Effective Water Management at Oil Sands

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Oil Sands Water Management Initiative
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Outline

• Water use at oil sands (Mining and In Situ)
• Challenges and opportunities
• Industry and Suncor performance
• Looking ahead
  – Goals
  – Operational excellence
  – Capital planning
  – Collaboration
Oil Sands Water Use

Extraction: process water

Upgrading: cooling and utility water

In situ: generate steam

Suncor refineries: heating and cooling
Oil Sands Water Use

Challenges:

• Water remains a key requirement in our processes
• Public expectations on responsible water use -> tougher regulation
• Athabasca River low flow periods

Opportunities:

• Technology can drive performance improvement, reduce requirements
• Public sustainability commitment ensures accountability
• Public policy involvement
• Industry collaboration
Water Performance

Industry:

- **0.5 barrels** of water for every barrel of oil produced (in situ)
- **2 to 4 per barrels** of water per barrel of oil produced (mining)
- Recycling in industry: **80 to 95%**
- 2009 oil sands water use was **179 million m³** (1/3 of 2008 City of Toronto water use)
- Oil sands water use: **7% of Alberta water allocation**
- Athabasca River withdrawal: **0.5% of average** and **3.4% of lowest weekly water flow**

Suncor:

- 2009: gross water withdrawal of **40.6 million m³** (decline of more than 1/3 since 2002)
- Now operating at **1998 levels**, even though bitumen production has more than doubled
- Operate well below license of 66.2 million m³
- 90% recycling rate at Firebag In Situ facility
- 95% recycling rate at MacKay River facility
- Savings achieved by:
  - increased reuse, recycling
  - improved mine tailings operations
  - new cooling towers.
- Edmonton refinery water use supplied by municipal grey water
Looking Ahead

- Performance goals (announced in 2009 SD Report)
- Operational excellence focus (increased reliability, sustainability metrics)
- Capital planning (10 year growth strategy -> 1 million boe in 2020)
- Industry collaboration (Oil Sands Leadership Initiative)
- WBCSD Water Project leadership team member
“For Suncor, being a sustainable energy company means managing our business in a way that enhances social and economic impacts to society while striving to minimize and mitigate environmental effects associated with resource development.”

*Rick George, Suncor CEO*

- Sustainable development: at the core of our business strategy
- Responsible water use: key element of sustainability strategy