Alberta’s Evolving Water Use Regulatory Framework for Energy Projects

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Presentation Overview

- Saline vs. non-saline water (definitions, history)
- Current regulations (AEW, ERCB)
- New regulations
- Drivers/timelines/application
- Single regulator for upstream O&G?
- DFO
- Managing uncertainty
- Monitoring/reporting requirements
- Questions
Before we talk about regulations, let’s remember:

- In 2007, 76% of Alberta’s oil production was water-assisted (CAPP, 2010)
  - Conventional
  - In-situ
  - Mining
Alberta Regulations - Water

- Based on Total Dissolved Solids (TDS)
  - AEW for TDS < 4,000 mg/L
    - Non-saline or fresh
  - ERCB for TDS > 4,000 mg/L
    - Saline or brackish
- AEW-ERCB MOU (Dec/07)
- But…
Current Regulations - AEW

- Water Act (1996 + updates)
- Water for Life (2003/08/09)
- Updated O.I.P. (2006 + update)
- 3PC process for EIA Review (2007)
- Draft Bitumen/Non-Saline (2009/10)
Current Regulations - AEW

- Water Act (1996, + later updates)
- Non-saline water (GW and SW)
- License (T&C)
- Moratoriums (area-specific)
- Water for Life Strategy (2003/08/09)
- Safe, reliable and sustainable water for all, and healthy ecosystems
Current Regulations - AEW

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

- Updated Oilfield Injection Guideline (2006)
  (AEW Dec/11 draft guidance document, CAPP Jan/12 letter)
- Injecting non-saline H$_2$O
- ERCB consultation
- Tier 1, 2 and 3 investigations
  - Substantial, comprehensive reports
  - Lengthy/iterative approval process
Current Regulations - AEW

- 3PC Review Process for EIAs (2007)
- Designed to de-bottleneck
- Consultants contracted by AEW
- Review process expedited, but...
Current Regulations - AEW

- Non-Saline H$_2$O-Bitumen in Direct Contact (2009/10)
  - Existing/planned projects
  - GW Management Plan (GMP)
    - Quantity and quality indicators
    - Thresholds, limits, etc
    - Monitoring and frequency
  - Dovetails into GMFs
Drivers for New Regulations

- Evolving needs of AEW, ERCB, DFO, 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 - AEW

- Updated O.I.P. (draft 2011 guidance document)
- Land Use Frameworks (2010+)
- TDS definition of non-saline water
- Single regulator for upstream O&G
Emerging Regulations - AEW

- Land Use Frameworks (2010)
  - GW Management Frameworks (2012+)
  - All 7 Alta river basins will have them
    - Lower Athabasca = 1st
  - Includes AOS, SAOS and CLBR regions
- GW Management Plans (existing/planned projects)
  - Existing project (within 1 year)
  - Planned project (with application)
  - Conventional monitoring, thermal element monitoring
  - AEPEA (plant-site) as well as “regional” monitoring (example)
Emerging Regulations - AEW

- Updated TDS definition of non-saline water
- To remain at 4,000 mg/L until 2015?
  (2010 AEW letter to CAPP)
Emerging Regulations – AB Gov’t

- Single regulator for upstream O&G
- Regulatory Enhancement Task Force
  (Mar/10)
- Streamline the regulatory process
- Status = ongoing
Before we continue...
Current Regulations – ERCB

- EIA Review/3PC process (2007)
- Draft Thermal - Water Use (2009/12?)
Current Regulations – ERCB

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

➢ *Draft* Directive (2009) - Non-Saline/Saline H₂O Make-up

➢ As proposed (*current status?*)...
  ➢ 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)
    ➢ Etc
DFO is taking an increased role…

- GW – SW interaction, ground heave, etc
- Understanding unconsolidated sediments
- Federal involvement expected to increase
Main takeaway points:

- Multiple regulators for water use
- Regulatory drivers = maximize saline water use
- Non-saline water use *perhaps* okay for start-up
  - Expectation to rely on saline moving forward
- Approval process complex owing to:
  - Existing/emerging regulations
  - Introduces schedule *uncertainty*
- Single upstream regulator may be coming, but…
  - Will take time
  - Approval process uncertain
  - **Assemble of knowledgeable team**
Closure

➢ Thank You
➢ Questions

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