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STARFIELD RESOURCES INC.
2001 WILDLIFE BASELINE STUDIES
FERGUSON LAKE, NUNAVUT

Prepared by:

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Submitted To:

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EXECUTIVE SUMMARY

During the summer of 2001 Starfield Resources Inc. (SRI) initiated baseline wildlife studies in the Ferguson Lake area, Nunavut (NU). The overall objective of the study program was to select and survey Valued Ecosystem Components (VECs) for the SRI exploration program in preparation for ongoing environmental management and future environmental assessment, should the program advance to the development stage. This report present the results of the initial wildlife and inventory studies completed during the summer of 2001.

Between 30 June and 02 July 2001 and 16 and 20 August 2001, two field trips were carried out to survey caribou, muskoxen and raptors and to conduct a vegetation assessment. Incidental wildlife observations were also documented. This report presents the survey methodology used and the results observed on the wildlife and habitat assessments.

The following is a brief summary of highlights of the 2001 baseline wildlife study program in the Ferguson Lake area of Nunavut.

Wildlife Species

A total of 39 different wildlife species were documented as occurring across the Ferguson Lake wildlife study area during the 2001 field program. This included 7 mammal species and 32 bird species. Caribou densities were estimated at 37,950 (± 21,600) on 01 July and 107 (± 18) on 17 August. More caribou were observed this year in the wildlife study area than in previous years. Muskoxen densities were estimated at 173 (± 65) in July and 22 (± 6) in August.

Peregrine Falcons and Rough-legged Hawks were the only raptor species documented as nesting on site. Six active Peregrine Falcon and two active Rough-legged Hawk sites were documented in the study area. There were 18 pairs of Sandhill Cranes documented across the study area. The five most frequently observed species included caribou, Canada Geese, Greater White-fronted Geese, muskoxen and Sandhill Cranes.

Habitat Assessment

During 2001, habitat assessment was initiated on a 1,600 km^2 study area surrounding Ferguson Lake. A total of 60 site assessments were conducted representing 12 different ecosystem units: *Betula – Ledum, Saxifraga – Silene, Betula – Empetrum, Betula – Rubus chamaemorus, Betula – Calamagrostis, Eriophorum vaginatum – Andromeda, Carex chordorhiza – E. russeolum, Salix – Rubus arcticus, Carex aquatilis – E. angustifolium, Arctophila – Ranunculus*, lichen – boulder field, and exposed bedrock.

Five hundred and forty three (543) plant observations were documented comprising of 138 plant species. These ecosystem units and plant species are typical of the barrenlands. No rare or endangered plant species were found during the 2001 field survey program.

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1.0 INTRODUCTION

1.1 Introduction

Starfield Resources Inc. (SRI) began an exploration program at the Ferguson Lake property in Nunavut in the spring of 1999. This site is part of an older mineral exploration site originally discovered and explored by International Nickel Company (INCO).

During 2001, in preparation for possible program advancement to the development phase, SRI retained EBA Engineering Consultants Ltd. (EBA) to initiate the collection of baseline wildlife, wildlife habitat and vegetation cover information in the immediate area of the company's Ferguson Lake exploration site.

The study program conducted in 2001 focused on terrestrial wildlife species and habitats considered to be important to communities (Rankin Inlet and Baker Lake), regulators and other stakeholders with an interest in the area. The species or species groups selected for study included those that were most likely to interact with current exploration activities or possible future development of a mine at this location.

Of particular interest were potential effects on the Qamanirjuaq Caribou Herd, with an estimated population in 1994 of approximately 496,000 animals, that pass through the region during their annual cycle (Beverly and Qamanirjuaq Caribou Management Board 2002). To address these concerns, baseline wildlife studies were initiated in 2001.

The wildlife studies focused on wildlife species and terrestrial areas understood to be important to stakeholders and government regulators, which have been previously identified in other environmental assessments (EAs) as Valued Ecosystem Components (VECs). These included current industrial developments in other parts of the north, *e.g.* Ekati Diamond Mine™, the Diavik Diamond Mine, the Kennady and Snap Lake projects, Lytton Minerals and activities related to the Tibbitt to Contwoyto winter road. The VECs selected for the study included caribou, muskoxen, carnivores, birds of prey (raptors) and wildlife habitats.

