



**Katch Kan<sup>®</sup>**

*An ISO 9001 & 14001 Company*

Protecting Lives And The Environment.

# **IPEC 2013**

**International Petroleum Environmental Conference**

**November 12-14 2013**

***San Antonio, Texas***

Reliable, Responsible, Responsive & Respectful = *RESULTS*



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**An Attractive, Proactive Approach Aimed at Protecting the Environment**

***IPEC***

***November 12-14 2013***

***San Antonio, Texas***

**George de Rappard, Vice Pres. Industry & Government Relations,**

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## **Presentation**

1. Introduction
3. Issues
4. Problems
5. Solutions
6. Bill 50 –Alberta Energy Regulator



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“Safety and environmental performance are integral to everything we do.  
We believe we have a moral obligation to protect our **people**, a  
responsibility to the **society** and to the **environment**, and to our assets.”

**Tove Stuhr Sjoblom**

Chief Staff Officer & Executive Vice President

**Statoil**

Statoil Annual Report 2011

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“Canadians demand that our industry returns developed areas back to a **sustainable landscape**. From drilling one well to mining for oil sands, oil and gas activity changes the land we work on.”

**Canadian Association of  
Petroleum Producers**

“We now face a complex challenge. Protecting the environment is not enough. We need to encourage public and private decision-makers to incorporate **environmental and social concerns** into economic planning and growth strategies.”

**Antonio Patriots**  
Minister of Foreign Relations  
Government of Brazil

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**Environmental  
Sustainability**

**Corporate  
Performance**

**Profits**

**Social  
Responsibility**

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“Existing practices have produced huge \$\$\$\$ liabilities -----need for proactive alternative.”

*IADC Environment Conference, New York, April 2013*

- **Jay Hakes**, Administrator, Energy Information Administration -  
(President Bill Clinton)

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**Gord Lambert**, Vice President, Sustainable Development, Suncor  
Energy

*“Move environment from compliance to strategic advantage with:*

- better business model*
- better business performance*

*For better results for shareholders”*

*“Convince people through actions not words with true  
programs”*

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## Issues Today

Environmentally Sensitive Areas  
Restricted From Oil & Gas  
Development

- Permafrost
- Semi-Arid Desert
- Wetlands
- Coastal Marshes



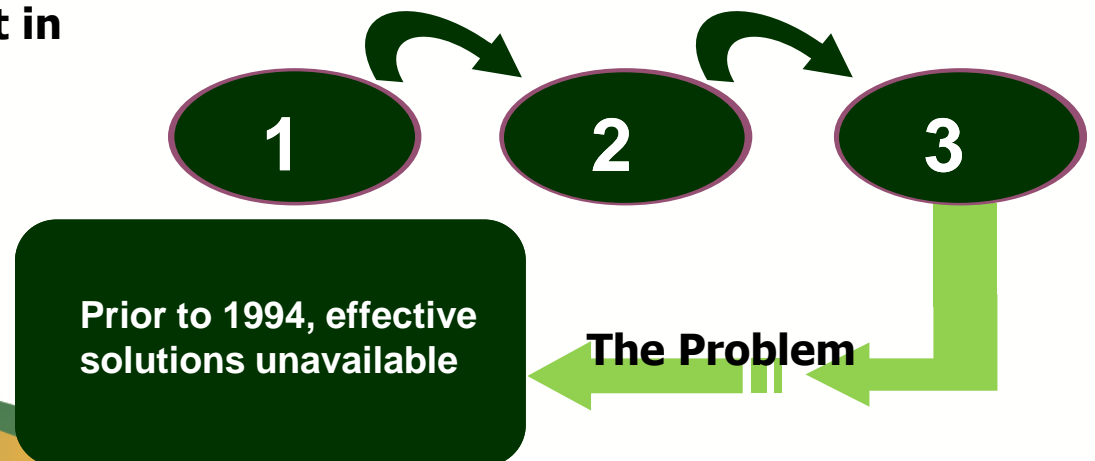
• **Environmentally Sensitive Areas of Future Activity:**

- *Arctic Development*
- *Animal Habitats*
- *Populated and Agricultural*
- *Horizontal drilling/Fracing*



