

12 Summary of Environmental Impact Assessment

12.1 Introduction

12.1.1 Disciplines Assessed

The Surmont project was assessed (Volume 2) for its potential effects on the following biophysical and resource use disciplines:

- air
- hydrogeology
- surface water
- fisheries
- soils and terrain
- vegetation
- wildlife
- biodiversity
- resource use
- human health

Effects on socio-economics were also assessed (Volume 3).

12.1.2 Methods

The Environmental Impact Assessment (EIA) focused, using the information in the Environmental Baseline Study (Technical Appendix 1), on the issues of greatest concern, either because of their effects on humans directly or on ecology. Also, the effects were analyzed for certain constituents or characteristics of an environmental or social component, called key indicator resources (KIRs). These resources were selected because they are either of greatest concern or they are indicative of the component's biophysical or resource use state. The effects on these KIRs were then assessed in specific study areas, selected to ensure that effects were measured to the fullest extent possible and appropriate.

Project-specific and cumulative effects were assessed for routine project conditions. Upset (i.e., accidental) events were assessed separately. The project was assessed at peak production (i.e., maximum product throughput) or disturbance (i.e., maximum surface clearing) and at abandonment (reclamation).

An update of the Surmont CEA, reflecting the potential contributions of the OPTI Long Lake project, are provided in Technical Appendix 4.

In all cases, the effects presented are those that would remain after all engineering and environmental management controls are undertaken to minimize environmental effects. See Volume 2: Biophysical and Resource Use Assessment for more detail on the issues,

project design feature(s), mitigation and protection planning and Gulf's plans to monitor either its facilities or the environment.

Residual effects (i.e., after mitigation) were finally evaluated as significant or not significant. The criteria for these rankings for each discipline are defined in Volume 2, and are generally based on consideration of the duration and magnitude of an effect at the end of the project life.

The remainder of this section summarizes what was assessed and the assessment results for each discipline.

12.1.3 Summary of Conclusions

Gulf will implement numerous mitigation measures designed to minimize potential residual environmental effects. These include: Phased Environmental Management (PEM), which includes constraint mapping; Integrated Landscape Management (ILM) that coordinates activities between Gulf and AIPac, and the Conservation and Reclamation Plan (C&R) These measures address both project-specific and cumulative effects.

No significant project-specific effects were identified for air, hydrogeology, surface water, fisheries, resource use, human health and socio-economics. A significant project-specific effect was identified for one KIR for vegetation (acid deposition on uncommon ecosites). Such sites however are not necessarily uncommon outside the Surmont lease.

Significant overall cumulative effects (i.e., contributions from all projects and activities, including Gulf Surmont) were identified for soils, vegetation and resource use. Some overall cumulative effects for wildlife and biodiversity were rated as Class 1 or 2, indicating a possible concern of sustainability of the resource over the long-term given current regional land use trends. Although the contribution of the Surmont project to any of these effects are not significant, Gulf is a committed participant with the Cumulative Effects Management Association (CEMA) and its programs that are working to address these regional concerns.

12.2 Air

The potential effects of the project on air quality are assessed for:

- NO₂ emissions
- SO₂ emissions
- potential acid input (PAI)

The contributions of the project to other emissions are discussed, including Greenhouse gases (GHG).

12.2.1 Project-Specific

All project-specific effects on air quality are not significant. NO₂ and SO₂ concentrations are below ambient air quality guidelines; release of SO₂ during flaring is substantially below guideline levels. Maximum PAI does exceed the guideline (0.25 kilogram equivalent per hectare per year) in some areas near the central facilities (the significance is not rated for air; however, it is rated for soil and vegetation receptors). Road dust may be a nuisance but is not significant.