

COMPILATION OF MOST-PROMISING  
AIRPHOTO-MAPPED GRAVEL PROSPECT AREAS  
SELECTED FROM MAPPING CARRIED OUT  
BY JDM&A IN YELLOWKNIFE AREA  
OVER LAST 30 YEARS

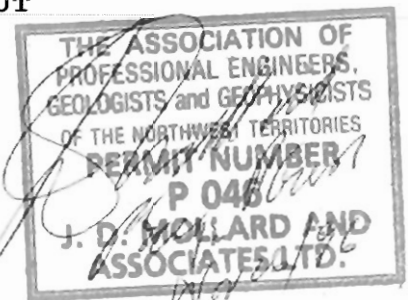


J D MOLLARD AND ASSOCIATES LIMITED

CONSULTING CIVIL ENGINEERS AND ENGINEERING GEOLOGISTS



COMPILATION OF MOST-PROMISING  
AIRPHOTO-MAPPED GRAVEL PROSPECT AREAS  
SELECTED FROM MAPPING CARRIED OUT  
BY JDM&A IN YELLOWKNIFE AREA  
OVER LAST 30 YEARS



Prepared for

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November, 1996



## TABLE OF CONTENTS

1.0 TERMS OF REFERENCE

2.0 PURPOSE OF STUDY

3.0 SCALES OF PHOTOGRAPHY

4.0 PITS NOT SHOWN IN THIS REPORT

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5.0 DISCUSSION OF INDIVIDUAL PROSPECT AREAS NUMBERED  
1 TO 10

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6.0 RECOMMENDATIONS

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## CITY OF YELLOWKNIFE GRAVEL PROSPECTS

(Compilation of Most-Promising Airphoto-Mapped Gravel  
Prospects Selected from Mapping Carried out by  
JDM&A in Yellowknife Area over Last 30 Years)

### 1.0 TERMS OF REFERENCE

#### Option 2

Obtain only airphoto coverage covering areas where we have mapped granular prospects over the last 30 years (radius 40 miles of Yellowknife), stereo-scopically examine these areas, map the areas in detail, select haul routes (winter in some cases), and produce a brief report with maps and photo prints of prospects

\$ 3,000

plus out-of-pocket expenses such as airphotos and GST. In this case photo cost would likely be under \$100.

### 2.0 PURPOSE OF STUDY

Purpose of this study is to search through the various airphoto-mapping reports carried out in the Yellowknife area by J D Mollard and Associates Limited sometime over the last 30 years, select those airphoto-mapped granular prospects that we feel have the best chance, upon testing, of developing a new commercial gravel source for the City of Yellowknife.



### 3.0 SCALES OF PHOTOGRAPHY IN AIRPHOTO PRINTS

Scale bars are shown on each airphoto prospect number in Figures 1 to 10. Most of the airphoto prints in this report are at scale 1:63,000 or approximately 1 inch = 1 mile.

### 4.0 PITS NOT SHOWN IN THIS REPORT

There are several existing pits that I have not shown in this report. These pits are presently open and well-known by the City of Yellowknife and by Contractors alike. They are:

- o Pits in vicinity of Yellowknife Airport (we understand the remaining material here is very sandy and nearly exhausted for the better grades of gravel required for granular base, blacktop and concrete purposes.)
- o Pit near the junction of Ingraham Trail and Yellowknife Highway.
- o Pit just west of mine dump and dam near intersection of Trapping Lake Road and Ingraham Trail.
- o Pit near mine along south side of Ingraham Trail south of Prosperous Lake near Lake 587<sub>+</sub>.
- o Other existing pits that may be unknown to us.

## 5.0 DISCUSSION OF INDIVIDUAL GRAVEL PROSPECTS NUMBERED 1 TO 10

### Prospect #1

Airphoto print shows a group of about six locations that should be helicopter-checked for presence of granular material. Prospect 1 is not rated as a promising prospect but because of haul distance and access they are still worthy of a field ground check. These prospects are located in an area where it is difficult to stereoscopically tell whether the small areas marked are silty sands, silts, or sandy gravels. Prospect rating: Poor.

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### Prospect #2

This is probably one of the shortest haul prospects to Yellowknife. The two most northerly areas (2A) are tiny terrace remnants. Area 2B is a flat outwash-like area. Area 2C is a narrow ridge and 2D is a kame-like hill. Check all four areas with chopper. Area would be accessible by water should it prove up. Prospect rating: Fair.

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### Prospect #3

This is likely the best prospect of all of the ten I have shown. There is at least a dozen separate areas here that all look interesting. If this prospect proves up there may be a very long-term commercial supply here. The area is right near water (summer) or ice (winter) for access haul. We would expect the gradation of the deposit to be quite different here than deposits along the North Arm where mostly water-washed beach deposits are expected. Thus opening a deposit at #3 would give you a variety of material likely not found in any North Arm pits. Prospect rating: Good.

**Prospect #4**

A smaller prospect north of Prelude Lake that may be accessible almost entirely by ice-haul that lies between the prospect and Ingraham Trail (see Figure 4 and Figure 1A). Prospect rating: Fair.

**Prospect #5**

Another small prospect rated as fair north of Prelude Lake and just east of Prospect #4. Winter access could be along the route shown south to Prelude Lake and Ingraham Trail or, alternatively, west through Prospect #5 following Prelude Lake to Ingraham Trail. Prospect rating: Fair.

**Prospect #6**

Well-developed beaches on the North Arm of Great Slave Lake. Ice haul about 59 km (36 miles). Prospect rating: Fair.

**Prospect #7**

An old beach prospect at upper left of airphoto and a second prospect area (not as well developed) on slopes of plateau-like bedrock remnant. There may be some shallow beach sands and gravels here. 55 km haul (33 1/2 miles). Prospect rating: Poor to Fair.

**Prospect #8**

Similar to Prospect #7. May be granular deposits lying against side of bedrock plateaus. If these prove positive with field checking I would expect them to be beach material deposited along the shoreline of Old Glacial Lake Slave when it operated at a higher level some 10,000 years ago. 61 km haul (37 miles). Prospect rating: Poor to Fair.

**Prospect #9**

More abandoned beaches on the North Arm. These are very large prospect areas with potential for huge quantities. Gradation of the material can only be determined by backhoe work and they could be oversanded in some areas of the prospect. Haul 70 km (42 1/2 miles). Prospect rating: Good.