## The Problem

- **Poor public perception of the oil and gas industry resulting in restriction of E & P activity**
- **Substantial environmental contamination and water loss resulting from uncontrolled discharge of drilling fluid**
- **Economic losses, caused by expensive drilling fluids, environmental reclamation costs, and time lost in inefficient production practices.**



# Social License - Poor Public Perception

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**CALGARY HERALD**



**5°C**  
A few clouds  
Detailed Forecast

Saturday, April 26th, 2008



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## Alberta fights 'dirty oil' stigma

With \$100 billion worth of bitumen projects on tap, the province is ready to battle environmental groups trying to turn public opinion against what they call 'dirty oil'

Renata D'Aliesio and Jason Fekete, Calgary Herald

Published: Saturday, April 26, 2008

Alberta's \$100-billion bonanza to develop the Athabasca oilsands has fractured into a tale of two solitudes.

In the eyes of the provincial government, the massive projects will unlock a secure and environmentally sustainable source of energy for Canada and the world.

In the words of environmental activists, they are among the most destructive developments on the planet.

These two divergent views are increasingly



 [Make Calgary Herald my start page](#)

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## **Problem:**

Resource Conservation and Recovery Act of 1976 made the largest volume of waste in the oilfield (produced water & drilling fluid) fully exempt from hazardous waste control.

In Alberta in 1993 Government regulation changed drilling fluid waste from hazardous to dangerous.

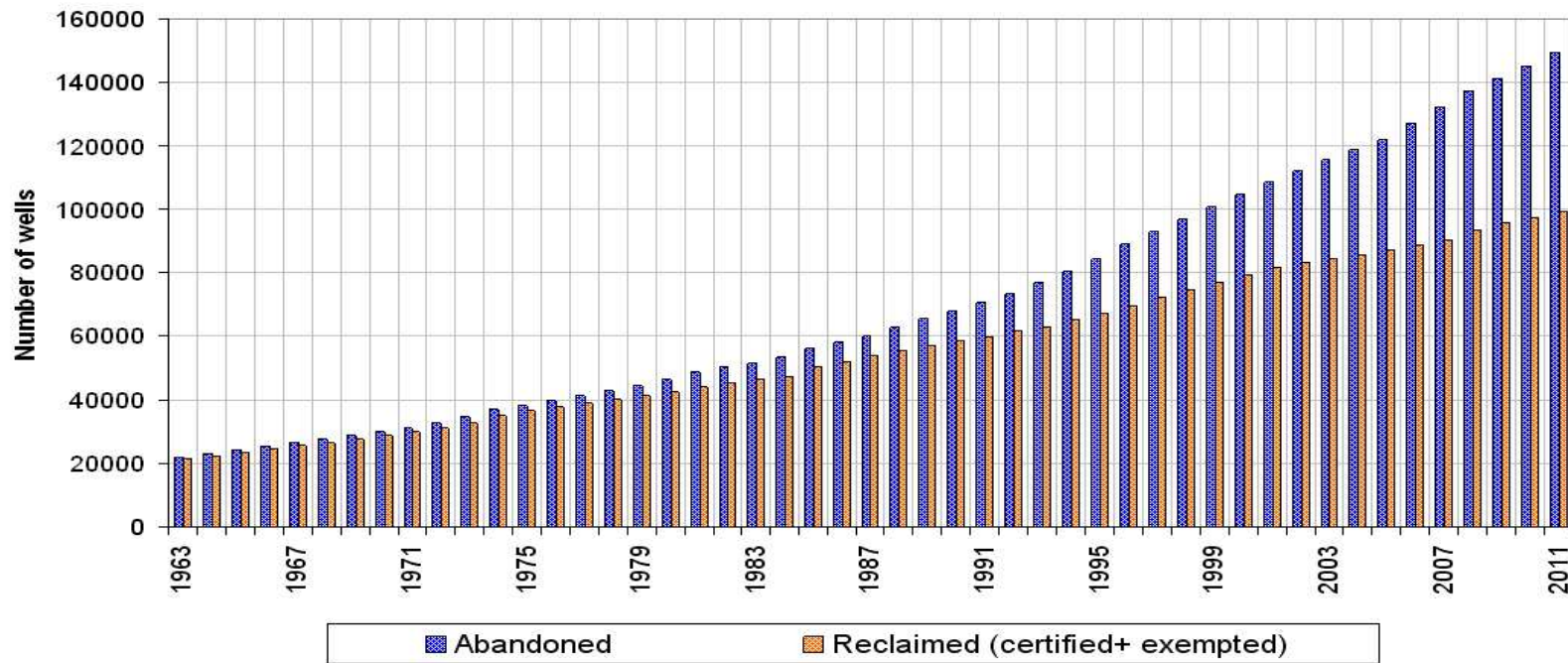
**Focus thus went to treating the waste after it had been created as opposed to reducing or eliminating waste.**

