

# MAR 20060024: WINEFRED LAKE

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**Project Name: Winefred Lake**

**Permit Number(s): 9304070986**

**Permit Holder: Paradigm Canadian Diamonds Pty Ltd**

**Author: Bernard Rowe BSc(Hons), MAIG**

**Date: 04/10/2006**

**Part B & C – Assessment Report**

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## **1 Introduction**

Paradigm Canadian Diamonds Pty Ltd is the holder of the Winefred Lake project (exploration permit 9304070986) in central eastern Alberta. Paradigm regards the area as prospective for diamond bearing kimberlite and exploration efforts have been focussed accordingly.

This report was prepared by Mr Bernard Rowe. Mr Rowe is an employee of Paradigm Geoscience and an exploration geologist with 17 years experience including seven years in diamond exploration with Ashton Mining Ltd. Ashton Mining was part-owner of the Argyle diamond mine in Western Australia until it was taken over by Rio Tinto. Mr Rowe holds a Bachelor of Applied Science (Honours) degree in Geology from the University of Ballarat, Australia and is a member of the Australian Institute of Geoscientists.

## **2 Summary**

Paradigm Geoscience Pty Ltd conducted a regional structural study over Alberta to identify areas most prospective for diamondiferous kimberlite. Subsequent to the regional study, Paradigm Canadian Diamonds Pty Limited (PCDPL) applied for mineral tenure over seven target areas. Regional data sets covering the targets were acquired, processed and reviewed in order to further evaluate the targets and to plan appropriate field programs. A program of reconnaissance and surface sampling was undertaken on the Winefred Lake target. Further work is proposed to more effectively test the project area and to identify discrete targets for drill testing.

## **3 Location**

The Winefred Lake project is located 55km southeast of Conklin between Lake Winefred and Lake Grist in central eastern Alberta. Access to the area is via a well maintained private gravel road that services several oil/gas fields. Otherwise the area is fairly remote and heavily forested.

## **4 Geological Setting**

Proterozoic rocks of the Taltson Magmatic Arc (2.0-1.8Ga) are overlain by thick sequences of Phanerozoic sediments of the Western Canada Sedimentary Basin. In this area, the youngest of platform cover rocks belong to the Late Cretaceous Labiche Formation.



## 5 Work Completed

Initial work involved the acquisition, reprocessing and review of the following datasets to assist in planning of field programs:

- Aeromagnetic data
- Bedrock geology (published maps)
- Quaternary geology (published maps)
- Quaternary isopachs
- Ice directions
- Topography
- Bore holes
- Kimberlite occurrences
- Indicator mineral data (mineralogy and mineral chemistry)

Aeromagnetic data from the Alberta #28 survey was acquired from the Geological Survey of Canada. The survey was flown in 1952 at a flying height of 305m and a line spacing of 1609m. Appendix 2 shows an image of the first vertical derivative of the total magnetic field. The wide line spacing and age of the survey render the data not particularly useful for kimberlite exploration and no anomalies of interest were identified.

An examination of the bedrock geology showed that the area is underlain by Late Cretaceous Labiche Formation at an average elevation of 400m asl. Only kimberlites of the same age or younger than the Labiche Formation are considered to be worthwhile targets. Kimberlites older than the Labiche Formation will almost certainly be too deep to be of economic importance, particularly given the thick Quaternary cover.

The area is covered by extensive and thick deposits of glacial derived sand and gravel. The glacial sediments are over 150m thick and make exploring the area a difficult and costly exercise. Within the broader area ice directions are mostly SSW. The area is unsuitable for surface till sampling and exploration will rely heavily on geophysical methods.

Whilst no kimberlites are known in the area, pyrope and chrome diopside have been found by the GSC/AGS over a broad area of radius 30km to the northwest of the project area. No source has been located for the indicator minerals but it is unlikely they are sourced from the project area.