**Prospect #10**

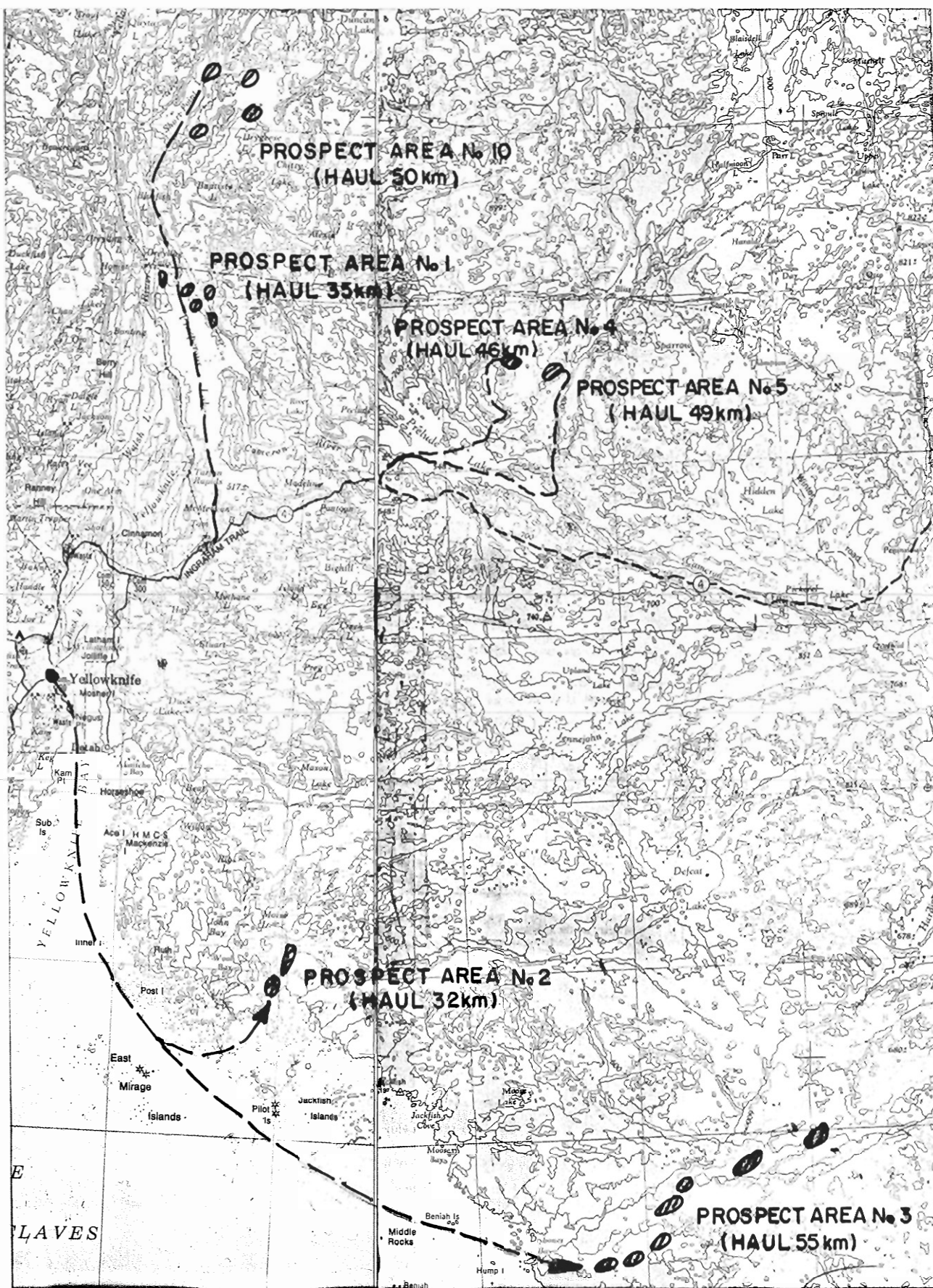
Four individual prospect areas some 8-10 miles north of the north end of Prosperous Lake. Mainly winter ice haul along haul route indicated in Figure 1A and Figure 10. Haul approximately 50 km (30 miles). Prospect rating: Fair to good.

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**6.0 RECOMMENDATIONS**

Following is one suggested order of field testing (you may prefer an alternative order for reasons not known to us):

- o **Prospect 2**
- o **Prospect 1** (very doubtful prospect area but good haul access)
- o **Prospect 10**
- o **Prospect 3** (probably the best potential of all prospects for quantity and gradation)
- o **Prospects 4 and 5**
- o Test remaining prospects based on results of testing on preferred group (i.e., 2, 1, 10, 3, 4, and 5).



KEY MAP SHOWING LOCATION OF GRAVEL PROSPECT AREAS 1 to 10 VICINITY OF YELLOWKNIFE, NWT

0 5 10 15 20 25 km

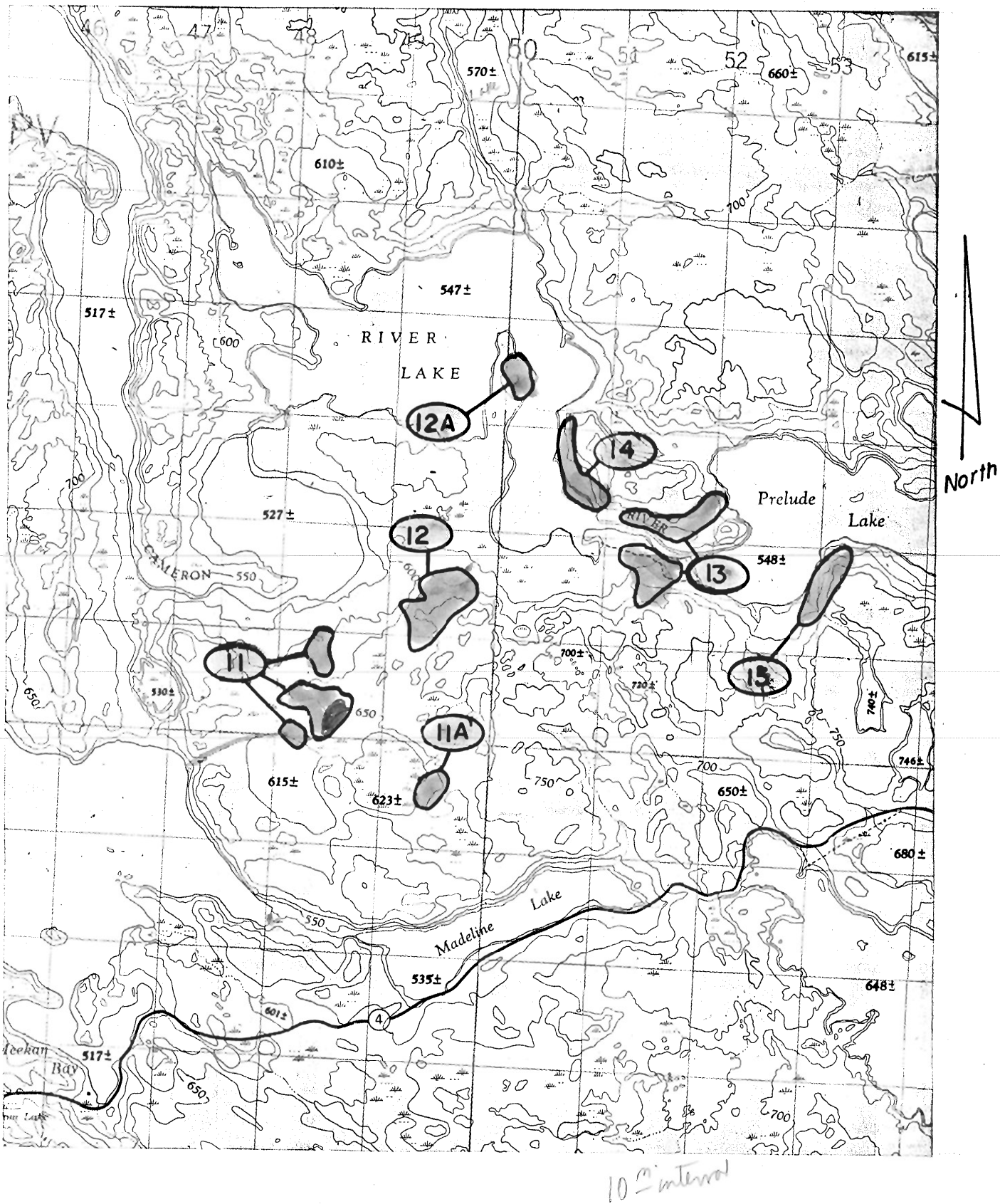
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November, 1996