**Zero discharge rather than zero spill!!**



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



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## **Well Abandonment & Reclamation in Alberta: the Failure of the Licensee Liability Rating Program**

Quote from Barry Robinson, lawyer with Ecojustice:

“The current number of inactive wells in Alberta which have not been reclaimed exceeds **100,000**. Of these wells, over 20,000 have been inactive for more than ten consecutive years.

(Paper prepared for the AB Institute of Agrologist’s Conference, March 17, 2010)

## **Abandoned Well History**

- Alberta Environment & Water in the 2011 R & R report stated:
- ***“The indicator shows that oil and gas well reclamation is progressing at a much slower rate than abandonment. This is resulting in a build up of uncertified wells. Over the last 10 years, the certification has been approx. 44.6% of the abandonment rate.”***



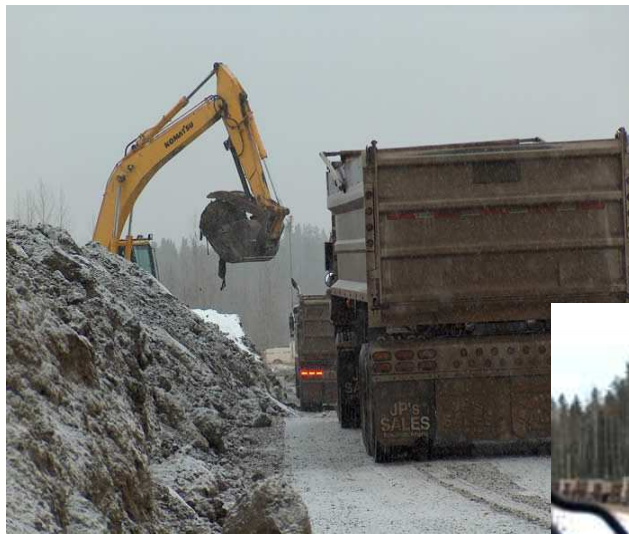
## **Environmental Issues Today**

1. 1993 regulatory change and its effects
2. Contaminated drilling sites - 100,000 abandoned wells in Alberta
3. Land mass bigger than City of Edmonton
4. Oil sands tailing ponds
5. Fracing

## **An Operators Three Areas To Evaluate:**

- 1** Environmental Liabilities – R & R
- 2** Drilling Fluid Costs
- 3**

## Environmental Reclamation Costs



**Ground reclamation  
in progress**



**Convoy of trucks transporting soil to be  
processed**

\$60,000 - \$80,000 or more to  
reclaim site back to a functional  
status

# Environmental Reclamation Costs

Alberta Environmental Protection & Enhancement Act (EPEA) requires operators to conserve and reclaim lands disturbed by their activities

- 25 Year liability for surface reclamation issues
- **Lifetime liability for contamination!**



## Problem

5-15 Gallons of drilling fluid spilled each time a connection is made

Losses total on average more than 5000 Gallons per single well

1 Gallon of invert contaminates 1m<sup>3</sup> of soil





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## **Problem**

Some companies have reported average surface losses of over 8,000 gallons of drilling fluid on a typical Woodford, Fayetteville or Barnett horizontal well found in the US.

On problematic wells, these amounts can easily balloon to more than 42,000 gallons or 1,000 barrels.

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## Problem

The “no-mans-land” of a substructure covered in slippery and toxic oil based drilling fluid





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## Problem

It has been found that [40 of the 65 chemicals](#) used by the oil and gas industry are listed as hazardous by the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) of 1980, commonly known as Superfund.

Discharges of Oil Based Mud have been prohibited in Norway since 1993.

