





Long-term Performance of Closed Out Mine Sites in Manitoba

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HBMS

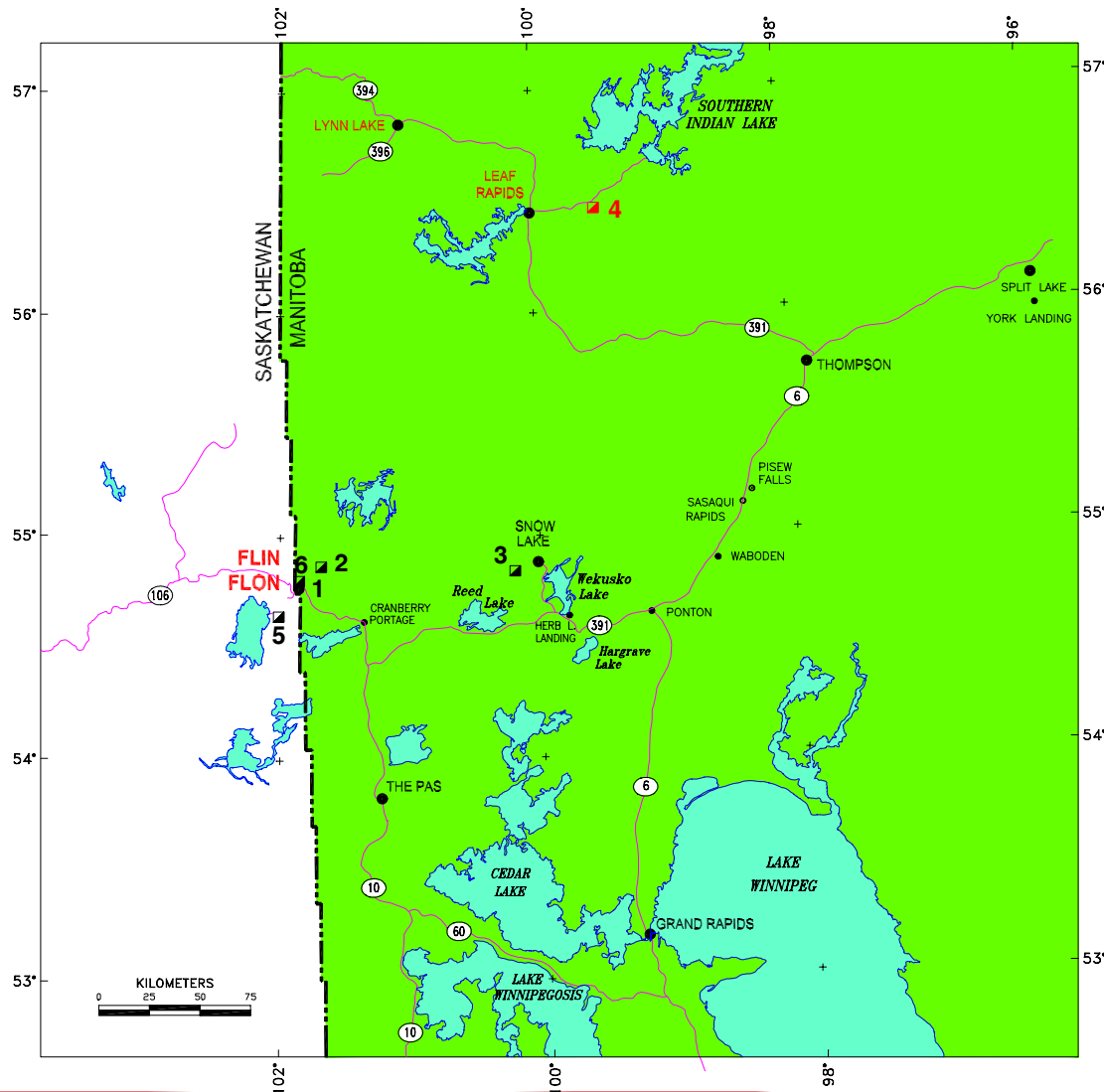


A member of the Anglo American plc group.



