

**HB**

**142**

HB 142

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STATE OF ALASKA  
OFFICE OF THE GOVERNOR  
JUNEAU

February 10, 2005

The Honorable John Harris  
Speaker of the House  
Alaska State Legislature  
State Capitol, Room 208  
Juneau, AK 99801-1182

Dear Speaker Harris:

Under the authority of art. III, sec. 18, of the Alaska Constitution, I am transmitting a bill relating to the regulation of underground injection under the federal Safe Drinking Water Act. This bill would enable the Alaska Oil and Gas Conservation Commission (AOGCC) to regulate all underground injection wells used in the oil and gas industry, in contrast to the current situation under which the AOGCC regulates most of these wells but the United States Environmental Protection Agency (EPA) regulates others.

Under the federal Safe Drinking Water Act of 1974, 42 U.S.C. 300f - 300j-26, the underground injection of waste or other fluids requires an EPA permit, unless the EPA has approved a state underground injection control program as meeting Safe Drinking Water Act standards. In 1986, the EPA approved Alaska's underground injection program for a subset of underground injection wells, known as Class II wells. Class II wells inject certain fluids related to the recovery and production of oil and natural gas. The AOGCC administers this program. However, the EPA continues to regulate other types of injection wells in Alaska, including Class I wells, which are used in the oil and gas industry to dispose of wastes that do not go into Class II wells. I believe that the time has come for authority over all underground injection relating to oil and gas operations to return to the state.

This action would have several benefits for the state and the industry. First, the AOGCC is generally able to respond more quickly to permit applications than is the EPA. Second, having a single, uniform process for regulating underground injection by the industry will improve efficiency and reduce confusion. Finally, there has been considerable uncertainty over, and considerable agency time and effort devoted to, the question of when a Class II well is appropriate for waste disposal and when a Class I well is required, and

The Honorable John Harris  
February 10, 2005  
Page 2

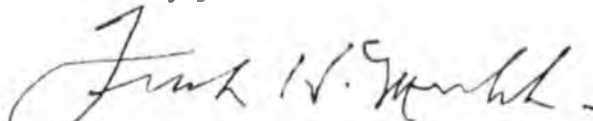
this question will likely become much less important with a single agency exercising authority over both classes of wells.

Under the bill that I am proposing, the AOGCC would have the authority to take all actions necessary to allow the state to acquire primary enforcement responsibility for Class I injection wells, in addition to continuing its current regulation of Class II wells. While the definition of Class I wells covers broad categories of industrial and municipal wastes in certain circumstances, in practice Class I wells in Alaska have been used only in the oil and gas industry, to accommodate wastes not allowed in Class II wells. There are currently 1,144 Class II wells (disposal and enhanced recovery) and seven Class I wells in the state.

This bill also provides for an immediate effective date.

I urge your prompt and favorable action on this measure.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "Frank H. Murkowski".

Frank H. Murkowski  
Governor

Enclosure



# FISCAL NOTE

**STATE OF ALASKA**  
**2005 LEGISLATIVE SESSION**

Fiscal Note Number: 1  
 Bill Version: HB 142  
 (H) Publish Date: 2/14/05

Revision Date/Time (Note if correction): \_\_\_\_\_ Dept. Affected: Natural Resources  
 Title Regulation of underground injection under RDU Resource Development  
the federal Safe Drinking Water Act Component Commissioner's Office  
 Sponsor Rules  
 Requester Governor Component No. 423

**Expenditures/Revenues** (Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

OPERATING EXPENDITURES	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Personal Services						
Travel						
Contractual						
Supplies						
Equipment						
Land & Structures						
Grants & Claims						
Miscellaneous						
<b>TOTAL OPERATING</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>

<b>CAPITAL EXPENDITURES</b>						
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<b>CHANGE IN REVENUES ( )</b>						
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**FUND SOURCE** (Thousands of Dollars)

1002 Federal Receipts						
1003 GF Match						
1004 GF						
1005 GF/Program Receipts						
1037 GF/Mental Health						
Other (Specify Type--Do not abbreviate)						
<b>TOTAL</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>

Estimate of any current year (FY2005) cost: 0.0  
 Mark this box (X) if funding for this bill is included in the Governor's FY 2006 budget proposal:

**POSITIONS**

Full-time						
Part-time						
Temporary						

**ANALYSIS:** (Attach a separate page if necessary)

There is no anticipated fiscal impact for DNR associated with implementation of this legislation.

