1.5406Ao)

NaAlSi3O8 Albite low (WL: 1.5406Ao)

Fig. 2



0015000 DATA\CM3.RAW CM3 (CT: 0.8s, SS:0.020dg, WL: 1.5406Ao)

- 001-070-0100 CaO.2(Al,Mg)2Si4O10(OH)2.xH2O Montmorillonite A (WL: 1.5406Ao)
- 14-0164 I Al2Si2O5(OH)4 Kaolinite IT A RG (WL: 1.5406Ao)
- 09-0911 \* CaSO4.2H2O Gypsum syn (WL: 1.5406Ao)

Fig. 3

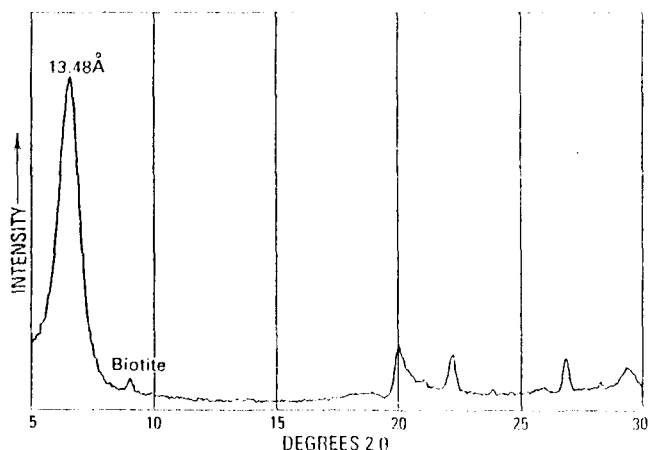


FIGURE 3.—X-ray diffraction trace of sodium-bentonite (montmorillonite) from the Clay Spur Bentonite Bed of the Mowry Shale, Crook County, Wyo.

primarily used in animal feed, but both sodium-bentonite and attapulgite are used in all types of fillers.

*Sealant and waterproofing.*—Approximately 2 percent of the bentonite produced in the United States is used as a sealant to reduce water seepage from ponds and irrigation ditches (Ampian, 1988). It is also used to waterproof the outside basement walls of homes and other structures (Mielenz and King, 1955). Sodium-bentonite is the best type used for sealant and waterproofing because of its swelling capacity, but a small amount of calcium-bentonite is also used. There is probably a large quantity of bentonite and bentonitic clay used locally for sealing irrigation ditches and stock ponds that is not included in the U.S. Bureau of Mines annual production statistics.

*Catalyst.*—Small amounts of bentonite are used for catalytic cracking of heavy petroleum fractions (Grim, 1962, p. 309). This use requires high-purity bentonite to be treated with sulfuric or hydrochloric acid to remove alkalis, alkaline earths, and iron and partially to remove magnesium and aluminum. Calcium-bentonite is the most suitable clay for this purpose.

## MINERALOGY

Both bentonite and fuller's earth are rocks composed predominantly of one clay mineral plus small amounts of fine-grained nonclay minerals. Bentonite consists chiefly of one or more members of the smectite-group (formerly the montmorillonite-group) mineral. Fuller's earth also consists chiefly of either a smectite-group mineral or palygorskite (attapulgite).

The smectite minerals have a layered crystal structure in which two silica tetrahedral sheets, enclosing an alumina octahedral sheet, are separated by an interlayer

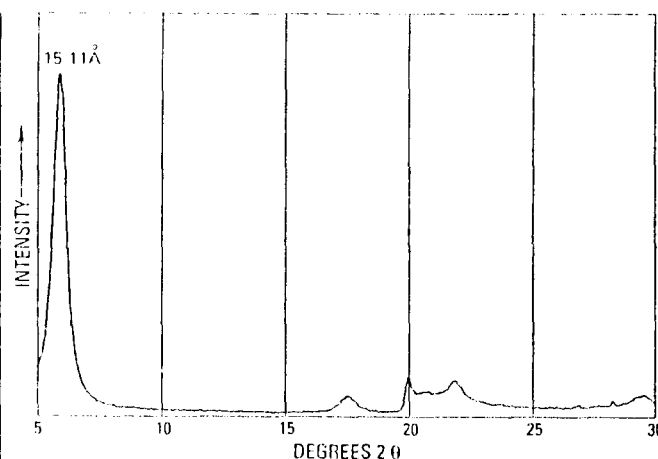
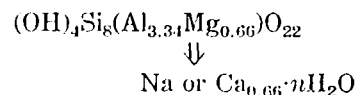


FIGURE 4.—X-ray diffraction trace of calcium-bentonite (montmorillonite) from the Yegua Formation, Claiborne Group, Gonzales County, Tex.

space containing an exchangeable ion(s) and water molecules. The theoretical formula is considered to be:



The arrow indicates a charge deficiency that must be satisfied by an exchangeable ion in the interlayer space. Sodium is the dominant exchangeable ion in the Wyoming (Na or swelling) bentonites (fig. 3), and calcium is the dominant ion in the southern (Ca or nonswelling) bentonites (fig. 4). Smectite is recognized on the X-ray diffraction (XRD) traces by its very strong basal (001) peak at about 14 Å, which expands to about 17 Å when saturated with ethylene glycol and collapses to 10 Å when heated to 350 °C for a minimum of 30 min.

