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PROSPECTING REPORT

on the

CLUTCH 1 - 4 MINERAL CLAIMS

EWER CREEK AREA

VERNON MINING DIVISION, B.C.

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**23,574**

NTS: 82L/5E  
Latitude: 50° 23.2' North  
Longitude: 119° 35.9' West  
Owner: D.H. Mitchell  
Operator: Discovery Consultants  
Author: K.L. Daughtry, P.Eng.  
Date: November 2, 1994

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## INTRODUCTION

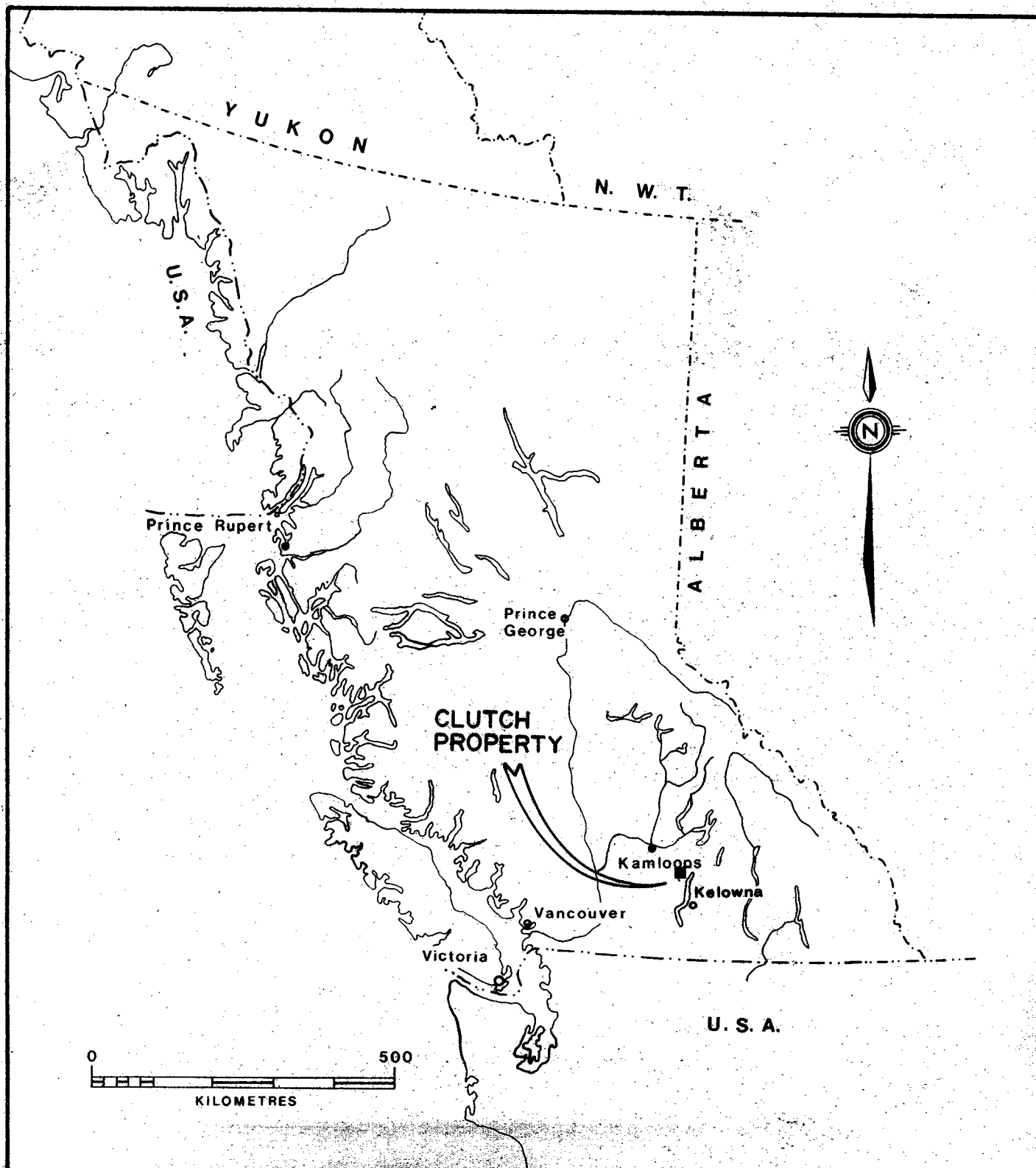
In the past few years, precious opal has been discovered at several localities on the Klinker and Red Rock properties between Pinaus Lake and McGregor Creek, northwest of Vernon, B.C. The opal occurs in association with agate mineralization in volcanic rocks of the Kamloops Group.

