

# **Albany Graphite Project – Project Description**

## **Project Summary**

Zenyatta Ventures Ltd. (Zenyatta) is a mineral development company based in Thunder Bay, Ontario. Zenyatta is currently developing the Albany Graphite Deposit – a rare, igneous related, hydrothermal graphite deposit with potential to produce a natural, high-purity graphite that may compete in high-technology markets traditionally reserved for synthetic graphite.

As part of the development of the Albany Graphite Project, Zenyatta Ventures Ltd. has requested permission to extract a 990 tonne bulk sample, as per the requirements of Section 52.1 of the *Mining Act*. Zenyatta has also requested permission to dispose, as per Section 52.4 of the Act, in order to permit the sale of graphene, a by-product of the laboratory testing process. The Minister's written permission must be obtained prior to mining, milling, refining or disposing of more than the prescribed quantity of any mineral-bearing substance on an unpatented mining claim. The Ministry of Energy, Northern Development and Mines Class Environmental Assessment also applies as a discretionary decision is contemplated by the Minister.

As per the requirements of O. Reg. 308/12, an exploration permit is also required for the proposed activities and is being processed by the Timmins regional office.

## **Project Location and Site Description**

The Albany Graphite Project, formed by the Block 4F group of claims, is located within the Hudson Bay-James Bay Lowlands area. The project is located approximately 30 km north of the Trans-Canada Highway, approximately 35 km north-west of the community of Constance Lake First Nation, and approximately 70 km north-west of the town of Hearst, in northeastern Ontario. (Figure 1) The proposed bulk sample is on two cell claims, 253668 and 265162, holding the west and east pipe respectively. Both claims are located in the Pitopiko River area, with coordinates as follows:

### **Cell Claim 253668**

682383.56 E 5545699 N

### **Cell Claim 265162**

682842.66 E 5545699 N

## **Site Access**

Access to most of the 4F claim block can be gained using helicopter, but boat or canoe access can be used along the Nagagami River in the central area of the claim block. Access to the cell claims for the proposed bulk sample will be via 4x4 pickup truck along the existing Pitopiko Road from the Trans-Canada highway, which joins an all-weather forestry road and ultimately a winter access trail. All of these access roads are already in place and shown on Figure 2.

## **Climate and Physiography**

The project is located in northern Ontario where there are various climates and weather extremes. Most of the region has a continental climate with warm to hot summers (June, July and August) with 25 to 35°C, and cold winters (December to March) with temperatures ranging from -10 to -35°C with lows down to -45°C. Generally, precipitation ranges from 600 mm to around 900 mm.

The Nagagami River flows north through the property with several meandering tributaries flowing in from the east and west. The Pitopiko River flows into the west side of the Nagagami. Lakes and swamps are typically frozen and suitable for diamond drilling from December to April.

Exploration can take place year round with minor breaks during the spring thaw and winter freeze-up.

Overburden averages 45 m with little or no outcrop exposure. Paleozoic limestone cover rocks are exposed in the bottom and along the banks of the Nagagami River. Vegetation is dominated by wetlands with some areas of spruce and alder trees, and cedar swamps. Spruce and alder trees are also abundant along the banks of the Nagagami River and other smaller rivers.

## **Project History**

Historical exploration work has been limited in this area of the James Bay lowlands and mostly consists of geophysical surveys and diamond drill projects. The majority of the Albany claim blocks have not been previously explored. Historical exploration on a very small number of the claims has been minor: the Archean basement terrane is covered with thick glacial till that blankets Paleozoic limestone cover rocks. There is no outcrop exposure on the claim blocks and any targeted mineralization can only be observed from drill core. The following paragraphs provide a summary of past exploration work on the property.

1959: A ground magnetic and electromagnetic survey was initiated on claims held by Nagagami River Prospecting Syndicate in the Feagan Lake/Pitopiko River Townships area. Results recommended drilling four holes to investigate the EM anomalies, but there is no record that these holes were ever drilled.

