MINUTES OF THE MEETING
NATURAL RESOURCES COMMITTEE
MONTANA STATE SENATE

February 9, 1987

The meeting of the Senate Natural Resources Committee was called to order at 1:00 p.m., February 9, 1987, by Chairman Thomas Keating in Room 405, State Capitol.

ROLL CALL: All members were present with the exception of Sen. Yellowtail who was excused and Sens. Stimatz and Hofman who were absent.

CONSIDERATION OF SENATE BILL 184: Sen. Larry Tveit, Senate District 11, introduced SB 184, amending the Montana Environmental Policy Act (MEPA), which would exempt oil and gas wells from that act because drilling a well is not a major action. Sen. Tveit explained that the Board of Oil and Gas Commission sets rules and follows State laws that govern impacts on air and water quality, reclamation and environment. Oil and gas wells have a minimal impact on the environment and MEPA has been misused to throw roadblocks in front of legitimate oil and gas development; such as, the cases in Kalispell and Bozeman areas. Sen. Tveit said that falling under MEPA as well as the other rules and regulations of Board of Oil and Gas is nothing more than duplication of State government and that he has had personal experience with development of oil and gas wells which qualified him to introduce SB 184. (Exhibit 1)

PROPONENTS: Sen. Ed Smith, Senate District 10, a member of Senate Finance and Claims Committee and a land and mineral owner, said that SB 184 would be Montana's hope in the future to get more development so it will stimulate the economy in Montana. Sen. Smith explained that in the past he had criticized oil and gas companies; but at present, landowners are treated very well and most problems have been corrected. Sen. Smith indicated that Gary Melon, Montana Land and Mineral Association, had asked that Sen. Smith appear in the Association's behalf. Sen. Smith also appeared as a member of the Northeast Land and Mineral Association in support of SB 184. Sen. Smith explained that with the passage of SB 16, oil companies are required to contact the surface owner or lessee before the company goes on property and starts developing. Sen. Smith reiterated that the drilling of an oil or gas well does not constitute a major action, and he proclaimed that it is time the Legislature sent a positive message to oil companies in Montana. He told the committee that if they wanted to get the State "moving" again, SB 184 should be passed. "Build Montana Program" seems to have fizzled out; but passage of SB 184 would promote a "Save Montana Program."

Joe Keating, Cenex, testified that MEPA has been successfully misused to stop oil drilling in Montana; and during the past two years two significant exploratory test wells were delayed or prevented by a lawsuit or a threatened lawsuit against the State under the permitting process. Drilling was stopped not because of environmental concerns, but simply because an Environmental Impact Statement (EIS) was not provided. Montana Citizens pay the expense of defending the agency when drilling is stopped. The use of MEPA to prevent drilling in the two cases cited (Bozeman and Flathead areas) has proven that every drilling permit issued for every test well in any area of the State is subject to the same challenge. With the passage of SB 184, Mr. Keating stated that would no longer be the case. (Exhibit 2)

Bill Jones, Sohio, gave a detailed account of Sohio's experience in Montana as mentioned in previous proponent's testimony. In October 1984 Sohio Petroleum Company applied for and received a drilling permit from the Board of Oil and Gas for an exploratory well in the Bridger Canyon area north of Bozeman. A group of residents sued in December 1984 to require the Board to follow MEPA requirements in issuing the permit. Sohio withdrew its application. After SB 410 failed during the 1985 legislative session, Sohio renewed its application and requested the Board to review the permit as though MEPA-applied and to prepare a preliminary environmental review (PER). NOTE: This was the first and as of July 1986 the only one ever written.

Because the area was in the zone site "Agriculture Exclusive," it was also necessary to obtain a permit from the Bridger Canyon Zoning Commission. During the next several months, six public hearings were held.

A permit was issued to Sohio in October 1985, one year after the first permit was issued. It had become obvious during the permitting process that the only way to obtain the permit without extensive delay or possible litigation under MEPA was to agree to any demands and conditions imposed. Therefore, Sohio agreed to each of the Board's and Zoning Commission's conditions.

Conditions that were attached to the permit follow:

1. All sewage must be contained in holding tanks and removed from site. No septic system was allowed even though residents in the area utilized septic systems.

2. A water well was required to supply fresh water for the drilling operation although Bridger Creek was a lively flowing stream within 300 yards. No water could be used from the stream for drilling. Sohio was required to test every water well and every domestic stream within one mile of the drill site for quantity and quality of water before drilling and not less than every 15 days during drilling to ascertain that there had been no change in the water in the area.

3. Reserved bit was to be lined with bentonite plus plastic liner. At the conclusion of drilling, all material must be removed and disposed of at the site.

4. Emergency Evacuation Plan must be approved by Zoning Commission before drilling could begin.

5. Drilling operations must cease if there is snowfall in the area and roads become impassable. (No additional drilling was permitted until the Gallatin Co. Sheriff declared the roads to be passable.)

6. Additional inspections were to be conducted by the oil and gas inspector to insure compliance of conditions imposed by the board.

The zoning condition permit had 33 special conditions to be met. Of the 33 conditions, 11 were not related to environmental matters. These and other conditions listed below were in the zoning permit.

1. Pave 3,000 feet of the county road as a dust control measure. (This road was regularly used by other vehicles, including trucks, buses and passenger cars.)

2. All of the residents' driveways within one mile of the site had to be plowed and kept open at the expense of Sohio when drilling was in progress.

3. Rig crews must be transported by bus to the drill site. (All roads to the location were paved and were either county or state-owned.)

4. No drilling-related traffic on the Bridger Canyon or Kelly Canyon Road was allowed during school bus hours--morning and afternoon as well. (These restrictions were not placed on any other traffic using these roads.)

5. No jet brakes were allowed on trucks.

6. Sohio was requried to place special clauses in their contracts with its suppliers requiring compliance with all traffic signs, school bus stops, and traffic laws while conducting Sohio business.

7. Sohio paid all fees and costs involved in zoning commission inspection of the operation. Since the commission had no inspector with an understanding of an oil and drilling operation, consultants of the commission's choice were employed at Sohio's expense.

8. Sohio was to pay for any damages to any resident's water source located within a mile of the drill site.

9. A secondary source for supply water for operations was required in case the first well should fail. A second well was drilled for this purpose.

10. Although Sohio was not allowed to use water from Bridger Creek, they were required to monitor quality and quantity of water in the stream throughout drilling operations.

11. Sohio was responsible for all activities of anyone related to the drilling operation from the time they entered Bridger Canyon Road until they exited the same upon their return.

The well was dry and was drilled without incident and without violating any of the imposed conditions at a cost in excess of $5 million. Included in this $5 million expenditure was more than $2 million (40%) of the total well cost for special considerations to satisfy imposed conditions that were in excess of what Sohio would normally spend in drilling the same type of well.

Mr. Jones was in favor of SB 184 and asked that the Committee would give it a DO PASS. (Exhibit 3)

Tack Van Cleeve, rancher who lives near Melville, supported SB 184 and related his experience with Chevron Oil who drilled a test well on his property. Mr. Van Cleeve said that Chevron's engineers and environmental experts cooperated fully and beyond the call of duty to accommodate his requests. After the well was drilled and plugged, the equipment was removed and site was restored to its original slope. Mr. Van Cleeve challenged anyone to drive up the road and identify the drill site. According to Mr. Van Cleeve, oil companies are sensitive to environmental issues and issuance of a permit under MEPA to drill for oil or gas is unnecessary, time consuming, and expensive. (Exhibit 4)

William Ballard, Balcron Oil Company, and President of Montana Petroleum Association, stated that Montana is the only State in which requirements such as MEPA exist. If Montana is to have an active exploration program, Mr. Ballard explained that SB 184 should be passed. He distributed a chart which depicted average daily production of oil by year. (Chart is attached to Mr. Ballard's written testimony--Exhibit 5.)

John Sheehy, member of Montana Land and Minerals and who served two terms on the Montana Board of Oil and Gas, testified that he had five holes drilled on his property, none of which had been a problem. Wells had been very well reclaimed. Mr. Sheehy said that Montana cannot afford to subject the oil and gas companies to the type of harrassment that occurred in Bridger Canyon. (Exhibit 6)

Stephen R. Granzow, Meadowlark Search, Helena, said that SB 184 must be passed because MEPA is eliminating or at least slowing exploration in the State. (Exhibit 7)

Jerry Branch, geologist and small gas producer, stated he had prepared a carefully written statement to read, but most of what he had written had already been presented to the committee. However, he added a couple of thoughts. Most of the well drillers in his area are small independents who do not have the staff to prepare EIS. Mr. Branch said that Montana is sparsely populated and independents just have to have their "hands untied."

Larry Menke, State Representative from Glendive, stated he had retired from Shell Oil Co. and for 34 years he was directly involved in the drilling, completion, and producing of oil and gas wells. Rep. Menke reminded the committee that employment is needed in Montana, and there are few operations that can employ 17-20 persons in such a short time as a drilling rig. Rep. Menke strongly supported passing SB 184. (Exhibit 8)

Janelle Fallan, Montana Petroleum Association, distributed a handout showing the economic impact of oil and gas in Montana. In addition, Ms. Fallan stated that there are no environmental impact statement requirements in other Rocky Mountain States relating to oil and gas drilling. (Exhibit 9)

Stewart Doggett represented the Montana Chamber of Commerce and verbalized support of SB 184.

Mike Micone, Western Environmental Trade Association, stated he was a proponent of SB 184.

Doug Abeline, Lobbyist for Montana Oil and Gas Association, testified that he wanted to go on record as supporting SB 184. (Exhibit 10)

Jerome Anderson, Shell Western, supported SB 184.

George Roskie, Great Falls, represented himself, and he stated that drilling a well is covered by a number of adequate laws to protect public interest; and EIS process is costly, time consuming, and unnecessary. However, Mr. Roskie asked the committee to consider another revision of MEPA to clarify what constitutes a major action of state government and what constitutes a significant impact on human environment. Mr. Roskie supported SB 184, but explained definition of "major action" should be included.

Additional testimony supporting SB 184 was given to the secretary by the following:

Kent Beers, MAPL President (Exhibit 12)
W. M. Vaughey, Jr., Havre (Exhibit 13)
Great Falls Chamber of Commerce (Exhibit 14)

OPPONENTS: Brace Hayden, Office of the Governor, stated that Gov. Schwinden opposed SB 184 because the Governor did not believe that one particular industry should be exempted from MEPA. Mr. Hayden conveyed the Governor's feeling that MEPA is a checklist for important decision making. Mr. Hayden suggested that one State-wide programmatic should be written as a basis to streamline review for the vast majority of wells. (Exhibit 14)

Connie Wilson, Bainville, strenuously opposed SB 184, and she said when an oil well on her property lost circulation of its drilling fluid and threatened a nearby water well, she had trouble convincing public officials that it was a problem. Also, Mrs. Wilson stated that only two out of about 13,000 drilling requests had been delayed under MEPA and that certainly could not constitute a "red flag" warning industry out of State. (Exhibit 15) Mrs. Wilson distributed portions of a study by Michelle B. Dewey, showing the effects of reserve pit reclamation on ground-water quality at selected oil well sites in eastern Montana and in western North Dakota. (Exhibit 16)

George Ochenski, Montana Environmental Information Center, strongly recommended that committee members read two studies prepared by Gail Kuntz, Resource Specialist (EQC), entitled "Comparison of Environmental Regulation of the Oil and Gas Industry in the Rocky Moutain States and Alberta" (Exhibit 18) and "Montana Environmental Policy Act Review of Oil and Gas Drilling Permits." (Exhibit 19)

Mr. Ochenski opposed SB 184 because he felt it would deny the landowners' rights and ignore the potential damage to natural resources. Mr. Ochenski said it was ironic that the sponsor of SB 184 had gone on record in support of landowners' rights and quoted from House Natural Resources Committee Meeting Minutes dated March 4, 1981. Also, Mr. Oshenski quoted from a letter from K. Bill Clark, Water Quality Bureau, requesting emergency funds to address a situation that presented an imminent threat to public health and safety of the people of Cut Bank. Mr. Oshenski asked the committee to reject SB 184 to avoid problems. (Exhibit 20 with Information Packet, marked Exhibit 21)

Mary Ann Kelly, Bozeman, represented Bridger Watch, and she stated concern for the health and safety of citizens. Ms. Kelly gave reference to "Lodgepole Blowout" in Alberta, Canada. (Exhibit 22) Ms. Kelly pleaded with the committee not to put speculation of profits before enactment of morality and to vote "no" to SB 184. (Exhibit 23)

Jean Marie Souvigney, League of Women Voters, read aloud the testimony of Joy Bruck, and Ms. Souvigney stated that Montana's Constitution guarantees citizens the right to a clean and healthful environment. Complying with MEPA should not be too much to ask, and she requested that the committee defeat SB 184. (Exhibit 24)

Janet Ellis, Audubon Legislative Fund, stated that the Audubon Fund does not support SB 184. She explained that a "major action" of State governemnt is defined as an action that significantly affects the quality of human environment. Ms. Ellis said such actions require the preparation of an EIS, a process that allows alternatives to be examined and the public to have a voice when something significant is about to happen to the environment. Ms. Ellis urged a "DO NOT PASS" on SB 184. Forthermore, she exclaimed, "It is unreasonable to say oil and gas drilling will never affect the quality of the environment." (Exibit 25)

Dean Harmon represented himself, Northeast Land and Mineral Association, and Northern Plains Resource Council. Mr. Harmon spoke against SB 184 and testified that he had attended several Cenex conventions. Mr. Harmon had four oil wells drilled on his land, and he stated that MEPA is the only real protection landowners have. Mr. Harmon explained that the Board of Oil and Gas had told him they had suffered staff reductions and policing powers were poor at best. If MEPA is eliminated, there would be the question of trust. Mr. Harmon had dealt with three oil companies and described his experiences with them.

Tri-Central Oil Company drilled a well on his property and he had excellent communication with them. The company did a very good job. In 1981 that company left with an amiable and satisfactory relationship established.

Another well was drilled which was a producer, and Mr. Harmon discovered he was supposed to sign a division order. When he saw the rules and regulations printed on the back of the order, he refused to sign and agree to the terms. Six years later Mr. Harmon received his first royalty check from Phillips Petroleum. He didn't know if the check was made out for the correct amount, but he stated he knew he could get information from Montana Oil and Gas Commission which was provided to the commission by Phillips Petroleum.

Two years ago, Sun Oil Co. approached Mr. Harmon with a lease agreement in mind. He agreed on all aspects, but because of his previous experience, asked that he receive a copy of all run tickets. Sun Oil Co. refused, and there was no oil lease. In many instances, Mr. Harmon maintained, environmental protection actions and communication with landowners by oil companies have only been brought about by State law. He urged committee not to pass SB 184.

Jan Nixon, Gallatin Valley resident, criticized emotionally loaded erroneous statements and expressed her feeling that the overstatements were an attempt to obscure the real result of passing SB 184. Ms. Nixon believed that the real result would be the diminishing rights of every citizen in the State for protection. IF SB 184 were passed, Ms. Nixon said a lawsuit would be the only recourse for citizens when oil companies don't do the right thing. (Exhibit 26)

Jeanne Klobnak, Montana Wildlife Federation, testified that oil and gas industries are in an economic downswing nationwide and the oil business has always been cyclical. Ms. Klobnak stated that the Independent Association has difficulty regulating its people to be responsible. If the over-thrust belt is as rich as predicted, Montana will not have to worry about MEPA because Ms. Klobnak stated that there are many old leases on that land already that were issued at far below market value to the public who owns the land. Environmental law will be thrown back into the stone age if oil and gas industries are not required to have public input and public support. Ms. Klobnak asked the committee to think about what the people want and not just what the industry wants and to oppose SB 184.

The following testimony was received from other opponents who were not allowed to speak because of the time limit.

Letter from Doug Smith, Sheridan Co. Planning Board (Exhibit 27)
Letter from L. Scott Ramsay, Bozeman (Exhibit 28)
Letter from Ken Frazier, Montana Wildlife Federation (Exhibit 29)
Testimony from Arnold J. Silverman, Western Montana Scientist Committee for Public Information, Missoula (Exhibit 30)

QUESTIONS (AND/OR DISCUSSION) BY COMMITTEE: Sen. Weeding asked Mr. Jones from Sohio to listen to Sen. Weeding's summation and to correct him if he said any wrong statements. Sen. Weeding stated that Sohio had requested a PER under MEPA to be done by Oil and Gas Commission, and two weeks later it had been concluded that project was not a major impact under Montana Law. Sen. Weeding continued that from that point on, Sohio only dealt with the Bridger Canyon Planning and Zoning Commission; and the list of 33 conditions that Mr. Jones classified as unjustified were conditions imposed by the Gallatin Planning and Zoning Commission and not as a consequence of the oil and gas PER. Mr. Jones said Sen. Weeding was correct in his statements; but Mr. Jones added that under MEPA, there is always a threat of a lawsuit, even if citizens are ultimately determined wrong, thereby causing another expensive delay. Therefore, the only way to obtain a permit without extensive delays or possible litigation under MEPA is to agree to any demands and conditions imposed.

Sen. Halligan asked whether a limited preliminary review isn't warrented if subsurface impact cannot be predicted. Rep. Menke stated that there are already several preliminary studies required from Mineral Management, USGS, and Oil and Gas Board; therefore, MEPA is a duplication.

During the course of the discussion, it was stated that Department of State Lands reviews under MEPA for State land and the Board of Oil and Gas issues drill permits with environmental stipulations included.

In reply to a question by Sen. Halligan, Tom Richmond said he didn't support a programmatic as suggested in Brace Haydan's testimony because programmatics would be too broad to remedy specific site issues.

During the question and answer period, committee was cautioned not to confuse oil and gas permits with coal exploration permits.

Jerome Anderson told the committee that he wanted to make clear that there are environmental regulations in other states under Boards of Oil and Gas.

CLOSING: Sen. Tveit closed by saying there are many laws that already regulate the oil and gas industry. He said that it is important that Montana's environment be protected, but that MEPA had become a "hammer" of State government that infringes on private property rights and allows one State agency to sue another. Oil and gas wells have a minimal impact on environment; MEPA is a duplication; and Sen. Tveit asked the committee to support SB 184.

There being no more business to come before the committee, Sen. Keating adjourned the meeting at 3:12 p.m.

THOMAS F. KEATING, Chairman

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ROLL CALL

NATURAL RESOURCES COMMITTEE

50th LEGISLATIVE SESSION -- 1987 Date 2-9-87

NAME	PRESENT	ABSENT	EXCUSED
Sen. Tom Keating, Chairman	X		
Sen. Cecil Weeding, Vice Chairman	X		
Sen. John Anderson	X		
Sen. Mike Halligan	X		
Sen. Delwyn Gage	X		
Sen. Lawrence Stimatz		X	
Sen. Larry Tveit	X		
Sen. "J.D." Lynch	X		
Sen. Sam Hofman		X	
Sen. William Yellowtail	X		
Sen. Elmer Severson	X		
Sen. Mike Walker	X		

Each day attach to minutes.

DATE 2-09-87

COMMITTEE ON Natural Resources

VISITORS' REGISTER

NAME	REPRESENTING	BILL #	Check One: Support	Check One: Oppose
GEORGE OCHENSKI	MT. ENV. INF. CNTR	SB 184		X
BG Jones	Sohio Petroleum		✓	
Larry MENKE	Keps		✓	
Stephen R Gregory	Meadowlark Search		✓	
James D. MacKler	MT. Coal Council		✓	
W.W. Ballard	Balcron – MPH	184	✓	
Jan Nixon		184		✓
MaryAnn Kelly	Budget Watch	184		X
Doug Abelin	Montana Oil & Gas	184	✓	
Rick Reis	MT Environmental Info Center	184		X
James Schmitt	MSU	184		X
Steve Anderson	Shell	184	✓	[illegible]
John M. Sheehy	Rancher	184	✓	
Jon Lee Simmons	MT. Environmental Info Center	184		X
Paul W. Kruger	BLM - Mat St Ofc.	184		
Tom Schneider	Consultant	184		✓
Janelle Fallan	MT Petroleum	184	X	
Richard Parks	Fishing & Floating Outfitters Assoc.	184		✓
Jay L Brand	Mont Oil & Gas Assoc	184	✓	
Jeanne C Klobuchar	MWF	184		✓
Esther Stenberg	MWF	184		✓
Doug Smith	Sheridan Co. Pl Bd, MT Assn Plan	184		✓
Dean HARMON	Self, Northern Plains Res Council	184		✓
Connie Wilson	Self Bainville Rancher	184		✓
BRUCE HAYDEN	Office of the Governor	184		✓
Jean-Marie Sawtooth	MT League of Women Voters	184		✓

(Please leave prepared statement with Secretary)

DATE _____

COMMITTEE ON _____

VISITORS' REGISTER

NAME	REPRESENTING	BILL #	Check One: Support	Oppose
Joann-Marie Sawyer	MT Sierra Club	SB184		✓
George F Keathley	Himself	SB 184	✓	
Janet Ellis	MT Audubon	SB 184		✓
Stan Bradshaw	Mt. Trout Unlimited	SB 184	~~✓~~	✓
Joe Keating	CENEX		X	
TACK VAN CLEVE	Self	SB 184	✓	
John North	Governor's Office	SB184		✓
Sen Ed Smith	~~Voted~~ Land + Minerals	SB 184	✓	
Mike Micone	LWCF	SB184	✓	
Stuart Doggett	Mt Chamber of Commerce	SB 184	✓	
Dana Field	MT Audubon Legis. Fund	SB 184		✓
Harold Hoe	CENEX	SB124	✓	
Evan Griffith	Entech	"	✓	

(Please leave prepared statement with Secretary.)

SENATE NATURAL RESOURCES
EXHIBIT NO. 1
DATE 2-9-87
BILL NO. SB 184

What is MEPA?

Why this Bill?

MEPA is the Montana Environmental Protection Act and as one of its directions in EIS Environmental Impact Statement Section 1 (75-1-201), Page 2, B(iii) to "include in every recommendation or report on proposals for projects, programs, legislation, and other major actions of state government signficiantly affecting the quality of the human envirnoment."

MEMBERS OF THE COMMITTEE:

That is why I have this bill before you today,

(1) One reason is that drilling a oil or gas well does not constitute a major action of state government. It affects the drilling of oil or gas wells that are drilled largely on private property and I believe MEPA does not apply.

When the drilling of a gas or oil well commences on federal land, the federal agencies have their own act of rules. On state lands, the state Land Board sets the rules.

The Board of Oil and Gas Commission, a state agency, sets rules plus follows the state laws that govern impacts on air and water quality, reclamation and environment that I will address as I go along.

Because of the drilling of a single oil well which is not a major act of state government especially on private land the oil company is subjected to a Environmental Impact State if someone or some organization files an EIS against them as was the case in both Kalispell and Bozeman areas.

(continued)

Senator Larry Tveit

What is and what are the demands of an EIS or Environmental Impact Statement on a company, 75-1-201, EIS General Directions. (1) the legislature authorizes and directs that to the fullest extent possible, that should be your first clue as to the limitations that can be implemented by this act (about like our new constitution.)

(a) the policies, regulations, and laws of the state shall be interpreted and administered in accordance with the policies set forth in parts 1 through 3;

The policies, regulations and laws of the state shall be interpreted and administered according to this act which is nothing more than duplication of state government. The Department of State Lands and Montana Oil and Gas Commission have rules and the state laws that govern such exploration.

(b) all agencies of the state, except as provided in subsection (2), shall:

(i) utilize a systematic, interdisciplianary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decisionmaking which may have an impact on man's environment.

The oil company by following the rules, regulations and laws of Montana of which are prescribed by state land and Oil and Gas Commission must be followed when an oil company plans on driling a well whether it is in Eastern Montana or overthrust. (Ihave watched Shell Oil operations in flat land, rough terrain, fragil land or close to inhabitents) and because of the state

laws and Oil and Gas Commission rules and regulations they have proven a minimum impact on mans environment.

(ii) identify and develop methods and procedures which will insure that presently unquantified environmental amenities and values may be given appropriate consideration in decisionmaking along with economic and technical considerations; these laws and rules are in place.

The oil company that plans to develope whether eastern Montana or Overthurst will have the expertise and knowhow plus he will follow all rules and laws pertaining to water quality and quality reclamation and general surrounding of well site.

(iii) include in every recommendation or report on proposals for projects, programs, legislation, and other major actions of state government significantly affecting the quality of the human environment, a detailed statement on; not a major act.

An oil well site that averages 3 to 5 acres and that does not significantly affect the quality of human environment should not be considered a major act of state government. The opponents to this bill will claim how it affects economics, quality human environment and so on and on. The testimony will either come from a book or what someone has told them to say.

As a farmer and rancher, with some minerals on some of my ranch and some of my ranch without minerals, and because I was lucky enough to have some oil development on my property and as a director of a Landowners Mineral Assciation for ten (10) years I can qualify that I have been there. There are oil and gas

wells four (4) of which I have small royalty interest, and three (3) oil and gas wells on another part of my place of which I don't have any minerals and royalty.

But I have roads leading to all these wells and I have oil lines, gas lines, water (salt) lines, power lines, (a gas plant on place six (6) years) and a salt water injection well. I have agreements with different companies on all these different areas on air water reclamation spillage.

As a director of Northeast Montana Land and Mineral owners and Senator, I have been involved in putting through rules on safety devices for gas flares at wells drilling with fresh water through all known fresh water structures. Also invovlved with rules on pit lines for seepage at drill site,and worked for and accomplished state laws addressing surface damages for drill sites and roads; notice of drilling operation, legal action for such damages and several seismic rules and laws.

So, I believe my background qualifies me to be concerned about our environment and proper developement of our resources.

(A) the environmental impact of the proposed action;

Because it is not a major act its not necessary.

(B) any adverse environmental effects which cannot be avoided should the proposal be implemented;

As far as adverse environmental effects, the sight of a drilling derrick might be different but drilling on private land again is not a major act as far as safety of drilling a well many guidelines are followed by company to assure that safety is just

that. The drilling rig is equipped with very expensive flow-out preventers should gas be encountered uphole and several other safety devices for safety workers and surroundings.

(C) alternatives to the proposed action;

Don't drill the well, and with the type of language in this act that is the purpose of the act.

(D) the relationship between local short-term uses of man's envirnoment and the maintenance and enhancement of long-term productivity; and

In the event of oil and gas in commercial quanities there would be a road and possibly a undergound gas line. The location would be reduced to smallest size feasible and possibly a pump if oil or some equipment, if gas if found.

(E) any irreversible and irretrievable commitments of resources which would be involved in the propsed action should it be implemented;

The drilling of a gas or oil well is not a major act so this section doesn't comply.

(iv) study, develope, and described appropriate alternatives to recommend courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources;

This language is another attempt to block any developement in area.

(v) recognize the national and long-range character of environmental problems and, where consistent with the policies of the state, lend appropriate support to

initiatives, resolutions, and programs designed to maximize national, cooperation in anticipating and preventing a decline in the quality of mankind's world environment;

A well being drilled sitting on private land or state land and the MEPA act says: "that this well is supposed to recognize the national and long range character of environmental problems", and the rest of paragraph addresses the need for such a bill. It is ridiculous language.

(vi) make available to counties, municipalities, institutions, and individuals advice and information useful in restorin, maintaining, and enhancing the quality of the environment; doesn't comply.

The oil company files with the county in which the well is in the files and is granted a permit by Oil and Gas Commission, and must follow all its rules and state laws with out MEPA.

(vii) initiate and utilize ecological information in the planning and developement of resource-oriented projects; and (doesn't comply)

More additional red tape under MEPA act.

(viii) assist the environmental quality council established by 5-16-101; and (structure of council)

5-16-010 is nothing more than the make up and members of EQC.

(c) prior to making any detailed statement as provided in subsection (1)(b)(iii), the responsible state official shall consult with and obtain the comments of any state agency which has jurisdicition by law or special expertise

with respect to any environmental impact involved. Copies of such statement and the comments and views of the ap ropriate state, federal, and local agencies which are authorized to develope and enforce enironmental standards shall be made available to the governor, the environmental quality council, and the public and shall accompany the proposal through the existing agency review processes.

Because drilling of a oil and gas well, which are covered under other rules, regulations, and state law, and is not a major act of state government, this section should not apply.

(2) The department of public service regulation, in the exercise of its regulatory authority over rates and charges of railroads, motor carriers, and public utilities, is exempt from the provisions of parts 1 through 3.

Does not apply.

(3) The issuance of a permit to drill a well for oil or gas is not a major acton of state government as that term is used in subsection (1)(b)(iii)."

That is the Amendment to the bill of why the drilling of a gas or oil well is not a major act of state government and should be amended into the MEPA Law.

Mr. Chairman: I reserve the right to close.

Closing:

This section of law 75-1-201, spells out that all agencies of state government has to conform with their policies, regulations, and law to this act, and thats duplication and the way this act is written the sky is thelimit on oil wells or whatever affects (mankinds would environment.)

It is important that we protect our environment but the language in MEPA's Environmental Impact Statement goes far beyond and becomes a hammer of state government. The EIS addresses major actions, of which, the drilling of a gas or oil well is not one, and it also addresses private land use and thats wrong.

We also must look at the future of Montana, the growth, the development, a positive business attitude and climate, which we don't have now, to provide a healthy, compatable condition for our people and jobs.

This type of law (EIS) that is on the books that encompasses all other laws, treats everything as major actions, infringes on private property rights, allows one state agency to sue another state agency, raises large red flags to

because of a law like this one that encompasses far beyond its; for these reasons I would hope you support my bill.

Thank you.

NAME: V. R. Kelley DATE: 2/9/87

ADDRESS: P.O. Box 21479 - Billings, Mt. 59104

PHONE: 245-4747

REPRESENTING WHOM? CENEX

APPEARING ON WHICH PROPOSAL: SB 184

DO YOU: SUPPORT? X AMEND? _____ OPPOSE? _____

COMMENTS: Written comments submitted

SENATE NATURAL RESOURCES
EXHIBIT NO. 2
DATE 2-9-87
BILL NO. SB 184

PLEASE LEAVE ANY PREPARED STATEMENTS WITH THE COMMITTEE SECRETARY.

SENATE NATURAL RESOURCES
EXHIBIT NO. 2
DATE 2-9-87
BILL NO. SB184

CENEX • Post Office Box 21479 • 1601 Lewis Ave. • Billings, Montana 59104 • (406) 245-4747

Senate Natural Resources Committee Hearing
February 9, 1987
SB-184

Thank you for the opportunity to discuss an issue which I believe will determine whether or not Montana will be a natural resources state.

My name is Joe Keating. My employer is CENEX. CENEX has been drilling wells and producing oil in Montana since 1946. Our exploration and production office is located in Billings. We rank as the 15th largest oil producer in Montana and as the 53rd largest oil producer in the United States.

The Montana Environmental Policy Act is being successfully misused to stop oil drilling in our state - but not for environmental reasons. CENEX is a victim of the manipulation of our Environmental Act and strongly supports SB-184 which is a measure to correct a serious defect in existing law.

Under MEPA, every Montana state agency is required to determine whether or not the issuance of a permit constitutes a "major action of state government significantly affecting the quality of the human environment." Under the law this determination is discretionary with each agency. MEPA states that if an agency determines that issuing a permit does constitute a "major action of state government significantly affecting the quality of the human environment", then that agency is required to provide an Environmental Impact Statement. During the past two years two significant exploratory test wells were delayed or prevented by a lawsuit or threatened lawsuit against the state under the permitting process.

In these two cases, the state was challenged and drilling stopped -- not because environmental concerns were not addressed -- but simply because the EIS was not provided. Agency discretion has been replaced with the court process. Win or lose, citizens pay the expense of defending the agency and the drilling is stopped.

In October, 1984 SOHIO received a drilling permit from the Board of Oil and Gas for a test well in Gallatin County. A local group threatened to file suit against the Board because no EIS was provided. SOHIO relinquished the permit and negotiated for one full year to avoid the court challenge against the Board. The well was re-permitted in October, 1985 and completed as a dry hole in 1986. SOHIO was "blackmailed" into spending large sums of unnecessary monies on the project to avoid a lawsuit that would have been paid for by Montana taxpayers to defend the Board of Oil and Gas. The same environmental protection existed before, during and after the one year delay.

Today the taxpayers are financing the defense of a lawsuit against the Montana Department of State Lands for granting an access permit to CENEX for a test well in Flathead County. In September, 1983 the Land Department offered oil and gas leases for sale after conducting a ten year study of environmental impacts. CENEX spent some $600,000 at the lease auction. In May, 1984 CENEX submitted an operating plan to the Land Department, in accordance with lease terms, proposing a test well on a state oil and gas lease. The Department conducted a Preliminary Environmental Review under MEPA. For ten months the agency investigated environmental concerns and ruled that the access permit was not a "major action of state government significantly affecting the quality of the human environment."

The permit was granted on January 22, 1985. On February 19, 1985 - less than 30 days - the North Fork Preservation Association of Kalispell filed suit against the Land Department to void the permit because the Department provided no Environmental Impact Statement. The suit is now 24 months old; the taxpayers are paying to defend the actions of the Land Department and no drilling has taken place.

We now have precedent. The scene has been set. Under MEPA, two state agencies have become jesters in a kangeroo court financed by taxpayers while exploration companies - with millions of dollars invested - wait for a winner. Legitimate companies will not and cannot conduct business under these conditions.