Paradigm visited the project area and attempted to locate till suitable for sampling. The attempt was unsuccessful and no till samples were collected. One gravel sample was collected from a minor stream that is reworking glaciofluvial gravel. Sites were positioned with GPS (+/- 10m).

The samples were processed by SRC Geoanalytical Laboratories in Saskatoon to produce a heavy mineral concentrate from the 0.25mm-1.0mm fraction. The concentrates were then dispatched to Global Diamond Exploration Services in

Perth Western Australia for mineral observation. Sample locations and results are tabulated in Appendix 4 and a sample processing flowsheet is included in Appendix 5.

## **6 Results**

No indicator minerals were recovered in the gravel sample collected. The target has not been effectively tested and the area is not suitable for surface till sampling.

## **7 Conclusions**

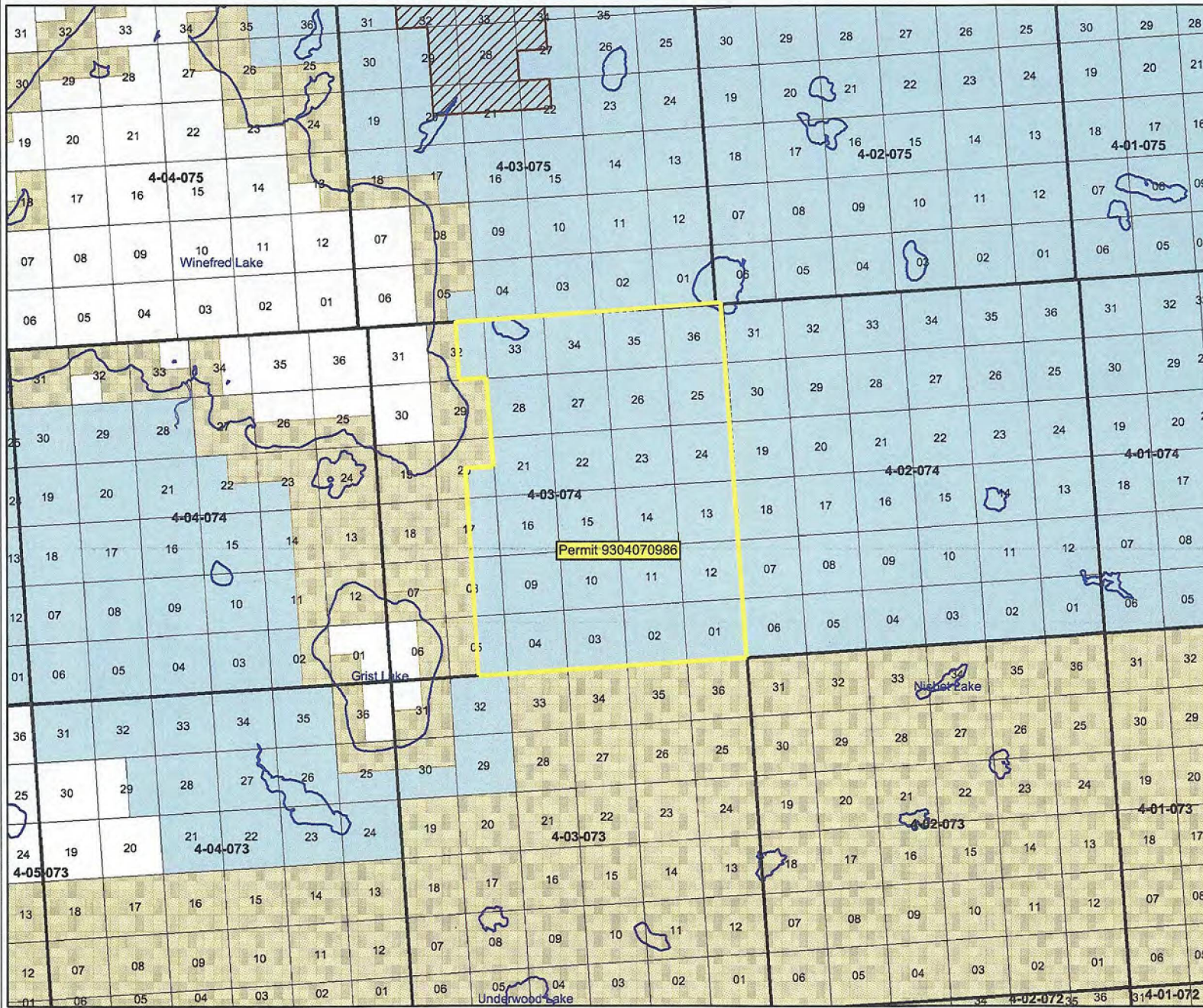
The area is not suitable for surface till sampling and further work is required to better evaluate the project area. Future exploration will have to rely on geophysical methods followed by drilling.

