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11 KEY LINES OF INQUIRY

11.1 INTRODUCTION

The Key Lines of Inquiry (KLOI) were identified by the MVEIRB as those subjects requiring the most rigorous analysis in the DAR, as they are aspects of the Taltson Hydroelectric Expansion Project with the highest potential to have a major effect on the land and its peoples.

The three subjects identified as KLOI are barren-ground caribou, water fluctuations in the Taltson River watershed (excluding Trudel Creek), and ecological changes in Trudel Creek.

As priorities, these topics have been given the highest level of consideration in the DAR and each topic has been subject to analysis that includes multiple expert evaluations.

A detailed cumulative analysis has been carried out on the KLOI, involving valued components that are influenced by more than one human activity or development.

Chapters 12, 13, and 14 examine these Key Lines of Inquiry in detail and provide the specific information and assessment requirements. Cumulative effects analysis has been included with each KLOI where applicable, and a separate chapter (Chapter 19) presents a comprehensive summary of cumulative effects of all issues presented in the Subjects of Note and Key Lines of Inquiry.

11.1.1 Barren-ground Caribou

Barren-ground caribou are a source of food for Aboriginal and non-Aboriginal residents of the Northwest Territories alike. Furthermore, caribou form an integral part of the aboriginal cultures. Sport hunting of caribou and caribou viewing contributes to the NWT economy. Effects on caribou may thus have subsequent cultural, social, and economic effects.

Chapter 12 examines how predicted changes due to the Expansion Project may affect caribou abundance, health, distribution, and behaviour, and the associated effects on the persons, communities and businesses that depend on the caribou. It also presents mitigation and Project design features, and discusses the lessons learned from other developments within the barren-ground caribou range that have impacted this and other important food species.

11.1.2 Water Fluctuations in the Taltson River Watershed

The Taltson River watershed encompasses an area of approximately 60,000 km² and comprises all water bodies and associated riparian areas potentially affected by the development of the Project. The Project plans involve construction of a new control structure on Nonacho Lake and new generating facilities at Taltson Twin Gorges. Hydrological effects of the development may include altered flows on water bodies upstream and downstream of the Taltson Twin Gorges.

Chapter 13 discusses the resulting potential for seasonal changes in the hydrological characteristics of the Taltson River Drainage Basin above and below Taltson Twin Gorges. Modelling and analyses of water level changes, flow rates, and changes to the winter ice regime are presented.

Biophysical issues addressed include potential changes to water quality and quantity, and effects on aquatic ecosystems, fish populations, riparian vegetation, and wildlife habitat and wildlife.

11.1.3 Ecological Changes in Trudel Creek

The Expansion Project may result in alteration of the ecology of Trudel Creek as substantial volumes of excess water currently flowing through Trudel Creek are redirected, and water flows in Trudel Creek are typically reduced while subject to fluctuations during natural high flows or shutdown events.

Chapter 14 addresses biophysical issues such as erosion potential and habitat shifts, effects on aquatic communities and habitat including quantity and quality of aquatic habitat at risk due to decreased flows, effects on fish populations, and changes to wildlife species.

Also discussed are mitigation strategies and any effects associated with the mitigation activities, and the ability of affected ecosystems to recover.