LOCATION MAP OF HBMS MANITOBA & SASKATCHEWAN PROPERTIES

-- FIGURE 1 --



SHEET ORIENTED UTM NORTH

- 1 - FLIN FLON SMELTER, CONCENTRATOR AND CALLINAN MINE**
- 2 - TROUT LAKE MINE**
- 3 - CHISEL NORTH ZINC MINE AND SNOW LAKE CONCENTRATOR**
- 4 - RUTTAN MINE AND CONCENTRATOR**
- 5 - KONUTO LAKE COPPER MINE (SASKATCHEWAN PROPERTY)**
- 6 - 777 MINE PROJECT**









History



Developed:

- 30 Mines
- 8 Concentrators

Operating:

- 5 Mines
- 2 Concentrators

“Planning For Closure”



Environmental Liabilities



Decommissioned:

2 Mine / Concentrators

9 Mines

Total

\$20 M CDN

Work Underway:

2 Mine / Concentrators

2 Mines



Why?



- Future Liability
- Regulators and Public



The “Material”



- Ore
- Stable Rock
- Acid Generating Rock



MEND Program



- Characterization
- Sampling
- Reactions



Rules of Thumb



- Minimum 20 kg / tonne excess alkalinity
- Ratio of base to acid 2:1 to 4:1
- Sulphur - less than 0.5%