The smectite-group minerals are divided into two subgroups—trioctahedral and dioctahedral. The trioctahedral smectites are represented by saponite (fig. 5) and hectorite (fig. 6) as end members of a magnesium-lithium series. The dioctahedral smectites are represented by beidellite, nontronite, and montmorillonite as end members of an aluminum-iron-magnesium series. For detailed discussion of the chemistry of the smectite-group minerals, the reader is directed to Ross and Hendricks (1945).

During the work leading to this report, the senior author investigated many deposits of bentonite and Wolfbauer (1977; Frahm (1978) reviewed a large quantity of data resulting from tests by the U.S. Bureau of Land Management. The U.S. Bureau of Land Management has also studied relation between the physical properties and exchangeable cations of bentonite (Regis, 1978a,b). The grit content, water-soluble salt content, and exchangeable cations of bentonite from many deposits in the United States are in table 1.

**Appendix iii**



ASSAYING  
GEOCHEMISTRY  
ANALYTICAL CHEMISTRY  
ENVIRONMENTAL TESTING

10041 E. Trans Canada Hwy., R.R. #2, Kamloops, B.C. V2C 2J3 Phone (604) 573-5700  
Fax (604) 573-4557

**CERTIFICATE OF ANALYSIS ETK94-923**

CHUCK MARLOW  
2E-7155 E TRANS CANADA HWY.  
KAMLOOPS, B.C.  
V2C 4T1

28-Nov-94

3 samples received November 2, 1994


ET #.	Tag #	BaO	P2O5	SiO2	MnO	Fe2O3	MgO	Al2O3	CaO	TiO2	Na2O	K2O	L.O.I.
1	B105	0.06	0.01	57.34	0.06	7.13	2.09	16.53	2.03	0.85	1.46	1.05	11.40
2	B108	0.05	0.01	57.88	0.17	5.98	1.32	16.67	2.39	0.86	1.50	0.29	12.90
3	D1	0.08	0.01	62.21	0.03	4.95	1.37	12.11	1.04	0.71	0.86	0.91	15.73

**QC/DATA**

**Standards:**

MRG1	0.04	0.04	38.92	0.17	17.41	13.40	8.32	14.37	3.77	0.72	0.44	2.40
SY2	0.09	0.55	59.71	0.32	6.26	2.93	12.06	7.70	0.15	4.24	4.16	1.84

Note: Values expressed in percent

  
\_\_\_\_\_  
ECO-TECH LABORATORIES LTD.  
Frank J. Pezzotti, A.Sc.T.  
B.C. Certified Assayer

XLS/Kmisc7  
df/wr939





ASSAYING  
GEOCHEMISTRY  
ANALYTICAL CHEMISTRY  
ENVIRONMENTAL TESTING

10041 E. Trans Canada Hwy., R.R. #2, Kamloops, B.C. V2C 2J3 Phone (604) 573-5700  
Fax (604) 573-4557

**CERTIFICATE OF ANALYSIS ETK95-26**

CHUCK MARLOW  
2E-7155 E TRANS CANADA HWY.  
KAMLOOPS, B.C.  
V2C 4T1

20-Jan-95

1 ROCK sample received January 17, 1995


Values expressed in percent

ET #.	Tag #	BaO	P2O5	SiO2	MnO	Fe2O3	MgO	Al2O3	CaO	TiO2	Na2O	K2O	L.O.I.
1	33-01	0.11	0.12	62.30	0.04	5.93	0.93	16.90	2.19	0.69	1.94	1.73	5.65

QC/DATA:

repeat:	Tag #	BaO	P2O5	SiO2	MnO	Fe2O3	MgO	Al2O3	CaO	TiO2	Na2O	K2O	L.O.I.
1	33-01	0.10	0.11	63.10	0.04	5.98	1.03	17.10	2.23	0.67	1.97	1.55	5.89

XLS/Kmisc95  
df/wr26

  
ECO-TECH LABORATORIES LTD.  
Frank J. Pezzotti, A.Sc.T.  
B.C. Certified Assayer

14-Dec-94

ECO-TECH LABORATORIES LTD.  
10041 East Trans Canada Highway  
KAMLOOPS, B.C.  
V2C 2J3

CHUCK MARLOW ETK 94-1005  
2 - E 7155 EAST TRANS CANADA H  
KAMLOOPS, B.C.  
V2C 4T1

Phone: 604-573-5700  
Fax : 604-573-4557

1 ROCK sample received December

Values reported in ppm unless otherwise indicated

Et #.	Tag #	Au(ppb)	Ag	Al %	As	Ba	Bi	Ca %	Cd	Co	Cr	Cu	Fe %	La	Mg %	Mn	Mo	Na %	Ni	P	Pb	Sb	Sn
1	SYN1	10	<.2	2.46	<5	115	<5	1.09	<1	17	23	35	3.85	<10	0.92	448	<1	<.01	9	260	20	15	<20

