

Reclaiming tomorrow today

Jason Unger, Staff Counsel

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The ELC

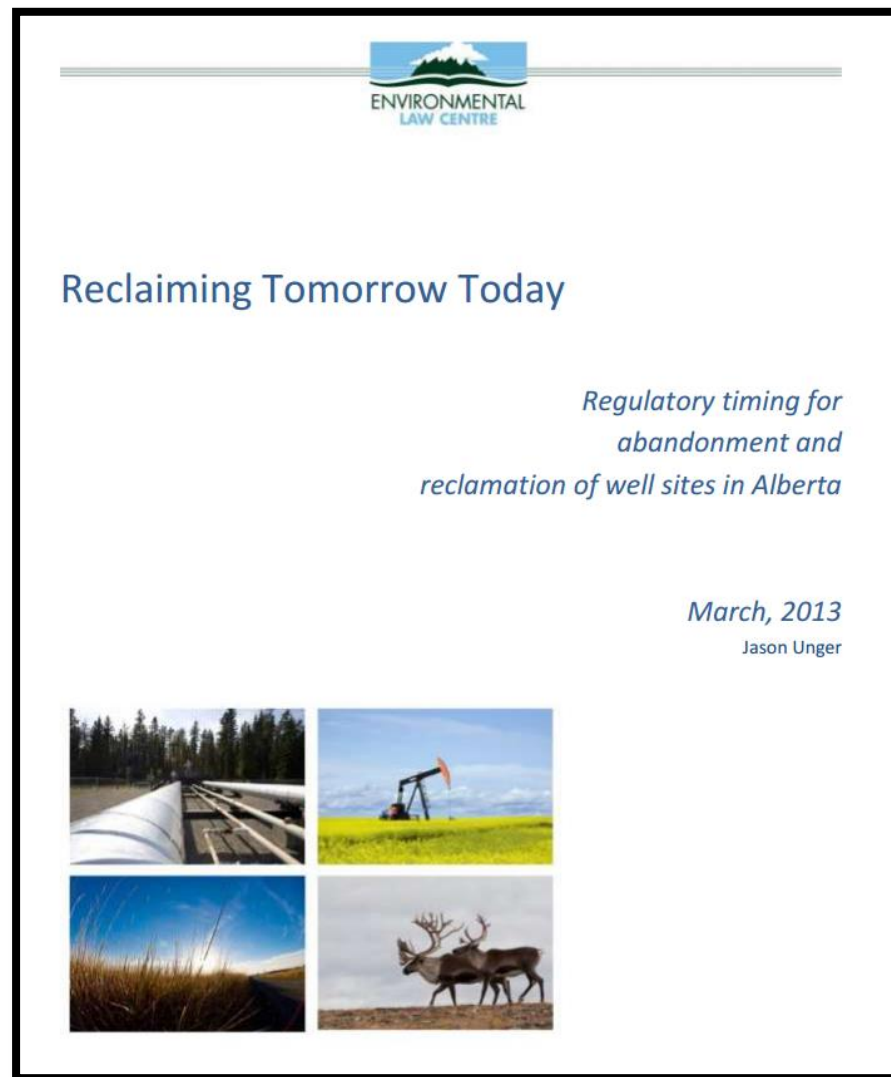
- **Our mission:** To ensure that Alberta's laws, policies and legal processes sustain a healthy environment for future generations
- Registered charitable organization