Prepared by: Janet Baxter, Legislative Liaison Phone 907-465-4730  
 Division: Commissioner's Office Date/Time 2/8/2005  
 Approved by: Tom Irwin, Commissioner Date 2/8/2005  
 Agency: Natural Resources

# FISCAL NOTE

**STATE OF ALASKA**  
**2005 LEGISLATIVE SESSION**

Fiscal Note Number: 2  
 Bill Version: HB 142  
 (H) Publish Date: 2/14/05

Revision Date/Time (Note if correction): \_\_\_\_\_ Dept. Affected: Admin  
 Title: Underground injection under the RDU: Oil & Gas Conservation Commission  
Federal safe drinking water Component: Oil & Gas Conservation Commission  
 Sponsor: Rules Committee  
 Requester: Governor Component No.: 2010

**Expenditures/Revenues** (Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

OPERATING EXPENDITURES	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Personal Services	25.0	25.0	25.0	25.0	25.0	25.0
Travel						
Contractual						
Supplies						
Equipment						
Land & Structures						
Grants & Claims						
Miscellaneous						
<b>TOTAL OPERATING</b>	<b>25.0</b>	<b>25.0</b>	<b>25.0</b>	<b>25.0</b>	<b>25.0</b>	<b>25.0</b>

<b>CAPITAL EXPENDITURES</b>						
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<b>CHANGE IN REVENUES ( )</b>						
-------------------------------	--	--	--	--	--	--

**FUND SOURCE** (Thousands of Dollars)

1002 Federal Receipts						
1003 GF Match						
1004 GF						
1005 GF/Program Receipts						
1037 GF/Mental Health						
Other 1162 AOGCC Receipts	25.0	25.0	25.0	25.0	25.0	25.0
<b>TOTAL</b>	<b>25.0</b>	<b>25.0</b>	<b>25.0</b>	<b>25.0</b>	<b>25.0</b>	<b>25.0</b>

Estimate of any current year (FY2005) cost: 0.0  
 Mark this box (X) if funding for this bill is included in the Governor's FY 2006 budget proposal:

**POSITIONS**

Full-time						
Part-time						
Temporary						

**ANALYSIS:** (Attach a separate page if necessary)

Will take 10% inspection time (\$9.0) and 10% Petroleum Engineer (\$16.0). The impact will be covered by overtime.

Prepared by: Daniel Seamount, Commissioner Phone 907-793-1221  
 Division: Alaska Oil & Gas Conservation Commission Date/Time 1/28/05 1:13 PM  
 Approved by: Michael Tibbles, Deputy Commissioner Date 1/28/2005  
 Agency: Department of Administration

## Alaska Oil and Gas Association

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Anchorage, Alaska 99503-2035  
Phone: (907)272-1481 Fax: (907)279-8114  
Email: [crockett@aoga.org](mailto:crockett@aoga.org)  
*Marilyn Crockett, Deputy Director*

April 1, 2005

Testimony to House Resources Committee  
On HB142  
By Marilyn Crockett, Deputy Director  
Alaska Oil and Gas Association  
April 1, 2005

The Alaska Oil and Gas Association (AOGA) is a private, nonprofit trade association whose 18 member companies account for the majority of oil and gas exploration, development, production, transportation, refining and marketing activities in Alaska. We appreciate the opportunity to testify in favor of the Alaska Oil and Gas Conservation Commission (AOGCC) assuming primacy from EPA for the Underground Injection Control (UIC) Class I Program.

The Commission has had responsibility for the Class II program since 1986, and is highly regarded for its management of that program. In 2003, the independent Ground Water Protection Council's Peer Review of the AOGCC's program gave the program high marks, noting that "the commission has a well defined organizational pattern designed to ensure quality coverage in all regulatory areas".

The critical components of decision-making related to Class I well permitting are subsurface evaluations and structural integrity of wells. AOGCC is the state agency with the technical expertise to make these evaluations. In fact, AOGCC routinely provides invaluable technical assistance to EPA on permitting and management of Class I wells in Alaska.

We encourage passage of legislation granting AOGCC with the statutory authority to assume this important program. Thank you.

## Alaska Oil and Gas Association

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Phone: (907)272-1481 Fax: (907)279-8114  
Email: [crockett@aoga.org](mailto:crockett@aoga.org)  
Marilyn Crockett, Deputy Director

March 15, 2005

Testimony to House Special Committee on Oil and Gas  
On HB142  
By Marilyn Crockett, Deputy Director  
Alaska Oil and Gas Association  
March 15, 2005

The Alaska Oil and Gas Association (AOGA) is a private, nonprofit trade association whose 18 member companies account for the majority of oil and gas exploration, development, production, transportation, refining and marketing activities in Alaska. We appreciate the opportunity to testify in favor of the Alaska Oil and Gas Conservation Commission (AOGCC) assuming primacy from EPA for the Underground Injection Control (UIC) Class I Program.

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We encourage passage of legislation granting AOGCC with the statutory authority to assume this important program. Thank you.

Support



## U.S. Environmental Protection Agency Underground Injection Control Program

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What is the  
UIC program?