**QC DATA:**

<b>Repeat:</b>																							
1	SYN1		<.2	2.43	<5	115	<5	1.08	<1	17	31	34	3.80	<10	0.89	437	<1	<.01	8	250	20	15	<20
<b>Standard 1991:</b>			1.0	1.73	70	150	<5	1.77	2	20	59	86	4.03	<10	0.90	674	<1	0.01	29	730	24	5	<20

XLS/Kmisc#8  
df/1004

4-Jan-95

ECO-TECH LABORATORIES LTD.  
10041 East Trans Canada Highway  
KAMLOOPS, B.C.  
V2C 2J3

Phone: 604-573-5700  
Fax : 604-573-4557

CHUCK MARLOW ETK 923  
2E-7155 E TRANS CANADA HWY.  
KAMLOOPS, B.C.  
V2C 4T1

3 pulp samples received November 2, 1994  
Telephone request : December 30, 1994

Values in ppm unless otherwise reported

Et #.	Tag #	Ag	Al %	As	Ba	Bi	Ca %	Cd	Co	Cr	Cu	Fe %	La	Mg %	Mn	Mo	Na %	Ni	P	Pb	Sb	Sn	Sr	Ti
2	B108	<.2	1.44	35	135	<5	0.64	<1	19	14	21	2.28	<10	0.39	1107	<1	0.04	16	40	14	<5	<20	73	0.
3	D1	<.2	0.84	20	170	<5	0.27	<1	12	26	53	2.02	10	0.45	140	<1	0.07	19	230	32	5	<20	70	0.

QC DATA

Repeat:

2	B108	<.2	1.35	30	130	<5	0.59	<1	17	13	20	2.13	<10	0.36	1046	<1	0.04	16	50	12	5	<20	68	0.
---	------	-----	------	----	-----	----	------	----	----	----	----	------	-----	------	------	----	------	----	----	----	---	-----	----	----

Standard:

		1.0	1.74	70	170	5	1.74	1	20	66	80	4.07	<10	0.96	704	<1	0.01	22	650	20	15	<20	58	0.
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XLS/Kmisc8  
df/923

  
ECO-TECH  
Frank J. Pe  
B.C. Certifi

**Appendix iv**



ASSAYING  
GEOCHEMISTRY  
ANALYTICAL CHEMISTRY  
ENVIRONMENTAL TESTING

10041 E. Trans Canada Hwy., R.R. #2, Kamloops, B.C. V2C 2J3 Phone (604) 573-5700  
Fax (604) 573-4557

**CERTIFICATE OF ANALYSIS ETK94-990**


CHUCK MARLOW  
2E-7155 E TRANS CANADA HWY.  
KAMLOOPS, B.C.  
V2C 4T1

16-Dec-94

7 samples received November 29, 1994

ET #.	Tag #	Cation Exchange Capacity meq. (NH3/100g)	Water Retention & Capacity (ml/100g)	Oil Retention & Capacity (ml/100g)	pH (units)	Density (g/cm <sup>3</sup> )
1	B-1	30.7	26	28	3.45	1.80
2	B-2	42.1	50	20	3.53	1.90
3	B-3	24.7	28	20	3.00	1.99
4	B-4	29.9	16	16	3.52	1.91
5	B-6	35.5	20	20	4.50	1.98
6	B-7	32.6	26	16	5.59	2.01
7	B-9	28.9	24	16	6.41	2.10

XLS/kmisc8

  
ECO-TECH LABORATORIES LTD.  
Frank J. Pezzotti, A.Sc.T.  
B.C. Certified Assayer



ASSAYIN  
GEOCHEMIST  
ANALYTICAL CHEMIST  
ENVIRONMENTAL TESTIN

10041 E. Trans Canada Hwy., R.R. #2, Kamloops, B.C. V2C 2J3 Phone (604) 573-57  
Fax (604) 573-45

" R E V I S E D "

CERTIFICATE OF ANALYSIS ETK94-923

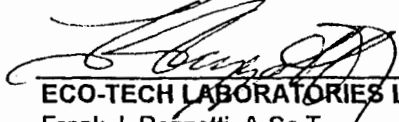
CHUCK MARLOW  
2E-7155 E TRANS CANADA HWY.  
KAMLOOPS, B.C.  
V2C 4T1

16-Dec-94

3 samples received November 2, 1994

ET #.	Tag #	Cation Exchange Capacity meq. (NH3/100g)	Water Retention & Capacity (ml/100g)	Oil Retention & Capaci (ml/100g)
1	B105	37.0	38	30
2	B108	35.7	44	56
3	D1	29.6	96	104

XLS/kmisc8

  
ECO-TECH LABORATORIES LTD.  
Frank J. Pezzotti, A.Sc.T.  
B.C. Certified Assayer



ASSAYING  
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ANALYTICAL CHEMISTRY  
ENVIRONMENTAL TESTING

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Fax (604) 573-4557

**CERTIFICATE OF ANALYSIS ETK 95-1**

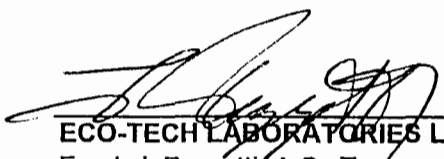
CHUCK MARLOW  
2E-7155 E TRANS CANADA HWY.  
KAMLOOPS, B.C.  
V2C 4T1

