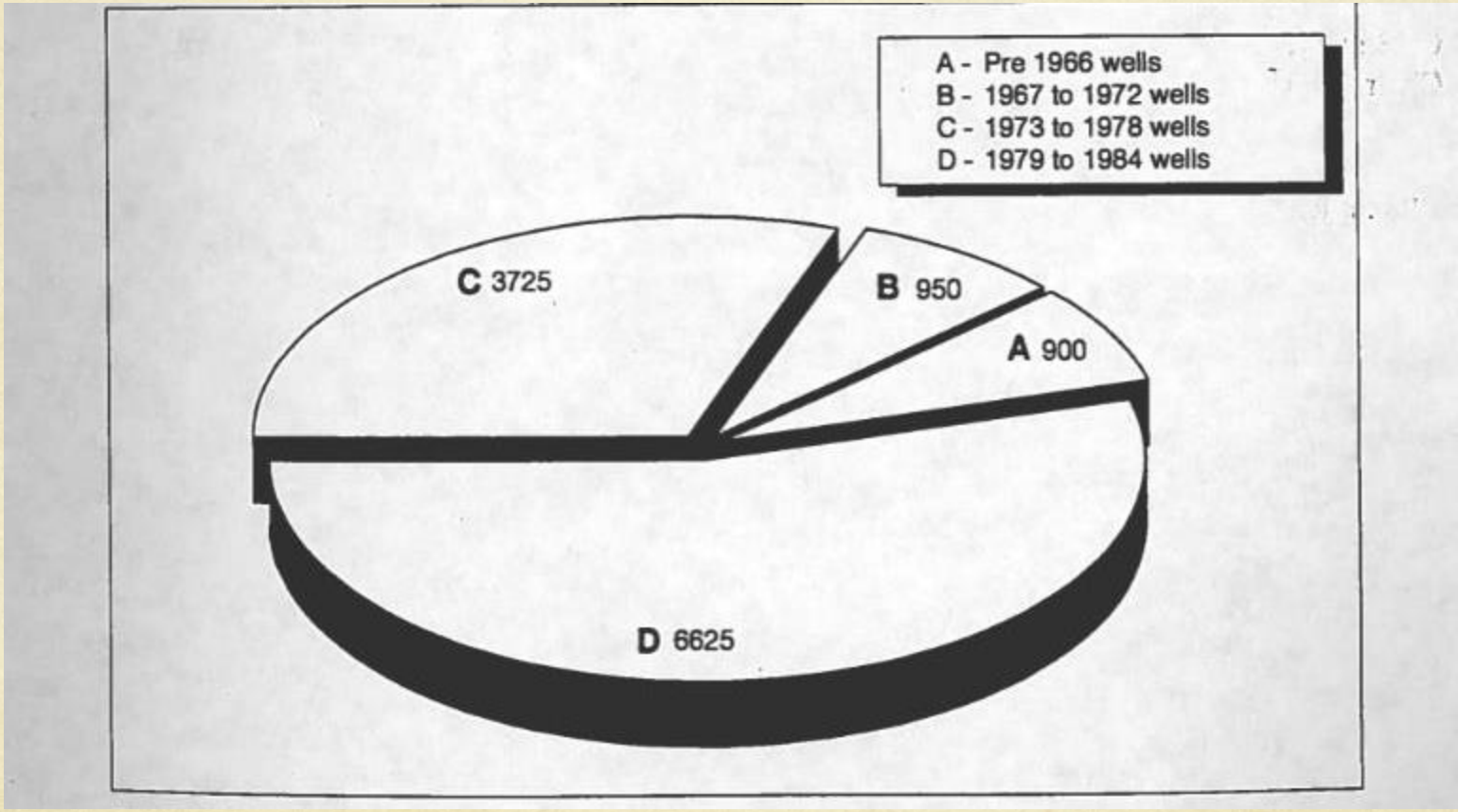
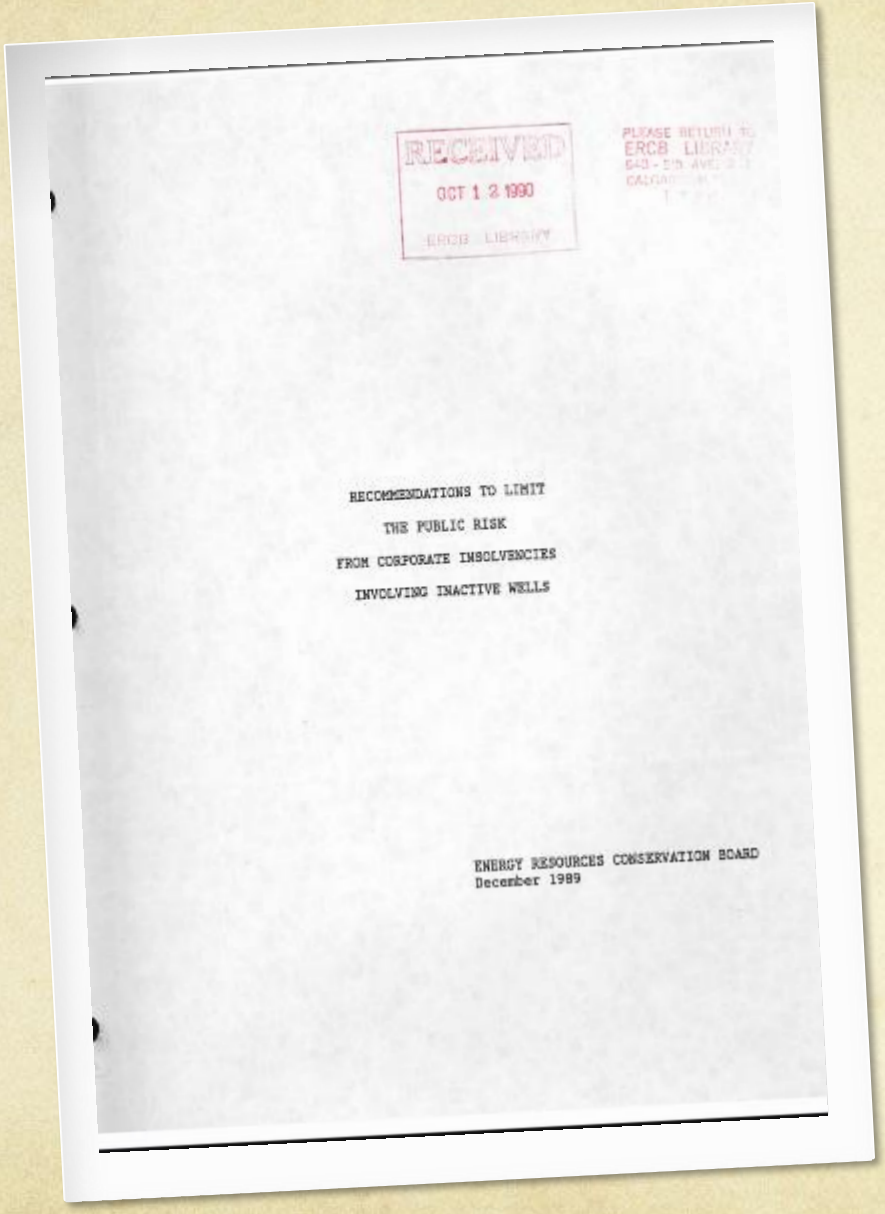
Loading the Camel with Hot Potatoes

Liability management in Alberta's oilpatch and the province's fiscal and environmental future

Inactive wells multiplied after ’73, doubled again after ’78





Environmental awareness & price crash put issue on agenda

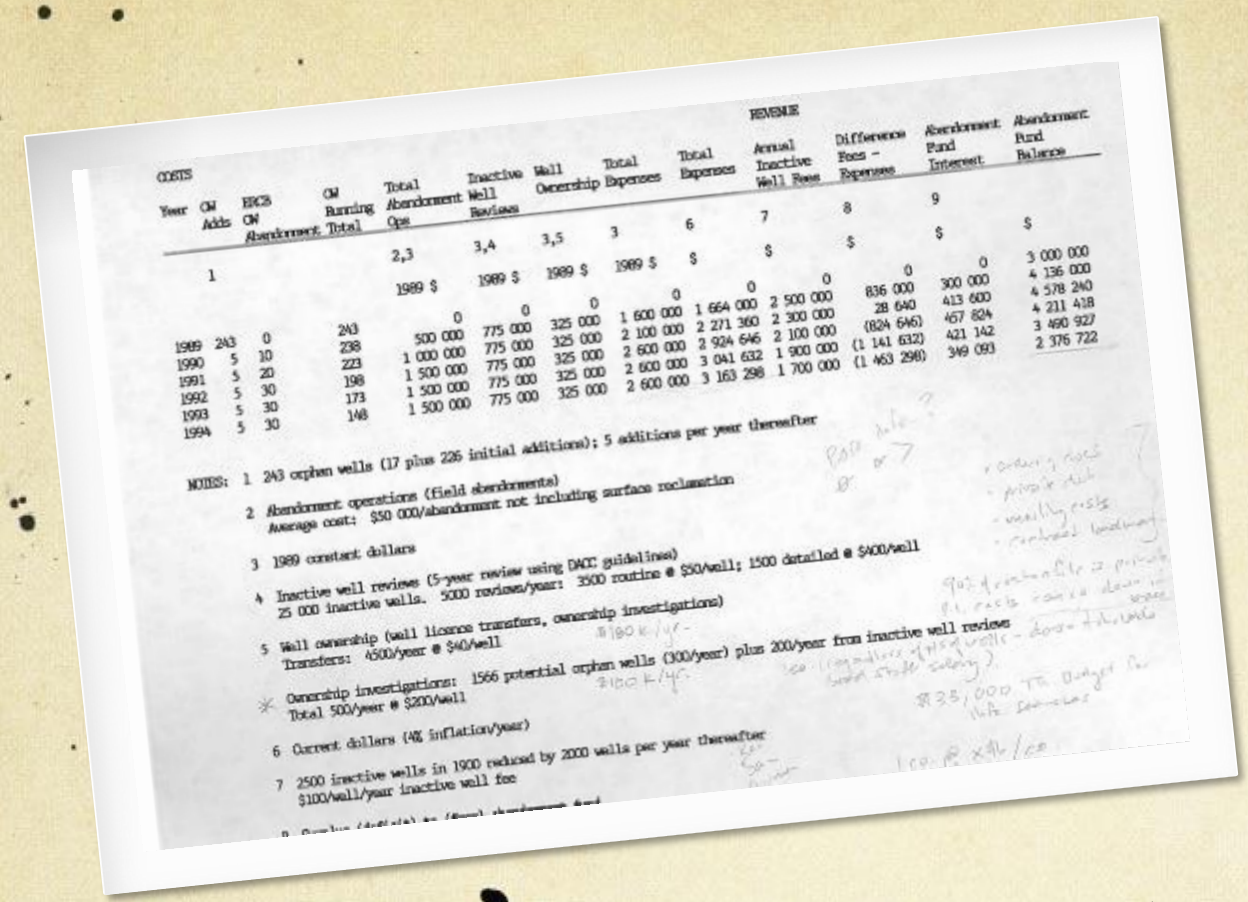
$3 million joint government/industry abandonment fund set up in early 1986.

Issue continued to grow, demanding more action.