FIGURE 1A  
Sheet 1 of 2

*MOLLARD COPY*





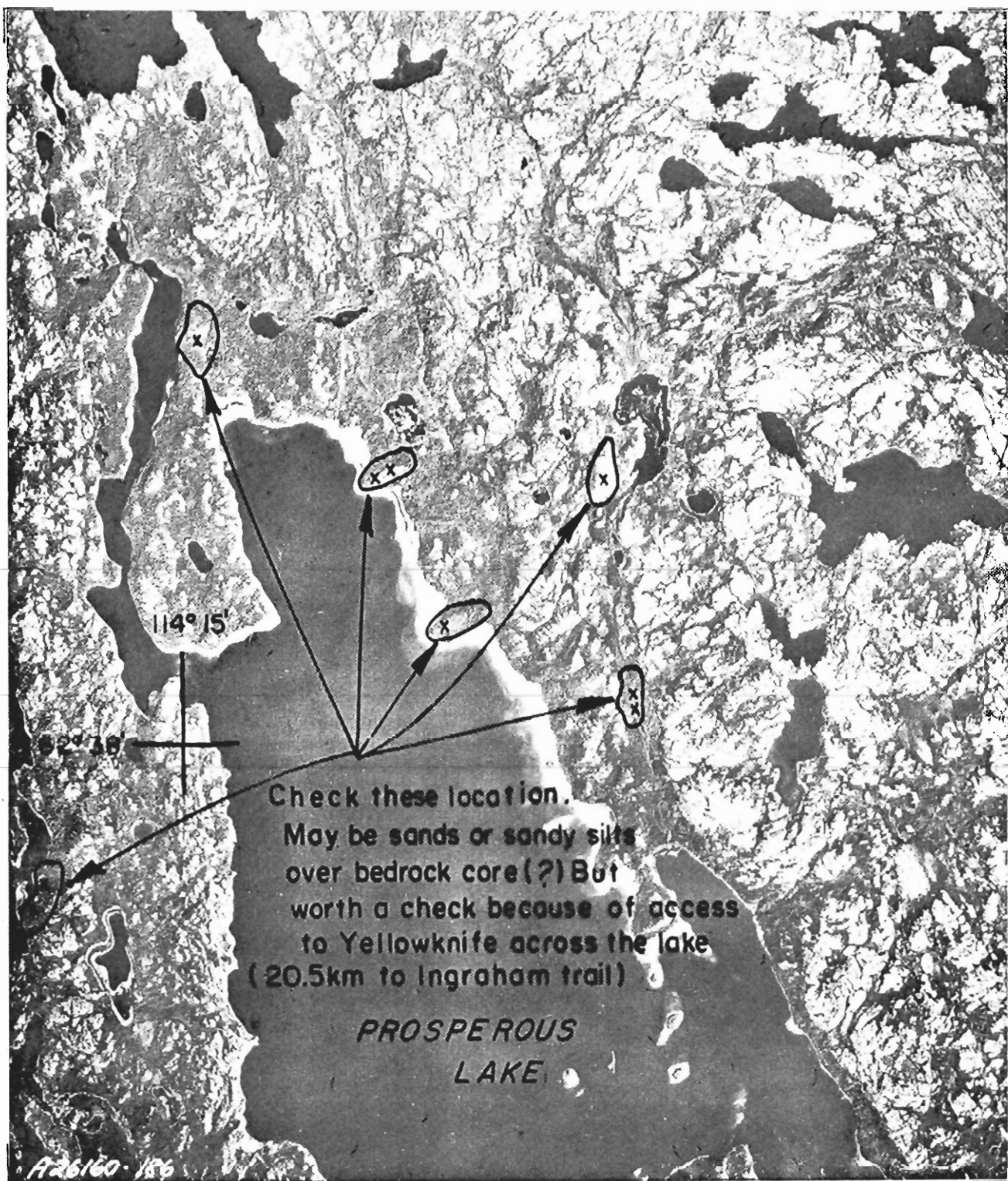


KEY MAP SHOWING LOCATION OF GRAVEL PROSPECT  
AREAS II to 15 VICINITY OF YELLOWKNIFE, NWT

0 1 2 3 4 5km

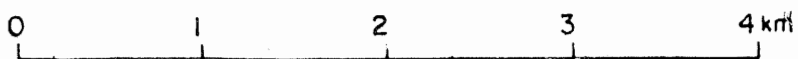
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FIGURE 1A  
Sheet 1 of 1



AIRPHOTO PRINT SHOWING PROSPECT AREA No.1  
NEAR.