The use of MEPA to prevent drilling in the SOHIO and CENEX cases has proven that every drilling permit issued for every test well in any area of the state is subject to the same challenge. A state drilling permit is required to drill on all lands within our borders -- federal land, state land and private land. Any citizen can use MEPA to stop drilling by declaring the permit a "major action of state government significantly affecting the quality of the human environment." Even though the suit is without foundation, drilling is stopped.

SB-184 amends MEPA by recognizing that after 70 years of activity and 28,000 test wells, drilling does not constitute a "major action of state government significantly affecting the quality of the human environment." This amendment will force protestors to use existing law to prevent violation of actual rights by specific parties rather than using the EIS umbrella in MEPA to harass state agencies at taxpayers' expense.

Prior to the drilling of a test well, an oil and gas operator must invest considerable sums of capital to conduct geologic studies, geophysical surveys, secure leasehold and finance all of the blind leads in developing a prospect worthy of the drill bit. No thinking industry will risk this "up front" investment in Montana when it becomes apparent that our permitting process is designed to go through the courts, not the regulatory agencies.

We urge your adoption of SB-184. Thank you.

J. R. Keating
CENEX
Gen. Mgr., Exploration and Production
Post Office Box 21479
Billings, Montana 59104

NAME: E.G. Jones DATE: 2/9/87

ADDRESS: PO Box 30 Casper Wy 82602

PHONE: 307-237-5261

REPRESENTING WHOM? Sohio Petroleum

APPEARING ON WHICH PROPOSAL: SB 184

DO YOU: SUPPORT? Yes AMEND? _____ OPPOSE? _____

COMMENTS: Passage of this bill is necessary for the economic orderly and timely development of oil/gas reserves in Montana

SENATE NATURAL RESOURCES
EXHIBIT NO. 3
DATE 2-9-87
BILL NO. SB184

PLEASE LEAVE ANY PREPARED STATEMENTS WITH THE COMMITTEE SECRETARY.

NAME: Jack Van Cleve DATE: 9 Feb 87

ADDRESS: P.O. Box 550 Big Timber MT 59011

PHONE: 537-4404

SENATE NATURAL RESOURCES
EXHIBIT NO. 4 (cover sheet)
DATE 2-9-87
BILL NO. SB184

REPRESENTING WHOM? self

APPEARING ON WHICH PROPOSAL: SB 184

DO YOU: SUPPORT? ✓ AMEND? _____ OPPOSE? _____

COMMENTS: on attached sheets

PLEASE LEAVE ANY PREPARED STATEMENTS WITH THE COMMITTEE SECRETARY.

My name is Tack Van Cleve. My family has been ranching near Melvill since 1880, on land encompassing the peaks, canyons, timberland and foot-hills of the Crazy Mountains, with elevations ranging from 5000 to 11,000 feet. I am here to support Senate Bill 184.

Back in 1979, Chevron Oil sought our permission to drill a test well in Big Timber Canyon, scarcely 3/4 of a mile below our dude ranch buildings. We were at first extremely reluctant, not only because of the proximity to our buildings, but because the well would, of necessity, be located within 120 yards of the river. Also, we were concerned with an adverse effect on the wildlife in the area, which we protect, as well as with how the activity would affect the horses and cattle we run in the canyon. "Environmentally sensitive" would perfectly describe the site!

Chevron's engineers and environmental experts cooperated fully and probably beyond the call of duty, to accommodate all of our concerns in the situating of the drill site in the most mutually beneficial location. Upon fully recognizing our concerns for the preservation of water quality, visual integrity, and minimal impact on wildlife and domestic livestock, Chevron brought in a specialist from Denver - at considerable cost to them, I have no doubt - to supervise the entire operation from start to finish. I should point out that his area of expertise was the drilling of wells in extraordinary circumstances - no matter where on the globe that might be - and that he was IN ADDITION TO, and exercising authority over, the regular chain of command in drilling operations. A sort of super-supervisor. Chuck brought his motor home to the site, and was on call around the clock.

All aspects of the operation which could conceivably affect us or our guest and cattle ranching business were cleared with us prior to commencement. The site settled on was next to the road, but out of sight of our buildings. The area, about 320 by 120 yards, on a sloping, sunny side of the canyon, was levelled, the topsoil first being removed and saved for the restoration of the site. Chevron agreed to delay any work until AFTER our guest season had closed. The entire site was well-fenced to protect our livestock. A guard rail was installed for the full distance of the road paralleling the site, and a telephone was installed to preclude the necessity of borrowing ours. Multiple blowout prevention devices were installed on the rig. A dust suppressant was sprayed on the 3 miles of road through our property.

SENATE NATURAL RESOURCES
EXHIBIT NO. 4 (page 1)
DATE 2-9-87

During the duration of the operation - September 22 to February 6 - we had no complaints whatever. Crews motor-pooled to and from town, to minimize road traffic, and while they were - to say the least - an interesting looking lot - as I imagine most crews of roughnecks are - they were always courteous and willing to explain things to us. No violations of our no hunting policy were attempted, permission was always asked to fish, no trash was scattered on the road and in fact, Chuck had given instructions that the motor-pools were to police the road on their trips to and from town. No litter was ever apparent at the drill site either. Nothing of any kind was returned to the river, and while I can't remember what they were called, Chuck pointed out to me some special devices that were brought in from Canada or Mexico, to obviate the need to dispose of drilling waste. The noise of the diesel engines was inaudible from the ranch buildings, and except for their exhaust, there was no pollution of the air. Within a week or so, cattle and horses, as well as deer, had become more curious than afraid - and a bear even wandered through the drill site one night, while everything was operating!

Without question, to us the most troublesome aspect of the whole operation was the number of sight-seers from town who drove out to watch - and of course Chevron had no control over that.

After the well was plugged, the equipment moved, and the crew gone, the site was restored to its original slope, the topsoil replaced, the fence removed, and the guardrail left in place at our request. A man was hired for a week, to scour the canyon and riverbottom above and below the drill site, for any debris that might have blown away undetected. Preliminary seeding and rolling was done, with grasses of our choice, and a second seeding and rolling followed later in the spring.

Today, the ONLY evidence that the site was ever disturbed is the fact that the ground cover is somewhat different than the grasses in the vicinity, and is much preferred by cattle, horses, and deer. They always graze the site first! I challenge ANYONE to drive up the road and identify the drill site.

This experience has demonstrated to me that oil companies can be, and are demonstrably willing to be, sensitive to environmental issues. To make the issuance of a permit to drill for oil or gas a major action of the state is unnecessary, time consuming and

TELEPHONE 259-7860
AREA CODE 406

845 12TH STREET WEST
P. O. BOX 20174

BALCRON OIL COMPANY

BILLINGS, MONTANA 59104

W. W. BALLARD

W. R. CRONOBLE

SENATE NATURAL RESOURCES
EXHIBIT NO. 5
DATE 2-9-87
BILL NO. SB 184

February 5, 1987

Senate Natural Resources Committee
Capitol Station
Helena, MT 59620

Gentlemen:

Throughout history Montana has been at a competitive disadvantage as far as attracting exploration dollars into the State. This has been largely due to State oil and gas taxation policies. Now a new obstacle has appeared: inclusion of oil and gas permitting under MEPA. The Sohio and Cenex experiences show that any permit issued by the Board of Oil and Gas is subject to challenge under MEPA and consequent delays with the accompanying tremendous increase in cost.

Montana is the only State in which such requirements exist. If we are to have an active exploration program, SB 184 must be passed. The accompanying graph, showing the drastic drop in daily production during 1986, underscores the necessity of increased exploration to replace our dwindling reserves.

I strongly recommend passage of this bill.

Very truly yours,

W. W. Ballard

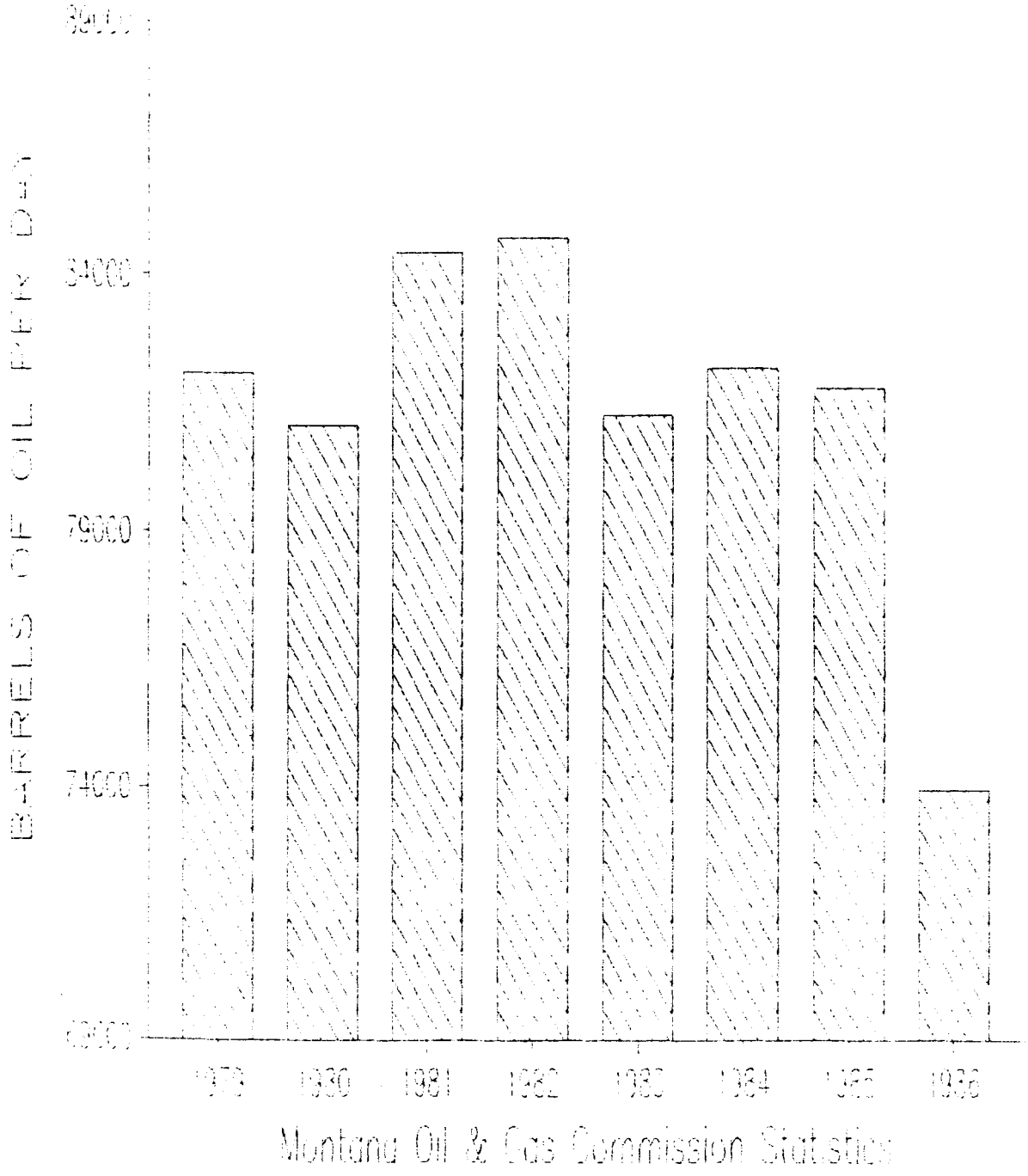
W. W. Ballard

WWB:ljm

Attachment

STATE OF MONTANA

AVERAGE DAILY PRODUCTION BY YEAR



SENATE NATURAL RESOURCES
EXHIBIT NO. 6
DATE 2-9-87
BILL NO. SB 184

I am John Sheehy, a rancher from Big Sandy, Montana. I live up in the Bear Paw Mountains. I am a member of the Montana Land & Mineral Owners association.

I just finished serving two terms on the Montana Board of Oil & Gas Conservation.

There have been five dry holes drilled on our ranch by three separate companies, non were a problem. One was cut into the side of a hill to make a drill site. I asked the company to put the hill back the way it was, the site is hard to find now. Another was in an alfalfa field. I hayed over it the next year. The others were on flat pasture so they do not show.

I was on the board when Sohio drilled in Bridger Canyon. As a land owner I thought Moats ranch had a right to have the well drilled without all the hassel. I wonder if Sohio would do it again.

As a taxpayer I want oil and gas produced in Montana to help pay the expenses of the state and local governments.

I don't think we in Montana can afford to subject the oil companies to the opposition that occured in Bridger Canyon.

John M. Sheehy

JOHN SHEEHY
February 9, 1987

NAME: Stephen K Cranston DATE: Feb 9 1987

ADDRESS: 3045 Meadowlark Drive, East Helena MT 59635

PHONE: 227-5615

SENATE NATURAL RESOURCES
EXHIBIT NO. 7
DATE 2-9-87
BILL NO SB184

REPRESENTING WHOM? Meadowlark Search

APPEARING ON WHICH PROPOSAL: SB 184

DO YOU: SUPPORT? X AMEND? _____ OPPOSE? _____

COMMENTS: attached

PLEASE LEAVE ANY PREPARED STATEMENTS WITH THE COMMITTEE SECRETARY.

Meadowlark Search
Oil·Gas·Minerals

February 9, 1987

STEPHEN R. GRANZOW

Senate Natural Resources Committee

Mister Chairman and Members of the Committee

I am an independent landman, depending on the exploration of companies like those that have spoken before me for my living.

The attractiveness of Montana for oil and gas exploration is already low do to other factors and policies the State of Montana has.

Oil and Gas Companies are Multi State Companies. The cost of drilling (exploration) is relatively the same through out the Rocky Mountain Area.

The costs of the extras (state policies) are then considered in determining where the next exploration and possible strike will be located.

Senate Bill 184 must be passed. Eliminating one factor that is slowing and/or eliminating exploration in the State of Montana.

Thank You

Stephen R. Granzow

3045 Meadowlark Drive East Helena, MT 59635 (406) 227-5613

NAME: Larry Menke DATE: 2-09-87

ADDRESS: 315 Gibson - Glendive, Mont.

PHONE: 365-5887

SENATE NATURAL RESOURCES
EXHIBIT NO. 8
DATE 2-9-87
BILL NO. SB184

REPRESENTING WHOM?

APPEARING ON WHICH PROPOSAL: SB 184

DO YOU: SUPPORT? ✓ AMEND? _____ OPPOSE? _____

COMMENTS: Passage of this bill will alleviate some of the duplication and records in the oil & Gas industry. (testimony attached)

PLEASE LEAVE ANY PREPARED STATEMENTS WITH THE COMMITTEE SECRETARY.

Mr Chairman & Members of the Committee I am Rep. Larry Menke from Glendive

I Recently Retired from the Oil Patch, having Spent 34 yrs there, 32 was directly involved in the drilling, Completion and producing of Oil and Gas Wells. I want to Support SB 184 as I feel its implications and duplicating functions are a deterent to Exploritory drilling.

I would like emphasize, as we are in Need of employment in the State, what the Starting of a drilling Rig does.

There are few operations that can employe 17-20 persons in such a short time as a drilling Rig.

There are many Support people to be Needed before, during and after the drilling operations are Commenced. Approx. 60-70 person can Receive monetary Compensations

SENATE NATURAL RESOURCES
EXHIBIT NO. 8
DATE 2-9-87
BILL NO. SB184

Thank You

Larry Menke

MONTANA PETROLEUM ASSOCIATION
A Division of the
Rocky Mountain Oil and Gas Association

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2030 11th Avenue, Suite 23
Helena, Montana 59601
(406) 442-7582

Billings Office
The Grand Building, Suite 501
P.O. Box 1398
Billings, Montana 59103
(406) 252-3871

Janelle K. Fallan
Executive Director

SENATE NATURAL RESOURCES
EXHIBIT NO. 9
DATE 2-9-87
BILL NO. SB 184

TAXES

Montana imposes four taxes on oil and natural gas:

A. Severance tax is currently 5% of the gross value of oil and 2.65% for natural gas.

B. Net Proceeds Tax is calculated on gross value of oil, minus all allowable deductions multiplied by the local mill levy. The 1985 Legislature set a 7% maximum on oil and a 12% maximum on gas produced after July 1, 1985, from leases which have not produced during the preceding five years. Therefore, the maximum tax rate on "new" production from a previously non-producing lease will be 12.7% on oil and 15.35% on gas.

C. Resource Indemnity Trust Tax is .5% of gross value of all minerals produced. These taxes are placed in a trust fund to "indemnify the state against damage to the environment from the extraction of non-renewable natural resources." Interest from the trust is appropriated for projects "to improve the total environment and rectify damages thereto."

	SEVERANCE TAX		NET PROCEEDS TAX		RESOURCE INDEMNITY TRUST TA	
FY	OIL	NATURAL GAS	OIL	NATURAL GAS	OIL	NATURAL GAS
1980	$10,544,555	$1,264,025	$21,011,951		$1,828,947	$355,054
1981	19,578,172	2,116,291	28,663,376		3,328,426	419,647
1982	51,073,425	2,659,811	40,868,506		5,308,525	491,832
1983	45,228,535	2,649,726	66,160,884		4,783,438	522,396
1984	49,029,017	2,797,996	65,610,580	$11,976,791	4,279,714	589,348
1985	48,789,984	2,945,778	60,819,000	14,220,000	4,204,763	627,504
1986	34,728,749	2,890,666	67,220,584	14,771,771	3,913,955	583,961

D. Conservation Tax: The Board of Oil and Gas Conservation levies a tax to support its own operations. The tax is .2% of gross value. It yielded $753,000 in FY 1985 and $631,000 in FY 1986.

Production in Montana has averaged 29-30 million barrels per year, dropping to 27 million barrels in 1986. The highest year for oil production was 1968, at 48,460,000 barrels.

Extraction employment has been around 3500, but will show a decline in 1986. The average annual salary is $26,000.

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Executive Director

SENATE NATURAL RESOURCES
EXHIBIT NO. 9 (attachment)
DATE 2-9-87
BILL NO. SB184

ENVIRONMENTAL IMPACT STATEMENT REQUIREMENTS OF OTHER ROCKY MOUNTAIN STATES RELATING TO OIL AND GAS DRILLING

COLORADO

Colorado has no requirements for environmental impact statements for oil and gas drilling.

NORTH DAKOTA

State health officials do not have the authority to require an EIS prior to obtaining a drilling permit, nor have they ever attempted to exercise such authority.

UTAH

The state Oil and Gas Commission (OGM) has full authority for drilling permits on state and private land. OGM is not required to get approval from any health or environmental agency before issuing the permit. OGM must inform the applicant of local health ordinances and verify that the applicant has made proper arrangements for water use associated with drilling. OGM conducts an on-site pre-drill inspection of drilling operations on state or private lands.

WYOMING

No other state agency statute or regulations preempt the permitting authority of the Oil and Gas Conservation Commission. The Department of Environmental Quality is specifically prohibited from interfering with the authority of the Oil and Gas Supervisor. No attempt has ever been made to impose environmental impact statement requirements.

Montana Oil & Gas Association

P.O. Drawer D
Shelby, Montana 59474
Phone 434-5518

SENATE NATURAL RESOURCES
EXHIBIT NO. 10
DATE 2-9-87
BILL NO. SB 184

SENATE NATURAL RESOURCES;
Mr. Chairman, and Committee;

SB-184

An act amending section 75-1-201, MCA, to declare that the issuance of a permit to drill an Oil or Gas well is not a major action of State Government, under the provisions of the Environmental Polocy Act; and providing an immediate effective date.

After, and because of two prior permit requests, we feel it is a must that it is proven beyond a doubt, that the issuance of a permit to drill a well for Oil or Gas is not, and should not be a "MAJOR ACTION ofSTATE GOVERNMENT", as that term is used in Subsection (1) (b) (iii).

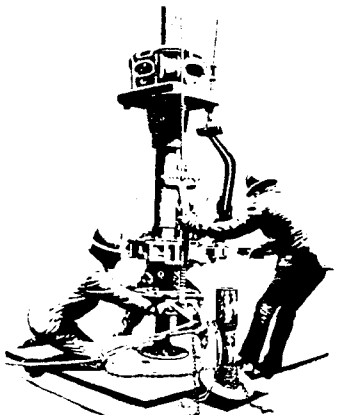
The Sohio well, on private land in BRIDGER CANYON, out of Bozeman, was a real eye opener; both because of costs to get a permit on private land, and, secondly it proved beyond a doubt that the MEPA proccess, can in fact, be deliberately used to stop or slow the drilling of a well in Montana, to the point of costs of permitting to be beyond the scope of logic;

~~COSTS TO OIL AND GAS COMMISSION: approximately $100,000~~
~~COSTS TO SOHIO: stated to be over $1,000,000~~

~~The North Fork well permit has not yet been settled~~.

So for this reason it is a must that Oil and Gas be removed from Montana Environmental Protection Agency process.

Doug Abelin Lobbist
Montana Oil and Gas Association



STATEMENT SUPPORTING SB-184

GEORGE ROSKIE

GREAT FALLS, MONTANA

SENATE NATURAL RESOURCES
EXHIBIT NO. 11 (page 1)
DATE 2-9-87
BILL NO. SB 184

In considering the need for the amendment contained in S.B. 184 I would like to refer briefly to specific portions of the Montana Environmental Policy Act.

Under Sec. 75-1-103 the act "declares that it is the continuing policy of the State of Montana-----to use all practicable means and measures, including financial and techincal assistance, in a manner calculated to foster and promote the general welfare, to create and maintain conditions under which man and nature can coexist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Montanans."

Sec. 75-1-104 states that "Nothing in 75-1-103 or 75-1-201 shall in any way affect the specific statutory obligations of any agency of the state---and Sec. 75-1-105 states that "The policies and goals set forth in this chapter are supplementary to those set forth in existing authorizations of all boards, commissions and agencies of the State.

And finally Sec. 75-1-201 staes that "(1) The legislature authorizes and directs that, to the fullest extent possible: (b) All agencies of the state, except as provided in subsection (2) shall: (iii) include in every recommendation or report on proposals for projects, programs, legislation and other major actions of state government significantly affecting the quality of the human environment, a detailed statement:, "commonly known as the Environmental Impact Statement.

I believe it is important to note that in addition to the natural-biological-esthetic environment the act speaks directly to Montana's general welfare, social, economic and other requirements.

It is also improtant to note that the policies and goals are supplementary to existing authority and shall not in any way affect specific statutory obligations of any agency.

It is therefore incumbent on any agency making a decision or taking action to do so under its specific statutory authority. And the Montana Environmental Policy Act only comes into the picture if a "major action of state government significantly affecting this quality of the human environment occures. And therein, I believe, lies the major problem with the proper allocation of MEPA.

Other acts such as the Major Facility Siting Act define the parameters of a project or action in rather clear-cut terms. MEPA does not, leaving the decision up to the responsible agency in many cases. Since there are no definitions or paramenters for "major actions significantly affecting the environment" a number of things seem to be occurring.

Projects and developments here-to-for not considered to have a significant impact on the environment are being required to prepare an E.I.S. And groups and individuals are taking legal action against agencies for not requiring an EIS. This even though the impact is minor and temporary, the project is on private land, and laws governing the action are clearly adequate to protect the public interest and environment.

It appears, at least to some of us, that there is an attempt to stretch MEPA's policy and directions to the limit. And further to force the use or misuse of the policy and directions in selective cases, where no significant impact on the environment will occur.

In the case of drilling a well whether it be for oil, gas or water current laws such as the Gas and Oil Act, Gas and Oil Conservation Act or the Water Quality Act are clearly adequate to protect the public interest and our general welfare, social, economic and natural environment without the costly time consuming EIS process.

SENATE NATURAL RESOURCES
EXHIBIT NO. 11 (page2)
DATE 2-9-87
BILL NO. SB184

I therefore believe that drilling an oil, gas or water well does not contitute a major action or result in a significant impact on the human environment and, given present laws, should not require an EIS as a condition of serving a permit to drill.

However while passing this amendment would be appropriate I strongly urge the committee to consider revision of the act to clarify what constitues a "major action of state government" and what constitues a "significant impact on the human environment."

Thank you for the opportunity to appear before your committee.

SENATE NATURAL RESOURCES
EXHIBIT NO. 11 (page 3)
DATE 2-9-87
BILL NO. SB184

Kent Beers, President
256-4105
Greg Oblander, 1st Vice President
259-5504
Les McCormick, 2nd Vice President
245-9031
Scott Frizzell, Treasurer
245-6248
Bucky Heringer, Secretary
252-6821
John Hauptman, Past President
248-6655

MONTANA ASSOCIATION OF PETROLEUM LANDMEN

P.O. BOX 1911
BILLINGS, MONTANA 59103

SENATE NATURAL RESOURCES
EXHIBIT NO. 12
DATE 2-9-87
BILL NO. SB 184

February 5, 1987

Mr. Tom Keating, Chairman
Senate Natural Resources Committee
Capitol Station
Helena, Montana 59601

Re: Senate Bill #86
Senate Bill #184

Dear Mr. Keating:

I am employed as Land Manager in Meridian Oil Inc.'s Billings office which has responsibility for the Rocky Mountain Region. Additionally, I am the current President of the Montana Association of Petroleum Landmen, an organization whose ranks have been reduced by more than half as a result of the current industry conditions. Most importantly I am a native Montanan and hope to be able to remain in Montana and raise my three children.

I am writing you today concerning my support of Senate Bill #184. I am of the strong opinion that if permits to drill oil and gas wells are considered to be "a major action of State Government" and therefor subject to the provisions of THE MONTANA ENVIRONMENT POLICY ACT, this will have a negative impact on the exploration industry within the State of Montana, an industry which as you are well aware is already severely depressed. It has been my experience in other Rocky Mountain States and in Montana, until recently, that the issuance of a drilling permit could be relied on as having satisfied certain State requirements for the drilling of a well. If Senate Bill #184 fails to pass and every drilling permit issued by the State is subject to possible review and challenge from the provisions of THE MONTANA ENVIRONMENTAL POLICY ACT, drilling schedules, particularly those in lightly drilled or "Frontier" areas, must necessarily be modified to anticipate a potential delay, or in the worst case, given the prospects of such a lengthy delay and the associated additional costs, some wells may simply not be drilled. I trust that you are aware of the effects that the uncertainty over the issuance of a permit and its susceptibility to THE MONTANA ENVIRONMENTAL POLICY ACT has had on recent wells drilled and proposed to be drilled in parts of Western Montana.

The passage of this Bill will not preclude interested parties from taking action against exploration they disagree with; however, it will assure exploration companies wishing to drill in the State that every drilling permit issued will not be subject to possible extensive environmental review as is necessary for certain other activities more properly covered by THE MONTANA ENVIRONMENTAL POLICY ACT. Thank you for your consideration.

Very truly yours,

Kent Beers
MAPL President

KB:tmp/5823I

W. M. VAUGHEY, JR.

P.O. BOX 46
HAVRE, MONTANA 59501-0046
(406) 265-5421

February 6, 1987

SENATE NATURAL RESOURCES
EXHIBIT NO. 13
DATE 2-9-87
BILL NO. SB184

The Honorable Bill Norman
President of the Montana State Senate
Capitol Station
Helena, MT 59620

RE: In Support of SB 184

Dear Senator Norman:

As I believe you'll recall, I am a small explorer for oil and gas with offices here in Havre the past 18½ years. I am writing, however, in my capacity as Vice President for Montana of the Independent Petroleum Association of Mountain States. IPAMS represents the truly "little guys" who look for petroleum in the Rockies, and I would point up that the independent for many years has drilled upwards of 80% of all wildcat tests in Montana.

SB 184 can look to an event in recent history for its reason to be. The event involved surrounded the proposed drilling by Sohio of a rank wildcat test at a private land location in the Bridger Canyon northeast of Bozeman. This Overthrust test of tremendous potential was opposed by a small group of very zealous obstructionalists. As I think you will remember when all else failed, they filed a suit against the Montana Oil & Gas Conservation Commission which had as its basis the presumption that the Commission had the duty under the Montana Environmental Policy Act to require an Environmental Impact Statement as the condition for granting the drilling permit.

Of all the legislators I know personally - including your good friend, Stan Stephens - who were in office when MEPA was passed, I don't know one who envisioned its application to the permitting of an oil or gas test by the Oil & Gas Commission. Senate Bill 184 merely precludes ever again in the future any outfit being able to utilize MEPA as at least a stalling tactic when attempting to keep a well from being drilled.

Senator Norman, Sohio was caused to suffer a tremendous amount of undue expense in the course of attempting to get drilled its Bridger Canyon well. Although the well was finally plugged and abandoned last year, the whole sequence of events gave Montana a black eye in the Rocky Mountains. I'll assure you that this got the attention of every major oil company with the capacity to drill Overthrust type tests in the Rocky Mountains. If that's the case, you can be certain that all those independents whom I represent feel that SB 184 must be passed if they are to have any assurance that a set of events similar to the Sohio story won't befall them when they wish to risk their exploration dollars in our state.

Speaking for myself and all those whom I represent, I urge the passage of SB 184 and am absolutely certain that it represents the best interests of Montana.

Sincerely,

Bill Vaughey

W. M. Vaughey, Jr.
Vice President for Montana of the Independent
Petroleum Association of Mountain States

WMV/aks
cc: Senate Natural Resources Committee

Proponent

GREAT
FALLS AREA
CHAMBER OF COMMERCE

P.O. BOX 2127
926 CENTRAL AVENUE
GREAT FALLS, MONTANA 59403
(406) 761-4434

SENATE NATURAL RESOURCES
EXHIBIT NO. 13-A
DATE 2-9-87
BILL NO. SB184

February 13, 1987

TO: Senate Natural Resources Committee
Cascade County Legislative Delegation

FROM: Roger W. Young, President

SUBJECT: MONTANA ENVIRONMENTAL POLICY ACT EXEMPTIONS

The Executive Committee of the Great Falls Area Chamber of Commerce goes on record as supporting the enactment of SB-184 which would specifically exempt oil and gas drilling from the provisions of the Montana Environmental Policy Act. It is our understanding that MEPA should only come into the picture if a "major action of state government significantly affecting the environment" occurs. In the case of drilling a well, whether it be for oil, gas or water, current laws such as the Gas and Oil Conservation Act or the Water Quality Act are clearly adequate to protect the public interest and our general welfare, social, economic, and natural environment without the costly, time consuming EIS process. It is the opinion of the Great Falls Area Chamber of Commerce that drilling an oil, gas or water well does not constitute a major action or result in a significant impact on the human environment, and given present laws, should not require an EIS as a condition of securing a permit to drill.

Furthermore, the Great Falls Area Chamber of Commerce urges the Montana Legislature to consider revisions of the Montana Environmental Policy Act to clarify what constitutes a "major action of state government" and what constitutes a "significant impact on the human environment". Other acts such as the Major Facility Siting Act define the parameters of a project or action in rather clear cut terms. MEPA does not, leaving the decision up to the responsible agency in most cases. This uncertainty provides a chilling effect on various economic development activities important to the growth and development of our state.

SENATE NATURAL RESOURCES
EXHIBIT NO. 14
DATE 2-9-87
BILL NO. SB 184

COMMENTS ON SB 184

BY BRACE HAYDEN

OFFICE OF THE GOVERNOR
February 9, 1987

MR. CHAIRMAN, MEMBERS OF THE COMMITTEE, MY NAME IS BRACE HAYDEN. I AM THE GOVERNOR'S REPRESENTATIVE ON THE ENVIRONMENTAL QUALITY COUNCIL (EQC). WITH ME TODAY IS JOHN NORTH, THE GOVERNOR'S LEGAL COUNSEL AND FORMER REPRESENTATIVE TO THE EQC.

GOVERNOR SCHWINDEN OPPOSES SB 184 AS HE DOES NOT BELIEVE ONE PARTICULAR INDUSTRY SHOULD BE EXEMPTED FROM THE MONTANA ENVIRONMENTAL PROTECTION ACT. IT'S AN UNFAIR AND UNNECESSARY ACTION. WHILE THERE CERTAINLY CAN BE SERIOUS ENVIRONMENTAL PROBLEMS ASSOCIATED WITH THE DRILLING OF AN OIL AND GAS WELL, THE MONTANA'S OIL AND GAS INDUSTRY GENERALLY HAS A GOOD ENVIRONMENTAL RECORD. FURTHERMORE, OPTIONS EXIST THAT FOR THE VAST MAJORITY OF WELLS, CAN PREVENT MEPA COMPLIANCE FROM ADDING SIGNIFICANT NEW DUTIES TO THE BOARD OF OIL AND GAS.

RECENTLY, THE GOVERNOR DISCUSSED HIS CONCERNS REGARDING A MEPA EXEMPTION WITH REPRESENTATIVES OF THE MONTANA PETROLEUM ASSOCIATION AT A MEETING IN BILLINGS.

THE MEPA REVIEW PROCESS, BE IT A CHECKLIST, A PRELIMINARY ENVIRONMENTAL REVIEW OR AN ENVIRONMENTAL IMPACT STATEMENT (EIS),

IS AN IMPORTANT DECISION-MAKING TOOL. FOR SOME 16 YEARS NOW, MEPA HAS BEEN AN INTEGRAL PART OF AGENCY DECISION MAKING.

