

PRODUCTION OF A TOPOGRAPHIC MAP
OF THE ISLAND COPPER MINERAL PROPERTY

Latitude - 50° 36' N
Longitude - 127° 29' W

N.T.S. LOCATION: - Maps 92 L/11 and L/12
1:50000

DETAILED LOCATION: - Approximately 16 km. by road
south of Port Hardy.

OWNER: - Utah Mines Ltd.,
and Gordon Milbourne.

OPERATOR: - Utah Mines Ltd.

AUTHOR: - John Lamb, P. Eng.

DATE SUBMITTED: - 10th July, 1981.

9305

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INTRODUCTION:

In late 1979, Utah Mines Ltd., decided to commence surface exploration across the entire Island Copper property. Being about 15 km. by 4 km., this property covers in excess of 6000 hectares. That area surrounding the pit is reasonably well explored but beyond, it is less well known.

The exploration program was laid out to include line-cutting followed by geological, geophysical and geochemical surveys. Production of an accurate map of the whole property had to be the logical first step in carrying out such a program. This step was taken between June and October, 1980, and is the subject of the following report.

DESCRIPTION OF WORK:

An agreement between Utah Mines Ltd., and Pacific Survey Corporation (Appendix I) was the basis on which work was done. It involved an aerial photographic survey from which was produced an accurate topographic map, showing all surface features, natural and man-made. The following specifications for the map were:

1. Scale 1:4800 (1 inch = 400 ft.)
2. Surface contour interval - 3.05 meters (10 ft.).
All elevations to be compatible with the open pit datum, i.e., sea level equal 305 meters (1000 feet).
The reason for this datum is to keep the numbering of pit benches positive, because most of them are below sea level.
3. Field survey control to be provided by Utah.
4. A film positive and two ozalid copies of each of the six sheets required to cover the area, would be provided by Pacific Surveys.

The field survey control by Utah, involved the establishment of 26 numbered and targetted stations; identifiable on the air photographs. The accuracy of these stations was 1:32000 horizontally and 0.15 meters vertically (0.5 feet). They formed the controlling points for the photogrammetric map.

From the 1:4800 scale film positive sheets, of which there are six, one smaller map was produced on a scale of 1:12000 by photographic reduction (Appendix IV). It was presented also in the form of a film positive sheet and it is an ozalid print of this map that is included with the report. Also included is a 1:12000 scale mineral claim map, which although not as accurate, is useful in determining the relative position of all the mineral claims.

COSTS:Contractor (Pacific Surveys)

Aerial Photography	\$ 2,855.00	
Photogrammetric Mapping scale 1:4800	13,220.00	
Reduction Map scale 1:12000	346.09	
	<u>\$16,421.09</u>	\$16,421.00

Utah (Owner)

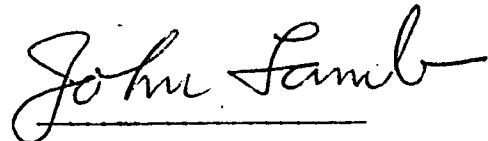
Reconnaissance & Layout - 6 man/days	
Field Work	50 man/days
Office Calculations	<u>14</u> man/days
Total Labour:	70 man/days

70 Man/days @ \$100.	\$ 7,000.00	
Truck Rental 35 Days @ \$25.	875.00	
Supplies @ 10% of Costs	780.00	
Preparation of this Report	<u>400.00</u>	
	<u>\$ 9,055.00</u>	\$ 9,055.00
		<u> </u>
	TOTAL: -	<u>\$25,476.00</u>

John Lamb
John Lamb, P. Eng.

AUTHOR'S QUALIFICATIONS:

1. I have been the project geologist for Utah Mines Ltd., at the Island Copper Mine, for over ten years.
2. I have both B.A.Sc., (1939) and M.A.Sc.,(1947) degrees in Geological Engineering from the University of British Columbia.
3. I have been a member of the Association of Professional Engineers of British Columbia for 30 years.

A handwritten signature in cursive script that reads "John Lamb". The signature is written in dark ink and is positioned above a horizontal line.

John Lamb, P. Eng.

Date: July, 1981.