5-Jan-95

2 CRUSH samples received January 3, 1994

ET #.	Tag #	Water Retention & Capacity (ml/100g)	Oil Retention & Capacity (ml/100g)	Density (g/cm <sup>3</sup> )
1	W.C.	88.33	85.00	1.82
2	K.K.	85.00	76.67	1.94

XLS/95kmisc1

  
ECO-TECH LABORATORIES LTD.  
Frank J. Pezzotti, A.Sc.T.  
B.C. Certified Assayer

# Norwest Labs



"We Solve Problems"

203 - 20771 Langley By-Pass  
Langley, B.C. V3A 5E8  
Phone (604) 530-4344  
Fax: (604) 534-9996

WO (Lang.) : #7295

WO (Other) :

PO # :

Date Rec'd. : 25-May-94

Date Comp. : 27-May-94


Client

Received From

<p>Name : Dave Duguay &amp; C. Marlow Address : 2-E 7155 E.T. Canada Hwy. Kamloops, B.C. CANADA V2C 4T1 Phone : (604) 573-2845 Fax : Attention :</p>	<p>Name : Address :  Phone : Fax : Attention :</p>
--	--

## Soil Analysis

b #	Sample Id	Cation Exchange Capacity me/100g
7295-1	253-1	16.1
-2	253-2	18.6
-3	253-3	15.6

Approved By   
 Dr. Thomas F. Guthrie, P.Ag.  
 General Manager



# PACIFIC SOIL ANALYSIS INC.

## SOIL AND PLANT ANALYSES

May 18/94

Northwest Mining Industries

ATTN: S.B. Buttrick

Sample

← EXCHANGEABLE →

CEC      Ca      Mg      Na      K  
← me/100 gm →

VID	CEC	Ca	Mg	Na	K
1	13.3	6.00	6.00	0.38	0.88
2	22.3	10.5	8.00	1.43	2.38
3	19.7	9.50	7.25	0.73	2.18
6	19.2	9.00	7.75	0.68	1.78



# Norwest Labs



"We Solve Problems"

203 - 20771 Langley By-Pass  
Langley, B.C. V3A 5E8  
Phone (604) 530-4344  
Fax: (604) 534-9996

WO (Lang.) : #6995  
WO (Other) :  
PO # :  
Date Rec'd. : 03-May-94  
Date Comp. : 05-May-94

Client

Received From

Name : Dave Duguay & C. Marlow Address : 2-E 7155 E.T. Canada Hwy Kamloops, B.C. CANADA V2C 4T1 Phone : (604) 573-2845 Fax : Attention :	Name : Address :  Phone : Fax : Attention :
--	--

## Soil Analysis

Lab #	Sample Id	Cation Exchange Capacity me/100g
	Duguay Soil	
6995-1	223-1	31.8
-2	223-2	29.7
-3	223-3	40.0
-4	223-4	42.2

Approved By Thomas F. Guthrie  
Dr. Thomas F. Guthrie, P.Ag.  
General Manager

**Appendix v**



ASSAYING  
GEOCHEMISTRY  
ANALYTICAL CHEMISTRY  
ENVIRONMENTAL TESTING

10041 E. Trans Canada Hwy., R.R. #2, Kamloops, B.C. V2C 2J3 Phone (604) 573-5700  
Fax (604) 573-4557

## INVOICE

CHUCK MARLOW  
2E-7155 E TRANS CANADA HWY  
KAMLOOPS, B.C.  
V2C 4T1

16-Dec-94

INVOICE #: ETK 94-923-A

ANALYSIS	PRICE / EACH	AMOUNT
3 OIL & WATER RETENTION ANALYSES	30.00	90.00
	SUBTOTAL :	90.00
	& 7% G.S.T.	6.30
THANK YOU !	TOTAL DUE & PAYABLE UPON RECEIPT:	<u>96.30</u>
	<i>LESS 10% DISCOUNT IF PAID WITHIN 30 DAYS:</i>	<u>9.00</u>

G.S.T. REGISTRATION NUMBER R101565356

TERMS : NET 30 DAYS. INTEREST AT RATE OF 1-1/2% PER MONTH (18% ANNUM) WILL BE CHARGED ON OVERDUE ACCOUNTS.