A REASONABLE ALTERNATIVE TO CONDUCTING WELL BY WELL SITE SPECIFIC ASSESSMENTS WOULD BE FOR THE BOARD OF OIL AND GAS TO PRODUCE ONE STATEWIDE PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT. THE EXISTENCE OF SUCH A STUDY WOULD EXPEDITE FUTURE ENVIRONMENTAL REVIEWS OF INDIVIDUAL DRILLING PROJECTS BECAUSE A BASIS WOULD BE ESTABLISHED FOR EXEMPTING PROJECTS WITH MINOR IMPACTS FROM DETAILED REVIEW, AND BECAUSE THE STUDY WOULD BE REFERENCED IN LIEU OF CONDUCTING A NEW ANALYSIS FOR EACH INDIVIDUAL DRILLING PROPOSAL. THE VAST MAJORITY OF DRILLING PROJECTS WOULD INVOLVE ONLY ROUTINE, CHECKLIST-LEVEL REVIEW THAT WOULD REFERENCE THE TYPE OF STIPULATIONS THAT SHOULD BE FOLLOWED BY THE APPLICANT. FOR ONLY THE MOST SENSITIVE SITES, WOULD THE DOCUMENT NEED TO BE SUPPLEMENTED WITH ADDITIONAL ANALYSIS. MONTANA'S BLM OFFICES HAVE SUCCESSFULLY AVOIDED THE TIME DELAYS OF SITE SPECIFIC ENVIRONMENTAL ASSESSMENTS FOR OIL AND GAS LEASES BY UTILIZING THE PROGRAMMATIC EIS APPROACH.

I'VE HEARD THAT PART OF THE OIL AND GAS INDUSTRIES CONCERNS ARE THAT MEPA REVIEWS CAN BE USED AS A FOOT IN THE DOOR FOR ENVIRONMENTAL GROUPS TO DELAY THE PERMITTING PROCESS. AS THE FORMER ADMINISTRATOR OF MONTANA'S COAL MINE RECLAMATION DIVISION, I WISH TO POINT OUT THAT WE CONDUCTED MEPA REVIEWS ON 10'S OF THOUSANDS OF COAL EXPLORATION HOLES WITH LITTLE MORE DELAY THAN

HAVING AN INSPECTOR REVIEW THE APPLICATION AND CONDUCT A FIELD CHECK. FURTHERMORE, LIFTING OF APPLICATIONS TO DRILL FROM MEPA REMOVES A LEGITIMATE PROCESS BY WHICH THE BOARD CAN DEAL WITH THE PUBLIC SHOULD CONCERN FOR DRILLING IN A PARTICULAR AREA BE RAISED. A CHECKLIST THAT REFERENCES THE SITE CONDITIONS AND SUGGESTED MITIGATIONS TO THAT DESCRIBED IN A PROGRAMMATIC EIS, PROVIDES BOTH THE BOARD AND THE INDUSTRY WITH EVIDENCE THAT DURING THE PERMITTING PROCESS, IMPACTS WERE CONSIDERED AND APPROPRIATELY DEALT WITH. MEPA THUS CAN PROVIDE AS MUCH PROTECTION FOR THE INDUSTRY AS IT DOES FOR A CONCERNED PUBLIC.

JOHN OR I WOULD BE HAPPY TO ANSWER ANY OF THE COMMITTEE'S QUESTIONS.

SENATE NATURAL RESOURCES
EXHIBIT NO. 15
DATE 2-9-87
BILL NO. SB184

TESTIMONY OPPOSING SB184

My name is Connie Wilson. My husband Pat and I ranch near Bainville, Montana, in the heart of Northeastern Montana's oil country. For the past seven years, we have been members of the Northeastern Montana Land and Mineral Owners' Association. We were saddened to hear that SB 184 was introduced by a director of that Association. We oppose this legislation strenuously, and we hope the Association as a whole does not endorse it.

The proponents of this bill say that individual oil wells do not constitute a major impact upon the environment, since all that is affected is a 3-5 acre well location. The industry has done a good job of selling this point of view, but its absurdity is apparent to anyone with even slight familiarity with the oil patch--inclusing, I suspect, the sponsor of this bill. After all, one of the issues near and dear to the heart of the Land and Mineral Association is the problem of groundwater contamination by salt water and drilling fluids from leaking reserve pits, well casings,, and salt water disposal wells. The difficulty with speaking about oil impacts is that most of the damage occurs under the ground, out of sight and difficult to document.

To the best of my knowledge, there has been only one major scientific study of oil-related groundwater contamination in Northeastern Montana, and that is B. Michelle Dewey's 1984 Master's thesis on the subject. I am taking the liberty of submitting the abstract and conclusions of her thesis along with my testimony. Two of the wells she examined were in Senator Tweit's own Richland County; at both "plumes of contaminated groundwater were shown to

extend from the pits in the direction of groundwater flow. "

Dewey's thesis concentrates on reserve pit leachites and groundwater pollution. Other well-known impacts and health hazards include new access roads, increased traffic on existing roads, and potential releases of deadly hydrogen sulfide gas. Such problems are easy to sweep under the rug in thinly populated, not particularly scenic Northeastern Montana; if oil is discovered in the Overthrust, will the problems be as easy to sweep away as the industry encroaches on Montana's population centers and wilderness areas.?

What about the argument that MEPA regulations keep industry out of the State? One can certainly not say that the oil industry in Montana is over-regulated. The Oil and Gas Commission's disinterest in environmental impact is legendary. I know from personal experience in 1981, when a well on my property lost circulation of its drilling fluid and threatened a nearby water well, that it is very hard to catch the attention of any regulatory agency above the county level. If my numbers are accurate, there have been 13,080 weels drilled in Montana. MEPA regulations have delayed or canceled drilling operations only twice. A law that hampers drilling operations only once in every 6090 times is certainly not a red flag warning industry out of the State. In fact, I have the stomach turning suspicion that the real motivation behind this bill is that the EQC and the Oil and Gas Commission realize that regulation of the oil industry has been so lax that these agencies may be liable in some future law suit. Rather than confront their shortcomings and do their job, they are choosing to kick out the legal underpinnings of such a law-suit. Grotesque, beaurocratic logic, to say the least.

It is perhaps true that most oil wells do not seriously affect the environment. Dewey's groundbreaking study suggests otherwise; I do now know. But it is certainly true that each prospective well carries with it the potential for serious harm When wells are planned near twons or wilderness areas, or in areas of steep slope, their affects can easily cross property lines. Surely we can take the time for at least a cursory examination of potential damage before we start. That is all MEPA asks. I urge you to vote against SB 184, and I thank you for hearing my testimony.

Respectfully Submitted,
Pat Wilson
Connie Wilson

HC 58 Box 23
Bainville, Montana 59212
PH. 406-769-2534

SENATE NATURAL RESOURCES
EXHIBIT NO. 15 (page 3)
DATE 2/9/87
BILL NO. SB184

SENATE NATURAL RESOURCES
EXHIBIT NO. 16
DATE 2-9-87
BILL NO. SB 184

Dewey, B. Michelle, M.S. Spring 1984 Environmental Studies

Effects of Reserve Pit Reclamation on Groundwater Quality at Selected Oil Well Sites in Eastern Montana and Western North Dakota

Director: Dr. William W. Woessner WWW

This study was initiated to examine the effects of reserve pit reclamation practices on groundwater quality at two oil well sites in Richland County, Montana. Additional work was done to determine the feasibility of using electrical resistivity to detect groundwater contamination at these sites and five others in McKenzie County, North Dakota.

The reserve pits evaluated held produced brines, drill cuttings, drilling fluids, and other wastes during the drilling of the oil wells. The contents of the pits in Richland County were buried at the drill sites.

Twelve groundwater monitoring wells were installed at the Richland County sites. Water level elevation and water quality data were collected from August, 1982 through June, 1983. Water samples from five of these monitoring wells showed chloride levels exceeding background, indicating the presence of pit fluids or leachate. Forty-five electrical resistivity soundings were made and results evaluated with respect to groundwater flow and quality data. At both sites, plumes of contaminated groundwater were shown to extend from the pits in the direction of groundwater flow.

At the McKenzie County sites, from one to four electrical resistivity soundings were made. Three sites had seeps of high salinity water apparent at the surface before resistivity examination. Apparent resistivity data at these sites were lower than readings from control areas, indicating the presence of saline oil field fluids. Testing was not extensive enough to determine if buried reserve pit materials caused the seeps. Resistivity data from two of the sites showed no indication of subsurface problems.

State and federal well site reclamation policies seem inadequate in the light of the results of this study. More environmentally compatible reclamation techniques need to be developed and further study done to determine the extent and severity of the problems created by past and current pit reclamation methods.

CHAPTER VII

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

1.) The reserve pit reclamation technique of trenching and burying pit materials and fluid on the drill site adversely affected local groundwater quality at two study sites in Richland County, Montana. This procedure may also be responsible for at least one salt water seep on Forest Service land in McKenzie County, North Dakota.

2.) In Richland County, chloride analysis of well samples served as a good indicator of drilling fluid contamination due to the low chloride concentration of native groundwater (13 to 45 mg/l) and the relatively high concentration in pit fluids (38,300 mg/l).

3.) Groundwater sample analysis coupled with surface electrical resistivity surveys successfully outlined plumes of high chloride groundwater extending down the groundwater gradient at both Richland County sites. Surface resistivity techniques indicated the presence of salts on or in the surface layers at three of the McKenzie County study sites.

4.) Several groundwater samples from affected wells at Study Sites One and Two and surface samples at Site Four exceeded the secondary drinking water standard for chloride. Richland County

samples also exceeded Montana's aesthetic groundwater quality criteria.

5.) Electrical resistivity results correlated best with groundwater flow and groundwater chemistry for Study Site Two, which had the greatest lateral homogeneity.

6.) Electrical resistivity is most useful in outlining zones of groundwater contamination when coupled with lithologic and groundwater quality information. This technique seems to work best in areas with a shallow (10 to 20 feet deep) groundwater table, lateral homogeneity, and a very low resistivity contaminant. Electrical resisitivity is useful for filling in information gaps between monitoring wells.

7.) Sufficient lithologic and geohydrologic information was not available to make quantitative interpretations of field or computer interpreted resistivity values at the McKenzie County study sites.

8.) Current reserve pit reclamation practices are resulting in local groundwater quality degradation and damage to surface soils and vegetation at Sites One, Two, and Four of this study. State and federal policies need to be set to outline specific reclamation procedures to reduce the risk of groundwater or soil contamination by reserve pit fluids or leachate. Enforcement of

these policies must then become agency priorities.

Recommendations

Further Study

More data are needed before it can be proved that reserve pit fluids or leachate are causing the seeps noted on Forest Service lands. Such studies should include test drilling for lithologic control, extensive sampling in the saturated and unsaturated zone, and more extensive electrical resistivity testing.

Further study at the Richland County sites would provide additional information on the changes in groundwater quality with depth below and distance from the pits. Both single and nested monitoring wells could be installed to monitor these changes. An evaluation of the clay content of the aquifer (determined from drill cuttings) could be used to estimate the effect of ion exchange and adsorption on the movement of pollutants. Trace metal analysis of well samples would indicate the extent of migration of these less motile, but potentially harmful, pit materials.

More information is needed to determine at which sites in the Williston Basin, or other oil and gas producing areas, groundwater may be adversely affected by current reserve pit reclamation techniques. Electrical resistivity surveys provide a quick, inexpensive method to detect the presence of low resistivity oil field brines and drilling fluids. This method could be used to screen a large number of sites to determine which should be designated for further study.

NAME: James Schmitt DATE: 2-9-87

ADDRESS: 505 W. Olive St. Bozeman, MT 5971

PHONE: 586-3118

SENATE NATURAL RESOURCES
EXHIBIT NO. 1 (corrected)
DATE 2-9-87
BILL NO. SB 184

REPRESENTING WHOM? Self

APPEARING ON WHICH PROPOSAL: SB 184

DO YOU: SUPPORT? _____ AMEND? _____ OPPOSE? _____

COMMENTS: Written Testimony (attached)

PLEASE LEAVE ANY PREPARED STATEMENTS WITH THE COMMITTEE SECRETARY.

Testimony Before the Natural Resources Committee of the Montana State Senate

by Dr. James G. Schmitt

Department of Earth Sciences

Montana State University

Bozeman, Montana 59717

SENATE NATURAL RESOURCES
EXHIBIT NO. 17 (page 1)
DATE 2-9-87
BILL NO. SB 184

February 9, 1987

I would like to speak to you today as a professional geologist concerning several geological and hydrological problems which may arise during the drilling of an oil and gas well that have potential for significant environmental impact.

The first of these is the potential for encountering hydrogen sulfide (H_2S) during the drilling process. Hydrogen sulfide is a product of the heating of organic material in sediments and rocks as they are progressively buried, through time, to greater and greater depths. Different age and type of hydrocarbon-bearing rock units contain differing amounts of hydrogen sulfide. This variation makes it extremely difficult to predict, prior to drilling, whether hydrogen sulfide will be encountered and in what quantity. Nonetheless, it is well-known that several of the major hydrocarbon-producing rock units in the Overthrust Belt, including the Madison Limestone, frequently contain significant amounts of hydrogen sulfide. For example, sour gas in the Whitney Canyon-Carter Creek gas field of the western Wyoming Overthrust Belt contains as much as 20 percent hydrogen sulfide (Bishop, 1982) and has necessitated the construction of sour gas processing plants by Amoco and Chevron. Because the Overthrust Belt extends throughout the length of western Montana, with the Madison Limestone as one of the primary exploration targets in it, there is excellent potential for hydrogen sulfide to be encountered during drilling in this region. While there are precautions which can be taken during the drilling process to reduce the chances of hydrogen sulfide leakage into

the atmosphere, the drilling of an oil or gas well, especially in inhabited areas of western Montana, should not be taken as an inconsequential or minor procedure. The protection afforded the welfare of both the environment and public through the Preliminary Environmental Review requirement of the Montana Environmental Policy Act is a necessary action of state government.

Secondly, I would like to address the potential effects of oil and gas well drilling on subsurface aquifers. Depending upon the specific hydrologic and geologic setting of a drilling site, there can be a wide range of potential effects on groundwater quality and integrity. Depending upon the lateral and vertical extent of the groundwater table, drilling of water wells to provide fluids for drilling muds has the potential to cause water table drawdown. The major effect of this would be to render local water wells dry and, at expense to the owners, require them to be drilled to greater depths. Drawdown has the potential to cause disruption of water utilization in both residential and agricultural regions. Drawdown effects would be greatest in intermontane basins such as those of western Montana, where groundwater tables are not laterally continuous over large distances.

Probably the greatest degradation to the quality of groundwater concerns contamination associated with the disposal of drilling fluids and muds. Drilling fluids are commonly highly saline in nature. Disposal is almost always done on-site and involves either pumping of fluids back down the drill-hole and disposal of muds in reserve pits, or disposal of both fluid and mud in reserve pits. Major shallow groundwater contamination by saline drilling fluids has been documented in western North Dakota, where both residential drinking and agricultural irrigation water wells were rendered useless (Murphy and Kehew, 1985). Similar saline contamination of groundwater associated with oil and gas

well drilling in rural areas of eastern Wyoming is just now coming to light. Preparation of a Preliminary Environmental Review would help to delineate, beforehand, any potential adverse effects of drilling on groundwater resources.

Thirdly, the drilling of an oil or gas well has associated with it the potential for land surface disturbance which can have significant effects on land stability and surface water quality. In particular, increased surface water run-off associated with site clearing procedures and road construction can cause increased rates of soil erosion that contribute to sedimentation in streams. Increased sediment load in streams typically results in severe damage to fish reproductive habitat. Depending upon the location of a drill site with respect to local topography, soil types, bedrock geology, surface run-off patterns, microclimatology, vegetation, and previous land-use, the consequences for land stability and surface water quality can be wide-ranging. The potential exists for serious damage to be done to the integrity of fish populations in nearby affected streams and, in turn, to any economic benefits of sport fishing in the area. Nonetheless, it is possible, through preparation of a Preliminary Environmental Review, to forsee any potential degradational effects on surface-water quality. This process must be carried out on a site-specific basis, since the factors I just mentioned vary from site-to-site.

In summary, the geographic, geologic, and hydrologic setting of any potential oil and gas well site, in combination with the nature of the drilling process, make each individual well-site unique in terms of its potential adverse effects to the environment. The Preliminary Environmental Review requirement of the Montana Environmental Policy Act insures that each potential drilling site is evaluated in terms of its own unique physical attributes, and provides a mechanism for protecting both the natural and human environments of Montana so highly valued by its citizens.

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SENATE NATURAL RESOURCES
EXHIBIT NO. 18
DATE 2-9-87
BILL NO. SB 184

COMPARISON OF ENVIRONMENTAL REGULATION OF THE OIL AND GAS INDUSTRY IN THE ROCKY MOUNTAIN STATES AND ALBERTA

Prepared by:
Gail Kuntz, Resource Specialist
Environmental Quality Council Staff
July, 1986

TABLE OF CONTENTS

This report presents a comparison of environmental protection and safety related portions of oil and gas regulations and regulatory practices in the Rocky Mountain states and Alberta. The purpose of the comparison is to determine if revisions or clarifications in Montana's regulations and enforcement practices may be appropriate. The study includes North Dakota, Wyoming, Colorado, Utah, New Mexico, Montana and Alberta. The regulatory requirements are presented in a series of tables contained in Appendix A that include the following topic areas:

Administration	On-Site Produced Water Disposal
Seismic Exploration	Safety
Permits to Drill	Abandonment
Reserve Pits	

Air quality and jurisdictional overlap between oil and gas agencies and departments of health in protecting water quality are also discussed. The report includes a brief summary of relevant previous evaluations and monitoring of Board of Oil and Gas Conservation operations and regulatory practices by the Environmental Quality Council, Legislative Auditor and Governor's Groundwater Advisory Council. Analysis and options for Montana regulation comprise the final section.

The data summarized in this report was obtained through review of regulations, board orders and other materials, a meeting with Montana oil and gas agency staff, and telephone discussions with agency staff in the six states and Alberta during the period of January-June, 1986.

I. REGULATORY COMPARISON

A. Administration

The table labelled "Administration" in Appendix A compares the size and geographic distribution of the oil industry with the budget and field staff size in each state/provincial oil and gas agency. Volume of drilling activity and number of producing wells can vary considerably from one year to the next, but since this comparison is designed primarily to gain an idea of the relative size of the industry per state/province, only the most recent annual data (1984) are reported.

New Mexico had over 2½ times more producing oil and gas wells (34,547) than the state with the next highest total, Wyoming, and over 5 times more than Montana (6,674 wells). With approximately 41,500 producing wells in 1984, Alberta's oil and gas industry was even larger. Colorado, Wyoming and New Mexico had roughly comparable rates of drilling activity in 1984, ranging from 1,494 wells drilled in Wyoming to 1,523 in Colorado. Of the six states, Montana was fourth in both total number of existing wells and 1984 drilling activity (725 wells). The industry was smallest in North Dakota and Utah, although the 634 wells drilled in North Dakota compares favorably to Montana. Alberta had the largest volume with about 1,975 wells drilled.

By dividing the total number of producing wells and wells drilled in 1984 in each state and Alberta with the number of field inspectors

employed, a rough estimate can be obtained of the inspector work load per state/province. However, it must be noted that work load allocation among inspectors is affected by the distribution of well locations, exploration areas and field offices, production characteristics, and numerous other factors. Actual work load may vary considerably from these estimates. Wyoming, New Mexico and Colorado had the highest number of wells per inspector, with 2,498, 2,403 and 2,119, respectively. Montana was again fourth, with 1,057 wells per inspector. Utah, Alberta and North Dakota had the lowest ratios with 411, 406 and 317 respectively. Current inspector workload in all the states and Alberta has lessened due to the dramatic decline in world oil prices and corresponding reductions in exploration and production.

Montana has the lowest budget for regulation of oil and gas activities, but it is also the only state that has not taken over administration of the Underground Injection Control (UIC) program from the Environmental Protection Agency (EPA). Field staff in Alberta, Colorado, North Dakota and New Mexico are responsible for UIC-related inspections in addition to other duties.

Geographic distribution of the industry varies considerably among the states. With the entire eastern two-thirds of its counties containing oil and gas production, Montana probably has more territory for inspectors to cover than the other states. Only two states, New Mexico and North Dakota, have concentrated oil and gas production. Gas deposits are located in much of Alberta except the northeast quarter and along the western border. Oil deposits are more concentrated in central Alberta but extend over three-quarters of the length of the province. Inspectors are located in nine district offices in order to cover this extensive territory.

B. Seismic Exploration

Seismic exploration regulations, shot hole plugging regulations and field inspection practices vary among the states primarily by the amount of information and level of contact with the regulatory agency that is required before seismic operations commence and during or after plugging. New Mexico is not included in this comparison because it has no seismic regulations.

In Montana, North Dakota and Colorado, counties issue permits for geophysical activity. Montana's statute requires the seismic exploration company to file a notice of intent with the state and the county, and also requires the county to notify the state when a permit has been issued. In practice, the counties normally telephone oil and gas division staff so there is an opportunity for discussion of the planned activity with the crews before work begins. Companies planning to engage in seismic exploration are also required to notify the surface user of the approximate time schedule, provide names and addresses of contact persons for the companies involved, and identify the number of its surety bond, the surface areas to be explored, and any anticipated needs for water. The North Dakota oil and gas statute contains similar requirements, and also gives counties authority to condition or restrict

oil and gas exploration through ordinances. North Dakota oil and gas agency staff do not inspect seismic shot holes at any time. This area of regulation is considered to be exclusively under the counties' jurisdiction. In Montana, a representative sample of shot holes is inspected by state oil and gas staff after plugging is completed. Colorado's inspections also occur after plugging.

In Wyoming and Utah the state oil and gas agencies issue the exploration permits. Wyoming, Utah, Alberta and Colorado require companies to file notices of intent for each exploration operation. Content of the notices varies by state/province, and includes descriptions of the plugging procedures, depth and number of holes, names and addresses of contact persons, and time and location of the operations. Wyoming requires companies intending to conduct seismic shot hole exploration to meet with oil and gas agency staff before beginning to operate in the state to discuss regulatory requirements. Seismic operations in Utah and Alberta are usually witnessed by an inspector.

All of the states and Alberta prohibit seismic shots within a specified distance (usually ¼ mile) of buildings, springs and water wells. Utah similarly protects "cultural and natural" features. Alberta also restricts exploration in certain environmentally sensitive areas such as critical wildlife habitat on public lands. This requirement appears similar to restrictions that the U.S. Forest Service and Bureau of Land Management may put on drill permits.

All of the states except Colorado require advance notice of plugging operations. Plugging requirements are similar among the states and include specifications for materials such as bentonite and water slurries or coarse ground bentonite or cement, depending on the presence or absence of water in the hole. Montana's Board of Oil and Gas Conservation is evaluating potential changes in the regulations to require plugging with coarse ground bentonite rather than a bentonite-water slurry in certain types of holes.

Montana's statute allows surface owners and companies to agree to plugging methods other than those specified by the Board. Landowners in New Mexico also specify the plugging requirements. In other states and Alberta, the company may use alternative methods only with the approval of the oil and gas agency.

All of the states require a report subsequent to completion of plugging indicating the location and date of the operations. Colorado's is the most detailed because it must also include information about the plugging materials and procedures, and identification of any water that was encountered.

C. Permits to Drill

Permits to drill were compared in terms of application content, processing time, timing of site inspections, and authority to condition permits for purposes of environmental protection. All of the states require information about the specific location of the drill site, the

name and expected depth of the targeted strata, the casing that is planned, cement points, and other aspects of the drilling program. The differences examined in this study focus on how environmental protection aspects of the drilling operation are addressed.

Alberta requires drilling plans that include descriptions of site construction and maintenance operations in addition to a description of the drilling programs. Plans for final disposal of mud and fluids must also be submitted. If the location proposed for drilling is environmentally sensitive, personnel from concerned agencies may inspect the site. The Energy Resources Conservation Board may subsequently prescribe road locations and attach environmental stipulations, as necessary, to any aspect of the drilling operation. Drill permits may also be denied.

As discussed in the next section on reserve pits, Wyoming requires certain site-specific information in a separate form that is attached to the drilling permit application. No other state requires written data describing the site location before drilling commences. However, Utah requires a pre-drill inspection before the permit is approved. The inspection includes an assessment of site soil and water characteristics in order to establish permit stipulations and pit construction requirements. North Dakota inspectors visit the drill site after the permit is approved, but before the rig arrives in order to perform the same type of assessment.

Because of the pre-drill inspection, Utah requires 7-14 days to process permits. All of the other states try to process the applications the same day they are received, unless information is missing. Montana oil and gas staff often discuss drilling plans with the crews by telephone before field work begins. In both Colorado and Montana, the first site inspection typically occurs after the permit is issued and drilling has commenced. In New Mexico site inspections typically occur after drilling is completed.

The oil and gas agencies in Utah and Wyoming may attach special stipulations concerning surface use and pit and road construction. In Montana landowners make agreements concerning road placement and surface use.

D. Reserve Pits

Drilling fluids may have very high concentrations of salt, especially chloride, and also may include concentrations of oil and grease, sulfates, total dissolved solids (TDS), and various additives that include toxic trace metal compounds. Reserve pits are potential sources of ground water contamination if the fluids are allowed to escape or migrate to the subsurface. This study does not include a comprehensive assessment of scientific literature documenting the relationship of oil and gas wastes and produced water to water quality contamination. A number of studies have been done in various states that indicate site-specific or aquifer-specific water contamination problems occur when reserve pits and produced water pits are not properly designed and/or

reclaimed. The volume and quality of produced water, drill muds and other oil field waste, proximity and quality of surface and ground water, and characteristics of soil and underground strata, must all be taken into consideration in determining the potential for water contamination.

Wyoming is unique among the states in requiring a special application form for reserve pits, which includes a site map and plan, information about sub-soils, a surface water map, a chemical analysis of water at the site, a plan for final disposal of the mud, and a description of the sealing material that will used and how it will be installed. Following review of this data, the oil and gas agency may modify the plans on a case by case basis. As discussed above, North Dakota and Utah inspectors visit drilling sites before activity occurs, in part to determine reserve pit siting and construction requirements. In Utah reserve pits may not be sited on porous soils unless they are lined. In other areas, either tight soils must be present or the pits must be lined in a manner acceptable to the Board of Oil, Gas and Mining. Colorado and New Mexico have no specific pre-drilling information requirements or inspections for reserve pits. Both Colorado and Wyoming report that most of their drill muds are not salt-based. Alberta's reserve pit regulations are being revised. Current requirements provide that waste must be confined to the site and must be limited to 6,000 barrels unless a special application is filed and approved.

Montana has general rules for reserve pits that require construction to be "adequate to prevent undue harm to the soil or natural water." Also, "[W]hen a salt base mud system is used...., the reserve pit shall be sealed when necessary to prevent seepage." Inspections normally do not occur until after drilling has commenced. Soils data and and information about depth to water table are not included in the application nor is a minimum adequacy standard for construction or sealing defined.

Drilling site reclamation methods appear fairly consistent among the states (including Colorado and New Mexico), but methods of final disposal of the muds and fluids vary. It is important to note that pit reclamation is an essential component of the effort to control undesirable discharges or escape of fluids.

North Dakota and Wyoming regulations reference piling of topsoil during pit construction. Most states require that the surface be restored to as near original condition as possible, although landowner specifications must also be followed. In New Mexico, district oil and gas supervisors have authority to specify disposal and surface restoration methods, but contouring and re-seeding are not necessarily required. In Montana, previous productive capability must be restored. North Dakota requires reseeding with native species and restoration of the access road and pad unless the landowner specifies otherwise. North Dakota and Wyoming require reclamation to be complete within at least one year. The other states do not specify a time frame. North Dakota also requires a notice of intent to reclaim and verbal approval before the company proceeds.

In Colorado drilling muds are generally not considered toxic because they are primarily bentonite and water based. Such muds are commonly removed from the pits and discharged to the surface.

The Utah Health Department requires removal of reserve pit liquids and disposal in approved ponds. With approval from the department and landowner, surface disposal of the mud is also allowed. Alberta requirements are similar to Utah's.

According to Montana's rules, waste must either be removed or buried at the well site to a minimum depth of three feet below the restored surface of the land. Methods of disposal of muds/fluids removed from the site are not specified in the rules, but include discharge down hole, or hauling to another site re-use. Oil and gas agency staff request companies to obtain prior approval for down hole disposal. In some cases the liquid may be hauled away based on landowner specifications. In most cases the mud is left in the pit. Liquid that has not evaporated is drained off by squeezing and trenching the pit prior to leveling the site.

E. Interagency Water Quality Jurisdiction

In all of the states the health/water quality agency and the oil and gas agency have somewhat overlapping responsibility for water quality protection. Oil and gas agencies are usually responsible for on-site disposal in pits and UIC (except Montana), and health/water quality agencies are responsible for permitting surface discharges and off-site disposal in commercial pits.

All of the state oil and gas statutes convey authority to the oil and gas board or commission to require that drilling, casing, producing and plugging of wells be accomplished in a manner that prevents the pollution of fresh water supplies by oil, gas or salt water. On the other hand, the health/water quality agencies are given general responsibility for protecting the quality of all state waters. All of the states report some problems in smoothly regulating protection of water quality within the oil and gas industry.

Oil and gas agencies tend to emphasize production and conservation of the oil and gas resource and prevention of waste as their primary statutory responsibility. These agencies do not typically include environmental specialists on their staffs. The one exception of the states surveyed is New Mexico. An environmental unit has been formed within the oil and gas agency to oversee those portions of the regulations concerning water quality protection and to be the liaison to the environmental/water quality agency. Agency interaction undoubtedly is enhanced because the New Mexico Water Quality Control Commission has oversight responsibility for both the oil and gas agency and the environmental agency. A special memorandum delineates the agencies' respective duties and calls for close communication and cooperation where responsibility is unclear. In such instances the agencies are charged with reaching mutual agreement as to lead agency status and

determining the method by which a water discharge plan will be evaluated.

In Montana, oil and gas wells are exempt from Groundwater Pollution Control System permitting requirements, but water quality agency staff become involved if a pollution event occurs or if complaints about water pollution are received. However, there is no interagency Memorandum of Understanding describing the areas of cooperation and areas of separate responsibilities between the two agencies. The situation in North Dakota is similar although health department personnel emphasize that they are routinely in close communication with the oil and gas agency.

In Wyoming reserve pits are explicitly exempt from the environmental quality agency's regulations, but produced water disposal is included. The Wyoming oil and gas agency appears to be taking lead responsibility for on-site disposal and the environmental agency for commercial disposal (see the next subsection). New Mexico and Colorado also follow this pattern, but as noted above New Mexico has worked out a unique cooperative system. Colorado's water and oil and gas agencies have also developed a Memorandum of Understanding that delineates their separate responsibilities.

The Utah oil and gas agency will soon be an exception to the pattern because it is in the process of taking over responsibility from the Health Department for regulating disposal of produced water in all types of pits. A Memorandum of Understanding has been drafted that declares it is the policy of both agencies to pursue a close cooperative working relationship. Also, the oil and gas agency has pledged its intent to "develop, administer and enforce regulations for design, construction, operation and abandonment of on-site and off-site disposal ponds and reserve pits that will be no less effective" than those the Health Department administered. Discussion of these regulations is included in the following subsection.

F. On-Site Produced Water Disposal in Earth Pits

Methods of produced water disposal vary considerably, based on the range of characteristics and existing uses of ground and surface water, chemistry of produced water, and soil characteristics. Underground injection and surface discharge disposal methods are regulated, respectively, under the National Pollution Discharge Elimination System (NPDES) and the UIC program. These methods are not examined in this study. In Montana these programs are administered by the Department of Health and Environmental Sciences and the U.S. Environmental Protection, respectively. Administration is relatively uniform among the various states. Although the NPDES establishes minimum standards for most discharges, including the oil and gas industry, states are given discretion to adopt more stringent standards.

North Dakota is not included in this comparison because surface pits have been prohibited for storage of salt water since 1968. Wyoming, New Mexico, Utah, Colorado and Alberta allow surface pits but require special applications, plans and permits for these facilities. These

requirements appear to apply regardless of the type of produced water to be received, except that less stringent construction requirements (usually concerning the use of liners) may be imposed depending on the quality of the water. Some produced water in most states is of sufficient quality to qualify for surface discharge permits, and over the past few years, increasing volumes of produced water are being disposed by underground injection. However, if an operator wants to dispose of the water in earth pits the following types of requirements apply in the states listed.

Wyoming, New Mexico, Colorado, Utah and Alberta require similar types of information from companies wishing to construct water disposal pits, including anticipated volume and type of water to be received, soil and water data from the site, and plans for sealing or waterproofing the pit and final disposal of the water. Drawings and maps are also required. This information is evaluated to determine if the plans will adequately protect water quality and different design requirements may be imposed if necessary. New Mexico and Utah additionally require companies to submit descriptions of leak detection methods and leak prevention procedures.

New Mexico has adopted special orders concerning produced water disposal in each of its two producing basins, due in part to the high concentrations of TDS and also the presence of benzene in most of the water. In the northwest (the San Juan Basin), pits will be prohibited beginning January 1, 1987 in areas designated as having vulnerable aquifers. Operators of existing pits have to file registration forms. In the southeast, disposal in unlined pits is currently prohibited, and new lined pits are allowed only on leases where production is declining. New Mexico has issued detailed statewide guidelines for pit construction and design, liner installation, leak detection, and leak contingency plans.

When liners are required in Utah, at least two feet of impervious in-situ soils or placement of an equivalent amount of clay is necessary. Either method must meet an impermeability (seepage) standard of about one foot per year (10^{-6} centimeters per second). Artificial liners such as plastic or concrete may also be used. A monitoring system is required if the pit receives over 100 barrels per day, but this requirement is waived for artificially lined pits. Clay liners are the most common liner material in Alberta. The oil and gas agency staff report that artificial liners are not considered as effective.