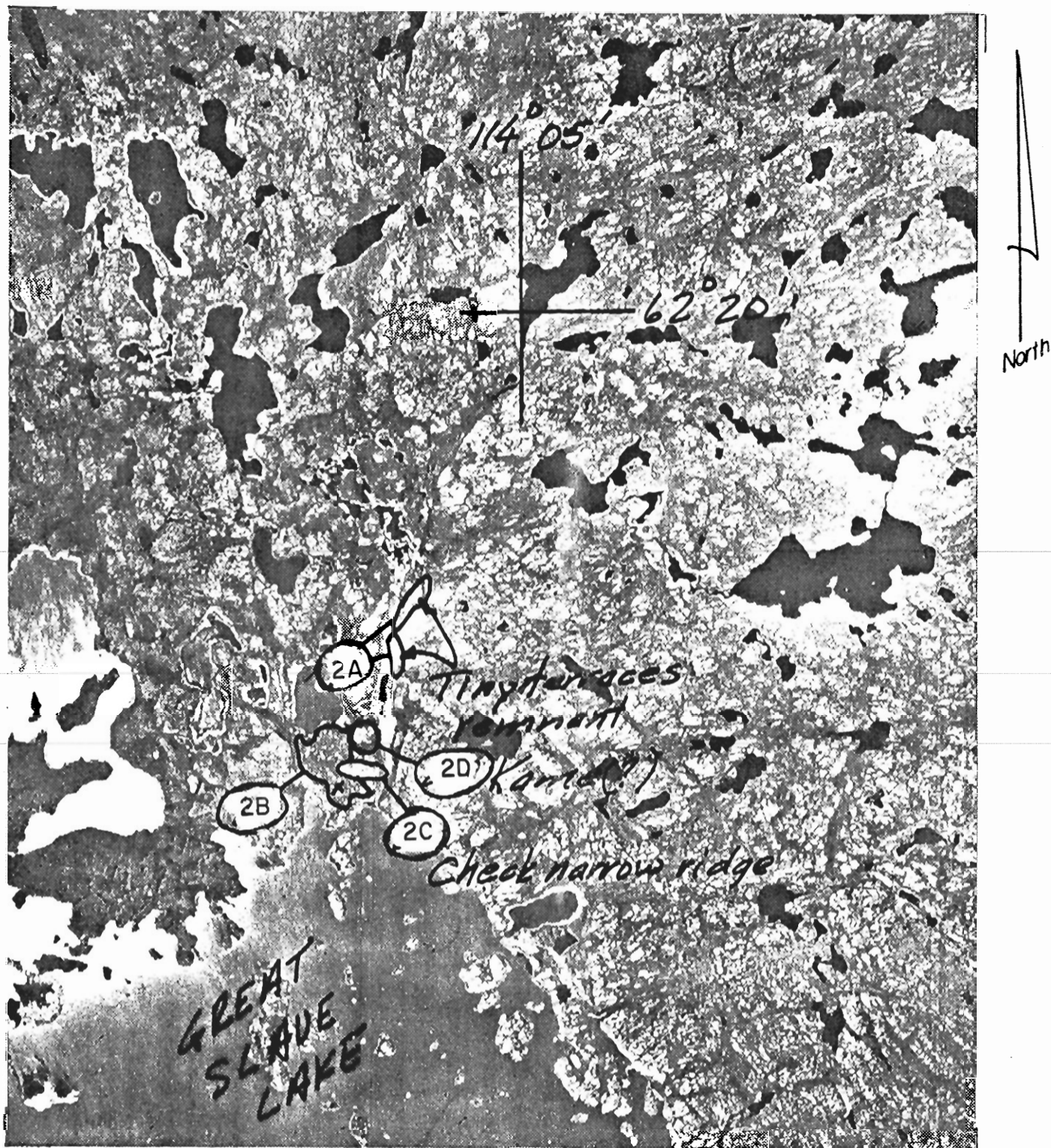
PROSPEROUS LAKE, NWT



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FIGURE 1





AIRPHOTO PRINT SHOWING PROSPECT AREA No.2  
NEAR

WOOL BAY ON GREAT SLAVE LAKE, NWT



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FIGURE 2



AIRPHOTO PRINT SHOWING PROSPECT AREA No. 3  
NEAR

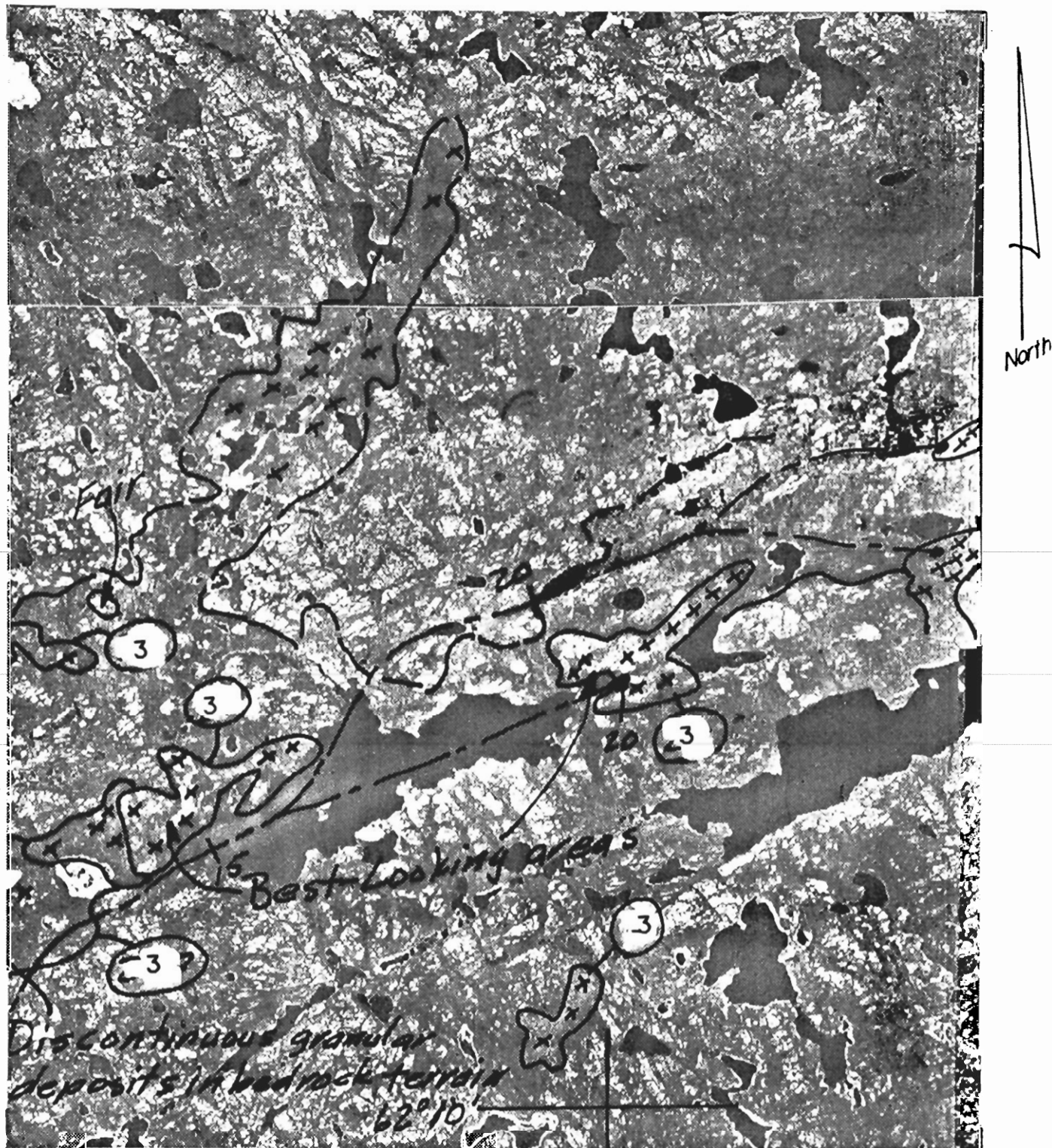
DRY BONES BAY ON GREAT SLAVE LAKE, NWT

0 1 2 3 4 5 km

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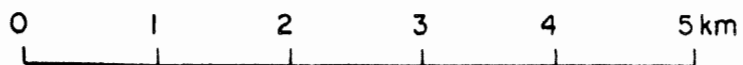
FIGURE 3