ASSAYING  
GEOCHEMISTRY  
ANALYTICAL CHEMISTRY  
ENVIRONMENTAL TESTING

10041 E. Trans Canada Hwy., R.R. #2, Kamloops, B.C. V2C 2J3 Phone (604) 573-5700  
Fax (604) 573-4557

## INVOICE

CHUCK MARLOW  
2E-7155 E TRANS CANADA HWY  
KAMLOOPS, B.C.  
V2C 4T1

16-Dec-94

INVOICE #: ETK 94-990

ANALYSIS	PRICE / EACH	AMOUNT
7 SAMPLE PREP.	4.25	29.75
7 CATION EXCHANGE CAPACITY	125.00	875.00
7 OIL & WATER RETENTION ANALYSES	30.00	210.00
7 pH ANALYSES	6.00	42.00
	SUBTOTAL :	1156.75
	& 7% G.S.T.	80.97
THANK YOU !	TOTAL DUE & PAYABLE UPON RECEIPT:	<u>1237.72</u>
	<b>LESS 10% DISCOUNT IF PAID WITHIN 30 DAYS:</b>	<b><u>115.68</u></b>

G.S.T. REGISTRATION NUMBER R101565356

TERMS : NET 30 DAYS. INTEREST AT RATE OF 1-1/2% PER MONTH (18% ANNUM) WILL BE CHARGED ON OVERDUE ACCOUNTS.



ASSAYING  
GEOCHEMISTRY  
ANALYTICAL CHEMISTRY  
ENVIRONMENTAL TESTING

10041 E. Trans Canada Hwy., R.R. #2, Kamloops, B.C. V2C 2J3 Phone (604) 573-5700  
Fax (604) 573-4557

## INVOICE

CHUCK MARLOW  
2E-7155 E TRANS CANADA HWY  
KAMLOOPS, B.C.  
V2C 4T1

5-Jan-95

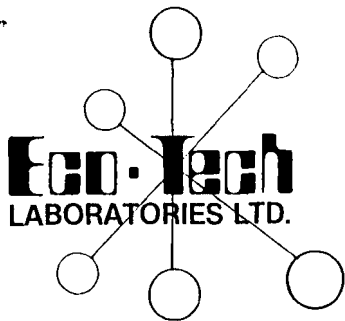
INVOICE #: ETK 95-1

ANALYSIS	PRICE / EACH	AMOUNT
2 OIL & WATER RETENTION ANALYSES	30.00	60.00
2 SPECIFIC GRAVITY ANALYSES	12.00	24.00
	SUBTOTAL :	84.00
	& 7% G.S.T.	5.88
	TOTAL DUE & PAYABLE UPON RECEIPT:	\$ <u>89.88</u>

THANK YOU !

G.S.T. REGISTRATION NUMBER R101565356

TERMS : NET 30 DAYS. INTEREST AT RATE OF 1-1/2% PER MONTH (18% ANNUM) WILL BE CHARGED ON OVERDUE ACCOUNTS.



ASSAYING  
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ANALYTICAL CHEMISTRY  
ENVIRONMENTAL TESTING

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Fax (604) 573-4557

## INVOICE

CHUCK MARLOW  
2E-7155 E TRANS CANADA HWY  
KAMLOOPS, B.C.  
V2C 4T1

14-Dec-94

INVOICE #: ETK 94-1005

ANALYSIS	PRICE / EACH	AMOUNT
1 SAMPLE PREP. (ROCK)	4.25	4.25
1 30 ELEMENT ICP	5.50	5.50
1 AU GEOCHEM	8.50	8.50
	SUBTOTAL :	18.25
	& 7% G.S.T.	1.28
THANK YOU !	TOTAL DUE & PAYABLE UPON RECEIPT:	<u>19.53</u>

G.S.T. REGISTRATION NUMBER R101565356

TERMS : NET 30 DAYS. INTEREST AT RATE OF 1-1/2% PER MONTH (18% ANNUM) WILL BE CHARGED ON OVERDUE ACCOUNTS.



ASSAYING  
GEOCHEMISTRY  
ANALYTICAL CHEMISTRY  
ENVIRONMENTAL TESTING

10041 E. Trans Canada Hwy., R.R. #2, Kamloops, B.C. V2C 2J3 Phone (604) 573-5700  
Fax (604) 573-4557

## INVOICE

CHUCK MARLOW  
2E-7155 E TRANS CANADA HWY  
KAMLOOPS, B.C.  
V2C 4T1

4-Jan-95

INVOICE #: ETK 94-923-B

ANALYSIS	PRICE / EACH	AMOUNT
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Telephone request: December 30, 1994

2	28 ELEMENT ICP	6.25	12.50
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	SUBTOTAL :		12.50
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	& 7% G.S.T.		0.88
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THANK YOU !

TOTAL DUE & PAYABLE UPON RECEIPT:	<u>13.38</u>
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G.S.T. REGISTRATION NUMBER R101565356

TERMS : NET 30 DAYS. INTEREST AT RATE OF 1-1/2% PER MONTH (18% ANNUM) WILL BE CHARGED ON OVERDUE ACCOUNTS.