New Mexico requires liners of at least 30 mills thickness and information on the resistivity of the material. Colorado requires liners and monitoring systems for facilities receiving over 100 barrels per day of water containing 5000 parts per million (ppm) TDS or greater. Liner requirements are determined on a case by case basis in both Wyoming and Colorado.

Wyoming, Colorado, Utah and New Mexico exempt pits receiving less than 5 barrels per day of water, although in New Mexico the water must have 10,000 ppm or less of TDS and the pit must be located at least 10 feet

above the water table in order to qualify. Wyoming requires monthly monitoring and chemical analyses for exempt pits.

Montana's oil and gas rules do not require an application for or special information from applicants about plans to construct earthen pits. The regulations state that "[W]here the soil ...is porous and closely underlaid by a gravel or sand stratum, impounding of salt or brackish water in such earthen pits is prohibited." Pits that fail to properly impound such water can be condemned. "Salt or brackish water may be disposed ...in excavated earthen pits ...when the pit is underlaid by tight soil such as heavy clay or hardpan." In practice, oil and gas division staff report that there are relatively few water pits in long-term use. Those in areas of porous soils that contain salt water (primarily in the Williston Basin) must be impermeable (i.e., lined with synthetic material and/or bentonite) or they are subject to condemnation.

G. Safety

Safety regulations examined in this report include provisions for handling gas containing hydrogen sulfide (H_2S) and safety equipment requirements. Montana, North Dakota, and New Mexico have essentially similar requirements for flaring vented gas that contains H_2S, although Montana is the only state that links its requirement to a specific concentration (i.e., any vented gas containing 20 ppm or greater H_2S must be burned). North Dakota's air quality agency is considering a new rule that would require registration of all wells that produce H_2S-laden gas in order to review the control technology on these wells. Wyoming's air quality agency requires companies venting gas containing H_2S during well completion testing or workovers to file a notice. If the amount exceeds 50 tons/year of H_2S, a report is required that must state the reason for the flaring and discuss any efforts that were made to minimize the amount.

Utah and Alberta have special requirements for H_2S wells that include submission of plans for dealing with accidental releases and emergencies. In Utah the plans must be submitted with drilling permit applications for areas where H_2S is likely to be encountered or where its presence is unknown. The information must include plans for protecting workers and the public. A detection system capable of sensing 10 ppm H_2S and certain other safety equipment is required to be on site.

Since a major blowout that occurred in 1982 (the Lodge Pole blowout), Alberta has added a number of new regulatory and application information requirements to insure safety during drilling and production of sour gas wells. A classification system has been established for "critical sour wells" that is based on potential maximum H_2S release rates and such factors as population density, the environment, sensitivity of the area, and expected complexity of drilling the well. In addition to the types of information noted above for Utah, plans must be submitted that include: guarantees that adequately trained supervisors and a 5-person drill crew will be on-site; plans for blow-out prevention drills; the

process for initiating emergency procedures; and evacuation plans for residents. Companies must identify an emergency zone wherein "worst case" H_2S concentrations could reach 100 ppm. Personal visits to all residents in the emergency zone must be made and input from other local residents solicited before the emergency plans are filed with the provincial government. Of 8,763 exploratory and development wells licensed in Alberta in 1985, 31 were classified as "critical"; emergency response plans were required for an additional 99 wells. Alberta government agencies have also prepared emergency response plans to coordinate the flow of information to and from the public and the media in the event that an H_2S emergency occurs.

All of the states and Alberta have requirements that blowout prevention and well control equipment must be adequate to keep a well under control, especially in unproven areas. Differences exist primarily in the specificity and level of detail of the requirements. Montana regulations require operators to "take all available precautions to prevent ...any well from blowing open." In unproven areas wells must "be equipped with a mastergate or its equivalent and an adequate blowout preventor, together with a choke and line or lines of the proper size and working pressures."

Wyoming includes a map in its regulations that shows where formation pressures are unknown. In those areas, types of required equipment, and installation, pressure and testing specifications are listed in detail. New Mexico requires a blow-out prevention program to be submitted with the drill permit application in areas of unknown pressure. Colorado lists equipment components, and requires daily inspections of equipment during drilling and posting of emergency phone numbers. Also, wells must be located at least 150 feet from buildings, roads and property lines.

Alberta has a well classification system based on depth. Detailed blowout prevention equipment and operational specifications are included in the regulations for each well class. Rig crews must be adequately trained and weekly safety drills are required. Also, testing requirements for each step of the drilling process are specified.

H. Air Quality

Sulfur dioxide (SO_2) and H_2S are the two primary air pollutants associated with oil and gas development. Flaring produces SO_2. As described in the section on safety, gas containing H_2S is supposed to be flared (unless it is collected and treated). If the equipment is working efficiently, the flaring completely converts the H_2S to SO_2.

All of the state regulations except Colorado's provide for flaring associated or "casinghead" gas, and flaring or venting of gas in connection with well completion and testing. Montana, New Mexico and Utah place limits on the time and/or volume of flaring that may take place. To exceed the rates set by Utah and Montana, operators must submit justification statements showing that marketing the gas is not economically feasible. North Dakota and Wyoming allow flaring pending

arrangements to dispose of the gas in some useful manner. It should be noted that the oil and gas regulations in the various states approach flaring from the view point of conserving the gas resource and, where H2S-laden gas is concerned, to insure safety.

Air quality statutes and regulations require new sources of air pollutants to obtain a permit if they exceed a certain size as measured in emission levels. In Montana the emission standard is 25 tons or more of any regulated pollutant per year, including both SO_2 and H_2S. Past studies in Montana have shown that some wells exceed these limits but the violations are not usually discovered unless there is a complaint and subsequent monitoring.

Wyoming, North Dakota, Alberta and Montana air quality agencies have concerns about the cumulative impacts of flaring (i.e., a number of wells flaring in close proximity may result in violations of ambient SO_2 standards). Cumulative impacts have become an issue in Wyoming due to episodes of flaring large quantities of sour gas in the Overthrust area. However, no major studies have been undertaken to date. North Dakota reports that some areas producing gas with high H_2S concentrations are close to exceeding ambient SO_2 standards, again due to flaring. Monitoring stations have been established in Mackenzie County, in part because a Class I air quality area, the Theodore Roosevelt park, is located only a few miles away.

Several years ago an oil and gas well emission inventory was conducted in Montana's Williston Basin, but it produced inconclusive results because calculations were based on high, rather than average, H_2S concentrations. Stack tests of flare equipment have revealed inefficiencies in converting H_2S to SO_2 in both Montana and North Dakota. One problem noted by Montana air quality personnel is the lack of baseline data on existing ambient air concentrations in major oil and gas producing areas such as the Williston Basin. This makes it difficult to evaluate the effect of new wells.

Alberta's regulations require companies to file a special application in order to flare sour gas. The application must include a topographical map showing the well location and any towns, residences or recreation areas within a three mile radius, a gas analysis, the volume of gas to be flared and stack dimensions. Alberta has required operators to either gather the gas or cap wells in areas where the volume of flaring has threatened its air quality standards. Both Wyoming and Alberta officials report that sour gas processing facilities are a concern, especially if located near fields that are already near to or exceeding ambient SO_2 standards or, for Wyoming, if located near Class I air quality areas.

I. Well Abandonment

To abandon a well in Montana, companies are required to give oral notice and receive approval if no casing has been run. If casing has been run, written notice is required, including a description of the plugging method, and depths and number of plugs that will be used. The notice

must also be sent to the surface owner. A subsequent report is required within 15 days that must specify the nature and quality of plugging materials used. The site is inspected thereafter. Release of the bond follows, typically after revegetation is established. Colorado has a similar system, except for requiring somewhat more detail in the completion report.

North Dakota, Utah and Wyoming regulations contain specific requirements for the length and placement of plugs. North Dakota and Utah also specify the amount and placement of cement. North Dakota is unique in requiring 24-hour advance notice of plugging; its policy is to have an inspector witness each plugging operation. Not enough details about Alberta's abandonment requirements were available to make a complete comparison with the various state regulations. Advance notice of plugging is required. However, plugging methods are not specified in the regulations and apparently are specified through interim directives from the provincial government.

Montana, North Dakota, New Mexico and Alberta have established "abandoned well" funds to provide for reclamation at wells that have been improperly plugged or well sites that have not been reclaimed. Alberta's program has only recently been created and is not yet fully operational. New Mexico oil and gas staff said that their fund is seldom used, and North Dakota reportedly spent only one-fifth of its available funds last biennium.

The history of Montana's program is similar to New Mexico's and North Dakota's. The abandoned well reclamation program was created in 1974 at the same time that the Resource Indemnity Trust (RIT) fund was established. The Department of Natural Resources and Conservation was given administrative responsibility for the program and instructed to maintain an inventory of abandoned oil and gas wells, injection wells, sumps and seismographic shot holes that "disturb land, water or wildlife resources to a degree not in compliance with plugging, pollution prevention and reclamation rules of the Board of Oil and Gas Conservation." The inventory is to be compiled from petitions or written statements from the owners of surface rights or lessees. If the responsible party cannot be located, the Board notifies DNRC, and the department is authorized to reclaim the disturbed land with RIT funds, as appropriated by the Legislature.

In each of FY's '82, '83 and '84, $65,000 was appropriated for the abandoned well fund. Only slightly more than $7,000 was spent on two or three surface restoration projects during that period. DNRC sent letters to a number of other state agencies requesting information about any problem wells that field staff might discover, but no additional projects were identified. During the 1985 legislative session the annual appropriation for the fund was reduced to $10,000.

II. SOME PREVIOUS OIL-GAS EVALUATIONS IN MONTANA

A. Environmental Quality Council

The Environmental Quality Council (EQC) has monitored activities of the Board of Oil and Gas Conservation and various environmental-related aspects of oil and gas production in the past. Previous activities have included a 1978 tour of areas in northeastern Montana where salt water brine contamination problems were occurring, and participation in meetings concerning gas flaring and methods of plugging seismic shot holes.

The 1978 tour and subsequent staff report appears to be the EQC's most extensive previous examination of environmental problems resulting from oil and gas production. The staff report stated that "the law governing the lining of salt water pits has been in effect since 1954, and yet we found instances of pits with no lining or pits lined with less than 2 inches of unpacked bentonite. ...We noticed salt water pits which were not sealed or had been sealed with 1 inch of bentonite." It was further noted that "a minimum of 6 inches of packed bentonite" is required for sewage lagoons by the Department of Health and Environmental Sciences, and that the Soil Conservation Service requires a minimum of 4 inches of packed bentonite for water up to 8 feet deep in its design criteria for dams and impoundments. If the water is deeper, the clay layer must be thicker.

The Board's current regulation concerning disposal of salt water in earthen pits was adopted in 1972. While the rule does not contain specific guidance about the amount of clay or other tight soil that is necessary to properly line a pit, it should be noted that the areas EQC observed in 1978 could have been contaminated by pits that were constructed prior to 1972.

The 1978 report concluded with a recommendation that the Board of Oil and Gas Conservation and other agencies cooperatively establish a sampling and/or ground water monitoring program to determine the extent of groundwater contamination problems from salt water and brines. This has not been done to date.

In October 1980, then EQC chairman Representative Dennis Nathe and EQC staff met with members of the Northeastern Montana Land and Mineral Owners Association, representatives of the oil industry and others to discuss salt water problems. One resulting recommendation was that "salt water pits shall be made impermeable or the material in question shall be stored in enclosed tanks. This requirement shall be placed on the drilling permit."

B. Legislative Auditor

In 1981 the Legislative Auditor conducted a sunset review of the Board of Oil and Gas Conservation. The auditor concluded that the Board has been less effective in protecting surface owner rights and other natural resources than in encouraging production. Recommendations to correct this problem included a number of items concerning management of the field inspection staff and the need for better inspection records. The Board took steps to address these recommendations by implementing a system for field inspectors to document their daily activity and

authorizing compensatory time for inspectors so they can spend long hours in the field.

The auditor's report also included other findings concerning reserve pit regulations and the abandoned well reclamation program as follows:

1. "During drilling, the saltwater and mud are kept in (reserve) pits at the site. Board rules require that these pits be constructed so they are impermeable, but the rules do not further define impermeable. Most companies use plastic pit liners to assure proper containment. However, a few companies either do not use liners or use liners of such quality that they can be easily torn."

2. "Another practice of salt water disposal is the burying of contaminants on site. This seems inconsistent with having a pit liner since what was contained by the liner is now being introduced into the ground. The board could help alleviate these problems by revising its rules. It could consider rules to require pit liners for all salt-based drilling pits, to establish minimum pit liner standards, and to prescribe rules for the disposal of salt based residues."

3. "[T]here may be many improperly reclaimed wells drilled prior to the board's creation in 1954. ...The Legislature has recognized this potential problem and has defined a procedure to pay for the cleanup. Under the statutes, DNRC is to set up a procedure for cataloging reports of wells which were not plugged and abandoned properly. ...If the responsible party cannot be found or is no longer active, Resource Indemnity Trust money can be used to reclaim the site. The board has received an appropriation to fund reclamation from the Trust Fund. DNRC's approach has been to await reports of improper abandonments rather than actively soliciting them. Since DNRC has not received many such reports, there has been little activity relating to this statute. The Legislature should clarify whether it wants the board and DNRC to implement a program to actively solicit reports of improper abandonments."

C. Governor's Ground Water Advisory Council

In a January 1985 report, the Governor's Ground Water Advisory Council stated that monitoring near reserve pits is infrequent and that the number of contamination incidents reported in Montana may be small compared to actual contamination occurrences. The Council recommended that the Board of Oil and Gas Conservation assess the extent to which presently accepted reserve pit reclamation procedures threaten ground water quality. A June 1985 memorandum was written by oil and gas division's petroleum engineer in response to the Council's recommendations. It states that "[b]reaching the pit liner by squeezing and trenching the pit could result in the contamination of near surface groundwater in the vicinity of the pit," but most of this contamination would likely be limited to the vicinity of the site. In discussing potential changes in reclamation procedures to avoid potential contamination problems, the memorandum states that landowners and governmental agencies tend to specify that reserve pits must be

reclaimed in the absolute minimum of time. As a result there may not be enough time for the fluids to evaporate.

According to the memorandum, the method of removing free water for off-site disposal, and allowing natural drying before backfilling the pit requires a much longer reclamation period. Alternatively, the pit contents can be removed off-site through the use of a closed mud system and reused at another site, but not all drilling contractors are equipped for this method of operation. If the mud cannot be reused, a disposal problem occurs due to lack of available sites. Local governments are not willing to accept the semi-liquid wastes at solid waste landfills, and commercial disposal wells cannot accept the mud solids. Therefore on-site burial of the mud solids continues to be the most viable disposal method.

The memorandum further notes that semi-encapsulation of the mud pit appears to be a reasonable alternative in cases where adverse affects to groundwater are likely. Trenching and spreading the mud solids can be avoided by folding the pit liner over the pit, with care not to tear the liner. Additional dewatering would be necessary, and possibly a longer period for drying of the pit contents. However, in this manner the integrity of the liner could be better maintained. Additional liner material could be placed over the pit if folding the existing liner over the pit cannot be done; a bentonite seal could also be acceptable.

The memorandum concludes that prohibition of squeezing and trenching reserve pits on a statewide basis would probably be both unreasonable and a burden because groundwater quality is not likely to be adversely affected. However, "[i]n cases where pit contents pose a threat to water quality some additional care and expense may be fully justified."

III. REGULATORY ANALYSIS AND OPTIONS

A. Introduction

The review presented in Part I indicates the variety of approaches utilized in state and provincial oil and gas regulation. Some agencies require a great deal of specific information for permitting decisions, while others grant routine approvals with little paperwork or preliminary inspections. Even within a single jurisdiction, regulatory constraints may vary widely depending on the phase of exploration or development under review.

Environmental protection objectives of all types are often better achieved though preventive actions rather than through penalties, condemnation and/or clean-up efforts after water contamination or other problems have already occurred. Also, reactive efforts can be more expensive and are less effective than designing projects with appropriate environmental safeguards built in from the beginning.

In order to analyze the effectiveness of the various regulatory systems, it is important to keep in mind the goals of oil and gas regulation that are associated with environmental protection. The following discussion

lists the environmental regulatory goals of various phases of oil and gas development, including seismic exploration, drilling permits, reserve pits and produced water pits, and safety considerations. The highlights of the regulatory systems imposed by other jurisdictions are then compared to the Montana system. Abandoned well reclamation and staff resources are also discussed. Finally, options for Montana regulation are sequentially presented and numbered within the following subsections, and information presented on the tradeoffs that adoption of these options might entail. A number of the options follow up on the recommendations resulting from previous evaluations discussed in Part II.

B. Seismic Exploration

Environmental Regulatory Goals:

1. Provide advance notice of seismic operations to surface owners and the state to provide opportunity for interaction and ensuring that concerns are addressed

2. Require adequate shothole plugging to protect water quality and ensure public safety

Comparative Analysis

Contact between seismic exploration companies and Montana oil and gas division staff does not typically occur before field operations commence, except through telephone conversations. The counties call the oil and gas division concerning pending exploration activity when the exploration permit has been issued. Division staff then have an opportunity to discuss the planned operations with the seismic crew.

Landowners in Montana have apparently had more complaints about improper plugging of shotholes in the past than in recent years, probably due to statutory changes and new or amended regulations that were adopted in 1977, 1982 and 1983 to require seismic crews to provide proper identification and advance notice of planned operations to surface users. The various states and Alberta exhibit a wide range of inspection patterns. Utah and Alberta inspectors try to observe seismic shothole operations. North Dakota does not make seismic-related inspections of any type. Montana and Colorado inspections occur after plugging is completed, but the inspectors do not visit all shotholes.

The system used in Wyoming varies from these approaches. Wyoming oil and gas staff meet with seismic exploration companies before they begin initial operations in the state. This meeting is to ensure that the regulations are discussed and it removes the problem of trying to have such conversations at a point when specific individual field operations have been permitted and may be about to begin.

Options and Tradeoffs

1. Montana's Oil and Gas Conservation Division staff could hold meetings with seismic crews before they begin initial operations in the state.

This option would add to the staff work load, but it could result in a reduction of time required for separate telephone discussions prior to each individual seismic operation.

2. Oil and Gas Conservation Division staff could inspect all or a greater proportion of plugged seismic shotholes than is done under current practice.

The tradeoff is between work load level, work priorities other than seismic operations, and water quality protection. Since the current volume of oil field activity is drastically lower than previous years, more staff time might be available to inspect shothole locations.

3. A reporting system could be developed to require seismic exploration companies to file information indicating whether water was discovered in any of their shotholes, and if so, what type (i.e., artesian, non-artesian, salt, fresh).

This option would allow plugging inspections to be targeted to those holes that would involve the highest risk of creating problems if not properly plugged.

4. The current practice of discussing individual seismic operations with companies by telephone, and inspecting a random sample of plugged holes could be continued.

Staff work load may be greater than would be required by a system of having one-time meetings with seismic companies before they begin to operate in Montana. Random inspections of a portion of shotholes may mean that some improperly plugged holes are overlooked, with attendant problems unresolved.

C. Drilling Permits

Environmental Regulatory Goals

1. Ensure proper well construction for safety and water quality protection

2. Require wells and other surface facilities to be constructed, and associated surface uses to be conducted, in an environmentally acceptable manner

Comparative Analysis

Personnel from several other state and Alberta oil and gas agencies indicate that they have authority to attach stipulations to permits addressing pit siting and construction, safety, surface use, road

placement and any other practices associated with oil and gas development that can adversely affect the environment. The other states' statutes do not appear to be significantly different than Montana's, but additional legal evaluation is needed to determine this with any certainty.

Montana's Board of Oil and Gas Conservation considers issuance of drilling permits a ministerial action*. The Board places standard conditions on all drill permits that address such matters as permit fees and bonds, construction of an "adequate" sump to contain all mud and water bailed from the hole, and properly cemented casing both to control the well and to protect possible productive and fresh water formations. The Board's staff also have occasionally required more surface casing than included in an operator's original drill plan in order to protect fresh water aquifers.

The Board believes it lacks authority to condition permits to lessen the potential environmental impacts associated with surface activities such as road building and placement of pits (see EQC Staff Report, "Montana Environmental Policy Act (MEPA) Review of Oil and Gas Drilling Permits"). The Board's regulations do not provide for the collection of site data that would allow the staff to identify and correct potential environmental problems before they occur. If the operator makes a wrong decision, the available options include withholding all or part of a company's bond, potential condemnation of pits and potential legal action by the surface owner. Montana's statutes and regulatory system defer to the surface owner's judgement in a variety of instances (e.g., seismic shot hole plugging, stipulations placed on surface use and restoration). In the case of shot hole plugging, the oil and gas rules contain plugging specifications, but landowners may agree to different methods. The Board has statutory authority to adopt rules to prevent contamination of and damages to surrounding land or underground strata caused by drilling operations and production, but there is no reference to surface use restrictions.

In 1981 the oil and gas statute was amended to require oil companies to notify landowners before drill operations begin, and to provide for landowner collection of payments for surface damages or disruption. Testimony presented in support of this legislation by landowners from major oil and gas producing areas in Montana included cases where landowners were given little or no notice of pending drilling operations, and were not included in well site or road selection.

*A ministerial action is a decision that an agency carries out according to predetermined criteria (i.e., determining that permit fees have been paid, and descriptive information about the proposed well drilling program has been submitted). No judgement is necessary in carrying out a ministerial action if all the criteria are met. By contrast, a discretionary action involves analysis and potential modification of proposed drill operations to account for site-specific differences in both surface characteristics and underground strata.

According to the testimony, damages from improperly constructed or improperly reclaimed reserve pits, improper surface restoration, and road placement and construction have occurred. Many of these problems apparently occurred in cases where mineral and surface ownership are split. Cases of misunderstandings were reported about the timing and amount of clean-up and surface restoration a landowner could expect.

Many of the problems arising from lack of landowner notification prior to drilling have ceased. However, there may be a continuing correlation between the types of problems cited by the landowners and the lack of clear requirements in the Board's rules and/or the lack of regulatory involvement in road and pit placement and construction, and other surface use activities.

Most state oil and gas laws reflect the concept that landowners should have a decisive role in determining how oil and gas operations are conducted on their property and ensuring that land and water protection measures are fully integrated into the specifications that oil and gas companies are expected to follow. Utah's system of scheduling pre-drill site inspections, which are attended by state agency personnel, company representatives, and the landowner(s), appears particularly conducive to determining the most acceptable means of proceeding with oil and gas development activities with all parties involved. Considering the diversity of industry practices and variety of soil, water, underground strata and surface characteristics that exist, it is impossible to specify requirements in rules that would appropriately address all site situations. Evaluation of individual site circumstances is more effective.

Options and Tradeoffs

5. Additional legal review could be requested to clarify the extent of the Board's authority to condition drill permits for purposes of environmental protection. Based on the results of the review, additional legislation or rulemaking could be considered, if necessary, to ensure that water quality and other environmental values are protected.

6. The Oil and Gas Conservation Division's review of drilling permits could be modified to include conference calls between the staff, company representatives and landowners. In complex cases, the review could also include pre-drill site inspections. Both conference calls and pre-drill site inspections could be used to determine appropriate environmental stipulations to attach to the drill permit.

This option would add some time to permit review, but would provide the benefit of increased communication among the involved parties and increase environmental protection.

7. The Board's rules could be modified to require companies to submit drill site maps and plans, soil and water data, and site reclamation plans with drill applications.

Environmental review of this material would add to the staff's work load and increase the developer's pre-drilling costs. However, options discussed more fully in another EQC staff report concerning the applicability of MEPA to drill permits indicate that most applications could still be processed expeditiously.

8. The current rules and regulatory system could be maintained.

Some environmental impacts would not be avoided; staff work load and industry responsibilities would not be increased.

D. Reserve and Salt Water Disposal Pits

Environmental Regulatory Goals

1. Protect water quality

2. Restore surface values

Comparative Analysis:

States regulate construction of reserve pits and produced water pits to protect surface waters and shallow groundwater during and after drilling. Wyoming has the most comprehensive regulatory system for reserve pits, requiring companies to gather and submit site-specific water and soil data and pit design information before drilling and pit construction is begun. This system allows the agency to evaluate plans and determine whether any modification is necessary.

Another approach, used by North Dakota and Utah, features drill-site inspections before work commences in order to assess site conditions and insure that reserve pit siting and construction plans are appropriate.

Montana's approach to reserve pit regulation relies on broad statutory language and rules which state that construction must be "adequate" and sealing is required "when necessary" to prevent seepage. Site inspections usually do not occur until after drilling has commenced.

Alberta and all of the states except Montana (and North Dakota, which prohibits salt water pits) require applications and site-specific data before approving construction of on-site produced water disposal pits. These requirements appear to apply to all types of produced water. Utah and New Mexico provide minimum permeability specifications and construction guidelines for installation of pit liners. Monitoring is also required in some cases.

Again, Montana relies on general rule language. Regulations prohibit on-site disposal of produced salt water unless "tight soil" is present. No guidance concerning proper construction of pits is provided and no standards are specified for minimum leakage. Pits that fail to properly impound salt or brackish water may be condemned.

Reclamation of pits involves both surface activities to restore land uses and final disposal of drilling muds and produced water to protect water quality. As noted previously, drilling site reclamation methods appear fairly consistent among the states, and landowners are often given discretion to specify final surface restoration.

Requirements for ultimate disposal of pit muds, drill fluids, and produced water vary widely. A number of methods for pit reclamation are available, and no single method is necessarily appropriate for all locations or conditions. Surface disposal of pit muds is allowed in some states without review. Wyoming requires companies to file a plan for final disposal of reserve pit contents. Alberta and Utah require disposal at approved, off-site facilities unless special permission is given for another disposal method. The Montana oil and gas regulations do not require companies to submit plans for final disposal of drill muds, fluids and produced water, so there is not an opportunity to review proposed drill operations on a case by case basis. According to the Board's rules, waste in reserve pits must either be removed or buried at least three feet below the restored land surface. In a majority of cases, the mud is left in the pit, and liquid that has not evaporated is drained off by trenching prior to leveling the site.

Past evaluations in Montana relating to oil and gas field waste and produced water have included recommendations stating that some type of monitoring program should be established to determine the extent of ground water contamination that may be occurring. To date, no program has been established and very little information specific to Montana has been collected. It has been generally assumed that problems are limited to the localized area around individual well or pit sites, and that contamination of a few acres or nearby water wells is the full extent of the problem. Research on effective pit sealing technologies has largely been confined to the private sector.

Options and Tradeoffs

9. The Board's rules could be modified to require submission of plans for pit construction (in conjunction with site specific soil and water data as specified in Option 7). Staff would review the appropriateness of the plans for each proposed drill location.

10. Pre-drill inspections and inspections before produced water pit construction could be done in lieu of Option 9.

Both Options 9 and 10 would enhance water quality protection efforts. Both options would also require extra staff time. Option 9 would involve review of additional information that is not presently included in permit applications. Also, companies would incur additional expense in collecting the information, but the cost would be similar to costs incurred in surrounding states for comparable requirements.

Inspection staff currently visit sites at some point during drilling operations. If Option 10 were implemented this would add an inspection that does not presently occur, but the visit would be used to insure that drilling and associated activities are appropriate to the site.

Option 9 would allow the staff to conduct a desk review and convey comments to applicants via the telephone. By comparison, it might not always be possible to make site visits in time to accomplish the intent of Option 10 without causing delay of drill operations. Also, Option 9 has the advantage of causing the site data and construction plans to be documented. The Board could waive the need to re-submit the site information for subsequent drill operations on or next to a location previously documented, if soil and water characteristics are the same. After initial implementation, the main burden of gathering site data would fall on wildcat operations.

11. The Board's rules could be modified to:

a. specify a minimum leakage or permeability standard for earthen pits;

b. require submission of plans for disposal of drill fluids and/or produced water, including chemical analysis of these waste liquids. The Board's staff could subsequently modify the plans, if necessary, through conditions on the drill permit.

Industry representatives have frequently expressed the importance of clear regulatory requirements, both through written rules and discussions with agency personnel early in project design. Option 11 would provide a definition of the quality of pit construction that operators need to meet in order to "adequately" seal a pit.

Option 11 would require additional staff time to review plans for ultimate disposal of waste material and fluids and to ensure that the plans are appropriate to the site. Plan preparation would require additional cost and time and, in some cases, additional cost for pit construction and waste disposal. The benefit would be decreased incidents of water contamination due to inappropriate pit construction and reclamation.

12. Retain Montana's current rules and regulatory practices.

Montana's rules and current regulatory practices do not include the guidance or documentation requirements of Options 9, 10 and 11. If pits are improperly constructed, the only recourse is condemnation and cleanup efforts.

13. The Board of Oil and Gas Conservation, the Water Quality Bureau, and any other interested agencies could establish a task force to develop siting criteria for reserve and process water disposal pits and to identify ways to establish a program for monitoring ground water around pits and abandoned well sites.

a. An interagency proposal could be developed to establish a monitoring program with RIT funds.

The tradeoff of not making the effort described in Option 13 would continue the current lack of understanding of the magnitude of water contamination problems from oil and gas operations.

E. Water Quality Jurisdiction

Environmental Regulatory Goal

1. Improve effectiveness and efficiency of water quality protection efforts

Comparative Analysis

According to water quality and health agency personnel in all of the states surveyed, the split in responsibility for water quality between health and oil and gas agencies, along with the lack of environmental staff within oil and gas agencies is a common problem that is hampering water quality protection efforts. Some states have devoted significant effort to coordinating the efforts of their oil and gas and water quality agencies, including New Mexico and Utah.

Options and Tradeoffs

14. The Board of Oil and Gas Conservation and the Water Quality Bureau could be requested to more closely coordinate their efforts and improve communication, potentially including:

a. forming an on-going task force that would meet periodically to discuss problem areas of common interest and responsibility in protecting water quality;

b. formulating a Memorandum of Understanding delineating areas of separate responsibility, and areas where consultation and cooperation would be routinely sought;

c. identifying ways for field inspection personnel from both agencies to cooperate more closely in reporting incidents/sites observed in the field that may be creating or have the potential to create water contamination problems;

15. Although the addition of environmental staff to the oil and gas division may be unlikely in the near term considering the current budget deficit and the depressed state of the oil and gas industry, such an option could be considered for the long term, potentially to be patterned after New Mexico's approach.

16. Current regulatory practices and interagency communication patterns could be maintained.

Monana's water quality and oil and gas agency personnel currently work together primarily when a pollution incident has occurred. Some additional staff time would be required to achieve closer coordination and communication. The benefit might be increased ability to prevent pollution events from occurring or escalating. Given that the Board has primary oversight of all aspects of oil and gas field operations, water quality protection efforts might be most enhanced by addition of at least one environmental specialist to the oil and gas agency staff.

F. Safety

Regulatory Goal

1. Ensure public safety through well control and, where necessary, special management procedures for wells that may produce H_2S gas.

Comparative Analysis

Safety in oil and gas drilling operations is particularly important when there is a potential for discovering H_2S gas. Alberta has a system of classifying "critical sour wells" in terms of both potential H_2S release rates and proximity to people. Both Alberta and Utah require companies to submit plans for dealing with emergencies and accidental releases of H_2S, including plans for protecting workers and the public. Montana's rules do not contain this type of requirement.

Options and Tradeoffs

17. The Board's rules could be modified to require submission of emergency response plans in the event of an accidental release of H_2S.

a. A map showing areas where this rule would apply, or a classification system based on potential H_2S release rates and proximity to residential areas could be developed to better limit the requirement in Option 17 to certain geographic areas or types of wells.

18. A model emergency response plan could be formulated by a task force composed of oil and gas agency staff, oil industry representatives, and interested citizens. This plan could be attached as a condition to drill permits for operations in areas where the potential for discovering H_2S exists.

19. Retain the current rules, which mention H_2S only in the context of requiring flaring of vented gas containing 20 parts per million or greater H_2S.

Preparation of emergency response plans would be an additional information requirement for companies proposing to drill wells in areas where discovery of H_2S gas is likely, or where its presence is unknown. Proximity of proposed drill sites to residential areas has caused public concern in one case in Montana, Sohio's Bridger Canyon drill operation. The potential for an H_2S accident or emergency is very remote if proper well control technology and procedures are used. Nevertheless if an emergency situation were to occur, it would be very important to have plans in place that would insure an immediate and proper response by the drill crew.

G. Abandoned Well Reclamation

Environmental Regulatory Goal

1. Surface restoration and water quality enhancement through clean-up of improperly abandoned wells and sites.

Analysis

During the 1985 legislative session, the Board of Oil and Gas Conservation proposed the establishment of a $1,000,000 contingency fund to respond to problems created by improperly abandoned well sites. Also, an annual budget of $100,000 was requested for this purpose. The proposal was rejected. The abandoned well reclamation fund has a $10,000 appropriation from the RIT fund for FY's 86 and 87. Very few reclamation projects were funded in the period from 1982-1984. However, in 1985 the Board of Oil and Gas Conservation was informed that a leaking well in Liberty County had damaged 1½ acres of farmland and that the current leaseholder's attempts to plug the well had failed. A minimum of $55,000 is estimated to be required to properly reclaim the well. Due to the reduced appropriation, this amount is no longer available. Although about three-quarters of the RIT is funded by oil and gas industry taxes, the reduced appropriation apparently reflects the lack of reclamation projects funded in the past.