1961: Algoma Ore Properties Limited flew an aeromagnetic survey in the Nagagami River and Pitopiko Townships area. The survey outlined a horseshoe-shaped anomaly which was confirmed on the ground in the same year. This led to further exploration in 1963.

1963: Algoma Ore Properties Limited flew an airborne magnetometer survey in the Nagagami River area, located forty miles northwest of Hearst, Ontario. The survey was flown by Hunting Survey Corporation. The survey results indicated two large low intensity circular shaped anomalies (Anomalies #1 and #2), underlying the Paleozoic limestones. Algoma recommended follow-up work to include a ground magnetometer survey over the anomalies and a diamond drill program.

1964 - 1967: Algoma Ore Properties Limited continued exploration in the Nagagami River area. Ground work involved grid cutting followed by a ground magnetometer survey and claim staking. Algoma drilled nine holes (located in the Albany blocks 4E and 4F) for a total of 4,868 feet. Holes 1-64 to 7-64 were drilled in Block 4E. Two holes were drilled in Anomaly #2 (drill holes 8-64 and 9-64) and reported to be located near the northern boundary of Block 4F. Erratic sampling was done on the core, along with petrographic studies. It was concluded that the ground magnetometer survey and the diamond drilling verified the airborne survey fairly well, and although drilling did not intersect any ore minerals, the structure was still geologically interesting.

1978: Shell Canada Explorations Limited initiated a diamond drill program in the area based on results of an airborne geophysical survey. Drill logs were available from MNM, but no report was submitted with the logs. One hole, drill hole 7609-78-1, was drilled within Block 4F in the Pitopiko River Area and it was reported to have intersected "graphitic syenite breccia". Unfortunately, it was not possible to locate the historic drill site but it appears to have likely been drilled on the East Pipe.

1999: The Ontario Geological Survey (OGS) released aeromagnetic geophysical maps for the Hudson Bay and James Bay Lowlands areas, Geophysical Data Set 1036.

2008: The Ontario Geological Survey (OGS) Precambrian Geology Map P.3599 was published: Hudson Bay and James Bay Lowlands Region Interpreted from Aeromagnetic.

2010 to 2012: Exploration work conducted by Zenyatta Ventures Limited includes the initial 2010 helicopter-borne geophysical survey (VTEM Max and magnetometer) which identified airborne EM and magnetic anomalies. Follow-up drilling in Block 4F during the fall of 2011 included one drill hole which intersected several mineralized zones of graphitic breccia. In 2012, Zenyatta continued with a Phase II diamond drill program and drilled eight more holes on the graphite deposit. Results were very encouraging and several additional graphite mineralized zones were intersected; however, Zenyatta was unsure of the size, geometry and attitude of the zones.

2013: Exploration work in Block 4F conducted by Zenyatta Ventures Limited included a large loop surface DPEM survey by Crone Geophysics and Exploration Ltd. The survey confirmed the presence of two discrete breccia pipes and was used to plan the resource drill program. Between March and November 2013, Zenyatta drilled 54 holes totalling 22,463 m in the graphite deposit area which is located approximately 14 km to the southeast of the 4E block. Also in 2013, Geotech performed a higher powered VTEM max survey over the newly staked 4F Extension claims to the north of 4F which included the Block 4E claims (Geotech, 2013). Additionally, Zenyatta also drilled two reconnaissance drill holes on Block 4F to test two weaker conductive zones which were defined by the 2010 VTEM survey.

### **Proposed Project**

Zenyatta proposes a large-diameter reverse circulation drilling program to obtain a 990 tonne bulk sample from cell claims 253558 and 265162. Drilling is proposed via truck-mounted drill. Additional equipment will include a bulldozer for site preparation as well as a compressor. Approximately 30 drill holes are expected to be drilled, as closely as possible to minimize land disturbance via the preparation of drill pads. 90% of material will be extracted from the west pipe and 10% from the east pipe. Pipe locations are shown on Figure 5.