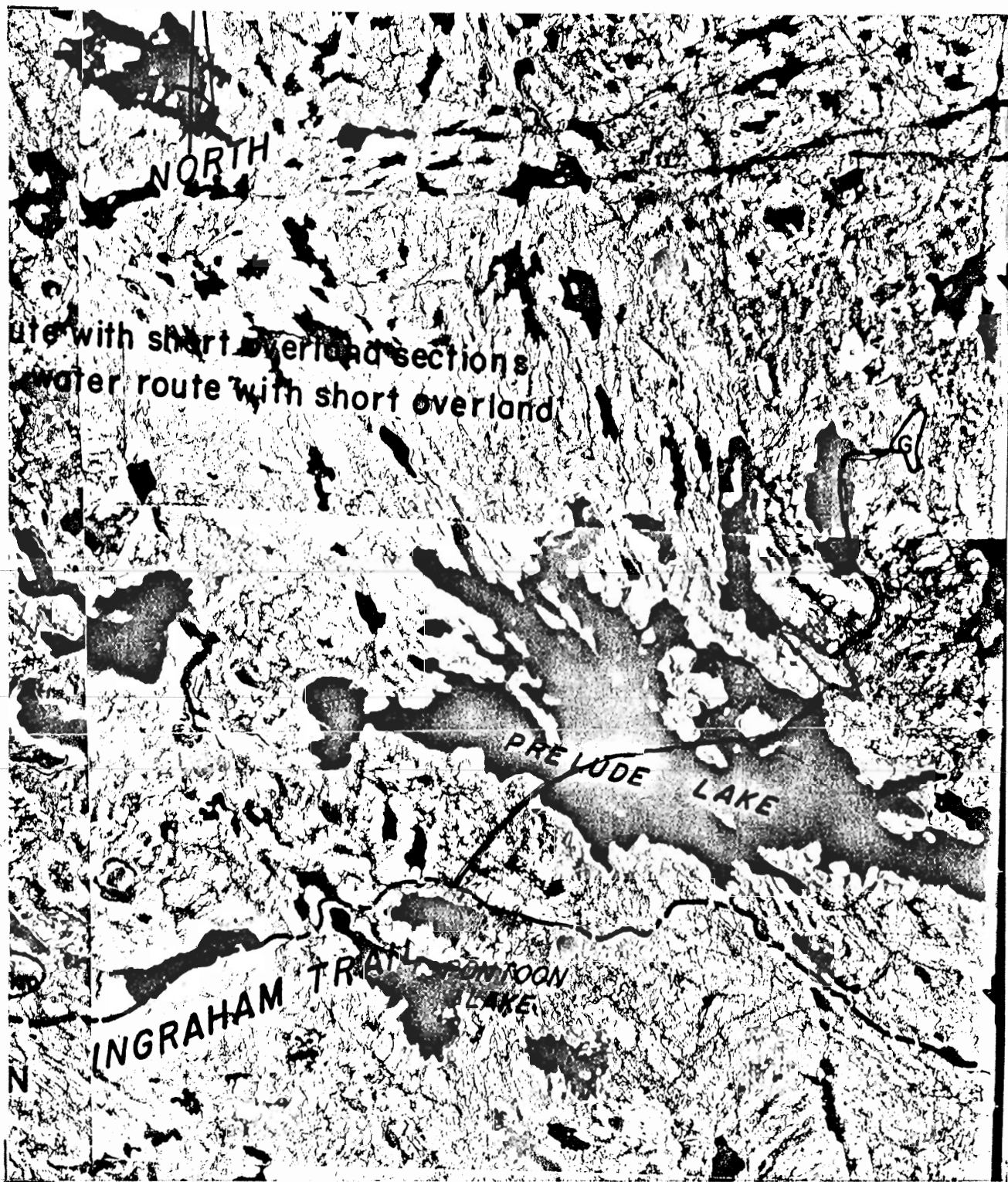
AIRPHOTO PRINT SHOWING PROSPECT AREA No.3  
NEAR

DRYBONES BAY ON GREAT SLAVE LAKE, NWT



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FIGURE 3A



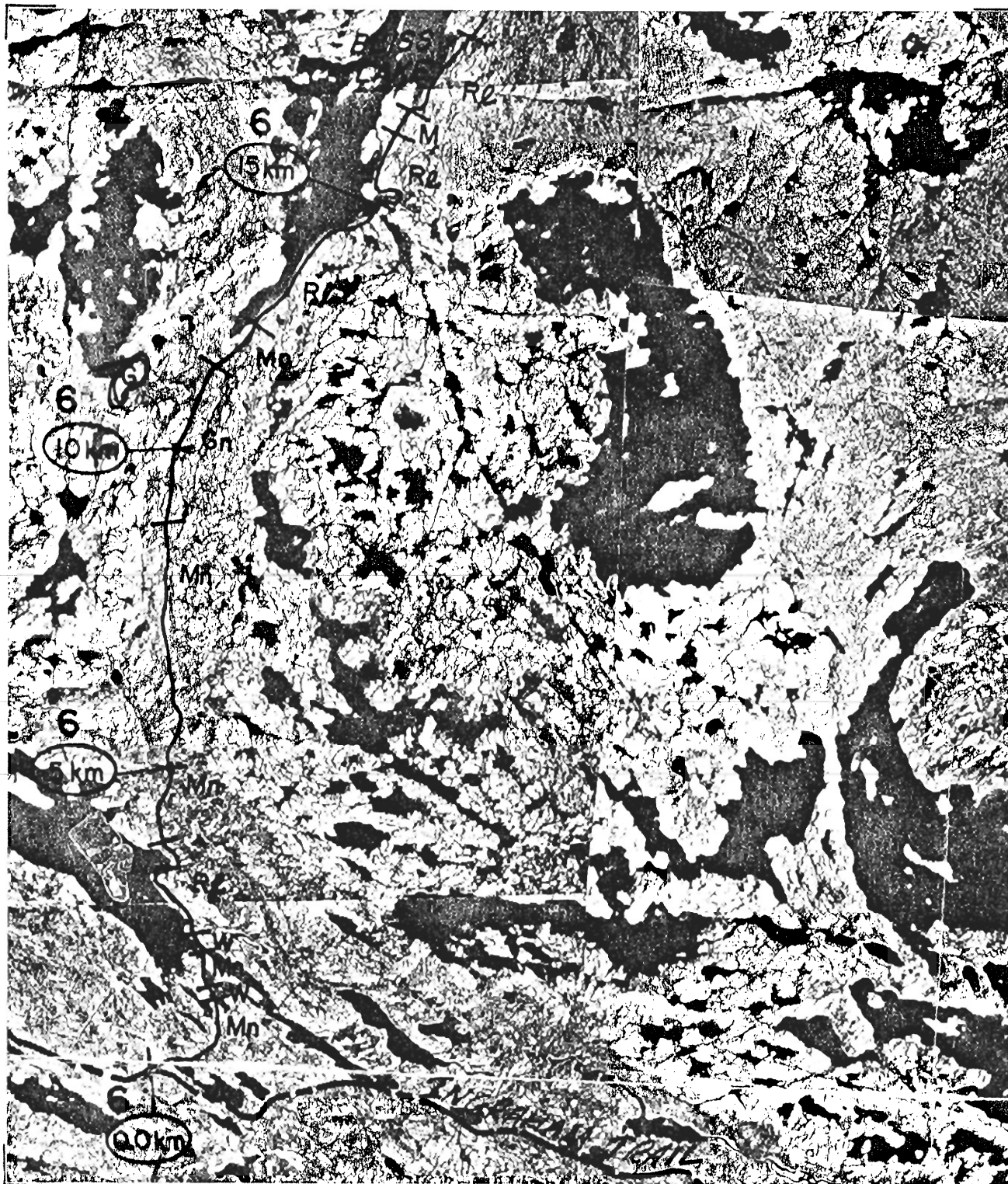
AIRPHOTO PRINT SHOWING PROSPECT AREA No.4

NORTH OF PRELUDE LAKE, NWT  
AND  
POSSIBLE HAUL ROUTE TO INGRAHAM TRAIL

0 2 4 6 8 km

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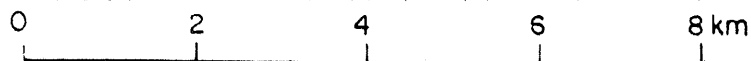
FIGURE 4