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## **Katch Kan ZSS<sup>™</sup> and RSS<sup>™</sup>**

Four main components:

Kelly Kan

Katch Kan

Katch Mat

ACE – Adjustable Containment Enclosure

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## **Outdated or Homemade Solutions:**





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## **Solution: Kelly Kan**

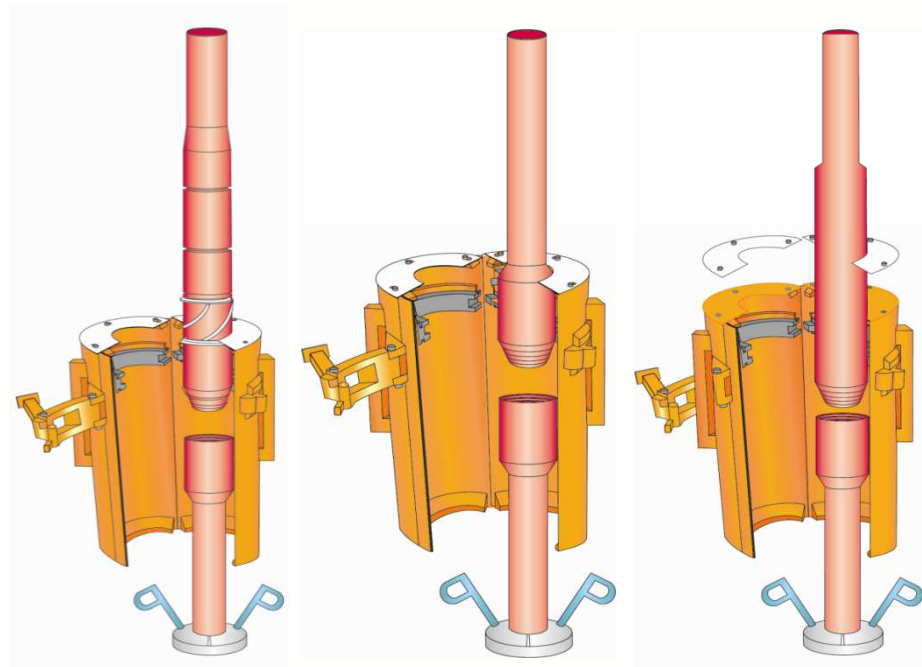
- Introduced in 1994
- Composed of super polymer
- Weighs 27 lbs.
- Redirects fluid discharge through slips
- Eliminates dangerous trip hazards
- Strong enough to withstand being driven over by a D9 CAT front end loader