Options and Tradeoffs

20. The Board could request its staff to make a report to the 1987 Legislature about the volume of leaking wells or other reclamation problems that are known, discovered or anticipated through the rest of 1986. The report could also include remedial action priorities.

21. Depending on the number of potential projects, the funding level for abandoned well and related surface reclamation could be re-examined during the 1987 legislative session.

The 1981 Legislative Auditor's sunset review concluded that the legislature should clarify whether it wants the Board and DNRC to actively solicit reports of improper abandonments. Currently problem well sites are identified based on landowner complaints, although inspectors also watch for such sites on a continuing basis. A re-newed effort to collect and categorize abandoned well sites that may qualify for reclamation would help establish the volume and extent of the problems the abandoned well fund was established to address. If the list of sites were compiled based on inspector observations, in addition to those specifically reported by landowners, this would take some additional staff time but might yield a more accurate inventory of problem wells.

H. Staff Resources

Environmental Regulatory Goal

1. To ensure adequate guidance to companies concerning environmental regulatory requirements and to provide adequate enforcement.

Comparative Analysis

Based on 1984 data concerning the size of the oil and gas industry and size of field inspection staff in the various Rocky Mountain states and Alberta, Montana's inspector work load appears to be in the middle range when compared to the inspector work loads in the other states/Alberta. Utah, Alberta, and North Dakota inspector work loads appeared to be roughly half that of Montana's, although the North Dakota and Alberta inspectors have Underground Injection Control program duties that were not factored into the work load calculations.

The work load levels calculated in this study do not account for the many variances in regulatory patterns among the states. Another problem is the difficulty of determining the relationship between the quality of environmental-related oil and gas regulation and enforcement among the states and Alberta based on this type of comparative work load data.

Utah appears to have a generally strong environmental component in most of the regulatory categories examined, and it also has one of the lowest inspector work loads. This could imply that Utah inspectors have more time to ensure the quality of individual drill and production operations. The work loads of New Mexico, Colorado and Wyoming inspectors are over twice as high as Montana's, but for selected areas of regulation these states appear to have regulatory systems that achieve a somewhat greater level of environmental protection than Montana rules and regulatory practices (e.g., reserve pits in Wyoming, and produced water disposal in all three states).

Options and Tradeoffs

22. An analysis of the effect of any changes in rules or regulatory practices on Oil and Gas Conservation Division staff could be made in conjunction with efforts to implement options for change previously discussed in this report.

a. The Board and Oil and Gas Conservation Divison staff could be requested to formulate specific proposals to address the potential changes included in the options previously presented in this report.

b. Recommendations and alternative options for re-structuring staff work loads, and/or adding staff, could be developed as a result of the analysis.

The need for this option appears evident in the context of any significant change in an agency's mode of regulation. A long-term and short-term administrative plan would likely be needed to implement options that could result in new rules, staff review of more detailed drill applications and/or additional drill site inspections. This may be an appropriate time to consider changes, given the current hiatus in drilling activity and production.

MONTANA ENVIRONMENTAL POLICY ACT REVIEW OF OIL AND GAS DRILLING PERMITS

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July, 1986

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The Montana Environmental Policy Act (MEPA) embodies a state policy requiring the review of environmental impacts of state actions. A brief written statement called a preliminary environmental review (PER) is prepared to determine whether a proposed action of state government will significantly affect the quality of the human environment. If the PER indicates the proposed action would have a significant effect an Environmental Impact Statement (EIS) must be prepared.

Montana's Board of Oil and Gas Conservation (Board) has approved an average of 900-1000 drill permits annually in past years, but has not historically undertaken MEPA review of the permit applications, with one exception that is discussed in this report. The Board believes that its approval of applications for drill permits is not a state action that must be evaluated according to MEPA procedures because it considers the decision non-discretionary or ministerial. According to the MEPA rules, non-discretionary actions do not require an EIS.

Montana's oil and gas statute directs the Board to make rules to "prevent contamination of and damage to surounding land or underground strata caused by drilling operations and production, including but not limited to regulating the disposal of salt water and oil field wastes (emphasis added)." However, through its rules the Board has defined the drill application content and review process, including the time allowed for review, in a manner that makes permit issuance an essentially ministerial action. A major outstanding issue is whether the Board should excercise more discretion to direct oil and gas field operations than it currently assumes.

RECENT CASE STUDIES

The question of MEPA's applicability to issuance of oil and gas drill permits has been raised at least three times over the past few years. In 1981 the Legislative Auditor conducted a sunset review of the Board, and in finding that the Board had no rules to implement MEPA, stated that the issue of the Board's compliance with MEPA would likely arise in the future, particularly in conjunction with drilling in the Overthrust area, since that area is "more environmentally fragile". The Auditor's report concluded that, "(T)he Legislature should consider clarifying the applicability of MEPA to ...the Board ..." The three specific occasions concerning applicability of MEPA to oil and gas drilling are reviewed below.

A. The Exemption Issue

Senate Bill 410 was introduced during the 1985 legislative session to exempt the Board from MEPA, but the bill died in committee. A number of comments raised by the Board's attorney in response to the Legislative Auditor's report and in support of SB 410 are summarized below, along with relevant comments supplied by other persons during the hearing on SB 410.

According to the Board's attorney, there has been no indication in the 14 years since MEPA was passed that any of the more than 12,000 drill

permits issued by the Board during that time have adversely affected the environment in any significant manner. Also, "to require the Board to base its decisions on permitted well locations on factors other than the location most likely to result in commercial production of oil and gas would hopelessly conflict with (the Board's) statutory mandate to prevent waste and provide for efficient and economic development of oil and gas pools." The Board's attorney noted that the Montana Supreme Court held in Montana Wilderness Association v. Board of Health in 1976 that MEPA is procedural and grants no additional regulatory powers. For example, the Board believes it does not have the authority to regulate construction of access roads.

Several persons commented that the only result of requiring an EIS before the issuance of drilling permits might be to delay development on private lands. It was noted that the appropriate time to apply MEPA review to oil and gas development is when leases are issued on state land. Where the land and minerals are privately owned, the Board felt that MEPA was not intended to provide veto authority over a private landowner's decision to develop minerals.

The Board's attorney cited the following practical problems with MEPA compliance: 1) The Board does not have employees trained in identifying and evaluating "presently unquantified environmental amenities and values" as required by MEPA. 2) Previous testimony before the 1979 Legislature on a matter unrelated to the Board or to oil and gas regulation included an estimate that a core environmental staff of seven people costs approximately $135,000 per year. 3) Approximately $7500 and two months time would be required to prepare a PER for a proposed well for which the company had already completed the basic necessary research; the fees authorized by MEPA would not begin to cover these costs for the average well in Montana.

The Board's attorney submitted comments on both the Legislative Auditor's report and on SB 410 stating that if the Legislature decides that the Board should comply with MEPA and prepare EIS's, clear guidelines are needed to assist the Board in making the judgements called for by MEPA, and in determining when a Board decision might "significantly affect the quality of the human environment."

B. Sohio-Bridger Canyon Application for a Permit to Drill

In October 1984 Sohio Petroleum Company applied for and received a drill permit from the Board for an exploratory, "wildcat" oil or gas well in the Bridger Canyon area north of Bozeman. After a group of residents sued in December 1984 to require the Board to follow MEPA requirements in issuing the permit, Sohio withdrew its application. After SB 410 failed during the 1985 legislative session, Sohio renewed its application and requested the Board to review the permit as though MEPA applied and to prepare a PER. This was the first, and to date it remains the only PER the Board has written.

Residents of Bridger Canyon and other citizens of the Bozeman area expressed considerable opposition to the proposed Sohio well. Concerns

included health and safety effects, and the risk of a hydrogen sulfide (H_2S) blowout. There was also general opposition to the drilling and the possible eventual presence of one or more producing wells in a scenic, rural-residential area.

The public's concerns were registered in several forums, including 1) a public hearing held by the Board in April 1985 prior to the draft PER, 2) comments on the PER, and 3) a hearing before the Bridger Canyon Planning and Zoning Commission that covered a total of seven days in four separate sessions between June and September, 1985. The zoning commission was involved because Sohio and the surface owners of the proposed well site had to obtain conditional use permits in accordance with requirements of a Bridger Canyon zoning ordinance which designated the area an "agricultural-exclusive" district.

Experts in blow-out prevention, safety, and control of H_2S-producing wells were brought in by both the citizens and Sohio to testify at the hearings and otherwise furnish information. In addition, Sohio sponsored preparation of its own environmental impact report and developed a citizen evacuation plan for use in the event of an accidental release of H_2S. Other testimony and information submitted during the hearings concerned the effects of increased traffic in the Bridger Canyon area, access road construction, reserve pit construction, noise impacts, visual impacts, garbage and sewage disposal, and effects on water wells and air quality.

This public interest and opposition was unprecedented for proposed drilling of oil and gas wells on private land in Montana. Wells have been drilled and are currently producing in other areas of the state that are in agricultural use, are relatively close to residences, and contain H_2S gas (e.g., the Sidney area). Also, numerous wells have been drilled on private lands that are considered very scenic and high in natural environmental amenities. The Bridger Canyon well may be the first site that has exhibited all of these characteristics (or the potential, in the case of H_2S).

The Board's PER was prepared at Sohio's request. Subsequently the Board elected to take the unprecendented step of attaching a number of site-specific conditions to the drill permit. The Board stated that, "to the extent within our statutory authority, we should ...meet the concerns of the area residents." The conditions addressed volume of surface casing to be placed in the well, sewage disposal, volume of water use, reserve pit lining, removal of pit contents, a citizen evacuation plan and drilling safety. Also, commitments were made to conduct more frequent inspections than are normally done, and to prepare a detailed inspection checklist, with copies of the results of each inspection to be furnished to the "Gallatin County Zoning Board". The Board of Oil and Gas Conservation concluded that the issuance of the drill permit, as conditioned, was not a major action significantly affecting the quality of the human environment and therefore no EIS was required.

The Bridger Canyon Planning and Zoning Commission imposed 33 conditions on Sohio's use permit that addressed the following: evacuation training

for sheriff, fire and disaster/emergency service personnel and establishment of communication lines from the well site to these offices; installation of sirens at the site; payment of compensation for livestock killed or injured due to H_2S inhalation; paving and maintenance of the access road; repair of the county road (if necessary); control and scheduling of traffic; further approval of site reclamation plans; visual screening of potential future production facilities; inspections by county or zoning commission personnel; repair or replacement of water wells (if necessary); monitoring and control of noise; monitoring of air quality; payment for damages; and disposal of sewage and garbage. The zoning commission approved the conditional use permit in October 1985.

If the proposed well site had not been within a zoned agricultural district, it is unclear whether the issues included in the conditions approved by the zoning commission would have been addressed. If these issues had not been addressed, it is also unclear whether the citizens opposing the well would have pursued further legal action against the Board. The Board deferred to the zoning commission on several items such as noise and traffic control, final approval of the citizen evacuation plan, and standards for access road construction. As noted previously, the Board stated that its conditions would be limited by the extent of its statutory authority. Sohio agreed to all of the conditions set by both the Board and the zoning commission and incurred considerably more expense than is normally required for well drilling in Montana.

The review process led to approval of the Sohio drill permit in October of 1985, a year after the initial application was filed. Sohio began drilling in late January 1986, but in July announced that the well was a "dry hole" and would be abandoned.

The lack of a single, comprehensive environmental review document and a well-defined review process may have worked to the detriment of Sohio. The Board was criticized by many interested citizens for giving routine approval to the initial Sohio drilling permit application in the fall of 1984 without public review. Further criticism was directed at the Board's PER. Many interested citizens considered it inadequate because of the lack of detailed analysis of most topic areas listed in the MEPA rules, and because it ignored some topics altogether. The environmental impact report prepared by Sohio's consultant received public criticism because it was not an independent study. The Sohio review process was further complicated by the involvement of two decision-making bodies and two hearings held for different purposes from April-September 1985.

This case study raises at least two important points for consideration. First, environmental review of even very complicated drill projects in environmentally sensitive locations could be structured more efficiently, with reductions in the uncertainty and potentially the amount of time required to conduct the Sohio permit review. State agencies that routinely prepare PERs and EISs have learned to streamline the process without sacrificing the quality of environmental analysis. Second, the vast majority of drill permits would not require the level of review involved with the Sohio permit, assuming compliance with all

aspects of the Board's regulations, and imposition of conditions/mitigation measures to address site specific environmental concerns.

C. The Coal Creek Lease and Drilling Plan PERs

A PER has been prepared on only one other proposed oil/gas well on state or private land in Montana to date. The Department of State Lands (DSL) received an "operating plan" from CENEX in early May 1984 for drilling an oil/gas well on the Coal Creek State Forest west of Glacier National Park. The "operating plan" was required as a result of lease stipulations identified by a 1983 PER prepared by DSL that examined the environmental consequences of oil and gas leasing in the forest. The DSL decided to prepare a detailed, site-specific environmental review of the planned drilling, and issued the resulting PER for public review and comment in October 1984.

The PER on the Coal Creek well is another example of how environmental review of a controversial oil/gas drilling project can be handled. Coal Creek State Forest is located in the drainage of the North Fork of the Flathead River. The area has outstanding natural resource values, including a national scenic river, Glacier National Park, Glacier-Waterton Biosphere Reserve, and critical habitat for the grizzly bear and wolf. There is also a group of concerned citizens, the North Fork Coalition, monitoring all types of development in the drainage.

Based on the drill plan PER, the DSL identified a number of mitigation measures addressing water quality, accidents, man-bear incidents, bald eagle nesting, noise and visual impacts, and air quality. These measures, which were attached as conditions to the operating plan, played an important role in DSL's determination that environmental impacts would not be significant and that an EIS would not be necessary.

Public comments on the PER indicated some disagreement with this decision. In a supplement to the PER issued in January 1985, the DSL stated that an EIS would be written to examine the impacts and issues associated with oil and gas production on the Coal Creek Forest if a major hydrocarbon discovery resulted from the drilling. The DSL noted that it is highly unlikely that environmental review of a future production proposal would "identify a potential impact capable of entirely preventing development not identified at the previous exploration evaluation stage." The same discussion added, however, that "it is not possible to entirely rule out a denial for a production stage at the well site."

The sequential type of review DSL has used on the proposed Coal Creek drilling operation has been described as "tiering" or "staged review". It recognizes that adequate information to predict impacts of potential future actions such as drilling and production may not be known at the time that leasing evaluations and decisions are made. Also, drilling does not ultimately occur on a high percentage of leases, and production does not result from many exploratory drilling operations.

The "tiered" review was possible because the DSL has authority to review all activity on state lands, and aproval at one stage of operations is not a guarantee that subsequent approvals will be given. Federal agencies such as the Forest Service and Bureau of Land Management have followed a similar pattern in evaluating leasing and drilling decisions. It is important to note that issuance of permits by the Board of Oil and Gas Conservation has historically conveyed implicit approval to proceed with production. If commercial deposits of oil or gas are discovered, compliance with the Board's rules is required, but significant environmental review does not occur at the production stage.

Since issuance of the PER supplement, DSL has discovered that it does not have clear title to the land proposed for drilling. Old records potentially transferring the land to the U.S. Forest Service need to be clarified. Also, the North Fork Coalition filed suit to require DSL to prepare an EIS on the Coal Creek drilling project. For these reasons as well as the current depressed market conditions, no drilling has occurred on the Coal Creek State Forest to date.

II. ENVIRONMENTAL POLICY ACT REVIEW OF DRILL PERMITS IN OTHER STATES

There are approximately a dozen states that have environmental policy acts or other administrative processes similar to MEPA. Of these states three have significant oil and/or gas production. The following section is a brief summary of how the environmental review of oil and gas drilling is accomplished in New York, Michigan, and California.

A. The New York Environmental Quality Review Act

New York's Department of Environmental Conservation (DEC) is responsible for issuing oil and gas drill permits under the Oil, Gas, and Solution Mining Law and the State Environmental Quality Review Act. New York has between 4000 and 5000 active oil wells and about 4000 active gas wells. In comparison, Montana had 4716 active oil wells and 1958 gas wells in 1984. In 1984, 686 wells were drilled in New York, a volume of activity that is comparable to the 725 wells drilled in Montana in the same year. New York employs about fifteen field inspection staff as compared to seven in Montana. Pre-drill site inspections are conducted in New York before drill permits are issued. Permit processing takes about 10 business days if the application contains all necessary information, as compared to one-day service in Montana.

The DEC is currently completing a new generic EIS (GEIS) that will be used to establish the future basis for environmental review and permitting of oil and gas wells. A GEIS is equivalent to the programmatic EIS described in Montana's rules for implementing MEPA. Programmatic EIS's are used to evaluate a particular class of agency-initiated actions. The GEIS examines the various types of impacts that could occur from oil and gas drilling and production in different types of locations, and identifies mitigation measures that could be used to condition drill permits. Some of the conditions are being proposed for inclusion in New York's oil and gas regulations.

The conclusion reached in the draft GEIS is that the permitting of standard individual oil and gas wells pursuant to the New York oil and gas statute and regulations, in combination with additional permit conditions, is considered to be a non-significant action under the environmental policy act. This means that compliance with the regulations is sufficient for wells and locations that are equivalent to those studied in the GEIS. Decisions on permit applications for such wells do not require public review and comment other than what may already be required under the oil and gas statute or regulations.

Drilling proposals that are located in agricultural districts, parklands, or near municipal water supply wells, or proposals that require other types of permits or approvals because of their location may have to undergo additional site-specific environmental review. Special mitigating measures may be identified and attached to drill permits for these types of projects. In addition, the oil and gas agency works with the operator and landowner to locate well sites along existing roads, where possible, in order to restrict or minimize disturbance to agricultural land.

Companies proposing wells that are located in the types of areas noted above and that exceed certain threshold sizes (usually defined in terms of number of acres to be disturbed), must submit an "environmental assessment form" that includes descriptive information about the drill plan and the proposed location. Attachment A is an example of the environmental assessment form, which also includes suggested sources of environmental information that the applicant can consult.

B. Michigan's Executive Order of the Governor

Over the past few years Michigan's Department of Natural Resources (DNR) has issued approximately 1000 oil and gas drilling permits per year. Oil and gas activity is presently located only on the southern penninsula where the agency has 40 field staff located in six district offices. The staff spend about 80% of their time on matters related to oil and gas. The permit approval process takes approximately 45 days. An Executive Order of the Governor provides essentially the same mandate for environmental review of major state actions as MEPA requires in Montana. Oil and gas drilling applications must receive environmental review under the executive order. Companies are required to include an environmental assessment and list of safety equipment with the application. Oil and gas, fish and wildlife, and forestry staff conduct a field review of each proposed site and obtain input from the surface owner. Joint agency recommendations are included as conditions to the drill permit. If the proposed drill location includes environmentally sensitive areas or unique resources previously identified by state agencies, the review is more complex and may include special opportunities for public comment and identification of special stipulations for attachment to the drill permit. DNR can deny drill permits on a case by case basis, but environmental problems are more commonly resolved by re-engineering or slightly re-locating planned drilling operations.

C. The California Environmental Quality Act

The state and county governments share responsibility for approving oil and gas drilling operations in California. The counties' approval concerns surface use and well location. They decide the level of environmental review that is required under the California Environmental Quality Act (CEQA) and prepare the necessary evaluations. Based on the environmental review, conditions may be attached to surface use permits in order to reduce adverse impacts. The state oil and gas agency subsequently issues the actual drilling permit, and regulates the drilling and casing program.

Only a few California counties prepare environmental analyses as part of the review process. Most drill applications are approved under CEQA as "negative declarations". This means that an evaluation of the information submitted by the applicant company, and as conditioned by the county, shows that no signficant adverse environmental impacts would occur, and no EIS will be prepared.

In Sacramento County, negative declarations typically take 30 days to prepare, with another 10 days added for public review. All oil and gas wells in that county receive at least this level of review. Attachment B is an example of a conditioned use permit for a gas well, and the initial environmental study and checklist used to make the determination that the well would not have significant impacts. A review of two negative declarations from Sacramento County indicates that the initial studies and conditions are nearly identical for these wells except for a few site-specific conditions concerning proximity to residences and floodplains. Apparently the environmental analysis has been standardized, and adjusted to incorporate site-specific considerations for each proposed well.

III. FEDERAL REVIEW OF DRILL PERMITS UNDER THE NATIONAL ENVIRONMENTAL POLICY ACT

Oil and gas drilling is a category of activity that is normally "categorically excluded" from detailed environmental review under the National Environmental Policy Act (NEPA). A "categorical exclusion" does not mean that drilling is exempt from NEPA. Rather, it involves an evaluation that is roughly equivalent to the checklist type of PER many Montana state agencies currently use to determine whether significant impacts are likely to occur as the result of a proposed action. Attachment C contains a completed categorical exclusion form with attached stipulations from the Wyoming Bureau of Land Management.

Most drill permits qualify as categorical exclusions for at least three reasons. First, federal agencies have developed specific requirements for reserve pit design and other types of surface disturbance associated with oil and gas drilling that reduce most common types of environmental impacts. Second, forest or resource management plans contain information and standard restrictions for various types of uses on public lands that further limit potential impacts. Third, for some areas, oil and gas leasing programmatic EISs have already assessed many

of the impacts of oil and gas exploration and development and identified mitigation measures for thess activities. Available background data and the location proposed for drilling are examined to determine whether a proposed drill operation is likely to cause significant adverse environmental impacts. Proposed drilling would not qualify for a categorical exclusion if it could cause any of the following conditions:

> 1) cause significant adverse effects on public health or safety; 2) cause adverse effects on unique geographic characteristics such as historic or cultural resources, park, recreation or refuge lands, wilderness areas, wild or scenic rivers, sole or principal drinking water aquifers, prime farm lands, wetlands, flood plains, or ecologically significant or critical areas, including those listed on the National Register of Natural Landmarks; 3) cause highly controversial environmental effects; 4) cause highly uncertain and potentially significant environmental effects or unique or unknown environmental risks; 5) establish a precedent for future action or represent a decision in principle about future actions with potentially significant environmental effects; 6) cause adverse effects on properties listed or eligible for listing on the National Register of Historic Places; 7) cause adverse effects on species listed or proposed to be listed on the list of endangered or threatened species, or have adverse effects on designated critical habitat for these species; 8) require compliance with floodplain management, wetland protection, or fish and wildlife coordination acts/executive orders; 9) threaten to violate a federal, state, local or tribal law or requirements imposed for the protection of the environment.

Mitigation measures submitted by the applicant, another agency or the BLM as part of the original project proposal are acceptable for reducing impacts below the "significance" threshold. Standard stipulations may also be attached to the drill permit to accomplish the mitigation. If these stipulations/mitigation measures are not adequate to reduce impacts in the above-listed categories to the point that they are no longer considered "significant", the project will not qualify for a categorical exclusion. In that event, an environmental assessment (EA) must be prepared. EA's contain information addressing the same categories listed above, but in more detail than a categorical exclusion and with more emphasis on defining site-specific mitigation measures to reduce impacts.

EA's are usually prepared if the proposed drilling would occur in a "new" area that is not near an established oil/gas field or if one or more of the significant adverse effects listed above would be likely. EA's are more equivalent to the "expanded PER's" some Montana state agencies prepare. EA's must contain sufficient analyses to allow readers to reach a conclusion about the significance of impacts, and include descriptions of the proposed action and alternatives, discussion of any irreversible impacts or commitment of resources, (direct, indirect and cumulative impacts), proposed mitigation and a description of public involvement efforts. The seriousness of resource conflicts, degree of public interest or controversy, and risk to resources dictates the complexity and level of detail in an EA. Federal agencies are given

considerable discretion as to size and complexity of these documents and are allowed to tailor them to case by case circumstances. Again, this is very similar to Montana's PER process.

If significant impacts remain after an EA is completed and mitigation identified, an EIS must be prepared to accomplish the more detailed level of review required to address those impacts.

The Board of Oil and Gas Conservation and the Montana BLM have a cooperative agreement to provide consistent statewide oil and gas orders, policies and procedures affecting federal and non-federal lands, to avoid duplication of effort and define jurisdictional authority on Indian lands. The Board approves all matters where non-federal minerals are involved, including cases where federal and/or Indian minerals are partly involved. If federal or Indian lands are involved the BLM may require that the Board refer the case to the BLM for decision.

The cooperative agreement generally appears to work well. However, the sequence of the approvals needed from federal agencies and the Board varies and may not always occur in the most appropriate order. For example, during the spring of 1986 the BLM was preparing an EA on an application submitted by Amoco to directionally drill onto a federal lease onto the Custer National Forest. The proposed drill site is located on private land south of Red Lodge. The Board approved the drilling permit while the EA was being prepared. The BLM indicated that the Board's decision did not create a problem in this case, but that difficulties could arise in cases where the BLM's review indicates that a drill permit should be denied.

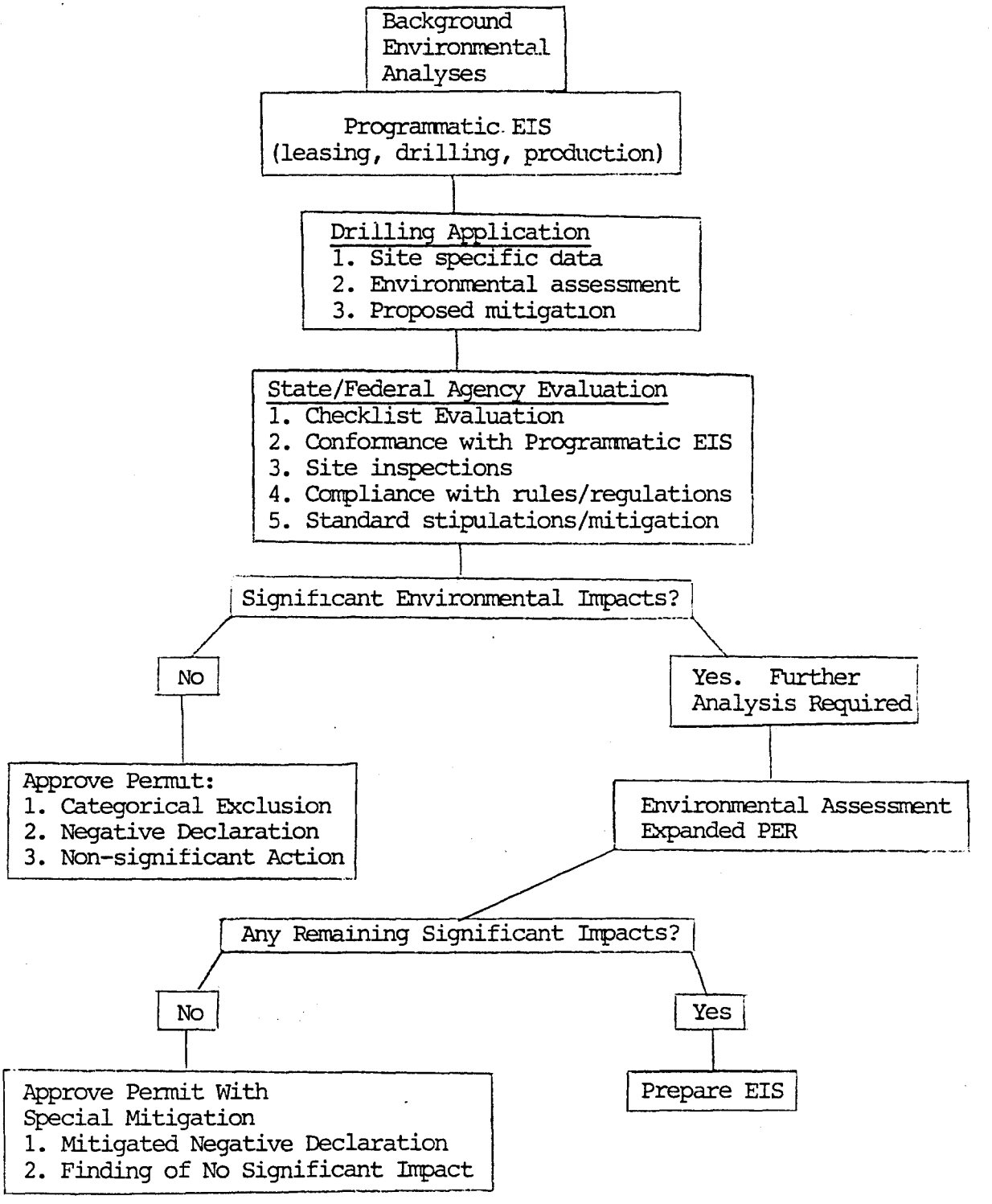
ANALYSIS

New York, Michigan, California and federal agencies apply the concept of tiered environmental review in approving drilling permits. This section summarizes the various steps in the environmental review process as shown in the accompanying diagram and explores the possibility of developing a method for satisfying MEPA that would not create delay in approving most drill operations.

A. The Programmatic Environmental Impact Statement

The first step in applying MEPA to the review of drilling permits could involve a programmatic EIS. The New York process utilizes this model for establishing that oil/gas drilling operations exhibiting certain characteristics and conditioned with "standard" environmental stipulations are exempt from further environmental review. Programmatic environmental analyses are prepared to clearly identify the range of impacts that may occur from oil and gas exploration and development and to identify potential mitigation measures. "Standard environmental stipulations or mitigation measures" refer to specifications applied to drill site construction activities that would reduce environmental impacts. Some examples include removing and stockpiling top-soil, standards for new road construction that minimize the potential for

MODEL ENVIRONMENTAL REVIEW OF OIL/GAS DRILLING



erosion, standards for crossing streams, general avoidance of surface water bodies, and site reclamation procedures. If a proposed drilling plan appropriately addresses these types of considerations, no stipulations may need to be attached to the drill permit.

A programmatic EIS could take a regional approach and examine the environmental implications of drilling in geographic areas with similar characteristics. For example, the generic impacts of drilling and production along the Rocky Mountain Front and in the area west of the Continental Divide could be analyzed as one unit, and impacts on the eastern half of Montana analyzed as another unit. If the Board were to prepare a programmatic EIS, it may not be essential that a team of environmental specialists join the Division of Oil and Gas Conservation staff. Preparation of this type of document could be accomplished by a one-time contract with a private sector consultant or another state agency. Also, considerable material could likely be borrowed from the oil and gas leasing and production EIS's previously prepared by federal agencies, the DSL and the Department of Fish, Wildlife and Parks (DFWP) for the lands they manage.

The discussion of the DSL's Coal Creek PER focuses on the different levels of impacts associated with exploratory drilling versus production. If MEPA review were to be applied to issuance of drill permits that review would likely have to encompass review and mitigation of production impacts. A programmatic EIS could address both drilling and production, and identify appropriate stipulations for both levels of development that could be attached to the drill permit. For drilling that occurs near established producing fields, standard regulatory requirements and stipulations would almost certainly be adequate. For wildcat wells, more "customized" stipulations might be necessary, and more detailed initial environmental review to identify appropriate requirements. The DSL's environmental review of drilling on the Coal Creek State Forest provides a model for the tiered approach to decision-making. The Board could consider this approach in special cases and stipulate the need for further environmental review of production activities when it approves the drill permit. However, further legal review and revisions to the oil and gas statute could be necessary to make this a viable approach.

B. Preliminary Environmental Reviews

The environmental evaluation of drilling applications may be based on information submitted by the applicant, site inspections, and applicable information contained in a programmatic EIS, and includes attaching conditions to permits to reduce environmental impacts. Such evaluations have not been done in the past in Montana. There is no organized record or body of data to prove or disprove the extent of impacts that have occurred as a result of oil and gas operations. Incidents of localized, site-specific impacts have occurred, including salt water brine contamination of soil and water wells, leaking reserve pits, leaking wells, improper placement or construction of roads, and various other surface disturbances that have resulted in problems for landowners over the years.

The oil and gas statutes were amended in 1981 to 1) ensure that landowners are informed prior to proposed drill operations so they can evaluate the potential effects on their continued use of the property, and 2) to provide for landowner collection of payments for surface damages or disruption. Landowners from major oil and gas producing areas in the state testified in support of this legislation because of past problems they had experienced with a few companies that failed to conduct their operations in an acceptable manner.

The information resulting from site-specific MEPA review would almost certainly better inform landowners about the effects of drilling and would facilitate placement of appropriate stipulations in lease agreements. If environmental stipulations and conditions were developed, based on site-specific information, this would further reduce the potential for unacceptable impacts to occur.

As noted in the diagram, PER review would be based on information about the drill site submitted by applicant companies (e.g., soils data, water quality and quantity data) and would potentially include proposed mitigation. If a checklist PER shows that potential environmental impacts are not significant, the permit would be issued. State and federal agencies have applied various names to this environmental review finding, including categorical exclusion, negative declaration, and non-significant action.

If the Board were to conduct MEPA review of drilling applications, the existing staff might require some additional training in evaluating environmental data. Training might also be needed to conduct PER checklist reviews, but given the current reduced rate of drilling activity (about 1/3 the level of the past few years), additional staff might not be needed in the short term to handle the workload.

EQC staff conducted an informal survey during the spring of 1986 to assess the costs and time state agencies are typically incurring to complete checklist-type PER's. Three agencies reported taking one or two days time for an approximate cost of $250 per project. Another agency estimated one to five days and a commensurate increase in costs.