Critical Initiatives

Classes of  
Injection Wells

Class I

Class II

Class III

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Class V

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### Deep Wells (Class I)

- EPA has completed and submitted to Congress a study of Class I wells that describes the current Class I UIC Program, documents past compliance incidents involving Class I wells, and summarizes studies of human health risks associated with Class I injection conducted for past regulatory efforts and policy documentation. Read [Class I Underground Injection Control Program: Study of the Risks Associated with Class I Underground Injection Wells \[PDF file\]](#) (EPA 816-R-01-007 / March 2001).
- Class I injection well facilities dispose of industrial hazardous, industrial nonhazardous and municipal (non-hazardous) waste.
- There are 272 active Class I injection facilities nationwide. Of these, 51 are hazardous and 221 are non-hazardous. These 272 facilities maintain approximately 529 Class I injection wells that are scattered throughout the US in 19 states. The greatest concentration are located in the Gulf Coast, Great Lakes, and the Floridian peninsular geographical regions.
- Class I wells are mainly used in the following industries:
  - Petroleum Refining,
  - Metal Production,
  - Chemical Production,
  - Pharmaceutical Production,
  - Commercial Disposal,
  - Municipal Disposal and
  - Food Production.
- Class I injection wells are sited such that they inject below the lowermost USDW and a confining zone above an injection zone. Injection zone reservoirs typically range in depth from 1,700 to over 10,000 feet below the surface.

#### Hazardous Waste Injection Wells

Injection of hazardous waste into deep wells began in the United States in the 1960s. At that time, the chemical industry was looking for a safe, relatively inexpensive method for disposing of high volumes of waste that could be considered toxic. Technology was borrowed from the oil and gas industry to develop this new form of disposal.

- There are 163 Class I hazardous waste injection wells located at 51 facilities. Most are found in Texas (78) and Louisiana (18). Eleven of the facilities are commercial hazardous waste injection facilities. These are the only facilities that can accept hazardous waste generated offsite for injection. Ten of them are located in the Gulf Coast region while one is located in the Great Lakes region.
- Hazardous and Solid Waste Amendments to RCRA made UIC regulations (1988) more stringent for Class I hazardous wells. This resulted in strict no-migration standards and a petition approval process for continued operation of the wells. Of the 51 Class I hazardous waste facilities, 47 have approved no-migration petitions that cover 123 wells. To receive a no-migration petition the facility must be able to

demonstrate that injected waste will not impact the biosphere (ground water or surface water) for 10,000 years.

### UIC Class I Deep/High Technology Hazardous Waste Wells



#### Non-Hazardous Waste Injection Wells

Non-hazardous deep injection wells have to meet all the technical requirements of hazardous waste wells. These wells inject industrial, low radiation and municipal wastes. Some states include some mining wells in this group and require the operators of these wells to meet all the requirements of other deep wells.

- There are 366 Class I non-hazardous injection wells nationwide. While these wells are scattered through 19 states, most of them are found in the states of Florida (112) and Texas (110).
- Florida is the only state with Class I municipal waste disposal wells (104).

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Last updated on Monday, February 14th, 2005  
URL: <http://www.epa.gov/safewater/uic/classi.html>



## U.S. Environmental Protection Agency Underground Injection Control Program

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What is the  
UIC program?

Critical Initiatives

Classes of  
Injection Wells  
Class I  
Class II  
Class III  
Class IV  
Class V

State UIC Programs

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Guidance

### Oil and Gas Injection Wells (Class II)

The oil and gas production industry accounts for a large proportion of the fluids injected in the subsurface. Typically, when oil and gas are extracted, large amounts of salt water (brine) are also brought to the surface. This salt water can be very damaging if it is discharged in surface water. Instead, all states require that this brine be injected into formations similar those from which it was extracted. Over 2 billion gallons of brine are injected daily into injection wells in the US.