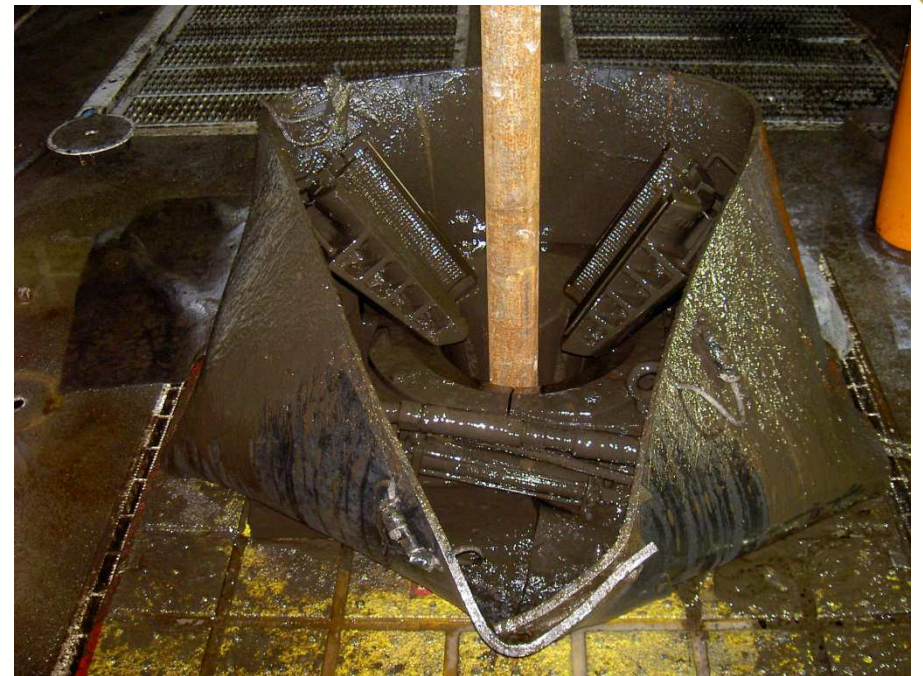
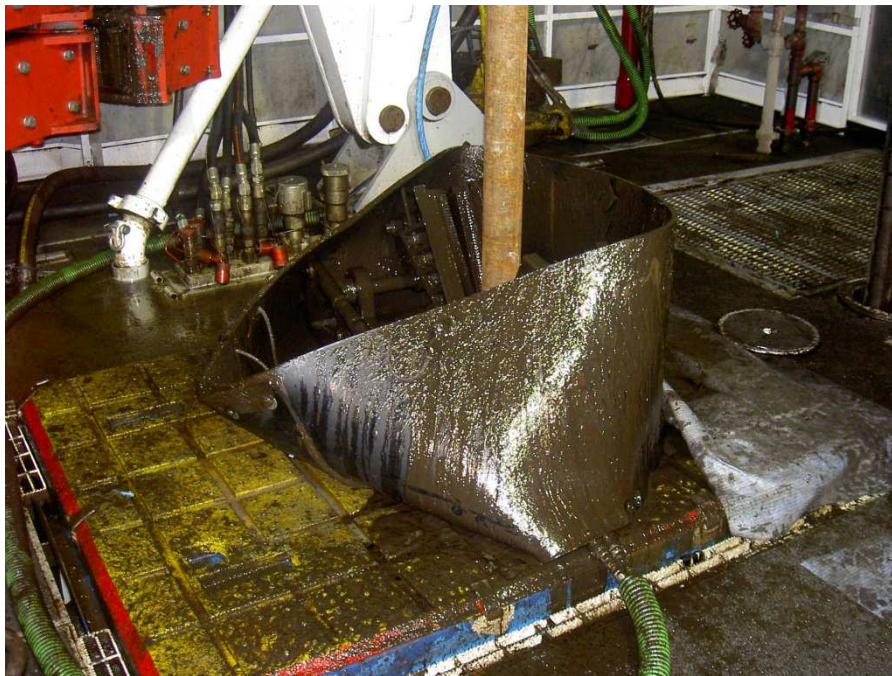
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## Kelly Kan

- Quick exchange seals
- Fits pipe 2-8"
- Kelly, drill pipe, heavy weight, drill collars, test tools, core barrels, service tubing & casing



## Ineffective Homemade Solution:



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## **Solution: Splash Guard**

- Used to aid the mud bucket in redirecting any low fluid splashes into the slips/rotary table
- Durable yet flexible
- Bends over when stepped on for easy insertion of slips



## **Solution: Katch Mat**

- Fluid containment
- Anti-slip
- Anti-fatigue
- Safety
- Adaptable



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## Effective Homemade Solution:



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## **Solution: Upper Katch Kan**

- Introduced in 1994
- Made of super polymer
- Lightweight
- Installs in minutes
- Fluids are collected and recycled back to the system via the annulus
- Captures 85% of discharged fluids



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## **Solution: Junk Basket**

- Works in conjunction with upper containment tray & window stripper to prevent foreign objects from falling down the annulus
- Substantially minimizing costly fishing trips
- Enables 5" telescopic action of upper containment tray to allow for rig settling eliminates costly fishing trips



## **Solution: Window Stripper**

- Works in conjunction with junk basket and upper containment tray
- Strips fluid off the drill pipe and directs fluid into upper containment tray
- Acts as a hole cover, eliminating costly fishing trips
- Slots allow fluids (*not foreign objects*) back into the flow nipple for re-circulation





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## **Solution: Adjustable Containment Enclosure - ACE**

- Captures remaining 15% of drilling fluid enabling Zero Spill
- Captures any additional fluids coming through the drill floor
- Can be retrofitted to fit anywhere on a stack
- 4" drain boxes and hoses return captured fluid to mud tanks