Rational approach, would have largely solved problem in 1989

"The Department of Energy is considering changes to the Mines and Minerals Act to the effect that

- **the obligation to abandon a well or to reclaim the surface survives the expiration of the lease and the lessee shale indemnify the Crown for any costs associated with the abandonment or reclamation;**
- **the transfer of a lease will not relieve the transferor of this obligation if the transferee fails to honor it;**
- **there may be provision for the well to be abandoned within a set time after the lease expires. "**



COSTS

Year	ERCB Adds	ERCB Abandonment Total	GW Running	Total Abandonment Ops	Inactive Well Reviews	Well Ownership	Total Expenses	Total Expenses	REVENUE Annual Inactive Well Fees	Difference Fees - Expenses	Abandonment Fund Interest	Abandonment Fund Balance
			2,3	3,4	3,5	3	6	7	8	9		
1			1989 $	1989 $	1989 $	1989 $	$	$	$	$		
1989	243	0	243	0	0	0	0	0	0	0	0	3 000 000
1990	5	10	238	500 000	775 000	325 000	1 600 000	1 664 000	2 500 000	836 000	300 000	4 136 000
1991	5	20	223	1 000 000	775 000	325 000	2 100 000	2 271 360	2 300 000	28 640	413 600	4 578 240
1992	5	30	198	1 500 000	775 000	325 000	2 600 000	2 924 646	2 100 000	(824 646)	467 824	4 211 418
1993	5	30	173	1 500 000	775 000	325 000	2 600 000	3 041 632	1 900 000	(1 141 632)	421 142	3 490 927
1994	5	30	148	1 500 000	775 000	325 000	2 600 000	3 163 298	1 700 000	(1 463 298)	349 093	2 376 722

NOTES: 1 243 orphan wells (17 plus 226 initial additions); 5 additions per year thereafter

2 Abandonment operations (field abandonments)
Average cost: $50 000/abandonment not including surface reclamation

3 1989 constant dollars

4 Inactive well reviews (5-year review using DACC guidelines)
25 000 inactive wells. 5000 reviews/year: 3500 routine @ $50/well; 1500 detailed @ $400/well

5 Well ownership (well license transfers, ownership investigations)
Transfers: 4500/year @ $40/well

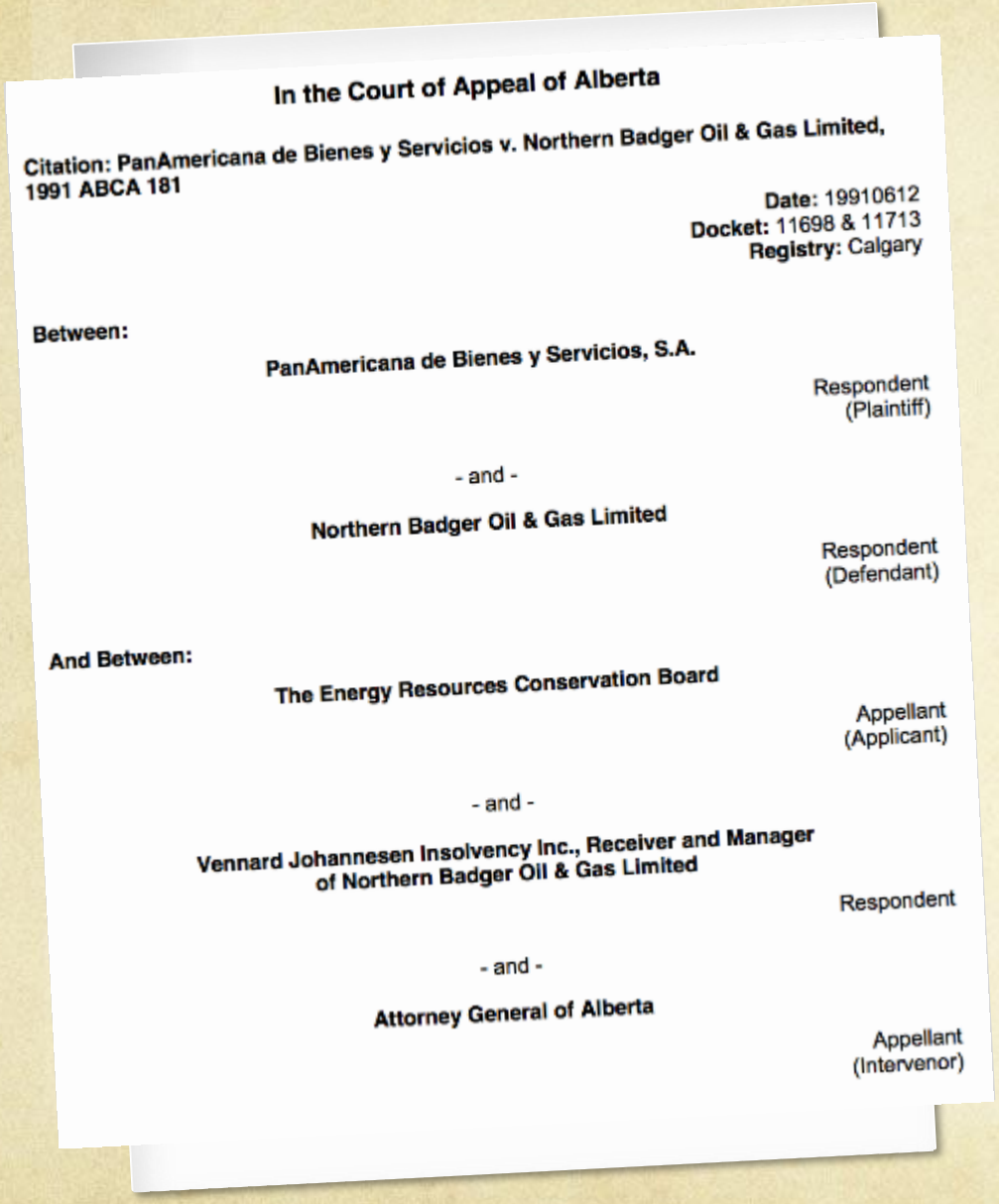
* Ownership investigations: 1566 potential orphan wells (300/year) plus 200/year from inactive well reviews
Total 500/year @ $200/well

6 Current dollars (4% inflation/year)

7 2500 inactive wells in 1900 reduced by 2000 wells per year thereafter
$100/well/year inactive well fee

ERCB's solution?

- $100 annual fee/inactive well
- $2.5 million in fees expected to cause almost $100 million in abandonments yearly.
- Unlikely, to say the least.



In the Court of Appeal of Alberta

Citation: PanAmericana de Bienes y Servicios v. Northern Badger Oil & Gas Limited, 1991 ABCA 181

Date: 19910612
Docket: 11698 & 11713
Registry: Calgary

Between:

PanAmericana de Bienes y Servicios, S.A.

Respondent (Plaintiff)

- and -

Northern Badger Oil & Gas Limited

Respondent (Defendant)

And Between:

The Energy Resources Conservation Board

Appellant (Applicant)

- and -

Vennard Johannesen Insolvency Inc., Receiver and Manager of Northern Badger Oil & Gas Limited

Respondent

- and -

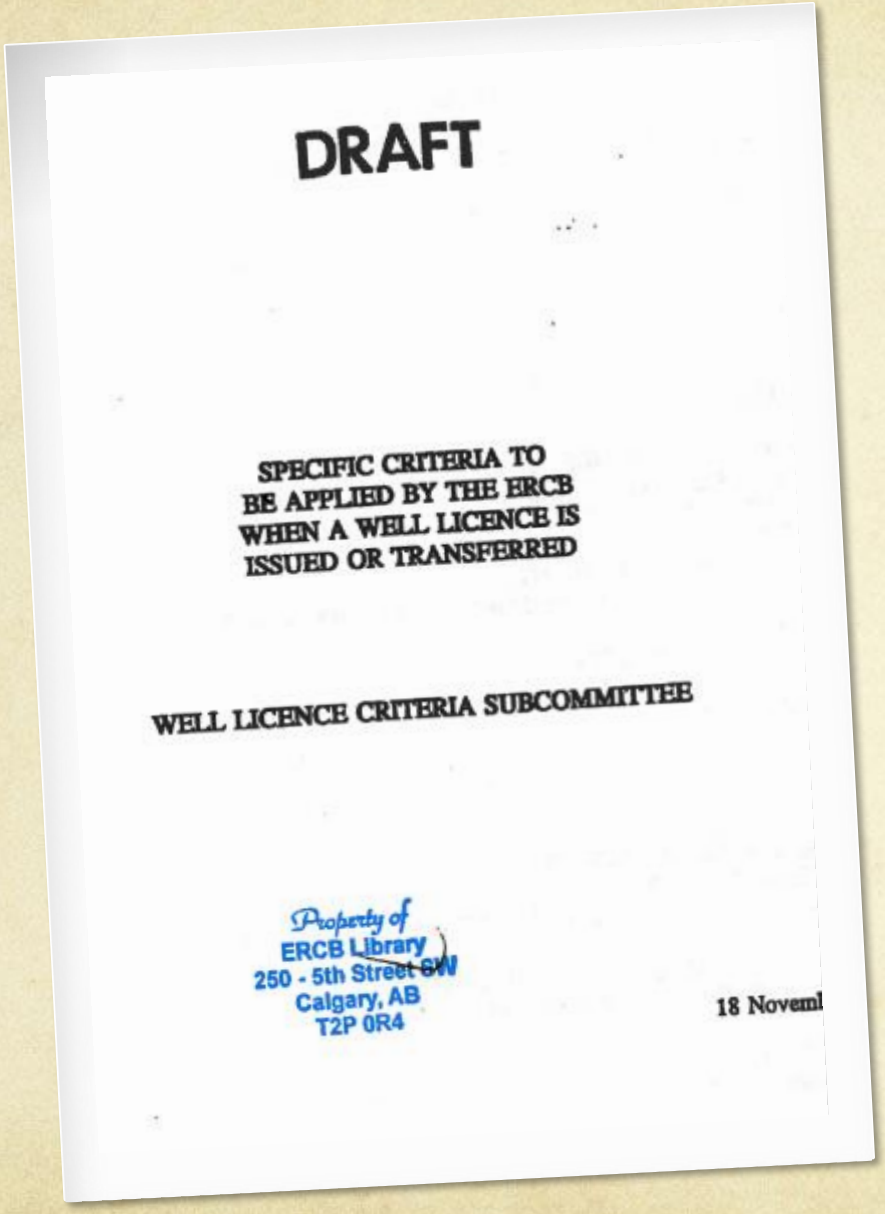
Attorney General of Alberta

Appellant (Intervenor)

Northern Badger Oil & Gas

Unanimous Appeals Court decision, June 1991

Profoundly important.