ASSAYING  
GEOCHEMISTRY  
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ENVIRONMENTAL TESTING

10041 E. Trans Canada Hwy., R.R. #2, Kamloops, B.C. V2C 2J3 Phone (604) 573-5700  
Fax (604) 573-4557

## INVOICE

CHUCK MARLOW  
2E-7155 E TRANS CANADA HWY.  
KAMLOOPS, B.C.  
V2C 4T1

20-Jan-95

INVOICE #: ETK95-26

ANALYSIS	PRICE / SAMPLE	AMOUNT
3 SAMPLE PREP.	4.25	12.75
1 WHOLE ROCK ANALYSIS	24.00	24.00
	SUBTOTAL :	36.75
	& 7% G.S.T.	2.57
THANK YOU !	TOTAL PAID IN FULL (cash):	<u>39.32</u>

G.S.T. REGISTRATION NUMBER R101565356

TERMS : NET 30 DAYS. INTEREST AT RATE OF 1-1/2% PER MONTH (18% ANNUM) WILL BE CHARGED ON OVERDUE ACCOUNTS.

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**Mati Raudsepp, Ph.D.**  
807-5775 Toronto Road  
Vancouver, BC V6T 1X4

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***Invoice to:***

**Chuck Marlow.**  
2-E 7155 East Trans-Canada Highway  
Kamloops, B.C. V2C 4T1

**Invoice Date:** May 30, 1994  
**Invoice Number:** 94-009  
**Amount Due:**

\$300.00
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***Subject:*** X-ray powder diffraction analysis of rock samples.

***Requested by:*** Chuck Marlow.

<i>Description</i>	<i>Hours</i>	<i>Unit cost</i>	<i>Subtotal</i>
1. X-ray powder diffraction analysis, and interpretation.	3.0	60.00	180.00
2. Instrument time.	3.0	40.00	120.00
		<b>Total</b>	\$300.00

  
Mati Raudsepp



**XRAL Laboratories**  
A Division of SGS Canada Inc.

1885 Leslie St.  
Don Mills  
Ontario M3B 3J4  
Canada  
Tel: (416) 445-5755  
Fax: (416) 445-4152  
Telex: 09-986947

PLEASE NOTE NEW  
SUBMITTANCE ADDRESS  
PO Box 9581  
Station "A"  
Toronto, Ontario  
M5W 2K3

**Invoice Date:** 11-May-94  
**Work Order No.:** 18152  
**Date Submitted:** 4-May-94  
**Report No.:** 27124  
**Customer No.:** 2683-1/NGHE  
**Your P.O. No.:**  
**Your Project No.:**

**Invoice To:**  
CHRIS MARLOW  
2-E 7155 E.T. CAN.  
RD.  
KAMLOOPS, B.C.  
V2C 4T1

**Submitted To:**  
CHRIS MARLOW  
2-E 7155 E.T. CAN.  
RD.  
KAMLOOPS, B.C.  
V2C 4T1

Q. OF PKGS	SHIPPED VIA	WAY BILL NO.	SHIPPED FROM	TYPE OF SAMPLES	
	BREYHOUNE	71197163196	KAMLOOPS, B.C.	ROCK	
QUANTITY	DESCRIPTION METHOD	CODE NUMBER	UNIT COST	AMOUNT	
1. 4	KRD SOAP OF SPECIFIC MINERALS	5 0 0 0 0	50.00	200.00	
2. 4	CRUSHING & MILLING	1 0 0 0 0	4.35	17.40	
	SEE REG NO. R105192572 APPLIES TO # 24,4			13.71	
			*****	ADVANCED PAYMENT RECEIVED \$ 232.62	*****
<b>MISC. CHARGES</b>		SHIPPING CHARGES	CUSTOM BROKERAGE	TELEX/FAK	M/V MLM CHARGES
		OTHER	C.O.D.	7.00	SURCHARGE - RUSH SERVICE

ORIGINAL INVOICE

**TOTAL IN →**

CON FUNDS \$ 240.11



Member of the SGS Group (Société Générale de Surveillance)

# NORWEST LABS

PLEASE REMIT ONE COPY WITH PAYMENT TO:

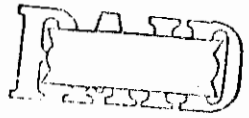
Norwest Soil Research Inc.  
203 20771 Langley Bypass,  
Langley, B.C., V3A 5E8

DAVE DUGUAY & C. MARLOW  
P.O. BOX 7155 E.T. CANADA HWY,  
CAMLOOBS, B.C. V2C 4T1

Attention:

INVOICE NO.	94 6995
DATE	05/05/94
CLIENT NO.	DUGUAD
P.O. NO.	
Page #	1
W.O. #	6995
GST Reg. R121376321	

DESCRIPTION		AMOUNT
L 223-1	S99 CATION EXCHANGE CAPACITY	\$ 25.77
L 223-2	S99 CATION EXCHANGE CAPACITY	\$ 26.00
L 223-3	S99 CATION EXCHANGE CAPACITY	\$ 26.00
L 223-4	S99 CATION EXCHANGE CAPACITY	\$ 26.00
SUB. TOTAL		\$ 103.77
7.0% GST		\$ 7.26
TOTAL		\$ 111.03



INTEREST CHARGED 24% PER ANNUM AFTER 30 DAYS  
 PAYMENT IS PAYABLE ON RECEIPT.

## **Appendix vi**

**List of Personnel:**

L.C. Marlow- 25 man days in the field- 2 days report preparation.

W.T.Hall- 18 man days in the field.