Management and Disposal





Successes and Failures















































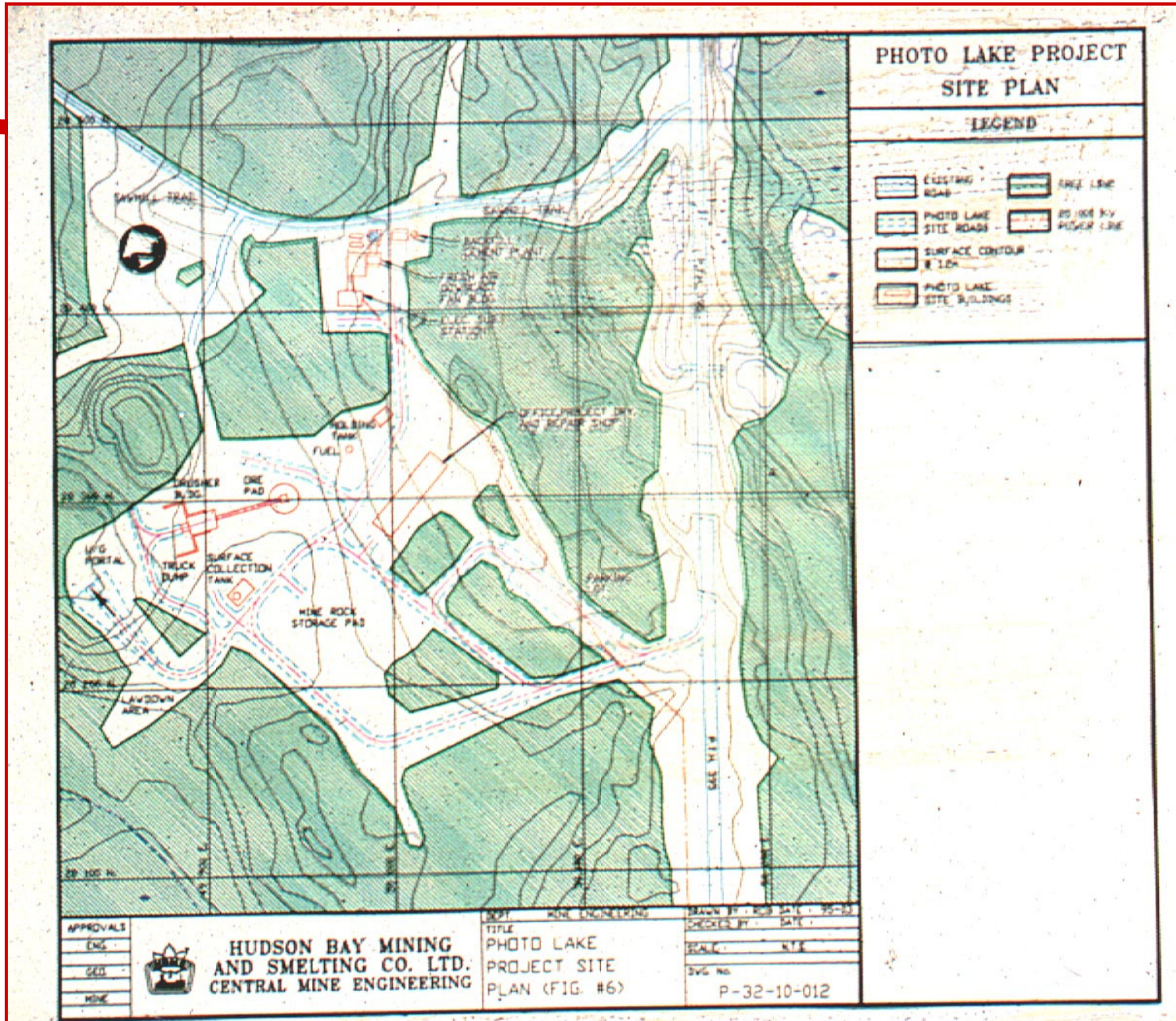














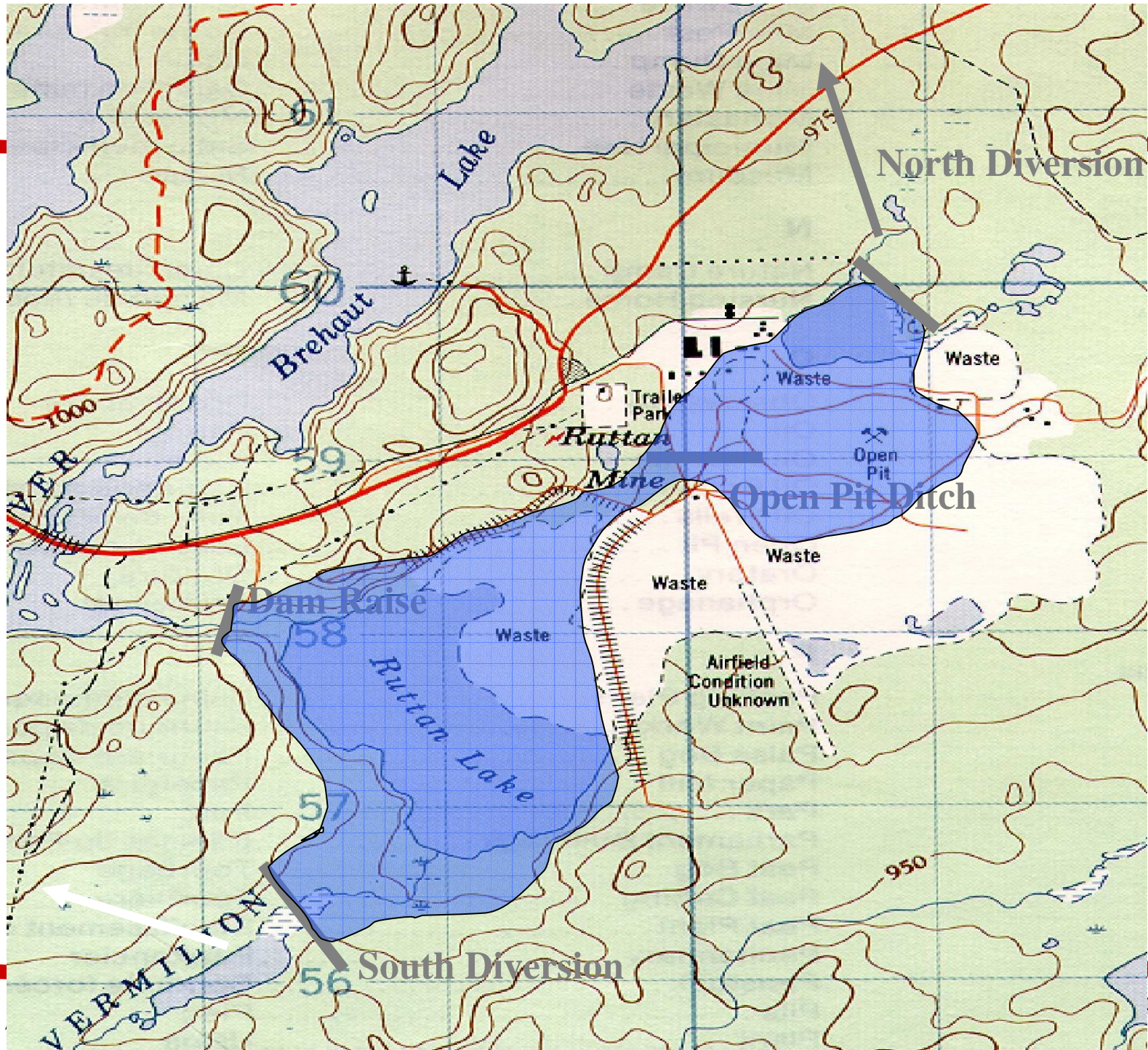


Ruttan Tailings Pond- 46 Million Tonnes



Waste Rock Piles - 52 Million Tonnes





















Questions?