Alberta **LAW**
FOUNDATION



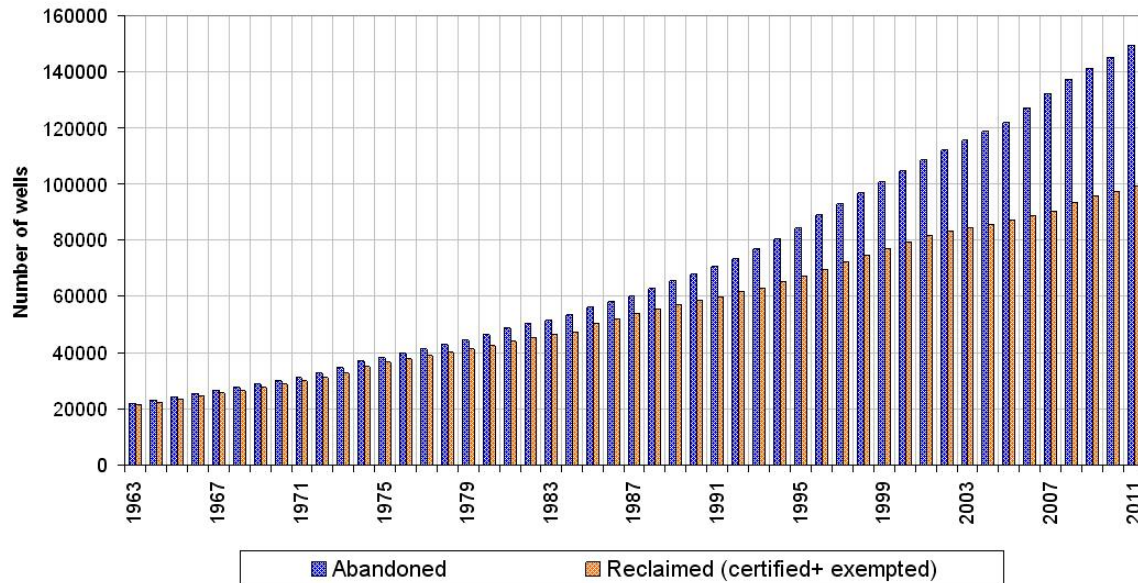
Outline

- The current state
 - Wellsites and regulation
- Rationale for change
- Jurisdictional comparison
- Recommended approach



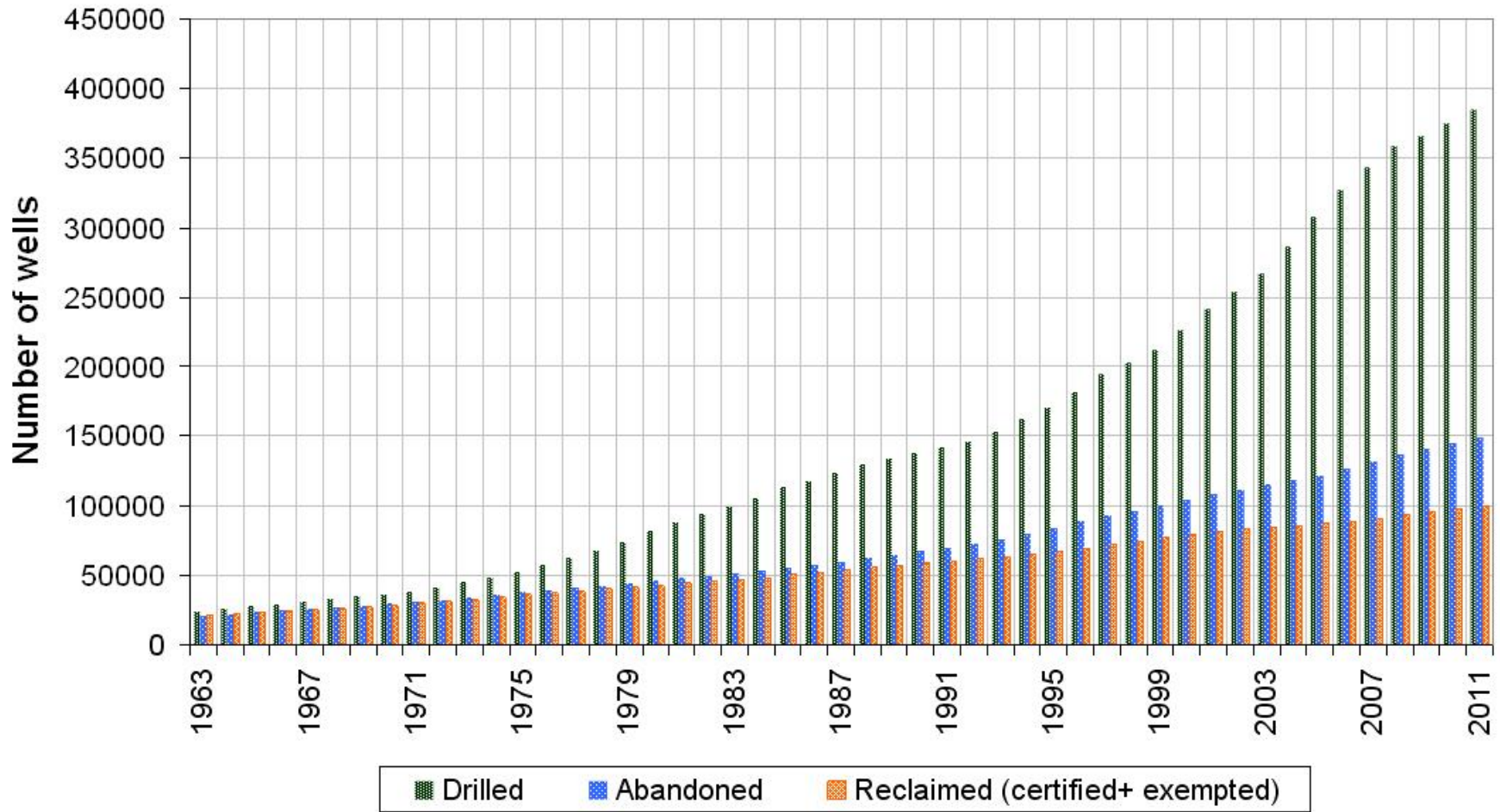
“Trend deteriorating”