Richard Duplessie- 5 man days in the field

**Appendix vii**

**Statement of Costs:**

**Labour:**

L.C. Marlow-	27 days @ \$150.00/day.....	\$4050.00
W.T. Hall-	18 days @ \$150.00/day.....	\$2700.00
Richard Dupplessie-	5days @ \$100.00/day.....	\$500.00
	Total:.....	\$7250.00

**Expenses:**

**Analytical Costs:**

X-RAL.....	\$240.00
U.B.C.....	\$300.00
Northwest Labs.....	\$201.00
Pacific Soil Labs.....	\$111.03
Eco Tech Labs.....	\$1973.80
Total.....	\$2825.83



STATEMENT OF COST:(cont.)

**Equipment rentals:**

Truck rental:	25 days @ \$40/day.....	\$1000.00
Bus rental:	25 days @ \$40/day.....	\$1000.00
Total:	.....	\$2000.00

**Supplies:**

Universal reproductions:.....	\$206.00
Supplies:.....	\$490.83
Fuel.....	\$363.10
Food.....	\$361.82
Total.....	\$1421.75

Grand Total:.....\$13,497.58

**Appendix viii**

**Qualifications:**

1. I Chuck Marlow successfully completed the ~~Advanced~~ Advanced Prospectors Course in Meschachie Lake in 1986.
2. I successfully completed the Petrology for Prospectors Course at Kamloops in 1991.
3. I have been involved in mining exploration for over over 25 years and extensively since 1980.
4. I have worked for various exploration companies including Teck Explorations, Placer Dome and the S.M.D.C.
5. I hold a B.C. Sand +Gravel/ Placer Supervisor Certificate.