An exploration camp may be set up on site to accommodate the exploration crew of approximately 10 personnel. Setup of the exploration camp will be contracted to an exploration camp company. Refuse will be collected and transported to a landfill. Zenyatta is also considering setting up the camp from the Eagle's Earth Centre situated on Hwy. 11 and owned by Constance Lake First Nation.

### **Project Timelines**

Zenyatta wishes to start preparing the property for drilling in December of 2018. Drilling is proposed to commence in January 2019 until March 2019. The exploration permit for the project would be active for 3 years.

### **Potential Impacts**

Minimal impacts are expected as exploration drilling has recently been performed within the same footprint as the proposed project, and no new access will be created. Drilling will be performed over a short duration – with the bulk sample expected to be collected during the winter of 2019 (approximately 3 months). Disturbance associated with the past activities is shown on Figure 3 and Figure 4.

### **Surface Water**

No impacts to water bodies are foreseen as drilling will be localized and there are no creeks or ponds in the vicinity of the project area. The cell claims are located approximately 900 m east

of Pitopiko River area 930 m west of the Nagagami River (**Figure 5**). Drilling is proposed during the winter months when ground conditions are frozen. If water is required for the drill program, water will be pumped from the holes previously drilled in 2013 as the casings are still in place and the holes have been capped.

Drilling will also follow the Provincial Standards for Early Exploration, which requires that drilling fluids, cuttings and mud, if left on site, be contained and must not be left within 30 metres from any permanent water body or waterway.

### **Wildlife**

The proposed project is located in what is known as the Pagwachuan Range of woodland caribou habitat. Additional authorizations may be required from the Ministry of Natural Resources and Forestry to ensure adherence with the Endangered Species Act, which provides species and habitat protection for woodland caribou in Ontario.

The project is also located in Wildlife Management Unit 24, including Cervid Ecological Zone A. Woodland caribou with low densities of moose and white-tailed deer live in this zone. The goal for moose and white-tailed deer is to maintain low densities through population and habitat management. The management objective for this zone is to minimize impacts on woodland caribou populations through maintenance and restoration activities, as directed by the Caribou Conservation Plan and associated policies.

In February of 2015, KBM Resources Group conducted an aerial survey of the Block 4F project area to delineate and determine the current level of use by woodland caribou and other large mammals. Moose were observed during the aerial survey and caribou tracks were found at the northern extent of the study area.

### **Trapline**

The project is located in registered trapline HE014.

### **Nagagamissis Provincial Park**

The project is located west of the Nagagami River, forming part of Nagagamissis Provincial Park. Road construction and maintenance (if required) will be in accordance with the park management plan.

The eastern edge of cell claim 265162 (which contains the East Pipe) is 730 m from the western extent of the provincial park boundary.

### **Forestry**

Minor waste wood will be generated from the preparation of the drill pads and upgrade to site access roads. The lumber is generally black spruce, cedar and tamarack and is generally unsalable.

The project is located in the Hearst Forest, forming part of the Hearst Forest Management Plan (2017-2027). The forest is managed in accordance with the Caribou Conservation Plan, and has applied a dynamic caribou habitat schedule. Based on the schedule, the area is available for harvest in 40-60 years, as shown in Figure 6.

### **Hazardous Materials**

Fuel for vehicles and equipment will be stored on the property. Zenyatta will follow the recommendations of the Prospectors and Developers Association of Canada's (PDAC) e3 (Excellence in Environmental Stewardship) Good Practices Guidelines for Spill Management.

Explosives will not be required for the proposed project and will not be stored on site.

**Consultation**

The project is located in Constance Lake First Nation's traditional homelands. On July 18, 2011, Zenyatta Ventures Ltd. and Constance Lake First Nation announced the signing of an Exploration Agreement for a mutually beneficial and co-operative relationship regarding exploration and pre-feasibility activities on the Albany Project.

A memorandum of understanding was recently signed between the parties as a commitment to work together on the project.

A consultation process will also be associated with the exploration permit application for the project.