Although Montana's Board of Oil and Gas Conservation is technically responsible for approving drill permits, the Oil and Gas Conservation Divison staff has been delegated the duty of processing and approving the applications. Approvals are usually given the same day the applications are received. The speed of permit issuance is mandated by the Board's rules rather than by the statute, and is apparently done to accommodate the industry. With appropriate background data such as could be developed through a programmatic EIS and adequate site-specific data in applications, no significant delay need be incurred in conducting an environmental review of most drill permit applications.

C. Expanded Preliminary Environmental Review's

The stipulations and mitigation measures identified in a programmatic EIS might not cover all potentially significant adverse environmental

impacts associated with some drilling proposals (most likely due to the environmental sensitivity of the proposed location and public concerns such as those raised in conjunction with the Sohio well). The federal agency criteria for determining the need for an environmental assessment thoroughly address the rationale for deciding that more detailed review is needed than would be included in a checklist (or categorical exclusion) (see page 9).

If significant impacts are likely to occur, and are not adequately reduced based on the applicant's proposed mitigation or mitigation proposed by the agency, more detailed analyses are necessary to "custom-design" appropriate mitigation. This review process may take several weeks to several months, and also may involve coordination with other agencies and public review. This level of analysis or decision goes by several names (e.g., mitigated negative declaration, environmental assessment, expanded PER).

The Board could accomplish the more detailed site-specific environmental analysis via contracts. However, the prohibition on assessing fees for PER-level reviews would be a problem, and it would likely prove difficult to fund these efforts. Alternatively, the Board could request funding for an environmental specialist to handle these reviews in conjunction with the oil and gas field inspectors. One option for obtaining the funding for such a position would be to slightly increase drill permit fees.

Expanded PER's such as the one prepared by DSL for the Coca Mine or by DNRC on water rights and water development projects, may cost from $10,000-$15,000. These type of evaluations typically involve field investigations, data collection, detailed analyses, and development of "custom-designed" mitigation measures, as well as public involvement. As noted previously, the Coal Creek expanded PER required approximately seven months to complete. Although very few drilling proposals are likely to involve this level of review, they are a strain on agency budgets and staff resources.

Environmental Impact Statements

The potential for an EIS to be required to appropriately review an oil or gas drilling application is very low, but the need for this detailed level of environmental review could occur. For example, a question that is difficult to answer is whether potential oil and gas development, especially from wildcat wells, may constitute a significant environmental impact by virtue of its location and regional context. This question underlines much of the uncertainty and litigation that has affected oil and gas activities in roadless areas on public land. Federal agencies take the lead in conducting environmental reviews on public land under NEPA. If similar issues were to arise in conjunction with oil and gas development on private lands with non-federal minerals, the Board would be the agency faced with deciding the most appropriate level of environmental review.

An EIS could contain a detailed analysis of other current levels of activity in an area proposed for drilling in order to establish a context for evaluating the significance of impacts associated with the issuance of the drilling permit and potential production. Also, the values and productivity of the existing environment might be discussed in relation to the potential impacts on those values resulting from a major oil or gas development. As part of this discussion, a cumulative effects analysis could also be presented, based on one or more possible scenarios of oil and gas development. The BLM is currently preparing this type of analysis for an EIS on potential future production levels in the Blackleaf Canyon area along the Rocky Mountain Front.

Discussion of alternatives to the proposed action is a critical element of MEPA review that usually is examined in detail in an EIS but not in a PER. An analysis of alternatives could shed additional light on the various options available to the Board. Analysis of the no-drilling option could clarify the legal constraints on the Board and the potential costs and benefits to the state. Also, a discussion of alternatives might lead to more detailed consideration of inter-agency coordination for long term management of some environmentally sensitive areas. The level of analysis in an EIS is particularly useful for explaining an agency's decision to the public and insuring that the full range of issues and concerns associated with a proposed action are considered.

Agencies can collect fees for EIS's. Recent estimates indicate that wells drilled in the Overthrust Belt may cost from $6-$8 million each. The fee schedule in MEPA would provide a maximum of $70,000-$90,000 to conduct the environmental review for this type of well.

V. INTEGRATING MEPA WITH REVIEW OF DRILLING APPLICATIONS FOR PERMITS TO DRILL

As discussed in the companion EQC staff report concerning environmental-related oil and gas regulation in the Rocky Mountain states and Alberta, Montana's neighboring states (Wyoming, North Dakota, and Utah) routinely condition drill permits and/or provide site-specific directives to oil/gas operators concerning construction of waste disposal pits and surface use activities that could adversely affect water quality and other environmental values. The conditions to permits or other types of directives to oil and gas companies are based on requirements in the regulations, examination of site-specific data provided by applicant companies and/or pre-drill site inspections.

The Montana Board of Oil and Gas Conservation has several rules for construction of drilling mud and salt water disposal pits, but site-specific data is not required with drill permit applications and the guidance contained in the rules is general. Field inspectors often do not visit drill sites before operations begin. If a company is found in violation, disposal pits can be condemned or bonds can be held until sites are properly reclaimed. Some general conditions are attached to all drill permits, including the requirement that a sump adequate to contain all mud and water bailed from the hole must be constructed, and

sufficient cement placed in the hole to protect the casing and all possible productive and fresh water bearing formations. However, Sohio's Bridger Canyon drilling operation remains an exception because of the site specific environmental analysis and conditions that were attached to the permit. Surface use requirements are primarily specified by landowners, although the Board's rules require that sites must be restored to previous grade and productive capability.

The Board has been concerned that if it were required to base its permit decisions on factors other than the location most likely to result in commercial production, there would be conflicts with its mandate to prevent waste and provide for efficient development. MEPA review would not, in the large majority of cases, involve re-locating drilling operations. As indicated by the discussion of other state and federal processes, the most common result of environmental review is the imposition of mitigation measures concerning how the drill operation takes place.

Based on statutory language concerning the Board's authority to make rules to prevent contamination and damage to surrounding land and underground strata, the Board may, in fact, have authority to limit adverse environmental impacts of access roads and any other aspect of well drilling and production. Proper placement of roads and restrictions on use and method of construction, in consultation with the landowner's wishes, may in some locations be the most effective way to control erosion and protect environmental values such as water quality. MEPA review is instrumental in ensuring availability of sufficient information to make this type of determination, and it also serves to document potential environmental impacts and provide information to the public.

Nothing in the Board's statutory authority conveys explicit authority to deny drilling permits, except where a proposed location would violate field spacing requirements or other aspects of efficient/economic production. Hence, incorporating MEPA review into the Board's permitting process would not in itself clearly lead to denying or vetoing drilling.

VI. CONTRIBUTIONS OF MEPA REVIEW

MEPA review of oil and gas drilling projects would provide several positive contributions to the regulatory process in Montana, considering the perspectives of landowners, the oil industry and the public. Industry and regulatory agencies have stressed the importance of clear regulatory requirements both for allowing development to proceed in a timely and appropriate manner, and for minimizing the potential for conflicts and litigation. Based on MEPA review, the potential adverse environmental impacts and mitigation measures would be identified before project activities begin. A programmatic EIS would provide the added benefit of allowing a significant portion of the environmental analysis to occur prior to the review of individual oil and gas projects, and establishing up-front requirements and guidelines for industry to follow in designing drilling and production operations.

MEPA review could minimize conflicts between regulatory agencies, industry, environmental groups, landowners and other concerned citizens by providing a formal, constructive context for: 1) information dissemination; 2) public review and input; 3) industry and agency response; and 4) interagency coordination and communication.

Finally, it might be argued that regulatory requirements should be applied equitably to all types of projects and development activities that could have a significant effect on the human environment. Most other industries in Montana have successfully integrated environmental review requirements into their project planning activities. Also, in other states with environmental policy acts, the oil and gas industry has adapted to environmental review and mitigation requirements.

VII. OPTIONS FOR EQC CONSIDERATION

The following options present a range of alternatives that recognize the legal uncertainties concerning MEPA review of oil and gas drilling applications.

1. Preserve current drilling permit review procedures and wait for clarification from the courts concerning the applicability of MEPA.

2. Direct the EQC staff to prepare new proposed legislation to formally exempt the Board from MEPA.

3. The attorney general could be requested to review the oil and gas statute to determine the current extent of the Board's authority to condition drilling permits to reduce environmental impacts.

4. Request the Board of Oil and Gas Conservation to prepare a proposal to the next Legislature, including cost estimates, a time schedule and a management plan for conducting a programmatic environmental review of oil and gas exploratory drilling and production. The programmatic EIS would assess the impacts of oil and gas exploration and development in various regions of the state and identify appropriate environmental stipulations and mitigation measures.

a. If this option is pursued, the Board could develop a proposal for funding from the Resource Indemnity Trust. The programmatic EIS would be of use in preventing future adverse impacts to water quality and other environmental values.

5. Staff from EQC, the Division of Oil and Gas Conservation and other interested/affected agencies could be directed to form a task force to devise a process for accomplishing MEPA review of drill permits and report back to the EQC.

a. The task force could convene during the fall of 1986, and make at least an interim report to the EQC by December 1986.

b. The task force could include personnel from the Water Quality Bureau because that agency's overall responsibility for protecting the quality of state waters is affected by oil and gas operations. Also, personnel from DSL and FWP could be asked to share their past experience in preparing oil and gas leasing EISs and PERs.

c. The task force could assist the Board in developing a process for MEPA review of oil and gas drill applications in two phases. Phase I could occur during the fall of 1986 and could include: i) development of a plan for preparing a programmatic EIS (see Option 4); ii) development of a drill application form that would include site specific information necessary to conduct a checklist-type PER review; and iii) review of the Board's rules and regulatory practices to identify modifications or additions that would assist in integrating MEPA.

6. The Board could be requested to more closely integrate its regulatory system with federal environmental review processes that occur under NEPA, especially the timing of approval of drill permits.

Ex. 19

The Montana Environmental Information Center Action Fund

• P.O. Box 1184, Helena, Montana 59624 (406)443-2520

SENATE NATURAL RESOURCES
EXHIBIT NO. 20
DATE 2-9-87
BILL NO. S.B184

February 9, 1987

Mr. Chairman and members of the Committee, for the Record, my name is George Ochenski and I represent the Montana Environmental Information Center. We strongly oppose Senate Bill 184 as a bad piece of legislation that both denies the landowner's rights and ignores the potential damages to those natural resources held in common by all Montanans.

It is ironic that the sponsor of this bill has gone on record in support of landowner rights with such strong statements as "They drive the stake, dirt moving equipment is standing by the field and the surface owner wonders what is going on." Quoting again from the record, "A surface owner should be notified in advance so he or she can evaluate the situation, so he can discuss with the operator in advance ways in which to enter the land not only to disturb the least amount of surface but also pointing out to developer ways to reach that stake (where the well is to be dug) for the operator's benefit."

It is ironic that the sponsor of this bill has also experienced direct damages to his property as a result of a poorly or unplugged salt water disposal pipeline.

Yet now, through Senate Bill 184, the chances of diminished landowner participation and increased environmental damages are enhanced. Also enhanced are the chances that what controversies do arise will wind up in expensive, time-consuming litigation.

Those states that outdrill and outproduce Montana do not have weaker regulations than ours. To the contrary, they make every attempt to address the potential problems "up front"...before drilling begins. They avoid problems, but more importantly, they avoid the complications that can and do arise when little mistakes become big ones: When shallow aquifers are polluted, when domestic wells become unusable, when salinity destroys cropland. They avoid those problems by taking the "ounce of prevention" adage seriously and applying it through a well-designed pre-drill evaluation of the pros and cons of site-specific advantages and constraints.

Despite the fact that not one permit has been denied by MEPA, the risks associated with drilling for oil and gas are real, and potentially deadly.

This letter, dated February 5th, is a request for emergency funds to address a situation that presents "an imminent threat to public health and safety of the people of Cut Bank, Montana." Why? I quote again, "...the threat exists due to an abandoned well which has now started to flow and contains significant concentrations of hydrogen sulfide gas which is both toxic and explosive at high concentrations."

And this letter, is from the Governor, authorizing up to $37,000 to plug the well "as expeditiously as possible," because of "an imminent threat to persons, property and the environment in Cut Bank, Montana."

As we hear this bill, the good Senator from Cut Bank, my friend Del Gage, has signed onto and supported a piece of legislation which would remove one of the major tools the people of this state have to examine the consequences of proposed drilling. At this moment, 125 pounds per square inch of pressure is forcing oil, fluids, and toxic gas upward and into contact with near surface aquifers, Cut Bank Creek, and the very air the people of Cut Bank must breathe. Sanitary sewer and water lines are within five feet of the well, there is a chance that migration into utility conduits will take place, and a service station and Sinclair/Texaco bulk fuel storage facility are located on the same block as the well. If an explosion or fire occurred, the results could be disastrous.

Do the people of Cut Bank want less protection under the law? If they did before, I'd bet they're having second thoughts now. Are the people of Cut Bank overjoyed with Montana's "drive through" permitting system? "In by 8 out by 5" is what they say at the Board of Oil and Gas Commissioners. You can get a permit to drill through aquifers into poisonous gas and brine deposits quicker than you can get a three piece suit back from the cleaners in Montana.

The plain and simple facts are that there is no good reason for this bill. The experience of our neighbor states explicitly shows that running a responsible government, in the best interest of the public, and with a "better to avoid problems than try to fix them" attitude is working. It is working so well, in fact, that they are doing their jobs on more wells with less people because there is less wasted time, less misunderstanding, and more cooperation.

The Board of Oil and Gas Commissioners has decided that issuance of permits is a "ministerial action" and ignored the benefits of MEPA. They have done it so long that they are worried someone is going to sue them for it. If you pass this bill today, to categorically exempt oil and gas permitting from MEPA, I can assure you that you will be voting for an almost certain lawsuit, that you will bring strong critical attention to bear on an industry that is beginning to move into more environmentally and socially sensitive portions of the state, and that you will hinder that very development which you wish to help.

Reject this bill, work with the drillers and the public together. If there are unnecessary fears, a Preliminary Environmental Review can help dispell them. If there are ways to avoid problems, a Preliminary Environmental Review can help find them. If there are landowners with justified concerns, a Preliminary Environmental Review will provide them with information with which to make decisions. Vote "NO" on SB 184 and "YES" on good government and wise public policy.

Thank you.

EL.30

HEARING SB 16

SMITH

Notice of Intent & Damage Rental

I am Larry Tveit, Senator, District #27. I would like to remove myself from the committee for the purpose of testifying for the bill.

The bill, like Sen. Smith says, addresses two points of major concern with surface owners. The problems being encountered are:

1. Notice of intent to drill. Some oil companies or operators have shown that they have no consideration for the land or surface owner. They drive the stake, dirt moving equipment is standing by the field and the surface owner wonders what is going on. A surface owner should be notified in advance so he or she can evaluate the situation, so he can discuss with the operator in advance ways in which to enter the land not only to disturb the least amount of surface but also pointing out to developer ways to reach that stake (where the well is to be dug) for the operator's benefit.

2. The other part of the bill addresses the damages due to loss of production disturbance of land - land taken out of production and road right-of-ways. Several companies, not all companies, are not willing to negotiate fair compensation for these damages. They tell surface owners we have the right to "take it or leave it".

I'm not standing here in an attempt to harrass oil companies and operators. Over the past two years I've had a good relationship with four oil companies. The companies and myself have

CASE #15:

location: NW NW Sec 29 T25N R59E
owner: Mr. Larry Tveit
first reported: 30 April 1982

In this case produced waters from a salt water disposal pipeline escaped to the surface at an abandoned location. Mr. Joe Simonson, Oil and Gas Commission, told me that the problem was due to a poorly plugged or unplugged feeder line to the old well. He said that there was no way of knowing exactly how long salt water had been escaping at this location, but that he estimated it could have been for at least six months.

Pictures 21-23 were taken at the site on 6 May 1982. The line was plugged soon after.

PIC 21: Salts on surface of abandoned location.

PIC 22: Salts on surface of abandoned location. The source was an unplugged salt water disposal line.

PIC 23: Looking south from location where salt water flowed onto adjacent fields.

MINUTES OF THE MEETING OF THE NATURAL RESOURCES COMMITTEE
MARCH 4, 1981

The House Natural Resources Committee convened in Room 437 of the Capitol Building on Wednesday, March 4, 1981, at 12:45 p.m. with CHAIRMAN DENNIS IVERSON presiding and fourteen members present (REP. NEUMAN was excused and REPS. NORDTVEDT, QUILICI, and HUENNEKENS were absent).

CHAIRMAN IVERSON opened the hearing on SB 16.

SENATE BILL 16 SENATOR ED SMITH, sponsor, presented the bill which would require mineral developers to give written notice to surface owners of the intent to begin drilling operations, to require mineral developers to compensate surface owners for damages caused by drilling operations, and to allow such compensation to be made in annual installments. See Exhibit 1.

Speaking as a proponent was DON ALLEN, Montana Petroleum Association, who said his organization had worked with the sponsor to develop this bill and that it is a compromise. He supported the bill without amendment.

SENATOR LARRY TVEIT spoke in favor of the bill. See Exhibit 2.

JO BRUNNER, Women Involved in Farm Economics, spoke in favor. See Exhibit 3.

PAT UNDERWOOD of the Montana Farm Bureau testified in support of the bill. See Exhibit 4.

Also speaking in favor of the bill were CHRIS JOHNSON, Montana Farmers Union; REP. JOHN SHONTZ; PAT OSBORNE, Northern Plains Resource Council.

There were no OPPONENTS.

SENATOR SMITH closed on the bill.

During questions from the committee, REP. KEEDY questioned the method by which owners can reach an agreement with the company. He asked what does happen when the companies and the people cannot agree. SENATOR SMITH answered that the courts will solve that type of problem.

REP. ROTH asked how the law would be enforced. SENATOR SMITH again stated that the courts would handle it.

REP. KEEDY questioned the part of the bill which referred to the impacted land only being covered. There could be direct impact on only a small area and yet a large impact on the rest of the ranch. SENATOR SMITH said the landowner would be paid for the inconvenience and disruption.

Written testimony was received from W. M. Vaughey, Jr., Havre, and from the Northern Plains Resource Council, in opposition of this bill. (copies are attached)

Chairman Dover asked for questions from the committee.

Senator Tveit addressed this question to Don Lee. You stated this piece of legislation is tieing the oil company's hands and that the land owner would get extremely high prices for surface lands, more than is justified. Would you explain this statement.

Don Lee said that if a case comes up for hearing the oil company is responsible for court costs as stated in this bill. If the surface owner is demanding an exorbitant amount and we go to court and the court awards the surface owner a similar amount as was offered by the oil company, then the oil company should not be penalized by paying court cos

Senator Tveit asked Mr. Lee if he thought the oil companies were paying competent damages now.

Don Lee said that it depended on each factual situation after negotiations. He questioned what would happen if the plan is not submitted to the surface owner, as there is no penalty if you do not submit the plan.

Senator Ryan asked Don Allen if his company agreed with the amer ments proposed by Don Lee.

Don Allen said that the amendments were some suggested ways to reach what was thought to be the desire of the bill. The language presented by Mr. Lee has not been reviewed by the Montana Petroleum Association.

Senator Manley questioned that the oil companies have the right to go into a surface land owners property and build a road wherever they want to. Isn't there a law to protect the surface owner?

Senator Smith said there is no protection whatsoever for the surface owner. In certain cases the surface owner has gone to court and lost.

Don Allen said that this does not apply to most oil companies. They will try to arrange the best place for a road to go.

Chairman Dover closed the hearing to SB 16.

DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

TED SCHWINDEN, GOVERNOR

COGSWELL BUILDING

STATE OF MONTANA

HELENA, MONTANA 59620

February 5, 1987

Governor Ted Schwinden
State of Montana
Capitol Station
Helena, MT 59620

RE: Environmental Contingency Account

Dear Governor Schwinden:

As director of the Montana Department of Health and Environmental Sciences I am writing to inform you of a situation that represents an imminent threat to public health and safety of the people of Cut Bank, Montana and to request assistance through your Environmental Contingency Account in abatement of this threat. The attached field investigation report prepared by Mr. K. Bill Clark of our Water Quality Bureau provides a factual summary of the situation in Cut Bank.

In summary, the threat exists due to an abandoned well which has now started to flow and contains significant concentrations of hydrogen sulfide gas which is both toxic and explosive at high concentrations. The solution to this problem is proper plugging of this well and we are hereby asking that you agree with the emergency nature of this situation and will authorize use of these funds to accomplish this task.

If you have any questions or we can be of further assistance, please contact this office.

Sincerely yours,

John J Drynan, M.D.

by John J. Drynan, M.D.
Director.
William J Spitz

JJD:yf
Enclosure

cc: Larry Fasbender, DNRC

SUBJECT: Abandoned Oil Well in the City of Cut Bank

DATE: February 5, 1987

FROM: K. Bill Clark, Water Quality Bureau

I met Floyd Podall, of the DNRC Oil and Gas Commission, in Shelby at 10:00 a.m. on February 4, 1987. Floyd outlined the history of an abandoned oil well in Cut Bank that began to produce oil and water in May 1986. He also described the efforts of Rex Neil, owner of the property where the well is located, to control the flow.

The well is located at 301 East Railway Avenue at the northeast corner of the J. F. Neil Electrical Contractors Building. It was completed to 3000 feet in the lower Cretaceous Cut Bank Formation in February 1935. After producing only 330 barrels of oil, a decision was made to plug and abandon the well in May 1935. Plugging was reportedly accomplished using standard oil field techniques. This involved putting heavy mud and cement in the well bore in an attempt to overcome hydrostatic pressure in the well and prevent migration of fluid up the well. Until last May it appeared to be effective.

In May of 1986, Rex Neil noticed oil and water oozing out of his parking lot. Subsequently he dug beneath the asphalt and found a 10" surface casing one foot below grade. There was no cement plug in the casing and he found an 8" casing inside the 10". He hired a contractor to weld a neck or switch on the 8" casing. After putting on a pressure gage, which read 85 psi, he decided to control the flow by removing it rather than shutting it in the casing. He rigged up a centrifical pump to the neck and pumped down the fluid level 12-15 feet every three days. He put the fluid in an on-site 200-300 gallon tank, which amounted to 10-15 gallons per day. While pumping, however, he noticed that the fluid level in the annulus responded to pumping of the 8" casing. This indicates that some degree of communication exists between the two casings and perhaps the area outside the casings.

The pumping procedure seemed effective until approximately two to three months ago when the system froze. Mr. Neil decided to shut-in the entire well rather than allow a surface flow of oil. A pressure gage on February 3, 1987 recorded 125 psi present at the top of the 10" casing. In addition, Mr. Neil and Floyd noted water seeping up around the outside of the casing. This again suggests that sealing off the top of the casing may not control down-hole pressures.

To identify any beneficial uses of water in Cut Bank that may be affected by the problem, I met with John Wadham, Glacier County Sanitarian. Two unused water wells owned by the City of Cut Bank are recorded and are about 1/4 mile to the northeast. The present municipal supply comes from Cut Bank Creek. Cut Bank Creek could be affected by the oil because the storm drain system reportedly drains into the creek. Although groundwater users in the area could not be identified yesterday, there doesn't appear to be an immediate threat to potable supplies.

I have outlined several concerns with this problem:

1. H_2S gas is present and is not inherent to the Cut Bank Formation. Floyd feels the source of the gas is from "water flooding" (injection) of Madison Formation water into the oil producing zone. Water flooding occurred north of Cut Bank last spring.

2. The gas present, according to Floyd, is partially dissolved in the oil and degasses at atmospheric pressures. Thus, "live oil" is present. H_2S gas is toxic and explosive at high concentrations.

3. The 50 year old casing may not be intact. This would allow fluids and gases to excape from the corroded casing into near surface aquifers (Eagle Sandstone) and possibly migrate into utility conduits.

4. Sanitary sewer and water lines are within five feet of the well. Also, a house 30 feet east of the well has a basement.

5. The present remediation techniques and equipment in place may not be able to withstand oil field pressures.

6. A Cenex service station and a Sinclair/Texaco bulk storage facility are located on the same block as the well. If a fire or explosion occurred, increased risk is present.

My opinion is that the problem needs resolution by proper plugging and abandonment of the well. I feel there is a threat to public health and safety and perhaps a risk to the aquifers beneath Cut Bank. At this time, I cannot comment on the emergency nature of the problem.

KBC:gr/1943Y

John Drynan, Director
Department of Health and Environmental Sciences

Ellen Feaver, Director
Department of Administration

David Hunter, Director
Office of Budget and Program Planning

James C. Nelson, Chairman
Board of Oil and Gas Conservation

FROM: Governor Ted Schwinden

DATE: February 5, 1987

RE: Authorization for expenditure of funds from the environmental contingency account for the plugging of the abandoned well described as:

John Wikstrand et al., Simero #1
NE Lot 5, Block 17 original townsite Cut Bank, MT,
Section 12, Township 33 North, Range 6 West

By letter of February 5, 1987, the Department of Health and Environmental Sciences provided me with documentation that the abandonded well described above presents an imminent threat to persons, property and the environment in Cut Bank, Montana.

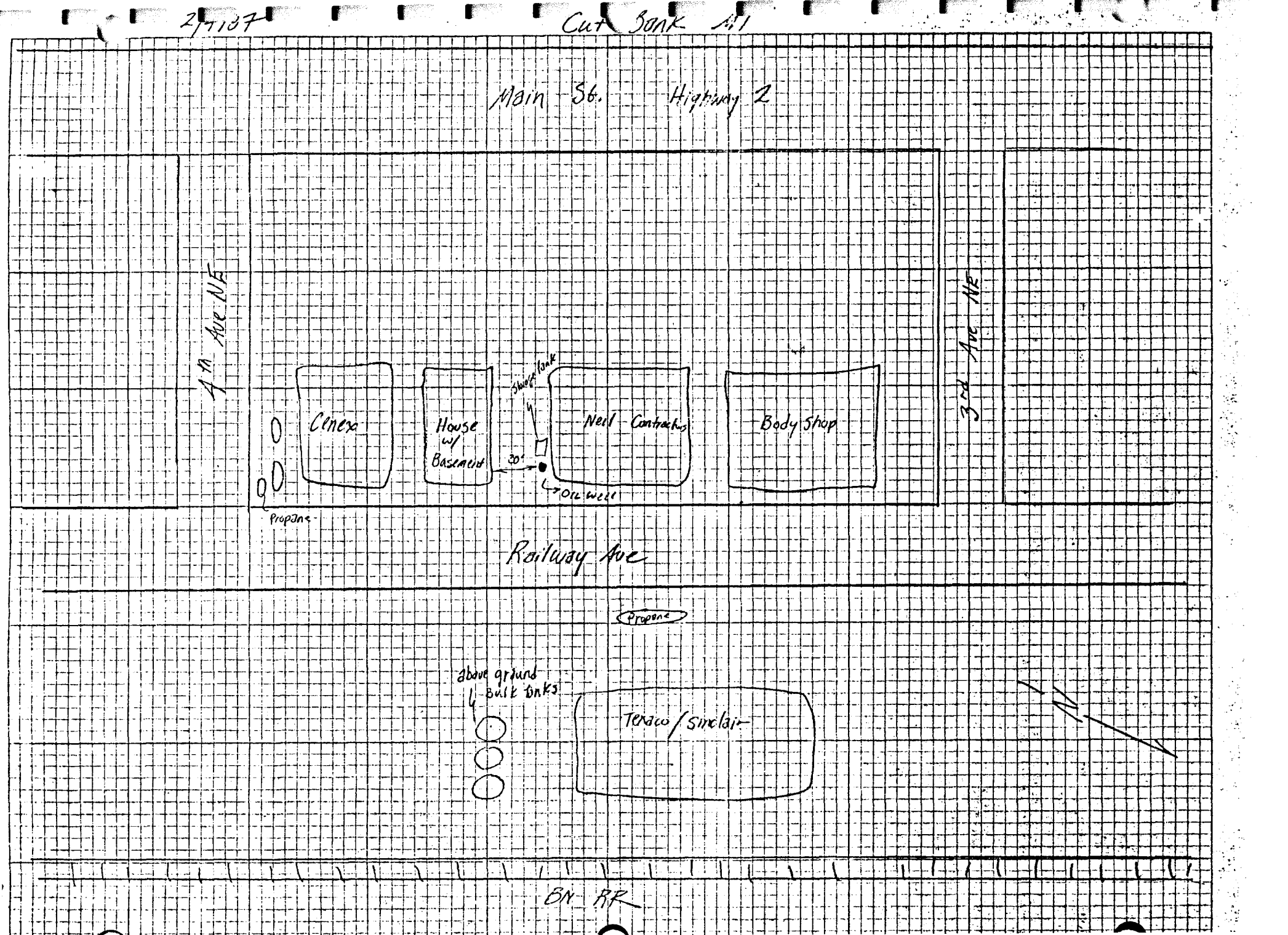
In order to respond to this threat I am directing that the well be plugged as expeditiously as possible. To accomplish this goal $7130 of the funds appropriated to the Oil and Gas Conservation Division from the Department of Natural Resources

[illegible] pursuant to [illegible], an expenditure from the [illegible] contingency account, not to exceed $10,000.00, for the plugging of the well. The establishment of the necessary accounting entity to accomplish this expenditure shall be established by the Office of Budget and Program Planning.

Because this is an exigency situation I direct that a contractor be selected to provide the necessary service of plugging the well in a manner consistent with A.R.M. 2.5.605. I further direct that the Board of Oil and Gas Conservation be the responsible agency to contract for the necessary services.

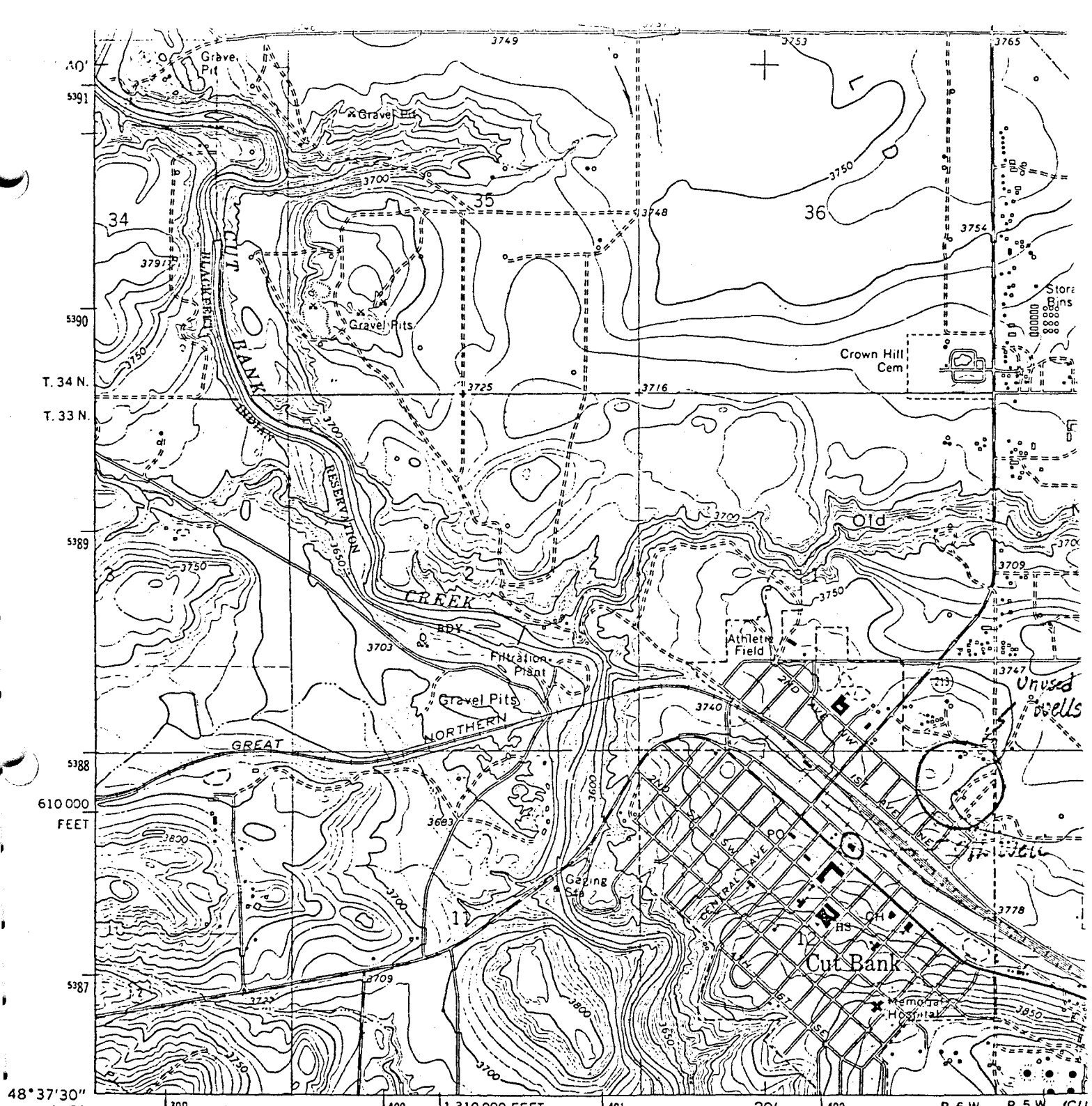
2/7/07

Cut Bank, MT



and Conservation's RIT accounting entity #02104 is to be used to plug the well. In addition, I hereby authorize, pursuant to Mont. Code Ann. § 75-1-1101 (1985), an expenditure from the environmental contingency account, not to exceed $30,000.00, for the plugging of the well. The establishment of the necessary accounting entity to accomplish this expenditure shall be established by the Office of Budget and Program Planning.