Comparison of Cumulative Number of Oil and Gas Wells Abandoned to Cumulative Number of Wells Reclaimed (Certified or Exempted) from 1963 to 2011



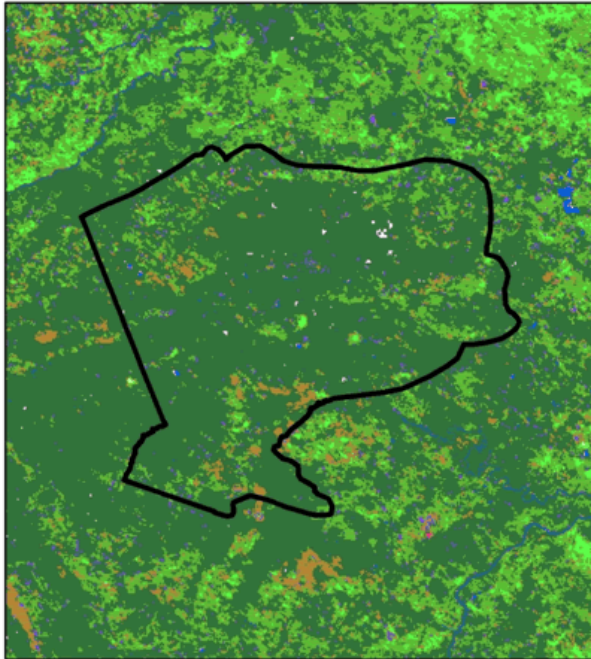
“There were 50,417 uncertified wells remaining at the end of 2011. Approximately 35 per cent (17,611) of uncertified wells were abandoned between 1963 and 2002. On average, over the last 10 years, approximately 14,227 wells were drilled per year, 4,111 were abandoned and 1,682 certified. This indicates that over the last 10 years, the certification rate has been approximately 40.9 per cent of the abandonment rate.” *Alberta Environment and Sustainable Resource Development* <http://www.environment.alberta.ca/02862.html>

Cumulative Number of Drilled, Abandoned and Certified Oil and Gas Wells, 1963-2011



Alberta Environment and Sustainable Resource Development
<http://www.environment.alberta.ca/02862.html>