DRAFT

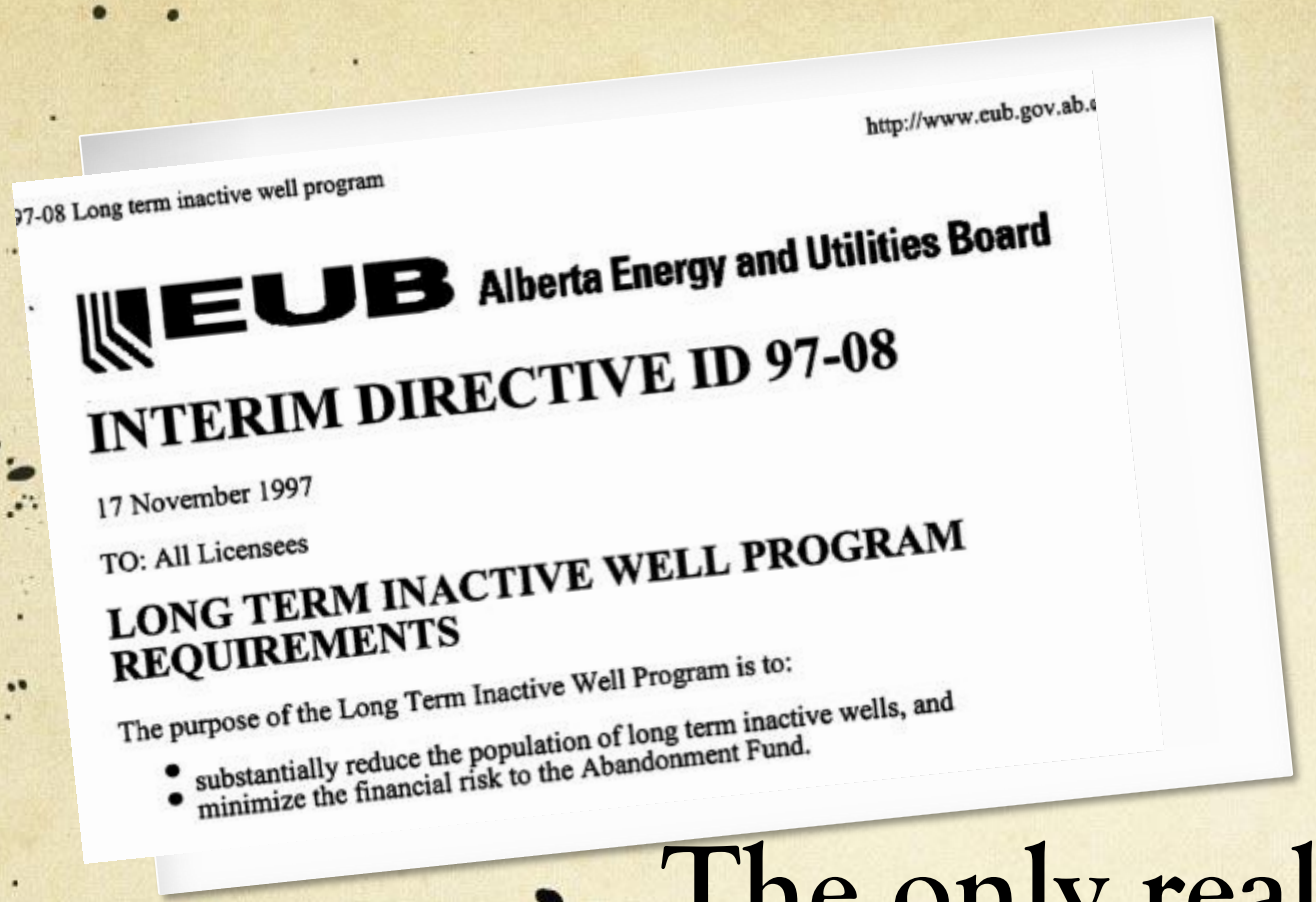
SPECIFIC CRITERIA TO
BE APPLIED BY THE ERCB
WHEN A WELL LICENCE IS
ISSUED OR TRANSFERRED

WELL LICENCE CRITERIA SUBCOMMITTEE

18 Novem

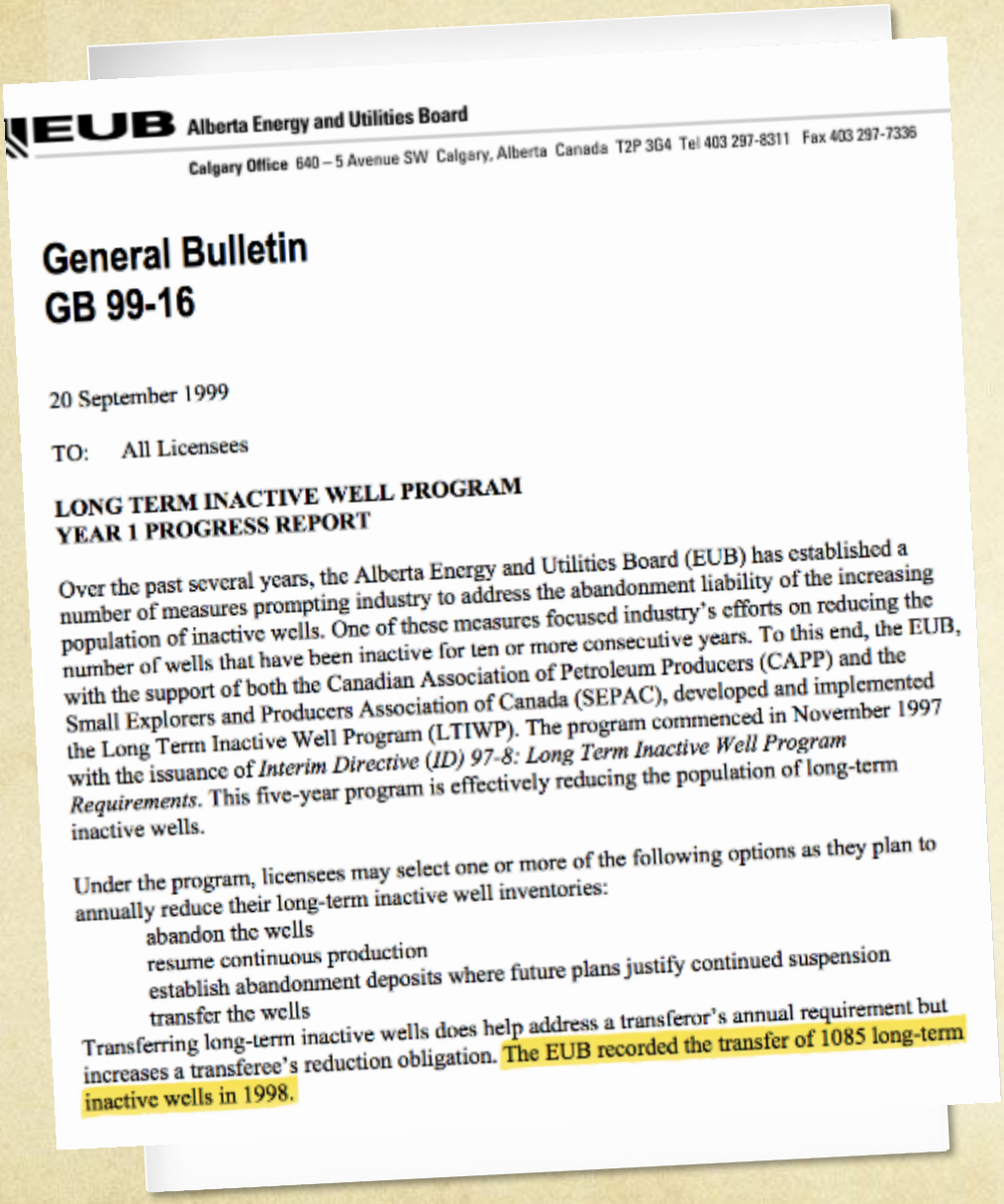
An honest assessment of the problem

- "growing fears of unmanageable future abandonment problems"
- "The number of transfer applications that appear to be an attempt to avoid abandonment responsibility, have increased in the past several years."
- "The licensee profile has changed rapidly **over the past 12 months**": "**relatively unsophisticated**", "**limited understanding**", "**inadequate financial resources**"



The only real attempt ever made

5-year program to abandon substantial number of wells inactive for more than a decade



EUB Alberta Energy and Utilities Board

Calgary Office 640 – 5 Avenue SW Calgary, Alberta Canada T2P 3G4 Tel 403 297-8311 Fax 403 297-7336

General Bulletin
GB 99-16

20 September 1999

TO: All Licensees

LONG TERM INACTIVE WELL PROGRAM
YEAR 1 PROGRESS REPORT

Over the past several years, the Alberta Energy and Utilities Board (EUB) has established a number of measures prompting industry to address the abandonment liability of the increasing population of inactive wells. One of these measures focused industry's efforts on reducing the number of wells that have been inactive for ten or more consecutive years. To this end, the EUB, with the support of both the Canadian Association of Petroleum Producers (CAPP) and the Small Explorers and Producers Association of Canada (SEPAC), developed and implemented the Long Term Inactive Well Program (LTIWP). The program commenced in November 1997 with the issuance of *Interim Directive (ID) 97-8: Long Term Inactive Well Program Requirements*. This five-year program is effectively reducing the population of long-term inactive wells.

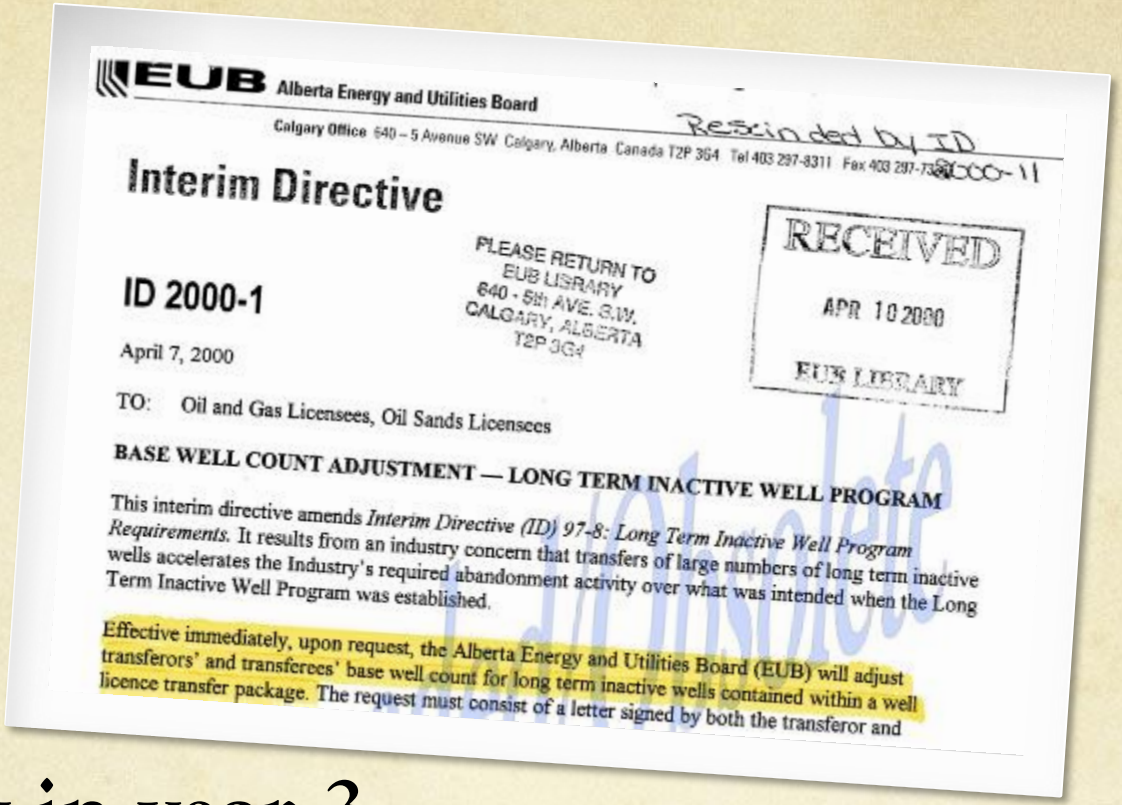
Under the program, licensees may select one or more of the following options as they plan to annually reduce their long-term inactive well inventories:

abandon the wells
resume continuous production
establish abandonment deposits where future plans justify continued suspension
transfer the wells

Transferring long-term inactive wells does help address a transferor's annual requirement but increases a transferee's reduction obligation. The EUB recorded the transfer of 1085 long-term inactive wells in 1998.