May 25th



PACIFIC SURVEY CORPORATION

1409 WEST PENDER STREET VANCOUVER, B.C., CANADA V6G 2S4 TELEX: 04-507805 TELEPHONE: 683-6501

February 29, 1980

UTAH MINES LIMITED
Post Office Box 370
Port Hardy, British Columbia
VON 2P0

Attention: Mr. W.D. Blenkhorn
Senior Planning Engineer

Dear Sirs:

RE: AERIAL PHOTOGRAPHY, VOLUME MEASUREMENTS
AND MOSAIC. OUR QUOTATION NO. Q73/80

In response to your letter of February 20, 1980, we are pleased to submit the following for your consideration.

1. AREA AND PHOTOGRAPHY

We would secure 6" focal length, black and white photography at an approximate scale of 1"=550' of the pit area as indicated on your 1"=400' map. Drawing number G.125. On the same flight we would secure similar type photography at an approximate scale of 1"=1200' of the mosaic and approximate scale of 1"=2000' photography of the mapping area for a cost of:-

Lump Sum:\$ 2,855.00
Plus applicable Sales Taxes

In the event we are unable to secure the higher level photography on the same flight as the low level photography due to a cloud situation, we would charge an additional \$750.00 for a second trip. However, we would do everything we could to secure all the photography on the same flight.

As you probably are aware, the cost of photographic materials are directly effected by the price of silver and since last November the material costs have been increased by 80%. The cost of photography above reflects this increase.

2. VOLUME

Utilizing this year's low level photography, we would digitize and compute the volume of the ore removed since April 27, 1979 of the area outlined in black on your 1980 Monthly Progress map, for a cost of:

Lump Sum:\$ 7,800.00
Plus applicable Sales Taxes

AERIAL PHOTOGRAPHY • PHOTOGRAMMETRIC ENGINEERING • AIRBORNE GEOPHYSICS

A MEMBER OF THE NORTHWAY GROUP

APP. I
cont'd.

February 29, 1980

- 2 -

UTAH MINES LIMITED

RE: Aerial Photography, Volume Measurements
and Mosaic. Our Quotation No. Q73/80

It would appear that it would not be necessary to digitize and compute any areas in 1979 that were added in 1980.

3. CONTROL

We understand you would supply all necessary field control as you have in the past.

4. MOSAIC

Utilizing this year's 1"=1200' photography, we would compile and produce a mosaic at an approximate scale of 1"=400' of an area bounded by 1000North to 11000North and 17000East to 33000East.

You would be provided with 15 prints of the mosaic for a cost of:-

Lump Sum:\$ 650.00
Plus applicable Sales Taxes

5. MAPPING

We would produce scribed mapping at a scale of 1"=400' with a 10 ft. contour interval of an area of some 42 square miles.

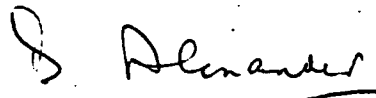
You would be provided with one film positive and two ozalid copies of each of 6 sheets each approximately 32" x 44" complete with grid, title etc. for a cost of:-

Lump Sum:\$13,220.00
Plus applicable Sales Taxes

We trust this proposal has provided you with all the information you require and look forward to your instructions in due course.