Little Smoky Caribou Range

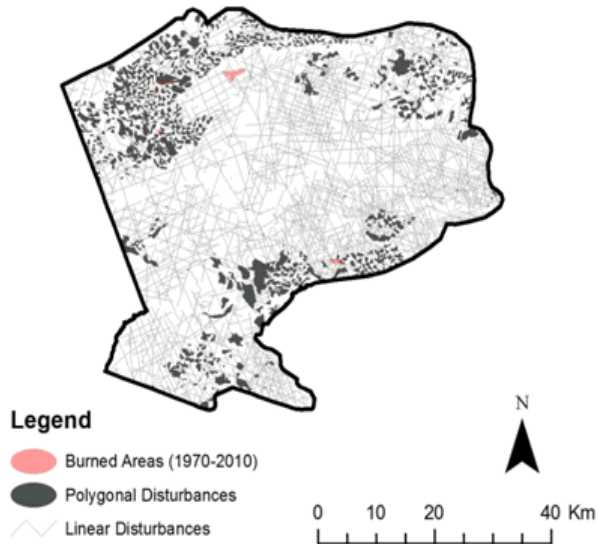


Landcover

- Water
- Coniferous Forest
- Deciduous Forest
- Mixed Forest
- Shrub
- Herbaceous
- Wetland
- Cropland
- Rock Outcrop
- Recent Burn
- Old Burn
- Built-Up

MODIS 2005 Landcover (250m Pixels) (Generated by CCRS)
 Legend reclassified by EC.
 With NTDB 1:250,000 Hydrology Layer.

Disturbances Across Caribou Range



*Based on fire data provided by jurisdictions

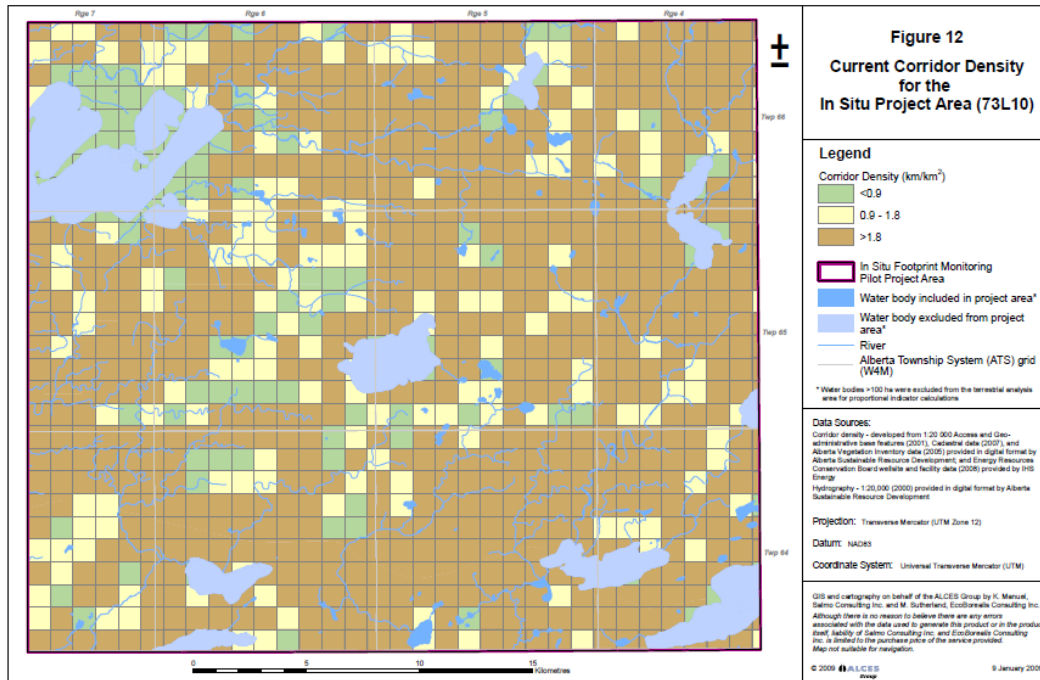
Disturbance Type and Amount:

Burned Areas = 0.2%
 Buffered³ Anthropogenic (no reservoirs) = 95%
 Total Habitat Disturbance = 95%⁴

³ Buffered means a 500m buffer is applied to linear and polygonal disturbances.

⁴ Total Habitat Disturbance is non-overlapping which means anthropogenic disturbances and burned areas that overlap are not counted twice in the total.