LTIWP Year 1 Progress Report

- 1,085 wells transferred
- 673 wells abandoned
- 172 wells back into production
- $6.1 million in abandonment deposits on 471 wells
- 92 non-compliant companies



EUB Alberta Energy and Utilities Board

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Rescinded by ID 2000-11

Interim Directive

ID 2000-1

PLEASE RETURN TO
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CALGARY, ALBERTA
T2P 3G4

RECEIVED
APR 10 2000
EUB LIBRARY

April 7, 2000

TO: Oil and Gas Licensees, Oil Sands Licensees

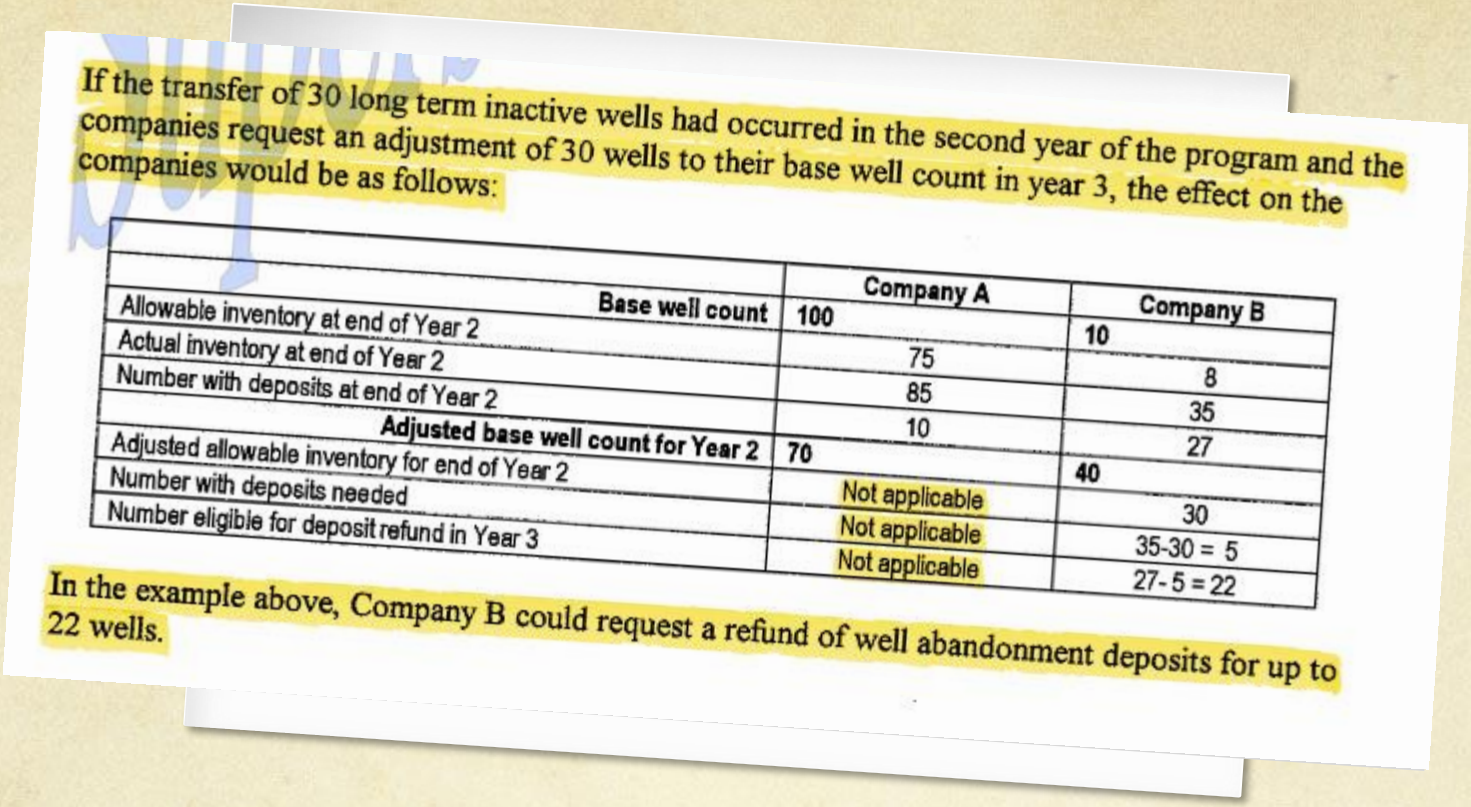
BASE WELL COUNT ADJUSTMENT — LONG TERM INACTIVE WELL PROGRAM

This interim directive amends *Interim Directive (ID) 97-8: Long Term Inactive Well Program Requirements.* It results from an industry concern that transfers of large numbers of long term inactive wells accelerates the Industry's required abandonment activity over what was intended when the Long Term Inactive Well Program was established.

Effective immediately, upon request, the Alberta Energy and Utilities Board (EUB) will adjust transferors' and transferees' base well count for long term inactive wells contained within a well licence transfer package. The request must consist of a letter signed by both the transferor and

Early in year 3, LTIWP severely undermined

Base Well Count, intended and reaffirmed as unchanging, is suddenly offered to be amended – including retroactively.



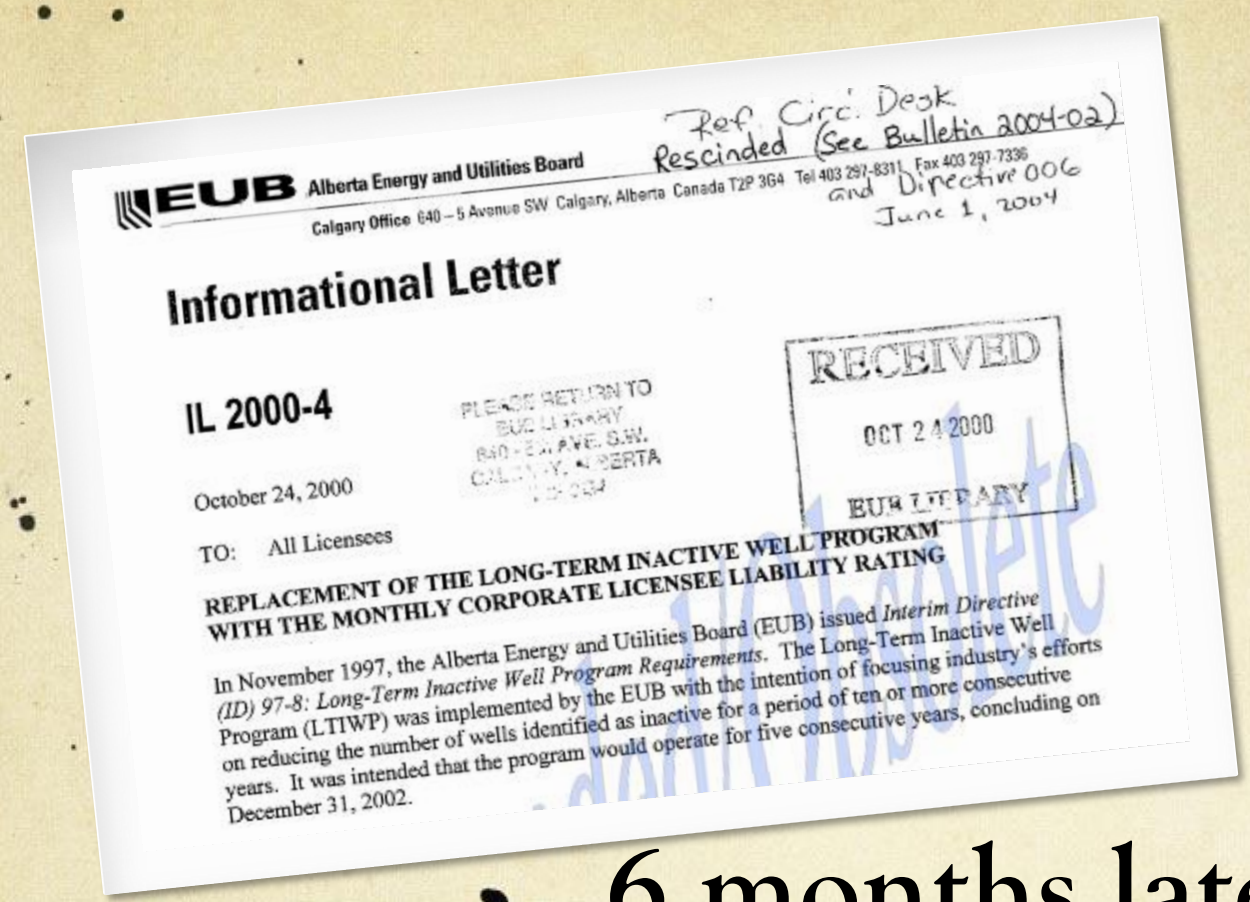
If the transfer of 30 long term inactive wells had occurred in the second year of the program and the companies request an adjustment of 30 wells to their base well count in year 3, the effect on the companies would be as follows:

	Company A	Company B
Base well count	**100**	**10**
Allowable inventory at end of Year 2	75	8
Actual inventory at end of Year 2	85	35
Number with deposits at end of Year 2	10	27
Adjusted base well count for Year 2	**70**	**40**
Adjusted allowable inventory for end of Year 2	Not applicable	30
Number with deposits needed	Not applicable	35-30 = 5
Number eligible for deposit refund in Year 3	Not applicable	27- 5 = 22

In the example above, Company B could request a refund of well abandonment deposits for up to 22 wells.

ID 2000-1 included this curious table

Demonstrates to producers how rule changes can be used to game the LTIWP, requirements can be avoided, and program looted of deposits by transferring inactive wells to smaller companies.



EUB Alberta Energy and Utilities Board

Calgary Office 640 – 5 Avenue SW Calgary, Alberta Canada T2P 3G4 Tel 403 297-8311 Fax 403 297-7336

Ref. Circ. Desk
Rescinded (See Bulletin 2004-02)
and Directive 006
June 1, 2004

Informational Letter

IL 2000-4

PLEASE RETURN TO
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CALGARY, ALBERTA

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OCT 24 2000
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October 24, 2000

TO: All Licensees

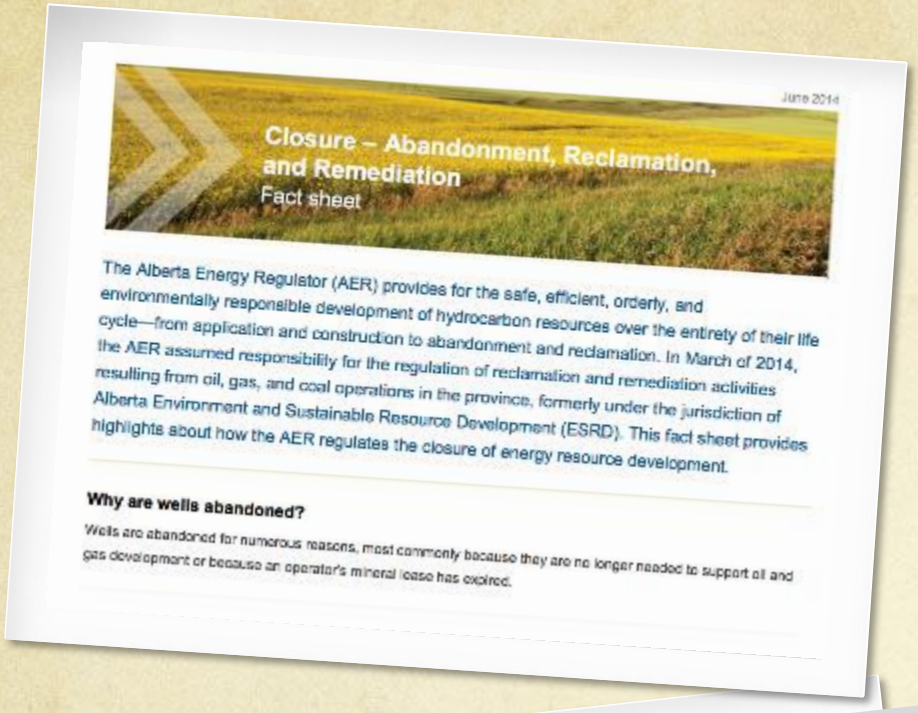
REPLACEMENT OF THE LONG-TERM INACTIVE WELL PROGRAM WITH THE MONTHLY CORPORATE LICENSEE LIABILITY RATING

In November 1997, the Alberta Energy and Utilities Board (EUB) issued *Interim Directive (ID) 97-8: Long-Term Inactive Well Program Requirements*. The Long-Term Inactive Well Program (LTIWP) was implemented by the EUB with the intention of focusing industry's efforts on reducing the number of wells identified as inactive for a period of ten or more consecutive years. It was intended that the program would operate for five consecutive years, concluding on December 31, 2002.