Figure 1 - Project Location

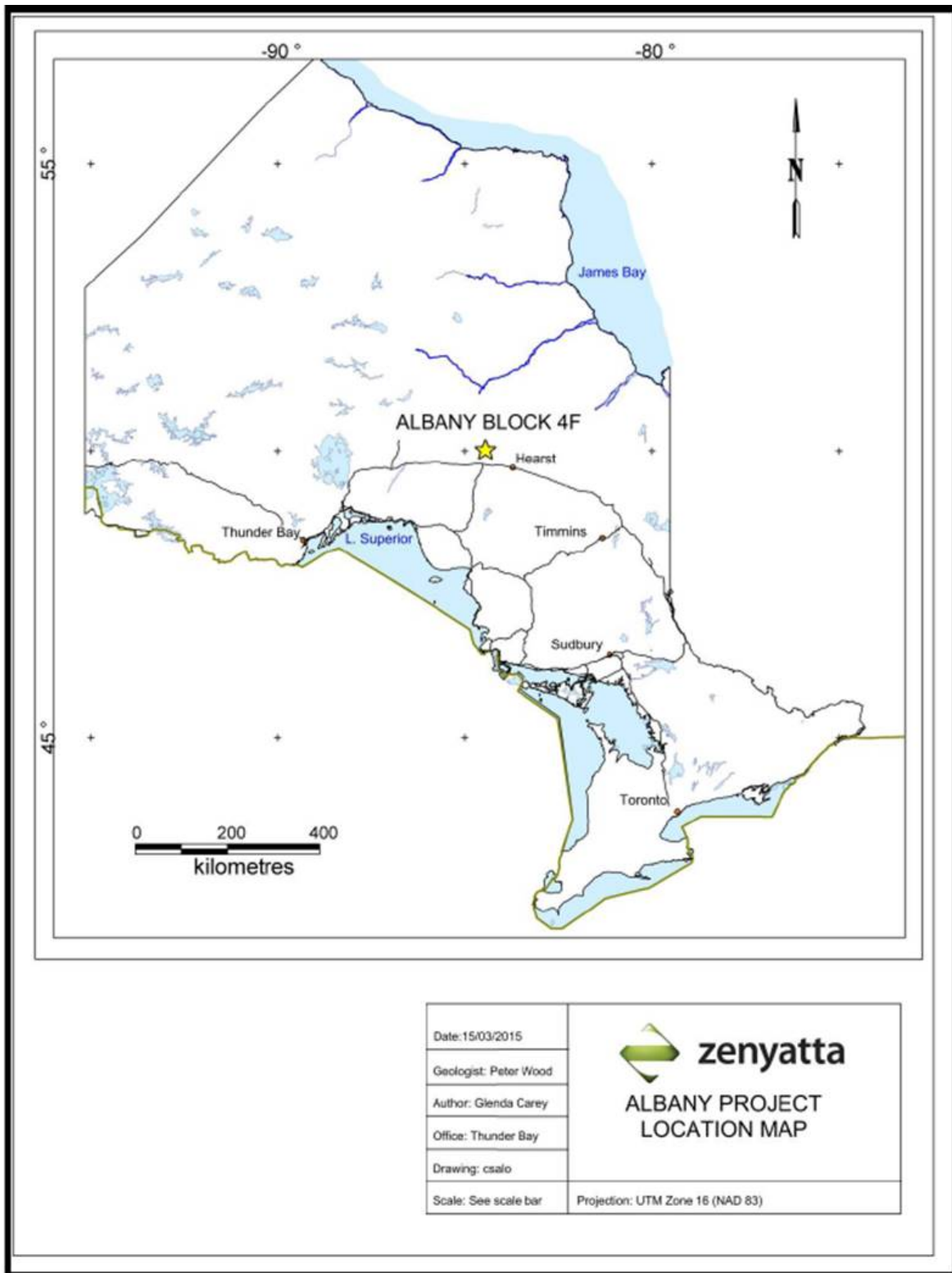


Figure 2 - Existing Roads