In situ corridor density



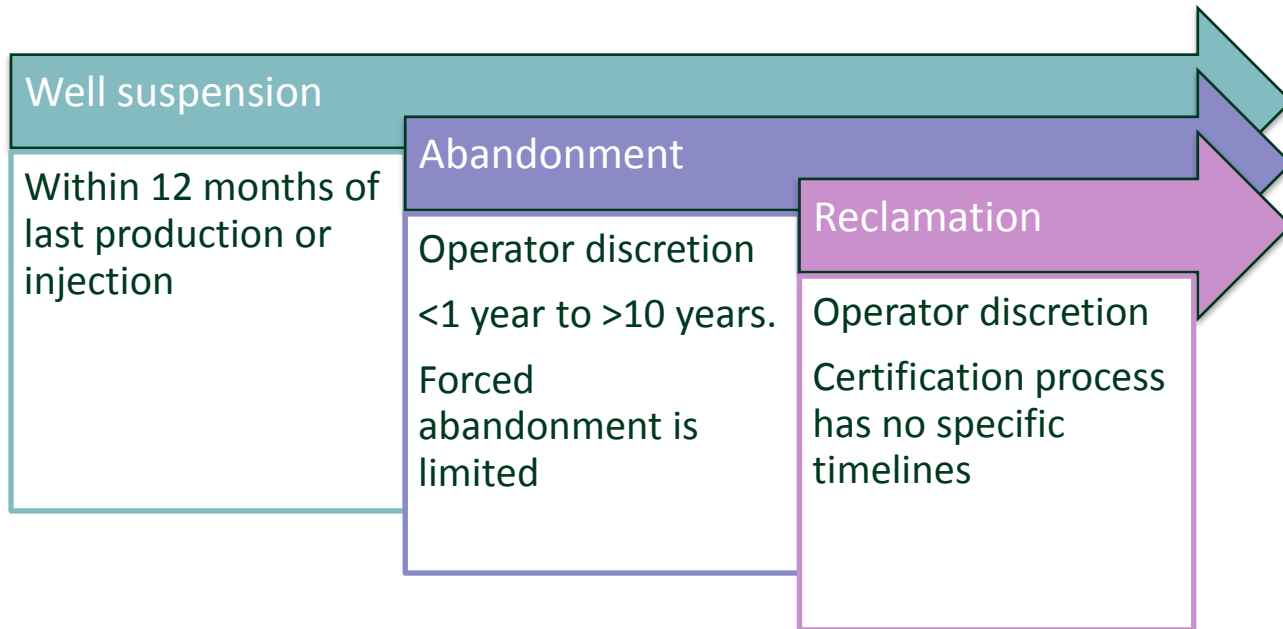
- Disturbance levels are high in many areas
- Standards of reclamation also remain an issue
 - For example see Terry Osko and Maggie Glasgow-Revised 2010, *REMOVING THE WELLSITE FOOTPRINT: Recommended Practices for Construction and Reclamation of Wellsites on Upland Forests in Boreal Alberta* http://www.biology.ualberta.ca/faculty/stan_boutin/ilm/uploads/footprint/Upland%20Recommendation%20-%20Final%20Revised%20-%20Small%20File.pdf

Antoniuk, T., K. Manuel, M. Sutherland, and J.T. Bowen. 2009. In Situ Oil Sands Footprint Monitoring Project. Prepared by the ALCES Group for Alberta Environment, Land Monitoring Team. Edmonton. 125 pp.

Impacts of delay

- Impacts of linear and other industrial disturbance
 - sage grouse, grizzly bear, caribou
- Impacts on watershed features/function
 - Less is known but cumulative impacts appear likely
- Social impacts
 - Landowner conflicts/litigation
 - Conflict with terms of mortgages
- Economic
 - Opportunity costs vs. benefits arising from rents
 - Investor certainty?
 - Timely retirement likely minimizes costs (to the operator and sector as whole)

Current regulation on timing



Current policy focus

Suspension

- Safety and standards for suspended wells (risk management)

Abandonment

- Standards of abandonment
- Flexibility - enhanced recovery
- Transfers - LMR assessments

Reclamation

- Standards and guidelines
- Financial security for “risky” operators (LLRP)