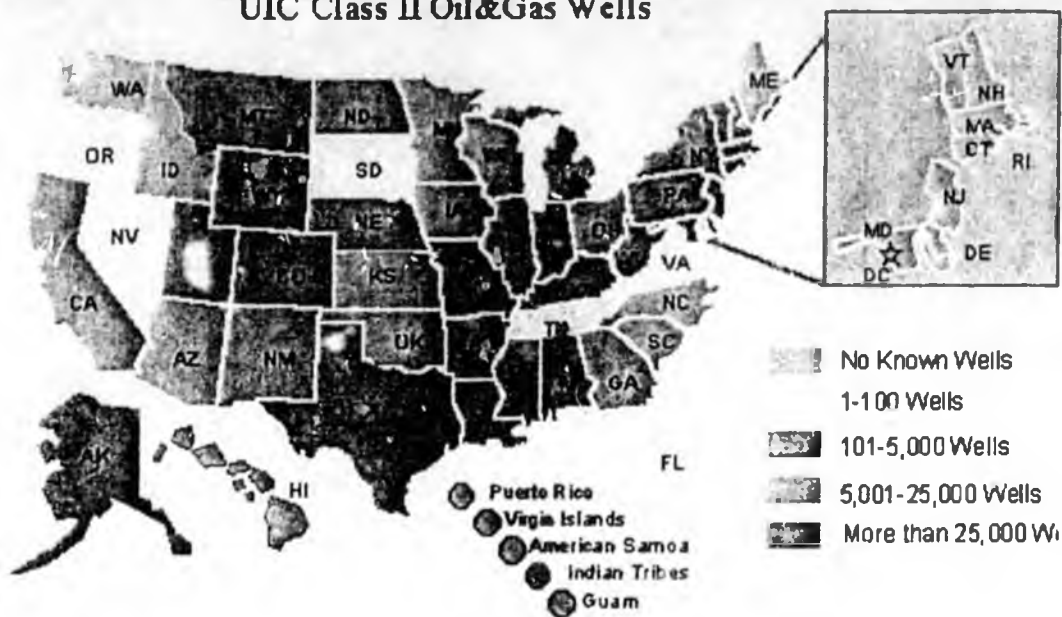
The largest proportion of these brines are injected into formations that contain trace portions of extractable oil and gas. Injection of the brines can have the effect of enhancing production of oil and gas from the formations, thus secondary recovery of oil and gas depends heavily on injection. Furthermore, when States started to implement rules that prevented the disposal of brine to surface water bodies and soils, injection of this waste fluid became the prevalent form of disposal.

Class II wells exist wherever there is production of oil and gas. There are approximately 167,000 oil and gas injection wells in the US, most of which are used for the secondary recovery of oil. In this process water is pumped into the formation that contains some residual hydrocarbons. A portion of the hydrocarbons are recovered, along with the injected water, by extraction or production wells. In a common configuration, one injection well is surrounded by 4 or more extraction wells. The recovered fluid is treated to remove most of the hydrocarbons in a device called a separator. The other type of oil and gas injection well is a disposal well. In this type of well, excess fluids from production and some other activities directly related to the production process are injected solely for the purpose of disposal.

Class II wells have to follow strict construction and conversion standards except when historical practices in the State and geology allow for different standards. A Class II well that follows EPA federal standards is built very much the same as a deep or Class I well. In 1997 Congress added Section 1425 to the Safe Drinking Water Act, that controls underground injection, relieving Class II well programs in the States from having to meet the technical requirements in the UIC regulations. Instead, they can make a demonstration that the State has an "... effective program (including adequate record-keeping and reporting) to prevent underground injection which endangers drinking water sources."

Most of the oil and gas injection wells are located in the Southwest, with Texas having the largest number (53,000) and California, Oklahoma and Kansas following some distance behind with 25,000, 22,000 and 15,000 wells respectively.

### UIC Class II Oil&Gas Wells



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Last updated on Monday, February 14th, 2005  
URL: <http://www.epa.gov/safewater/uic/classii.html>

# Alaska UIC Issues

What we do.

What are the challenges?

What are the options?



# AOGCC – EPA UIC Situation

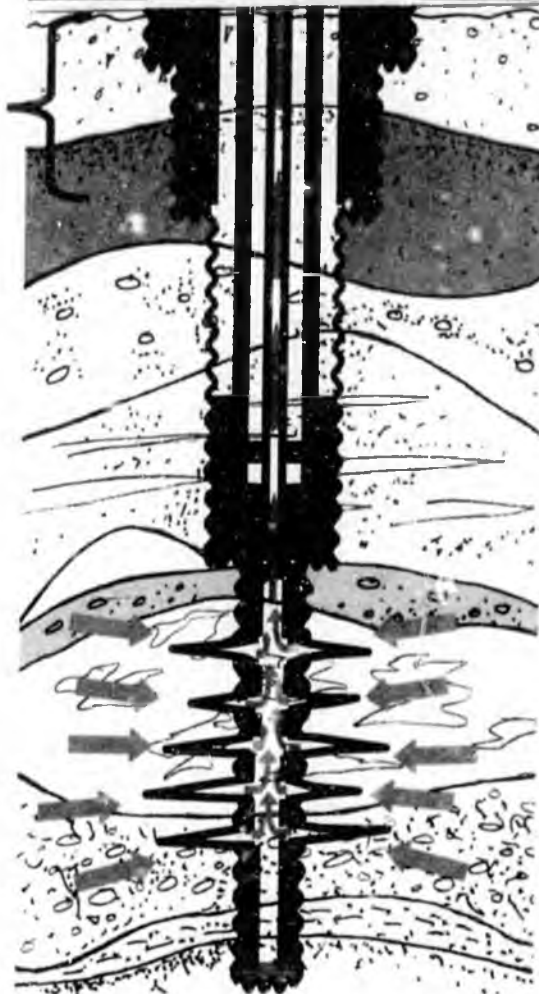
- Introduction
- UIC and other USDW Responsibilities
- House Bill 142
- The Problem to Solve
  - UIC Well Classes
  - Alaska UIC Situation- redundancy, confusion, Time, \$\$\$
- Options/Solutions