# **ACCESS LEGEND**

- R - Mainly bedrock
- M - Silty mineral soils
- W - Water crossings

AIRPHOTO PRINT SHOWING PROSPECT AREA No.5  
NEAR  
SOUTHWEST OF BLISS LAKE, NWT  
AND POSSIBLE HAUL ROUTE TO INGRAHAM TRAIL



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FIGURE 5





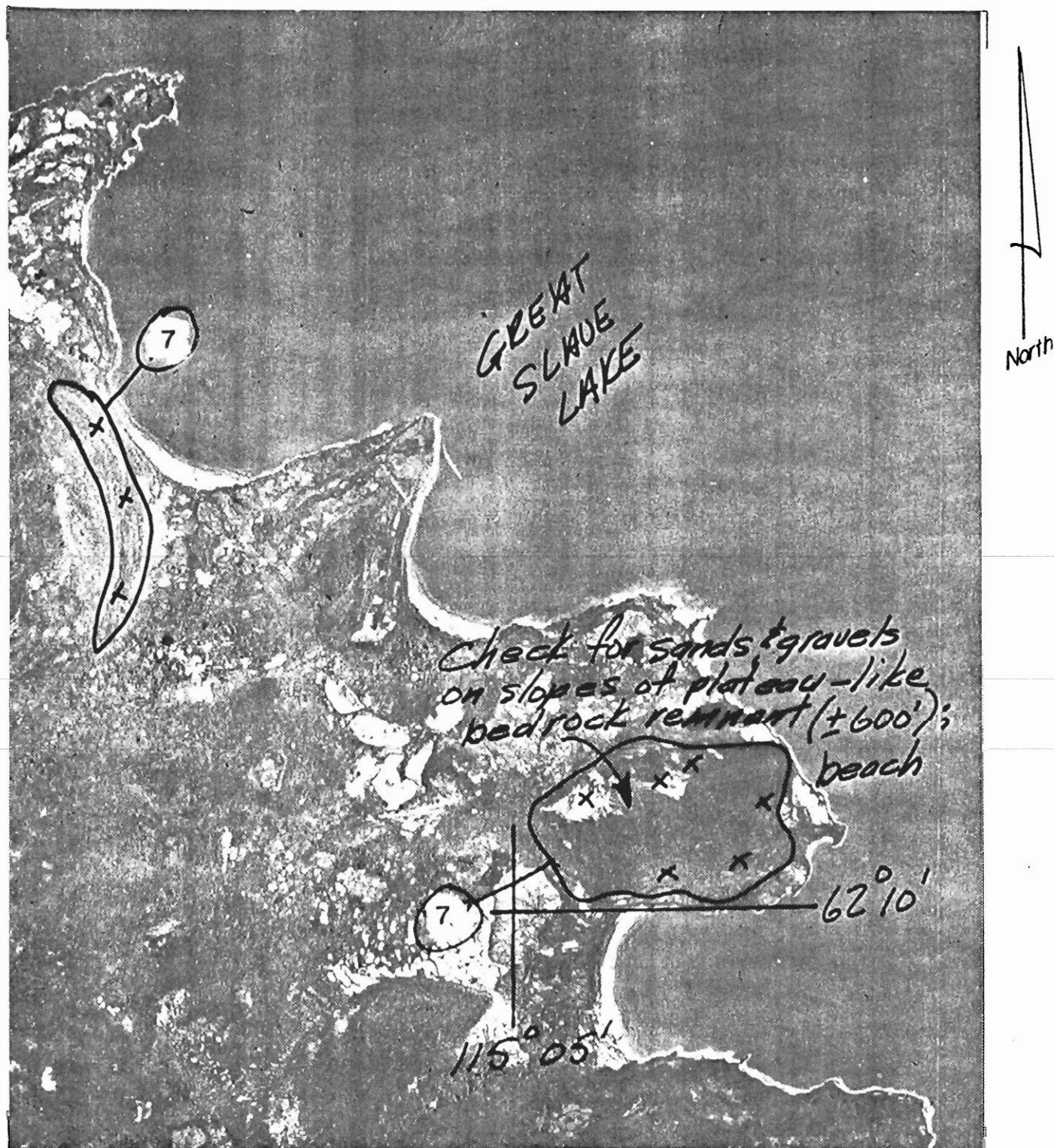
AIRPHOTO PRINT SHOWING PROSPECT AREA No.6  
NEAR