**Qualifications of other Prospectors:**

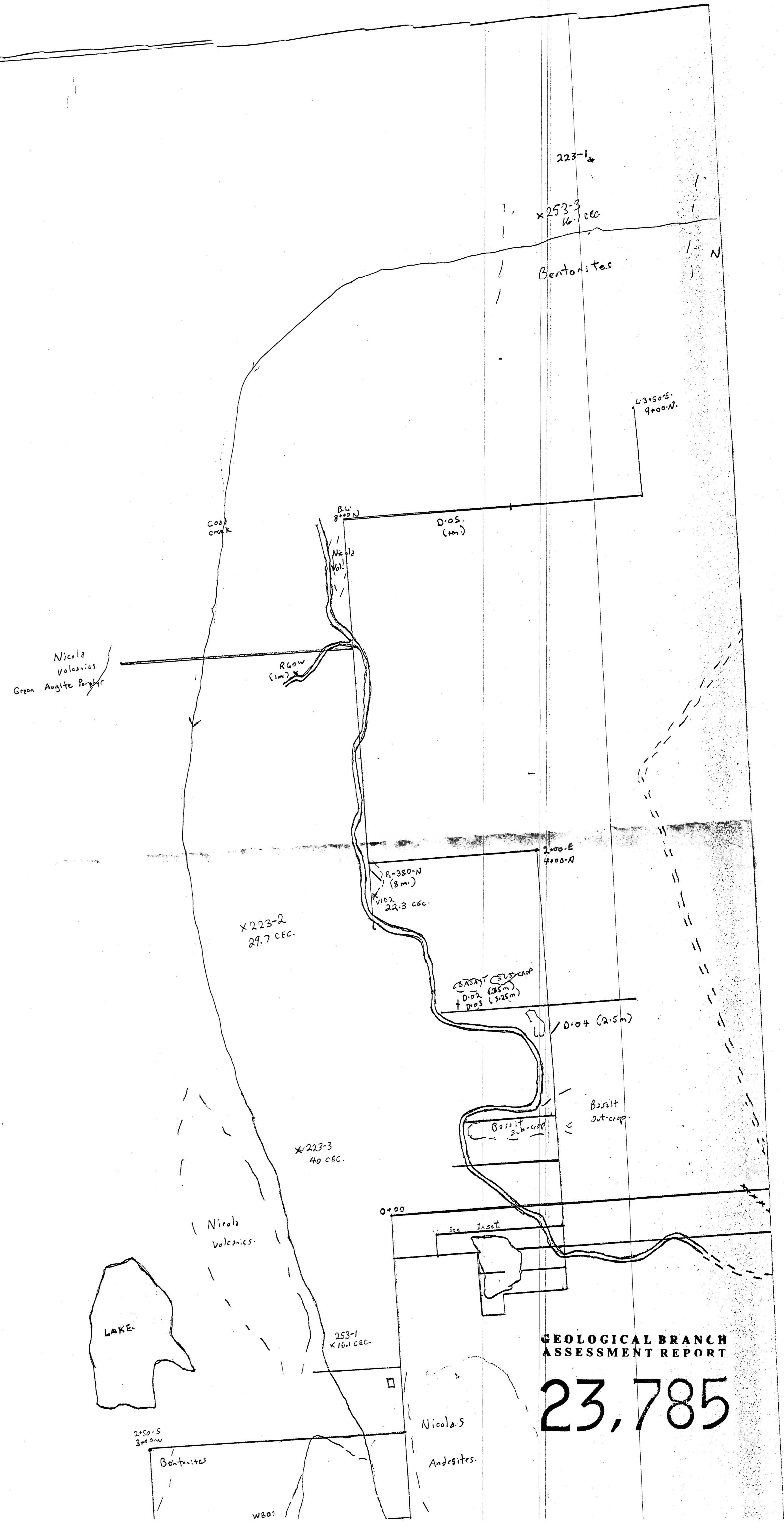
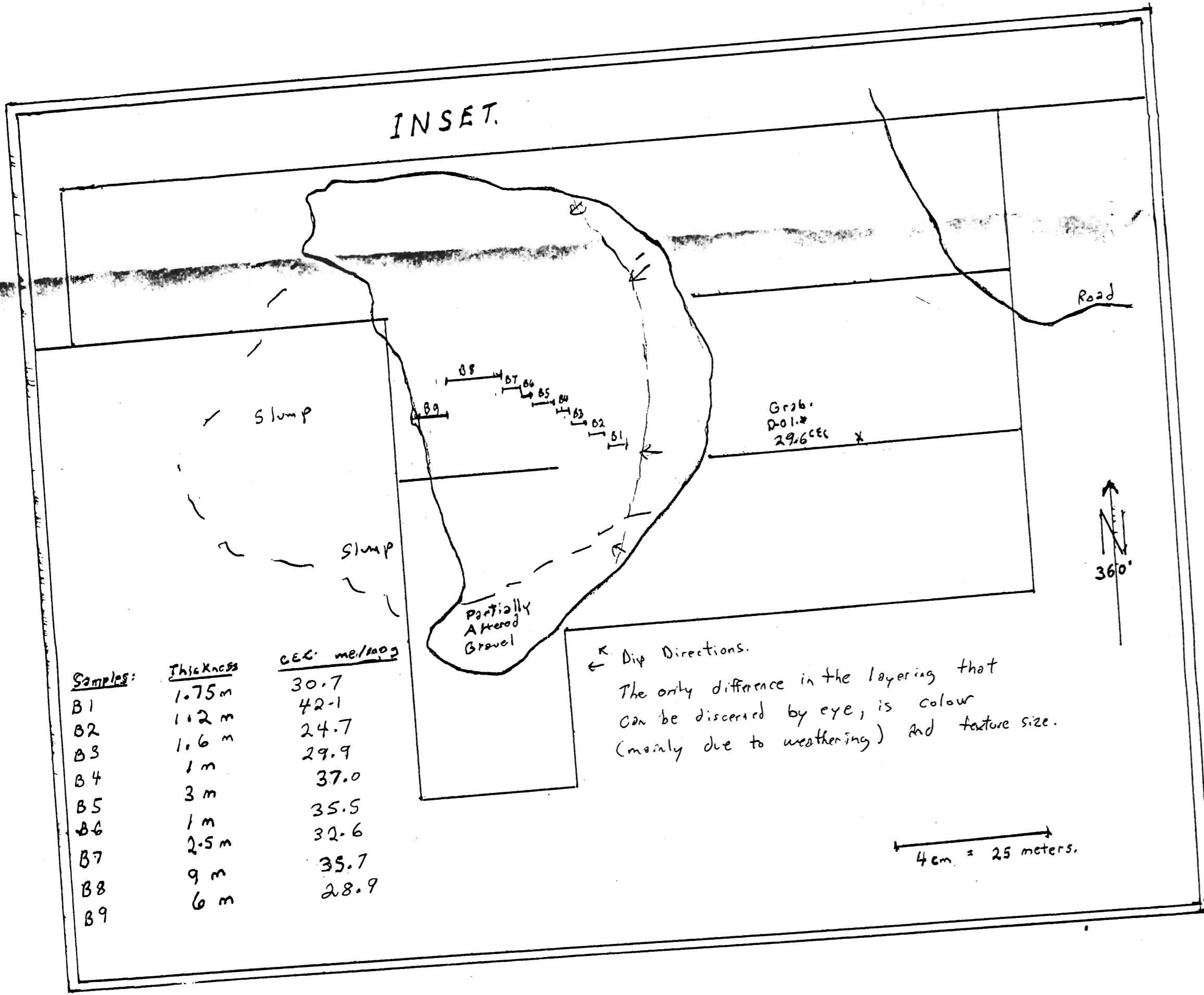
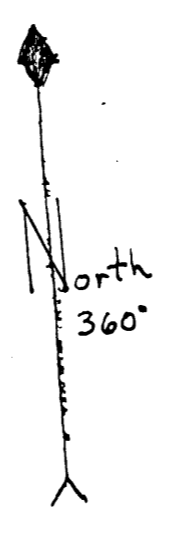
*Chuck Marlow.*

W.T. Hall.

1. He has successfully completed Advanced Prospectors Course in 1987.
2. He has been extensively involved in exploration since 1984.
3. He has worked for several mining companies including Placer Dome.
4. He holds a B.C. Blasters Certificate.

Richard Duplessie.

1. He has been involved in exploration since 1979.
2. He has worked for various mining companies including Teck Explorations.



**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**23,785**