Because this is an exigency situation I direct that a contractor be selected to provide the necessary service of plugging the well in a manner consistent with A.R.M. 2.5.605. I further direct that the Board of Oil and Gas Conservation be the responsible agency to contract for the necessary services.



Mapped, edited, and published by the Geological Survey

Control by USGS and USC&GS

Topography by photogrammetric methods from aerial photographs taken 1964. Field checked 1966.

Polyconic projection. 1927 North American datum
10,000-foot grid based on Montana coordinate system, north zone
1000-meter Universal Transverse Mercator grid ticks, zone 12, shown in blue

Red tint indicates areas in which only landmark buildings are shown

Fine red dashed lines indicate selected fence lines

GN MN
0°59' 18 MILS
20° 356 MILS

UTM GRID AND 1966 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SCALE

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DATUM IS M

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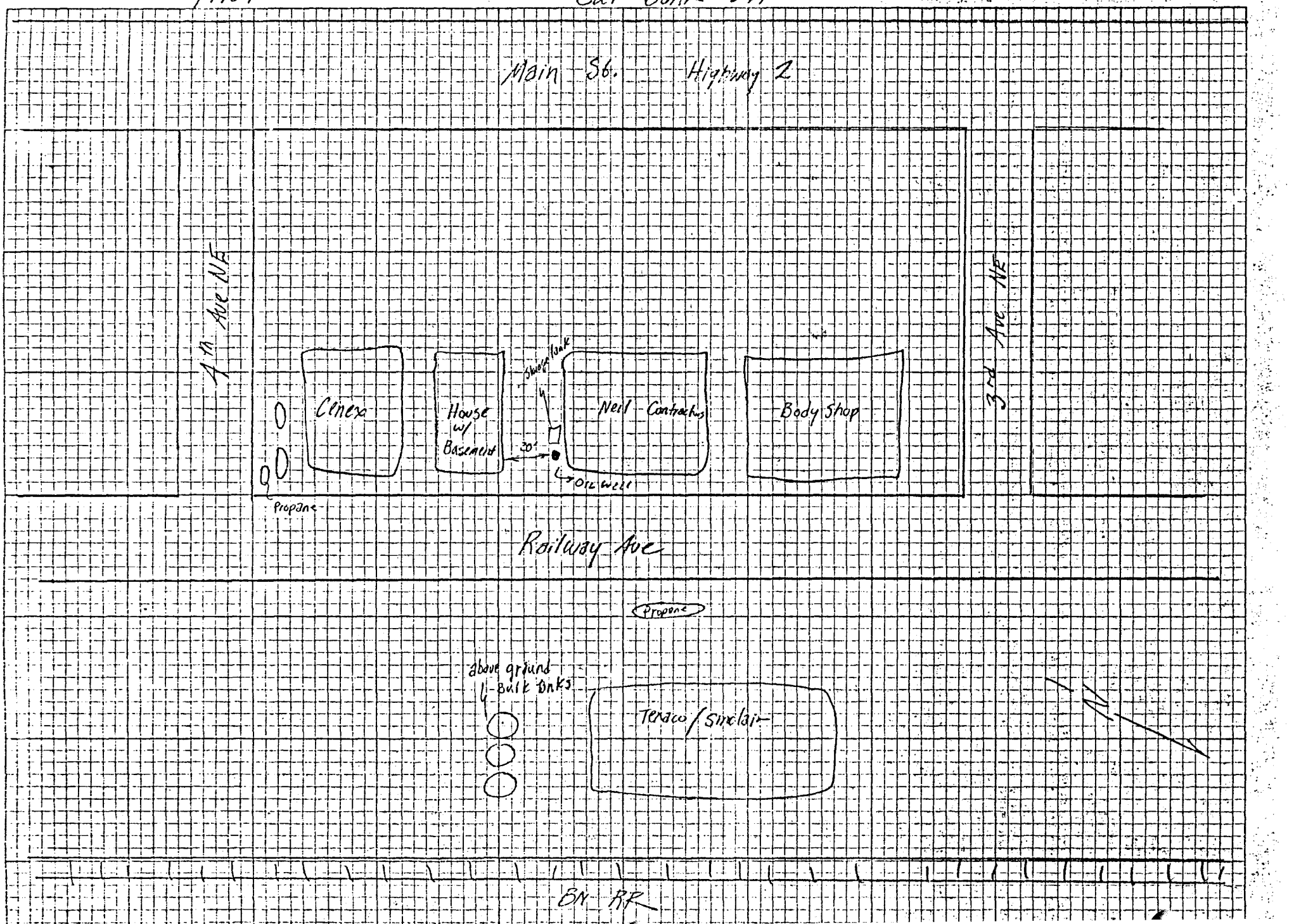
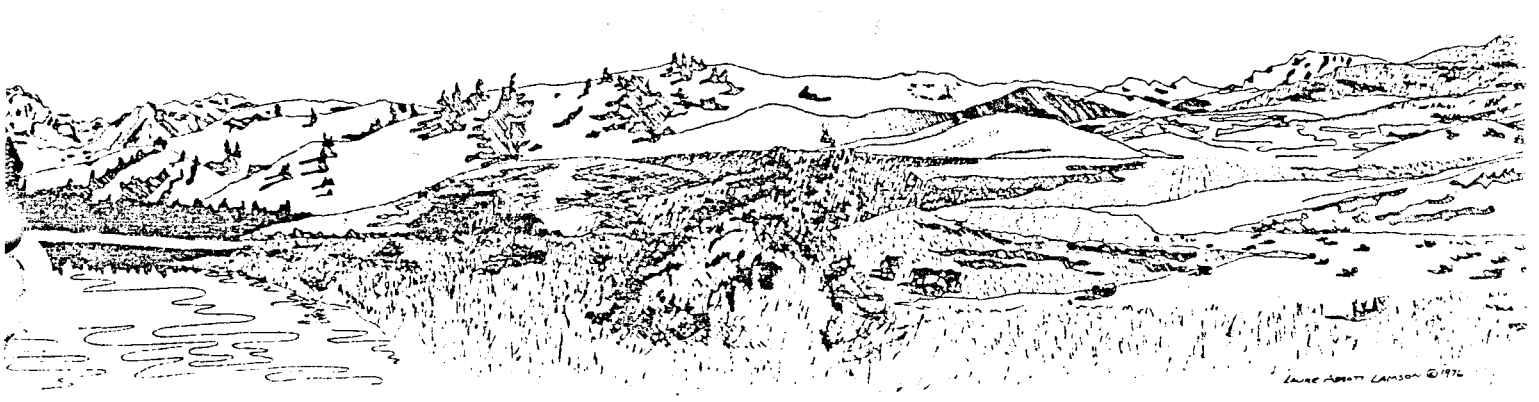
FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVE
A FOLDER DESCRIBING TOPOGRAPHIC MAP

2/4/97

Cut Bank MT





The Montana Environmental Information Center Action Fund

• P.O. Box 1184, Helena, Montana 59624 (406)443-2520

SENATE NATURAL RESOURCES
EXHIBIT NO. 21
DATE 2-9-87
BILL NO. SB184

INFORMATIONAL PACKET

SENATE BILL 184

February 9, 1987

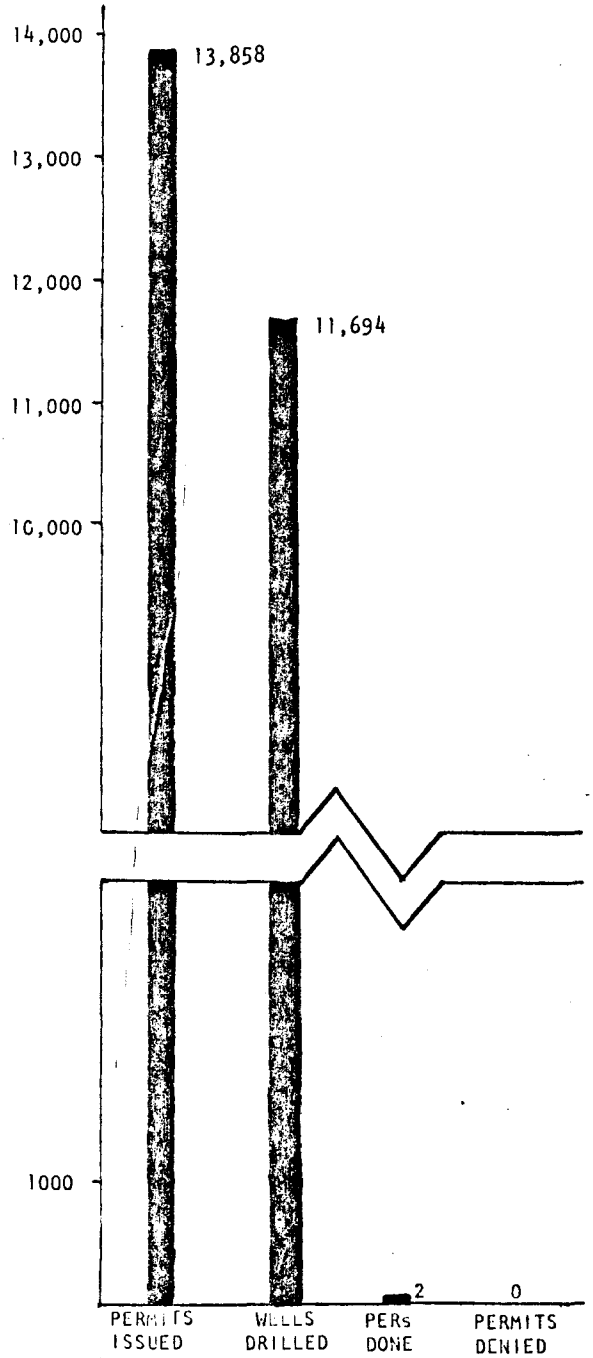
This packet illustrates some of the impacts and costs of drilling of oil and gas wells in Montana. Included are some of the documented impacts that have occurred in the state.

CONTENTS:

The Montana Environmental Information Center Action Fund

February 5, 1987 • P.O. Box 1184, Helena, Montana 59624 (406)443-2520

OIL AND GAS DRILLING PERMIT ACTIVITY
since MEPA: 7-1-71 through 12-31-86



WHY MEPA?

MEIC believes oil and gas drilling permits should be reviewed under MEPA. There are environmental and social impacts associated with some drilling that should be addressed and mitigated.

MEPA does not require an Environmental Impact Statement be done, only a systematic review of the application against a simple environmental checklist to determine what impacts may occur and what measures to take to mitigate those impacts. An EIS is only done where serious problems are discovered.

Some of the impacts that may need to be addressed are: the spread of noxious weeds, roads (traffic & dust), water pollution, noise, highly toxic hydrogen sulfide (rotten egg) gas, fire, social services in the community, and property values of adjacent lands.

This bill removes the only method homeowners, ranchers, farmers and other businesses have to require that these impacts be mitigated. Other industries regulated by state agencies are reviewed through the MEPA process. According to a recent EQC study, it usually takes only a day or two to process a checklist prior to approval of permits.

Only in a few particularly sensitive areas would more than the minimum be required. Through the MEPA process these more serious ones can be addressed and mitigation plans developed and incorporated into the permit.

Feb. 5, 1987

SB 184 FACT SHEET

What is SB 184?

SB 184 would exempt oil and gas wells from the Montana Environmental Policy Act (MEPA). Oil and gas well drilling permits are routinely issued by the Board of Oil and Gas Conservation. The Board has not historically followed MEPA.

What is the Montana Environmental Policy Act?

MEPA provides for a systematic examination of anticipated effects of proposed major state actions which affect the environment. State agencies making decisions which affect the environment generally complete a Preliminary Environmental Review (PER).

A PER is a checklist of possible environmental impacts of a project. If the impacts appear to be significant, as determined by rule, the agency prepares an Environmental Impact Statement (EIS).

Why should oil and gas permits be subject to MEPA?

Many oil and gas wells have little or no impact on the environment. for those wells with a few impacts, complying with MEPA would merely mean completing the PER checklist to show that the impacts are minimal and to describe mitigating measures that can be incorporated into the permit.

Some new wells may have significant environmental impacts. For these drilling permits, the state should prepare an EIS. As we begin to see new wells in or near residential and other sensitive areas, the environmental impacts of oil and gas wells will become increasingly important to the public.

Do other similar decisions come under MEPA?

Yes. All state agencies use the MEPA process to examine new development under their jurisdiction. In 1986, the Montana Environmental Quality Council conducted an informal survey to determine the time and costs incurred in preparing checklist-type PERs. Three state agencies reported taking one or two days to do a PER, costing approximately $250. The Board of Oil and Gas Conservation could do the same with no significant delay in review of most drill permit applications.

What are some potential impacts of oil and gas drilling?

* the spread of noxious weeds
* building of new roads
* hydrogen sulfide gas releases
* disposal of drilling mud and salt water
* contamination of water, both surface and ground

What are some examples?

In 1979, hydrogen sulfide releases from a well near Big Piney, Wyoming, killed livestock and forced local residents to leave their homes.

Based on the information in an EIS, Wyoming conditioned access to a drilling site near the small town of Story. The public was concerned with increased traffic through the small town. Oil and gas production is proceeding there and the community seems pleased with the results.

Near Lodgepole, Alberta, Canada, in 1982, a gas well blew and burned out of control for 67 days, and causing a major impact on the area, including a forest fire.

A sensitive situation arose near Bozeman, MT, when a well was proposed in a rural residential setting. In 1985, the Board of Oil and Gas Conservation did a PER on a Sohic Petroleum permit application in Bridger Canyon which found an EIS was unnecessary, but did impose a number of conditions regarding water, health, and safety.

[From: The Montana Department of Health and Environmental Sciences
Water Quality Bureau]

OIL WELL COMPLAINTS 1975 - 1985

1975

11/10/75	Oil production water discharged on complainant's land. 75/38A.	4/15/76 Bloom (I)	
12/29/75	Phillips Petroleum - oil and production water water discharge of state waters without permit. 76/8	4/15/76 Bloom (I)	

1978

3/27/78	Woods Petrol. - discharge oil & melt water to Lone Tr. Cr. observed. 78/04 & 78/05	4/27/78 K. Keenan (P)	O & G Commission took care of problem.
/28/78	Unknown person dumping brine in shallow pit for 2 weeks or more - oil well brine disposal. 78/04 & 78/05	4/27/78 K. Keenan (P)	O & G Commission is investigating.
7/11/78	Trucking company disposing of oil well brine on county roads near streams, cropland, etc. 78/57.	7/19/78 Alsaker (I)	Samples taken.
7/14/78	Trucking company disposing of oil well brine on county roads near streams, cropland, etc. 78/58.	7/19/78 Alsaker (I)	Samples taken.
/10/78	Trucking company disposing of oil well brine on county roads near streams, cropland, etc. 78/59.	7/19/78 Alsaker (I)	Samples taken.

1979

1/10/79	Oil Co. installing brine water pits in groundwater, pit liners are broken. 79/01	1/16/79 2/26/79 Brown	N.O.V. issued. See VRF 79/02A
/23/79	Bealle Incorporated in Lockwood - drainfield for disposal of oil waters is failing-going to ditch - potentially to Yellowstone River. 79/27	4/20/79 Alsaker	Requested appropriate disposal system.
/31/79	Louisianna Land & Ex. Co. - brine & oil pit in sandy soil - no liner. 79/54	6/13/79 Alsaker	Pollution of surface water is not apparent.
/12/79	Murphy Oil Co. brine pits, unlined are polluting water wells - high salt content. 79/61	7/23/79 Alsaker	No apparent WQ problem
/23/79	Bud Lien complaint of well pollution by oil pollution by oil field salt water on his farm approx. 10 mi. north of Poplar.	7/23/79 D. Alsaker (I)	No apparent ongoing pollution was identified.

1980

1/22/80	Brine water - turbid - sulphur water - near Poplar River.	1/22/80	
3/18/80	Shell Oil has drilled an oil well near Charles (Chuck) Lowman, Sidney, sandpoint water well & also installed a drilling pit nearby. Says he now has salt water & drilling mud in his well water.	3/18/80 K. Keenan (P)	Had his water sampled.
5/12/80	Fulton Producing (Roy Alrick, Earl Hannah - SASU unit - Fey property) discharging water and oil without a permit - 10 mi. west of Whitlash (between Oilmont & Whitlash) -not using pit most of the time.	5/12/80 K. Keenan (P) 9/25/80 E. Weber (I)	Evidence of discharge of oily water possibly last spring. Needs followup inspec. in spring 1981.
7/9/80	Complainant was flying over Plentywood and noticed an oil covered area behind the Big "M" Company which services oil wells and treater units. Looked as if it was headed for or had reached Muddy Creek.	7/9/80 R. Montgomery (P)	
7/31/80	D & H Oil Field Service, Glendive, MT, L. P. Anderson, cleaning tanks owned by Pete Huschka, Don Heron, and Bob Baker. Havey Rogers has complained of oil in his well 200 yds from the Yellowstone River.	8/13/80 Alsaker (I)	They agreed to contain washwater.
8/11/80	Complaint from the Froid area oil fields on property belonging to James Wheeler.	8/11/80 K. Keenan (P) 8/21/80 K. Keenan (P)	Duane Klarich will investigate.
12/16/80	Contractors reclaiming an oil well sludge pond - pond was breached, coating 1/2 mile of streambank with oil near Ashland, MT.	12/16/80 K. Knudsen (P) 1/9/81 K. Keenan (P)	Enforcement letter sent to Harry Weeden, Inc.
12/26/80	Oil well operation - possibly Shell Oil - water supply has oil film on it - Jess Roberts, Crane, Montana.	12/26/80 by mail 1/19/81 Alsaker (I) 3/5/81 Alsaker (L)	Water appears to be very good quality.

1981

5/12/81	Water from oil well threatens to contaminate fresh water pond near Kevin, Montana.	5/12/81 M. Pasichnyk (P) 5/13/81 E. Weber (P)	Referred to O & G Commission.

5/15/81	Matador Trucking reportedly dumping large quantities of salt water on their parking area. Also, other complaints received regarding oil well drillers using salt water when developing.	5/15/81 by mail 7/8/81 K. Walther (L)	Referred to O & G Commission.
5/26/81	Eastern American Energy Corp. oil spill from oil well - approx. 2 barrels spilled - rainstorm runoff carried the oil about 1/2 mile of a spring that feeds E. Fork Fidler Cr.	5/28/81 J. Burns (I) (BWQB)	Referred to O & G. Topsoil will be stripped, replaced, & reseeded.
6/19/81	Report of drilling operation east of Cut Bank that was using "reclaimed" water instead of drilling mud. Concern about groundwater contamination. Believed to be for WESTCO Refinery - haulers: Big Chief & General Wells	6/19/81 S. Pilcher (P) 6/19/81 D. Pedersen (P)	Use of salty water fo drilling mud should nc result in pollution o groundwater because tl mud acts as a sealant
8/19/81	HB&P, Sidney, MT dumping oily waste along along county road set on fire north of of Sidney, MT.	10/19/81 10/20/81 Keenan (P)	Called HB&R & explaine law to him-O&G will investigate.
11/9/81	Brine solution from oil well drilling is being dumped along county road 2 1/2 miles SE of Wibaux.	J. Burns (BWQB)	Referred to O & G.
	1982		
2/8/82	Getty Oil Co. - Hogback - needs to discharge drill water from leaking drill pond.	2/10/82 Pedersen	WQB denied permission to discharge-they pumped water down dril hole - and the rest leaked away.
2/13/82	Aikins drilling service rinsing chemical barrels at Aldrich Spring near Conrad.	2/13/82 Keenan (P) Morgan RS (I)	Aikins denied involve-ment-snow melt beat us to cleanup.
2/13/82	Big M Oil dumping waste oil & salt water in field near her 30 foot deep well.	2/15/82 Keenan (P) Local RS Local O & G	R.S. & O&G will inspect-Called Big M-they agree to stop & cleanup.
/19/82	O'Conner Oil Field Service - contamination from oil & drainfield problems by Baker.	2/15/82 Alsaker (BWQB)	They have taken actior to correct problem.
/26/82	Hampton Water Co. dumped oil & salt water in stock pond on Hertz land.	2/26/82 Keenan (P)	They will stop & have begun clean up.
larch	Oil well perforations, Glendive - oil on ground behind building.	3/17/82 Alsaker (BWQB)	Oil not threat to surface water-R.S. wil work w/ owner to rectify problem.
/82	Hempton Water Service dumped couple truck loads from oil field - including sons oil in Hertz's pond.	3/18/82 Alsaker (BWQB)	Some cleanup could still be done-sample water & upper pond for possibility of brine contamination.

4/23/82	Water haulers dumping brackish water & oily sludge in county road ditches.	4/26/82 Pedersen	Found areas-drillin wastewater-Co. Comm notified-Big Chief water haulers susp e
4/27/82	Williams Exploration reserve pit - may cause pollution during reclamation.	4/30/82 D. Morgan RS	Samples taken-pH norma Company contacted- normal reclamation appear acceptable.
5/6/82	Sun Exploration oil drill pit - want to dump contents in reservoirs & irrigation ditches.	5/6/82 Keenan (P) 5/8/82 Weber (I)	Meeting & inspectio Sun Oil eventually t permission & put material in neighbor's "closed" reservoir- w neighbor is upset.
5/10/82	MPC oil field water hauler (contract) dumping oil field waste in dry drainage upstream of G. Boyer property - flowing toward him.	5/11/82 Alsaker	See report-dump sit modified then elimi ated.
5/11/82	Pumping of brine from oil well brine pit into dry coulee.	5/11/82 5/18/82	Pumping was occurri - pumping location was changed to satisfactio of landowner.
7/9/82	Salt water from oil field getting into fresh water.	Keenan Dewey	Referred to Dewey.
7/16/82	Big Chief water hauler dumping oil field wastewater in pond series on complainant's property near Oilmont, MT.	7/21/82 Weber	Discnarge is documente awaiting sample dat report.
7/29/82	Sun Oil Pumper truck dumping reserve pit waste in irrigation ditch - oil, mud, water.	7/30/82 Keenan (P)	
8/5/82	Sun Oil Co. - subcontractor discharging oil reserve pit material to lake on Johnston's property near Augusta, MT.	8/26/82 E. Weber (I) K. Keenan (P)	Apparently charge is true-samples collec d -took corr. actions
8/10/82	Somont Oil contractor constructing unlined production water (oil) pits near Nutter land in Sunburst, MT - fears saline seep.	8/17/82 E. Weber	Pits were lined-sample taken.
8/13/82	Pennzoil Subcontractor "squeezing" reserve pit - saline water leaking out - possible spring pollution.	8/13/82 M. Dewey Keenan (P)	Dewey reported bad situation-special p reclamation agreed upo
12/7/82	McAllister Fuel discharging from oil pits to coulees & creek beds - Hiawatha Field - Musselshell County.	12/22/82 R. Greene	Contacted company. Notified of WQB req- quirements-will inspec in the spring.
12/13/82	Big Chief Water Services - dumping oil field wastes on county roads.	12/13/82 Pedersen	Sent warning lett

1983

/15/83	Oil field HCL tank in Cascade - possibly unsafe - WQ hazard.	4/15/83 Pedersen (P)	Company has implemente safety measures.
3/3/83	Suspect Tenneco Oil Company of polluting springs, groundwater, surface water, with oil & salt on P-K Ranch property.	5/11/83 J. Burns (BWQB)	Some corr. actions by Tenneco. See file.
5/5/83	MT Pacific Oil & Gas discharge process water across his property to state waters.	5/19/83 Weber (I)	Could not confirm-Informed MT Pacific of requirements.
5/10/83	Uncapped oil well, Sweetgrass, property owned by George Horgus & Roger Horgus. They have a domestic spring; uncapped well is migrating-water comes out of hole.	5/10/83 Keenan (P)	O & G has been contacted.
/16/83	Oil drilling operation contaminated Iverson well with Saltwater seepage during drilling-well is 350 ft away from operation.	5/16/83	Samples taken.
6/27/83	Possible contamination of well by salt water-produced water.	6/27/83 Keenan (P)	Sample taken-water suspected is not poor quality.
7/22/83	Water hauler near Sidney is dumping salt water.	J. Burns (BWQB)	Referred to O & G
10/28/83	Unknown drilling rig discharging drilling fluids to West Fork Rock Creek - 1 mile downstream from Basin Campground which is 8 to 9 miles from Red Lodge, MT.	10/28/83 Pasichnyk (P)	No action taken.
1/15/83	Complaint regarding wells becoming salty & extremely turbid or sandy possibly due to oil field operation near Glendive.	11/15/83 L. Brown (P)	DNRC oil & gas will be contacted by J. Burns.
2/14/83	Mt. Pacific Oil & Gas (Jerry Bacon - Bacon Drilling) is filling up ponds & siphoning them into a small reservoir on 15 Mile Coulee drainage which drains eventually to Wilson Cr. - Tiber Res., Toole Co. They do not have an MPDES permit.	12/14/83 F. Shewman (O)	Complainant wants Company on a C.S. & will sign beneficial use letter. Wants an inspection conducted.

1984

2/8/84	Phillips Oil Co., Cut Bank, MT, 6 barrels of oil & 30 bbl of water were spilled. Cause: drill pit was put into the area where old flow line was laid - excavation apparently cut line & water flowed out other end into coulee.	2/8/84 Keenan (P)	Picked up contaminated soil & picked up oil with straw.
/9/84	Oil company near Cut Bank discharging produced water onto land.	2/9/84 Keenan (P)	Erich Weber inspected. See report.

3/6/84	Moline Rig No. 5 at Galen set up drill site with mud pit at head of drainage near Deer Lodge - possible hazrd to surface water.	3/6/84 Keenan (P) 3/10/84 Pedersen (I)	See Pedersen Inspec. Report 5-10-84
7-9-84	Power Fuels & Matador Service accused of disposing of salty, oil-produced water on property adjacent to their company offices-also near adjacent water wells - low pH, oily water instead of re-injecting or evaporating in lined pits.	7-9-84 Keenan (P)	Referred to Jerry Burn (BWQB) & he'll inspect
11/21/84	Frontier Exploration accused of discharging produced water in Toole County.	11/20/84 Shewman (P) 11/21/84 Shewman (L) 11/28/84 Shewman (L)	Had previously applied for permit-never issue because didn't verify posting pub. notice. Sent Pub. Not. MT 8-0 for posting & verif & we will issue permit.
	1985		
1/4/85	Complainant concerned about environmental damage caused to Fred George Creek Field due to oil & gas activity in Northern Toole Co.	1/4/85 Pilcher (P)	Referred to Erich Weber to inspect.
/14/85	Tim Zimmerman Trucking truck wreck near Plentywood resulting in @ 40-50 bbls. of crude oil.	1/16/85 Keenan (P)	Material scooped up & hauled to local landfill.
1/23/85	Jerry Bacon, Bacon Drilling, 2 miles SE of Kevin, MT, produced water from an oil well running off land he leased onto neighbor's property.	1/23/85 Keenan (P) 1/24/85 Keenan (P) 2/4/85 Pedersen (L)	Advised to submit plan for eliminating the discharge.
2/14/85	Oil wells in Kevin area discharging brackish water (on state lands).	Chrest (P)	
2/22/85	Unknown oil company - oil well water discharging at 5 gpm to a pond on Mr. Cook's land, Toole County.	2-22-85 Pasichnyk (P)	
2/26/85	Big Chief Water Service dumping water on county roads - south of Oilmont - 3 miles east on county rd - 2 miles.	2/26/85 Pedersen (P)	
6/28/85	Somont Oil Company - may be selling property (old Texaco Arcus lease) - salt water & oil going off their property, causing salt and oil seeps down below on Nutter.	6/28/85 Shewman (P)	

[Excerpts from:]

WATER QUALITY PROBLEMS ASSOCIATED WITH OIL AND GAS DEVELOPMENT IN EASTERN MONTANA

internship report
B. Michelle Dewey
June 1982

#21

CASE #21

Location: SE NE Sec 15 T25N R59E
Own'r: Mr. Chuck Lowman
First record: 30 September 1979

Mr. Charles Lowman sent in a sample of his well water for analysis when he learned that Shell Oil Company was to drill a well on adjacent property (in late September 1979). He was concerned that the quality of water in his 19 foot well would be affected by drilling activities only 300 feet away.

The reserve pit was lined, but Mr. Lowman learned from one driller on the rig that the surface hole was drilled with salt water. Also, upon completion of the well in January 1980, the fluids from the reserve pit were removed by draining over the land's surface rather than being pumped out and taken to a disposal well.

In mid February, Mr. Lowman noticed that his well water became too salty to drink, and his plumbing had started to corrode. He again sent a sample to the state lab for analysis. These results showed significant increases in dissolved ions: sodium from 64.9 to 811 mg/l; magnesium from 43.6 to 178 mg/l; and chloride from 12.2 to 1940 mg/l. There were also increases in TDS from 782.2 to 3865.9 mg/l and conductivity from 953 to 6630 umhos/cm (complete lab results follow).

Mr. Lowman refused an offer of $5000 by Shell for the damaged well. Finally, in late April, Shell paid for a new well to be drilled to replace the polluted water supply.

Since that time, Mr. Lowman has put in another sandpoint approximately 60 feet further away from the oil well than his old well was. Analysis of a water sample taken from this new well on 6 May 1982 shows that the water quality is about that of the old well before pollution.

CASE #3:

location: SE NE Sec 15 T23N R59E
owner: Mr. Chuck Lowman
first record: 30 September 1979

Mr. Charles Lowman sent in a sample of his well water for analysis when he learned that Shell Oil Company was to drill a well on adjacent property (in late Semptember 1979). He was concerned that the quality of water in his 19 foot well would be affected by drilling activities only 300 feet away.

The reserve pit was lined, but Mr. Lowman learned from one driller on the rig that the surface hole was drilled with salt water. Also, upon completion of the well in January 1980, the fluids from the reserve pit were removed by draining over the land's surface rather than being pumped out and taken to a disposal well.

In mid February, Mr. Lowman noticed that his well water became too salty to drink, and his plumbing had started to corrode. He again sent a sample to the state lab for analysis. These results showed significant increases in dissolved ions: sodium from 64.9 to 813 mg/l; magnesium from 43.6 to 178 mg/l; and chloride from 12.2 to 1940 mg/l. There were also increases in TDS from 782.2 to 3865.9 mg/l and conductivity from 933 to 6630 umhos/cm (complete lab results follow).

Mr. Lowman refused an offer of $5000 by Shell for the damaged well. Finally, in late April, Shell paid for a new well to be drilled to replace the polluted water supply.

Since that time, Mr. Lowman has put in another sandpoint approximately 60 feet further away from the oil well than his old well was. Analysis of a water sample taken from this new well on 6 May 1982 shows that the water quality is about that of the old well before pollution.

This would indicate that either this new well is out of the groundwater flow path or that the pollution has been temporarily or permanently flushed from the system. This does not show conclusively that the groundwater pollution problem has ended.

CASE # 11:

location: NE NE Sec 27 T35N R57E
adjacent owner: Mr. Norman Nelson
well completed: 29 March 1982

In this case, a reserve pit was left full and was overflowing its banks after drilling operations had finished. The well was completed at the end of March, and when I visited the site on 30 April, the pit was still overflowing (see PIC 14). Mr. Nelson, an adjacent property owner, was concerned because oil and fluids from the pit had flowed onto his land (see PIC 15).

Mr. Nelson also informed me that a representative of Patrick Petroleum Corporation had asked permission to pump this water onto Mr. Nelson's land, saying that it was fresh water. On 30 April, I took a sample of this pit fluid for conductivity analysis. It proved to have a conductivity of 5100 umhos/cm, and, although this value was not incredibly high, it certainly raised questions as to it being classified as fresh water. I informed Mr. Nelson of the laboratory results, and he said that he would continue to deny permission to have the pit drained onto his land.

exerpts from:

Effects of Reserve Pit Reclamation on Groundwater Quality at Selected Oil Well Sites in Eastern Montana and Western North Dakota

by:
B. Michelle Dewey
Master of Science Thesis
University of Montana, 1984

Chapter 7. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

1) The reserve pit reclamation technique of trenching and burying pit materials and fluid on the drill site adversely affected local groundwater quality at two study sites in Richland County, Montana.

2) In Richland County, chloride analysis of well samples served as a good indicator of drilling fluid contamination due to the low chloride concentration of native groundwater (13 to 45 mg/l) and the relatively high concentration in pit fluids (38,300 mg/l).

3) Groundwater sample analysis coupled with surface electrical resistivity surveys successfully outlined plumes of high chloride groundwater extending down the groundwater gradient at both Richland County sites.

4) Several groundwater samples from affected [domestic] wells at study sites one and two [Richland Co.] . . . exceeded the secondary drinking water standard for chloride. Richland County samples also exceeded Montana's aesthetic groundwater quality criteria.

8) Current reserve pit reclamation practices are resulting in local groundwater degradation and damage to surface soils and vegetation at sites [in Richland Co.] of this study.