6 months later, LTIWP cancelled

Ending obligations and locking in the looting of deposits.

Complimented with legislative changes ending executives' liability for unfulfilled reclamation responsibilities.



LTIWP replaced with LLR

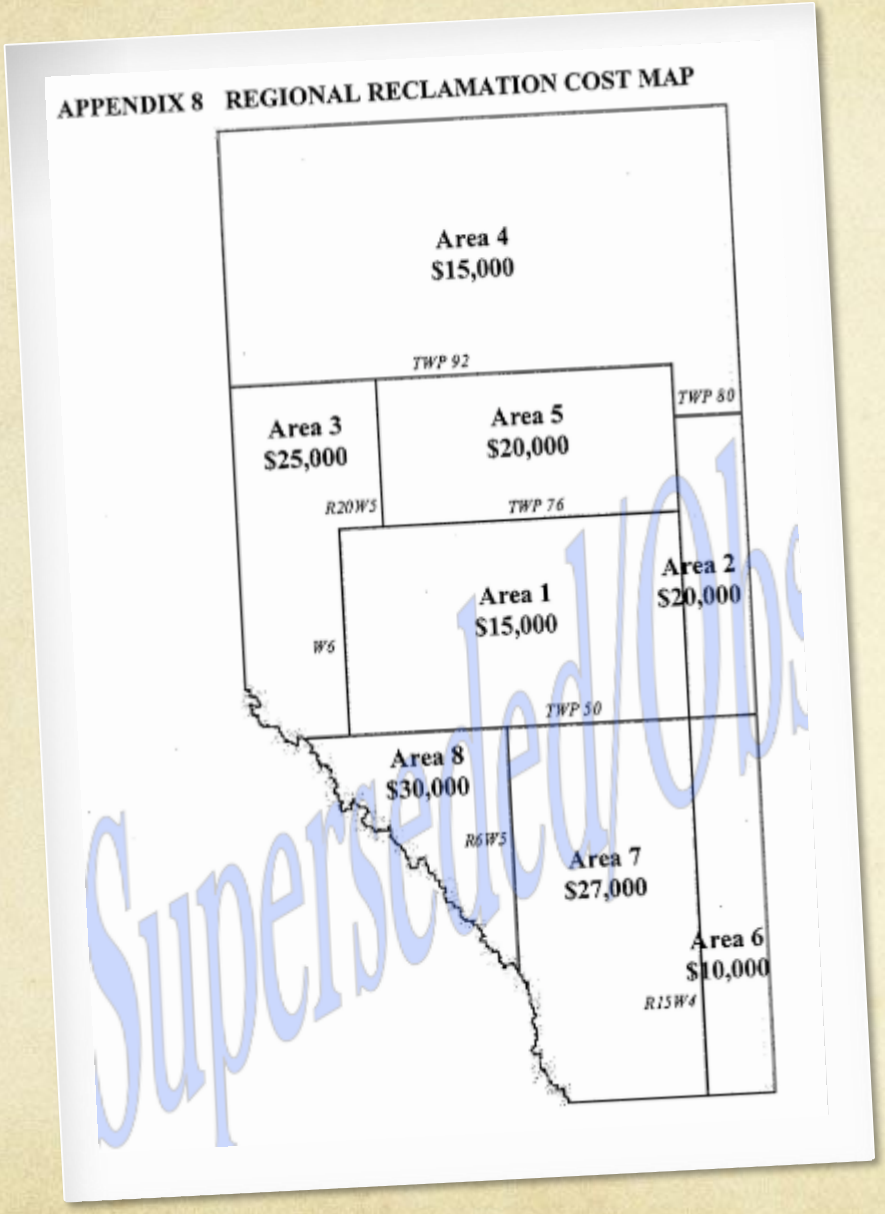
A fraud.

Period.

Who pays for it?

The AER works collaboratively with government and industry stakeholders to develop and implement appropriate liability management programs for all energy sectors.

The Licensee Liability Rating (LLR) program ensures companies have adequate assets to deal with abandonment, remediation, and reclamation of their liabilities so that Albertans are not left with the costs of abandoned wells or other infrastructure.

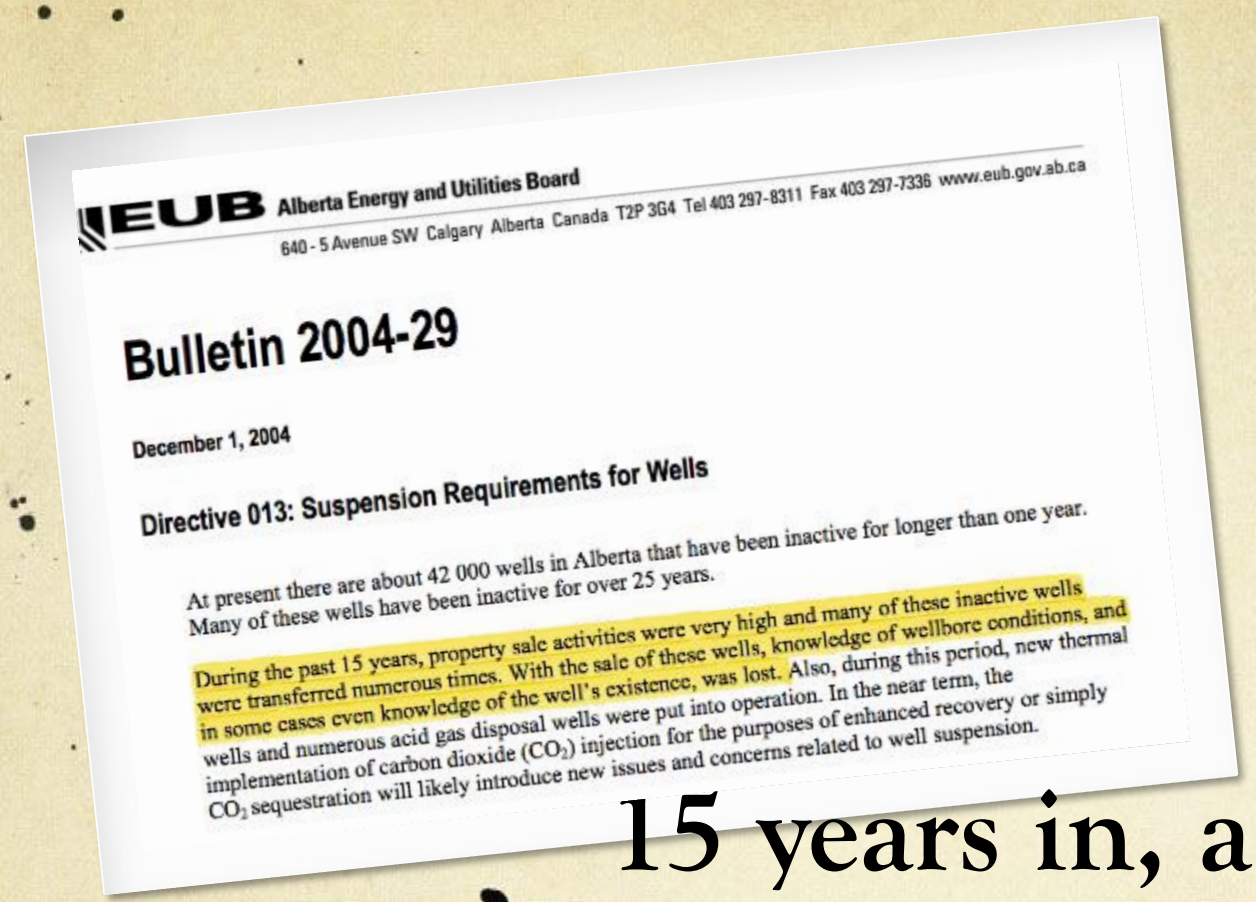


A small taste of ridiculous LLR estimates

Cost of RECLMATION in 2001:

- $10,000 - $30,000/well

Abandonment costs alone averaged $50,000/well a decade earlier!



EUB Alberta Energy and Utilities Board

640 - 5 Avenue SW Calgary Alberta Canada T2P 3G4 Tel 403 297-8311 Fax 403 297-7336 www.eub.gov.ab.ca

Bulletin 2004-29

December 1, 2004

Directive 013: Suspension Requirements for Wells

At present there are about 42 000 wells in Alberta that have been inactive for longer than one year. Many of these wells have been inactive for over 25 years.

During the past 15 years, property sale activities were very high and many of these inactive wells were transferred numerous times. With the sale of these wells, knowledge of wellbore conditions, and in some cases even knowledge of the well's existence, was lost. Also, during this period, new thermal wells and numerous acid gas disposal wells were put into operation. In the near term, the implementation of carbon dioxide (CO_2) injection for the purposes of enhanced recovery or simply CO_2 sequestration will likely introduce new issues and concerns related to well suspension.

15 years in, a gob smacking admission:

"During the last 15 years, property sales were very high and many of these inactive wells were transferred numerous times. With the sale of these wells, knowledge of wellbore conditions, and in some cases even knowledge of the well's existence, was lost."