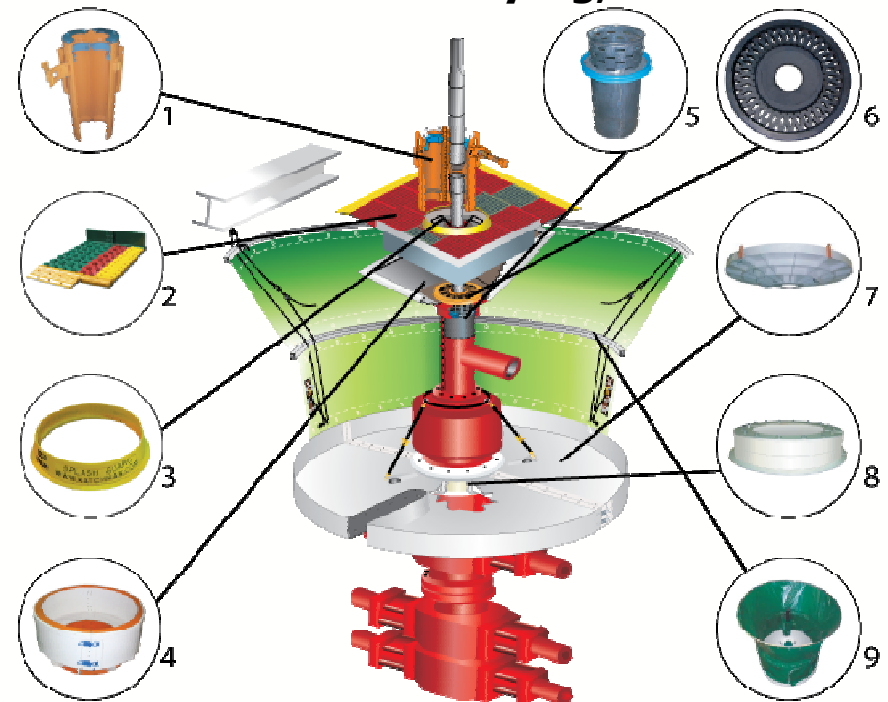


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## **Solution: Zero Spill System**

An integrated set of components that enables operators to easily reduce their environmental footprint and operation costs. Able to fit any rig, anywhere in the world.

1. New style mud bucket
2. Safety, traction & containment mat
3. Drilling fluid splash guard
4. New style tray made of super polymer
5. Junk basket
6. Window stripper
7. Lower collection tray
8. Reducer collar
9. Adjustable containment enclosure





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**Common perception is that environmental stewardship involves a prohibitive price tag  
----- this is a misconception!!**

**ROI can be 200%**

**Fluid savings**

**R & R**

**Lost time prevention**

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## **1<sup>st</sup> Study: Pemex Zero Spill Technology Assessment over 5 months**

**Over a 5 month period, Pemex saved a total of \$78,540 USD in labor and resources**

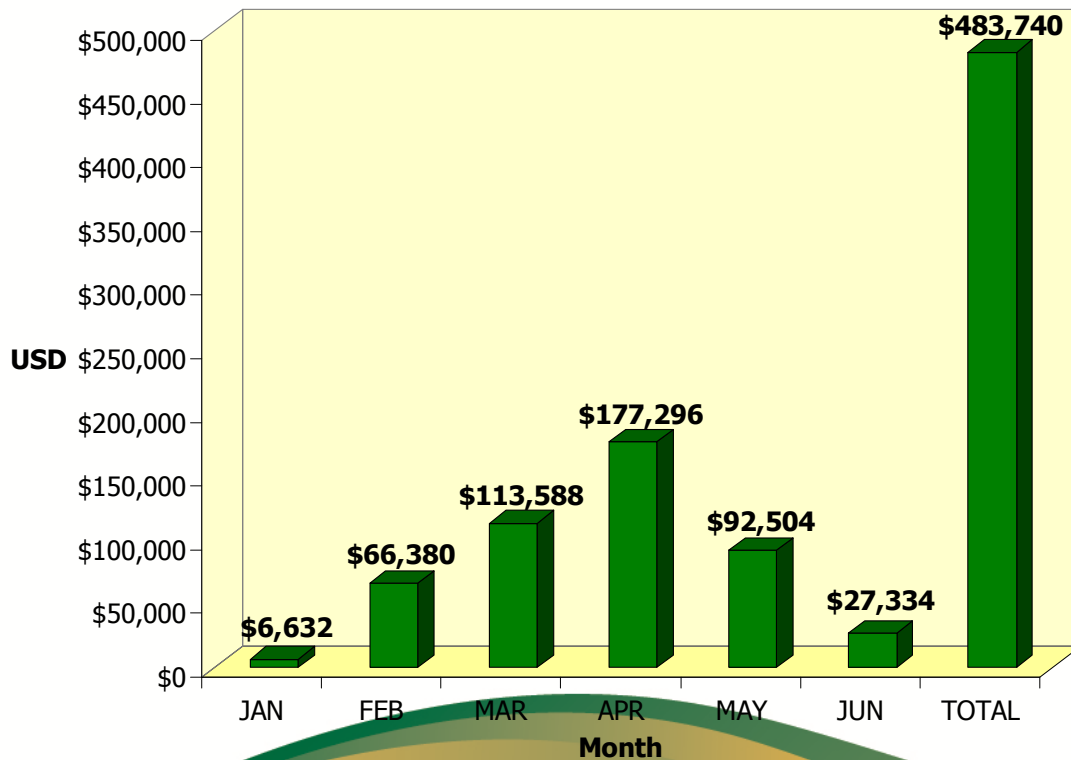
**•Pemex saved \$483,740 USD in investment recovered.**