Meter proving on pipelines

**AOGCC regulates operations affecting subsurface oil & gas resources, ensures the reliability of oil & gas flow measurements, and ensures that underground sources of drinking water are protected.**

Inspection of drilling operations



Protect Fresh Water

Regulate oil & gas fields operations

Regulate wells constructed

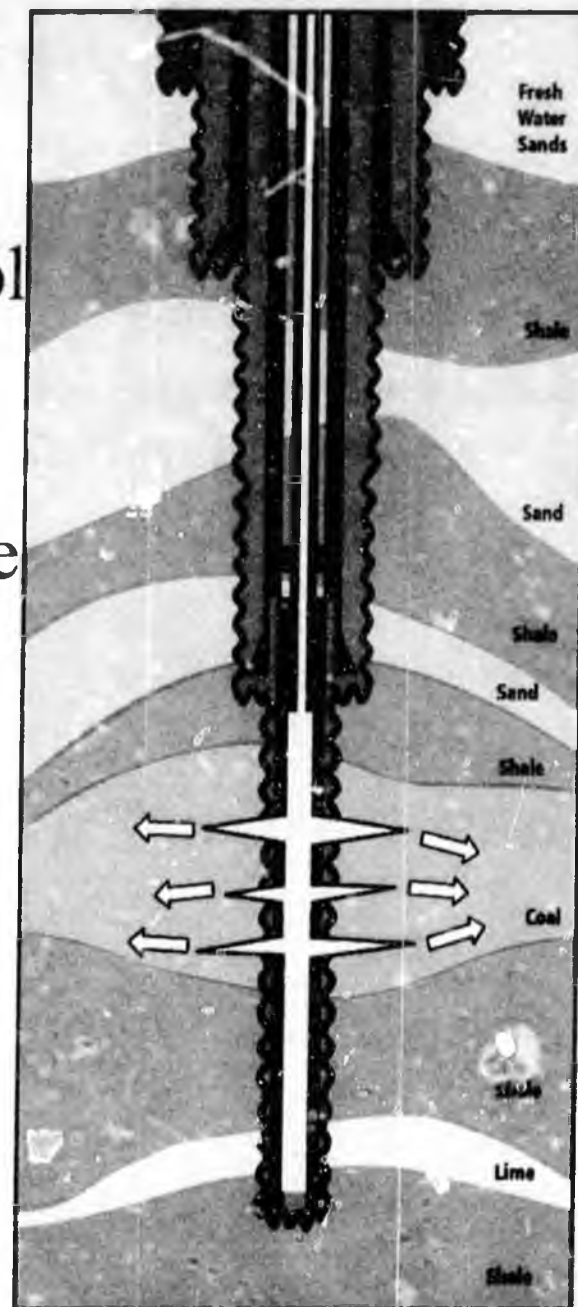
# UNDERGROUND INJECTION PROGRAM (Class II)

AOGCC has primacy for implementing the federal Underground Injection Control (UIC) Program relating to regulation of underground injection activities for the purposes of enhanced oil recovery and the most environmentally sound disposal of oil field waste.

**The proper underground injection of material to enhance oil recovery has resulted in billions of \$\$\$ in revenue to the State of Alaska**

**And**

**The best place to put oilfield waste is deep underground.**



**Sec. 31.05.030. Powers and duties of commission.**

**(d) The commission may require**

**(3) the drilling, casing and plugging of wells in a manner that will prevent the escape of oil or gas out of one stratum into another, the intrusion of water into an oil or gas stratum, the pollution of fresh water supplies by oil, gas or salt water, and prevent blowouts, cavings, seepages and fires;**

**(e) The commission may regulate**

**(1) for conservation purposes**

**(D) the disposal of salt water, nonpotable water, and oil field wastes;**

**(E) the contamination or waste of underground water;**

**(h) The commission may take all actions necessary to allow the state to acquire primary enforcement responsibility under 42 U.S.C. 300h-4 (Safe Drinking Water Act of 1974, as amended, 42 U.S.C. 300f-300j), for the control of underground injection related to the recovery and production of oil and natural gas.**

## House Bill 142

**“An Act relating to regulation of underground injection under the Safe Drinking Water Act and providing for an immediate effective date.”**

**\* Section 1.** AS 31.05.030(h) is amended to read:

(h) The commission may take all actions necessary to allow the state to acquire primary enforcement responsibility under **42 U.S.C. 300h-1 and 42 U.S.C. 300h-4** (Safe Drinking Water Act of 1974, as amended, 42 U.S.C. 300f - **300j-26**), for the control of underground injection related to the recovery and production of oil and natural gas **and the control of underground injection in Class I wells as defined in 40 C.F.R. 144.6, as amended.**

**\* Sec. 2.** This Act takes effect immediately under AS 01.10.070(c).

## UIC Situation

Two agencies performing same job, one protecting a non-existent resource resulting in onerous and costly requirements on industry and Alaska.