Yours very truly,

PACIFIC SURVEY CORPORATION



D. Alexander
Marketing Division

DA:fz

PACIFIC SURVEY CORPORATION

PACKING SLIP

1409 WEST PENDER STREET
VANCOUVER, B.C. V6G 2S4
683-6501

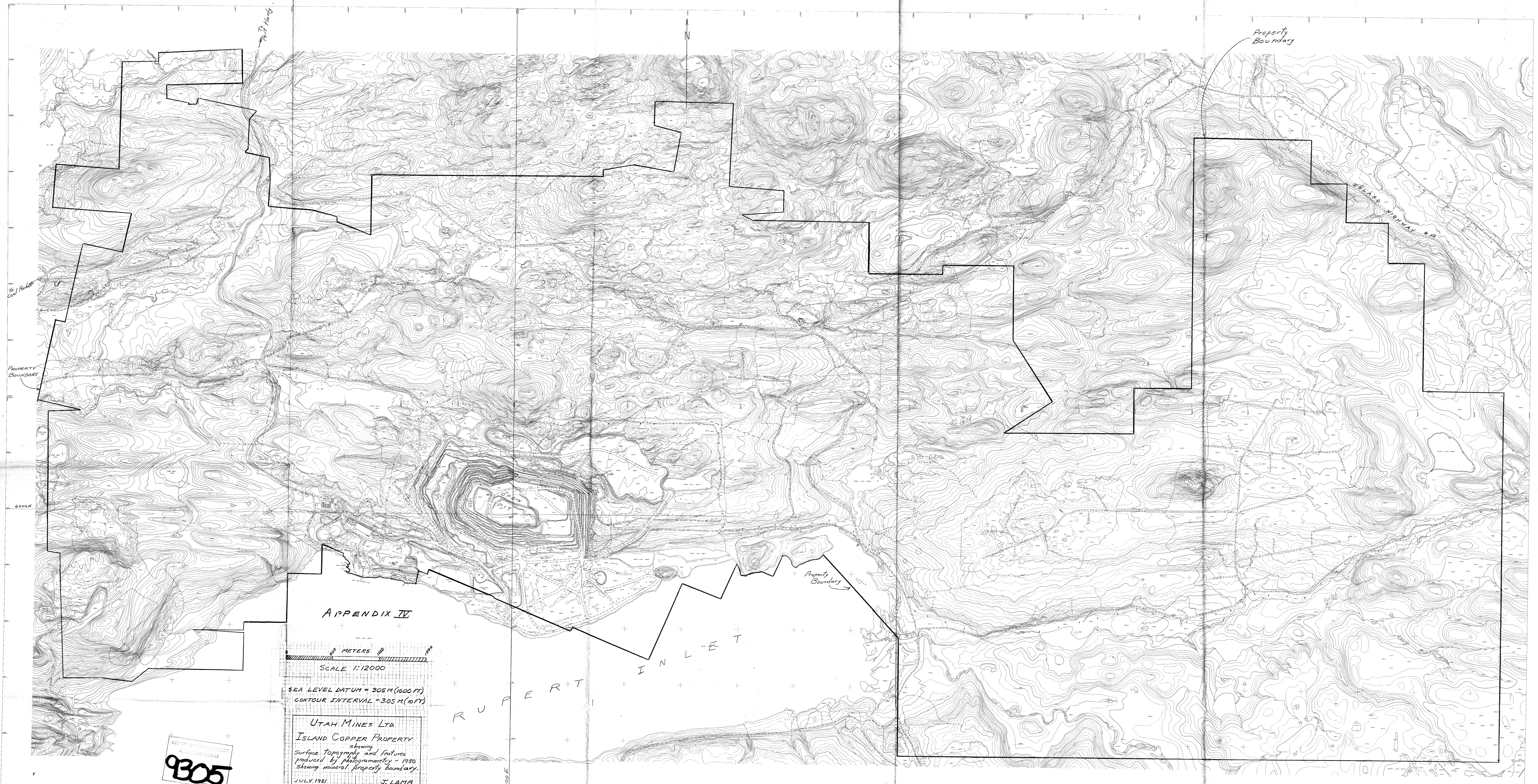
C 0652

CLIENT: <u>Hotel Minnie Hotel</u>		DATE ORDERED: <u>8th / 11th / 80</u>
<u>Island Capers Minnie</u>		DATE SHIPPED: <u>17th / 11th / 80</u>
<u>P.O. Box 370</u>		CHARGE
<u>Port Hardy B.C.</u>		CASH
<u>Attention: W.D. Blankhorn</u>		C.O.D.
<u>Senior Planning Eng.</u>		ORDER No.: <u>1</u>
		TELEPHONE: <u>104-719-1326</u>

QUANTITY	REFERENCE	
	Reduce to map scale & original photos	
	join maps and produce one film print	
	with ink work	
	final scale 1" = 1000'	\$ 308.30
		+ 9% FEO TAX 27.48
		\$ 332.78
		+ 4% PROV TAX 13.31
		\$ 346.09

Appendix II

SHIP VIA: B.D.C. RECEIVED BY: _____ DATE: _____



APPENDIX IV

METERS 0 100 200
SCALE 1:12000

SEA LEVEL DATUM = 305 M (1000 FT)
CONTOUR INTERVAL = 30.5 M (100 FT)