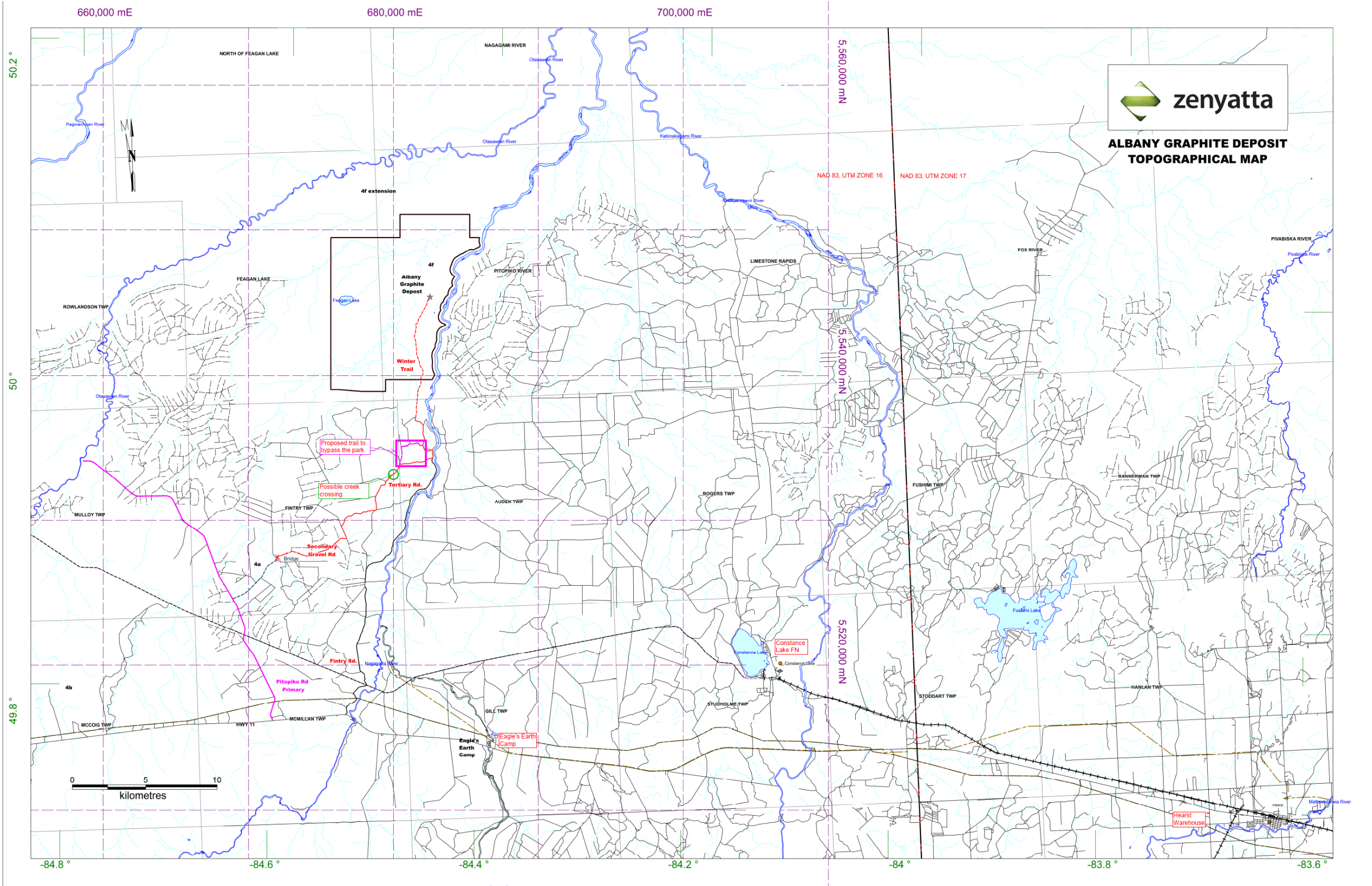




Figure 3 - Previous Exploration Disturbance