## **8 References**

Dufresne MB, Eccles DR, Mckinstry B, Schmitt DR, Fenton MM, Pawlowicz JG and Edwards WAD, 1996. The Diamond Potential of Alberta. Alberta Geological Survey Bulletin No. 63, 1996.

## 9 Appendices (Part C)





- Legend**
- Alberta Boundary
  - ~ Meridian
  - ▭ Township
  - Section
  - ▭ Major River
  - ▭ Major Lake
  - ▭ Major Road
  - 30 Day Pending
  - Reserved/Withdrawn - Restrictions
  - No Surface Access - Restrictions
  - Subject To - Restrictions
  - Other - Restrictions
  - ▭ Municipality
  - ▭ Special Lease - 037
  - ▭ Phosphate Exploration - 069
  - ▭ Permit - 093
  - ▭ Other - 042
  - ▭ Natural Gas Storage - 036
  - ▭ Lease - 094
  - ▭ Application Special Lease - A37
  - ▭ Application Phosphate Exploration - A69
  - ▭ Application Permit - A93
  - ▭ Application Other - A42
  - ▭ Application Natural Gas Storage - A36
  - ▭ Application Lease - A94
  - ▭ Mineral Ownership Undetermined
  - ▭ Minerals Not Owned by the Alberta Crown
  - ▭ Parks and Protected Areas
  - ▭ National Park