1.2 Objectives

The 2001 field program at Ferguson Lake, NU represented the first year of the SRI wildlife studies program. Consequently, a preliminary reconnaissance of the flora and fauna occurring in the region was required. The primary objectives of the 2001 field program included:

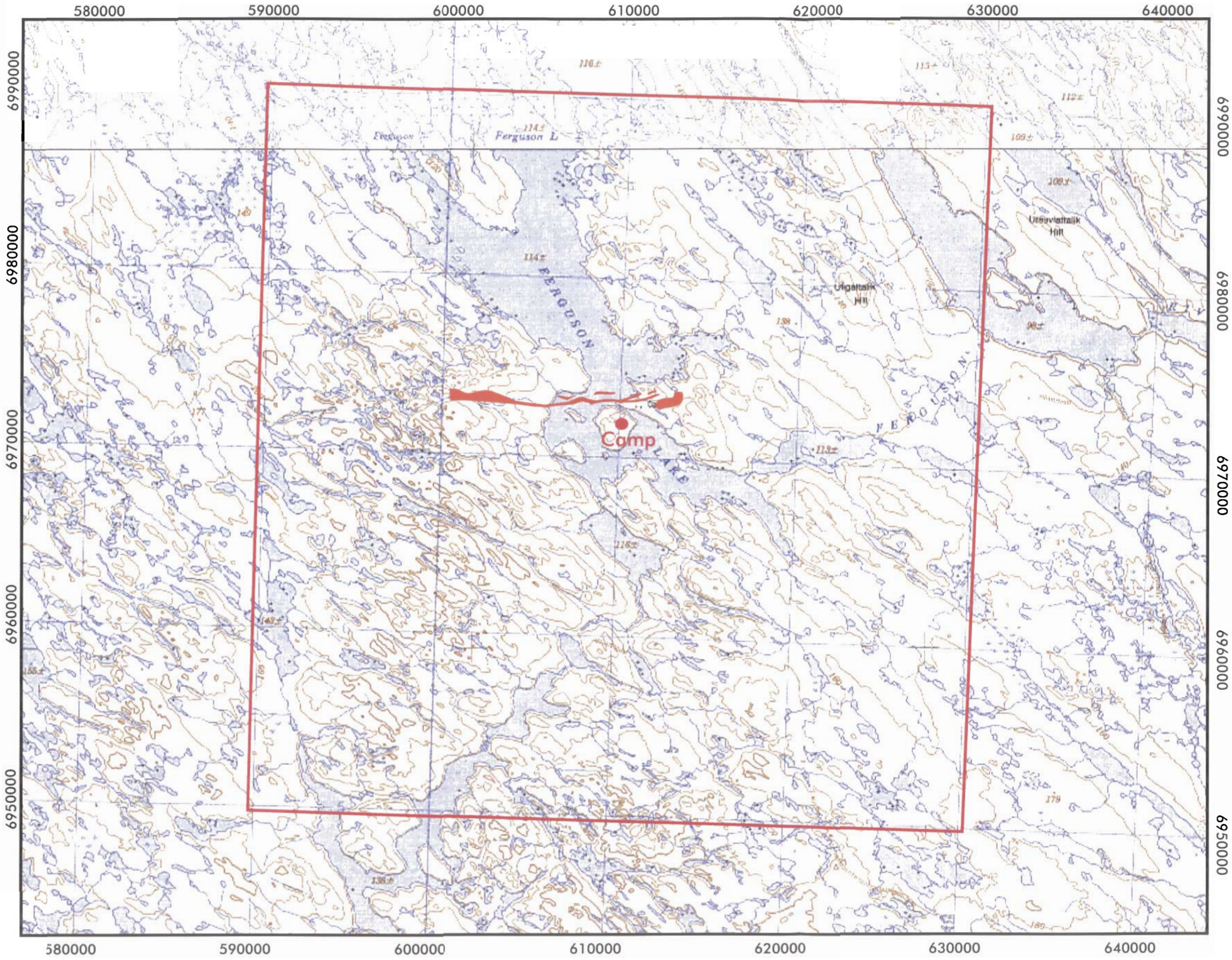
- The collection of baseline information on the wildlife resources and terrestrial ecosystems of the Ferguson Lake area.
- The completion of two aerial caribou surveys and one raptor survey;
- The completion of ecosystem classification for representative habitats types within the SRI study area; and
- The documentation of carnivore presence on an opportunistic basis.

1.3 Study Area

The SRI study area is located approximately 235 km southwest of Rankin Inlet, NU and measures approximately 40 km by 40 km, totaling 1,600 km^2. The wildlife study area is centered around the current camp and exploration area (Plate 1) (Figure 1), to capture the home range of species living within the potential zone of influence, while encompassing a region of sufficient size to adequately cover wildlife species with larger home ranges. These boundaries were used to define the study area for the baseline program.