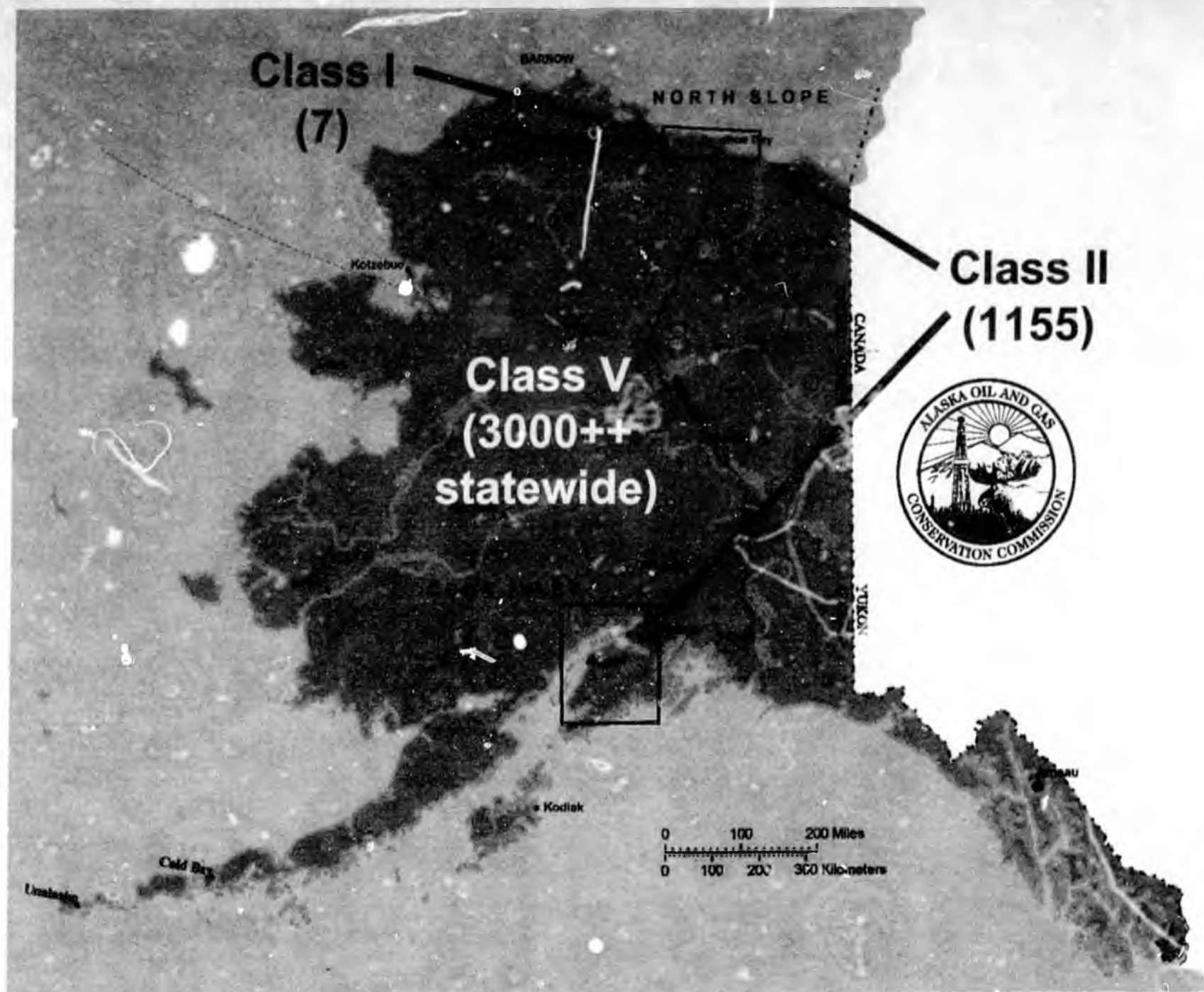
### Common Sense Solutions?