**Figure 4 - Previous Exploration Disturbance**

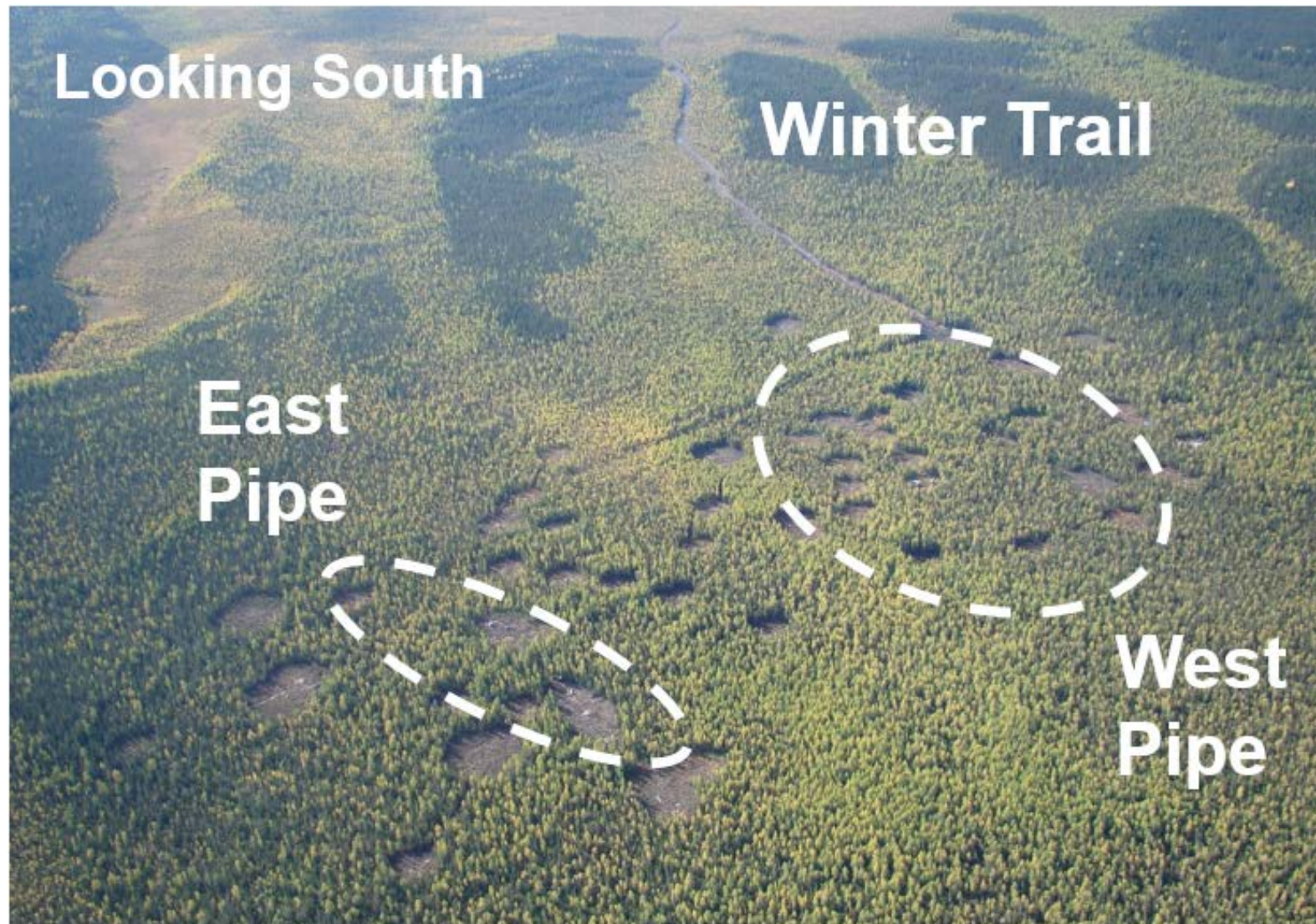


Figure 5 - Cell Claim Location