FOAM POINT ON GREAT SLAVE LAKE, NWT

0 1 2 3 4 5 km

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FIGURE 6



AIRPHOTO PRINT SHOWING PROSPECT AREA No. 7  
NEAR

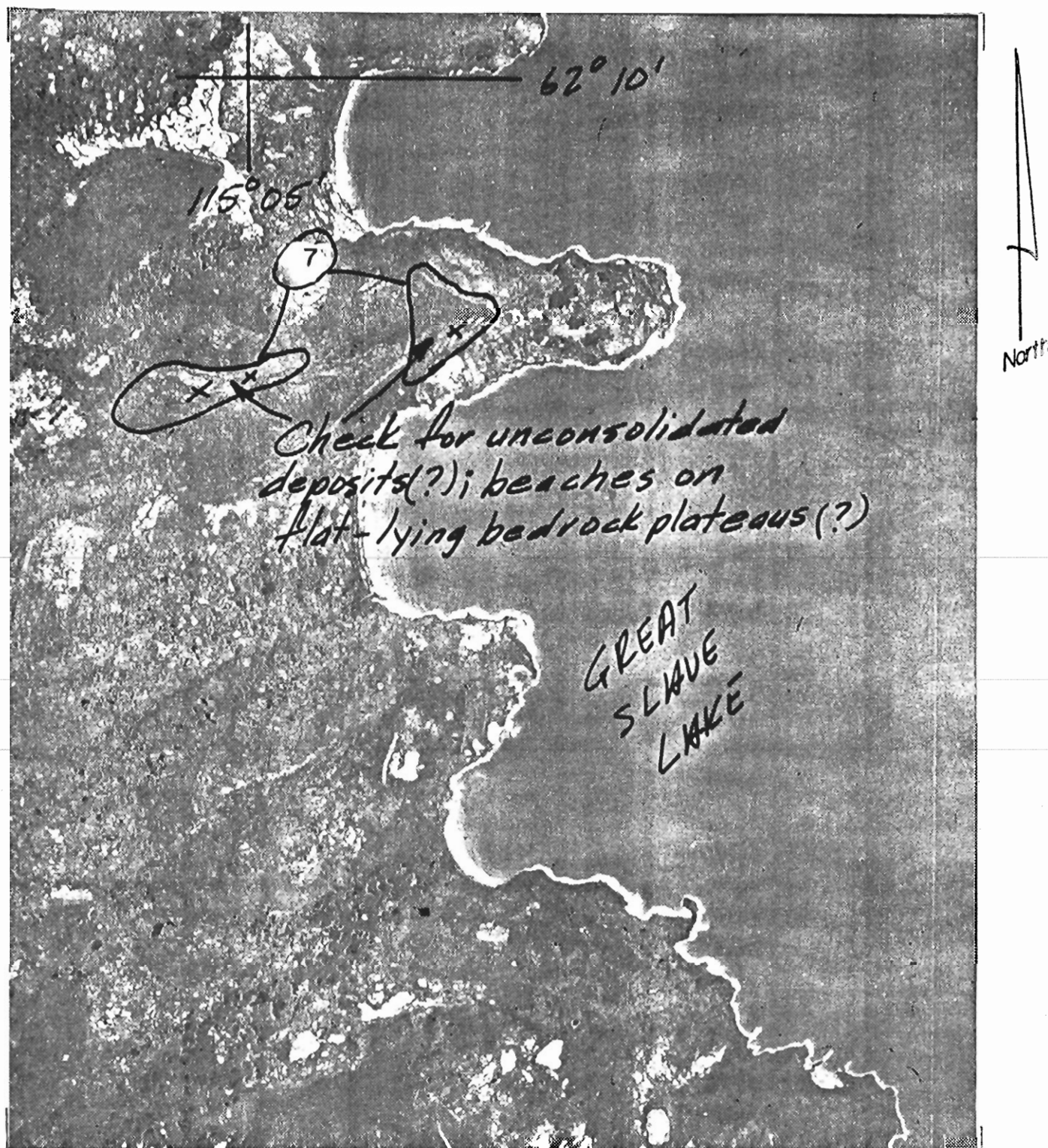
ALEXANDER BAY ON GREAT SLAVE LAKE, NWT



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FIGURE 7





AIRPHOTO PRINT SHOWING PROSPECT AREA No.7  
NEAR

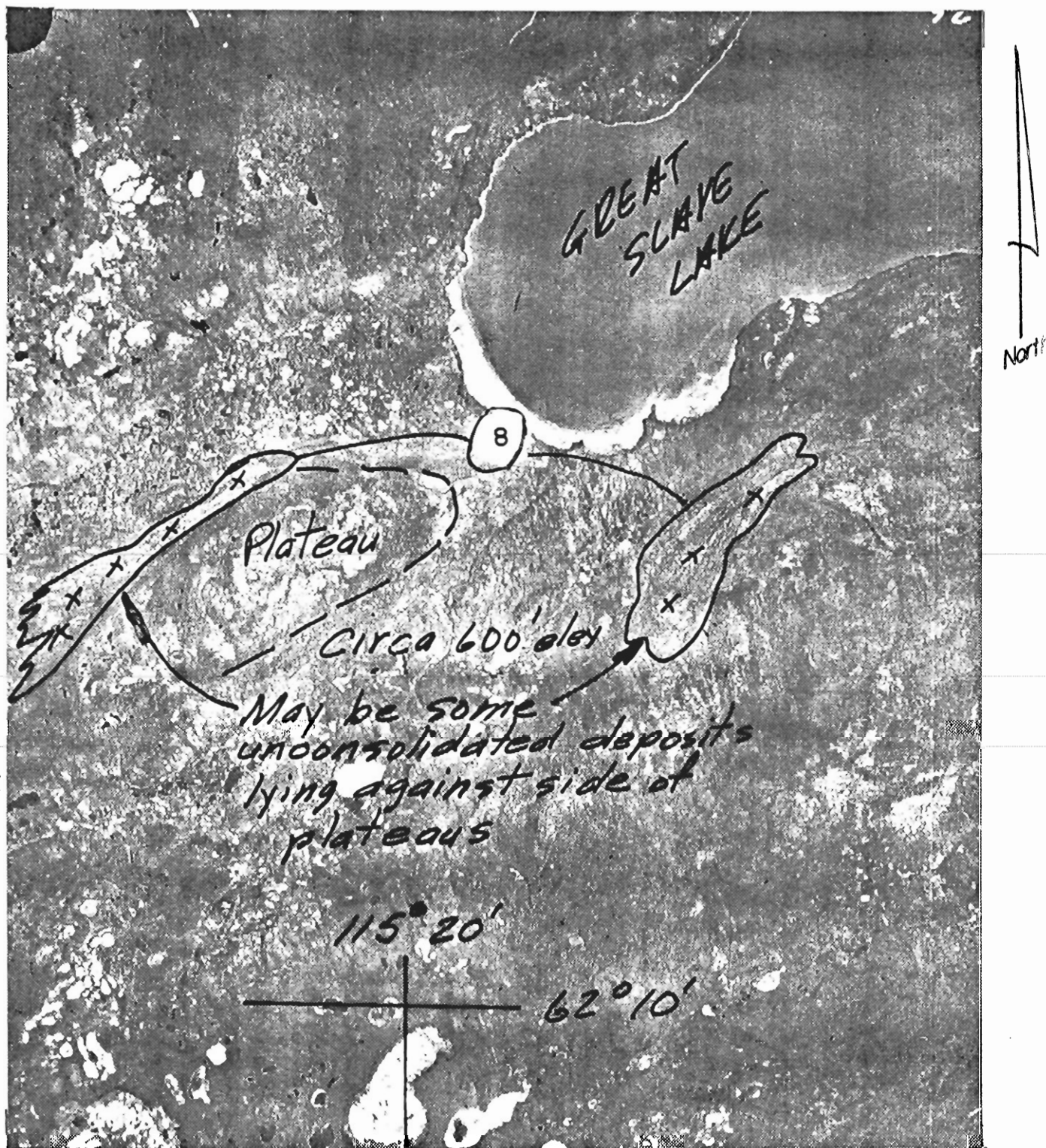
ALEXANDER BAY ON GREAT SLAVE LAKE, NWT



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FIGURE 7A





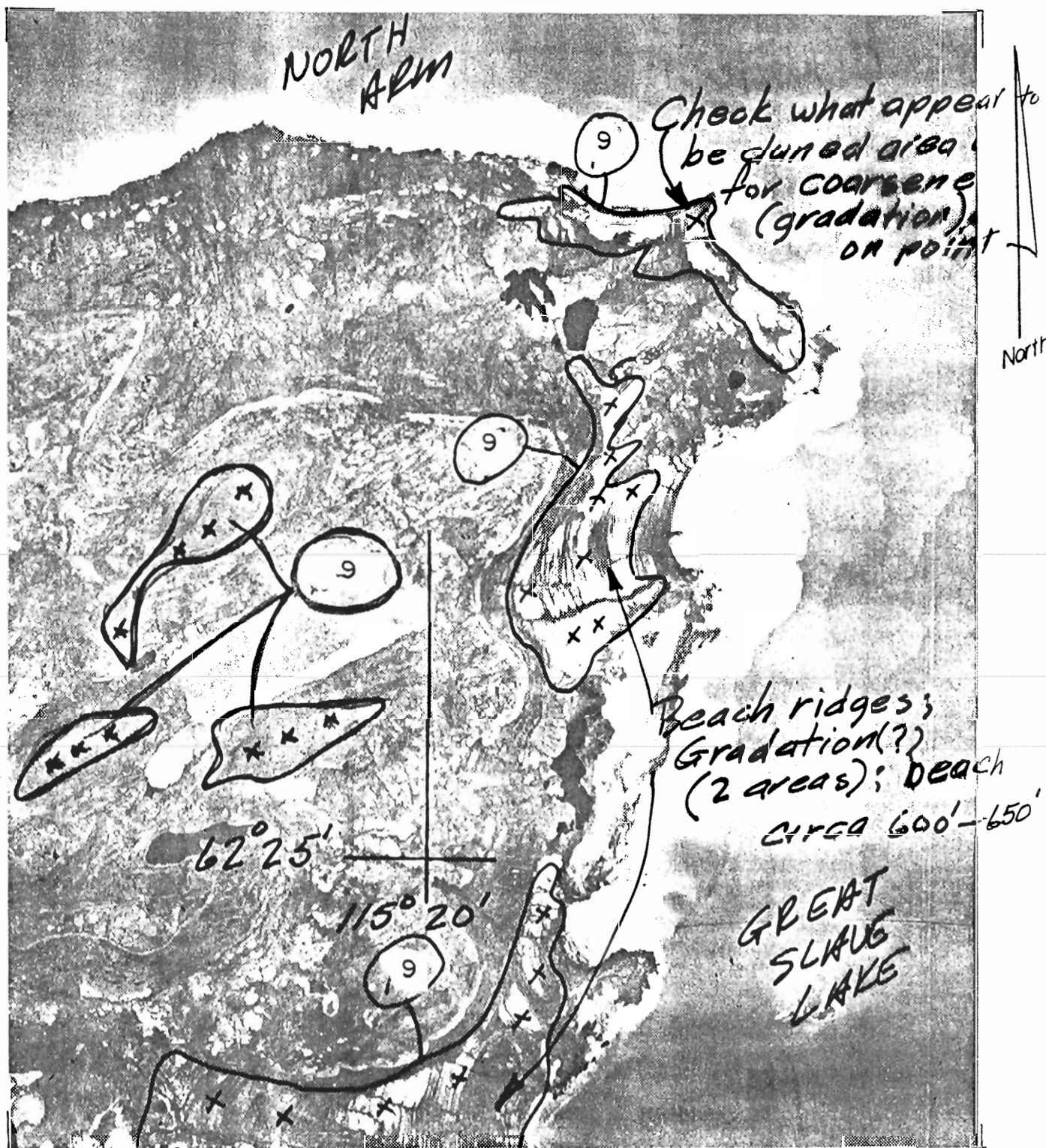
AIRPHOTO PRINT SHOWING PROSPECT AREA No. 8  
NEAR