AOGCC control through primacy or single disposal class by eliminating redundancy through statute change (new bill) and positive EPA interpretation and ruling (EPA doesn't think this is possible)

# Underground Injection Control

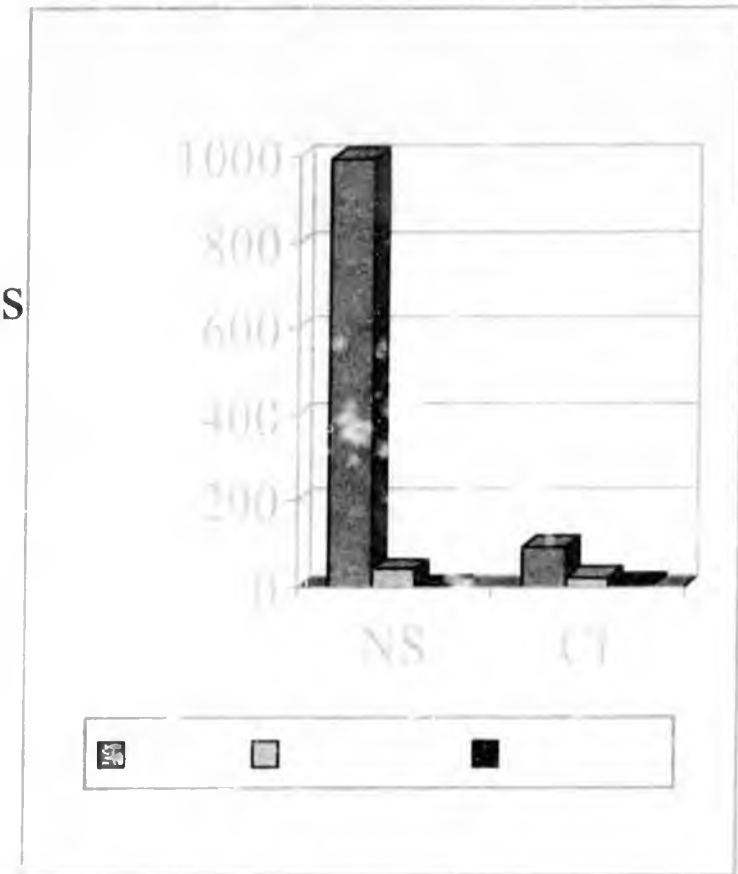


- Program under Safe Drinking Water Act
  - Protect underground drinking water sources
- 5 classes of wells
  - Class I: industrial, hazardous and non-hazardous; municipal waste
  - Class II: oil and gas
  - Class III: mining
  - Class IV: shallow hazardous and radioactive waste injection
  - Class V: whatever doesn't fit in I-IV (into H<sub>2</sub>O table->20 people domestic, industrial, ?)



# Alaska UIC Statistics - 2004

- 1155 operable UIC wells
  - 90% EOR (Class II-R)
    - Most converted producers
  - 1.1 billion bbls water, 3.2 Tcf gas injected (2004)
- 7 Class I wells
  - All on North Slope
    - 8th Class I well drilling
- 1.87 Billion bbls waste disposed (cumulative)
  - Class I wells: 1.2% of total volume disposed to date



## UIC Situation- Waste of Tax Payer and Industry \$\$ & Time

- Confusion by operators over what waste is allowed to be disposed in each Class
  - All wastes on the NS are directly associated with hydrocarbon production- should all be Class II-(not EPA view)
  - Much time & energy expended for waste determination and tracking by industry and government
- Redundancy- North Slope- EPA and AOGCC running virtually identical programs.
  - Often same fluids injected into the same disposal zones
  - Class I- same confinement and well construction or worse (see slide after next)
  - AOGCC performs much work advising EPA on their program

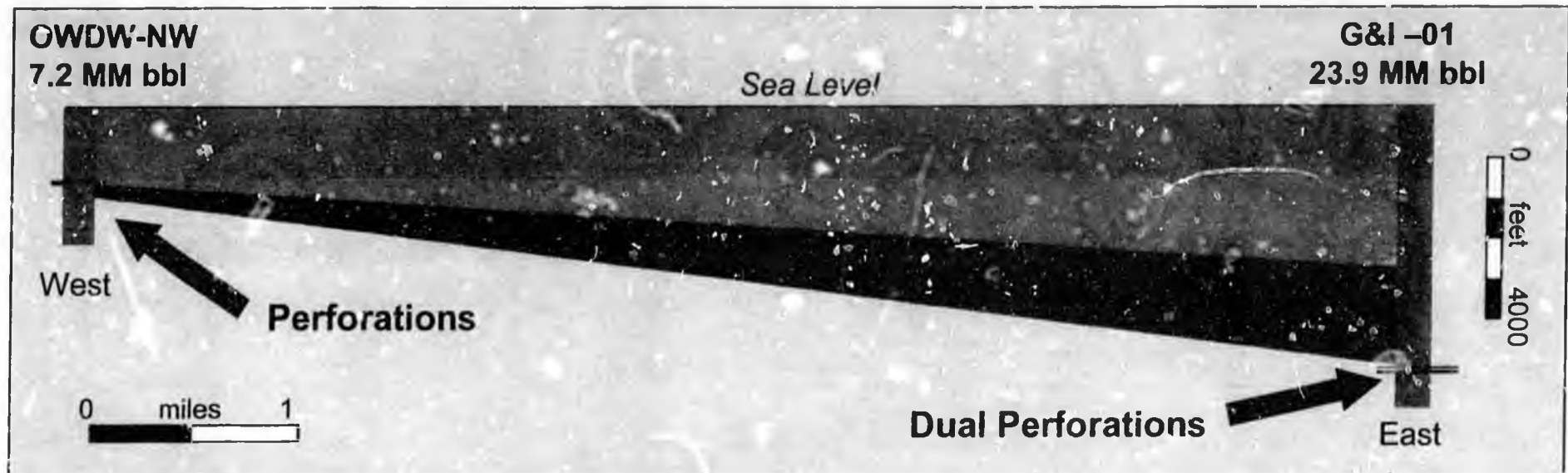
## UIC Situation- Waste of Tax Payer and Industry \$\$ & Time (cont.)