The above-mentioned technology test was conducted on the Puerto Ceiba Well 135, Rig 339 of the South Division. According with the technical-economical analysis conducted by personnel of Comalcalco Operation Unit and the South Division Engineering Sub-manager's office, the following advantages are emphasized in comparison to the conventional collecting pans.

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# 1<sup>st</sup> Study: Pemex Zero Spill Technology Assessment over 5 months

Investment Recovered in USD



**Total Volume of Fluid Recovered**

**1,209.35m<sup>3</sup>**





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## **2<sup>nd</sup> Study:**

# **Jacques Whitford Environment Limited in partnership with Akita Drilling & Talisman Energy**

“This assessment is qualitative in nature and uses a scoring system developed by Jacques Whitford Environment Limited to reflect technical input from the field drillers and consultants using the equipment, as well as an independent audit conducted by Jacques Whitford Environment Limited.”

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## **2nd Study**

### **Jacques Whitford rated the Zero Spill System as follows:**

- Environmental Protection **99%**
- Health and Safety **98%**
- Economic Benefits **94%**

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## **2nd Study**

### **Akita Drilling and the Consultants rated the Zero Spill System as follows:**

- Environmental Protection **97%**
- Health and Safety **85%**
- Economic Benefits **72%**

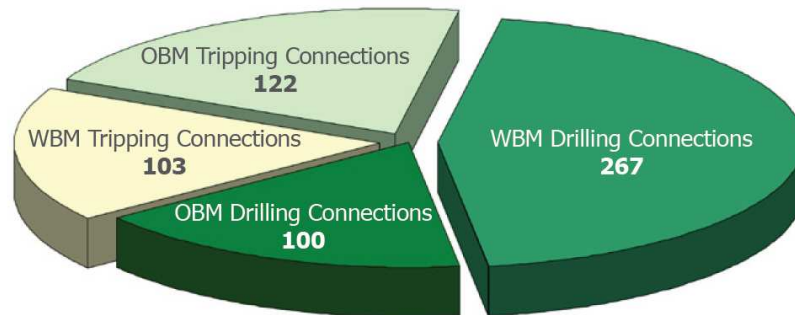
**“The Environmental Protection component was rated very high by all parties indicating that the system achieved its goal of capturing drilling fluids on the drilling rig”**

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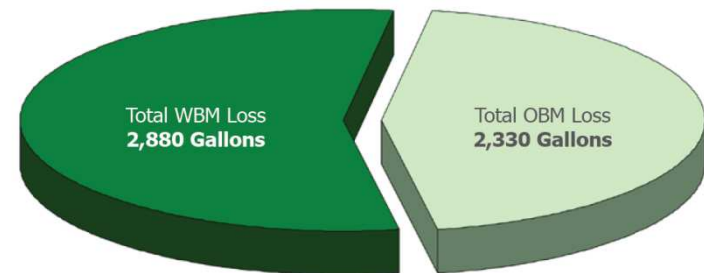
## Mud Savings During Drilling Process

- 5 Gallons during drilling connection
- 15 Gallons during trip connection (pulling wet)\*using an onshore triple drilling rig
- Savings as much as \$12, 124USD in mud usage per job