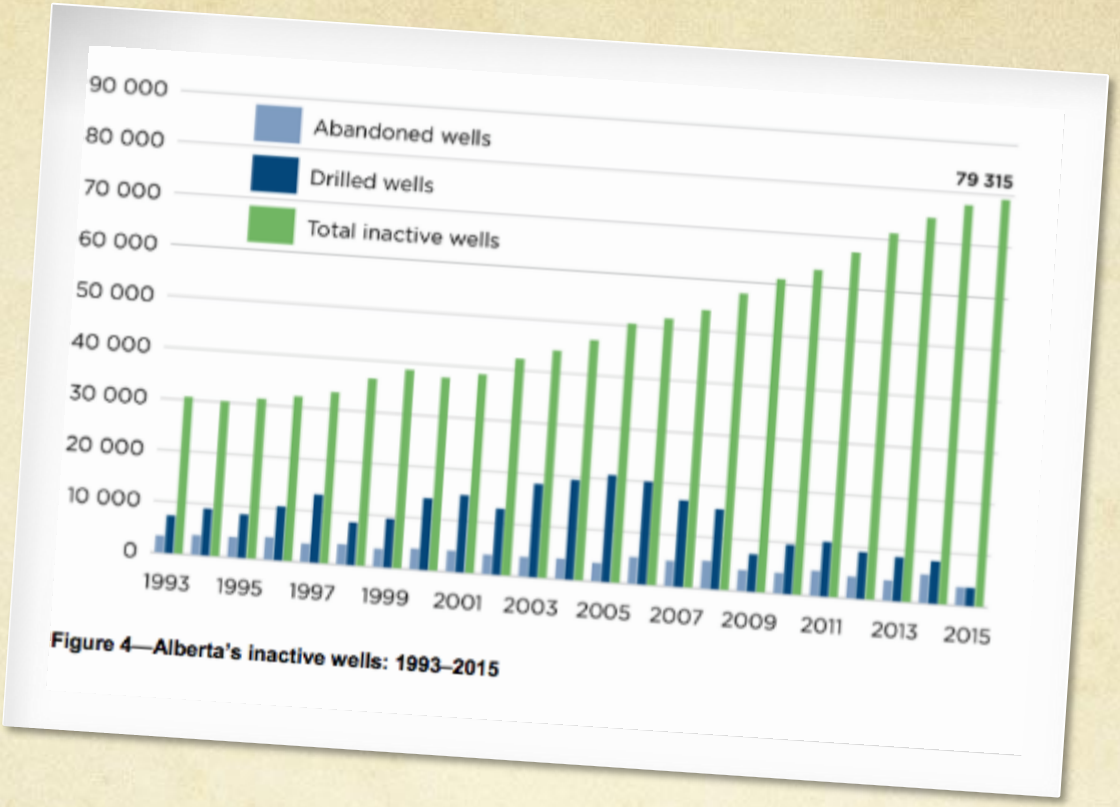
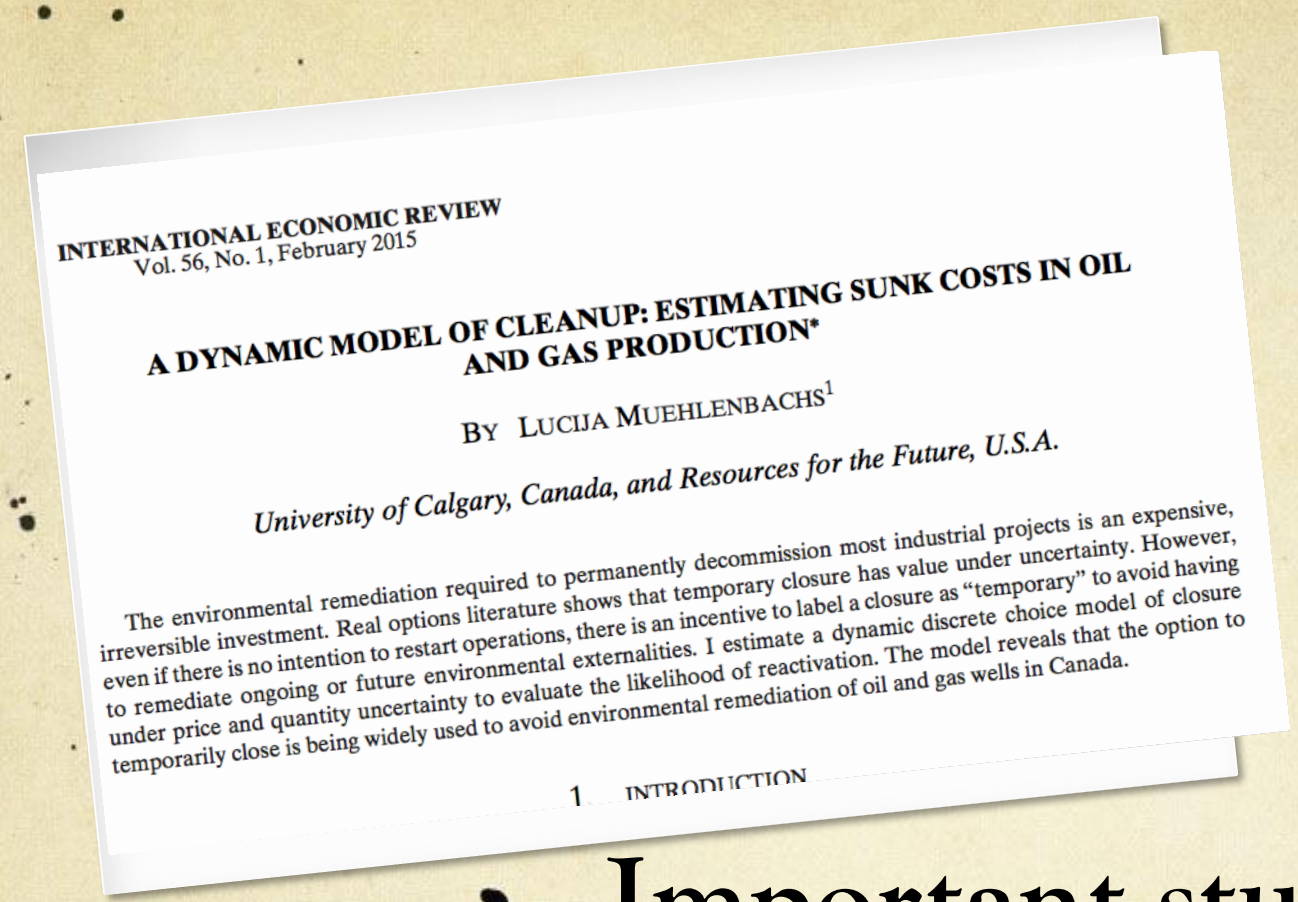


Figure 4—Alberta's inactive wells: 1993–2015

Inactive wells, 1993 - 2015

The problem has only ever continued to grow and grow.



INTERNATIONAL ECONOMIC REVIEW
Vol. 56, No. 1, February 2015

A DYNAMIC MODEL OF CLEANUP: ESTIMATING SUNK COSTS IN OIL AND GAS PRODUCTION*

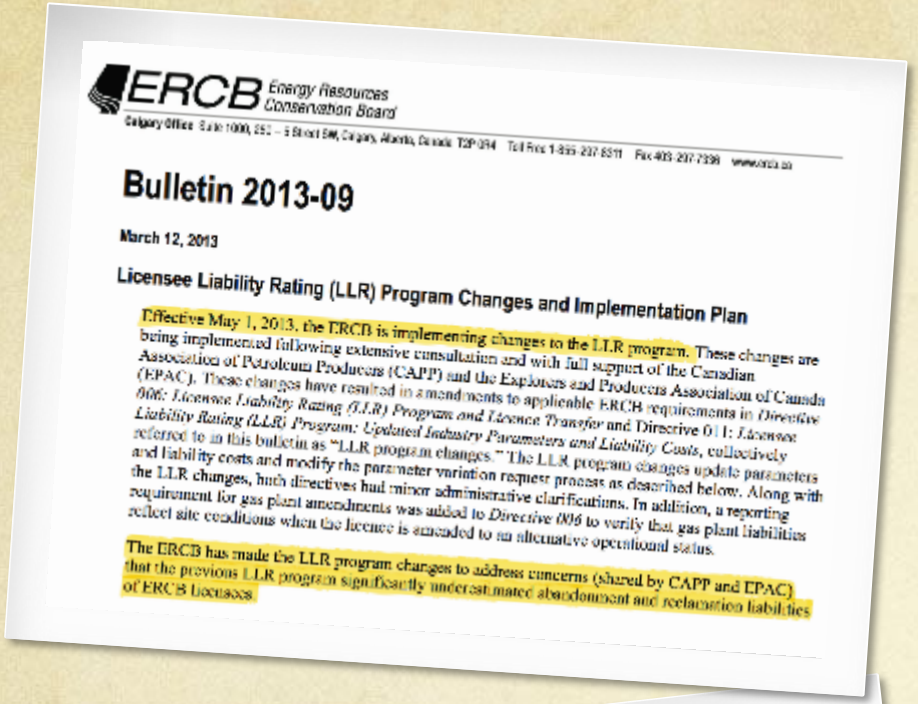
BY LUCIJA MUEHLENBACHS[1]

University of Calgary, Canada, and Resources for the Future, U.S.A.

The environmental remediation required to permanently decommission most industrial projects is an expensive, irreversible investment. Real options literature shows that temporary closure has value under uncertainty. However, even if there is no intention to restart operations, there is an incentive to label a closure as "temporary" to avoid having to remediate ongoing or future environmental externalities. I estimate a dynamic discrete choice model of closure under price and quantity uncertainty to evaluate the likelihood of reactivation. The model reveals that the option to temporarily close is being widely used to avoid environmental remediation of oil and gas wells in Canada.

1. INTRODUCTION

Important study of the fiction of wells being 'temporarily' inactive



ERCB Energy Resources Conservation Board

Calgary Office Suite 1000, 250 – 6 Street SW, Calgary, Alberta, Canada T2P 3H7 Toll Free 1-855-297-8311 Fax 403-297-7336 www.ercb.ca

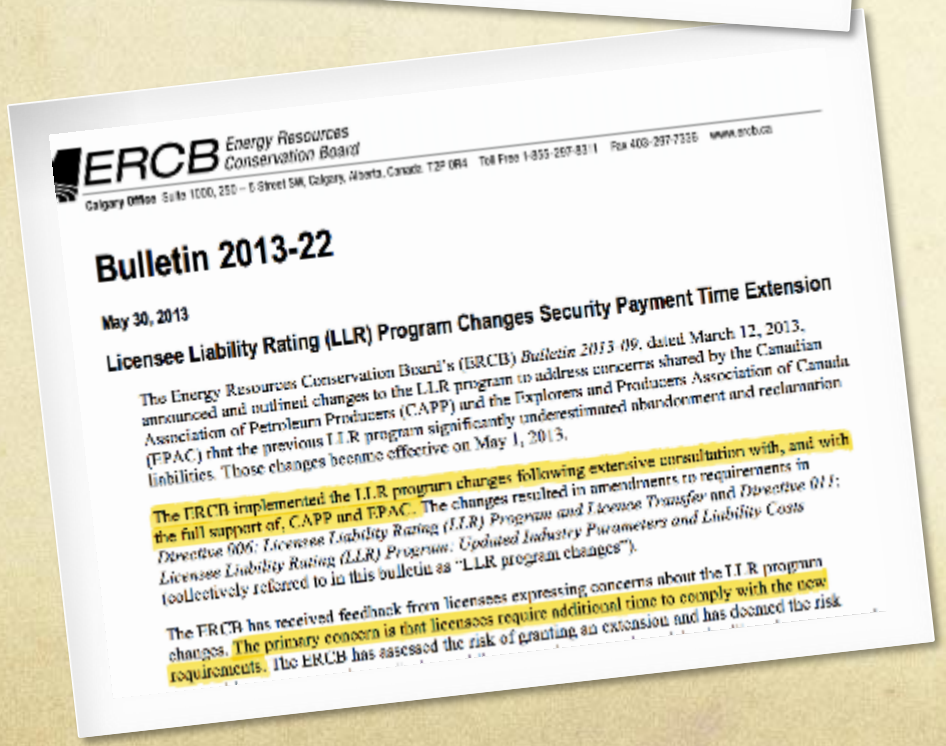
Bulletin 2013-09

March 12, 2013

Licensee Liability Rating (LLR) Program Changes and Implementation Plan

Effective May 1, 2013, the ERCB is implementing changes to the LLR program. These changes are being implemented following extensive consultation and with full support of the Canadian Association of Petroleum Producers (CAPP) and the Explorers and Producers Association of Canada (EPAC). These changes have resulted in amendments to applicable ERCB requirements in *Directive 006: Licensee Liability Rating (LLR) Program* and *Licence Transfer* and Directive 011: *Licensee Liability Rating (LLR) Program: Updated Industry Parameters and Liability Costs*, collectively referred to in this bulletin as "LLR program changes." The LLR program changes update parameters and liability costs and modify the parameter variation request process as described below. Along with the LLR changes, both directives had minor administrative clarifications. In addition, a reporting requirement for gas plant amendments was added to *Directive 006* to verify that gas plant liabilities reflect site conditions when the licence is amended to an alternative operational status.