Limiting Crown liability - Orphan well program/fund & LLR program

Recent advancements



The screenshot shows the Financial Post website interface. At the top, the 'FINANCIAL POST' logo is displayed in white on a blue background. Below the logo is a navigation bar with links for 'NATIONAL POST', 'NEWS', 'OPINION', 'MARKETS', 'INVESTING', 'PERSONAL FINANCE', 'RRSP', and 'MORTGAGES & REAL ESTATE'. A secondary navigation bar highlights 'NEWS' and 'ENERGY'. A market indices section shows the following data:

Index	Value	Change
S&P/TSX	13,664.20	81.91 (0.60%)
Dow Jones	15,911.38	73.50 (0.46%)
NASDAQ	4,083.31	-0.33 (-0.01%)

The main article is titled 'ENERGY' and is categorized as 'TRENDING'. The headline reads: 'Alberta's good intentions pushing some junior energy firms to the brink'. The author is Claudia Cattaneo, and the article is dated October 10, 2013. A 'Republish Reprint' icon is visible at the bottom right of the article preview.

- Alterations to LLR system (cost adjustments)
- “A fund that held \$13-million from 88 Alberta companies was expanded to hold to \$297-million from 248 companies.”

National Post, October 10, 2013, online:
<http://business.financialpost.com/2013/10/10/albertas-good-intentions-pushing-some-junior-energy-firms-to-the-brink/>

Policy outcomes of timely reclamation

- Minimize environmental impairment – through access, disturbance (and related environmental risks) and ongoing risks of contamination
- Minimize liability risk for Crown
 - Safety
 - Environmental (abandonment/reclamation costs/undetected contamination)
- Increasing due diligence in well transfers
- Foster research and innovation in reservoir depletion and reclamation to facilitate increased return (?)

Policy congruence

- Managing cumulative effects = timely reclamation
- Regional planning and environmental management frameworks
 - Air, land, water and biodiversity triggers and thresholds
 - Current Lower Athabasca plan seeks to promote timely reclamation (with limited specific regulatory tools)

Jurisdictional review

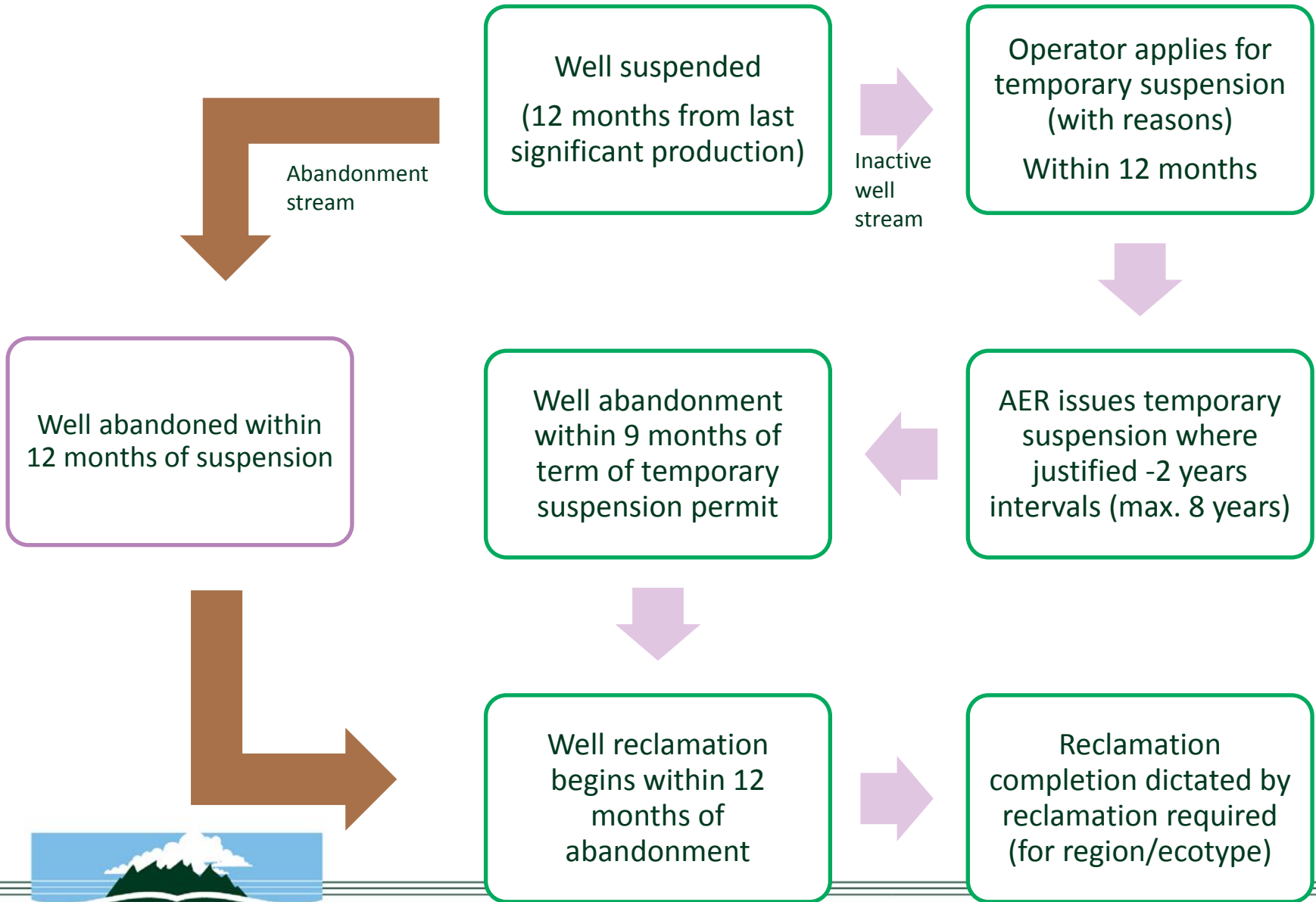
Jurisdiction	Abandonment timeline
New Mexico	90 days where well is not usable for beneficial purposes or 1 year (inactive well)
Pennsylvania	12 months (except where granted inactive status)
Colorado	6 months (with possible extension)
Ohio	1 year after completion or where no production has been reported for two or more reporting periods (2 years). (inactive well status feasible) Low producing wells may be required to apply for temporary inactive status.
Alaska	1 year after “permanent cessation of the operator’s ..activity within the field” or according to an abandonment schedule approved by the commission