**Total Connections**



**Oil & Water-Based Mud Usage**



Total Potential Fluid Savings: **5,210 Gallons**



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**“When ZSS™, zero spill technology is properly utilized in its entirety, the result is a successfully implemented waste minimization plan that also **optimizes the health, safety and operational performance of upstream oil & gas operations.**”**

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***These best practices will raise the performance level of oil companies and contractors as well as employee and public perceptions of the company and the industry at large.”***

## **Regulatory Measures**

**Alaska** has a “No Stain” policy

**Norway** has a “Zero Spill” policy

**United States** has become very conscious since the BP spill in the Gulf of Mexico.

Greater interest and environmental consciousness by **Mid East** and **Mexico** operators

## **Alberta Bill 50 – Responsible Energy Development Act**

### **A One Window (One-Stop Shop) Approach**

- Assumes the regulatory functions of the ERCB and SRD re oil, gas, oil sands and coal development
- Administer Public Lands Act, Environmental Protection Act, and Water Act





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### **Question**

Is this putting the coyote, fox, in with the chickens and turkeys?

### **Answer:**

Policy direction will be set by the Government of Alberta, through a newly created  
Policy Management Office

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## **Policy Management Office**

Responsible for:

- Clear policy guidance to the new regulator
- Creating an effective process to engage Albertans in the policy making process
- Developing performance measures



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**Gord Lambert**, Vice President, Sustainable Development, Suncor Energy

- *Preventative action less costly than remedial action*
- *10 times greater cost for remedial work than of preventative*
- ***If you have risk to manage, better to manage proactively”***

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## **In Conclusion:**

***The industry, including operators, contractors, government and regulators, need safety and environmental stewardship practices as their main goals and objectives, regarding contamination, reclamation and remediation.***

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## **In Conclusion cont'd..**

Utilize the new technologies and equipment to:

**Reduce, Recover, Recycle, Reuse.**

The result: **a more Proactive Approach for a  
contamination free Alberta.**

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“Environmental services, considered the little E, were seen in those days as purely a cost center for the business. However, in today's world, compliance based environmental management is not enough to gain an invitation to operate.”

- Elizabeth Cheney  
V.P. Hees Corp -

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# The Business Case for Using Zero Spill Technology

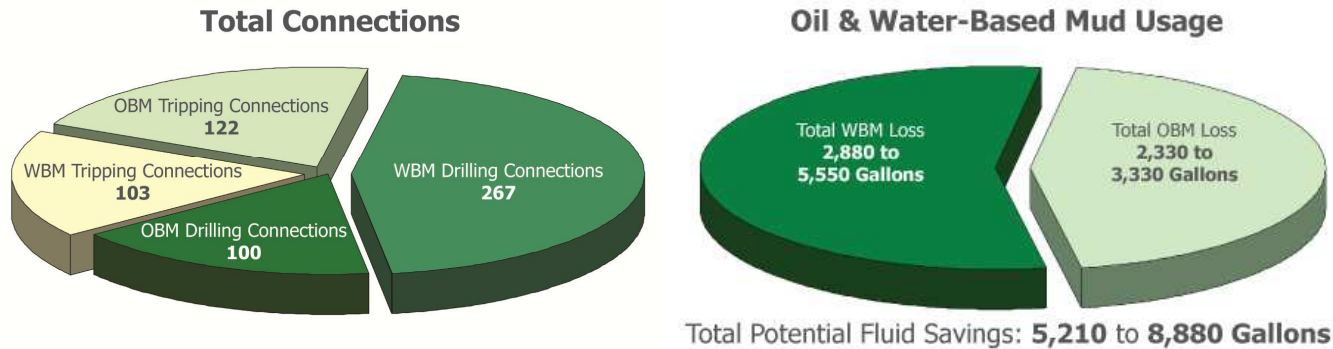
## Cost Benefit Analysis – Mud Usage

### Mud Savings on a 11,000 ft Well

- Optimal duration of 20 days on well
- 5 to 15 gallons of drilling fluid lost per drilling connections
- 15 gallons of drilling fluid lost per tripping-out connections

### Activity Report

Evaluating surface, intermediate, and touch down stages:



• These calculations do not factor in savings from avoided fluid replacement and artesian well effect

Note:

WBM \$1.20 per gallon

OBM \$2.85 per gallon

**Potential Savings between \$10,240 to \$16,150 over the 20-day period**