The Clutch 1-4 claims were staked to cover an area of abundant agate mineralization which was discovered between the Klinker and Red Rock properties. During the late summer and autumn of 1993, two days were spent prospecting the Clutch property for precious opal. This work consisted of thorough coverage of the Clutch 4 and parts of Clutch 2 and 3 claims.

## LOCATION, ACCESS, TOPOGRAPHY

The Clutch property is 27 kilometres northwest of Vernon and 13 km south-southwest of Falkland in the Okanagan region of southern British Columbia (Figure 1). The claims are on the Thompson Plateau at the head of Ewer Creek, an eastward-flowing tributary of Equisis (Six-mile) Creek which flows into the north arm of Okanagan Lake. Pinaus Lake is 4.5 kilometres due north of the property (Figure 2). The co-ordinates of the centre of the claim block are 50°23.2' North and 119°35.9' West.

The principal access to the property is gained by driving south from Highway 97 on Westside Road for 13.6 km to the junction of Six-mile Road, up Six-mile Road for 10.3 km to the start of the McGregor Main logging road, then west on this road for 19.2 km. The centre of the claim block is 900 metres to the east of this point along an old logging road. Topographic relief is moderate on the plateau in the area of the claims, ranging up to 80 metres. The property is on the northwestern rim of Ewer Creek Canyon, which has been deeply incised into the plateau. On the eastern edge of the property the relief in the canyon is about 300 m. Elevations vary from 1060 m above sea level in Ewer Creek to about 1370 m a.s.l. at the McGregor Main road.



**DISCOVERY** Consultants

**AUDAX ENTERPRISES LTD.**

**CLUTCH PROPERTY**

**LOCATION MAP**

DATE NOV. 4/1994	PROJECT 357	SCALE: As Shown	N.T.S. 82L/5E	M.D. VERNON	FIGURE 1
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## HISTORY

There is no record of any mineral occurrences or previous exploration activity in the area of the Clutch property.

## PROPERTY

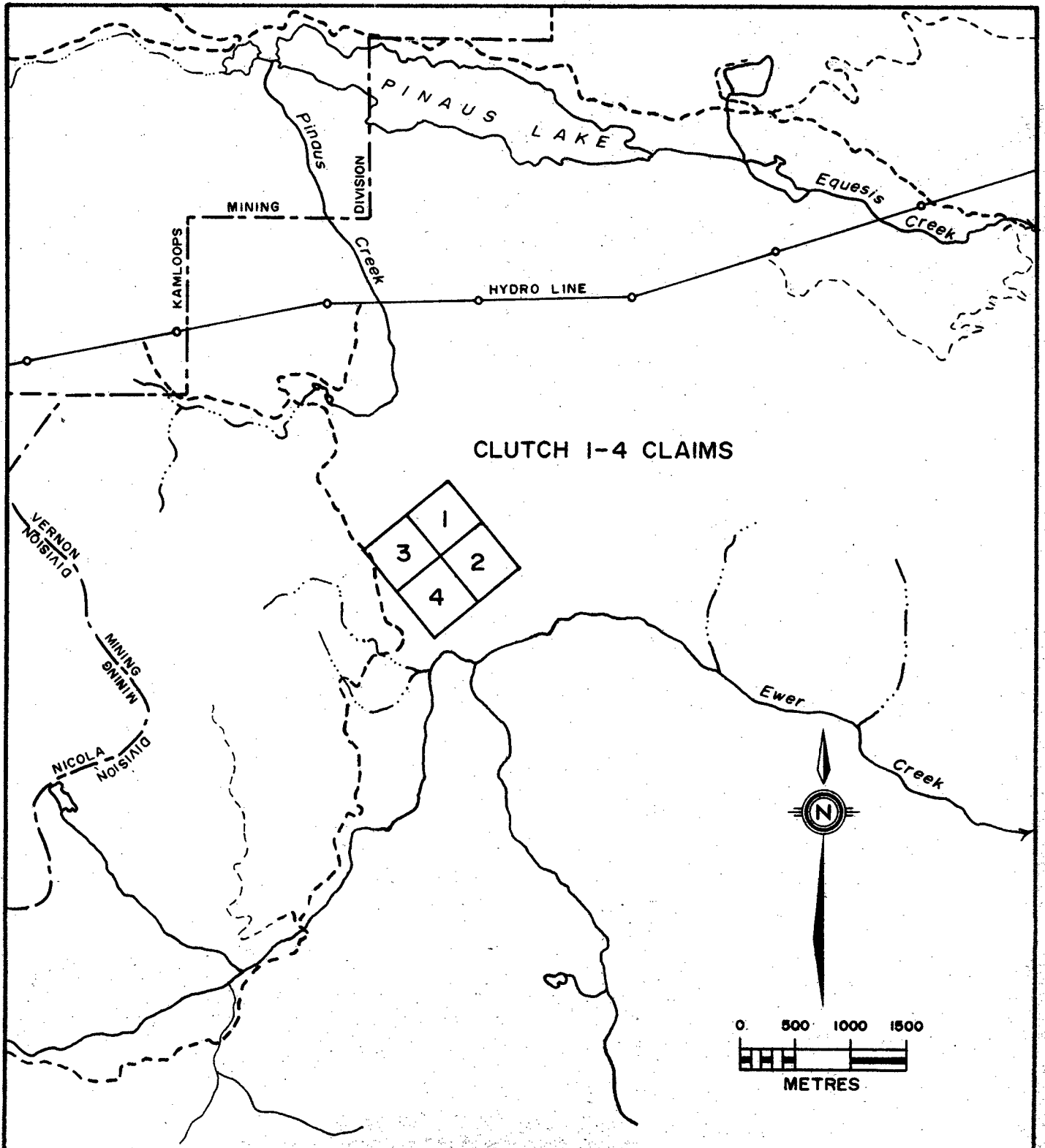
The property comprises the Clutch 1-4 mineral claims, Tenure numbers 320117 to 320120, in the Vernon Mining Division of British Columbia. The claims were located on August 6, 1993 and recorded on August 17, 1993. The owner of record is Mr. D.H. Mitchell of Vernon, B.C.