Jurisdiction	Reclamation timeline
New Mexico	Not > 1 year – remove site materials and “level the location and “take other measures necessary or required to restore the location...”
Pennsylvania	9 months remove all production or storage facilities, supplies and equipment and restore the well site” within nine months after plugging a well”
Colorado	3 Months on crop land 12 months on non-crop land Director may grant an extension where unusual circumstances are encountered, but every reasonable effort must be made to complete the reclamation before the next local growing season.
Ohio	6 months must remove infrastructure and seed provide cover where risk of erosion May be extended for 6 months
Tennessee	30 days of the plugging of a well, the permanent vegetative cover shall be planted on all disturbed areas. (Access roads are included unless otherwise exempt)

A new direction

- Timely abandonment and reclamation of well sites is needed
 - Conventional and unconventional
- Amending
 - *Oil and Gas Conservation Regulation*
 - *Conservation and Reclamation Regulation*
 - *Pipeline Regulation*
 - *Public Lands Administration Regulation*

Crown land



Private Land – additional landowner rights

- Landowner may object at time of application for inactive status (written hearing)
- Landowner may apply for EPO when reclamation is not completed in timely fashion (e.g. 3 years)

Additional policy amendments

- Determine appropriate reclamation timelines for eco-regions/ecotypes and amend guidelines accordingly

Barriers to adoption

- Resource recovery
 - Appropriate process/formula for determine justification for inactive well designation
- Economic transition
 - Transition planning
 - Clarification of true legacy of unfunded reclamation that is required

Transitional provisions

- Operator generated abandonment and reclamation **timing plan** submitted to the AER;
- AER review and acceptance of abandonment and reclamation timing plan (guidelines required); and
- Establish transition date
 - Prior to date operators comply with timing plan
 - Following date operators comply with regulatory timelines
- Economic transition plan?

Questions?

Jason Unger

- Ph: 780-424-5099
- E-mail: junger@elc.ab.ca
- Web: www.elc.ab.ca