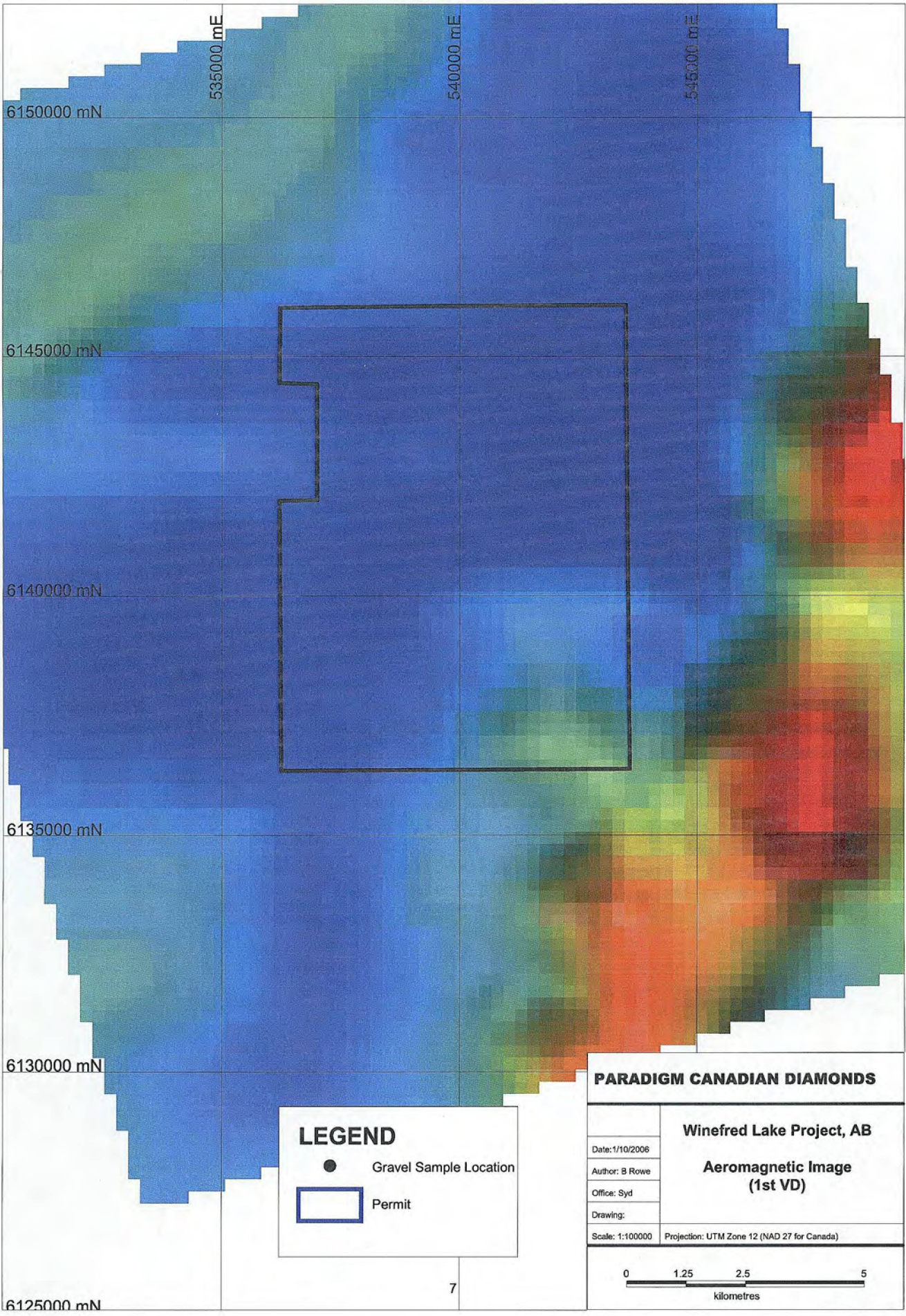
October 4, 2006

Map center: 55°24' N, 110°22' W

DISCLAIMER: Information presented on this map originates from various sources and is for general use only. Please be advised that some information may have been added, amended and deleted since this map was created.