Assuming acceptance of this report, the expiry date of the Clutch 1-4 claims is August 6, 1997.

## GEOLOGICAL SETTING

The Clutch property is underlain by volcanic and sedimentary rocks of the Eocene Kamloops Group. Immediately east of the property the canyon of Ewer Creek exposes Upper Paleozoic sedimentary and volcanic rocks of the Harper Ranch Group on which the Kamloops Group has been deposited with angular unconformity.

The Tertiary rocks of the area of the property dip gently to the west and northwest at about 10 degrees. Movement on late extensional normal faults disrupts and offsets the Kamloops Group rocks.



**DISCOVERY**

Consultants

**AUDAX ENTERPRISES LTD.**

**CLUTCH PROPERTY**

**CLAIM LOCATION MAP**

DATE NOV 4/1994

PROJECT 357

SCALE 1:50,000

NTS 82L/5E

M.O. VERNON

FIGURE 2

## PROPERTY GEOLOGY

During the course of prospecting, four distinct geological units were recognized (Figure 3):

Unit 1: The oldest rocks seen are agglomerate and basalt along the rim of the Ewer Creek canyon on the eastern part of Clutch 4 claim. The agglomerate is predominantly comprised of clasts  $\leq 20$  cm of brownish-black augite-porphyrific amygdaloidal and vesicular basalt. Occasional flows of brownish-black very fine-grained, dense non-vesicular and non-amygdaloidal basalt occur, and blocks  $\leq 2$  m in diameter were seen in the agglomerate. Brownish-black vesicular and amygdaloidal basalt flows also occur. Occasional discontinuous lenses of yellowish-brown weathering volcanoclastic wacke, grit and sandstone occur as interflow beds.

Unit 2: Overlying Unit 1 to the west are beds of yellowish-brown to reddish weathering, well-bedded volcanoclastic sediments. Lithologies include immature tuffaceous wacke, arkose, siltstone and sandstone and layers of tuff. Individual beds vary from 5 mm to 10 cm thick. Colour varies from pale yellow to dark yellowish-brown. The rock is soft and poorly lithified with carbonaceous seams and rusty layers. This unit represents a potentially favourable host rock for precious opal mineralization.

Unit 3: Overlying the sedimentary unit are pale yellowish to brownish weathering flows of very fine-grained vesicular and/or amygdaloidal basalt or basaltic andesite. Some flows contain olivine.

Unit 4: The youngest rock type seen is a distinctive lahar which overlies Unit 3. It is a reddish to maroon weathering, variably resistant, massive heterolithic lahar. Blocks of various volcanic lithologies occur as clasts  $\leq 22$  cm in diameter in a reddish medium to coarse-grained matrix of volcanoclastic arkose or tuff. This unit typically contains abundant agate mineralization in both fragments and matrix, in places making up more than 50% of the rock.

The above units are part of a conformable, gently westerly-dipping sequence underlying the Clutch 4 and southeastern Clutch 3 claims. No geological information is available to date for the other claims. Large areas are covered by glacial drift, but in general this overburden cover is less than 1 metre thick.