Plate 1 Starfield Resources Exploration Camp at Ferguson Lake

Figure 1: 2001 Ferguson Lake Wildlife Study Area



0 km 10 km

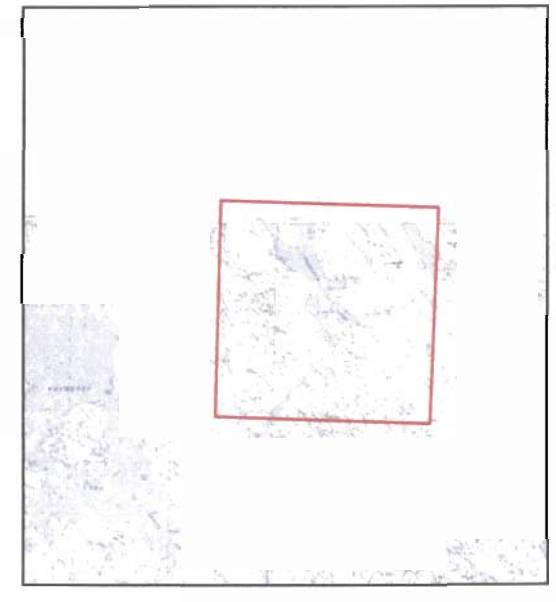
Scale - 1 : 227,500

Date: April, 2002
Projection: UTM, Zone 14
Company: EBA Engineering Consultants Ltd.
Project #: 01-14863

Legend

- Interpreted UTEM Conductors (Project Exploration Area)
- Camp Location
- Study Area Boundary

Inset Map



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1.3.1 Climate

No weather station is maintained at the SRI exploration camp. However, Rankin Inlet, the nearest community, is located approximately 235 km to the northeast, of Ferguson Lake and records weather parameters at the airport.

The SRI wildlife study area straddles two ecoregions known as the Maguse River and Kazan River Uplands. The Maguse River Upland is a smaller unit of the Western Taiga Shield Ecozone, while the Kazan River Upland is a smaller unit of the Southern Arctic Ecozone. These smaller units are part of a larger ecological hierarchy as defined by the Canada Committee on Ecological Land Classification. Ecoregions comprise portions of ecozones and are characterized by distinctive regional ecological factors, including climate, physiography, vegetation, soil, water, fauna and land use (Ecological Stratification Working Group 1995).

The climate of the Maguse River Upland ecoregion is marginally more extreme than that of the Kazan River Upland ecoregion and hence, is highlighted here. In general, the Maguse River Upland ecoregion is classified as having a low arctic ecoclimate. Regional weather patterns are influenced by the open waters of Hudson Bay during the late summer and early fall prior to freeze-up. Winters are long and cold, marked by short days and light precipitation followed by short, cool summers. Cold arctic air influences the area for most of the year.

The mean temperatures for summer and winter are 4°C and -24°C, respectively. The average annual precipitation in the region of the wildlife study area is approximately 200 mm.

1.4 Valued Ecosystem Components

The EIA process requires the identification of Valued Ecosystem Components (VECs) (Beanlands and Duinker 1983). However, it is impossible for an impact assessment to address all potential environmental effects of a project. Therefore, it is necessary that the environmental attributes considered to be important in project decisions be identified and addressed during initial baseline work.

VECs for this study were selected from species known to occur or of probable occurrence in the wildlife study area, and species that have been previously identified as being important at other northern project sites. Data on the distributional range of species were determined from past reports and the scientific literature. Species, or species groups, considered by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC 1997) as being endangered, threatened or vulnerable were

automatically considered as potential VECs. VECs that were selected for this baseline study included:

- caribou
- muskoxen
- carnivores (grizzly bears, wolves and wolverines)
- raptors.

Breeding birds were originally selected as a VEC. However, the necessary permits for conducting breeding bird surveys were unfortunately not issued until after the breeding season was over. As a result, breeding bird surveys were not conducted during 2001. Sandhill Cranes are not typically considered a VEC, but were common throughout the study area. Since monitoring data for these cranes were easy to collect while conducting aerial caribou surveys, Sandhill Crane results have also been presented in this report.

1.5 Report Organization

This report summarizes wildlife and wildlife habitat field data collected in the SRI study area during the summer 2001. The report is divided into six sections including an executive summary, introduction, wildlife VECs, habitat VECs and literature cited.

The wildlife section describes the fieldwork conducted and the study results obtained for ungulates (caribou and muskoxen), carnivores (grizzly bears, wolverines and wolves) and birds (raptors and Sandhill cranes). The wildlife habitat section focuses on identification of the plant species occurring in the area, and classifying vegetation patterns in relation to community types. Field methodologies are presented in the respective subsections for each of the VECs.