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6150000 mN

535000 mE

540000 mE

545000 mE

6145000 mN

6140000 mN

6135000 mN

6130000 mN

6125000 mN

**LEGEND**

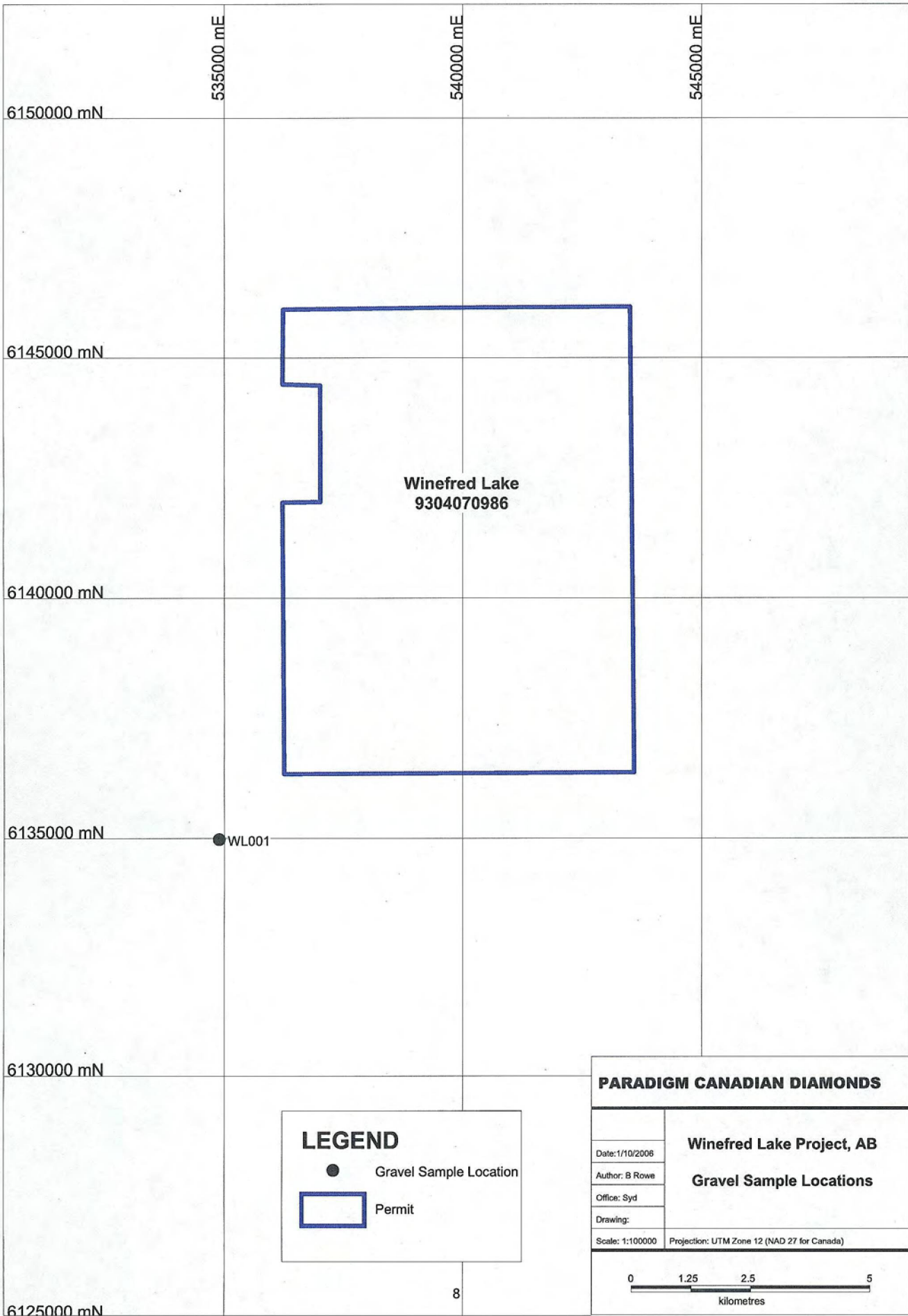
- Gravel Sample Location
- Permit

**PARADIGM CANADIAN DIAMONDS**

<b>Winefred Lake Project, AB</b>	
Date: 1/10/2006	<b>Aeromagnetic Image (1st VD)</b>
Author: B Rowe	
Office: Syd	
Drawing:	
Scale: 1:100000	Projection: UTM Zone 12 (NAD 27 for Canada)







**Winefred Lake  
9304070986**

● WL001

**LEGEND**

- Gravel Sample Location
- ▭ Permit

**PARADIGM CANADIAN DIAMONDS**

<b>Winefred Lake Project, AB</b>	
Date: 1/10/2006	<b>Gravel Sample Locations</b>
Author: B Rowe	
Office: Syd	
Drawing:	
Scale: 1:100000	Projection: UTM Zone 12 (NAD 27 for Canada)





**Appendix 1 – Sample Data**

SampleID	UTM Zone	Easting	Northing	Prospect	Type	Sample Weight kg	Observed Weight g	Positive/ Negative	Pyrope	Picro	Chromite	Chrome Diopside
WL001	12	534888	6134976	Winefred Lake	gravel	19.4	75.0	N				

## Appendix – Sample Processing Flow Sheet