[Two Applications from:]

MONTANA
LEGACY
PROGRAM

Recommendations for the FY 86-87 Biennium
January 1985

Montana Department of Natural Resources and Conservation

APPLICANT NAME: Fort Peck Tribal Council

PROJECT/ACTIVITY: Determine Extent of Ground Water Contamination In the East Poplar Oil Field

GRANT AMOUNT REQUESTED: $149,542

TOTAL PROJECT COST: $149,542

PROJECT DESCRIPTION

The East Poplar oil field is eight miles northeast of Poplar on the Fort Peck Reservation. Oil was discovered here in 1952. A 1982 study by the USGS confirmed that brine produced as a by-product in the production and recovery of oil in this field was contaminating the shallow alluvial aquifer. Several farm and domestic wells in the area now yield unusable water and there has been some contamination of the Poplar River. The most likely sources of contamination are: unlined brine-holding pits; leaks in pipelines transporting brine, in well-head connections, and in injection well casing; and spills from holding tanks or holding pits.

This study would define the extent of the contamination as recommended in the USGS report:

> "Additional data collection is necessary to determine the areal extent of contamination. Rates of movement of brine in the alluvium, geochemical reactions that may occur between the brine and alluvium resulting in precipitates, and changes in water quality with depth in the alluvium also could be determined by analysis of additional data."

TECHNICAL FEASIBILITY ASSESSMENT

The first phase of the project would be a reconnaissance-level study consisting of an inventory of existing wells and collecting water samples for chemical analysis, drilling and installing test wells in areas of sparse water-level data, conducting a seepage run on the Poplar River to determine its gaining or losing reaches and water-quality variations, and evaluating the data to identify potential point sources of contamination. The second phase would be site-specific study of contaminated areas identified in phase one. The work would consist of drilling additional test holes in areas of suspected point sources, conducting additional detailed seepage runs to pinpoint any areas where ground water inflow significantly affects the chemical quality of water in the Poplar River, using surface resistivity techniques to help define the areal extent of contaminant plumes through the alluvial aquifer. The third phase of the study would be to evaluate various management alternatives designed to alleviate or halt the contamination.

FINANCIAL ANALYSIS

Total Project Costs		$149,542
Funding Sources	Amount	
1. Legacy	$149,542	
Total Funding Contributions		$149,542

Due to the short time frame for developing applications for the legacy program, there was not time to solicit cost share from the BIA or USGS.

ENVIRONMENTAL IMPACT ASSESSMENT

This project would have positive environmental benefits if it led to the prevention of further contamination of the local aquifer and the Poplar River and if it led to the reduction of present damages.

PUBLIC BENEFITS ASSESSMENT

This project would provide benefits in the area of oil and gas reclamation. If the problem is addressed, benefits would accrue to local landowners and downstream users of Poplar River water.

RECOMMENDATION

A grant of up to $149,542 is recommended contingent on:

1. DNRC approval of the project scope of work and budget;
2. proven need for a full-time hydrologist;
3. no identification of a liable party who can reasonably be held responsible for this work; and
4. no availability of cost-share funds from USGS and/or BIA.

APPLICANT NAME: Toole County

PROJECT/ACTIVITY: North Toole County Reclamation Project

GRANT AMOUNT REQUESTED: $783,539

TOTAL PROJECT COST: $783,539

PROJECT DESCRIPTION

Oil was discovered in North Toole County in the 1920s. Today, over 13,000 acres of the county contain refuse, equipment, machinery, vehicles, and dwellings abandoned as a result of diminished oil and gas exploration, extraction, and processing. In addition, oil-saturated soils, sludge pits, and waste water (brine) sites have contaminated ground water supplies, thereby preventing revegetation and creating an aesthetically unpleasant appearance. In most cases, present landowners are not responsible for this situation, do not own oil and gas leases on the land on which they reside, and the responsible landowners cannot be identified. Agricultural producers lack venture capital to remove hazardous dwellings and equipment on owned or leased lands. Additionally, conditions of dilapidation and disrepair lend themselves to physical safety hazards for those working in and around these sites. Hazardous wastes associated with oil extraction and processing may also be present, though undocumented to date.

Toole County has proposed a reclamation planning and implementation program that would address oil-and-gas-production-related ground water contamination, soil contamination, abandoned equipment, and general surface reclamation.

TECHNICAL FEASIBILITY ASSESSMENT

The applicant has identified major goals of the proposed project as follows: 1) site identification and assessment; 2) assessment of existing ground water pollution and model future dispersion; 3) removal of abandoned equipment at seven pilot sites; 4) removal of rabid-animal breeding areas associated with the sites; 5) reclamation of impacted agricultural lands; and 6) provision for surface reclamation at production sites. This project is limited to seven sites covering 6,000 acres. The entire project is expected to require four years to complete. The first two years would cover site inventories, site cleanup, surface grading, and treatment of surface contaminants. The final two years would involve the actual seeding of disturbed areas, followed by evaluation and documentation of reclamation techniques.

The project would be coordinated with the Montana Bureau of Mines and Geology and the Triangle Conservation District. It would be administered by a five-member, local board. An executive secretary would be hired to administer contracts, perform office duties, and monitor project progress. This effort would produce seven sites involving 6,000 acres reclaimed for agricultural and other multipurpose uses. Results of this project could be applied to the remaining 7,000 acres in the area. The project is also expected to greatly improve both surface and ground water quality.

The need for this effort is supported by the serious environmental, aesthetic, and economic impacts imposed on this area from activities that damaged the area before current government standards were in effect.

FINANCIAL ANALYSIS

Total Project Costs		$783,539
Funding Sources	Amount	
1. Legacy	$783,539	
2. Applicant	-0-	
Total Funding Contributions		$783,539

The proposed budget is divided into categories as follows: 1) Contract Administration (executive secretary and operations) $27,000; 2) Triangle Conservation District (well drilling, sampling, analysis) $34,250; and 3) Montana Bureau of Mines and Geology (professional services, drilling, modeling) $147,500; Contracted Services (structure removal, sludge removal, grading, land treatments, seeding, repairs) $457,240; and Contingencies $117,549.

ENVIRONMENTAL IMPACT ASSESSMENT

The project would result in significant, positive, long-term environmental impacts to the soil, water, and social/economic resources of the area. Short-term negative impacts would include decreased water quality and erosion from the reclamation activities. Possible problems could result from disposal of reclamation wastes.

PUBLIC BENEFITS ASSESSMENT

The project would provide direct reclamation of past oil and gas extraction in an area where the economy and natural resources have been impacted. The benefits would include improved soil and water quality, wildlife habitat, aesthetics, and local economy. These benefits go directly to local landowners, oil companies, and other area residents. Montanans would benefit from removal of oil-and-gas-production-related environmental damages.

RECOMMENDATION

A grant of up to $390,000 is recommended contingent on DNRC approval of the project scope of work and budget. The project scope using legacy funds should be reduced from seven sites to two sites in order to demonstrate the viability of the reclamation techniques and to provide cost and scheduling information for future projects. The project budget should be reduced from that recommended after the two sites are selected and approved by DNRC.

The grant is further contingent upon DNRC approval of the applicant's documentation that no party can be identified as being reasonably liable or responsible for reclamation of the project sites. The applicant should obtain written permission from the land and mineral rights holders, allowing the reclamation activities to proceed and certifying that the sites would not be redeveloped for mineral extraction without provisions for adequate reclamation.

DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES
Cogswell Building, Helena, Montana 59601
(406) 444-2821

PRELIMINARY ENVIRONMENTAL REVIEW

Division/Bureau _____

Project or Application _____

Description of Project _____

_____

_____

_____

_____

_____

_____

_____

POTENTIAL IMPACT ON PHYSICAL ENVIRONMENT

	Major	Moderate	Minor	None	Unknown	Comments on Attached Pages
1. Terrestrial & aquatic life and habitats						
2. Water quality, quantity and distribution						
3. Geology & soil quality, stability and moisture						
4. Vegetation cover, quantity and quality						
5. Aesthetics						
6. Air quality						
7. Unique, endangered, fragile, or limited environmental resources						
8. Demands on environmental resources of land, water, air & energy						
9. Historical and archaeological sites						

DHES/ESD-1

POTENTIAL IMPACTS ON HUMAN ENVIRONMENT

	Major	Moderate	Minor	None	Unknown	Comments on Attached Pages
1. Social structures and mores						
2. Cultural uniqueness and diversity						
3. Local and state tax base & tax revenue						
4. Agricultural or industrial production						
5. Human health						
6. Quantity and distribution of community and personal income						
7. Access to and quality of recreational and wilderness activities						
8. Quantity and distribution of employment						
9. Distribution and density of population and housing						
10. Demands for government services						
11. Industrial & commercial activity						
12. Demands for energy						
13. Locally adopted environmental plans & goals						
14. Transportation networks & traffic flows						

Other groups or agencies contacted or which may have overlapping jurisdiction _____

_____

Individuals or groups contributing to this PER. _____

_____

Recommendation concerning preparation of EIS _____

_____

PER Prepared by: _____

Date: _____

ACTIONS

GENERAL

The Panel has submitted 39 recommendations that involve industry, the ERCB, government departments and, to a lesser degree, the public. They are wide-ranging in their scope. The Panel invites readers to obtain a copy of the Summary Report and review them. Two of the more important areas are commented on below.

REDUCE BLOWOUTS

While blowouts can't be totally eliminated, they can be significantly reduced. The Panel has recommended that

- new strict rules apply to drilling critical sour wells, to ensure careful planning, superior equipment and well trained crews
- the design, capacity and operating problems of key components of drilling rigs be carefully examined to determine whether changes are necessary
- drilling operations in the critical zone be conducted in a cautious manner
- ERCB increase both the number and completeness of its inspections of drilling operations
- the training of drilling personnel be improved

Each of these recommendations has been implemented or is under active consideration.

REDUCE EFFECTS OF A BLOWOUT

If a blowout were to occur the Panel believes that its effect can be reduced by

- requiring a site-specific emergency response plan for critical sour wells
- ensuring effective coordination of government response to the blowout
- ensuring effective communication with the public and particularly with the people residing in the immediate area
- ensuring that H_2S exposure limits are appropriate – especially for sensitive people
- ensuring that H_2S concentrations are carefully monitored and the information made available to the public

Most of these recommendations have been at least partially implemented.

WANT MORE INFORMATION?

If you are interested in learning more about the Lodgepole Blowout, the ERCB has three documents available:

1 Summary of Recommendations
2 Phase 1 report (a detailed analysis of the event and its effects, which includes the Phase 2 report)
3 Addendum to Phase 1 report, which deals with the updated estimates of emissions from the 13-12 well

WORTH REQUESTING!

Write, or drop by, any of the ERCB offices listed below:

Energy Resources Conservation Board
Maps and Publications Desk
640 Fifth Avenue S.W.
Calgary, Alberta
T2P 3G4
Phone: 297-8328

or

Energy Resources Conservation Board
Postal Station "D"
12204 - 145 Street
Edmonton, Alberta
T5L 4J6
Phone: 427-0200

A once in a lifetime photo of a small tornado caused by the vacuum developed from the fire and tremendous pressure roaring from the Lodgepole well

ERCB

LODGEPOLE Blowout Report

CAUSES. EFFECTS. ACTIONS.

CAUSES

WHAT HAPPENED?

Amoco spudded its 13-12 well on 10 August 1982. By 15 October, coring operations were proceeding at the 3000-metre level. Two cores were recovered that day without incident. Then, while cutting the third core on 16 October, formation gas unexpectedly began entering the wellbore and a "kick" occurred! For the next 16 hours the crew fought to control it, but on 17 October the well blew totally out of control.

In spite of a great deal of expertise and money, the well was not brought under control for another 67 days. During that period the Lodgepole blowout entered oil patch history, with two wild-well fighters dead, the public very upset, and millions of dollars in equipment and hydrocarbons lost. When the well was finally brought under control, the major question remained, "what went wrong?"

WHAT WENT WRONG?

(a) The initial "kick" occurred primarily because
- drilling practices, while cutting cores 2 and 3, were deficient
- the density of the drilling mud was only marginally adequate

(b) The kick was not controlled because
- the drilling crew did not immediately recognize the problem and apply standard kick-control practices
- several pieces of vital equipment did not function properly
- supplies of mixed drilling mud were not adequate
- the gas-bearing formation was extremely prolific

WHY DID IT TAKE SO LONG TO REGAIN CONTROL?

Several factors made control operations particularly difficult
- not only was the flow rate very high, but it contained large volumes of condensate and a high percentage of hydrogen sulphide (H_2S)
- weather conditions were frequently unfavourable
- safety procedures and equipment, although meeting existing standards, proved to be inadequate

Initially, both Amoco and the ERCB considered only two well control options;

1) capping when *not* on fire, and 2) drilling a relief well. The dangerous alternative of capping the well *while it was on fire* - which ultimately proved successful - was only adopted after the more traditional options had failed.

EFFECTS

WHAT WERE THE EFFECTS OF THE BLOWOUT?

EMISSIONS

For 67 days, very large volumes of gas, condensate and sulphur were emitted to the atmosphere. For most of those 67 days, the well was on fire and the sulphur was emitted as sulphur dioxide (SO_2), but for 26 days (when the well was not on fire) the sulphur was emitted as hydrogen sulphide (H_2S) with its offensive "rotten egg" odor. Daily sulphur emissions from the 13-12 well were greater than the total current emissions from the more than 130 sour gas plants, 5 coal-fired thermal power plants, and two oil sands plants, operating in Alberta.

EFFECTS ON PEOPLE

Local area residents, and a group of Edmonton respiratory patients, described how the blowout had affected their health. The effects included headache, eye irritation, sore throat, nose bleeds, some breathing problems, nausea and diarrhea. While scientific data was not available to link these health problems to the blowout, the Panel is satisfied that emissions from the 13-12 well did lead to short-term health effects for a substantial number of people. The evidence also suggests that some people are especially susceptable to H_2S emissions.

The Lodgepole Blowout site [illegible] the drilling rig still was standing.

Government departments reported on their efforts to ensure that people were not exposed to dangerous concentrations of either H_2S or SO_2. Exposure limits were established and nine monitoring units were employed to identify any situation when the limit would be exceeded. That occurred only on a few occasions, at rural residences, and the occupants temporarily left the area.

Actual H_2S concentrations at residences were substantially below the H_2S exposure limit of 15 parts per million (ppm) except for the occasional episode. For example, at Cynthia and Lodgepole the recorded concentrations were less than 1 ppm for 95 and 87 per cent respectively of the total monitored hours. At Drayton Valley it was 96 per cent, and at Edmonton the concentrations were less than 0.1 ppm for 93 per cent of the monitored hours.

During the 41 days that the well was on fire, and the sulphur was being emitted as SO_2, the concentrations were substantially less than the evacuation limit.

EFFECTS ON THE ENVIRONMENT

Environmental impacts were relatively modest. The major effects occurred on the 300 hectares (741 acres) surrounding the well. When the well was not on fire, the condensate "rain" had an impact similar to an oil spill. Two fires occurred during the several attempts to cap the well and burned all vegetation and trees in the immediate area. These fires also consumed much of the condensate, which greatly reduced the possibility of longer-term soil pollution. However, the unburned condensate, which was deposited on the perimeter of the blowout site, will have some impact on trees, groundwater, and soils for a number of years.

Sulphur emitted from the well was deposited in low concentrations on the ground over an area of hundreds of thousands of square kilometres. No evidence exists that there will be long-term harmful effects on soils, vegetation or water bodies.

Bridger Watch
P.O. Box 4407, Bozeman, Mt. 59715

February 9, 1987

SENATE NATURAL RESOURCES
EXHIBIT NO. 23
DATE 2-9-87
BILL NO. SB184

Senator Keating, Chairman
Senate Natural Resources Committee
Capitol Station
Helena MT 59620

Dear Senator Keating and Members of the Committee:

Thank you for the opportunity to bring our concerns to the legislature and help make this government one truly formed by "We the people...." Bridger Watch maintains a delicate and cordial relationship with Sohio, and I have been told by their district manager, Mr. B. G. Jones, that the Sohio well in Bridger Canyon is now used as an example of state of the art technology and planning for health and safety. It is our hope that the lessons learned will be applied to future permitting of oil and gas wells when conditions warrant.

I would like to outline for you some of the concerns of landowners. First and foremost is the issue of health and safety. After our research led us to the "Lodgepole Blowout," in Alberta, Canada, we became aware that a serious accident could endanger our families and property. Regardless of the probability factor, we were not willing to gamble with our children's safety.

Lodgepole raised the issue of deadly H_2S gas and its effect on humans and livestock. Lodgepole made us aware of the need for careful planning and review of safety precautions and evacuation procedures, and for coordination with state and local officials. Lodgepole was a well drilled by a reputable company with a good safety record in a known field. The Lodgepole well blew out continuously for 67 days. The H_2S plume was smelled as far away as Winnipeg, Manitoba, which is 800 miles from Lodgepole.

I remind you that the Sohio well was ¼ mile from the school bus stop and that 80 residences were within one mile of the site; this was not on an isolated "back forty." The Lodgepole blowout is a worst-case scenario that happened! I suggest you review the report from the Alberta government's Energy Resource and Conservation Board before you shun your responsibility to taxpayers who rely on your judgment for protection under the law.

As landowners we all have genuine concern for the local domestic aquifer. We were dismayed that an oil company would have access to FREE water, in a fragile mountain area, without compensation or protection for the landowners. Sohio developed and implemented a comprehensive water monitoring program for all landowners within one mile of the well site.

Our other concerns include reserve pit and other waste storage and removal, air quality control, noise level control, traffic and road conditions (especially in regard to school buses), property values and aesthetic impacts.

Few wells will require a PER; even fewer will require an EIS. But when such action is required, it is to the benefit of all the taxpayers to have factual data compiled in an impartial and comprehensive manner. Bridger Watch is well aware that an EIS does not stop a well; that is not its purpose. As exploration for the oil and gas that we all use extends into Overthrust-type structures we will see wells that are much deeper (Sohio Moats #1-3 was 15,000 feet), will probably involve more "sour gas," and will be closer to residential and/or traditional recreation areas. Compliance with MEPA is not unjust delay, but proper and correct procedure in order to represent and protect the rights of all the people and the environment of an area.

In conclusion, I ask you not to put speculation of profits before enactment of morality, and to vote NO on Senate Bill #184 and direct the State Board of Oil and Gas Conservation to establish procedure for compliance with MEPA.

Sincerely,

Mary Ann Kelly, President
Bridger Watch, Inc.

P. S. Bridger Watch has compiled much detailed public testimony and factual references that we would be happy to supply to any committee member.

SENATE NATURAL RESOURCES
EXHIBIT NO. 23 (p.2)
DATE 2-9-87
BILL NO. SB184

SENATE NATURAL RESOURCES
EXHIBIT NO. 24
DATE 2-9-87
BILL NO. SB 184

SB 184 DECLARES THAT THE ISSUANCE OF A PERMIT TO DRILL AN OIL OR GAS WELL IS NOT A MAJOR ACTION OF ~~STASTE~~ STATE GOVERNMENT UNDER THE PROVISIONS OF MEPA.

The League of Women Voters of Montana would like to speak in opposition to SB 184. We realize that many oil and gas wells have little or no impact on the environment. For them to comply with MEPA would mean completing a Preliminary Environmental Review which would show that the effects on the environment would be minimal. We don't believe that this is too much to ask when we are dealing with the public's right to a "clean and healthful environment" as written in the Montana Constitution.

If it is shown that the drilling could have a significant impact on the environment, then we believe that the oil and gas people should feel an obligation to the state and its citizens to let the state examine any significant effects systematically, and do what is necessary to minimize those effects.

We do not see the difficulty in complying with MEPA, and therefore ask that you defeat this bill.

Joy Bruck
LVW of Montana

Montana

Audubon Legislative Fund

SENATE NATURAL RESOURCES
EXHIBIT NO. 25
DATE 2-9-87
BILL NO SB 184

Testimony on SB 184
February 9, 1987

Mr. Chairman and Members of the Committee,

My name is Janet Ellis and I'm here today representing the Montana Audubon Legislative Fund. The Fund is composed of 9 chapters of the National Audubon Society and represents 2500 members in the state.

The Audubon Fund opposes SB 184.

A "major action of state government" is defined as an action "significantly affecting the quality of the human environment." Such actions require the preparation of an Environmental Impact Statement - a process that allows alternatives to be examined and the public to have a voice when something "significant" is about to happen to their environment.

This policy makes sense. It allows Montanans to stop and think and plan for the future. It is a good state policy to examine things closely when something "significant" is about to happen to our environment.

Generally, oil and gas drilling does not "significantly" affect our environment - and neither does the application of a pesticide on a winter wheat field. In 1983 the Department of Agriculture, however, completed its first EIS on a pesticide. That pesticide was endrin - a pesticide that became a household word when fish were killed and residues were found in waterfowl, nongame birds and big game animals.

I think that everyone here would agree that endrin "significantly affected our environment. It was a relief to all when less toxic and less persistent chemical alternatives were found to control agricultural pests.

So what about oil and gas drilling? Is it prudent to decide that such drilling will <u>never</u> "significantly" affect our environment? We think not.

Planning is essential as Montana coninues to grow. SB 184 predetermines the answer to the key question MEPA asks. This is bad policy, for we cannot know the answer <u>unless</u> we ask the question. And there is no harm in asking the question unless we fear the answer.

The Audubon Fund urges you to vote "Do Not Pass" on SB 184.

2620 W Sawmill Rd
Bozeman MT 59715

February 9, 1987

SENATE NATURAL RESOURCES
EXHIBIT NO. 26
DATE 2-9-87
BILL NO. SB 184

Senator Thomas Keating, Chair
Senate Natural Resources Committee
Capitol Station
Helena MT 59620

RE: Senate Bill #184

Senator Keating and Committee Members:

I have trouble fitting myself into the picture that proponents of this bill have drawn of those who oppose it, that of ecological fat cats - the rich and privileged few - using MEPA as a big stick to prevent any oil or gas development, and deliberately denying private landowners the right to develop their minerals if they see fit. This sort of emotionally-loaded and intentional overstatement is a deliberate attempt to obscure the real result of passage of Senate Bill #184: a diminishing of the rights of every citizen of the state to protection from those with an eye to the quick buck, who - without the MEPA process - could come in and extract minerals without regard to the effects on the health, safety, esthetics or economy of an area.

My family lives east of Bozeman, about a mile south of Sohio's Moats #1-3 well which was drilled in 1986. Our land is not included in the Bridger Canyon Zoning District, and it became disturbingly obvious to us and other landowners around us that - had Sohio chosen to drill on the south side of the ridge rather than on the north - there would have been no local forum in which to air our concerns about safety, water usage and quality, traffic, toxic-waste hazards and so on. There would have been only MEPA and the Board of Oil and Gas Conservation.

Sohio has a reputation as an oil company whose aim is to maintain good relations within any area in which they are drilling, and they are to be commended for the way they responded to the concerns of property owners and county officials on the Moats #1-3 well. But - as we all are aware - not all exploration or drilling companies share that concern for the taste they leave in peoples' mouths when they work in an area. You can't just "count on them to do the right thing." Most companies will do what they're required by law to do...and not a smidgin more. To exempt oil and gas drilling from complying with or being considered under MEPA removes virtually the only avenue the vast majority of us in the state have of making our voices heard on this type of development. Such an exemption merely smooths the pathway of minerals developers at the expense of those who are counting on the state to protect their health, property values, safety and peace of mind.

I can hear someone out there muttering "So, sue 'em!" And certainly if SB #184 is passed, that would seem to be our only recourse. But it's a frightening thought that the only way to protect this fragile and sensitive land we love is to pit our meager resources against the technical expertise and financial might of even the smallest oil company. That's not a David-and-Goliath scenario, it's more like a mosquito annoying a rhino! But the state does have the clout - in MEPA - and it should not sacrifice the right its citizens have to the protection MEPA provides.

I urge you all to cast a "NO-PASS" vote against this bill.

Thank you for your consideration,

Jan Nixon

Jan Nixon

SENATE NATURAL RESOURCES
EXHIBIT NO. 27
DATE 2-9-87
BILL NO. SB184

TESTIMONY FOR SENATE NATURAL RESOURCES COMMITTEE

RE: SB 184

Doug Smith, Planner
Sheridan County Planning Board, MONTANA ASSN. PLANNERS

I have been a planner in Eastern Montana for the past 10 years and I have seen the oil boom come and go. For the most part I oppose this bill because there are a number of social and environmental problems which have never been addressed in relation to the oil and gas industry, as they have been for coal and hard-rock minerals.

One of the problems I have been confronted with is the economic and social impacts of the boom and bust of oil development. During the boom every house was rented and every vacant lot had a trailer on it. The capacities of public water and sewer systems were stretched to their limits. Small towns without public systems had sewage running in the streets and wells contaminated from overflowing septic tanks and cesspools. Some of those communities put in public systems to accomodate the increased business and population, and they incurred long-term debts to pay for those systems - now that the boom is gone the permanent residents of those small towns are left holding the bag. It is particularly a seroius problem for small and unincorperated towns where they are not permitted to benefit from the outlying tax base or the impact funds from the increase in production proceeds.

Another problem I have been working with concerns the disposal of drilling mud. Sheridan County has roughly 800 drilling locations, each of those locations is also a drilling mud disposal site. The only requirement for the disposal of salt-laden sludge from the reserve pit is that it be buried a minimum depth of three feet. During drilling the industry is required to use a lined pit when using salt brine as the drilling solution. Once the drilling is completed the standard procedure for reclaiming the site is to dig trenches through the liner and away from the pit on one end and to fill the pit in from the other end so the sludge is squeezed out into the trenches for rapid disposal and clean-up. This mud, saltwater and drilling additives are buried without considering the proximity to water supplies for houses and farms, it is buried in sand and gravel where it can be leached into water tables and it is buried below the water table in some cases.

An oil rig is generally in one place for a month or two. It may generate roughly $100,000 into the local economy for wages and services. One drilling permit may have little impact, 10 drilling rigs is a major impact. One buried disposal pit may have minor impact, 10 or 100 locations in one area means major impacts on roads and local services, and it means wide-spread contamination from spills, leaking pipelines and leaching disposal pits.

The huge sums of money that oil has generated for state revenues should serve as some indication of the impact of the oil industry on local communities. It is not as permanent and stable as coal or hard-rock. It is spead out, it moves on wheels over county roads and moves through buried pipelines. The oil fields are spread all over eastern Montana and each field is criss-crossed with roads and buried pipelines for collecting and transporting oil, gas and saltwater for disposal.

I'm not saying that the oil industry is not welcome - I'm saying the state should clean up its act and give the landowners and communities in the oil patch the same consideration as in other mineral development areas.

The fact that the Oil and Gas Commission has never considered environmental effects, and the fact that state government just collects the revenues and looks the other way - does not mean there aren't problems in the oil patch. Every drilling location is a potential hazardous waste disposal site and water supplies and soils are being ruined by saltwater contamination. The oil patch is a time-bomb of environmental problems that is accumulating with every permit issued by the Oil and Gas Commission.

I feel that if the Oil and Gas Commission is exempted from MEPA the State will be abandoning its obligation to the land and people in eastern Montana, which I might add it has the constitutional responsibility to protect.

L. Scott Ramsay
14848 Kelly Canyon Rd.
Bozeman, Montana 59715

Feb. 5, 1987

SENATE NATURAL RESOURCE
EXHIBIT NO. 28
DATE 2-9-87
BILL NO. SB 184

Senator Keating, Chairman
Senate Natural Resources Committee
Capitol Station
Helena, Montana 59620

Dear Senator Keating and Members of the Committee:

Iam writing to express my opposition to Senate Bill 184. My family and I have been closely acquainted with the recent drilling of Sohio's, (Moats 1-3) well in Bridger Canyon.

From the very first indication that there would be a well drilled in our neighborhood we were concerned. Concerned that such activity would adversly effect our personal safety, water supply and lifestyle. As you may know there was a lengthy process of interaction between the interested parties before the well was started. I strongly feel that it was this interaction, influenced by the MEPA law, that resulted in a safe well.

I agree with those that say that not all wells in all situations should go through such a lengthy reveiw as M oats 1-3. However, if you enact SB 184 it will exempt far too many potential sites from MEPA influence. As the search for oil/gas moves off the range and into more populated areas the need for MEPA is even stronger.

In conclusion I ask two things. One, that a checklist be developed by the Board of Oil and Gas that would alert that Board to sites with potential problems for the surrounding residents, land, and wildlife. Secondly, that your committee vote no on Senate Bill 184.

The enclosed copies of this letter are for the other members of your committee. Thank you.

Sincerely

L. Scott Ramsay

L. Scott Ramsay

SENATE NATURAL RESOURCES
EXHIBIT NO. 28
DATE 2-9-87
BILL NO. SB184

EDUCATION - CONSERVATION

Montana Wildlife Federation

AFFILIATE OF NATIONAL WILDLIFE FEDERATION

P.O. Box 3526
Bozeman, MT
(406) 587-1713

February 6, 1987

SENATE NATURAL RESOURCES
EXHIBIT NO. 29
DATE 2-9-87
BILL NO. SB184

Senator Tom Keating
Capitol Station
Helena, MT. 59620

Dear Senator Keating:

On behalf of the Montana Wildlife Federation, I ask you to oppose SB184. This bill would allow oil and gas drilling to be "above the law" in not needing review of their permits.

We are proud of the job that SOHIO did in their Moats 1-3 well in Gallatin County. They did such a fine job largely because they were required to experience environmental review. The Board of Oil and Gas Conservation placed conditions on SOHIO's permit that made the well a model of good planning for health and safety of local residents. This would not happen if SB184 is passed.

We ask you to keep oil and gas drilling a major act of state government as it belongs, and vote no on SB184. Thank you.

Sincerely,

Ken Frazier, Billings
President

cc: members of Senate Natural Resources Committee

February 11, 1987

TESTIMONY OF ARNOLD J. SILVERMAN
Western Montana Scientist Committee for Public Information, Missoula, MT
on
Senate Bill 184 - To exempt oil and gas drillers from the provisions of MPEA

SENATE NATURAL RESOURCES
EXHIBIT NO. 30
DATE 2-9-87
BILL NO. SB184

Mr. Chairman and Members of the Committee,

My name is Arnold Silverman from Missoula, Montana, I am a professional geologist, and have been employed with the University of Montana for the past 28 years. I am also the President of the Western Montana Scientist Committee for Public Information on whose behalf I present this statement.

Mr. Chairman, this bill is both unnecessary and untimely. The provisions of the Montana Environmental Policy Act has never been at issue as inhibiting the ability of oil and gas drillers in Montana to secure permitting. Over 13,000 permits have been issued by the Board of Oil and Gas Conservation since 1971, and of that number only two have ever required a PER, and none have been refused in that sixteen year history. That record speaks well for both the dedication and wisdom of the legislature in supporting the requirements of the Montana Environmental Policy Act as it applies to potentially significant actions in natural resources extraction.

The Board of Oil and Gas Conservation is not mandated to review the environmental impact of oil and gas drilling proposals. Only the provisions of MEPA make it mandatory that a review be undertaken in order to screen any very high impact proposals for future followup. The work of that screening over the last sixteen years has provided only two occasions were a PER is

necessary, and no occasion that would have demanded a full-blown

With that historical record and the understanding by all oil and gas drillers in the state that MEPA is a standard by which all proposals will be judged, the industry has developed the planning and technology to accomodate, with little or no cost, environmental impacts. The record of successful application proves this point. The people of Montana and the industry became fully cognizant of externality costs that may be attributed to, but not fully accounted for, in the business of oil and gas drilling. Hence, the requirements of MEPA to mitigate any such action.

The slowly rebounding oil and gas industry, although still under the severe economic pressure of the international oil cartel, can maintain a viable and productive industry in Montana adhering to the standards of the MEPA. To ignore those standards is to invite a potential catastrophe for all concerned; the industry, the environment and the people in the state. The review that is provided by the state of Montana for oil drilling permits serves the very important role of identifying any potentially high impact proposal, calling attention to the fact that such a proposal has been made and requiring that the driller and the State work together to mitigate the potential impacts. This is clearly in the best interest of all involved, in that it provides a touchstone for the consideration of environmental impact by oil and gas drillers, and an understanding by the State of what the impacts will be, should they not be mitigated.

SB184 is clearly untimely, particularly as it comes when the economics of the industry and the financial condition of some of those involved in oil and gas drilling could lead to cost-saving performance and skimping on

important environmental protections that are needed when oil and gas is extracted. There are few, if any, proposals that can be identified by the proponents of this bill that were made impossible simply because MEPA review was required by state law. One can only assume, therefore, that SB184 is aimed at weakening MEPA, and proposing as a justification the unwarranted assumption that MEPA somehow inhibits the economic vitality of oil and gas drilling in Montana. We ask you not to support this bill.

SENATE NATURAL RESOURCES
EXHIBIT NO. 30 (p.4)
DATE 2-9-87
BILL NO. SB184

FINANCIAL ANALYSIS

Total Project Costs		$149,542
Funding Sources	Amount	
1. Legacy	$149,542	
Total Funding Contributions		$149,542

Due to the short time frame for developing applications for the legacy program, there was not time to solicit cost share from the BIA or USGS.

ENVIRONMENTAL IMPACT ASSESSMENT

This project would have positive environmental benefits if it led to the prevention of further contamination of the local aquifer and the Poplar River and if it led to the reduction of present damages.

PUBLIC BENEFITS ASSESSMENT

This project would provide benefits in the area of oil and gas reclamation. If the problem is addressed, benefits would accrue to local landowners and downstream users of Poplar River water.

RECOMMENDATION

A grant of up to $149,542 is recommended contingent on:

1. DNRC approval of the project scope of work and budget;
2. proven need for a full-time hydrologist;
3. no identification of a liable party who can reasonably be held responsible for this work; and
4. no availability of cost-share funds from USGS and/or BIA.

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