The ERCB has made the LLR program changes to address concerns shared by CAPP and EPAC that the previous LLR program significantly underestimated abandonment and reclamation liabilities of ERCB licensees.



ERCB Energy Resources Conservation Board

Calgary Office Suite 1000, 250 – 6 Street SW, Calgary, Alberta, Canada T2P 0R4 Toll Free 1-855-297-8311 Fax 403-297-7336 www.ercb.ca

Bulletin 2013-22

May 30, 2013

Licensee Liability Rating (LLR) Program Changes Security Payment Time Extension

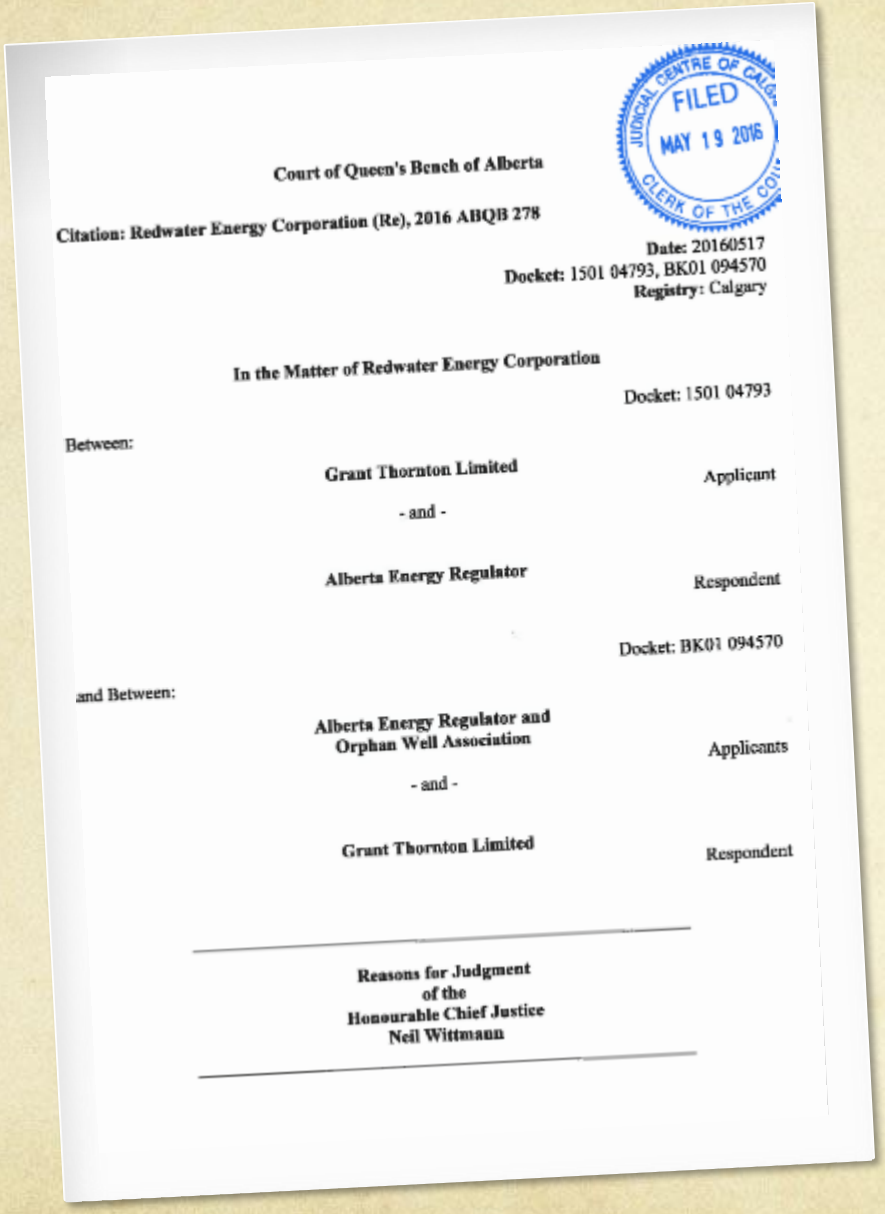
The Energy Resources Conservation Board's (ERCB) *Bulletin 2013-09*, dated March 12, 2013, announced and outlined changes to the LLR program to address concerns shared by the Canadian Association of Petroleum Producers (CAPP) and the Explorers and Producers Association of Canada (EPAC) that the previous LLR program significantly underestimated abandonment and reclamation liabilities. Those changes became effective on May 1, 2013.

The ERCB implemented the LLR program changes following extensive consultation with, and with the full support of, CAPP and EPAC. The changes resulted in amendments to requirements in *Directive 006: Licensee Liability Rating (LLR) Program* and *Licence Transfer* and *Directive 011: Licensee Liability Rating (LLR) Program: Updated Industry Parameters and Liability Costs* (collectively referred to in this bulletin as "LLR program changes").

The ERCB has received feedback from licensees expressing concerns about the LLR program changes. The primary concern is that licensees require additional time to comply with the new requirements. The ERCB has assessed the risk of granting an extension and has deemed the risk

After Supreme Court precedent, time to slowly blow up system

- Announced in March 2013, effective May 1st.
- Deposit payment rules relaxed on May 30th.
- Time to comply with each stage of enforcement process doubled.



Court of Queen's Bench of Alberta

Citation: Redwater Energy Corporation (Re), 2016 ABQB 278

JUDICIAL CENTRE OF CALGARY
FILED
MAY 19 2016
CLERK OF THE COURT

Date: 20160517
Docket: 1501 04793, BK01 094570
Registry: Calgary

In the Matter of Redwater Energy Corporation

Docket: 1501 04793

Between:

Grant Thornton Limited — Applicant

- and -

Alberta Energy Regulator — Respondent

Docket: BK01 094570

and Between:

Alberta Energy Regulator and Orphan Well Association — Applicants

- and -

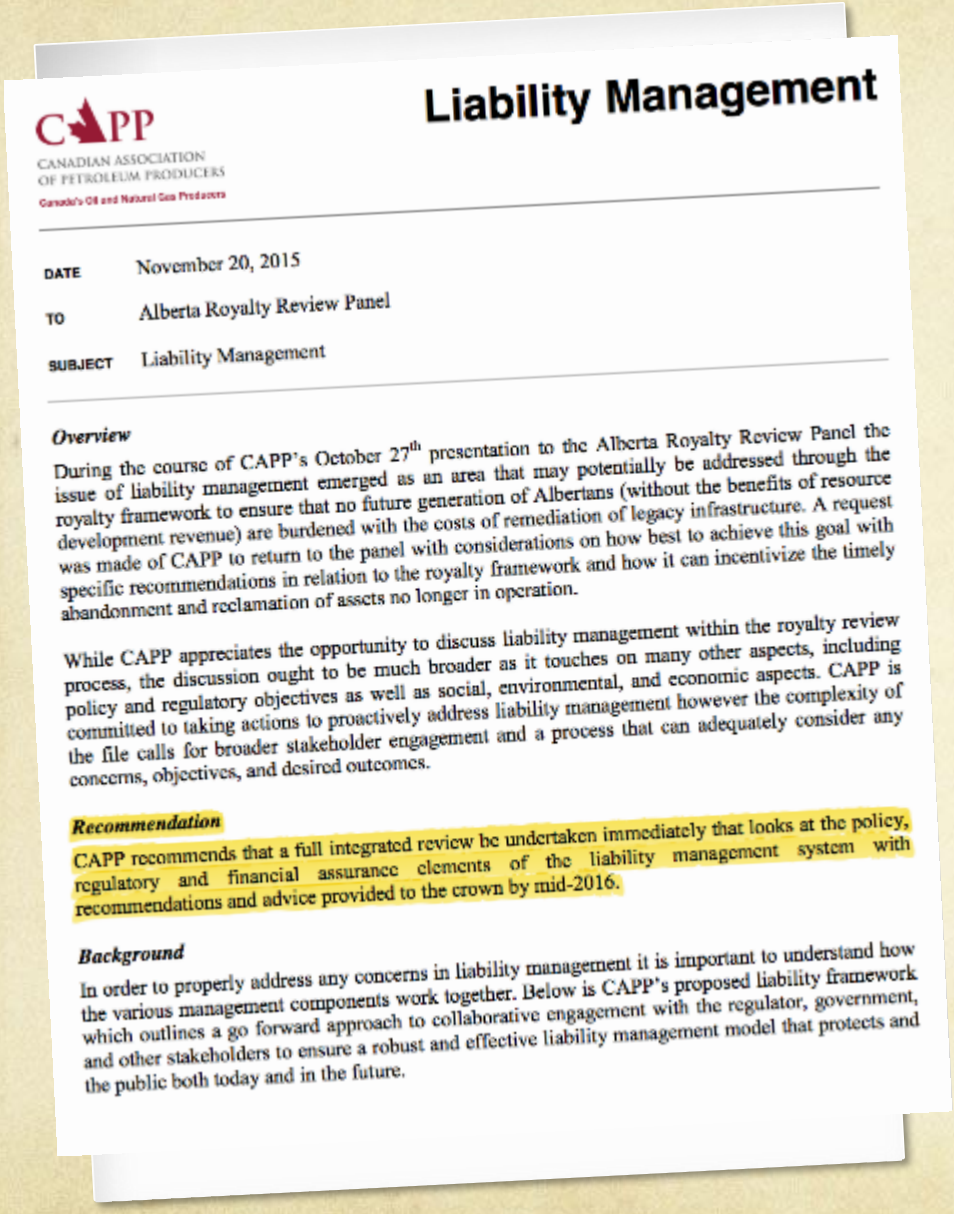
Grant Thornton Limited — Respondent

Reasons for Judgment
of the
Honourable Chief Justice
Neil Wittmann

The ominous case of Alberta Treasury Branches and Redwater Energy

May 2016 Court of Queen's Bench decision by Chief Justice Wittmann.

Currently under appeal.



CAPP
CANADIAN ASSOCIATION OF PETROLEUM PRODUCERS
Canada's Oil and Natural Gas Producers

Liability Management

DATE November 20, 2015

TO Alberta Royalty Review Panel

SUBJECT Liability Management

Overview

During the course of CAPP's October 27th presentation to the Alberta Royalty Review Panel the issue of liability management emerged as an area that may potentially be addressed through the royalty framework to ensure that no future generation of Albertans (without the benefits of resource development revenue) are burdened with the costs of remediation of legacy infrastructure. A request was made of CAPP to return to the panel with considerations on how best to achieve this goal with specific recommendations in relation to the royalty framework and how it can incentivize the timely abandonment and reclamation of assets no longer in operation.

While CAPP appreciates the opportunity to discuss liability management within the royalty review process, the discussion ought to be much broader as it touches on many other aspects, including policy and regulatory objectives as well as social, environmental, and economic aspects. CAPP is committed to taking actions to proactively address liability management however the complexity of the file calls for broader stakeholder engagement and a process that can adequately consider any concerns, objectives, and desired outcomes.