SPRUCE POINT ON GREAT SLAVE LAKE, NWT



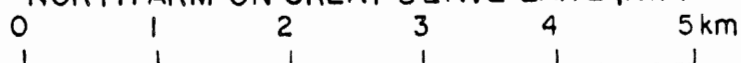
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FIGURE 8



AIRPHOTO PRINT SHOWING PROSPECT AREA No. 9  
NEAR  
WHITEBENCH POINT

NORTH ARM ON GREAT SLAVE LAKE, NWT

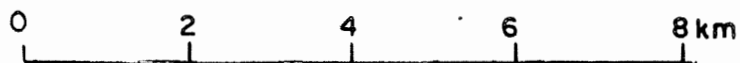




Note: Disregard km posts  
shown from old unrelated study

AIRPHOTO PRINT SHOWING PROSPECT AREA No.10  
NEAR

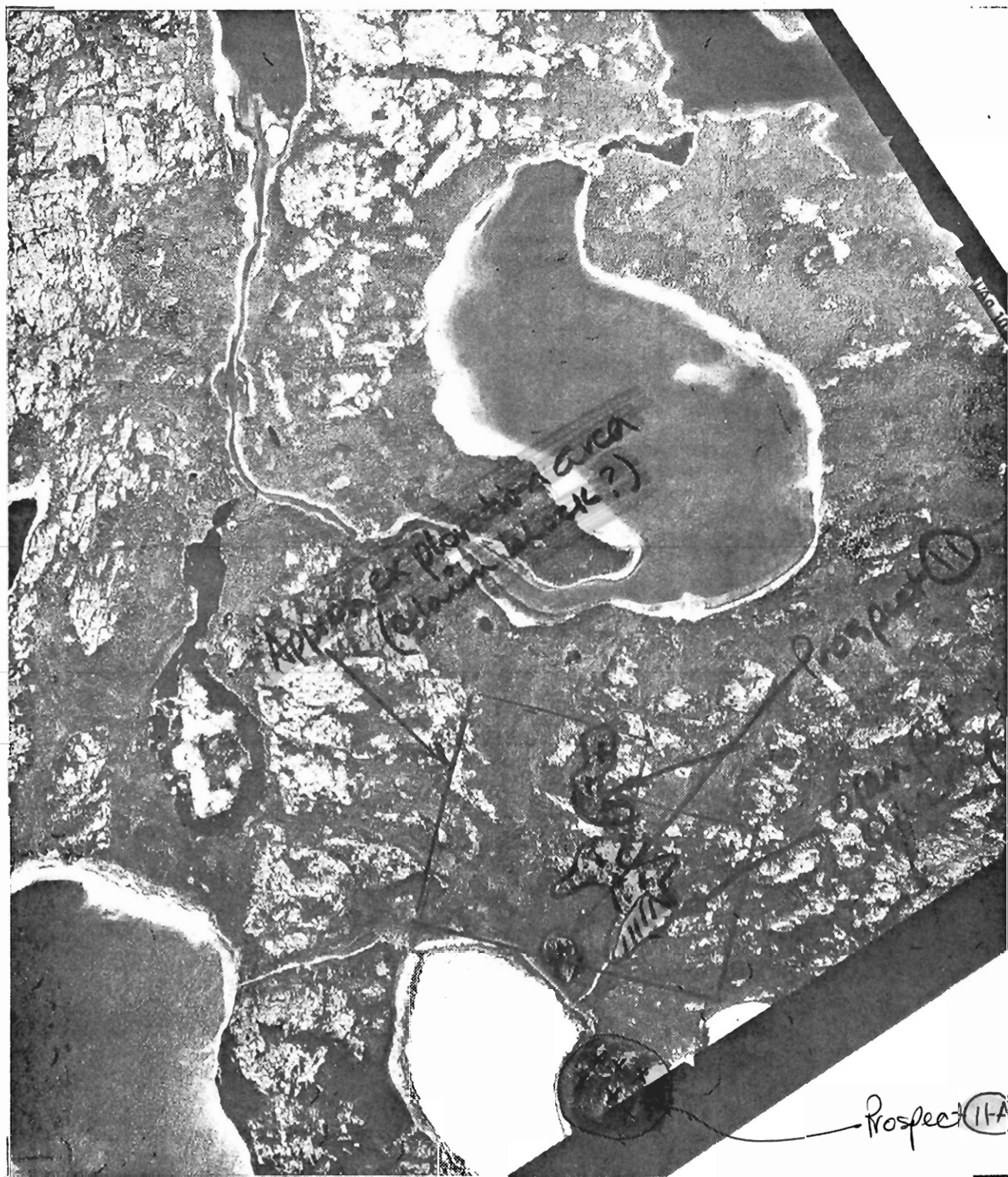
NORTH OF PROSPEROUS LAKE, NWT



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FIGURE 10





AIRPHOTO PRINT SHOWING PROSPECT AREA No. 11, 11A  
NEAR  
PROSPEROUS LAKE, NWT

0 1 2 km

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FIGURE 1



AIRPHOTO PRINT SHOWING PROSPECT AREA No.12,12A  
NEAR

PROSPEROUS LAKE, NWT



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FIGURE 1



AIRPHOTO PRINT SHOWING PROSPECT AREA No.13,14,15  
NEAR

PROSPEROUS LAKE, NWT



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FIGURE 1

END OF REPORT