Alberta’s Evolving Non-Saline and Saline Water Use Regulatory Requirements for Oil Sands Projects

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Presentation Overview

- Saline vs. non-saline water
- Definitions, history, etc

Current regulations
- AENV
- ERCB

Drivers for new regulations

Future/emerging regulations

Questions
Based on Total Dissolved Solids (TDS) conc.

- **AENV** for TDS < 4,000 mg/L
  - Non-saline or fresh
- **ERCB** for TDS > 4,000 mg/L
  - Saline or brackish

- **AENV-ERCB MOU (Dec/07)**
  - Work closer together
Current Regulations - AENV

- Water Act (1999)
- Water for Life (2003, renewed in 2008)
- Updated Oilfield Injection Guideline (2007)
- 3PC process for EIA Review (2007)
- Draft Bitumen/Non-Saline (2009)
Current Regulations - AENV

- Water Act (1999)
  - Non-saline water (GW and SW)
  - License
  - Moratoriums (area-specific)
  - Safe, reliable and sustainable water for all
  - Healthy ecosystems
Current Regulations - AENV

  - Only applies to GW
  - Standardizes methods
  - Streamlines application process
  - Great job AENV!
Current Regulations - AENV

- Updated Oilfield Injection Guideline (2007)
  - Injecting non-saline \( \text{H}_2\text{O} \)
  - ERCB consultation
  - Tier 1, 2 and 3 investigations
    - Represent substantial, comprehensive filings
    - Lengthy and iterative application process
Current Regulations - AENV

- 3PC Review Process for EIAs (2007)
  - Implemented to de-bottleneck
  - Consultants contracted by AENV
  - Review process expedited, but…
Current Regulations - AENV

- Draft Guideline on Non-Saline-Bitumen Contact (2009)
  - Where bitumen is in direct-contact with non-saline $\text{H}_2\text{O}$
  - Existing and planned projects
  - GW Management Plan (GMP)
    - Quantity and quality indictors (thresholds, limits, etc)
    - Monitoring and frequency
  - “Draft”..., but already being adopted
  - Dovetails into the GMF (see upcoming slides)
Drivers for New Regulations

- Evolving needs of AENV, ERCB, AE, etc
- Water for Life Strategy
- Concerns of...
  - Local stakeholders
  - Regional stakeholders
  - Global audience (bad press)

Scraping Bottom: The Canadian Oil Boom
National Geographic (Feb/09)
Emerging Regulations - AENV

- Land Use Frameworks (2010)
- Other
  - Non-saline definition ?
  - Water Act license and transfer process ?
Emerging Regulations - AENV

- Land Use Frameworks (2010)
  - GW Management Frameworks (2010)
  - All 7 Alta river basins will have them
    - Lower Athabasca = 1st
    - Includes AOS, SAOS and CLBR regions
- GW management plans (existing and planned projects)
  - Existing project (within 1 year)
  - Planned project (with application)
  - Conventional monitoring
  - Thermal element monitoring
  - AEPEA (plant-site) as well as “regional” monitoring
Emerging Regulations - AENV

- Other
  - Definition of non-saline GW
    - Higher TDS value in other jurisdictions
  - License applications and transfers
    - Moratoria, license transfer process, etc
Current Regulations – ERCB

- EIA Review/3PC process (2007)
- Draft Thermal - Water Use (2009)
Current Regulations – ERCB

- EIA Review/3PC process (2007)
  - As energy regulator, input needed
  - Reviewer of non-saline use
  - Review of reservoir
  - Review of economics
  - Review of alternate water source study
    - Tier 1, 2 and 3 search radii
    - Application process iterative, open-ended
Current/Emerging Regulations – ERCB

- Draft Directive - Non-Saline and Saline H₂O Make-up
  - As proposed...
    - Limit of 10% non-saline water use (annual)
    - Limit of 25% of saline water use (annual)
    - Limited provision to recognize:
      - Efficient operators
      - Reservoir physics (reservoir retention beyond operator control)
Closure

- Thank You
- Questions

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