## MINERAL OCCURRENCES

The Clutch claims were located to cover an area of abundant agate mineralization considered to be potentially favourable for the occurrence of precious opal. The recently discovered occurrences of precious opal on the nearby Klinker and Red Rock properties are hosted by basaltic breccia, lahar and agglomerate. The opal is spatially associated with abundant agate mineralization.

No precious opal was discovered in the course of the prospecting programme. Occasional minor occurrences of milky-white common opal were noted.

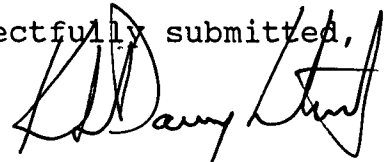
Agate occurs in abundance over a large part of the Clutch 4 claim (Figure 3). The agate is gray to white and translucent. It occurs as filling of vesicles, vugs, irregular open spaces and fractures in the lahar and vesicular lavas. Individual masses may be up to 15 cm in diameter and agate may comprise more than 50% of the rock in places.

## CONCLUSIONS and RECOMMENDATIONS

No precious opal has been found to date on the Clutch property. The presence of similar lithologies to those hosting opal mineralization on nearby properties, along with abundant agate mineralization, is encouraging. On those properties, it is reported that the opal is not visible on weathered outcrop surfaces. The discoveries were made in fresh rock after the bedrock was ripped with bulldozers.

It is recommended that several areas of agate mineralization be tested by bulldozer ripping or backhoe trenching.

Respectfully submitted,



K.L. Daughtry, P.Eng.

Vernon, B.C.  
November 2, 1994

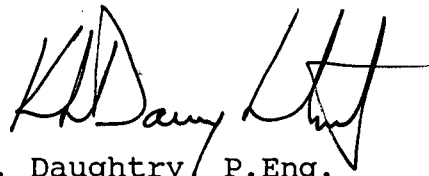
## STATEMENT OF COSTS

1.	Prospecting Personnel		
	K.L. Daughtry, P.Eng. (August 25, October 5, 1993) 2 days @ \$450 per diem	\$ 900	
	K.C. Daughtry (October 5, 1993) 1 day @ \$125 per diem	125	
	D.H. Mitchell (August 25, 1993) 1 day @ \$125 per diem	<u>125</u>	\$ 1150.00
2.	Transport and Supplies (4x4 vehicle)		174.00
3.	Report Preparation		
	K.L. Daughtry, P.Eng. (November 2-3, 1994) 0.7 days @ \$450 per diem	315	
	Drafting, printing $\frac{1}{2}$ x \$322	161	
	Secretarial	<u>42</u>	518.00
4.	G.S.T. (R121955470)		<u>128.94</u>
		Total	<u>\$ 1970.94</u>