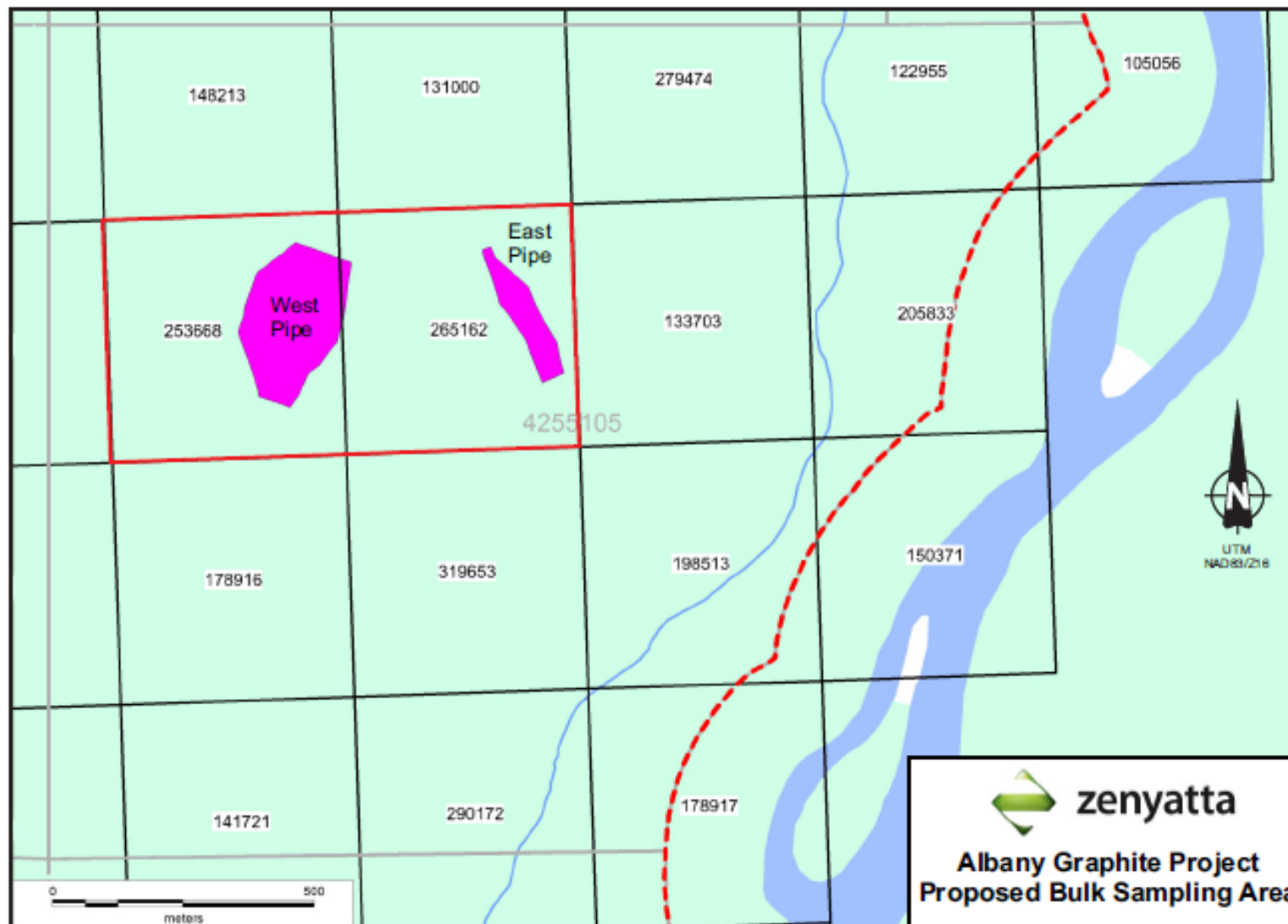




Figure 6 - Hearst Forest Harvest Schedule