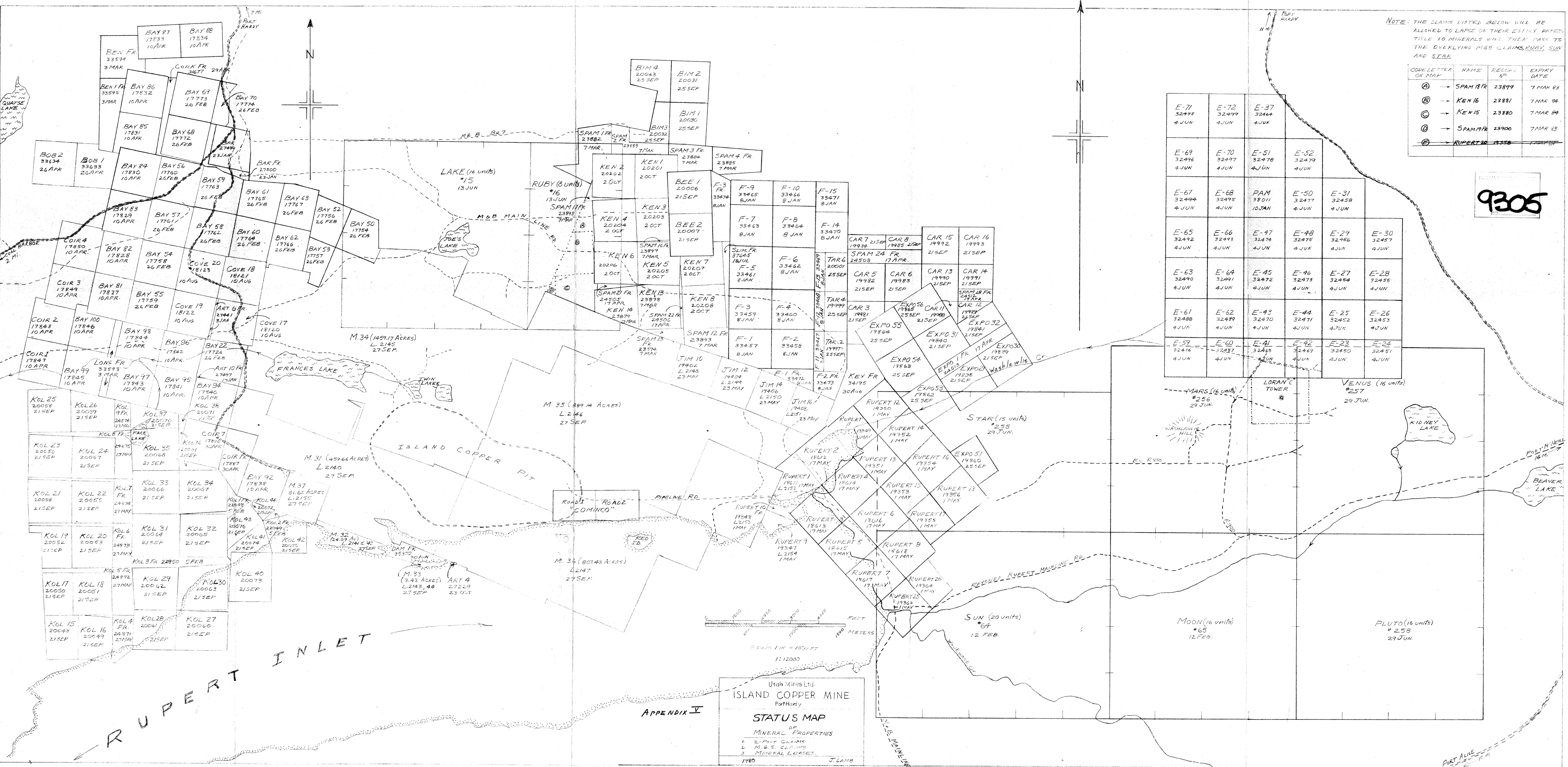
UTAH MINES LTD
ISLAND COPPER PROPERTY
showing
surface topography and features
produced by photogrammetry = 1980
showing mineral property boundary.
JULY 1981 J. LAMB

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NOTE: THE CLAIMS LISTED BELOW WILL BE ALLOWED TO LAPSE ON THEIR EXPIRY DATES. TITLE TO MINERALS WILL THEN PASS TO THE OVERLYING MGS CLAIMS, RUBY, SUN AND STAR.

CODE LETTER ON MAP	NAME	RECORD NO.	EXPIRY DATE
(A)	SPAM 18 FR	23899	7 MAR 83
(B)	KEN 16	23881	7 MAR 84
(C)	KEN 15	23880	7 MAR 84
(D)	SPAM 17 FR	23900	7 MAR 83
(E)	RUPERT 20	19358	1 MAR 83

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Utah Mines Ltd.
ISLAND COPPER MINE
Port Hardy
STATUS MAP
OF
MINERAL PROPERTIES
1. 2-POST CLAIMS
2. M. & S. CLAIMS
3. MINERAL LEASES
1980 J. LAMB

APPENDIX I

RUPERT INLET