- EPA Class I program-
  - Protects non-existing resource (fresh water)
  - Inefficient permit process; EPA approvals generally much slower than AOGCC.
  - Onerous & costly stipulations concerning well integrity
  - EPA has no permanent onsite field inspectors
  - EPA regulates only 7 out of 1162 UIC wells
  - Costly and remote for EPA

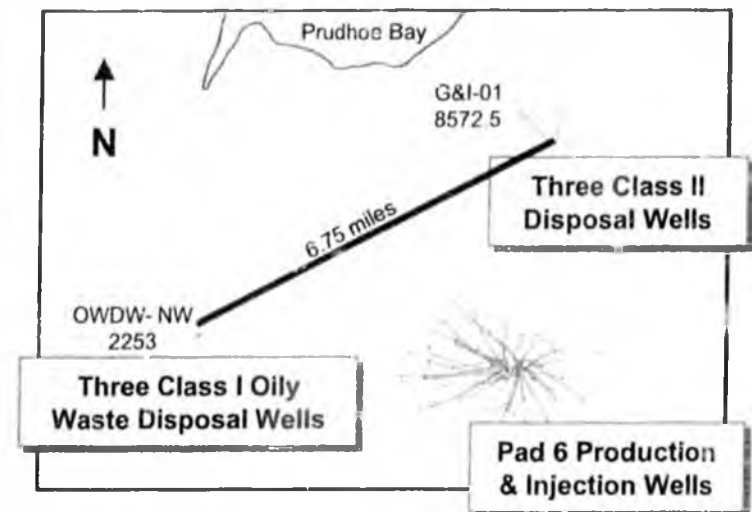
**Temptation to transport waste long distance for surface displacement or disposal in redundant disposal well**



# Confinement Analysis in Prudhoe Bay Unit Class I vs. Class II-D



	OVDW-NW	G&I-01
Permafrost Interval	0-1905'	0-1800'
Confining Interval	1905-1980'	1800-4200'
Injection Interval	1980-2253'	4270-6750'
Perforations	1980-2005'	6415-6422' 6505-6527'



# Confusion- Fluids Eligible for Class II

- EPA position
  - fluids that have been down hole
  - generated by contact with oil & gas production stream during removal of produced water or other contaminants
- Wastes “directly associated”; “intrinsically derived from”; “associated with”; “uniquely associated”?
  - Interpretive; contrary to logic
    - Cement rinsate; unused fluids; camp wastes
- Room for exceptions? On what basis?
  - EPA position – no; rules do not provide for exceptions
  - AOGCC – should be
    - uniqueness of NS ops; environmental preference; no USDWs; freshwater protection mandate for AK; SDWA and UIC

# Class I and Class II Examples

- Alpine UIC compliance cost (per barrel fluid disposed)
  - Class I: \$2.50
    - \$100k to operate
  - Class II: \$1.50
  - Difference is integrity demonstrations, reporting
- Prudhoe Bay field comparison
  - Grind and Inject Facility – Class II
    - AOGCC
  - Oily Waste Disposal Wells – Class I
    - EPA

# Options/Solutions

AOGCC working with EPA Region 10

- Business as Usual
  - No effort expended to change status quo
  - Confusion
  - Costly to tax payer and industry
  - Redundant
  - Inefficient approval process
  - Not Operator preference

# Options/Solutions (Cont.)

AOGCC working with EPA Region 10

- AOGCC primacy over EPA oversight- 2 well classes- HB 142
  - Less industry confusion
  - Saves industry and tax payer \$\$
- One class of well for all disposal- overseen by AOGCC- need statute & ruling by EPA
  - Less energy used for waste determination and tracking
  - Less industry confusion greatly
  - Saves industry and tax payer \$\$