## STATEMENT OF QUALIFICATIONS

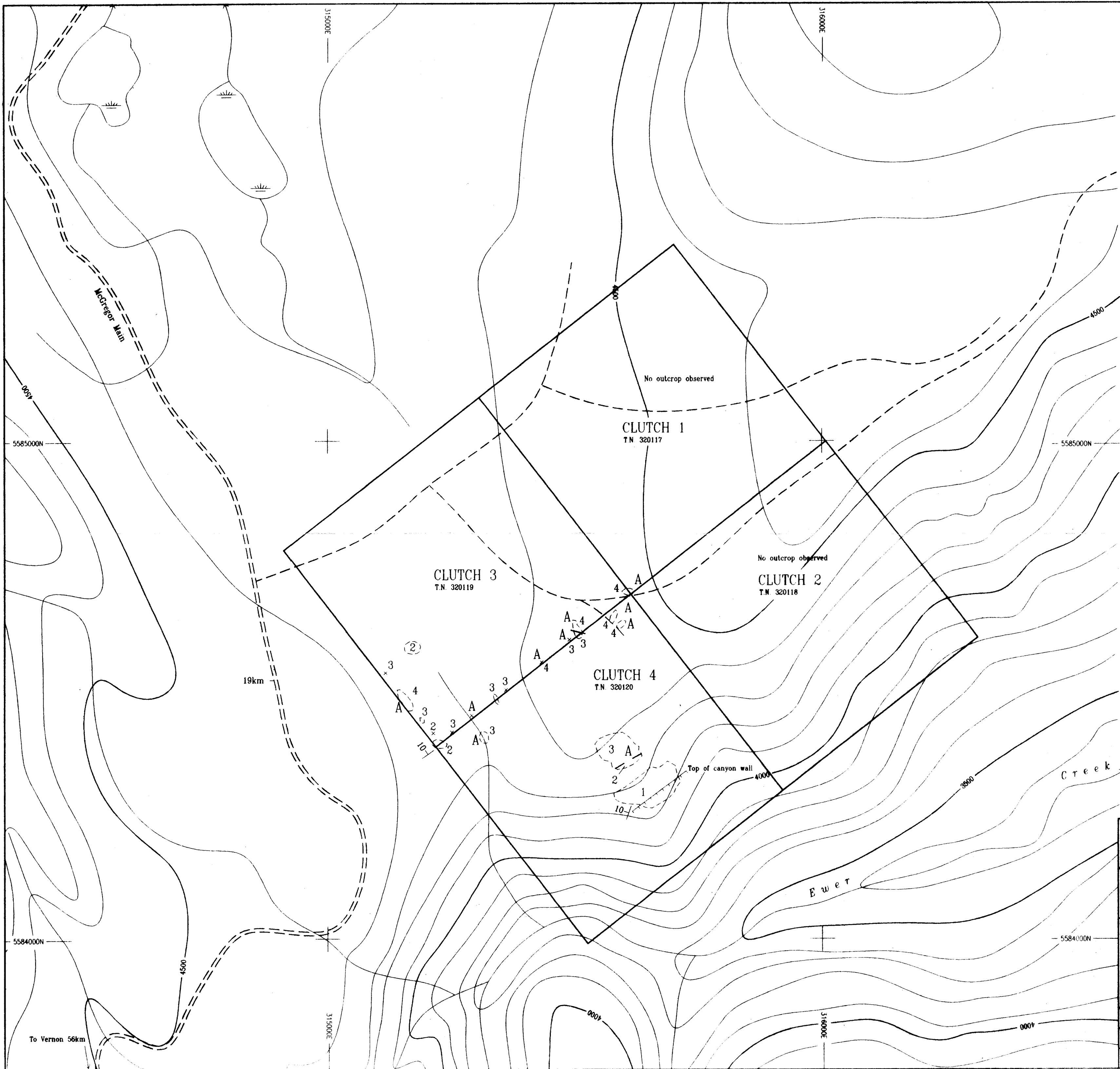
I, KENNETH L. DAUGHTRY, of R.R. #4, Vernon, British Columbia, DO HEREBY CERTIFY that:

1. I am a Consulting Geologist in mineral exploration.
2. I have been practising my profession for thirty years in Canada, the United States and Ireland.
3. I am a graduate of Carleton University, Ottawa, with a Bachelor of Science degree in Geology and Chemistry.
4. I am a member of the Associations of Professional Engineers of British Columbia, Ontario, and Yukon Territory, and a Fellow of the Geological Association of Canada.
5. This report is based upon knowledge of the CLUTCH property gained from the prospecting activity described herein.
6. I hold a beneficial interest in the CLUTCH property.



K.L. Daughtry P.Eng.

Vernon, BC  
November 2, 1994



# LEGEND

## Symbols

- Geological boundary
- Area of outcrop
- Spot outcrop
- Abundant agate present
- Attitude of bedding

## Geology

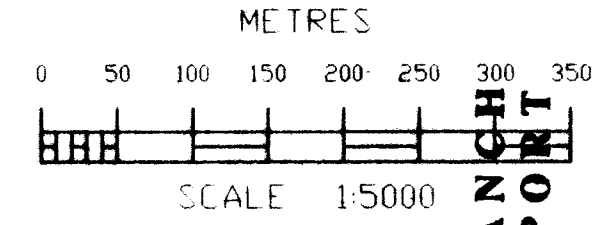
- Reddish weathering massive heterolithic lahar. blocks <22cm of various volcanic lithologies in reddish mg-cg matrix of volcanoclastic arkose or tuff
- Brown weathering vesicular amygdaloidal basalt or basaltic andesite
- Yellowish-brown to reddish weathering, well-bedded volcanoclastic sedimentary rock; tuffaceous wacke, arkose, siltstone, and sandstone with tuff
- Mainly basaltic agglomerate with blocks <2m of very fine grained basalt and clasts of augite-porphyrific amygdaloidal basalt, minor interbedded volcanoclastic grit and wacke



True North = 207°E  
 Topographic contour interval = 100 feet  
 N.A. Datum 1927

DRAWN November 4/1994
Revised

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<b>DISCOVERY</b> Consultants	
AUDAX ENTERPRISES	
CLUTCH PROPERTY PROSPECTING MAP	
Date: Nov. 2/1994	Scale: 1:5000
Project: 357	NTS: 82L/5E
M.D.: Vernon	Figure: 3

GEOLOGICAL BRANCH  
 ASSESSMENT REPORT  
 23,574