Recommendation

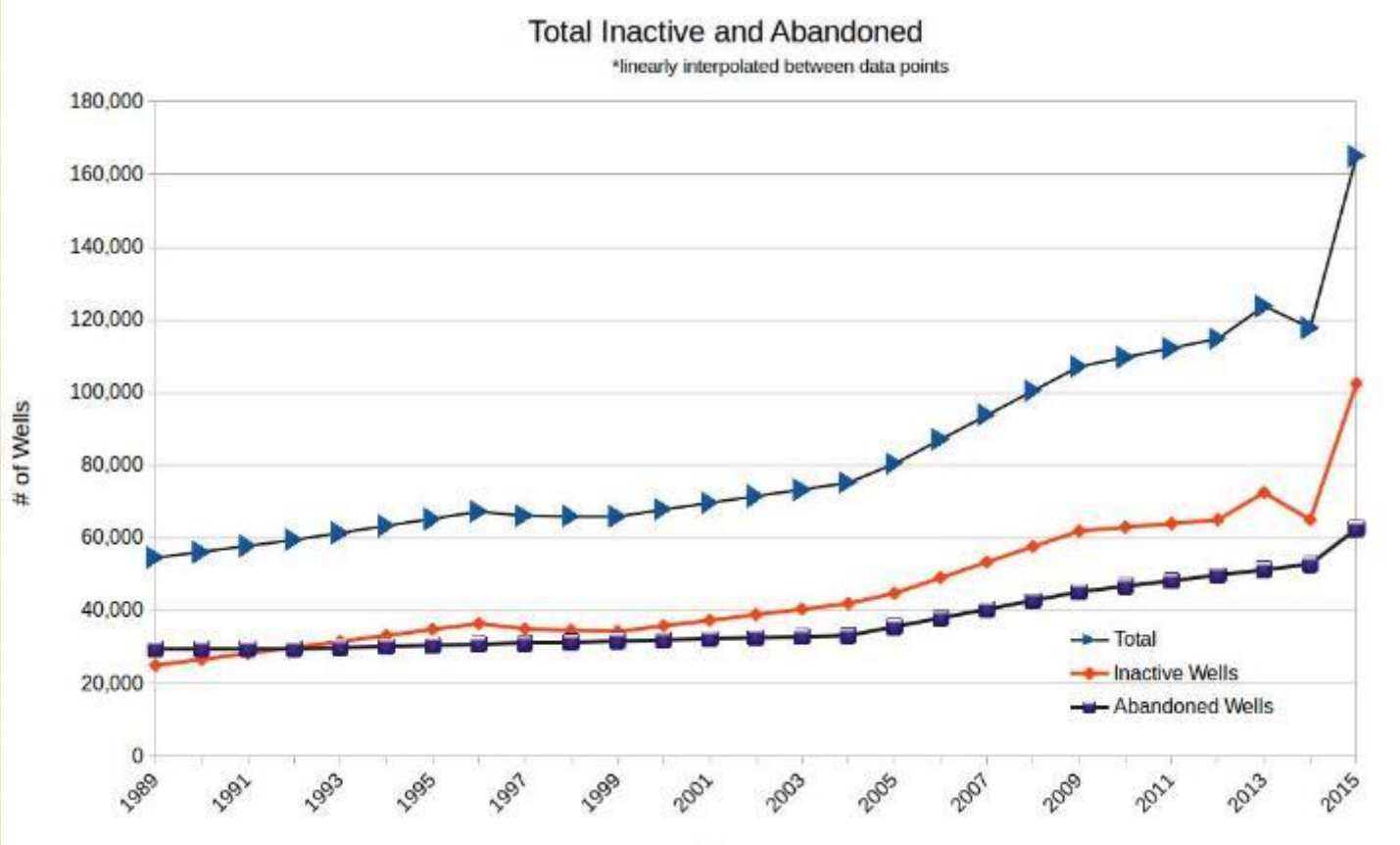
CAPP recommends that a full integrated review be undertaken immediately that looks at the policy, regulatory and financial assurance elements of the liability management system with recommendations and advice provided to the crown by mid-2016.

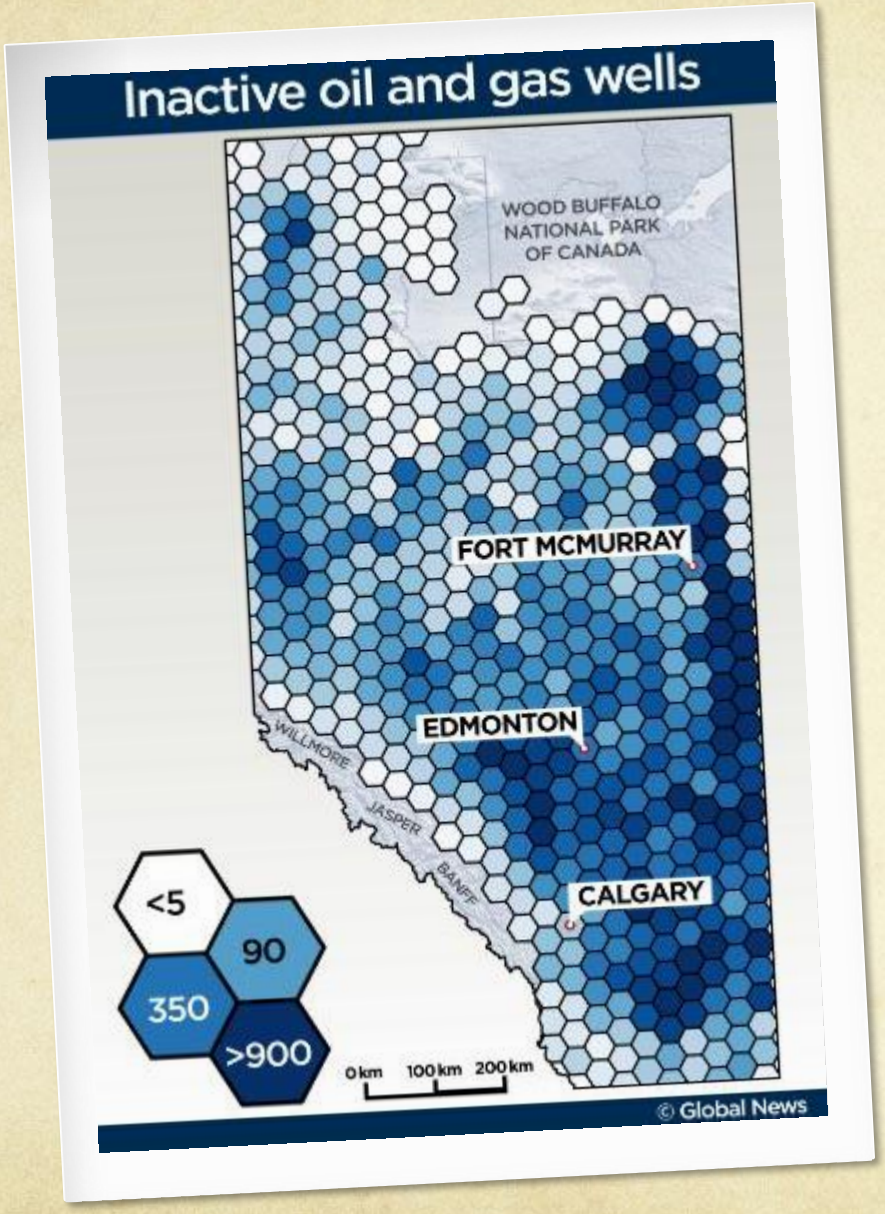
Background

In order to properly address any concerns in liability management it is important to understand how the various management components work together. Below is CAPP's proposed liability framework which outlines a go forward approach to collaborative engagement with the regulator, government, and other stakeholders to ensure a robust and effective liability management model that protects and the public both today and in the future.

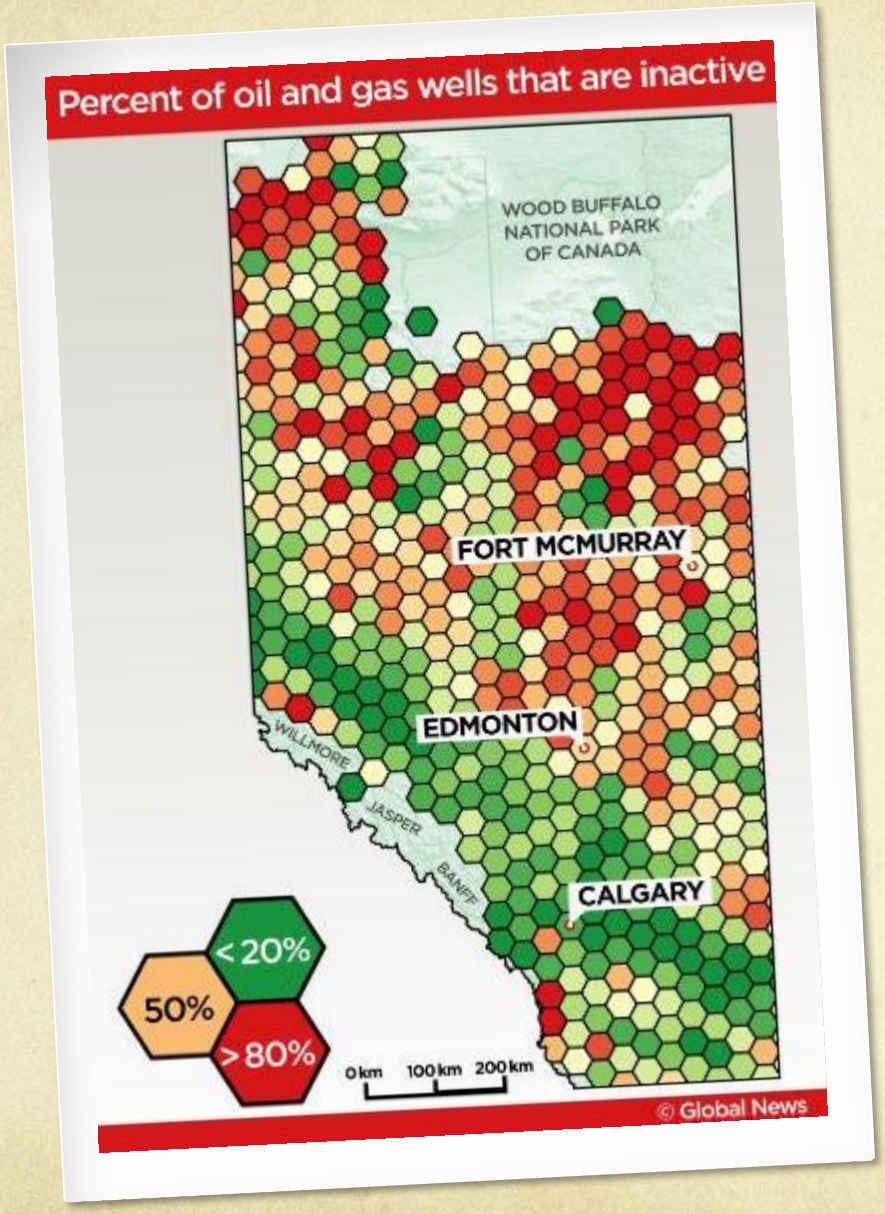
CAPP makes special presentation and recommendations to Royalty Panel on liability management

Close to 170,000 inactive/abandoned wells in 2015





Density of inactive wells



Proportion of wells inactive by area